SEVENTH FIVE-YEAR REVIEW REPORT FOR
ROSE PARK SLUDGE PIT SUPERFUND SITE
SALT LAKE COUNTY, UTAH

Prepared by

Utah Department of Environmental Quality
Division of Environmental Response and Remediation
For
U.S. Environmental Protection Agency
Region 8
DENVER, COLORADO

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Betsy Smidinger, Director
Superfund and Emergency Management Division

Table of Contents

Tables

LIST OF ABBREVIATIONS & ACRONYMS

Amoco	Amoco Oil Company
ARAR	Applicable or Relevant and Appropriate Requirement
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
bgs	Below Ground Surface
BP	British Petroleum
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
FYR	Five-Year Review
GCCA	Governmental/Corporate Cooperation Agreement
ICCA	Intergovernmental Corporate Cooperation Agreement
ICs	Institutional Controls
LNAPL	Light Non-Aqueous Phase Liquid
mg/L	Milligrams Per Liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OMM	Operation, Monitoring, and Maintenance
OU	Operable Unit
PRP	Potentially Responsible Party
RAO	Remedial Action Objectives
ROD	Record of Decision
RPM	Remedial Project Manager
SARA	Superfund Amendments and Reauthorization Act
TPH	Total Petroleum Hydrocarbons
UDEQ/DERR	Utah Department of Environmental Quality/Division of Environmental Response and Remediation
UU/UE	Unlimited Use and Unrestricted Exposure
VOCs	Volatile Organic Compounds
SVOCs	Semi-volatile Organic Compounds

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues, if any, found during the review and document recommendations to address them.

The Utah Department of Environmental Quality/Division of Environmental Response and Remediation (UDEQ/DERR) is preparing this FYR report for the U.S. Environmental Protection Agency (EPA) pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the seventh FYR for the Rose Park Sludge Pit Superfund Site. The triggering action for this policy review is the completion date of the previous FYR. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE). The review is a policy review because the remedial action was pre-Superfund Amendments and Reauthorization Act of 1986 (SARA).

The Site consists of one operable unit (OU) which will be addressed in this FYR.

The Rose Park Sludge Pit Superfund Site FYR was led by Tony Howes, UDEQ/DERR Project Manager. Participants included James Hou, EPA Remedial Project Manager (RPM); Dave Allison, UDEQ/DERR Community Involvement Coordinator; and Scott Everett, UDEQ/DERR Toxicologist. The community and Potentially Responsible Parties (PRPs), British Petroleum (BP) and Salt Lake City, were notified of the initiation of the Five-Year Review. The review began on 11/30/2021.

The EPA has determined in the five-year review that the cleanup at the Rose Park Sludge Pit Superfund Site is protective of human health and the environment in the short-term. The engineered cap prevents exposure to wastes contained within the repository, and groundwater monitoring and sampling data demonstrates that the slurry wall prevents off-site migration of contaminants. An Environmental Covenant prohibits the development and use of surface water and groundwater and restricts excavation activities that would impact the cap and slurry wall. However, in order for the Site to be protective in the long term, a document indicating ICs required and how they will be maintained needs to be written, and a determination needs to be made and documented as to who will be responsible for future O&M activities and groundwater monitoring.

Site Background

The Site is in Salt Lake City, Utah, at approximately 1300 North Boy Scout Drive (1200 West). The Site is bordered by vacant/undeveloped land to the north, Interstate 15 to the east, and Rosewood Park to the west and south (Appendix B - Figure 1). The Site is bound by steel vehicle barriers to the east, concreted jersey barriers to the south/west and a chain link fence to the north. Signs informing the public about the Site are located along the north, south and east boundaries. Rosewood Park is owned and maintained by Salt Lake City and includes tennis courts, soccer and baseball fields, a skate park, picnic areas, parking lots, dog park and restrooms. The Guadalupe Elementary School is located on the west side of Boy Scout Drive, less than a quarter of a mile away from the Site. Residential neighborhoods are located adjacent to Rosewood Park on the southern park boundary.

The Amoco Oil Company (Amoco) disposed of refinery wastes in an on-Site unlined pit from the 1930s until 1955. Most of the wastes disposed in the pit were believed to be acid soluble oil sludge generated during sulfuric acid alkylation of crude feedstocks at the refinery. The waste material was generated from the petroleum refinery located east of the Site (now Marathon Refinery). Salt Lake City purchased the property in 1957 in response to

citizen's complaints against the disposal of refinery wastes at the Site. In 1960, Salt Lake City removed 40 to 100 truck-loads of sludge from the Site and covered the remaining waste sludge with a soil cap.

Amoco merged with BP in 1998 and as a successor in interest to Amoco, is subject to Amoco's remaining rights and obligations for the Site.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Rose Park Sludge Pit		
EPA ID: UTD9806335452		
Region: 8	**State:** UT	**City/County:** Salt Lake City/Salt Lake County
SITE STATUS		
NPL Status: Deleted		
Multiple OUs? No	**Has the Site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: State		
Author name (Federal or State Project Manager): Tony Howes		
Author affiliation: UDEQ/DERR		
Review period: 11/30/2021 - 8/31/2022		
Date of Site inspection: 3/15/2022		
Type of review: Policy		
Review number: 7		
Triggering action date: 9/14/2017		
Due date *(five years after triggering action date)*: 9/14/2022		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

Salt Lake City rediscovered the Site in 1976 when a bulldozer, being used for expansion of recreational facilities at the park, broke through the soil cap exposing the acidic sludge waste. Due to state and local concerns, the EPA and Amoco conducted a number of site investigations between 1979 and 1981 focusing on physical contact with sludge extrusions, the release of acidic vapors from the Site, and to a lesser extent, groundwater contamination. In August 1981, Amoco installed six monitoring wells and collected soil samples from six borings within the sludge pit and surrounding area. The sludge pit was found to cover an area of approximately 5.5 acres, and the waste material was found as deep as 20 feet below ground surface.

Salt Lake City, Salt Lake City/County Health Department, the Utah Department of Health, the EPA and Amoco signed an Intergovernmental Corporate Cooperation Agreement (ICCA) on October 29, 1982, that required

Amoco to conduct remedial activities at the Site. The ICCA did not establish any specific exposure pathways or contaminants of concern that would have triggered cleanup.

The Site was considered a top priority for the State of Utah and was listed on the National Priorities List (NPL) on September 8, 1983.

Current constituents monitored in groundwater at the Site include total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals.

Response Actions

There is no Record of Decision (ROD), Baseline Risk Assessment, or cleanup criteria (Applicable or Relevant and Appropriate Requirements, or ARARs) for the Site. Response action requirements, including institutional controls (ICs) and Operations and Maintenance (O&M) were included in the ICCA. Remedial activities were conducted between 1983 and 1984 in order to contain and prevent exposure to refinery wastes, eliminate potentially unhealthy odors and vapors, and prevent off-site migration of the waste through surface water and/or groundwater.

The remedy components consist of the following:

- Constructing an on-site repository, with the following components:
    - A bentonite slurry wall was constructed around the perimeter of the Site, ten feet below the deepest known contamination.
    - An engineered cap was constructed over the waste material, which included a sand layer, fabric membrane, compacted clay layer, and 18-inches of soil.
    - Top soil was placed on top of the cap and seeded.
- Vehicle barriers, chain link fence, and warning signs were placed around the perimeter of the repository.
- Throughout the history of the remedial action, 20 groundwater monitoring wells have been installed around the boundary of the Site.
- The original ICCA ICs consisted of preventing any excavation or installation of any underground utilities on-site.
- The original ICCA O&M activities included annual groundwater sampling/monitoring, quarterly Site inspections, and well-integrity testing.
- The O&M activities were conducted from 1984 through 1992 by Salt Lake City; however, the EPA, UDEQ/DERR and Amoco identified several deficiencies regarding O&M activities during that time period. Amoco assumed responsibility of the O&M in 1992 and BP, the successor to Amoco, continued these activities documented annually in a report provided to the EPA and UDEQ/DERR.
- The Site was deleted from the NPL on June 30, 2003.
- In October 2010, Salt Lake City, BP, the EPA and UDEQ/DERR entered into an Environmental Covenant which specifies Site activity and use limitations.

Status of Implementation

BP and Salt Lake City executed a Governmental/Corporate Cooperation Agreement (GCCA) on April 1, 2014, that replaced the ICCA that expired on December 31, 2015. The GCCA identifies the Site Operation, Monitoring, and Maintenance (OMM) Plan, specifies that annual inspections and routine maintenance related to the cap and Environmental Covenant will be implemented by Salt Lake City, and groundwater monitoring and sampling will be completed every five-years by BP. Groundwater monitoring and sampling results will be compared to previous concentrations to ensure the integrity of the slurry wall.

IC Summary Table

Table 1: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Land-Use Restrictions	Yes	No	Site	Subjects the Site to activity and use limitations that protect the integrity of the bentonite slurry wall and engineered cap.	Environmental Covenant between Salt Lake City, BP, the EPA, and UDEQ/DERR October 2010

Systems Operations/Operation & Maintenance

Operation and Maintenance of the Site is conducted by BP and Salt Lake City in accordance with the 2014 OMM Plan and 2014 GCAA, to which UDEQ and the EPA were not parties. Salt Lake City performs annual inspections and maintenance activities to address issues associated with the cap such as inadequate vegetation and the presence of deep rooting trees or shrubs; holes and significant erosion features on or near the cap; depressions and/or ponded water on or near the cap; seepage emanating from the cap; and signs of disturbance by burrowing animals. BP conducts groundwater monitoring and sampling at the Site every five years in conjunction with the FYR. In addition to groundwater monitoring and sampling, BP is responsible for repairing any damage to the monitoring wells (missing locks, damage to protective stickup or flush mount vaults, etc.) and gas riser that is observed during the annual inspections.

Salt Lake City conducted an annual inspection in October 2021 and a summary of the inspection was provided in the 2021 Five Year Groundwater Monitoring and Sampling Report prepared by BP. Annual inspections were not completed in 2017, 2018, 2019, and 2020 as a result of staff changes and miscommunication that annual inspections needed to be performed for the Site.

The annual inspection conducted by Salt Lake City in 2021 identified maintenance concerns that did not impact the overall integrity of the remedy such as two small trees growing on the cap, burrowing animals, and a broken, small-diameter pipe that is connected to the side of the gas vent pipe. Salt Lake City removed the two small trees that were growing on the cap, and notified BP's consultant about the broken, small-diameter pipe on the side of the gas riser. The animal burrows were not considered to be a threat to the integrity of the cap because the burrows were small and no evidence of waste material was observed at the surface.

BP conducted the five year groundwater monitoring and sampling event in October 2021 for the purpose of evaluating the integrity of the slurry wall and potential impacts to groundwater from wastes contained within the repository. Groundwater samples were collected from eleven monitoring wells that are located just outside of the slurry wall (Appendix B-Figure 2) and compared to previous concentrations.

Groundwater samples from nine monitoring wells were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) and TPH. Groundwater samples from two of the eleven monitoring wells were analyzed for TPH, BTEX, and a broader list of VOCs, SVOCs, and metal constituents listed on the EPA Region 5 Waste Management Branch "Skinner List" Constituents of Concern for Wastes from Petroleum Processes.

A report summarizing the findings of the five year sample event conducted in October 2021 was prepared and provided to the EPA and UDEQ/DERR on April 11, 2022. UDEQ/DERR and the EPA reviewed this report and concluded that there were no issues related to the integrity of the slurry wall and cap.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last FYR as well as the recommendations from the last FYR and the current status of those recommendations.

Table 2: Protectiveness Determinations/Statements from the 2017 FYR

OU #	Protectiveness Determination	Protectiveness Statement
Sitewide	Short-term Protective	The Site is currently protective of human health and the environment. However, in order for the Site to remain protective in the long term, illegible caution signs need to be replaced and the OMM plan needs to be revised and approved by the State/EPA to adequately monitor the integrity of the cap/slurry wall.

Table 3: Status of Recommendations from the 2017 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
Site Wide	OMM Plan in the 2015 GCCA was not reviewed/approved by State/EPA.	OMM Plan needs to be revised and approved by State/EPA.	Completed	The EPA and the State have reviewed the OMM Plan, and if implemented as written, the OMM Plan can provide for long-term protectiveness	12/31/2018
Site Wide	Caution signs around Site are illegible.	Replace caution signs.	Completed	Signs observed during the Site inspection were legible and appeared to have been replaced.	9/30/2018

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A public notice was made available by a newspaper posting (Appendix C) in the Salt Lake Tribune on 4/27/2022, stating that there was a five-year review and inviting the public to submit any comments to the EPA and UDEQ/DERR. The results of the review and the report will be made available at the Site information repository located at UDEQ/DERR, 195 North 1950 West 1st Floor Salt Lake City, Utah and at http://eqedocs.utah.gov. The results of the review and the report will also be made available on the EPA's website at https://www.epa.gov/superfund/rose-park.

The UDEQ/DERR conducted community interviews with individuals knowledgeable about the Site. Individuals interviewed included personnel with Salt Lake City and BP. None of the interviewees expressed any health or environmental concerns.

Salt Lake City and BP are aware of the GCCA and Environmental Covenant that have been established for the Site. BP conducts groundwater monitoring and sampling every five years for purposes of evaluating the bentonite-slurry wall, and Salt Lake City performs annual inspections in order to identify and address any maintenance concerns that would impact the remedy. Reports summarizing the interviews are included in Appendix D.

Data Review

Groundwater monitoring data for eleven wells sampled during the October 2021 five-year monitoring and sampling event were reviewed for this FYR. Based on this review, groundwater elevations and flow direction were consistent with past measurements. TPH and BTEX were not detected above laboratory reporting limits in any of the groundwater samples collected in October 2021. In addition to TPH and BTEX, monitoring wells SL-92-3 and GW-92-3G were analyzed for SVOCs, metals, and a broader list of VOCs.

SVOCs were not detected above laboratory reporting limits in monitoring well SL-92-3; however, acenaphthene, fluorene, phenanthrene, and pyrene were detected in well GW-92-3G. These detections are the result of a laboratory reporting limit for these four analytes that was lower than the reporting limits used in previous monitoring and sampling events and, therefore, may be representative of past levels that were less than previous reporting limits and were reported as "not detected."

With the exception of arsenic and barium, metal concentrations were either less than the method detection limit or reporting limit. Arsenic concentrations exceeded the maximum contaminant level (MCL) of 0.01 mg/L in monitoring wells SL-92-3 and GW-92-3G. Arsenic concentrations in monitoring wells SL-92-3 and GW-92-3G were 0.0234 milligrams per liter (mg/L) and 0.0475 mg/L, respectively, and were within the historical range of previous levels. Barium was detected in two monitoring wells, but concentrations were less than the MCL of 2 mg/L and were within the historical concentration range for this analyte.

A 1.62-foot-thick layer of light, non-aqueous-phase liquid (LNAPL) was measured in monitoring well MW-90-3S in October 2021. Well MW-90-3S is located outside of the soil-bentonite slurry wall and LNAPL has been measured consistently in this well, ranging in thickness from 0.10 to 2.72 feet, during previous monitoring events. Consistent with previous years, LNAPL was not detected in any other Site monitoring wells. The EPA concluded in the 1992 FYR Report that the LNAPL in monitoring well MW-90-3S is associated with the Northwest Oil Drain Non-NPL Site and not the Rose Park Sludge Pit Site.

Site Inspection

The inspection of the Site was conducted on 3/15/2022. In attendance were UDEQ/DERR Project Manager Tony Howes and UDEQ/DERR Community Involvement Coordinator Dave Allison. The purpose of the inspection was to assess the protectiveness of the remedy.

The cap, which supports a variety of grasses and weeds, was observed to be in good condition and prevents exposure to the wastes contained in the repository. Surface water appeared to be draining off the cap with no signs of erosion or ponding on the cap's surface. No trees or shrubs were growing on the cap. However, signs of burrowing animals on and around the cap were observed during the inspection. These burrows were small and not deemed to be a threat to the integrity of the cap since no evidence of waste material was observed.

The inspection found all monitoring wells were properly secured/locked and in good condition. The chain link fence had been cut and rolled back to create an opening at two separate locations along the Site's north boundary. These opening are not deemed to be an immediate threat to the integrity of the cap since vehicle access points located along 1200 West are restricted by fences and barricades that are adjacent to the Site.

With the exception of one sign that had been vandalized with graffiti, signs informing the public that the Site is a waste contamination Site and digging and vehicle traffic are not allowed were found to be legible and in good condition. The sign that had been vandalized with graffiti was located on the Site's northern fence line.

Photographs of the Site are provided in Appendix E, and the completed Site Inspection check list is included in Appendix F.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:

The containment remedy that was implemented at the Site is functioning as intended. The engineered cap prevents exposure to wastes contained within the repository and eliminates potentially unhealthy odors and vapors. Groundwater monitoring and sampling data demonstrate that the bentonite slurry wall is functioning as intended to isolate and prevent the off-site migration of contaminants through groundwater. TPH and BTEX serve as good indicators for evaluating the integrity of the slurry wall and were not detected in any of the groundwater samples collected during the October 2021 five-year monitoring and sampling event. The O&M procedures in place are effective at finding and mitigating issues such as cut fencing and unwanted vegetation.

The Environmental Covenant subjects the Site to activity and use limitations that prohibit the development of surface water on or groundwater under the Site and protects the bentonite-slurry wall and engineered cap by restricting excavation and irrigation activities. The Environmental Covenant has been successful in protecting the bentonite-slurry wall and engineered cap over the period of the last five years, and no excavation activities at the Site have occurred that could potentially compromise the integrity of the remedy.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Question B Summary:

There have been no changes in the physical condition of the Site, toxicity, and risk assessment methods within the last five years that would affect the protectiveness of the remedy. Based on the results of the October 2021 groundwater monitoring and sampling event, vapor intrusion is not considered to be an exposure pathway of concern for the Site. The lack of contaminants in groundwater demonstrates that the bentonite slurry wall is functioning as intended to isolate and prevent the off-site migration of contaminants that could potentially result in unacceptable risks associated with vapor intrusion.

A dog park, located on the western portion of the cap, was completed in April 2020 as a new addition to Rosewood Park. Construction of the dog park did not impact the integrity of the remedy and consisted of placing a sandy material on top of the engineered cap and installing fence posts to a depth of less than 18 inches as specified in the Environmental Covenant.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No additional information has come to light that could call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues and Recommendations Identified in the Five-Year Review:

OU(s): Site-wide	**Issue Category:** Operations and Maintenance			
	Issue: The GCCA between BP and Salt Lake City expires on 12/31/2033.			
	Recommendation: Determine and document who will be responsible for O&M activities and groundwater sampling after the GCCA expires.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA	EPA/State	9/29/2023

OU(s): Site-wide	**Issue Category:** Operations and Maintenance			
	Issue: Documentation that ICs are required and will be maintained is needed.			
	Recommendation: A document indicating ICs are required and how they will be maintained needs to be written.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	EPA	EPA/State	9/29/2023

OTHER FINDINGS

The following are recommendations that were identified during the FYR that do not affect current and/or future protectiveness:

- As a result of staff changes and a miscommunication, annual Site inspections were not performed by Salt Lake City in 2017, 2018, 2019 and 2020. Salt Lake City was made aware of this issue during the course of the FYR and has placed the annual inspections in their "task order system" to ensure that future inspections will be completed.
- The chain link fence has been cut and rolled back to create an opening at two separate locations along the Site's north boundary and needs to be repaired by the PRP.
- One of the signs informing the public about the Site has been vandalized with graffiti and needs to be replaced by the PRP.
- A small-diameter pipe that is connected to the side of the gas vent pipe is broken and needs to be repaired by the PRP.

VII. PROTECTIVENESS STATEMENT

Protectiveness Determination: Short-term Protective

Protectiveness Statement:
The remedy at the Site is currently protective of human health and the environment. The engineered cap prevents exposure to wastes contained within the repository, and groundwater monitoring and sampling data demonstrates that the slurry wall prevents the off-site migration of contaminants. An Environmental Covenant prohibits the development and use of surface water and groundwater and protects the bentonite-slurry wall and engineered cap by restricting excavation activities. However, in order for the Site to remain protective in the long term, a document indicating ICs are required and how they will be maintained needs to be written and a determination needs to be made and documented as to who will be responsible for future O&M activities and groundwater monitoring when the GCAA expires in 2033.

VIII. NEXT REVIEW

The next FYR report for the Rose Park Sludge Pit Superfund Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

Atlantic Richfield, 2014, Operation, Monitoring, and Maintenance Plan, Rose Park Waste Disposal Area, Salt Lake City, Utah, (Included as Exhibit 3 of Government/Corporate Cooperation Agreement), p81.

Anderson Engineering Company Inc., 2022. Rose Park Waste Disposal Site Facility 2021 Five-Year Monitoring Report, 168p.

Salt Lake City Corporation, 1982, Intergovernmental/Corporate Cooperation Agreement Rose Park, (Included as Exhibit 1 of Government/Corporate Cooperation Agreement), p10.

Salt Lake City Corporation, 2010 Environmental Covenant by Salt Lake City Corporation, BP Products North America, Inc. United States Environmental Protection Agency and Utah Department of Environmental Quality Rose Park Superfund Site, (Included as Exhibit 2 of Government/Corporate Cooperation Agreement), p63.

Salt Lake City Corporation and British Petroleum Products North America, Inc., 2014 Governmental/Corporate Cooperation Agreement, 141p.

Utah Department of Environmental Quality Division of Environmental Response and Remediation, 2012, Fifth Five-Year Review Report for the Rose Park Sludge Pit Superfund Site Salt Lake City Utah, 66p.

Utah Department of Environmental Quality Division of Environmental Response and Remediation, 2017, Sixth Five-Year Review Report for Rose Park Sludge Pit Superfund Site Salt Lake City Utah, 29p.

U.S. Environmental Protection Agency, 1992, Rose Park Sludge Pit Superfund Site Close Out Report, 20p.

U.S. Environmental Protection Agency, 1992, Rose Park Sludge Pit Superfund Site Five Year Review Report, 22p.

APPENDIX B – SITE MAPS

Figure 1: Site Location Map
Rose Park Sludge Pit Superfund Site
Salt Lake City, Salt Lake County, Utah

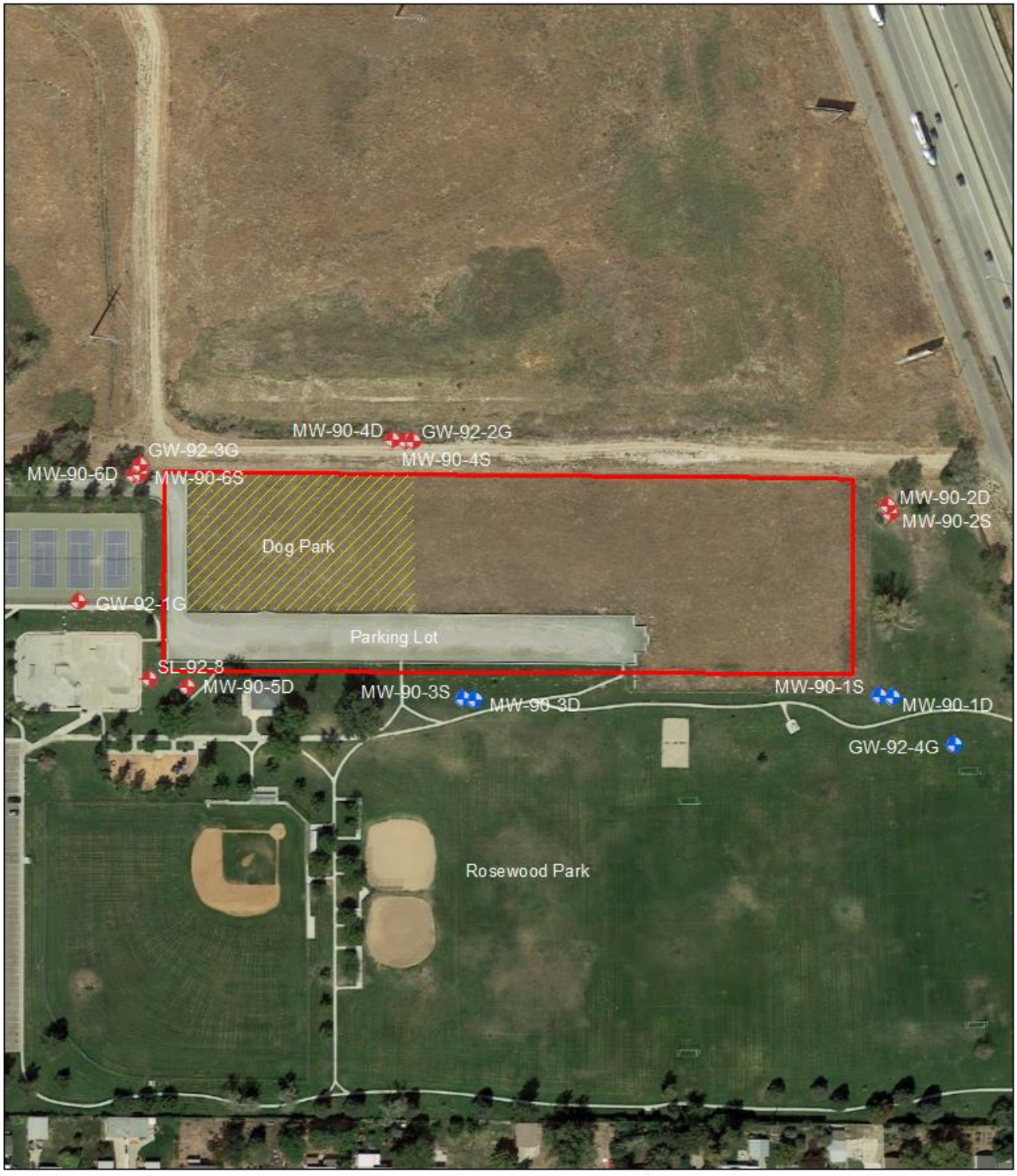

Figure 2:
Monitoring Well Locations
Rose Park Sludge Pit
Superfund Site
Salt Lake City, Salt Lake County, Utah

APPENDIX C – PUBLIC NOTICE

PUBLIC NOTICE
Five-Year Review Planned for the
Rose Park Waste Disposal Superfund Site
Salt Lake County, Utah

The Utah Department of Environmental Quality, Division of Environmental Response and Remediation (UDEQ/ DERR), in cooperation with the U.S. Environmental Protection Agency (EPA) is conducting the seventh Five-Year Review of the Rose Park Waste Disposal Superfund Site (RPWDS) in Salt Lake County, Utah. The purpose of a Five-Year Review is to determine whether or not the cleanup and other actions taken at the site are protective of human health and the environment. The RPWDS is located north of Rose Park at approximately 1300 North Boy Scout Drive (1200 West) in Salt Lake City, Utah.

Local oil refineries disposed of waste sludge at the site from the 1930s until 1957. Amoco cleaned up the 5-acre site in the early 1980s. The containment remedy was completed in 1992 and included a slurry wall around the perimeter and a protective cap over the waste material. The site was deleted from the NPL in June 2003. Current operations and maintenance activities include annual site inspections, groundwater monitoring, and sampling every five years. The Five-Year Review will include community interviews, a review of site documents and data, and a site inspection to evaluate all remedy components. UDEQ will prepare a report for EPA summarizing the results and the Review will be completed by the fall of 2022.

UDEQ and EPA invites community participation in the Five-Year Review process: As part of the Five-Year Review process, community members are encouraged to contact UDEQ staff with any information that may help EPA make its determination regarding the protectiveness and effectiveness of the remedies at the site. Additional site information is available at: DERR Offices located on the 1st Floor, at 195 North 1950 West, Salt Lake City, Utah, 84114. Please call for an appointment to review records at (801) 536-4100, Monday through Friday, from 8:30 A.M. to 4:30 P.M. Project documents are available online at: http://eqedocs.utah.gov/ using the search phrase "Rose Park." **Or visit the EPA website at: https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0800663**

If you would like more information about the review, please contact:

Tony Howes, UDEQ Project Manager, phone: (385) 391-8127 or email: thowes@utah.gov

Dave Allison, UDEQ Community Involvement, phone: (385) 391-8143 or mail: dallison@utah.gov

James Hou, EPA Remedial Project Manager, phone: (303) 312-6210 or email: Hou.James@epa.gov

APPENDIX D – COMMUNITY INTERVIEW SUMMARY REPORTS

Rose Park Sludge Pit Superfund Site
Five-Year Review
Interview of Local Agencies

Site Name: Rose Park Sludge Pit Superfund Site EPA ID: UTD9806335452	April 28, 2022
Type of Contact: Remote - Call	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Tony Howes, UDEQ/DERR Project Manager
Person Contacted	
Kyle Shields, Parks Operations & Maintenance Manager	Salt Lake City Corporation Public Services Parks & Public Lands Department 1965 West 500 South Salt Lake City, Utah 84104

1. **Is your organization/department aware of the Rose Park Sludge Pit Superfund Site and the actions underway to address environmental contamination?** Kyle Shields said he has worked for the Salt Lake City Parks Department since 2013 and as the Operations and Maintenance Manager since 2015 overseeing the upkeep on City parks including the Rosewood Park where the Rose Park Sludge Pit Superfund Site is located. Shields said his department crews have been involved with construction projects with a dog park (built in 2020) and parking area on top of the former Superfund site. Dog amenities and shade features have been added over the last five years and Shields said anything built on the site has to be within requirements established with the institutional controls, basically prohibiting digging into the cap such as fence posts and keeping water off the cap.

2. **What's your overall impression (your general sentiment) of the actions performed at the Rose Park Sludge Pit Superfund Site?** Shields said Salt Lake City has an Environmental Covenant (EC) and Government Corporate Cooperation Agreement (GCCA) with protective requirements for Rosewood Park and any projects near the Rose Park Sludge Pit Site. Shields said there haven't been any issues with the Rose Park Sludge Pit Superfund Site and the City has been able to make good use of the area with a parking lot and dog park.

3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the Rose Park Sludge Pit Superfund Site?** Shields said there are crews at the Rosewood Park daily. Shields said there are restrooms near the site requiring cleaning as well as making sure the dog park is presentable, especially as the weather warms as more people use the park. Shields said the Parks Department does annual inspections identifying any issues with the former Superfund Site. The inspections are scheduled every August, and the inspection information is kept in the City's work order file system, and a copy is provided to the Sustainability Department.

4. **Are you aware of any community concerns regarding the Rose Park Sludge Pit Superfund Site? If so, please give details.** Shields said no one has expressed any concerns regarding health and the environment for Rosewood Park; he feels there is a general knowledge of the Superfund Site history. Shields said the dog park idea was presented to the community and city councils as a reuse option for the former Superfund Site and became the best alternative to avoid any impacts to the remedy.

5. **Over the past five years, have there been any complaints, violations, or other incidents (e.g., vandalism, trespassing, or emergency responses) at or related to the Rose Park Sludge Pit Superfund Site requiring your office to respond? If so, please give details of the events and results of the response.** Shields said any incidents are park-related such as graffiti and illegal dumping. There has never been anything the Parks Department has had to respond to regarding the Rose Park Sludge Pit Site as far as Shields knows. "There are jersey cement barriers which prevent vehicle access, but people still dump garbage items illegally on the cap at times and unfortunately on a regular basis," said Shields.

6. **Do you feel well informed about the site's activities and progress over the last five years? Do you know how to contact the Environmental Protection Agency if you have questions or concerns about the Rose Park Sludge Pit Superfund Site?** Shields said he works within the Sustainability Department for any site-related questions, and they have always been the Park Department's point of contact to make sure the requirements are followed. Shields said Salt Lake City has always worked well with UDEQ/DERR and EPA and the coordination of information for the Site.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the Rose Park Sludge Pit Superfund Site and/or your role? If so, please describe the changes and the impacts**. Shields said there have not been any changes as they relate to the institutional controls and the Parks Department tasks and responsibilities.

8. **Over the past five years, have there been any changes in land use surrounding the Rose Park Sludge Pit Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** Shields said they will be removing the baseball and softball fields this Fall working with Salt Lake City Public Utilities on a large sewer project within Rosewood Park. A 72-inch, main artery, 20-foot deep, sewer pipeline is planned running to the South of the Rose Park Sludge Pit Site location, which will definitely impact Park activities. Shields has had a number of communications with Public Utilities looking at all possible issues and concerns including the Rose Park Sludge Pit location. Shields said the pipeline will service a new treatment plant for Salt Lake City.

9. **Do you have any comments, suggestions, or recommendations regarding the Site's management or operation (institutional controls)? If so, what types of future problems do you think (1) could occur; or (2) would concern you and/or your department?** Shields said he had a question on a vent pipe and possible broken nipple which may to be looked at by the property owner. Shields did not have any other recommendations or issues for follow-up for the management of the site.

Rose Park Sludge Pit Superfund Site
Five-Year Review
Interview of Local Agencies

Site Name: Rose Park Sludge Pit Superfund Site EPA ID: UTD9806335452	April 28, 2022
Type of Contact: Remote-Call	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator
Person Contacted	
Catherine Wyffels, Air Quality & Environmental Program Manager	Organization: Salt Lake City Corporation Department of Sustainability 451 South State City & County Building - Room 148 Salt Lake City, Utah 84111

1. **Is your organization/department aware of the Rose Park Sludge Pit Superfund Site and the actions underway to address environmental contamination?** Catherine Wyffels is the Air Quality & Environmental Program Manager within the Department of Sustainability which oversees Salt Lake City's environmental management programs. Wyffels has worked in her current position since July 2021 and works on environmental site assessments and manages SLCgreen's (sustainability) air quality programs and initiatives. Wyffels is familiar with the Rose Park Sludge Pit Site located within the Rosewood Park and the Environmental Covenant (EC) and Government Corporate Cooperation Agreement (GCCA). Wyffels' office works closely with the Parks Department and associated projects conducted throughout the City.

2. **What's your overall impression (your general sentiment) of the actions performed at the Rose Park Sludge Pit Superfund Site?** Wyffels said her knowledge is limited regarding the Rose Park Sludge Pit Superfund Site history due to the short time working with the City. She has looked at available information for the Site and has not come across any problems. Wyffels said although she can't speak for the protectiveness of the remedy, the environmental covenant has not restricted park use, and she has not heard of any issues from the Park Operations Staff.

3. **Does your office conduct routine communications and/or activities (Site visits, inspections, reporting activities, participation in meetings, etc.) for the Rose Park Sludge Pit Superfund Site?** Wyffels does not have any regular or scheduled activities for the Site, and any past communications have been situational as parks staff projects are brought to her office's attention. Wyffels said any construction or maintenance activities would require the Sustainability Office to look at workplans and determine any considerations regarding the environment covenant requirements for the Site prior to any construction near or on the Site.

4. **Are you aware of any community concerns regarding the Rose Park Sludge Pit Superfund Site? If so, please give details.** Wyffels said she is not aware of any community concerns regarding health or the environment for the Site.

5. **Over the past five years, have there been any complaints, violations, or other incidents (e.g., vandalism, trespassing, or emergency responses) at or related to the Rose Park Sludge Pit Superfund Site requiring your office to respond? If so, please give details of the events and results of the response.** Wyffels said she would rely upon the Parks Department Staff to communicate any incidents or responses by Salt Lake City and has not heard of any incidents at the Rosewood Park.

6. **Do you feel well informed about the Site's activities and progress over the last five years? Do you know how to contact the Environmental Protection Agency if you have questions or concerns about the Rose Park Sludge Pit Superfund Site?** Wyffels said any information regarding the Site was brought to her departments' attention, including conversations with UDEQ/DERR and the Parks Department with the Five-Year Review. Wyffels knows the Parks Department Staff has experience and institutional knowledge of the Rosewood Park, the Superfund Site requirements, and contacting the UDEQ/DERR and EPA project managers as needed.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the Rose Park Sludge Pit Superfund Site and/or your role? If so, please describe the changes and the impacts**. Wyffels is not aware of any changes in policy during the time she has worked on the Site, and the Department of Sustainability manages the Site according to the environmental covenant guidelines.

8. **Over the past five years, have there been any changes in land use surrounding the Rose Park Sludge Pit Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** Wyffels said there are no future plans for the Rosewood Park other than with its current recreational use. Wyffels said she is aware of a major sewer infrastructure project planned for next year running a pipeline through the Rosewood Park and near the Rose Park Sludge Pit Site location. Wyffels said her office has had communications with Parks and Public Utilities Departments and expects more coordination with UDEQ/DERR as plans take shape this Summer.

9. **Do you have any comments, suggestions, or recommendations regarding the Site's management or operation (institutional controls)? If so, what types of future problems do you think (1) could occur; or (2) would concern you and/or your department?** Wyffels does not have any recommendations or concerns for Site management and the Department of Sustainability. Wyffels said she would not have any problem contacting the UDEQ/DERR or EPA with any clarifying questions and the institutional controls in place. Wyffels would appreciate any information on Site activities from UDEQ/DERR or EPA with any developments.

Rose Park Sludge Pit Superfund Site
Five-Year Review

Site Name: Rose Park Sludge Pit Superfund Site EPA ID: UTD9806335452	May 3, 2022
Type of Contact: Remote- Call	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Tony Howes, UDEQ/DERR Project Manager
Persons Contacted	
John Frankenthal, Liability Manager; Cynthia Oppenheimer, P.G., Parsons Engineering and Ryan Anderson, Anderson Engineering	Remediation Management Services Co. A BP Affiliate 150 West Warrenville Road Naperville, IL 60563

1. **Is your organization/department aware of the Rose Park Sludge Pit Superfund Site and the actions underway to address environmental contamination?** John Frankenthal is the British Petroleum (BP) Liability Manager for long-term environmental remediation sites across the U.S. Cynthia Oppenheimer, a Principal Geologist with Parsons Engineering, and Ryan Anderson of Anderson Engineering, are contracted locally to oversee and conduct reporting and monitoring well sampling every five years for the Site. Mr. Frankenthal said the Rose Park Sludge Pit is part of the BP portfolio umbrella for closure and remediation waste sites.

2. **What's your overall impression (your general sentiment) of the actions performed at the Rose Park Sludge Pit Superfund Site?** Mr. Frankenthal said there are no issues or concerns to his knowledge with the Site; the barrier wall remedy is protective, and the institutional controls are functioning as intended. Mr. Frankenthal said his local contractor (Anderson Engineering) has more experience with current Site conditions and is not aware of any issues since the last Five-Year Review. Mr. Anderson said the most recent monitoring data from last fall showed contaminant levels below reporting limits and that the slurry wall remedy is working effectively. Although there has never been any indication from previous years' monitoring reports, Mr. Anderson said they would look for signs of light, non-aqueous-phase liquid (LNAPL) leaking outside of the wall or an increase in Total Petroleum Hydrocarbons (TPH) for a sign of remedy failure.

3. **Does your office conduct routine communications and/or activities (Site visits, inspections, reporting activities, participation in meetings, etc.) for the Rose Park Sludge Pit Superfund Site?** Mr. Frankenthal said the only requirement is groundwater monitoring scheduled accordingly with the institutional controls outlined in the Environmental Covenant for the Site. BP is required to do groundwater sampling for the Site every five years and provid result reports to UDEQ/DERR.

4. **Are you aware of any community concerns regarding the Rose Park Sludge Pit Superfund Site? If so, please give details.** Mr. Frankenthal and Mr. Anderson said they have not heard of any community concerns for the Site, and the Rosewood Park location is a popular resource for

the community. Mr. Anderson said during their well monitoring activities last fall, anyone using the park didn't ask any questions regarding health or the environment.

5. **Over the past five years, have there been any complaints, violations, or other incidents (e.g., vandalism, trespassing, or emergency responses) at or related to the Rose Park Sludge Pit Superfund Site requiring your office to respond? If so, please give details of the events and results of the response.** Mr. Frankenthal is not aware of any incidents nor have BP contractors had to respond to any emergency. Mr. Frankenthal said the Site remains protective and in proper condition.

6. **Do you feel well informed about the Site's activities and progress over the last five years? Do you know how to contact the Environmental Protection Agency if you have questions or concerns about the Rose Park Sludge Pit Superfund Site?** Mr. Frankenthal said the Site progress is limited to groundwater well monitoring every five years and doesn't change much. Mr. Frankenthal knows the current UDEQ/DERR Project Manager and communications would mostly consist of coordinating reporting tasks from local contractors.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the Rose Park Sludge Pit Superfund Site and/or your role? If so, please describe the changes and the impacts**. **Over the past five years, have there been any changes in land use surrounding the Rose Park Sludge Pit Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** Land use hasn't changed from its recreational park use. Mr. Frankenthal has had communications with Salt Lake City Public Utilities and Parks Departments regarding a large sewer project beginning this fall. The project would build a pipeline through the Rosewood Park location at a distance far enough south of the former Superfund Site to not cause any impacts. Mr. Frankenthal said he has been involved with the Salt Lake City Utilities Department planning the sewer line in accordance with the environmental covenant and expects to stay apprised of plans as the project nears construction in the fall.

8. **Do you have any comments, suggestions, or recommendations regarding the Site's management or operation (institutional controls)? If so, what types of future problems do you think (1) could occur; or (2) would concern you and/or your department?** As for future Site considerations, Mr. Frankenthal said he doesn't know the extent of the Government/Corporate Cooperation Agreement (GCCA) signed in 2014 with Salt Lake City. Mr. Frankenthal would like to have an attorney review of the GCCA language stating BP would no longer be required to conduct well monitoring after the goal date of 2033. This would leave two more monitoring events and Mr. Frankenthal said he would like to take a proactive approach to any potential exit strategies which would benefit everyone involved. Well monitoring may not be necessary past the agreement date; however, Mr. Frankenthal said BP will always be responsible for the contaminants in place despite Salt Lake City's owning the property since 1957. Mr. Frankenthal said he would like to begin working on what ending the agreement means, sooner rather than later, to avoid any last-minute expectations and the possibility of respective staff turnover over the next 10 years, which could complicate matters.

APPENDIX E – SITE INSPECTION PHOTOS

Dog park

Monitoring wells MW-90-6S, MW-90-6D, and GW-92-3G

Sign vandalized with graffiti

Opening in fence along the Site's northern boundary

Monitoring wells MW-90-2S and MW-90-2D

Vegetative cover and steel barricade

Vent pipe

Barricades and locked cable gate adjacent to the Site

APPENDIX F – SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST

I. SITE INFORMATION

Site name: Rose Park Sludge Pit	**Date of inspection: March 15, 2022**
Location and Region: Salt Lake County, UT Region 8	**EPA ID: UTD9806335452**
Agency, office, or company leading the five-year review: Utah Department of Environmental Quality Division of Environmental Response and Remediation	**Weather/temperature: Mostly Cloudy/59° Fahrenheit**

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☒ Access controls
- ☒ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☒ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☒ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Name: Kyle Shields Title: Parks O&M Manager Date: 4/28/2022

Interviewed ☐ at site ☐ at office ☒ by phone Phone no.
Problems, suggestions; ☐

2. **O&M staff** Name: _____ Title: _____ _____ Date

Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
Problems, suggestions; ☐

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; □ Report attached _____
_____

4. **Other interviews** (optional) ☒ Report attached as Appendix D

Individuals that were interviewed included personnel with Salt Lake City and British Petroleum.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

☒ O&M manual	☒ Readily available	☒ Up to date	☐ N/A
☐ As-built drawings	☐ Readily available	☐ Up to date	☐ N/A
☐ Maintenance logs	☐ Readily available	☐ Up to date	☐ N/A

Remarks: _____

2. **Site-Specific Health and Safety Plan**	☐ Readily available	☐ Up to date	☒ N/A
☐ Contingency plan/emergency response plan	☐ Readily available	☐ Up to date	☒ N/A

Remarks: _____

3. **O&M and OSHA Training Records**	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
4. **Permits and Service Agreements**			
☐ Air discharge permit	☐ Readily available	☐ Up to date	☒ N/A
☐ Effluent discharge	☐ Readily available	☐ Up to date	☒ N/A
☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	☒ N/A
☐ Other permits _____	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
5. **Gas Generation Records**	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
6. **Settlement Monument Records**	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
7. **Groundwater Monitoring Records**	☒ Readily available	☒ Up to date	☐ N/A
Remarks: Groundwater monitoring and sampling is conducted by the potential responsible party, British Petroleum, ever five years and in conjunction with the Five Year Review.			
8. **Leachate Extraction Records**	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
9. **Discharge Compliance Records**			
☐ Air	☐ Readily available	☐ Up to date	☒ N/A
☐ Water (effluent)	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
10. **Daily Access/Security Logs**	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house	☐ Contractor for State
☒ PRP in-house	☐ Contractor for PRP
☐ Federal Facility in-house	☐ Contractor for Federal Facility
☒ Salt Lake City Corporation	

2. **O&M Cost Records**

☐ Readily available ☐ Up to date

☐ Funding mechanism/agreement in place ☐ Unavailable

Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From mm/dd/yyyy	To mm/dd/yyyy	_____	☐ Breakdown attached
Date	Date	Total cost	
From mm/dd/yyyy	To mm/dd/yyyy	_____	☐ Breakdown attached
Date	Date	Total cost	
From mm/dd/yyyy	To mm/dd/yyyy	_____	☐ Breakdown attached
Date	Date	Total cost	
From mm/dd/yyyy	To mm/dd/yyyy	_____	☐ Breakdown attached
Date	Date	Total cost	
From mm/dd/yyyy	To mm/dd/yyyy	_____	☐ Breakdown attached
Date	Date	Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A

Remarks: The chain link fence had been cut and rolled back at two separate locations along the Sites northern perimeter. However, Site access is restricted by an outer fence and barricades.

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks: With the exception of one sign that had been vandalized with graffiti, signs informing the public that the Site is a waste contamination Site and digging and vehicle traffic are not allowed were found to be legible and in good condition. The sign that had been vandalized with graffiti is located along the site northern perimeter.

C. Institutional Controls (ICs)

1. Implementation and enforcement

Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (e.g., self-reporting, drive by) Routine Inspections

Frequency Annual

Responsible party/agency Salt Lake City Corporation

Contact Kyle Shields (Name) Parks O&M Manager (Title) _____ (Phone no.)

Reporting is up-to-date ☒ Yes ☐ No ☐ N/A

Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A

Violations have been reported ☐ Yes ☐ No ☒ N/A

Other problems or suggestions: ☐ Report attached

2. Adequacy ☒ **ICs are adequate** ☐ **ICs are inadequate** ☐ **N/A** **Remarks:** An Environmental Covenant executed in October 2010 between the Salt Lake City Corporation, British Petroleum, EPA, and UDEQ/DERR restricts specific activities including groundwater use and installation of subsurface features that require trenching.
D. General
1. Vandalism/trespassing ☐ **Location shown on site map** ☐ **No vandalism evident** **Remarks:** The Site used as a public park and a portion of the cap/cover is used as a dog park. As noted above one sign informing the public about the site had been vandalized with graffiti.
2. Land use changes on site ☒ **N/A** **Remarks:**
3. Land use changes off site ☒ **N/A** **Remarks:**
VI. GENERAL SITE CONDITIONS
A. Roads ☒ **Applicable** ☐ **N/A**
1. Roads damaged ☐ **Location shown on site map** ☒ **Roads adequate** ☐ **N/A** **Remarks:** The Site is accessible by city streets and established parking areas.
B. Other Site Conditions
Remarks:
VII. LANDFILL COVERS ☒ **Applicable** ☐ **N/A**
A. Landfill Surface
1. **Settlement** (Low spots) ☐ Location shown on site map ☒ Settlement not evident Arial extent _____ Depth _____ Remarks: _____
2. **Cracks** ☐ Location shown on site map ☒Cracking not evident Lengths _____ Widths _____ Depths _____ Remarks: _____
3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident Arial extent _____ Depth _____ Remarks: _____
4. **Holes** ☐ Location shown on site map ☒ Holes not evident Arial extent _____ Depth _____ Remarks: _____
5. **Vegetative Cover** ☒ Grass ☒ Cover properly established ☒ No signs of stress ☐ Trees/Shrubs (indicate size and locations on a diagram) Remarks: The vegetative cover appeared to be in good condition and there was no evidence of digging or holes in the cover.
6. **Alternative Cover** (armored rock, concrete, etc.) ☒ N/A Remarks: _____
7. **Bulges** ☐ Location shown on site map ☒ Bulges not evident Arial extent _____ Height _____ Remarks: _____

8. **Wet Areas/Water Damage**	☒ Wet areas/water damage not evident	
☐ Wet areas	☐ Location shown on site map	Arial extent _____
☐ Ponding	☐ Location shown on site map	Arial extent _____
☐ Seeps	☐ Location shown on site map	Arial extent _____
☐ Soft subgrade	☐ Location shown on site map	Arial extent _____
Remarks: _____		
9. **Slope Instability**	☐ Slides	☐ Location shown on site map
☒ No evidence of slope instability Arial extent _____ Remarks: _____		
B. Benches ☐ Applicable ☒ N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1. **Flows Bypass Bench** Remarks: _____	☐ Location shown on site map	☐ N/A or okay
2. **Bench Breached** Remarks: _____	☐ Location shown on site map	☐ N/A or okay
3. **Bench Overtopped** Remarks: _____	☐ Location shown on site map	☐ N/A or okay
C. Letdown Channels ☐ Applicable ☒ N/A		
1. **Settlement** (Low spots) Arial extent _____ Remarks: _____	☐ Location shown on site map	☐ No evidence of settlement Depth _____
2. **Material Degradation** Material type_____ Remarks: _____	☐ Location shown on site map	☐ No evidence of degradation Arial extent _____
3. **Erosion** Arial extent _____ Remarks: _____	☐ Location shown on site map	☐ No evidence of erosion Depth _____
4. **Undercutting** Arial extent _____ Remarks: _____	☐ Location shown on site map	☐ No evidence of undercutting Depth _____
5. **Obstructions** ☐ Location shown on site map Size _____ Remarks: _____	Type _____ Arial extent _____	☐ No obstructions
6. **Excessive Vegetative Growth** ☐ No evidence of excessive growth ☐ Vegetation in channels does not obstruct flow ☐ Location shown on site map Remarks: _____	Type _____ Arial extent _____	

D. Cover Penetrations ☒ **Applicable** ☐ **N/A**

1. **Gas Vents** ☐ Active ☒ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☒ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks: One gas vent penetrates the cover and is inspected annual by Salt Lake City Corporation. With the exception of the broken nipple/quick connect, the vent was observed to be in good condition during the FYR Site inspection.

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs maintenance ☒ N/A
Remarks: _____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☒ N/A
Remarks: _____

4. **Extraction Wells Leachate**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☒ N/A
Remarks: _____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☒ N/A
Remarks: _____

E. Gas Collection and Treatment ☐ Applicable ☒ N/A

1. **Gas Treatment Facilities**
☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
☐ Good condition ☐ Needs Maintenance
Remarks: _____

2. **Gas Collection Wells, Manifolds and Piping**
☐ Good condition ☐ Needs Maintenance
Remarks: _____

3. **Gas Monitoring Facilities** (e.g., gas monitoring of adjacent homes or buildings)
☐ Good condition ☐ Needs Maintenance ☐ N/A
Remarks: _____

F. Cover Drainage Layer ☐ Applicable ☒ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A
Remarks: _____

2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A
Remarks: _____

G. Detention/Sedimentation Ponds ☐ Applicable ☒ N/A

1. **Siltation** Area extent _____ Depth _____ ☐ N/A
☐ Siltation not evident
Remarks: _____

2. **Erosion** Area extent _____ Depth _____
☐ Erosion not evident
Remarks: _____

3. **Outlet Works** ☐ Functioning ☐ N/A
Remarks: _____

4. **Dam** ☐ Functioning ☐ N/A
Remarks: _____

H. Retaining Walls ☐ Applicable ☒ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
Horizontal displacement _____ Vertical displacement _____
Rotational displacement _____
Remarks: _____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
Remarks: _____

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☒ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
Area extent _____ Depth _____
Remarks: _____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
☐ Vegetation does not impede flow
Area extent _____ Type _____
Remarks: _____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
Area extent _____ Depth _____
Remarks: _____

4. **Discharge Structure** ☐ Functioning ☐ N/A
Remarks: _____

VIII. VERTICAL BARRIER WALLS ☒ **Applicable** ☐ **N/A**

1. **Settlement** ☐ Location shown on site map ☒ Settlement not evident
Area extent _____ Depth _____
Remarks: _____

2. **Performance Monitoring** Type of monitoring Groundwater monitoring
☐ Performance not monitored
Frequency Every five years ☐ Evidence of breaching
Head differential _____
Remarks: The remedy implemented at the site included the installation of a slurry wall. The PRP, British Petroleum, conducts groundwater monitoring and sampling every five year to ensure that the Slurry wall continues to perform as intended.

IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ **Applicable** ☒ **N/A**

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ **Applicable** ☐ **N/A**

1. **Pumps, Wellhead Plumbing, and Electrical**
☐ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks: _____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks: _____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks: _____

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable ☐ N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition ☐ Needs Maintenance
Remarks: _____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks: _____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided

Remarks: _____

C. Treatment System ☐ Applicable ☐ N/A

1. **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers
☐ Filters _____
☐ Additive (e.g., chelation agent, flocculent) _____
☐ Others _____
☐ Good condition ☐ Needs Maintenance
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually _____
☐ Quantity of surface water treated annually _____
Remarks: _____

2. **Electrical Enclosures and Panels** (properly rated and functional)
☐ N/A ☐ Good condition ☐ Needs Maintenance

Remarks: _____

3. **Tanks, Vaults, Storage Vessels**
☐ N/A ☐ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
Remarks: _____

4. **Discharge Structure and Appurtenances**
☐ N/A ☐ Good condition ☐ Needs Maintenance

Remarks: _____

5. **Treatment Building(s)**
☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair

☐ Chemicals and equipment properly stored
Remarks: _____

6. **Monitoring Wells** (pump and treatment remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition

☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks: _____

D. Monitoring Data

1. **Monitoring Data**
☐ Is routinely submitted on time ☐ Is of acceptable quality

2. **Monitoring data suggests:**

☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☒ Good condition

☐ All required wells located ☐ Needs Maintenance ☐ N/A

Remarks: The PRP, British Petroleum, conducted a five year groundwater monitoring and sampling event in October 2021 and prepared a report summarizing the findings of the monitoring and sampling event. A copy of the summary report was provided to EPA and UDEQ/DERR in April 2022.

X. OTHER REMEDIES

If there are remedies applied at the site and not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

The containment remedy that was implemented at the Site is functioning as intended. The engineered cap prevents exposure to wastes contained within the repository and eliminates potentially unhealthy odors and vapors. Groundwater monitoring and sampling data demonstrate that the bentonite slurry wall is functioning as intended to isolate and prevent the off-site migration of contaminants through groundwater.

B. Adequacy of O&M

O&M of the Site is conducted by BP and Salt Lake City. Salt Lake City performs annual inspections and maintenance activities to address issues associated with the cap such as inadequate vegetation and the presence of deep rooting trees or shrubs; holes and significant erosion features on or near the cap; depressions and/or ponded water on or near the cap; seepage emanating from the cap; and signs of disturbance by burrowing animals. BP conducts groundwater monitoring and sampling at the Site ever five years in conjunction with the FYR.

C. Early Indicators of Potential Remedy Problems

None

D. Opportunities for Optimization

Not applicable at this time.