

**FOURTH FIVE-YEAR REVIEW REPORT FOR
JACOBS SMELTER SUPERFUND SITE
TOOELE COUNTY, UTAH**



Prepared by

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Division of Environmental Response and Remediation
For
U.S. Environmental Protection Agency
Region 8
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LIST OF ABBREVIATIONS & ACRONYMS

AM	Action Memo
AOC	Administrative Order on Consent
BLL	Blood Lead Level
BLM	United States Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CSS	Contaminant Screening Survey
EPA	United States Environmental Protection Agency
ERA	Ecological Risk Assessment
FS	Feasibility Study
HHRA	Human Health Risk Assessment
ICs	Institutional Controls
KUCC	Kennecott Utah Copper LLC
mg/kg	Milligram per Kilogram
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU1	Operable Unit One
OU2	Operable Unit Two
OU3	Operable Unit Three
OU4	Operable Unit Four
OU5	Operable Unit Five
OU6	Operable Unit Six
PA/SI	Preliminary Assessment / Site Investigation
RAO	Remedial Action Objectives
Pre-RD	Pre-Remedial Design
RFS	Revised Feasibility Study
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SAP	Sampling and Analysis Plan
Site	Jacobs Smelter Superfund Site
UDEQ/DERR	Utah Department of Environmental Quality/Division of Environmental Response and Remediation
µg/dl	Micrograms per Deciliter
µg/m ³	Micrograms per Cubic Meter
UU/UE	Unlimited Use/Unrestricted Exposure

I. INTRODUCTION

The purpose of a Five-Year Review 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 Five-Year Review reports such as this one. In addition, Five-Year Review reports identify issues found during the review, if any, and document recommendations to address them.

The Utah Department of Environmental Quality (UDEQ), Division of Environmental Response and Remediation (DERR) has been tasked by the U.S. Environmental Protection Agency (EPA) Region 8, to conduct a Five-Year Review of the remedial and removal actions implemented at the Jacobs Smelter Superfund Site (Site). UDEQ is preparing this Five-Year Review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fourth Five-Year Review for the Site. The triggering action for this statutory review is the completion of the third Five-Year Review completed in September of 2015. The Five-Year Review has been prepared because hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for Unlimited Use and Unrestricted Exposure (UU/UE).

EPA has determined in this Five-Year Review (FYR) that the cleanup at the Jacobs Smelter Superfund site is protective of human health and the environment for Operable Unit One. Operable Unit One has been deleted from the National Priorities List. However, because waste has been left in place, FYRs must continue to be conducted. Protectiveness of human health has been ensured by the removal of surface and near-surface soil contaminated by lead and arsenic. Exposure to contaminated soil remaining at depth is prevented by a Town Ordinance that restricts excavation and development of properties within the Town of Stockton. Protectiveness determinations for Operable Units Two through Five are also made in this FYR but are not required by statute. Operable Unit Six is not addressed in this FYR as further investigations need to occur before a risk assessment can be conducted and a remedial path forward is selected. Environmental Condition and Notices of Potential Environmental Condition filed with Lincoln County. An environmental covenant has also been drafted for OU5, but it has not yet been filed. To ensure long-term protectiveness, the remaining institutional control at OU5 should be finalized.

The Site is divided into six operable units. The Site Map in Figure 1 shows the six operable units in relation to each other.

Table 1: List of Operable Units

Operable Unit	Description
1	Operable Unit One (OU1) consists of residential properties within the town of Stockton, Utah, that had contamination attributable to the former Jacobs Smelter.
2	Operable Unit Two (OU2) consists of lead and arsenic contaminated soil located to the west of Stockton (attributable to the Waterman Smelter). OU2 includes the Rawhide Ranchettes subdivision, the B&B subdivision, and the undeveloped land between the two.
3	Operable Unit Three (OU3) consists of contaminated soil located on the Stockton Rail Yard, owned by Union Pacific Railroad.
4	Operable Unit Four (OU4) consists of a parcel of land that lies between the Rawhide Ranchettes Subdivision and OU3, owned by Rio Tinto Kennecott Copper (formerly Kennecott Utah Copper LLC [KUCC]).
5	Operable Unit Five (OU5) consists of land located northeast of Stockton and near Waterman Smelter that is owned by the U.S. Bureau of Land Management (BLM).
6	Operable Unit Six (OU6) consists of land located south of the Town of Stockton that has contamination associated with the Chicago and Carson & Buzzo Smelters.

OU1 is the subject of this FYR. OU2, OU3, OU4 and OU5 do not require FYRs. However, as a matter of discretion, these OUs are included in this FYR since cleanup has occurred under removal actions. OU6 will not be addressed in this FYR since a remedy has not been selected. The contaminants of concern for all operable units are lead and arsenic in soil.

The Jacobs Smelter Superfund Site Five-Year Review was led by Scott Lippitt with UDEQ/DERR. Participants included Andrew Schmidt, EPA remedial project manager (RPM) and David Allison, UDEQ/DERR Community Involvement Coordinator. The review began on January 7, 2020.

Site Background

The Site is in and around the Town of Stockton, Utah, approximately 38 miles southwest of Salt Lake City via Interstate 80 and Utah Highway 36, and five miles southwest of the City of Tooele. The Stockton area was the center of a silver and base metal mining, milling and smelting district from the 1860s until 1970. Reports of up to nine smelters within the Site boundaries have been documented. The Jacobs Smelter was one of these historic smelters, and the entire Superfund Site was named Jacobs Smelter as a matter of convenience. Wastes in the form of heavy metal contaminated soil, mill tailings, and smelter wastes exist at several locations within the Site boundaries.

The topography of the Site is dominated by the Rush Valley floor and gently slopes east to west towards Rush Lake. In general, land surrounding Stockton is used for agricultural and recreational purposes. Stockton is mostly residential, with only a few retail/commercial businesses. Approximately 700 people reside within the Town of Stockton. Due to its location near the City of Tooele, there is potential for growth and residential development.

Hazardous substances that have been released at the Site include lead and arsenic in surface and subsurface soils. Refer to Appendix B for an expanded Site background.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Jacobs Smelter		
EPA ID: UT0002391472		
Region: 8	State: UT	City/County: Town of Stockton/Tooele
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	Has the site achieved construction completion? No	
REVIEW STATUS		
Lead agency: State <i>[If "Other Federal Agency", enter Agency name]:</i>		
Author name (Federal or State Project Manager): Scott Lippitt		
Author affiliation: State Project Manager		
Review period: 1/6/2020 - 9/30/2020		
Date of site inspection: 5/14/2020		
Type of review: Statutory		
Review number: 4		
Triggering action date: 9/30/2015		
Due date (five years after triggering action date): 9/30/2020		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

OU1, OU3

The basis for taking action includes the 1998 PA/SI for the Site that showed lead and arsenic at concentrations that represented a significant risk to human health and the environment. The primary exposure pathways were inhalation of dust and ingestion of surface soils.

OU2, OU4, OU5

The basis for taking action includes the 1998 PA/SI and the 1999 Remedial Investigation that showed lead and arsenic at concentrations that represented a significant risk to human health and the environment.

In 2003, UDEQ conducted a Human Health Risk Assessment (HHRA) and Ecological Risk Assessment (ERA) based on sampling results from the RI for OU2. The HHRA concluded that there were risks to both adults and children from lead and arsenic-contaminated soils. The most likely ways for contaminated soils to enter the body are ingestion and inhalation. Children, particularly those under the age of seven, are the most vulnerable group because of their size and the fact that their bodies are still developing. In addition, because children play outside, they are more likely to ingest contaminated soils when they put objects that have been in contact with the ground into their mouths. The ERA concluded that terrestrial animals are at risk from the contaminants of concern at the non-residential portion of the Site. The primary threat to ecological receptors was from exposure to lead.

Response Actions

A Preliminary Assessment and Site Investigation (PA/SI) in 1998 detected lead and arsenic in Site soils at concentrations that represented a significant risk to human health and the environment. The EPA added the Site to the National Priorities List (NPL) on February 4, 2000.

Removal Actions

OU1

The EPA issued a Time-Critical Removal Action Memorandum for OU1 on February 2, 1999. The actions, as described in the Action Memorandum, included:

- Excavation to a depth of 18 inches of all properties with average surface soil concentrations exceeding 3000 milligrams per kilogram (mg/kg) for lead.
- Off-site disposal of contaminated soils.
- Replacement of contaminated soil with 12 inches of clean soil and 6 inches of topsoil.

The EPA completed the time-critical removal action for contaminated soil in 29 properties in Stockton in the summer of 1999. Approximately 18 inches of contaminated soil were removed from each property and a total of 52,000 tons of material were excavated during this cleanup.

OU2

In December 2000, EPA signed a time-critical removal action memorandum for the Rawhide Ranchettes subdivision. A focused investigation of the Rawhide Ranchettes subdivision within OU2 in May 2001 indicated

that five of the 30 lots within the subdivision exceeded the residential lead screening levels. In August 2002, EPA finalized an administrative order on consent (AOC) with developer Titan LLC. The AOC required Titan to conduct a non-time-critical removal consisting of the following actions:

- Removal of contaminated soils and other material from the areas designated as future residential lots
- Relocation of contaminated material to other areas of the property based upon whether the material met the criteria for a hazardous waste
- Construction and maintenance of an on-site repository for contaminated material

Titan Development LLC completed non-time-critical removal action for five contaminated lots within the Rawhide Ranchettes portion of the OU in 2001. The removal action consisted of excavating six to 18 inches of contaminated soil from the contaminated lots. The excavated soil was placed within the roadbed and in a covered repository located within the subdivision which remains deeded to the subdivision's developer. Non-hazardous contaminated soils (soils that passed TCLP) with elevated concentrations of lead were placed underneath a section of roadway within the subdivision and covered with 1.5 feet of uncontaminated soil, 8 inches of road base and 2.5 inches of asphalt. The hazardous materials were placed in an on-site repository and were capped with a 60-millimeter high density polyethylene (HDPE) flexible membrane liner. The entire repository was enclosed with a four-foot high chain link fence. The developer retained ownership and responsibility for operation and maintenance (O&M) of the repository.

UDEQ completed a Feasibility Study (FS) in December 2003 and a Revised Feasibility Study (RFS) in July 2004 that evaluated different alternatives for cleaning up contaminated soil within OU2. The RFS was created to address comments received from the BLM regarding the original FS. USEPA and UDEQ issued a Proposed Plan in July 2004 that generated numerous public comments and concerns. As a result of the public comments and concerns, none of the alternatives were pursued and a ROD was not issued.

In order to address community concerns regarding lead and arsenic contaminated soil associated with the Waterman Smelter and to re-visit the remedial alternatives and associated cost estimates from the 2004 RFS, EPA and UDEQ collected and analyzed soil samples during 2009 and 2010 at both the Rawhide Ranchettes and B&B subdivisions. Elevated lead concentrations were found in five additional lots within the Rawhide Ranchettes subdivision and at four lots within the B&B subdivision. The EPA signed a time-critical removal action memorandum in July 2010 and conducted the removal of contaminated soil from residences within the Rawhide Ranchettes Subdivision in 2010/2011 which included the following actions:

- Excavation of surface soils above 500 mg/kg lead and subsurface soils above 800 mg/kg lead on residential properties to a maximum depth of 18 inches
- Backfilling of the excavated area with clean soil
- Revegetation of excavated area

The EPA completed the second time-critical removal action for the Rawhide Ranchettes portion of OU2 in May 2011. Excavated soil was disposed of at an off-site facility. Excavated areas were filled with clean soil and topsoil and then reseeded.

The initial removal actions at OU2 within the Rawhide Ranchettes and B&B subdivision are protected by Ordinance #2000-4 for the Town of Stockton. The ordinance requires permit applications for all construction work that requires excavation below 18 inches, to ensure excavated materials are tested and handled according to appropriate state and federal regulations. Following the completion of Remedial Action at OU2, the Ordinance #2000-4 will be updated to cover all soils within OU2, and any additional ICs such as environmental covenants under the State of Utah's Environmental Covenants Act, or other land use controls will be established to ensure the remedy remains protective.

OU3

In August 1999, Union Pacific Railroad signed an AOC to conduct a time-critical removal action with EPA. The AOC approved a work plan that identified the following actions:

- Construction of a soil cover consisting of a minimum of 12 inches of clean fill and four inches of topsoil
- Seeding of the covered area with native vegetation
- Construction of an access road within the capped area
- Construction of a six-foot high chain link fence along the east side of the OU

Union Pacific Railroad completed the work outlined in the AOC in 1999. Twelve inches of clean soil and an additional four inches of topsoil were placed over sections of soil that contained lead concentrations greater than 1,200 mg/kg.

A deed restriction was applied to OU3 that prohibits the construction of any buildings and limits future use to industrial.

This OU was deleted from the NPL on September 30, 2005.

OU4

On July 29, 2008, EPA signed an Action Memo and KUCC entered into an AOC to conduct a time-critical removal action at OU4. In August 2008, the EPA approved a work plan submitted by KUCC that identified the following actions:

- Excavation of surface soils above 500 mg/kg lead and subsurface soils above 800 mg/kg lead on residential properties to a maximum depth of 18 inches
- Construction of a clean soil cap over soil with lead concentrations between 3,000 mg/kg and 10,000 mg/kg for non-residential areas
- Removal of all soil containing more than 10,000 mg/kg lead to a depth of 18 inches
- Record an Environmental Covenant per Utah law (Utah code Ann §§57-25-101 et. seq.) for all areas where soils above 500 ppm lead remain, including the contaminated soil remaining under the gravel hill

In November 2008, KUCC completed the remediation of OU4 outlined in the AOC and Action Memorandum. An estimated 10,760 cubic yards of contaminated soil was removed from OU4 and placed in KUCC's Arthur Stepback Repository. All contaminated soil with concentrations of lead greater than 10,000 mg/kg was treated by mixing with a proprietary product to reduce the leachability characteristics of the soil prior to disposal. Approximately 2,000 cubic yards were stabilized.

Following removal of the contaminated soil, the property was reclaimed. Reclamation work included the grading and scarifying of the excavated areas. The entire Removal area was seeded with a soil mix as specified in the workplan. KUCC continues to monitor the re-vegetation success of the seeded area and repair as determined necessary.

A gravel hill serves as an effective cover over the contamination that remains beneath. The contaminated soil is documented and controlled under the environmental covenant signed in 2008 by KUCC, EPA Region 8 and UDEQ. The covenant describes additional sampling and cleanup work needed for the remaining contaminated material if the land use changes.

OU5

In July 2012, the BLM issued a time-critical removal Action Memorandum for the portion of OU5 just north of the Waterman Smelter area that included the following actions:

- Excavation of approximately 2,155 cubic yards of lead and arsenic contaminated soil
- Off-site disposal of contaminated soil at a permitted facility
- Confirmation sampling
- Re-contouring and seeding of excavated areas

In December 2012, the BLM completed the time-critical removal action on the portion of OU5 near the Waterman Smelter. According to the BLM's 2012 CERCLA Time-Critical Removal Action Final Report, 2,841 cubic yards of contaminated soil were removed from an area of 4.78 acres and disposed of at the Clean Harbor, Grassy Mountain Disposal Facility.

Following removal of the contaminated soil, confirmation sampling was performed by the BLM using XRF analysis. Excavated areas were contoured to blend with adjacent undisturbed areas to preserve the natural integrity of the area. The area was re-seeded with a native seed mix. The removal action and associated confirmation sampling was performed by the BLM using BLM removal authority and did not include EPA or UDEQ oversight. The remedy implemented at the portion of OU5 north of the Waterman Smelter is protective of human health and the environment.

Record of Decision

OU1

Following the fund-lead Time-Critical Removal Action, the Record of Decision (ROD) for the remainder of OU1 was signed on July 29, 1999. The following Remedial Action Objectives (RAOs) were identified in the ROD for OU1:

- Reduce risks from exposure to lead contaminated soil such that no child has a more than 5% chance of exceeding a blood lead level (BLL) of 10 micrograms per deciliter ($\mu\text{g}/\text{dl}$).
- Reduce risks from exposure to arsenic contaminated soil such that no person has a greater than 1×10^{-4} chance of contracting cancer.
- Clean the Site up to levels that allow for residential use.
- Remove as much contamination as practicable which could serve as a source of contamination to groundwater.
- Prevent the occurrence and spread of windblown contamination.

The components of the remedy selected in the OU1 ROD consist of the following:

- Excavation of soils within OU1 exhibiting (1) mean surface lead concentrations greater than 500 mg/kg, (2) mean subsurface lead concentrations greater than 800 mg/kg, or (3) mean surface arsenic concentrations greater than 100 mg/kg. Excavation will occur to a depth at which mean concentrations are below 500 mg/kg lead and 100 mg/kg arsenic or to a maximum depth of 18 inches. Affected properties include residential yards, vacant lots, rights of way, and unpaved streets and sidewalks.
- Testing of excavated material for hazardous waste characteristics with off-site treatment and disposal of characteristic hazardous material in a Subtitle C landfill, and off-site disposal of non-hazardous material in a Subtitle D landfill
- Replacement of excavated soil with up to 12 inches of clean backfill and six inches of clean topsoil and the re-landscaping of affected properties
- Interior cleaning of affected properties to remove contaminated indoor dust

- Development and implementation of institutional controls (ICs) to restrict exposure to residual contamination below eighteen inches and below existing structures

OU2

An updated Revised Feasibility Study (URFS) for OU2 was completed in June 2014 by EPA and UDEQ. USEPA and UDEQ issued a Proposed Plan in September 2015 and signed the ROD for OU2 in September 2016. The following RAOs were identified in the ROD for OU2:

- Reduce risks from exposure to lead and arsenic-contaminated soil, such that no more than 5% of children exposed to Site contaminants will have a BLL exceeding 10 ug/dL. Since lead and arsenic contamination is co-located, health risks associated with arsenic exposure will be addressed by the remediation of lead contamination. This objective can be achieved by preventing the ingestion of lead and arsenic contaminated soils above clean-up levels in residential and undeveloped areas.
- Reduce risks from exposure to lead contaminated soil such that no ecological receptor has the potential to exceed two times the toxicity exposure thresholds for non-cancer health effects. This objective can be achieved by preventing the ingestion of lead-contaminated soils by ecological receptors that would result in an average exposure in excess of 1,148 mg/kg lead.

The remedy selected in the ROD for OU2 consists of the following:

- Excavation of existing vegetation from contaminated areas
- Excavation of surface soils above 500 mg/kg lead or 100 mg/kg arsenic and subsurface soils above 800 mg/kg lead on residential properties to a maximum depth of 18 inches
- Excavation of surface and subsurface soils above 3,000 mg/kg lead on undeveloped properties to a maximum depth of 18 inches
- Transportation to and disposal of all excavated soil at an appropriate off-site landfill
- Placement of clean topsoil and revegetation of excavated areas
- Implementation of ICs to ensure the remedy remains protective

A minor modification to the OU2 ROD was signed on 2/5/2019. This modification notes slight changes to the aerial extent and depth of excavations to be conducted in the undeveloped area of OU2.

Status of Remedial Action Implementation

OU1

After the removal, UDEQ cleaned an additional 126 residential properties pursuant to the 1999 ROD. Individual properties were excavated to depths of 6, 12, or 18 inches depending on lead and arsenic concentrations. Approximately 60,000 cubic yards of contaminated soil were excavated from residential yards, vacant lots, rights of way, unpaved streets and sidewalks within Stockton.

RA at OU1 is complete. The residential properties were cleaned up during the removal actions and the Remedial Action, and OU1 was deleted from the NPL on September 4, 2001. ICs were designed to protect property owners from exposure to contaminated soil through gardening and landscaping activities and to protect workers and residents during construction activities on residential and public property within the town of Stockton. The Town of Stockton adopted Ordinance #2000-4 to address excavation and development of the Site within OU1 on May 8,

2001. The ordinance requires permit applications for all construction work that requires excavation below 18 inches, to ensure excavated material is tested and handled according to appropriate state and federal regulations. The Rawhide Ranchettes and B&B Subdivisions in OU2 are also covered by the Town Ordinance. A copy of the ordinance is provided in Appendix G.

OU2

The remedy outlined in the 2016 ROD for OU2 has not been implemented. At the time of this Five-Year Review report preparation, a 60% Remedial Design had been completed for the areas of OU2 that have remaining contamination (Waterman Smelter and B&B Subdivision). Completions of the Remedial Design and Remedial Action are awaiting federal funding for the Remedial Action. The components of the 2016 ROD will not be reviewed in the 2020 FYR.

IC Summary Table

Table 2: 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)
Soils	Yes	Yes	OU1	Requires permit applications for all work, including excavation below 18 inches, to protect health and ensure excavated material is tested and handled according to regulation.	Stockton Town Ordinance #20004 Implemented May 8, 2001
Soils	Yes	Yes	OU2	Requires permit applications for all work, including excavation below 18 inches, to protect health and ensure excavated material is tested and handled according to regulation.	Stockton Town Ordinance #20004 Implemented May 8, 2001
Soils	Yes	No	OU3	Prohibits construction of buildings on the parcel and limits future use to industrial.	Declaration of Restrictions Recorded September 17, 2001
Soils	Yes	Yes	OU4	Restrict exposure to contaminated soils above clean-up levels that remain underneath the gravel hill.	Declaration of Environmental Covenant, Recorded June 4, 2009

Systems Operations/Operation & Maintenance

OU1

There are no active systems that require operation at OU1.

OU2

There are no active systems that require operation in the areas of OU2 that have been cleaned under the 2001 and 2011 removal actions. The status of the Rawhide Ranchettes roadway and repository were investigated as part of this Five-Year Review. The roadway was in good condition and remains a protective cover over soil contaminated with lead and arsenic. The soil cap on the repository was still in place and remained protective. The fencing surrounding the repository was broken in two places on the southern end of the repository allowing horses to enter the area. The status of the roadway and repository will continue to be inspected for subsequent Five-Year Reviews.

OU3

There are no active systems that require operation at OU3. Future land-use is restricted by a deed restriction. The status of the soil cap, fencing and gravel road were investigated as part of this Five-Year Review and were found to remain protective. The status of the soil cap, fence and road will continue to be investigated for subsequent Five-Year Reviews.

OU4

There are no active systems that require operation at OU4. Soils containing elevated lead and arsenic concentrations that remain at OU4 (underneath the gravel hill) are managed using an environmental covenant. The status of the gravel hill was investigated as part of this Five-Year Review and was found to remain protective. The status of the gravel hill will continue to be investigated for subsequent Five-Year Reviews.

OU5

There are no active systems that require operation at the portion of OU5 near the Waterman Smelter that was addressed by the Time-Critical Removal Action performed by the BLM. The status of the excavated area was investigated as part of this Five-Year Review and the excavated area remained vegetated.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the **last** Five-Year Review as well as the recommendations from the **last** Five-Year Review and the current status of those recommendations.

Table 3: Protectiveness Determinations/Statements from the 2015 Five-Year Review

OU #	Protectiveness Determination	Protectiveness Statement
1	Protective	The remedy at OU1 is protective of human health and the environment, and the immediate threats posed by the contamination associated with OU1 have been addressed. The excavation and off-site disposal of the top 18 inches of contaminated soil performed during the time-critical removal and the State-lead Remedial Action construction activities for OU1 have effectively eliminated the majority of the risk associated with the Jacobs Smelter. The risk associated with the contaminated soil remaining after extraction is reduced by the 18 inches of clean fill and topsoil and the landscaping placed on each property. A Stockton ordinance and the associated soil management plan and repository address risks if excavation occurs in areas with contaminated soil below 18 inches.
2	Not Protective	The remedy implemented at the Rawhide Ranchettes Subdivision within OU2 is now protective of human health and the environment. A time-critical removal was performed by the EPA to address contaminated soil on four lots within the subdivision in 2010 to 2011. Remedial Action has not been implemented at the Waterman Smelter and B&B subdivision portions of OU2.
3	Protective	The remedy at OU3 is protective of human health and the environment. The immediate threat posed by the contamination associated with OU3 has been addressed. The cap, vegetative cover and fence installed on the Stockton Rail Yard provide an adequate barrier to exposure to contaminated soil in OU3.
4	Protective	The remedy at OU4 is protective of human health and the environment. The immediate threats posed by the contamination associated with OU4 have been addressed. The excavation, stabilization and disposal of contaminated soil effectively reduces the risk of exposure to contaminated soil. The contaminated soil remaining within OU4 lies underneath a large gravel hill and is not easily accessible. An environmental covenant recorded at the Tooele County Recorder's Office for this parcel describes sampling and cleanup needed if the gravel hill is ever disturbed.
5	Not Protective	The remedy performed at the portion of OU5 north of the Waterman Smelter is protective of human health and the environment. This determination of protectiveness is based solely on BLMs representation. Remedial Action has not been implemented at the portion of OU5 northeast of Stockton.
6	Not Protective	No Removal or Remedial activities have been performed on OU6. Consequently, a protectiveness determination has not been made.

Table 4: Status of Recommendations from the 2015 Five-Year Review

#	OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
1	2	There is no final Decision Document	Complete ROD	Completed		9/29/2016
2	2	Cleanup is needed at Waterman Smelter and B&B subdivision	Implementation of Remedial Design and Remedial Action	Ongoing	A 60% Remedial Design has been completed. Full Remedial Design and Remedial Action are ongoing/awaiting federal funding.	N/A
3	5	An agreement is needed with BLM to facilitate cleanup	Potential MOU with BLM	Ongoing	An agreement has not been made with the BLM.	N/A
4	5	Cleanup is needed at OU5 north of Stockton	Implement Removal or Remedial Action at OU5	Ongoing	The BLM submitted for review an SAP for OU5 north of Stockton.	N/A
5	6	Human health and ecological risk have not been evaluated for agricultural land use at OU6	Conduct an agricultural risk assessment and additional characterization	Ongoing	In July 2020, UDEQ received federal funding from EPA to conduct additional characterization of OU6.	N/A
6	6	Cleanup is needed at OU6	RI/FS for OU6 followed by ROD	Ongoing	Cleanup at OU6 will occur after contamination is characterized and a ROD is finalized.	N/A

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

The EPA's comprehensive Five-Year Review Guidance states that at a minimum the community should be notified that a Five-Year review will be completed and again notified when the review is completed. In accordance with the community involvement requirements of the Five-Year review, a public notice was published in the Tooele Transcript Bulletin Newspaper on May 28, 2020, announcing that the Five-Year Review of the Jacobs Smelter Site was to be conducted (see Attachment F) and requesting that interested parties participate in an interview. The Jacobs Smelter Five-Year Review public notice was also placed on the town of Stockton Facebook web page on June 8, 2020.

During the Five-Year Review, UDEQ conducted interviews with local officials and property owners to obtain their opinion and concerns at the Jacobs Superfund Site. Community interviews were conducted by the UDEQ and U.S. EPA from June 9 through June 16, 2020. Interviews were conducted with BLM Professional Geologist, Alan Jones; Stockton Town Mayor, Thomas Karjola; the Tooele County Environmental Health Director, Bryan Slade; and a Rawhide Ranchettes property owner. In summary, community interviews showed that the primary concern is the remaining remediation work needed for Operable Unit 2 (OU2) to finish the site. Local officials understand that the OU2 remediation work is awaiting funding and want to see final cleanup begin and completed as soon as possible. Of concern is that the 50-acre area of lead and arsenic contaminated soil is located between two developing residential subdivisions and is vulnerable to erosion and occasional recreational ATV use. Also, the fence surrounding the soil repository in the Rawhide Ranchettes subdivision has been in disrepair for years and needs replacement. Overall, local officials said they have received good communication and assistance from the UDEQ and the U.S. EPA while working towards site completion. Full summaries of the interviews are included in Appendix E.

Data Review

No data was collected to support this FYR.

Site Inspection

The inspection of the Site was conducted on May 14, 2020. In attendance were Scott Lippitt, UDEQ/DERR Project Manager and Tom Daniels, UDEQ/DERR Site Assessment Section Manager (previous Jacobs Smelter Project Manager). Due to the spread of COVID-19 at the time of inspection, UDEQ took special precautions while conducting the inspection and made some alterations including wearing masks, maintaining six feet of social distance, and refraining from interviewing residents in person. The purpose of the inspection was to assess the protectiveness of the remedies constructed for the Site, evaluate the effectiveness of ICs, and determine if land use assumptions remain accurate.

Inspection of properties within OU1 showed that fill, landscaping and vegetation on the cleaned properties remained in good condition. The inspection also showed that at least one new home had been constructed within OU1 since the 2015 Five-Year Review.

Inspection of the Rawhide Ranchettes portion of OU2 showed that the fill, landscaping and vegetation on the developed properties remained in good condition. Inspection of the repository south of Lot 18 showed that the southern fencing of the repository remained damaged by grazing livestock and needed repair. Failure in two areas of the fence have allowed grazing livestock to enter the repository from the south. Damage to the fence on the north side of the repository has been prevented by the installation of an electric fence to keep livestock from pushing into the fence. Inspection of the Waterman Smelter portion of OU2 showed that the signs installed in 2011 were intact and legible, but the text was partially faded due to sun exposure. The Waterman Smelter portion of OU2 remained unfenced and was easily accessible, and ATV use was evident on the dirt track.

Inspection of OU3 showed that the soil cap was still intact, the vegetated cover was well established, fencing on the east and west was intact, and the gravel road remained in good condition.

Inspection of OU4 showed that the area remained successfully revegetated and the gravel pile covering remaining contamination was intact.

Inspection of the northeast parcel of OU5 showed that the surrounding fence was still intact and the area remained closed-off. However, one sign indicating that the area was closed was nearly illegible, and there were no signs indicating risk of exposure to soil contamination. The OU5 portion north of the Waterman Smelter area that was remediated in 2012 remained successfully revegetated.

Inspection of OU6 showed that the land use remained agricultural. The Chicago Smelter area remained fenced by the property owner. The property owner had performed more agricultural work since the previous Five-Year Review inspection including tilling of the area previously known to have smelter remains.

The Town of Stockton continues to enforce Ordinance #20004. During the site inspection, it was mentioned that the current Town Mayor may be stepping down at the end of his term. A discussion on the specifics of ICs between UDEQ and the Town of Stockton could help the Town's implementation of Ordinance #20004 in the event of institutional knowledge leaving when a new Mayor is elected.

The Site-inspection form and photos are included in Appendix D.

V. TECHNICAL ASSESSMENT

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

The review of documents, risk assumptions and the result of the Site inspection indicates that the remedies are functioning as intended by the OU1 ROD and the Action Memoranda for OU1, OU2, OU3, OU4 and OU5.

The excavation of the lead and arsenic contaminated soil associated with the time-critical removal action and the remedial action associated with OU1 and the subsequent backfilling and landscaping has achieved the remedial objectives necessary to minimize direct contact with or ingestion of contaminants in soil. The fill and landscaping on the cleaned properties appear to remain in good condition.

The fill and landscaping on the majority of the properties within the Rawhide Ranchettes are in good condition and the asphalt paving placed over the non-hazardous contaminated soil remains in place and is in good condition. The soil cap over the repository remains intact and in good repair. However, the fence surrounding the repository is broken in two locations on the southern side, and there is evidence of grazing livestock entering the repository. The south side of the repository fence needs repair. The additional cleanup performed in 2011 addressed the properties with lead concentration above the cleanup levels specified in the AOC and these properties also remain in good condition.

The soil cap, vegetative cover and fencing installed at OU3 have achieved the objectives described in the action memorandum and remain protective of human health and the environment. The soil cap remains in good condition. The vegetative cover is well established, and the fencing continues to effectively control access.

The excavation and off-site disposal of contaminated soil at OU4 has effectively minimized direct contact with or ingestion of the contaminants in the soil. The gravel hill remains intact over the contamination left in place and provides an adequate barrier to the remaining contamination.

The Stockton Town Ordinance #20004 remains in place and requires permit applications for all work including excavation below 18 inches to protect health and ensure excavated material is tested and handled according to regulation. Contamination that remains under the gravel hill at OU4 is documented and restricted under an environmental covenant. The fence and access road on OU3 continue to be protective and a restrictive notice is in place to limit future activity on the parcel. Overall, the institutional controls at the site remain effective; however, ICs for OUs 3 and 4 need to be codified in a CERCLA decision document to allow EPA to make future protectiveness determinations.

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?

Exposure assumptions and toxicity data have changed since the risk assessments were conducted at the Site. Currently, these changes do not impact the cleanup levels for the remedy. The RAOs used at the time of the remedy selection are still valid for OU1. The removal action objects for OU2, OU3 and OU4 are still valid. Cleanup levels set for this Site were presented in the July 29, 1999, OU1 ROD and the OU2, OU3, OU4, and OU5 action memoranda. For lead in soil, the EPA's Office of Solid Waste and Emergency Response Directives 9355.4-12 (EPA, 1994) and 9200.4-27P (EPA, 1998), were identified as federal chemical-specific To Be Considered guidance documents. However, since 1994 and 1998 when those documents were issued, increasing evidence has shown that blood lead levels below 10 µg/dL may also have negative health impacts.

The cleanup levels for the Jacobs Smelter Site were derived based on the 1994 and 1998 lead guidance documents, which identify 10 µg/dL as the blood lead level of concern. If the blood lead level of

concern is revised to a value less than 10 µg/dL, the resulting cleanup levels for lead listed in the decision document will need to be revisited.

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/Recommendations	
OU(s) without Issues/Recommendations Identified in the Five-Year Review:	
OU5	

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): OU3, OU4		Issue Category: Institutional Controls		
		Issue: Institutional controls are not in a decision document.		
		Recommendation: Include institutional controls in a CERCLA decision document.		
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	State	EPA	12/2023

OU(s): OU2		Issue Category: Engineering Controls		
		Issue: The fencing surrounding the repository at Rawhide Ranchettes is broken and needs fixed or replaced.		
		Recommendation: Work with Titan LLC, the developer of the Rawhide Ranchettes Subdivision, to get the fence fixed or replaced.		
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	Rawhide Ranchettes Property Developer	EPA/State	12/2021

OU(s): OU1, OU2, OU3 and OU4		Issue Category: Other		
		Issue: There have been some changes to the current Centers for Disease Control and Prevention acceptable reference value blood lead concentrations to be protective for child blood lead levels.		

Recommendation: Region 8 will examine the need to revise the soil cleanup levels based on the CDC recommendations and determine if additional actions should be taken to further reduce the risk of future elevated blood lead levels in young children at the site.				
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	EPA	EPA	12/2021

OTHER FINDINGS

In addition, the following recommendations were identified during the Five-Year Review and may improve management of O&M but does not affect current and/or future protectiveness:

- At OU2, the signs warning of contaminated soils at the historic Waterman Smelter area are faded and need to be replaced.
- At OU5 near the gate to the northeast parcel, an “area closed” sign is nearly illegible, and there are no signs indicating risk of exposure to soil contamination. Recommend BLM update and replace signage.
- Consider applying a deed restriction to the parcel in the Rawhide Ranchettes subdivision that contains the soil repository to compliment the AOC and ensure future use of the parcel remains protective.
- A discussion on the specifics of ICs between UDEQ and the Town of Stockton could help the Town’s implementation of Ordinance #20004 in the event of institutional knowledge loss if a new Mayor is elected.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statements	
<i>Operable Unit:</i> OU1	<i>Protectiveness Determination:</i> Short-term Protective
<i>Protectiveness Statement:</i> The remedy at OU1 is currently protective of human health and the environment because targeted residential yards have been remediated and the ICs are functioning as intended. However, in order to be protective in the long term, the lead remedial action soil cleanup number needs to be reviewed once EPA issues new guidance.	

<i>Operable Unit:</i> OU2	<i>Protectiveness Determination:</i> Short-term Protective
<i>Protectiveness Statement:</i> The removal action at OU2 is currently protective of human health and the environment in areas where removals have been completed. However, the Remedial Action documented in the OU2 ROD still needs to be conducted for the undeveloped area and the B&B subdivision.	

<i>Operable Unit:</i> OU3	<i>Protectiveness Determination:</i> Short-term Protective
<i>Protectiveness Statement:</i> The removal action at OU3 is currently protective of human health and the environment because targeted residential yards have been remediated and the cap, vegetative cover, and ICs are functioning as intended. However, in order for EPA to make a determination that the remedy will be protective in the long term, required ICs need to be included in a decision document and the lead removal action soil cleanup number needs to be reviewed once EPA issues new guidance.	

<i>Operable Unit:</i> OU4	<i>Protectiveness Determination:</i> Short-term Protective
<i>Protectiveness Statement:</i> The removal action at OU4 is currently protective of human health and the environment because targeted residential yards have been remediated and the remaining lead contaminated soils are not accessible. However, in order for EPA to make a determination that the remedy will be protective in the long term, required ICs need to be included in a decision document and the lead removal action soil cleanup number needs to be reviewed once EPA issues new guidance.	

<i>Operable Unit:</i> OU5	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The implemented removal action at OU5 is currently protective of human health and the environment. A removal action was conducted by the BLM on the Waterman parcel consistent with the OU2 ROD, and access to the northeastern parcel of OU5 is currently restricted by a fence.	

VIII. NEXT REVIEW

The next five-year review report for the Jacobs Smelter Superfund Site is required five years from the completion date of this review.

FIGURES

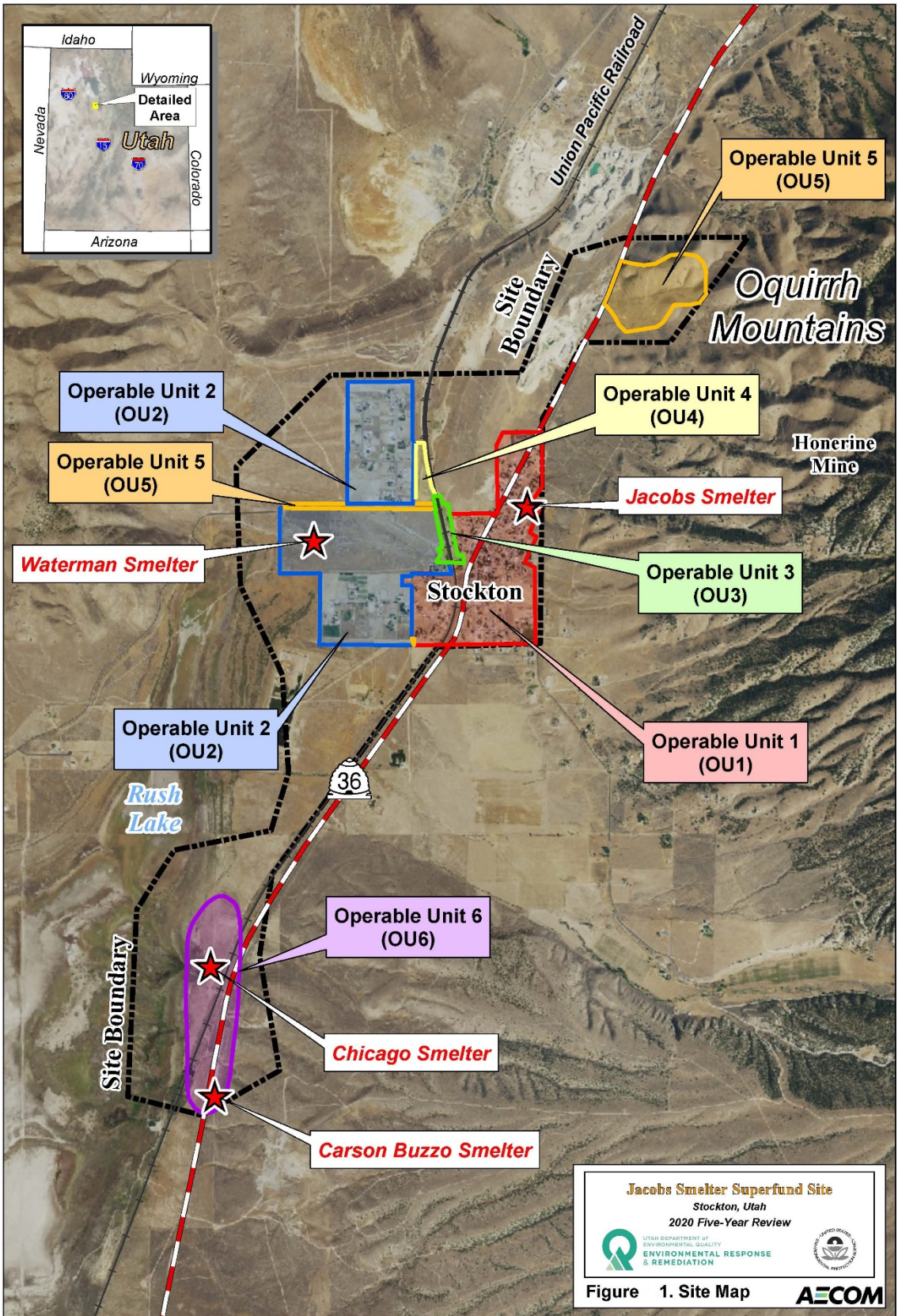
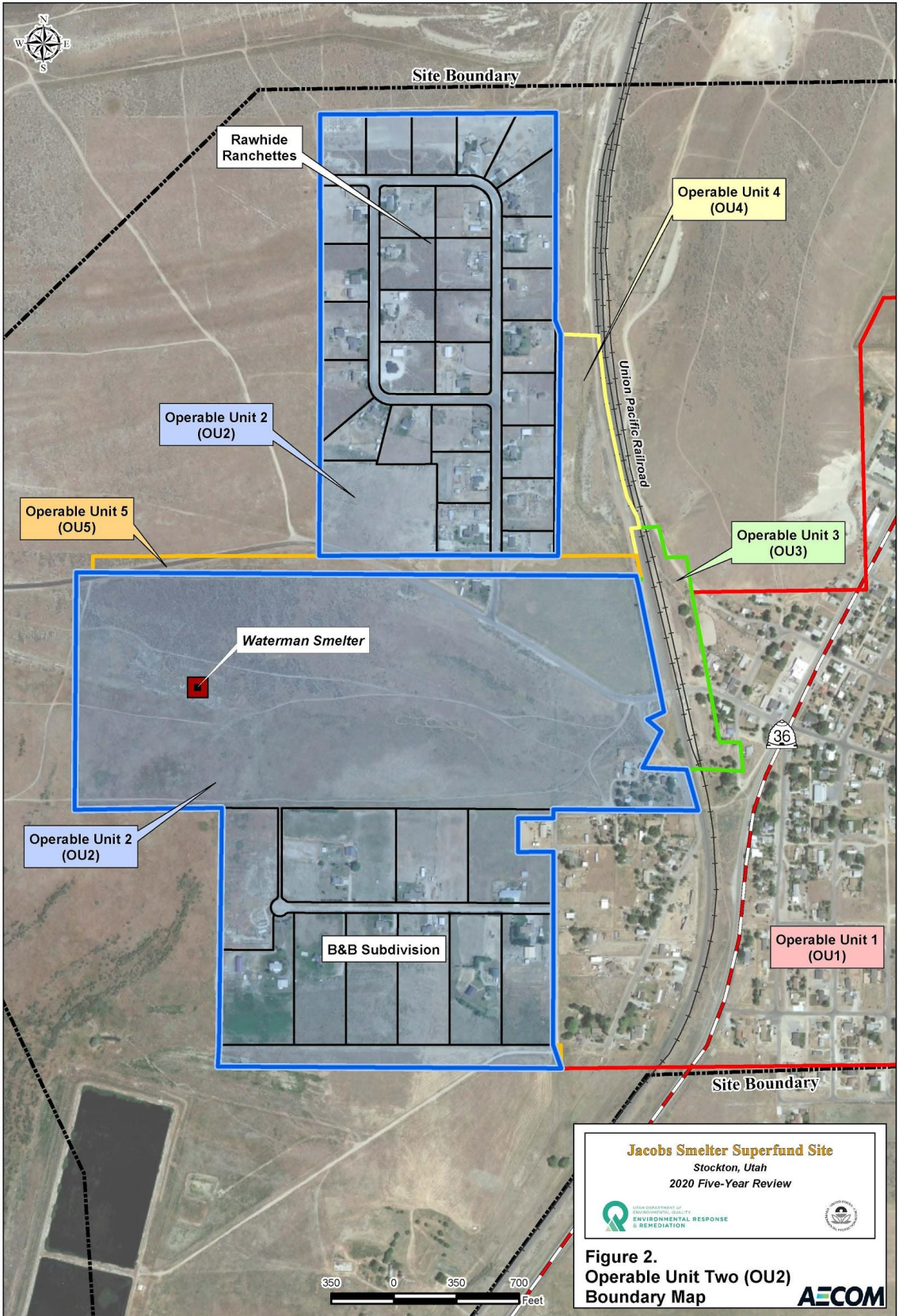


Figure 1. Site Map




Jacobs Smelter Superfund Site
 Stockton, Utah
 2020 Five-Year Review

U.S. DEPARTMENT OF
 ENVIRONMENTAL PROTECTION
 & REMEDIATION



Figure 2.
Operable Unit Two (OU2)
Boundary Map



APPENDICES

APPENDIX A – REFERENCE LIST

Action Memorandum: Request for Time-Critical Removal Action
Jacobs Smelter Operable Unit One
Stockton, Utah
February 1999

Action Memorandum: PRP Removal Action
Jacobs Smelter Operable Unit Three
Stockton, Utah

Action Memorandum: Request for Time-Critical Removal Action
Jacobs Smelter Operable Unit Two
Stockton, Utah
December 2000

Administrative Order on Consent with Titan Development, LLC
Jaco Jacobs Smelter Operable Unit Two
Stockton, Utah
July 2001

Final Remedial Investigation Report
Jacobs Smelter Operable Unit Two
Stockton, Utah
July 2003

Final Feasibility Study Report
Jacobs Smelter Operable Unit Two
Stockton, Utah
December 2003

Final Revised Feasibility Study Report
Jacobs Smelter Operable Unit Two
Stockton, Utah
July 2004

Proposed Plan
Jacobs Smelter Operable Unit Two
Stockton, Utah
September 2004

Closure of Administrative Order on Consent for Removal Action
Jacobs Smelter Operable Unit Three
Stockton, Utah
January 2005

First Five-Year Review Report
Jacobs Smelter Superfund Site
Stockton, Utah
September 2005

Action Memorandum: Enforcement Time-Critical Removal Action
Jacobs Smelter Operable Unit Four
Stockton, Utah
September 2008

Action Memorandum: Approval and Funding for a Removal Action at Residential Lots within the Jacobs Smelter NPL Site
Jacobs Smelter Operable Unit Two
Tooele County, Utah
July 2010

Second Five-Year Review Report
Jacobs Smelter Superfund Site
Stockton, Utah
September 2010

Action Memorandum: Time-Critical Removal Action for the Waterman Smelter Area of Operable Unit 5
Jacobs Smelter Superfund Site
Stockton, Utah
July 2012

CERCLA Time-Critical Removal Action Final Report
Jacobs Smelter Operable Unit Five - Waterman Area
Stockton, Utah
December 2012

Final Updated Revised Feasibility Study Report
Jacobs Smelter Operable Unit Two
Stockton, Utah
June 2014

Proposed Plan
Jacobs Smelter Operable Unit Two
Stockton, Utah
September 2014

Third Five-Year Review Report
Jacobs Smelter Superfund Site
Stockton, Utah
September 2015

Record of Decision
Jacobs Smelter Operable Unit Two
Stockton, Utah
September 2016

Final Pre-Remedial Design Report
Jacobs Smelter Operable Unit Two
Stockton, Utah
September 2019

APPENDIX B – EXPANDED SITE BACKGROUND

General Site Description

The Jacobs Smelter Site is located within Rush Valley, Tooele County, Utah. The most significant population in the valley resides in Stockton, approximately 38 miles southwest of Salt Lake City via Interstate 80 and Utah Highway 36, and five miles southwest of the city of Tooele. The Stockton area was the center of a silver and base metal mining, milling and smelting district from the 1860s until 1970. No industries and very few retail/commercial businesses currently exist in Stockton. In general, land surrounding Stockton is used for agricultural and recreational purposes.

The Site is referred to as “Jacobs Smelter,” after the name of a large smelting operation that was located within Stockton. Reports of up to nine former smelters with milling operations within the Site boundaries have been documented. The Jacobs Smelter was one of these historic smelters. The entire Superfund Site was named Jacobs Smelter as a matter of convenience.

The topography of the Site is dominated by the Rush Valley floor, which is generally smooth, at an elevation of 5,000 feet. Within the northern extent of Rush Valley is Rush Lake, which is in a closed drainage basin. Because of this, the lake level and size fluctuate over time, with its highest water level recorded in 1877 and its lowest water level reached in the summer of 2002 with virtually no standing water.

The risks posed by the Site derive from smelting and mining activity, which occurred primarily in the 1860s and 1870s. Wastes in the form of heavy metal contaminated soil, mill tailings, and smelter wastes exist at several locations within the Site boundaries. The primary contaminants are lead and arsenic.

Former, Current and Future Land and Resource Use

The area around Stockton is generally open grassland and used primarily for grazing. The topography of the area is gently sloping from east to west towards Rush Lake. Several single-family dwellings and farms exist in the area. Stockton is mostly residential, with only a few small businesses. Approximately 500 people reside within a four-mile radius around Stockton. Due to its location near the City of Tooele, the area is prime for growth and residential development.

Rush Lake is the dominant surface water feature in the area. The lake is recharged primarily through ground water flow and several springs, which empty into the lake. Water levels in the lake have fluctuated greatly over the years, with the lake size changing drastically. In the spring of 2020, there was virtually no standing water observed in Rush Lake.

Ground water at the Site consists of a shallow aquifer that feeds into Rush Lake, perennial springs and a deep aquifer. The shallow aquifer in Rush Valley is of poor quality and is not anticipated to be used as a drinking water source. The deep aquifer lies at a depth of 200 feet below ground surface and is used as a drinking water source for private residences. There is no evidence that suggests the shallow and deep aquifers are hydraulically connected.

History of Contamination

In April 1864, volunteer soldiers discovered silver ore east of Stockton and organized the first mining district in the area. The area around the military reservation became the base for small-scale milling and smelting activities. The Town of Stockton was established in 1864. By 1866, the town contained over 400 inhabitants. Several smelting furnaces were built in the area, operated for a short time with marginal results, then were shut down. The exact locations of most of these smelters remain unknown.

By 1870, mining in the area had expanded and smelting technology had improved to the point that metals extraction was profitable. The largest smelter in the Stockton area was the Waterman Smelting Works, which opened in 1871 on the northern shore of Rush Lake, about a half mile west of Stockton. The smelter operated through 1886 and produced approximately 3,300 tons of flue dust and nearly 15,000 tons of smelter slag.

In 1872, the Jacobs Smelter, owned by Lilly, Liesenring & Company, began operation within the town limits of Stockton. The smelter processed ore from the Ophir Mining District, located 10 miles south of Stockton, in three vertical blast furnaces. By 1880, each of these furnaces could process 25 tons of ore per day. In 1879, the Great Basin Concentrator was constructed adjacent to the Jacobs Smelter and by 1880 was milling 100 tons of ore per day with approximately 80 tons of mill tailings produced as waste.

The Chicago Smelter opened in 1873 on the eastern shore of Rush Lake two miles south of Stockton, within the boundary of the former military camp. It was owned and operated by the Chicago Silver Mining Company, a British firm that also operated two nearby mines. The smelter operated sporadically through 1880. The Carson & Buzzo Smelter was located about half mile south of the Chicago Smelter, also on the eastern shore of Rush Lake. The production rate of these smelters is unknown.

There was also mining activity further east in the Oquirrh Mountains. The largest contributor to mining activities in this area was the Honerine Mine. Founded around 1900, the mine also had a stamp mill on site and an extensive tunnel system, which drained westward into existing gullies just east of Stockton. In addition to the large smelters in and around Stockton, there were numerous small smelters and stamp mills within the Rush Valley. A total of at least nine smelting/milling operations are reported to have been in operation in the Stockton area, including those mentioned here.

Nearly all traces of these smelting operations have vanished. Buried timbers, stained soils, and some foundations are virtually all the physical evidence that remain. Homes were built upon a portion of the former Jacobs Smelter location. Much of the slag produced was likely reprocessed at other smelters located in the Tooele Valley or the Salt Lake Valley.

APPENDIX C – SITE CHRONOLOGY

Event	Date
Volunteer soldiers discovered silver ore east of Stockton and organized the first mining district. The area around the military reservation became the base for small-scale milling and smelting activities. The Town of Stockton was established in 1864 and contained over 400 residents by 1866.	April 1864
Several small smelting furnaces were built in the area, operated for a short time with marginal results and then shut down. The exact location of most of these smelters is unknown.	1866-1868
The Waterman Smelting Works was constructed on the north shore of Rush Lake about ½ mile west of Stockton and operated continuously until 1886. The smelter reportedly produced a total of approximately 3,300 tons of flue dust and nearly 15,000 tons of smelter slag.	1871-1886
The Jacobs Smelter began operation within the town limits of Stockton. The smelter processed ore from the Ophir Mining District, located 10 miles south of Stockton, in three vertical blast furnaces. By 1880, each of these furnaces could process 25 tons of ore per day, producing 19.5 tons of smelter slag and flue dust per day.	1871
The Chicago smelter opened in 1873 on the eastern shore of Rush Lake two miles south of Stockton. It was built by the Chicago Silver Mining Company, a British firm that also operated two nearby mines. The smelter operated sporadically through 1880. The Carson & Buzzo smelter was located about a ½ mile south of the Chicago smelter, also on the shore of Rush Lake. The production rate of these smelters is unknown.	1873-1880
At least nine smelting/milling operations are reported to have existed in the Stockton area, over the ensuing century. Nearly all traces of these operations have vanished. Buried timbers, stained soils and some foundations are virtually all the physical evidence that remains. Homes were built upon a portion of the former Jacobs Smelter location. Much of the slag produced was likely reprocessed in other smelters located in the Tooele valley or the Salt Lake valley. Through historical research and direct observation, the exact locations of the Jacobs, Waterman, Chicago and Carson & Buzzo Smelters have been found. The locations of other unnamed operations can only be speculated upon based on sampling of soils to test for the presence of heavy metals.	1880-1995
The Stockton Area was added to the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) under the name of “Stockton Smelters.”	1995
The EPA and UDEQ completed a Preliminary Assessment and Site Investigation (PA/SI) and the name of the entire Site was changed to Jacobs Smelter.	1998
Action Memorandum requesting a time-critical removal action for residential properties in Stockton.	February 1999
Action Memorandum for Union Pacific to conduct a removal action at OU3.	February 1999
The EPA initiated a time-critical removal action to address soil contamination of residential properties located in Stockton.	March 1999
The EPA and UDEQ completed a Remedial Investigation/Focused Feasibility Study (RI/FFS) for OU1. The RI/FFS identified approximately 125 residential properties within Stockton that required clean up.	June 1999
The EPA notified Union Pacific Railroad of contamination on their right-of-way and requested a time-critical removal be performed to address the contamination (OU3).	April 1999
Contaminated soils in OU3 were remediated by Union Pacific Railroad. Soil cover was selected as the remedy.	Summer 1999
The EPA issued a Record of Decision (ROD) for OU1.	July 29, 1999
The Site was added to the National Priorities List (NPL).	Feb 4, 2000

Lead and arsenic contamination identified in the Rawhide Ranchettes subdivision located within OU2.	May 2000
Remedial Action for OU1 started.	May 5, 2000
The EPA and UDEQ conduct a Contaminant Screening Study for OU2.	July 2000
Physical construction completed for OU1 Remedial Action.	October 2000
Action Memorandum for a time-critical removal action at OU2	December 2000
The EPA and UDEQ perform a Pre-Remedial Investigation for OU2.	July 2001
AOC entered with Titan Development, LLC for OU2.	July 2001
Titan Development LLC completed a non-time-critical removal action for five contaminated lots in the Rawhide Ranchettes subdivision.	August 2001
EPA conducted a land re-use assessment.	Sep 2001
Partial deletion of OU1 from NPL	2001
The EPA and UDEQ conducted a Remedial Investigation (RI) for OU2.	July 2003
Partial deletion of OU3 from NPL	2003
The EPA and UDEQ conducted a Revised Feasibility Study for OU2.	July 2004
A Proposed Plan was published for OU2.	August 2004
Closure of AOC for the removal action at OU3	January 2005
Creation of Operable Unit 4 (OU4) and a time-critical removal action performed by KUCC (September 2008 Action Memorandum for an enforcement time-critical removal action).	July to November 2008
Sampling of Rawhide Ranchettes Lot # 3 by UDEQ at property owners request discovers lead concentrations above cleanup levels.	September 2008
Addendum to the OU2 Revised Feasibility Study (RFS) to investigate lead and arsenic concentrations in two subdivisions located within OU2, the B&B and Rawhide Ranchettes Subdivisions, and to revisit the alternatives and associated cost estimates.	September 2009 to September 2010
The EPA and UDEQ re-evaluate human health risk due to ATV use.	June 2010
Action Memorandum approving and funding a removal action at residential lots within OU2.	July 2010
The EPA conducted a time-critical removal action at the Rawhide Ranchettes Subdivision.	October 2010 to May 2011
Action Memorandum for a time-critical removal action at the waterman smelter area of OU5.	July 2012
Clean up of soil on BLM property near Waterman Smelter.	December 2012
Boundary change for OU2, creation of OU6.	January 2014
Updated Revised Feasibility Study.	June 2014
Additional sampling of Waterman Smelter area.	May 2013
Proposed Plan for OU2.	September 2015
The EPA and UDEQ issue a ROD for OU2	September 2016
OU2 Remedial Design reaches 60% completion.	July 2019
BLM submits an SAP for the OU5 Northeast Parcel.	March 2020

APPENDIX D – SITE INSPECTION CHECKLIST & PHOTOS

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. “N/A” refers to “not applicable.”)

I. SITE INFORMATION													
Site name: Jacobs Smelter	Date of inspection: 5/14/2020												
Location and Region: Tooele County, Utah, Region 8	EPA ID: UT0002391472												
Agency, office, or company leading the five-year review: Utah Department of Environmental Quality (DEQ), Division of Environmental Response and Remediation (DERR)	Weather/temperature: Partly Cloudy, 65° F												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td><input checked="" type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Other <u>Removal</u></td> <td></td> </tr> </table>		<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input checked="" type="checkbox"/> Other <u>Removal</u>	
<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment												
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input checked="" type="checkbox"/> Other <u>Removal</u>													
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____													
2. O&M staff _____ _____ _____ <div style="display: flex; justify-content: space-between; margin-left: 100px;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____													

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
3.	O&M and OSHA Training Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
4.	Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
8.	Leachate Extraction Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
9.	Discharge Compliance Records <input type="checkbox"/> Air <input type="checkbox"/> Water (effluent) Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A

IV. O&M COSTS Applicable N/A

1. **O&M Organization**
 State in-house Contractor for State
 PRP in-house Contractor for PRP
 Federal Facility in-house Contractor for Federal Facility
 Other _____

2. **O&M Cost Records**
 Readily available Up to date
 Funding mechanism/agreement in place
 Original O&M cost estimate _____ Breakdown attached

Total annual cost by year for review period if available

From _____	To _____	_____	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From _____	To _____	_____	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**
 Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A

A. Fencing

1. **Fencing damaged** Location shown on site map Gates secured N/A
 Remarks: Fences at OU3 and OU5 are intact. The fence surrounding the repository south of the Rawhide Ranchettes subdivision has failed in two locations on the southern side. Horse tracks and manure were visible within the repository.

B. Other Access Restrictions

1. **Signs and other security measures** Location shown on site map N/A
 Remarks: The signs at the undeveloped area of OU2 are visible and legible, but the decals are showing signs of sun damage (see photo 4). While OU5 remains fenced off, the sign stating the area is closed is nearly illegible, and there are no signs warning of possible exposure to contamination (see photo 9).

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) _____
 Frequency _____
 Responsible party/agency _____
 Contact _____

	Name	Title	Date	Phone no.
Reporting is up-to-date				
Reports are verified by the lead agency				
Specific requirements in deed or decision documents have been met				
Violations have been reported				
Other problems or suggestions: <input type="checkbox"/> Report attached				

2. **Adequacy** ICs are adequate ICs are inadequate N/A
 Remarks _____

D. General

1. **Vandalism/trespassing** Location shown on site map No vandalism evident
 Remarks: Access to the undeveloped portion of OU2 remains unrestricted, and recreational off-road vehicle usage is evident.

2. **Land use changes on site** N/A
 Remarks: No land use changes on the site.

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 roads within Rawhide Ranchettes that serve as a cover over contaminated soil remained in good condition

B. Other Site Conditions		
Remarks _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Settlement not evident
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Cracking not evident
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Erosion not evident
4.	Holes Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Holes not evident
5.	Vegetative Cover <input checked="" type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input checked="" type="checkbox"/> No signs of stress <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks: <u>Native vegetative cover is well established at undeveloped areas that have been remediated including OU4 and the Waterman Smelter portion of OU5. Grass is established in yards of homes within OU1 and remediated portions of the Rawhide Ranchettes (OU2) subdivision</u>	
6.	Alternative Cover (armored rock, concrete, etc.) <input type="checkbox"/> N/A Remarks: <u>The gravel pile at OU4 remains intact and continues to serve as a cover of contaminated soil</u>	
7.	Bulges Areal extent _____ Height _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Bulges not evident
8.	Wet Areas/Water Damage <input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Wet areas <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Ponding <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Seeps <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Soft subgrade <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks _____	

9.	Slope Instability	<input type="checkbox"/> Slides	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of slope instability
	Areal extent _____			
	Remarks _____			
B. Benches				
	<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> 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	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay	
	Remarks _____			
2.	Bench Breached	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay	
	Remarks _____			
3.	Bench Overtopped	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay	
	Remarks _____			
C. Letdown Channels				
	<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A		
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)				
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of settlement	
	Areal extent _____	Depth _____		
	Remarks _____			
2.	Material Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of degradation	
	Material type _____	Areal extent _____		
	Remarks _____			
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of erosion	
	Areal extent _____	Depth _____		
	Remarks _____			

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____ _____		
5.	Obstructions	Type _____	<input type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____ _____		
6.	Excessive Vegetative Growth	Type _____	
	<input type="checkbox"/> No evidence of excessive growth		
	<input type="checkbox"/> Vegetation in channels does not obstruct flow		
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Remarks _____ _____		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active <input type="checkbox"/> Passive	
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	
	<input type="checkbox"/> N/A		
	Remarks _____ _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition	
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
3.	Monitoring Wells (within surface area of landfill)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition	
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> N/A
	Remarks _____ _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A
	Remarks _____ _____		

E. Gas Collection and Treatment <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Gas Treatment Facilities <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
2.	Gas Collection Wells, Manifolds and Piping <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
3.	Gas Monitoring Facilities (<i>e.g.</i> , gas monitoring of adjacent homes or buildings) <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____	
F. Cover Drainage Layer <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Outlet Pipes Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	
2.	Outlet Rock Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	
G. Detention/Sedimentation Ponds <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Siltation Areal extent _____ Depth _____ <input type="checkbox"/> N/A <input type="checkbox"/> Siltation not evident Remarks _____ _____	
2.	Erosion Areal extent _____ Depth _____ <input type="checkbox"/> Erosion not evident Remarks _____ _____	
3.	Outlet Works <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	
4.	Dam <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement _____	Vertical displacement _____	
	Rotational displacement _____		
	Remarks _____		
2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks _____		
I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent _____	Type _____	
	Remarks _____		
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent _____	Depth _____	
	Remarks _____		
4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks _____		
VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Performance Monitoring	Type of monitoring _____	
	<input type="checkbox"/> Performance not monitored		
	Frequency _____	<input type="checkbox"/> Evidence of breaching	
	Head differential _____		
	Remarks _____		

IX. GROUNDWATER/SURFACE WATER REMEDIES <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps, and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____
B. Surface Water Collection Structures, Pumps, and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Collection Structures, Pumps, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____

C. Treatment System		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Treatment Train (Check components that apply)	<input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters _____ <input type="checkbox"/> Additive (<i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____ _____	
2.	Electrical Enclosures and Panels (properly rated and functional)	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
3.	Tanks, Vaults, Storage Vessels	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
4.	Discharge Structure and Appurtenances	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
5.	Treatment Building(s)	<input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____ _____	
6.	Monitoring Wells (pump and treatment remedy)	<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____	
D. Monitoring Data			
1.	Monitoring Data	<input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality	
2.	Monitoring data suggests:	<input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining	

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
- | | | | |
|---|--|--|---|
| <input type="checkbox"/> Properly secured/locked | <input type="checkbox"/> Functioning | <input type="checkbox"/> Routinely sampled | <input type="checkbox"/> Good condition |
| <input type="checkbox"/> All required wells located | <input type="checkbox"/> Needs Maintenance | | <input checked="" type="checkbox"/> N/A |
- Remarks _____

X. OTHER REMEDIES

If there are remedies applied at the site which are 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

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

See Section VII. Protectiveness Statements

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Site Inspection Photos

Photo 1: OU1 Established Vegetation Near Historic Jacobs Smelter Location



Photo 2: OU1 New Home Construction



Photo 3: OU1 Established Vegetation and Grass Yard



Photo 4: OU2 Caution Sign Showing Wear



Photo 5: OU2 Fence Damage at Rawhide Ranchettes Repository (Location 1)



Photo 6: OU2 Fence Damage at Rawhide Ranchettes Repository (Location 2)



Photo 7: OU3 Established Vegetation and Intact Fence



Photo 8: OU4 Established Vegetation and Intact Gravel Hill Covering Remaining Contamination



Photo 9: OU5 Intact Fencing and Nearly Illegible “Area Closed” Sign at Entrance Gate



Photo 10: OU5 Intact Fencing



Photo 11: OU6 Agricultural Use at Chicago Smelter Area



Photo 12: OU6 Fencing at Chicago Smelter Area



APPENDIX E – COMMUNITY INTERVIEWS

Community Involvement

UDEQ conducted community interviews as part of the Five-Year Review process. A public notice was placed in the Tooele Transcript Bulletin Newspaper on May 28, 2020, and stated that the Five-Year review was in progress and requested public input (Appendix F). The Jacobs Smelter Five-Year Review public notice was also placed on the town of Stockton Facebook web page on June 8, 2020.

During the Five-Year Review the UDEQ conducted a number of interviews with local officials and property owners to obtain their opinion and concerns at the Jacobs Superfund Site. Community interviews were conducted by the UDEQ and U.S. EPA from June 9 through June 16, 2020. Interviews were conducted with BLM Professional Geologist, Alan Jones; Stockton Town Mayor, Thomas Karjola; the Tooele County Environmental Health Director, Bryan Slade and a Rawhide Ranchettes property owner.

Upon completion of the Five-Year review report, the report will be made available in the administrative record located at the respective Records Centers at UDEQ in Salt Lake City, Utah, and USEPA in Denver, Colorado. The purpose of the interviews was to identify any issues or concerns that may have developed since the 2015 Five-Year review.

**Jacobs Smelter Superfund Site
Five-Year Review
Interview of Local Agencies**

Site Name: Jacobs Smelter Superfund Site EPA ID: UT0002391472	June 9, 2020
Type of Contact: Telephone	Contact Made by: Dave Allison, UDEQ/DERR Community Involvement
Person Contacted	
Name: Alan Jones, Professional Geologist	Bureau of Land Management BLM-West Desert District 2370 S. Decker Lake Blvd. West Valley City, UT 84119 Phone: (801) 977-4300 Email: avjones@blm.gov

1. **Is your organization/department aware of the Jacobs Smelter Superfund Site and the actions underway to address environmental contamination?** The Bureau of Land Management (BLM) owns two parcels of land within the Jacobs Smelter Site designated as Operable Unit Five (OU5). Alan Jones has worked for BLM for 10 years and is the BLM Project Manager for OU5 which consists of lead and arsenic contamination in various areas of approximately 85 acres.
2. **What's your overall impression (your general sentiment) of the actions performed at the Jacobs Smelter Superfund Site?** Jones said further remediation activities are needed and are being conducted by BLM for their property. This includes a risk assessment and work plan to characterize the majority of their land to the northeast of town, closest to where the Jacobs Smelter was located. The land is fenced and has warning signs posted for the public regarding the soil contamination caused by historic smelting and mining in the area. BLM also conducted a time-critical removal in 2012 for a small strip of land near the historic Waterman Smelter which will be sampled as part of the BLM's overall work at the Site. Jones said BLM has funding to begin characterization of their property and wants to start as soon as possible once the risk assessment is finished.
3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the Jacobs Smelter Superfund Site?** Jones visits BLM lands regularly in the West Desert District two or three times a month and has not noticed any damaged fencing, and warning signs remain in place.
4. **Are you aware of any community concerns regarding the Jacobs Smelter Superfund Site? If so, please give details.** Other than having contaminated property responsibilities, Jones has not heard anyone from the community nor from the regulating agencies (EPA or UDEQ) express any concerns. The BLM property location and typography are not conducive for recreational use by the public. Jones said BLM

has funding to begin characterization of their property and wants to start as soon as possible once the risk assessment is finished.

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 Jacobs Smelter Superfund Site requiring your office to respond?** There have not been any incidents regarding the BLM parcels, and Jones would want to address any problems.

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 Jacobs Smelter Superfund Site?** Jones coordinates well with the State and EPA Project Managers and has ongoing dialogue as remediation plans and activities develop. Jones says the BLM also uses CERCLA authority along with EPA and UDEQ, which should lead to agreement decisions regarding the cleanup of OU5 contaminated areas.

7. **Over the past five years, have there been any changes in land use surrounding the Jacobs Smelter Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** Jones said there are no changes in BLM policies and doesn't see the land use as a future issue.

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?** Jones said once site characterization and risk assessment are complete, BLM, EPA and UDEQ can make the necessary decisions to finish OU5 areas. Jones said the BLM has the same goals as EPA or UDEQ to finish the cleanup to appropriate cleanup levels and no longer be a part of the Site.

**Jacobs Smelter Superfund Site
Five-Year Review
Interview of Community Members**

Site Name: Jacobs Smelter Superfund Site EPA ID: UT0002391472	June 10, 2020
Type of Contact: Telephone	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator, Scott Lippitt, UDEQ/DERR Project Manager, and Andrew Schmidt, U.S. EPA Project Manager.
Person Contacted	
Name: Mayor Thomas Karjola	Organization: Town of Stockton Stockton Town Hall 18 North Johnson Street Stockton, Utah 84071 Phone: (435) 882-3877 Email: tkarjola@stocktontown.org

1. **Is your organization/department aware of the Jacobs Smelter Superfund Site and the actions underway to address environmental contamination?** Thomas Karjola is in his third year as Mayor of the Town of Stockton and has worked closely with regulators on remediation activities regarding the Jacobs Smelter Superfund Site. Mayor Karjola also lives and owns property in the Rawhide Ranchettes subdivision where a non-time-critical removal action was completed in 2010 and has researched the area cleanup history.

2. **What's your overall impression (your general sentiment) of the actions performed at the Jacobs Smelter Superfund Site?** Mayor Karjola said he's been impressed with the involvement and care Stockton has received from UDEQ and EPA knowing the magnitude of remediation left for Stockton. As Operable Unit Two (OU2) awaits cleanup funding, Mayor Karjola said he is satisfied UDEQ and EPA are doing everything they can to finish the job.

3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the Jacobs Smelter Superfund Site?** Mayor Karjola said UDEQ and EPA have provided regular status briefings to the town council over the last five years, and he has participated in Site tours as cleanup activities progress.

4. **Are you aware of any community concerns regarding the Jacobs Smelter Superfund Site? If so, please give details.** Mayor Karjola said the community, unfortunately, hasn't shown more of a concern or realized the danger of having high levels of lead and arsenic soils within Stockton. Mayor Karjola said OU2 is a large (85-acre) open area located directly between subdivisions with noticeable wind events and ATV activity. People ignoring warning signs and stirring up dust are serious concerns and should avoid the Waterman Smelter area entirely.

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 Jacobs Smelter Superfund Site requiring your office to respond?** Mayor Karjola said there haven't been any Site-related emergencies but would say fencing issues for the Rawhide Ranchettes repository have become a chronic problem. The fence was built in 2010, is damaged and no longer keeps horses from grazing on it, and is a concern for property owners. Mayor Karjola knows the land developer is responsible for the repository maintenance and would like to see the fence repaired to resolve the matter.

6. **Do you feel well informed about the site's activities and progress over the last five years?** Mayor Karjola said he has a great working relationship with UDEQ and EPA project managers due to responsive communication over the years. From Site visits to town council briefings, Mayor Karjola, said learning about the Site helps him inform local elected officials including State Congressional staff to build awareness for Stockton's needs. Most recently, Mayor Karjola cited a letter of support from Senator Mitt Romney in 2020 for the Jacobs Smelter priority panel funding presentation this year.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the Jacobs Smelter Superfund Site and/or your role?** Mayor Karjola said there are no changes to the way Stockton addresses cleanup areas. The town's soil ordinance remains in place, and the Town Clerk identifies mapped permitted areas requiring controls. Mayor Karjola said there hasn't been any building in contaminated areas over the last five years and also calls UDEQ with any questions from property owners. Mayor Karjola said the town repository will be used for non-hazardous soils during the OU2 cleanup and will require coordination with the regulators.

8. **Over the past five years, have there been any changes in land use surrounding the Jacobs Smelter Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** No land use changes are planned at this time; however, Mayor Karjola said there is interest with residential and commercial development in Stockton. Mayor Karjola said there really isn't any way to know what future impacts or decisions to make once OU2 is cleaned up and the Town's soils ordinances work well for now.

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?** Mayor Karjola said he wants (OU2) Site cleanup as soon as possible and there will always remain a risk to the health and environment of the Stockton community until this happens. With remedial design and construction in place, funding is all that is needed. Mayor Karjola said he will continue to work through congressional funding channels, UDEQ, and EPA to move the Site towards completion.

**Jacobs Smelter Superfund Site
Five-Year Review
Interview of Local Agencies**

Site Name: Jacobs Smelter Superfund Site EPA ID: UT0002391472	June 11, 2020
Type of Contact: Telephone	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Scott Lippitt, UDEQ/DERR Project Manager
Person Contacted	
Name: Bryan Slade, Environmental Health Director	Organization: Tooele County Health Department Tooele Office 151 North Main Street Tooele, Utah 84074 Phone: (435) 277-2440 Email: bslade@tooelehealth.org

1. **Is your organization/department aware of the Jacobs Smelter Superfund Site and the actions underway to address environmental contamination?** Bryan Slade is the Tooele County Environmental Health Director and has 28 years with the Department. Slade knows the Jacobs Smelter Superfund Site very well, from the beginning of remediation in Stockton, and stays informed of Site progress.

2. **What's your overall impression (your general sentiment) of the actions performed at the Jacobs Smelter Superfund Site?** Slade said the cleanup has run fairly smoothly over the years and Stockton welcomed the EPA to clean up soils left behind from historic mining areas in and around Stockton. The Site has one major area requiring soil removal where the Waterman Smelter used to exist in Operable Unit 2. Any concerns the Health Department has with the Site is to better protect the public health from exposed areas of unprotected mining wastes.

3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the Jacobs Smelter Superfund Site?** Brian said his office is updated as needed by UDEQ and EPA and invited to participate with Site tours at cleanup areas in Stockton. Slade recently visited the area with project managers and local officials in January 2020 on upcoming plans for OU2.

4. **Are you aware of any community concerns regarding the Jacobs Smelter Superfund Site? If so, please give details.** Getting the soils cleaned up is a priority for everyone involved, Slade said he has not heard any specific health or environmental concerns regarding Jacobs Smelter. Brian said his office and the community leadership, the Mayor, and County are knowledgeable and would bring any issues to the regulator's attention. Slade is contacted occasionally by people looking for property information and smelter areas close by.

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 Jacobs Smelter Superfund Site requiring your office to respond? If so, please give details of the events and results of the response.** There were not any incidents or emergencies his department was aware of and knows there is evidence of ATV use in OU2 where the highest levels of lead and arsenic soils exist. Until the area receives cleanup, warning signs are all that can be done over such a large area (approximately 85 acres).
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 Jacobs Smelter Superfund Site?** Slade said his office is well informed with regular communication from UDEQ and EPA and that the agencies do a good job keeping them involved with any public meetings.
7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the Jacobs Smelter Superfund Site and/or your role? If so, please describe the changes and the impacts.** Slade said the County is fully staffed. Slade said they do not have any development permitting responsibilities for contaminated areas in Stockton and would only be involved in areas outside of Stockton.
8. **Over the past five years, have there been any changes in land use surrounding the Jacobs Smelter Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** Slade is not aware of any future development concerns. Slade said Stockton enforces its own soil ordinance and does not require health department approval. The County used to have more septic tank inspections in Stockton which mostly went away with their water and sewer upgrade 10 years ago. Slade said his office has reached out to UDEQ and EPA to provide any support possible throughout the county to protect community health.
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?** Slade said the UDEQ and EPA have done a good job managing the Jacobs Smelter cleanup and hopes funding will expedite and complete the Site in the near future.

**Jacobs Smelter Superfund Site
Five-Year Review
Interview of Community Members**

Site Name: Jacobs Smelter EPA ID: UT0002391472	Date: June 11, 2020
Type of Contact: Telephone	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement
Person Contacted	
Name: Rawhide Ranchettes Property Owner	Property Owner Stockton, UT 84071

1. Are you aware of the Jacobs Smelter Superfund site and the work that was completed to address environmental contamination? The property owner owns a home in the Rawhide Ranchettes subdivision and moved in December 2009 during a non-time-critical removal that was conducted in the area. The owner's property did not require cleanup, however, and they learned after the fact that the subdivision's soil repository is located adjacent and along the length of their property line.

2. What's your overall impression (your general sentiment) of the work that was completed at the Jacobs Smelter Superfund Site? The property owner says there has been a lot of work done in and around town with a lot more work to do at the smelter areas. The property owner said they serve on the town council and are informed through Site status updates with UDEQ and EPA.

3. Are you aware of any community concerns regarding the Jacobs Smelter Superfund Site? If so, please give details. The property owner says very few people have any health or environmental concerns with the Jacobs Smelter contamination history. The owner would like people to have a greater interest with cleanup areas whether or not they have concerns as little was known when they first moved in.

4. Over the past five years, have there been any events, incidents, or activities at the Jacobs Smelter Superfund Site that concern you? If so, please provide details. At issue with the property owner is that the fencing surrounding the Rawhide Ranchettes repository directly behind their property is damaged and no longer keeps horses out. The gate has been opened and fencing pushed down where horses graze on the grass cover as well as cause problems with her horses. The owner has had to add an electric fence to her property to keep her horses from neighbors' horses trespassing on the repository.

The property owner said the developer contacted her about five years ago, apologized, and said the fence would be fixed and yet nothing has been done. The owner says the horse issue is one thing but to have a repository cap containing a large volume of lead and arsenic soil contamination compromised in any way should warrant more attention. The owner would like UDEQ or EPA help with the developer to secure and fix the fence.

5. 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 Jacobs Smelter Superfund Site? The property owner said the town council is updated regularly by UDEQ and EPA. Mayor Karjola is also a neighbor and they have the opportunity to have conversations any time with whom to contact regarding Jacobs Smelter.

6. Do you have any additional comments, suggestions, or recommendations regarding the Jacobs Smelter Superfund Site? The property owner said they want the repository fencing restored and smelter areas to make the necessary progress and finish.

APPENDIX F – PUBLIC NOTICE

PUBLIC NOTICE



**ENVIRONMENTAL RESPONSE
& REMEDIATION**



Jacobs Smelter Superfund Site Five Year Review

Tooele County, Utah

The Utah Department of Environmental Quality (UDEQ) in cooperation with the U.S. Environmental Protection Agency (EPA) is conducting the fourth Five Year Review of the Jacobs Smelter Superfund Site. The site is located in Tooele County, approximately five miles south of the City of Tooele and includes the Town of Stockton and surrounding areas.

The purpose of a Five Year Review is to determine whether or not cleanup and other actions taken at the site are protective of human health and the environment. The Five-Year Review will include a review of site documents, community interviews, and a site inspection to evaluate all remedy components as well as the status of land-use controls. Upon completion of the review, a report will be made available to the public.

The Stockton area was the center of a silver and base-metal mining, milling and smelting district from the 1860's until 1970's. Historical smelting operations left behind tailings, slag, and other waste products with elevated concentrations of lead and other heavy metals. Cleanup is complete for several areas of the site. Investigation and evaluation of cleanup options in remaining areas is ongoing.

To review previous Five Year Review reports and other site-related files:

The Administrative Record for the Site includes all reports and documents used for the Jacobs Smelter Superfund Site and is available for public review at:

Utah Department of Environmental Quality

Multi Agency State Office Building
195 North 1950 West (First Floor)
Salt Lake City, Utah 84116
Phone: 801-536-4100

Project documents are available online at: <http://eqedocs.utah.gov> using the search phrase "Jacobs Smelter."
Information is also available at the Jacobs Smelter U.S. EPA website: <http://www2.epa.gov/region8/jacobs-smelter> .

If you would like more information on the Five Year Review or participate in an interview, please contact:

Scott Lippitt
UDEQ/DERR Project Manager
Phone: (801) 536-4172
Email: slippitt@utah.gov

Dave Allison
UDEQ/DERR Community Involvement
Phone: (801) 536-4479
Email: dallison@utah.gov

APPENDIX G – STOCKTON ORDINANCE #2000-4

SDMS Document ID



2026374

Ordinance # 2000-4

Excavation and Development within the Jacob Smelter

Sections:

- 1.10 Findings
- 1.20 Applicability
- 1.30 Definitions
- 1.40 Prohibited activity
- 1.50 Permits required
- 1.60 Permit procedures
- 1.70 Performance Standards
- 1.80 Soil testing
- 1.90 Inspection and Maintenance of Permanent Remedy
- 1.100 Appeals
- 1.110 Severability

1.10 FINDINGS.

The United States Environmental Protection Agency (EPA) has identified and designated an area known as the Jacob Smelter Tailing site as being contaminated with mining wastes containing high concentrations of lead and arsenic, and has consequently placed such Site on the EPA's National Priorities List for clean up and remediation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Section 9601 et seq. The EPA has determined that the concentration of lead and arsenic on the Site pose a potential health risk to humans, especially small children and pregnant women. Also, the EPA has formulated and issued a remedy for clean up of the site as published and set forth in a Record of Decision (ROD) dated 29 July 1999.

1.20 APPLICABILITY.

These regulations shall apply to and govern any development or activity, which may cause or contribute to the movement or disturbance of contaminated soil or other material within the boundaries of the Site as identified and designated by the EPA. And as depicted on the official map as maintained in the office at the Stockton Town Hall, 18 North Johnson Street Stockton Utah 84071-0240. Additional maps of the Site shall be maintained in the Offices of the County Clerk and Recorder, the Utah Department of Environmental Quality (DEQ), and Tooele County Health Department.

1.30 DEFINITIONS

As used in this chapter.

- A. "Activity" means any action occurring on, above, or below the surface of the ground within the boundaries of the Site, which results or may result in a disturbance of the permanent remedy applicable to the Site.
- B. "Clean fill" means topsoil or other fill material with lead concentration of 200 mg/kg (parts per million (ppm)) or less.
- C. "Contaminated soil or materials" mean soil or material containing lead concentration greater than 500 mg/kg (ppm) or 70 mg/kg (ppm) arsenic.
- D. "Development" means any construction or man-made change in the use or character of land including but not limited to building, grading, excavating, digging, paving, drilling, demolition work, or planting.

Page # 2 Excavation and Development within the Jacob Smelter

- E. "Hard surface cover" means a non-permeable or semi-permeable barrier overlaying the ground surface such as paving, asphalt, concrete, stone, or wood, and including building and other permanent structures.
- F. "Permanent remedy" means the remedial action plan specified by the EPA pursuant to its ROD for the Site and any subsequently adopted amendments thereto.
- G. "Permanent repository" means a location on Jacob Smelter Operable Unit as designated by the EPA to be utilized for the permanent storage of contaminated soil and material originating within the boundaries of the Site.
- H. "Person" means an individual, Partnership, corporation, association, company, landowner, tenant, occupant, contractor, subcontractor or any public body or political subdivision.
- I. "Site" means the area in the Town of Stockton boundaries as designated by the United State Environmental Protection Agency (EPA) as Operable Unit 2 (OU2) pursuant to the Comprehensive Environmental Response, compensation, and Liability Act, U.S.C. Section 9601 et seq., as amended and as depicted on the official map maintained by the development services division and signed by an official of the EPA.
- J. "Uncontaminated soil or material" means soil or material containing concentration of lead and arsenic less than 200 mg/kg (ppm) and 70 mg/kg (ppm) respectively for vegetable gardens and less than 500 mg/kg (ppm) and 70 mg/kg (ppm) arsenic for all other areas.
- K. "Vegetative cover" means plant life, including but not limited to grass, trees, shrubs, vines, and sod, planted or installed in such a manner so as to prevent or minimize the exposure of ground soil.

1.40 PROHIBITED ACTIVITY

No person shall undertake or conduct or cause to undertake or conduct any activity or development within the Site without first complying with the procedures and performance standards as provided in this chapter.

1.50 PERMITS REQUIRED

No person shall undertake or conduct any activities or development within the Site involving the excavation of more than one cubic yard of soil without first obtaining a permit from the Town of Stockton. Activities or development involving excavation of less than one cubic yard of soil shall not require a permit but shall be subject to the requirements as set forth in Section 1.70 of this chapter.

1.60 PERMIT PROCEDURES

- A. All permits shall be applied for on a form provided by the Town of Stockton. A fee shall be assessed in accordance with the building permit fees schedule. Each applicant for a permit shall at a minimum provide the following information.
 1. The location and nature of the proposed activity or development.
 2. The depth of any proposed excavation and volume of soil or material to be excavated or disturbed.
 3. The dimensions of all surface areas to be disturbed.
 4. The volume of soil or other material to be backfilled on site.
 5. The volume of soil or other material proposed to be disposed of off the excavation site.
 6. The duration of any exposure of soil or material excavated from below a hard surface cover.
 7. The applicant's plans for identification and segregation of clean fill and uncontaminated soil or material from contaminated soil and material during the period of activity or development.

Page #3 Excavation and Development within the Jacob Smelter

8. The applicant's plans for backfilling with uncontaminated soil or material.
9. The applicant's plans for insuring compliance with the performance standards as set forth in section 1.70 of this chapter.
10. Such additional information as determined by the Town of Stockton and the Tooele County Health Department utilizing the performance standards as set forth in Section 1.70 of this chapter

1.70 PERFORMANCE STANDARDS

The following performance standards shall be adhered to and applied to all activity or development within the Site so as to maintain and ensure the integrity of the permanent remedy.

- A. Any disturbed soil or material originating from below a hard surface cover that is to be stored above ground shall be securely contained and covered with a durable non-permeable tarp so as to prevent the leaching of contaminated material onto or into the surface soil. Where such storage is to extend beyond fourteen calendar days, stored soil or material excavated from below the hard surface cover shall be securely fenced to a height of not less than six feet in addition to being covered as herein required. All soil or material excavated from below a hard surface cover, unless as noted below, shall be removed to the permanent repository within the Jacob Smelter Tailings Operable Unit 1 upon approval by the Tooele County Health Department. Disturbed soil or material need not be removed to the permanent repository if the Tooele County Health Department finds that the contamination of the soil or material is less than the 500 mg/kg (ppm) of total lead and less than 70 mg/kg (ppm) arsenic.
- B. No contaminated soil or other material shall be removed, placed, stored, transported, or disposed of outside the boundaries of the Site without having first obtained any and all necessary state and/or federal transportation and disposal permits.
- C. All activity or development shall be accompanied by dust suppression measures such as the application of water or other soil surfactant to minimize the creation and release of dust and other particulate into the air.
- D. No vegetation shall be planted or cultivated within the boundaries of the Site except in established and designated garden beds. Clean fill and uncontaminated soil used in vegetable garden beds shall not be borrowed or taken from any other area within the Site.

1.80 SOIL TESTING.

The Town of Stockton or the Tooele Health Department may require any person undertaking to conduct activity or development within the Site to test any soil or material to establish its total lead (Pb) and arsenic (As) content for purpose of determining the application of any of the provisions of this chapter. All testing shall utilize and adhere to protocols established or approved by the EPA.

1.90 INSPECTION AND MAINTENANCE OF PERMANENT REMEDY.

In addition to all other requirements as set forth in this chapter, the following additional requirements shall apply to the use and maintenance of all lands within the Site, including but not limited to lawns, play areas, and parking lots.

- A. All areas within the Site shall be subject to inspection by the Town of Stockton and the Tooele County Health Department in order to enforce the provisions of this chapter. Inspections shall be done with the consent of the property owner or occupant. If consent is denied, inspection shall be obtained pursuant to a warrant.

Page #4 Excavation and Development with the Jacob Smelter

- B. All unremediated areas under hard surface cover within the Site shall be maintained with a hard surface cover. Except as allowed pursuant to a duly obtained permit issued under this chapter, no person shall alter any part of a hard surface cover absent prior notice to the Town of Stockton.
- C. Any fence, wall, or other barrier installed to limit or prevent access to contaminated areas within the Site shall be maintained in such a manner so as to insure its effectiveness against trespass or other intrusion.

1.100 APPEALS

- A. Any person adversely effected or aggrieved by a decision of the Town of Stockton or the Tooele County Health Department made pursuant to this chapter may appeal such decision to the Town Council. Said appeal shall be filed in writing, and in triplicate, stating the reasons for the appeal with Tooele County Health Department within ten days following the date upon which the decision is made.
- B. The Tooele County Health Department shall notify the Town Council of the date of review, in writing, at least seven days proceeding the date set for hearing so that the record may be prepared for the hearing.
- C. The Town Council, after proper review of the decision of the Tooele County Health Department may affirm, reverse, alter or remand for further review and consideration any action taken by the Town of Stockton or the Tooele County Health Department.

1.110 SEVERABILITY.

If any provision or clause of this chapter or the application thereof to any person or circumstances is held to be unconstitutional or otherwise invalid by any court of competent jurisdiction, such invalidity shall not affect other sections, provisions, clauses or applications hereof which can be implemented without the invalid provision, clause or application hereof. To this end, the provisions and clauses of this chapter are declared to be severable.

SECTION II In accordance with Section 96211 (e) of Title 42 of the United States Code, this ordinance shall not require or be construed to require the obtaining of a permit by any agency employee, or contractor of the United States for that portion of any removal or remedial action conducted entirely within the Site where such action is selected and carried out in compliance with the provisions of CERCLA, 42 U.S.C. Section 9601, et seq., and the permanent remedy.

SECTION III This ordinance shall not have any effect on existing litigation and shall not operate as an abatement of any action or proceeding now pending under or by virtue of the ordinance repealed or amended as herein provided, and the same shall be construed and concluded under such prior ordinances.

SECTION IV This ordinance shall become effective fifteen days after its passage and upon at least one publication in a newspaper published and having general circulation in Tooele County, except that the following provisions of the ordinance shall become effective and apply to any given parcel or land has been certified by the Remedial Project Manager for the EPA fully remediated in accordance with the permanent remedy and written notice thereof has been provided to the affected landowners. The Environmental Protection agency's written notice to the affected landowners shall cite the following:

- (1) Section 1.70, Performance Standards, Vegetable and Flower Gardening or Cultivation;
- (2) Section 1.90, Inspection and Maintenance of Permanent Remedy.

FROM : TOWN OF STOCKTON

FAX NO. : 4358339831

Nov. 27 2000 02:04PM P6

Page #5 Excavation and Development with the Jacob Smoller

Approved and Adopted this 8th day of May, 2000

Bany G. Shaw
Mayor

ATTEST:

Ellen L. Montagne
Clerk



FROM : TOWN OF STOCKTON

FAX NO. : 4358339031

Nov. 27 2000 02:04PM P7

EXCAVATION PERMIT

Town of Stockton
18 North Johnson Street
P.O. Box 240
Stockton, Utah 84071
Phone # (435) 882-3877 (435) 833-9031

Permit for Excavation is authorized to: _____

Excavation Contractors State License Number _____

Type Of License _____

Excavation permission is limited to the following area of the Stockton Street right-of-way:

It shall be the contractor's responsibility to post a \$2,000.00 bond per project, with the Town of Stockton for a two year period covering workmanship and materials, or have the options to post a \$10,000.00 annual bond for 3 years starting from January 1 of each year. Plus the Following:

Address of Excavation: _____

Purpose of Excavation: _____

A \$25.00 per one hundred lineal footage of excavation within the street right-of-way.

Total lineal footage of excavation if? _____ X \$25.00= _____

Date Paid _____

Amount Paid _____

Signature of Applicant

Signature of Water Department