THIRD FIVE-YEAR REVIEW REPORT FOR
VASQUEZ BOULEVARD AND I-70 SUPERFUND SITE
DENVER COUNTY, COLORADO

Prepared by

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Region 8
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Date

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LIST OF ABBREVIATIONS AND ACRONYMS

ASARCO	American Smelting and Refining Company Incorporated
CAG	Community Advisory Group
CDPHE	Colorado Department of Public Health and the Environment
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FYR	Five-Year Review
IC	Institutional Control
LUCIP	Land Use Control Implementation Plan
µg/dL	Micrograms per Deciliter
mg/kg	Milligrams per Kilogram
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
UU/UE	Unlimited Use and Unrestricted Exposure

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I. INTRODUCTION

Commented [TS1]: Jesse – in your email you indicated that you added a Spanish paragraph in this version, but it does not appear to be here?

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

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act Section 121, consistent with the National Contingency Plan (40 Code of Federal Regulations Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the third FYR for the Vasquez Boulevard and I-70 Superfund site (the Site), also known as the VB/I-70 site. The triggering action for this statutory review is the completion date of the previous FYR. The FYR 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).

The Site consists of three operable units (OUs). This FYR addresses one of the three OUs. OU1 addresses residential soil cleanup. OU2 and OU3 are not addressed in this FYR because remedial actions have not yet been implemented for those OUs. OU2 addresses the former Omaha & Grant Smelter location. OU3 addresses the former Argo location smelter.

EPA remedial project manager (RPM) Jesse Aviles led the FYR. Participants included community involvement coordinator Jennifer Chergo, and Treat Suomi and Brice Robertson from Skeo (EPA FYR support contractor). The review began on 12/10/2018.

EPA has determined that the residential soil cleanup at the Vasquez Boulevard and I-70 Superfund Site is protective of human health and the environment and allows for residential use. For properties whose owners did not allow soil sampling or cleanup, notices were filed in the county property records to notify present, prospective and future owners and current residents that elevated levels of lead or arsenic are present, or may be present.

Site Background

The 4.5-square-mile site area was a major smelting center in the north-central section of the city and county of Denver, Colorado (Figure C-1). Beginning as early as the 1870s, two smelting plants – Omaha & Grant and Argo – operated at the Site. They refined gold, silver, copper, lead and zinc until the early 1900s, when operations ceased. Afterwards, residential, commercial and industrial development of the area followed. Smelter operations deposited heavy metals in the area, contaminating soils.

OU1 is defined as residential yards in the site area with levels of lead and/or arsenic in surface soil that present an unacceptable risk to human health and includes all or part of five neighborhoods – Cole, Clayton, Swansea/Elyria, southwest Globeville and Five Points (Upper Larimer and Upper Curtis Park). There are approximately 4,500 residential properties in OU1. Most are single-family homes. There are also some multi-family and apartment building properties, schools and parks in OU1. OU1 only includes residential properties, OU2 and OU3 include other site properties. OU2 and OU3 are illustrated in Figures C-1 and C-2. Site and surrounding land uses include residential, commercial and industrial areas. Appendix A includes a list of documents reviewed during this FYR. Appendix B provides a chronology of site events. Figure C-2 provides a more detailed map of the Site.

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FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Vasquez Boulevard and I-70		
EPA ID: CO0002259588		
Region: 8	**State:** CO	**City/County:** Denver/Denver
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	**Has the Site achieved construction completion?** No	
REVIEW STATUS		
Lead agency: EPA		
Author name: Jesse Aviles with contractor support provided by Skeo		
Author affiliation: EPA Region 8 and Skeo		
Review period: 12/10/2018 - 7/31/2019		
Date of site inspection: 4/8/2019		
Type of review: Statutory		
Review number: 3		
Triggering action date: 9/30/2014		
Due date *(five years after triggering action date)*: 9/30/2019		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

In July 1993, the state of Colorado and the American Smelting and Refining Company Incorporated (ASARCO) entered into a Consent Decree for contamination at the ASARCO Globe Smelter site, a nearby smelter site. As part of the settlement agreement, ASARCO had to collect soil samples in residential yards in the Globeville neighborhood. In conducting these samples, ASARCO continued to find random occurrences of arsenic at elevated levels in residential yards at increasingly greater distances from the Globe plant smelter location. As a result, the Colorado Department of Public Health and the Environment (CDPHE) began a limited soil sampling program in the Elyria and Swansea neighborhoods, located just east of the Globeville neighborhood, across the South Platte River. The results indicated that high concentrations of arsenic and lead in soil extended far beyond the Globeville neighborhood. CDPHE requested immediate assistance from EPA following these results. In 1998, EPA mobilized an emergency response team to conduct extensive soil sampling efforts and time-critical removal actions. Soil sampling efforts showed that soils at many residential properties in OU1 had concentrations of arsenic or lead at unacceptable levels. As a result, EPA placed the Site on the Superfund program's National Priorities List (NPL) in July 1999.

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EPA performed a risk assessment as part of OU1's 2001 remedial investigation/feasibility study (RI/FS). During the RI/FS, extensive residential soil sampling also took place. The risk assessment identified that the principal threats posed by contaminants at the Site included residential incidental ingestion of soil and dust in and about the home and yard, and residential ingestion of home-grown vegetables. EPA also determined that there was a range of possible sources for the contamination, which included smelting operations, lead paint and pesticide application, among others. Key RI and risk assessment findings confirmed that metals concentrations were highest in the first 2 inches of soil and decreased with depth with hardly any contamination found below 6 inches. Primary contaminants of concern identified by the risk assessment included lead and arsenic.

Response Actions

In September 1998, EPA issued an Action Memorandum that established a basis for conducting a time-critical removal action based on emergency response sampling efforts at residential properties in OU1. The memorandum required the removal and replacement of soil at any residential property with an average arsenic soil concentration greater than 450 milligrams per kilogram (mg/kg) and/or an average lead soil concentration greater than 2,000 mg/kg. In October and November 1998, EPA conducted time-critical soil removals at 18 residential properties. After additional investigations from August 1999 through November 2000, EPA conducted additional time-critical removal activities at 30 residential properties.

In March 2003, EPA issued a second Action Memorandum that established the basis for conducting a non-time-critical removal action at residential properties. The memorandum required the removal and replacement of soil at any residential property with an average arsenic soil level greater than 240 mg/kg and/or average lead soil levels greater than 540 mg/kg. In late 2003, EPA conducted non-time-critical removal actions at 133 residential properties.

EPA selected a remedy for contaminated residential soils in the Site's OU1 Record of Decision (ROD) in September 2003 and updated it in an Explanation of Significant Differences (ESD) in September 2014. The ROD identified the following remedial action objectives (RAOs) for arsenic and lead in soil:

RAOs for Arsenic in Soil

- For residents living at the Site, prevent exposure to soil containing arsenic at levels predicted to result in an excess lifetime cancer risk associated with ingestion of soil which exceeds 1×10^{-4} (one in 10,000) using reasonable maximum exposure assumptions.
- For residents living at the Site, prevent exposure to soil containing arsenic in levels predicted to result in a chronic or sub-chronic hazard quotient associated with ingestion of soil which exceeds 1, using reasonable maximum exposure assumptions.
- For children with soil pica behavior[1] who live at the Site, reduce the potential for exposures to arsenic in soil that result in acute effects.

RAOs for Lead in Soil

- Limit exposure to lead in soil such that no more than 5 percent of young children (72 months or younger) who live on site are at risk for having blood lead levels higher than 10 micrograms per deciliter (µg/dL) from such exposure. This provides 95 percent confidence that children exposed to lead in soil will be protected.

The selected remedy included the following primary components:

- Implementation of a soil sampling program for all residential properties that had not been adequately tested.
- Implementation of a community health program.

[1] Pica behavior is a rare behavior in which children intentionally eat unusually large amounts of soil.

- Removal and off-site disposal of contaminated soils at residential properties with the highest soil composite concentration greater than 70 mg/kg arsenic and/or the average lead concentration greater than 400 mg/kg to a depth of 12 inches and backfilling of excavated areas with clean soil.
- Implementation of institutional controls for residential properties where the property owner denied EPA access to sample or remove soil.

Status of Implementation

Soil Sampling Program

Prior to the ROD for OU1, EPA sampled approximately 75 percent of the residential properties within the site boundary for lead and arsenic. For properties not adequately tested during this time, EPA implemented a program of ongoing soil sampling. The 2001 RI determined that outdoor soils were not a significant contribution to the levels of arsenic and lead in indoor dust, so indoor dust sampling was not necessary. The soil sampling program began with the identification of properties that required sampling. Once permission had been obtained from property owners to conduct the sampling, soil samples were collected from each property and analyzed for lead and arsenic. The results were provided to the property owner and evaluated to determine if a soil removal was needed. If a soil removal was needed, the property was referred to the contractor conducting the soil removal. Soil sampling as part of the remedial action took place from 2005 to 2015, with a majority taking place in 2005 and 2006. Due to refusal by some homeowners to allow EPA to sample their properties, not all residential properties were sampled.

Residential Soil Removal

Soil removals occurred at properties that had arsenic soil concentrations greater than 70 mg/kg or that had lead soil concentrations greater than 400 mg/kg. For properties where soil removal was conducted, all accessible soils were removed to a depth of 12 inches. Since the contamination was only found in the surface soil, EPA considered excavation to 12 inches to be adequate for removing all lead and arsenic contamination in residential soils. From 2004 through 2015, EPA and ASARCO conducted soil removals at a total of 633 properties. Table 1 summarizes the number of residential properties remediated each year.

Table 1: Summary of Remediated Properties, by Year

Year	Number of Properties Remediated
2004	326
2005[a]	212
2006[a]	65
2008	3
2013	21
2014	4
2015	2
Total:	**633**

Notes:
a. ASARCO completed the remediation of 62 properties in 2005 and 38 properties in 2006 (100 properties total) in accordance with the Consent Decree. These actions have been combined with EPA actions for a total of properties remediated in these years.

For soil removals conducted in 2004 through 2008, EPA transported contaminated soil to the nearby ASARCO Globe Smelter site for disposal. This soil was placed with the soil removed during the ASARCO Globe Smelter site residential cleanup. ASARCO agreed to conduct all maintenance of the residential soils repository as part of the ASARCO Globe Smelter site actions. For soil removals conducted in 2013 through 2015, EPA transported and disposed of contaminated soils at the Denver and Arapahoe Disposal site in Aurora, Colorado, because the repository at the ASARCO Globe Smelter site had been closed.

After placement of clean soil in the remediated residential yards, EPA landscaped each property in accordance with the restoration plan agreed upon by the homeowner. If sod was included in the restoration plan, then the property was watered for a 30-day period to establish the new sod.

EPA conducted exterior lead-based paint assessments at all properties that received soil removal due to elevated lead concentrations and concern of recontamination. A total of 312 properties met the criteria for lead-based paint assessments. During the assessments, EPA tested all structures, including garages, fences and sheds with chipping and peeling paint, for lead-based paint. If peeling of lead-based paint on the property was sufficient to cause recontamination of the soil above the action level, EPA then performed an exterior lead-based paint abatement at the property. As a result of the assessments conducted, 128 homes received exterior lead-based paint abatements.

Community Health Program

EPA developed a community health program in consultation with an advisory stakeholders group for the Site; the city and county of Denver implemented the program. The community health program was made up of two activities: biomonitoring services for children and community outreach.

Biomonitoring

The primary goal of the biomonitoring program was to test young children and pregnant women to determine if they had been exposed to lead and/or arsenic. This was accomplished through the following tasks:

- Establish and staff periodic testing clinics in each neighborhood.
- Collect and analyze biomonitoring samples.
- Report results to each participant.
- Recommend environmental and medical follow-up actions to parents, if needed.

The city and county of Denver held 38 clinics between November 2004 and October 2006. During this time, 661 individuals participated in the biomonitoring program. Twenty individuals were identified with elevated blood lead above the Centers for Disease Control and Prevention concentration of 10 µg/dL. The city and county of Denver referred the parents of children with elevated blood lead concentrations to organizations that were able to provide environmental and medical follow-up actions.

Community Outreach

The city and county of Denver conducted community outreach on a door-to-door canvassing outreach model, with community health workers providing individual health education. The community health workers were community members that the city and county of Denver trained to provide health information concerning lead and arsenic exposure and serve as a resource contact. The community health workers were trained to provide the following information:

- Health effects of lead.
- Health effects of arsenic.
- Soil pica behavior.
- Soil sampling and soil removal aspects of the remedy.
- Biomonitoring program.

Community health workers conducted home visits at 94 percent of the homes within the site boundaries. In addition to home visits, outreach was conducted to real estate agents and contractors that live or work within the site communities by mailing them relevant information.

In February 2017, EPA issued the Final Remedial Action Report, which documented remedial actions completed at the Site. In November 2018, CDPHE concurred with EPA's Notice of Partial Deletion for OU1. EPA and CDPHE are currently working to delete OU1 from the NPL by 2020.

Institutional Control (IC) Review

In 2014 and 2015, EPA implemented institutional controls for 72 residential properties in OU1 where the property owner denied EPA access to sample and/or remove soil. EPA filed a Notice of Potential Environmental Conditions for residential properties where EPA never sampled and a Notice of Environmental Conditions for properties where soil removal was not conducted even though it was determined to be necessary based on EPA's soil sampling results for lead and/or arsenic. These notices are filed with the City and County of Denver Office of the Clerk and Recorder in the title records and serve to notify present, prospective and future owners and current residents of the potential for elevated levels of lead or arsenic in the properties' soils. In addition, the 2008 Land Use Control Implementation Plan (LUCIP) is also in place across Denver. LUCIP tracks properties with waste left in place and flags a site when a building permit is pulled on that property under the city and county of Denver's building permit program. When this happens, EPA is notified and provides the prospective builder with information about potential risks at that property. During the FYR period, the EPA RPM was notified several times of this occurrence and provided information to property owners or current residents specific to their situation. In most cases, the properties were UU/UE and there was no action required. Beginning in 2018, EPA began referring these individuals to CDPHE as part of ongoing O&M.

In October 2014, EPA filed a Withdrawal Notice to remove the Notice of Potential Environmental Conditions/Notice of Environmental Conditions on 17 properties where ICs were implemented in 2014 but are no longer needed. Three of these 17 properties were remediated in 2008, so the Notice of Environmental Conditions was no longer required. For the remaining 14 properties, in 2014 the owners agreed to give EPA access to sample and/or clean up their properties. EPA conducted sampling at these properties from July through September 2014. Based on the sampling results, three of the 14 properties required cleanup, which was completed by October 2014. After these three properties were cleaned up, EPA filed a Withdrawal Notice on each of the 14 properties.

On July 2, 2019 EPA talked with staff at Denver's Office of the Clerk and Recorder. This discussion resulted in determining that everything in the Denver property database is indexed by name, not by property address or property parcel. Companies searching for information must provide an owner name to find information. Even liens to the deed are searched by the name. After researching properties that have had an owner change since the institutional control was filed it became clear that the new property record with the new owner does not link back to the original institutional control on the property. Therefore, new owners of properties may not get the needed information regarding the institutional controls on the property.

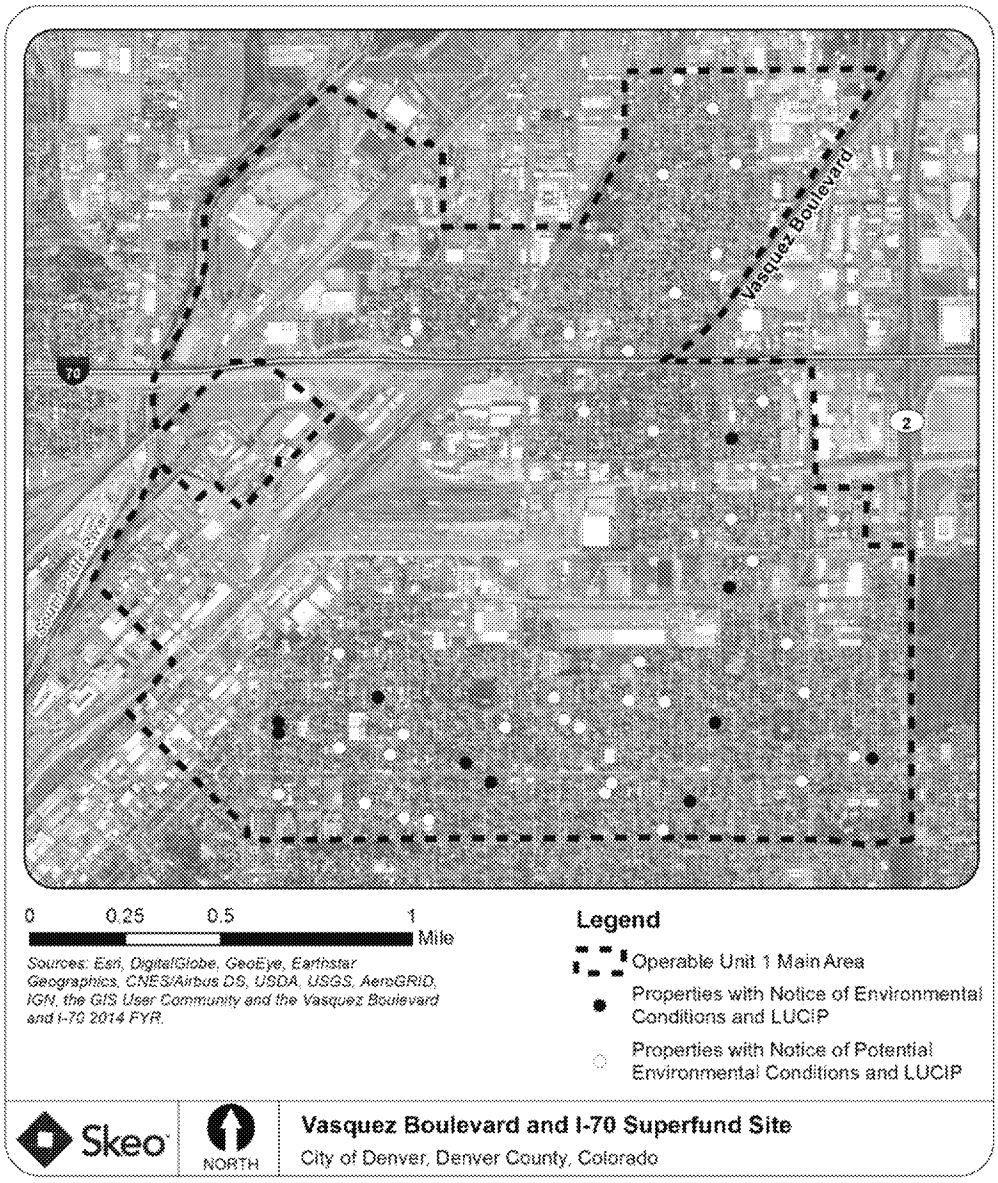
Table 2 contains a summary of implemented institutional controls within OU1. Tables H-1 and H-2 in Appendix H contain a detailed list of properties with implemented institutional controls. Figure 1 contains a map of parcels within OU1 with institutional controls.

Table 2: Summary of 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 Parcels	IC Objective	Title of IC Instrument Implemented
Soils – OU1 residential properties where EPA was not able to sample because access was not granted by property owner	Yes	Yes	See Figure 1 and Table H-2 for a list of impacted parcels.	Notify present, prospective and future owners and current residents of the potential for elevated levels of lead or arsenic in the properties' soils.	Notice of Potential Environmental Conditions
				Track property parcels with waste left in place and flag the Site when a building permit is pulled on	Land Use Control Implementation Plan (LUCIP)

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 Parcels	IC Objective	Title of IC Instrument Implemented
				that property under the city and county of Denver building permit program.	
Soils – OU1 residential properties where soil removal is warranted but could not be conducted because access was not granted by property owner	Yes	Yes	See Figure 1 and Table H-1 for a list of impacted parcels.	Notify present, prospective and future owners and current residents of the elevated levels of lead or arsenic in the properties' soils.	Notice of Environmental Conditions
				Track property parcels with waste left in place and flag the Site when a building permit is pulled on that property under the city and county of Denver building permit program.	Land Use Control Implementation Plan (LUCIP)

Figure 1: Institutional Control Map[2]



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding EPA's response actions at the Site.

Systems Operations/Operation and Maintenance (O&M)

O&M activities are required for the institutional controls added to the remedy in the 2014 ESD. O&M activities include monitoring the institutional controls and preparing and mailing annual informational letters. Starting in 2015, EPA and CDPHE began sending annual information letters to property owners and current residents for the 53 properties with institutional controls[3]. Each letter provides specific information on the individual property and how to minimize contact with and exposure to potentially contaminated soils. CDPHE has been responsible for the annual mailings since 2016. During the FYR period, CDPHE completed the annual mailings in September 2016, December 2017 and April 2019. Annual informational letters are currently sent out in English only. Appendix I contains two sample informational letters for both properties that did not consent to sampling and those that consented to sampling but not cleanup.

III. PROGRESS SINCE THE PREVIOUS REVIEW

This section includes the protectiveness determination and statement from the previous FYR Report.

Table 3: Protectiveness Determination/Statement from the 2014 FYR Report

OU #	Protectiveness Determination	Protectiveness Statement
1	Protective	The remedy at OU1 is protective of human health and the environment. Contaminated soils in residential yards have been excavated and disposed of off site and institutional controls have been implemented for the small number of residential properties where access to sample and/or cleanup was not granted.

There were no issues or recommendations included in the 2014 FYR Report.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Community Involvement and Site Interviews

A public notice was made available by publishing an English version in the Denver Post on 4/11/2019. An English and Spanish version was published in El Semanario on 4/18/2019, respectively (Appendix D). It stated that the FYR was underway and invited the public to submit any comments to EPA. The results of the review and the report will be made available at the Site's information repository, Valdez-Perry Branch Library, located at 4690 Vine Street Denver, Colorado 80216.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy implemented to date. Interview participants included local government officials, members of the Community Advisory Group (CAG) and local residents. The interviews are summarized below. Appendix E includes the interview responses.

As a result of the Community Involvement Plan update occurring in conjunction with the FYR, the EPA community involvement coordinator and the EPA RPM conducted interviews with nine individuals, which included local government officials, members of the CAG, residents living within the boundaries of OU1 and regional community members. Several residents expressed that the OU1 cleanup was majorly beneficial for the area. Some interviewees also expressed concern that the cleanup was not thorough enough, and that EPA should not consider delisting OU1 from the NPL at this time. Additionally, some respondents expressed that EPA has not

[2] Figure 1 does not show the smaller OU1 subarea to the west of the main OU1 area as there are no institutional controls on properties in this subarea.

[3] The 2017 Remedial Action report lists 55 properties with ICs. However, on September 12, 2017 EPA filed withdrawals for two properties.

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done a great job of communicating information and activities at the Site with OU1 residents. Several residents also expressed that they are concerned with development projects occurring around the Site and how digging efforts for those projects could potentially expose contaminated soil. Many residents expressed that they would like more communication and information about the Site through avenues like flyers, EPA attendance at public meetings, keeping the website up-to-date and social media posts. Appendix E contains a more detailed summary of these interview responses.

Data Review

There is no ongoing sampling or monitoring for the OU1 remedy, so no data needed to be reviewed.

Site Inspection

The site inspection took place on 4/8/2019. Participants included EPA RPM Jesse Aviles, and Treat Suomi and Brice Robertson from Skeo (EPA FYR support contractor). The purpose of the inspection was to assess the protectiveness of the remedy. The site inspection checklist is included in Appendix F. Site inspection photographs are included in Appendix G.

Participants began by driving around parts of the OU1 residential area. There is nothing to specifically inspect for OU1 since contaminated soils removed from the residential properties in OU1 were disposed of off-site and, except for the residential properties where access was denied to sample or conduct a soil removal, all other residential properties have been remediated or sampled and found not to need remediation. For the small number of properties where access was denied, institutional controls are in place and annual outreach occurs in the form of letters. There is construction in the area related to the Central 70 Project (Interstate 70 expansion). Participants then drove to the OU2 area and noted the construction for the current renovation of Globeville Landing Park. Lastly, participants drove to the document repository at the Valdez-Perry Branch Library to view what documents were available for the public. The repository contained all historical documents, including the 2014 FYR, as well as more recent documents including the OU1 deletion notice. EPA has noted the need to regularly update and replace this information due to it frequently disappearing.

V. TECHNICAL ASSESSMENT

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

Question A Summary:

Yes. The selected remedy is functioning as intended by the 2003 ROD, as modified by the 2014 ESD. There are no complete exposure pathways at OU1. After remedy selection, EPA continued sampling as part of a soil sampling program. For those properties with lead and/or arsenic concentrations above action levels, removal of contaminated residential soils with off-site disposal prevents direct contact with contaminated soils. EPA removed contaminated soil at a total of 814 residential properties. Implementation of institutional controls at residential properties where sampling and/or soil removal was not consented to by the property owners notifies present, ~~prospective and future~~ property owners and current residents of the contaminated soils or potentially contaminated soils at the property. However, because these notices are filed by owner name and may not be found when doing a record search in Denver's property database, new owners of these properties may not receive the institutional control information during the real estate transaction, preventing them from making an informed decision on the property they are buying. In order to ensure long term protectiveness EPA is investigating ways to improve the institutional controls on these properties.

Currently, 53 residential properties within OU1 have either a Notice of Potential Environmental Conditions or a Notice of Environmental Conditions. In addition, the LUCIP is also in place across Denver, which tracks properties with waste left in place and flags the Site when a building permit is pulled on that property under the city and county of Denver building permit program. During cleanup actions, EPA implemented a community health program, which included a biomonitoring and a community outreach portion. The 2014 ESD required O&M activities for implemented institutional controls. These annual activities include monitoring the institutional

controls, reviewing property records for the properties that have institutional controls and mailing annual informational letters. Starting in 2015, EPA and CDPHE began sending the annual information letters to property owners and current residents for the 53 properties with institutional controls. In February 2017, EPA issued the Final Remedial Action Report, which documented remedial actions completed at OU1. EPA and CDPHE are currently working to delete OU1 from the NPL by 2020.

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

Question B Summary:
Yes, the exposure assumptions, toxicity data, cleanup levels and RAOs used at the time of remedy selection remain valid. There have been no significant changes in the residential neighborhoods that compose OU1, so there are no expected changes to the physical conditions that make up OU1 that would affect the exposure assumptions laid out in the 2003 ROD. EPA selected conservative cleanup levels in the 2003 ROD for both lead and arsenic. The cleanup levels adopted were lower than levels originally proposed to be protective based on the baseline human health risk assessment. The arsenic cleanup level remains valid because the carcinogenic and noncarcinogenic toxicity values have not changed since the 2003 ROD.[4] The 2003 ROD developed a cleanup goal that was based on site-specific relative bioavailability and percent of fine fraction versus the bulk fraction of soil.

EPA's 2016 Office of Land and Emergency Management (OLEM) memorandum "Updated Scientific Considerations for Lead in Soil Cleanups" [OLEM Directive 9200.2-167] indicates that there is sufficient evidence that adverse health effects are associated with blood lead levels (BLLs) at less than 10 µg/dL. The validity of the 2003 ROD cleanup goal for lead was evaluated as part of this FYR because the goal was based on a target BLL of 10 µg/dL. EPA completed a site-specific lead cleanup goal analysis in 2018[5] using OLEM's recommended updates to the lead model along with information on site-specific bioavailability and soil properties (e.g., lead enrichment in the fine fraction and soil-dust relationship). Based on the revised lead model inputs, the model predicts that the average BLL would be less than 5 µg/dL based on post-cleanup lead concentrations in soil. The RAOs identified in the 2003 ROD are also still valid; implementation of the remedy has effectively prevented residential exposure to arsenic and lead-contaminated soils.

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

No other 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 FYR:
~~OU1~~None

Issues and Recommendations Identified in the FYR:
~~None.~~

[4] Cancer oral slope factor and the oral reference dose, 1.5 mg/kg/day^{-1} and 0.0003 mg/kg/day, respectively as presented in the 1993 ROD remain the same oral toxicity values as presented in EPA's November 2018 Regional Screening Level table.
[5] Lead Site-Specific Consultation for Deletions. Vasquez Boulevard and I-70. Prepared by EPA. July 2018.

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OU: 1	Issue Category: Institutional Controls			
	Issue: Some institutional controls were filed by property owner name and may not be found during property record research in Denver.			
	Recommendation: Evaluate ways to ensure the institutional controls are searchable in the Denver property database.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	EPA	EPA	9/30/2021

OTHER FINDINGS

An additional recommendation was identified during the FYR. This recommendation does not affect current and/or future protectiveness.

- Annual institutional control informational letters should be sent out in both English and Spanish.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement	
Operable Unit: OU1	*Protectiveness Determination:* Protective
Protectiveness Statement: The remedy at OU1 currently protects ~~is protective of~~ human health and the environment because the remedy has been implemented and is functioning as intended by the 2003 ROD and 2014 ESD. Residential soil sampling has been conducted across OU1 properties where possible, a community health program was implemented, contaminated residential soils have been excavated and disposed of off site, and institutional controls have been implemented for residential properties where access to sample and/or clean up was not granted. However, in order for the remedy to be protective in the long-term, EPA will evaluate ways to ensure the institutional controls are searchable in the Denver property database.	

VIII. NEXT REVIEW

The next FYR Report for the Vasquez Boulevard and I-70 Superfund site is required five years from the completion date of this review.

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APPENDIX A – REFERENCE LIST

Concurrence of Partial Deletion of Vasquez Boulevard and I-70 Superfund Site. Colorado Department of Public Health and Environment. November 2, 2018.

Explanation of Significant Differences, Operable Unit 1, Vasquez Boulevard and I-70 Superfund Site, Denver, Colorado. EPA Region 8. September 2014.

Final Institutional Control Implementation and Assurance Plan, Vasquez Boulevard and I-70 Superfund Site, Denver, Colorado. Prepared for EPA Region 8 and U.S. Army Corps of Engineers, Omaha District by CB&I Federal Services LLC. November 2016.

Final Remedial Action Report, Vasquez Boulevard and I-70 Superfund Site, Denver, Colorado. Prepared for EPA Region 8 and U.S. Army Corps of Engineers, Omaha District by CB&I Federal Services LLC. February 2017.

Lead Site-Specific Consultation for Deletions. Vasquez Boulevard and I-70 Superfund Site, Denver, Colorado. EPA Region 8. July 2018.

Memorandum of Understanding – Land Use Control Implementation Plan (LUCIP), Denver, Colorado. City and County of Denver and State of Colorado. November 18, 2008.

Record of Decision, Operable Unit 1, Vasquez Boulevard and I-70 Superfund Site, Denver, Colorado. EPA Region 8. September 25, 2003.

Second Five-Year Report, Vasquez Boulevard and I-70 Superfund Site, Denver, Colorado. EPA Region 8. September 2014.

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APPENDIX B – SITE CHRONOLOGY

Table B-1: Site Chronology

Event	Date
The Omaha & Grant and Argo smelting plants refined gold, silver, copper, lead and zinc at the Site	1870-early 1990s
CDPHE began a limited soil sampling program in the Elyria and Swansea neighborhoods	1997
CDPHE requested EPA assistance following results of the limited soil sampling program; EPA mobilized an emergency response team to conduct extensive soil sampling efforts and time-critical removal actions at residential properties where contaminated soil posed immediate health risks	1998
EPA began Phase 1 and Phase II soil sampling on residential properties	March 1998
EPA completed Phase 1 and Phase II soil sampling on residential properties	August 1998
EPA issued an Action Memorandum for a time-critical removal action	September 1998
EPA began time-critical soil removal actions	October 1998
EPA completed time-critical soil removal actions	November 1998
EPA began the OU1 RI/FS	December 17, 1998
EPA placed the Site on the NPL	July 22, 1999
EPA began Phase III soil sampling	August 1999
EPA completed Phase III soil sampling	November 2000
EPA finalized the RI Report and the baseline human health risk assessment	July 2001
EPA finalized the FS Report	October 1, 2001
EPA issued an Action Memorandum for non-time-critical soil removal actions	March 6, 2003
EPA completed the remedial design for the soil removal component of the OU1 remedy	March 14, 2003
EPA completed the remedial design for the community health component of the OU1 remedy	March 27, 2003
EPA conducted non-time-critical removal actions	July 2003
EPA signed the OU1 ROD	September 25, 2003
EPA, CDPHE and ASARCO entered into a Consent Decree for some OU1 remedial actions	January 21, 2004
EPA began OU1 remedial actions	March 31, 2004
EPA completed non-time-critical soil removal actions	March 2004
EPA issued the Final Site Report detailing soil sampling and soil removal activities through 2006	2007
EPA issued the Final Site Report Addendum detailing soil sampling and soil removal activities in 2008	August 2008
EPA signed the Site's first FYR Report	September 30, 2009
EPA began additional soil sampling at previously unaddressed properties	July 2012
EPA began soil removal activities at previously unaddressed properties	August 2013
EPA completed additional soil sampling at previously unaddressed properties	September 2013
EPA began filing site institutional controls for unaddressed properties with the city and county of Denver Office of the Clerk and Recorder	June 2014
EPA issued the OU1 ESD and signed the Site's second FYR Report	September 30, 2014
EPA completed soil removal activities at previously unaddressed properties	June 2015
EPA finalized site institutional controls for unaddressed properties with the city and county of Denver Office of the Clerk and Recorder	July 2015

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Event	Date
EPA issued the Final Sampling and Construction Site Report Addendum for soil sampling and soil removal activities from 2012 through 2015	November 2015
EPA issued the Site's final Remedial Action Report	February 22, 2017
CDPHE concurred with EPA's Notice of Partial Deletion for OU1	November 2018

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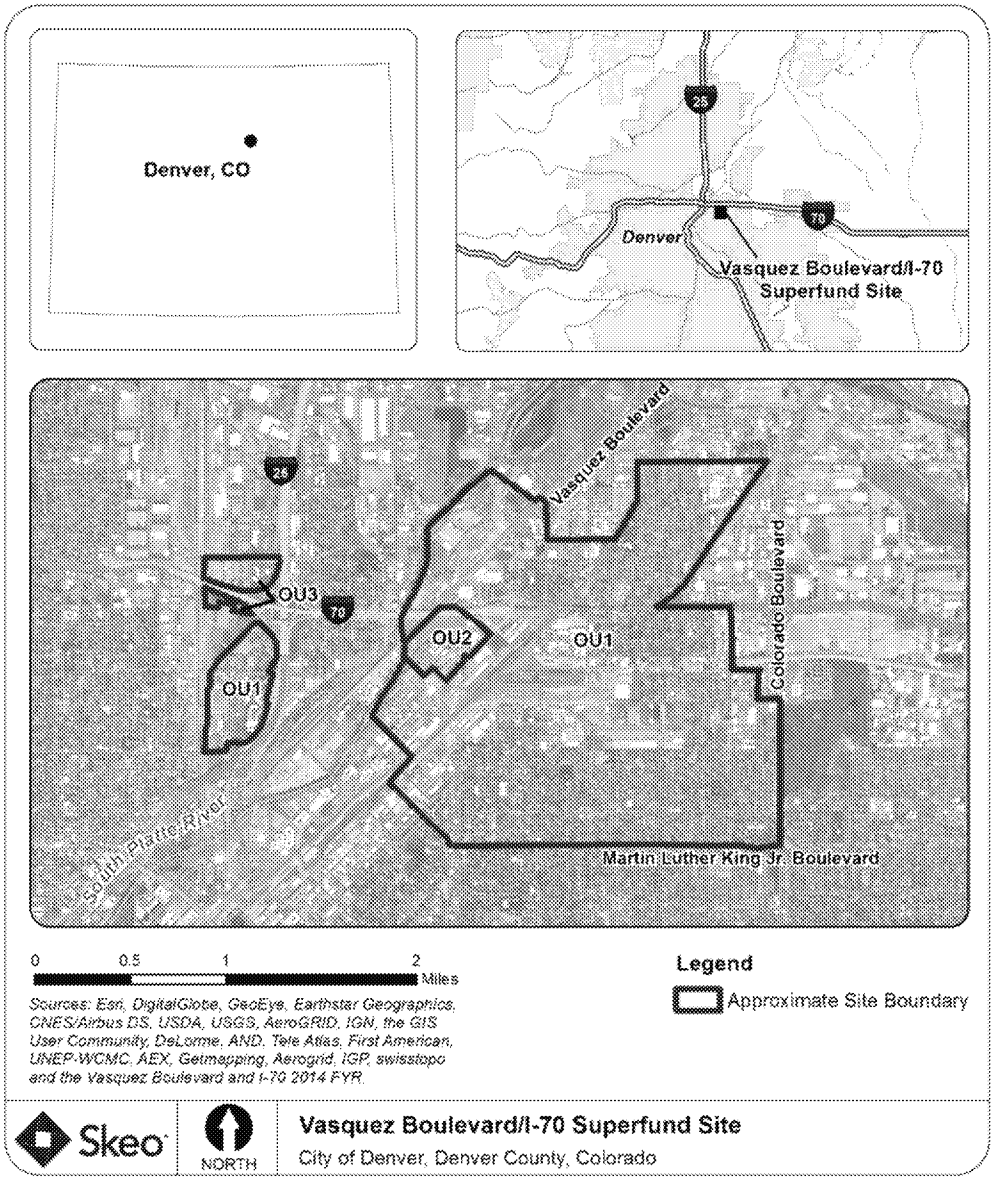
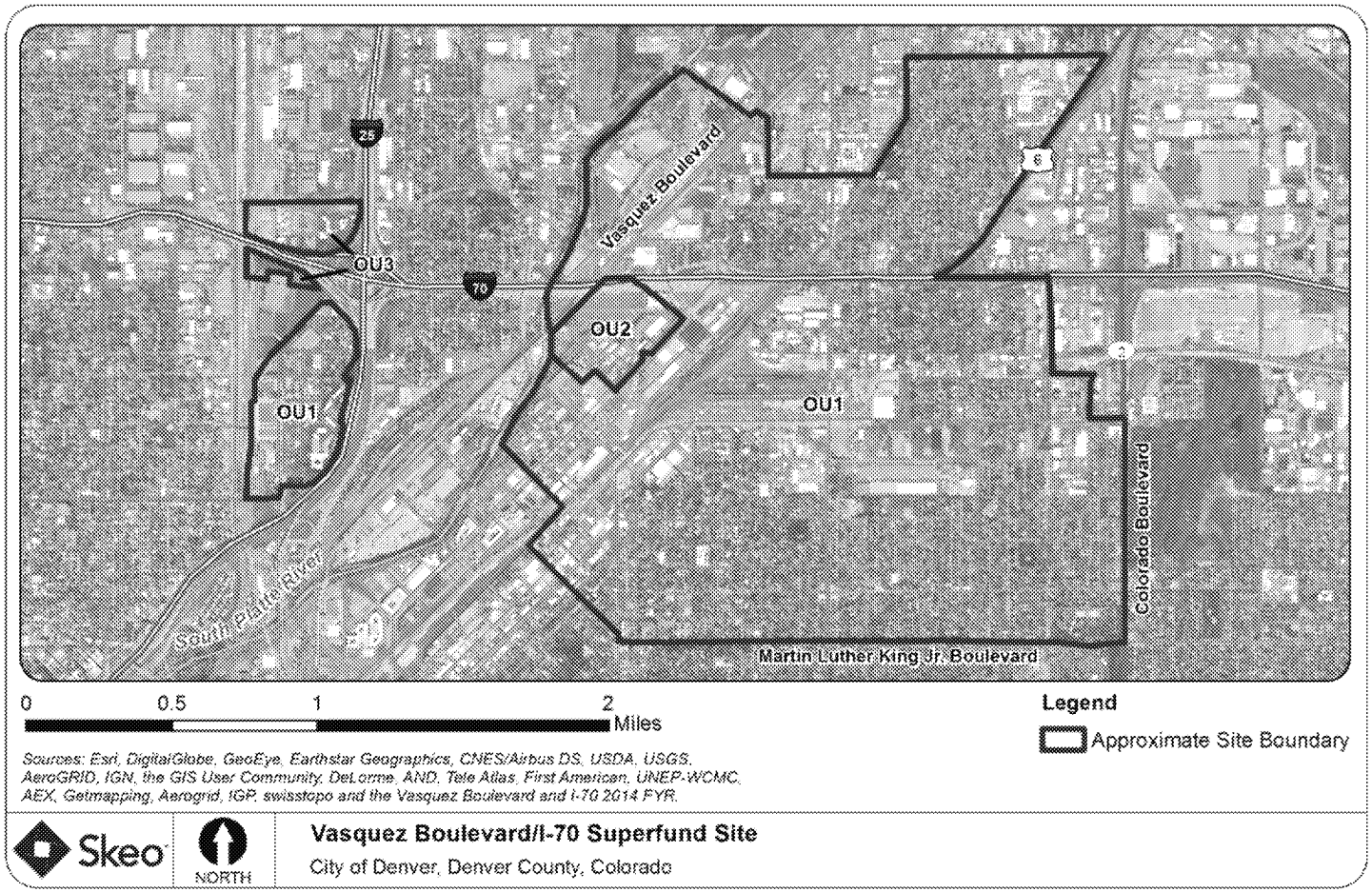
APPENDIX C – SITE MAPS

Figure C-1: Site Vicinity Map



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding EPA's response actions at the Site.

Figure C-2: Detailed Site Map



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding EPA's response actions at the Site.

APPENDIX D – PRESS NOTICE

16 | 18 Abril 2019 — El Semanario

HASTINGS, Viene page 3

What use is it for Candidate X or Y to offer up a detailed immigration plan that included the required points without offending or disappointing anyone? The plan will not matter if he or she does not win the presidency.

The only way forward for the Democrats must be to choose a viable candidate who can beat Trump. The important part is winning.

All the rest comes later

Maribel Hastings is a Senior Advisor and columnist at America's Voice and America's Voice Education Fund.

Read More Commentary: ELSEMANARIO.US

HASTINGS, de página 3

respeto a las instituciones y políticas dañinas, todavía haya sectores demócratas que se pongan sus mejores y elegantes puestos de posturas a los precandidatos porque, de lo contrario, no los apoyarán. O que tilden a los precandidatos de ser muy jóvenes, o inexpertos o que les falta liderazgo.

Señores, miren quien es presidente. Un individuo de 70 años que se comporta como un niño malcriado, que a diario miente, le falta el respeto a las instituciones, que como empresario se declaró en quiebra en múltiples ocasiones y ahora firma o rechaza presupuestos, que no tiene la más mínima idea de política exterior, ni interna tampoco. Y la peor, es un individuo cruel que está utilizando a familias, a mujeres, a niños migrantes como peones de su macabro juego de ajedrez político.

Es muy fácil ponerse exigentes con los precandidatos demócratas desde la comodidad de la cuidadana o de la residencia permanente, o de nuevas al les porque no tienen todas sus especialidades. Quienes sufrirán las consecuencias de un segundo periodo de Trump son precisamente esos sectores más vulnerables como los indocumentados o los miles que buscan refugio en este país de la violencia que plaga sus naciones.

¿De qué me sirve que el candidato X o Y me ofrezca un detallado plan migratorio que abarque todos los puntos adecuados sin ofender o desagradar a nadie? El plan de nada nos sirve si no ganan la presidencia.

El único norte para los demócratas debe ser elegir un candidato viable que pueda ganarle a Trump. Lo importante es ganar. Lo demás, vendrá por añadidura.

Maribel Hastings es asesora ejecutiva de America's Voice y America's Voice Education Fund.

Lee Más Comentarios: ELSEMANARIO.US

Classifieds/Clasificados

HELP WANTED

Sales and Care Women!

HELP WANTED

Water World to Hire 1000 for 2019
Part-in-Addition Season Work
Interested applicants should visit
www.waterworldcareers.com
for more information on the application process.

HELP WANTED

Caregiver/Enfermera
Urgently Needed

This will be a full time, live-out position from Monday to Saturday. The position includes set of relevant 4 days per generation with light house cleaning, light ironing and able to interact with children, speak english, and non smoker.
Ready pay $100.
Anyone interested should send to Mrs Florence at florencelaw0446@gmail.com

LEGALS

COLORADO
Department of Public Health & Environment

EPA
United States Environmental Protection Agency

EPA Five Year Review of the Vasquez Boulevard and I-70 Superfund Site

The U.S. Environmental Protection Agency (EPA) and the Colorado Department of Public Health and the Environment (CDPHE) are conducting a five-year review of the remedial actions performed at Operable Unit 1 (OU1) of the Vasquez Boulevard and I-70 (VB/I-70) Superfund Site. The five-year review is required because heavy metals remain at OU1 above levels that allow for unrestricted use and unlimited exposure.

The VB/I-70 Superfund Site is located in northeast Denver, Colorado. The 4.5-square mile area of OU1 includes all or part of five neighborhoods – Cole, Clayton, Swansea/Elyria, southwest Globeville and northern Curtis Park. OU1 is currently in residential, commercial and industrial use. There are approximately 4,500 residential properties within OU1, most of which are single-family homes.

From the early 1870s until the early 1900s, two smelting plants operated at the Site refining gold, silver, copper, lead and zinc. Smelter operations deposited heavy metals in area soils, contaminating OU1 soils. In September 2003, EPA selected a remedy to address contaminated residential soils within OU1 and updated it in September 2014. The remedy included removal and off-site disposal of contaminated residential soils, a soil-sampling program, implementation of a community health program and institutional controls. EPA completed the remedy in 2017 and has minimized risk to human health and the environment. EPA is currently scheduled to delete OU1 from the National Priorities List (NPL) in 2019.

This will be the third five-year review for the VB/I-70 Superfund Site. The five-year review is scheduled to be complete by summer 2019. If you would like to provide input regarding this five-year review please do so by April 30, 2019. Feel free to contact one of the following EPA representatives for more information and how to provide input:

Jennifer Chengo, EPA Community Involvement Coordinator,
US EPA Region 8, 1595 Wynkoop St. Denver, CO 80202
(303) 312-6601, chengo.jennifer@epa.gov
Jesse Aviles, EPA Remedial Project Manager,
US EPA Region 8, 1595 Wynkoop St. Denver, CO 80202
(303) 312-6227, Aviles.jesse@epa.gov

Revisión de cinco años de la EPA del bulevar Vásquez y el sitio I-70 Superfund

La Agencia Federal para la Protección Ambiental (EPA, por sus siglas en inglés) y el Departamento de Salud Pública y Ambiente de Colorado (CDPHE por sus siglas en inglés) están realizando la revisión de cada cinco años del sitio Superfund Vásquez Boulevard e I-70 (VB/I-70). La revisión de cada cinco años evalúa las acciones de corrección llevadas a cabo en el VB/I-70. Esta evaluación se requiere porque los niveles de metales pesados en el área operacional 1 (OU1) están por encima de los valores que permiten uso sin restricciones y exposición ilimitada.

El VB/I-70 se encuentra en el noreste de Denver, Colorado. El OU1 ocupa unas 4.5 millas cuadradas y se compone del área de Cole, Clayton, Elyria, Swansea/Elyria, suroeste de Globeville y la parte norte de Curtis Park. Actualmente el OU1 tiene usos residenciales, comerciales e industriales. En el OU1 se encuentran unas 4500 propiedades residenciales, muchas de ellas unifamiliares.

Dos fundiciones operaron en el área desde la década de 1870 hasta la década de 1900. En las fundiciones se trabajaba con oro, plata, cobre, plomo y zinc. Las operaciones de las fundiciones depositaron metales pesados en el área contaminando los suelos de OU1. En diciembre de 2003 la EPA seleccionó el remedio para limpiar la contaminación en OU1. En septiembre de 2014 la EPA actualizó el remedio. El remedio incluyó la remoción y disposición de los suelos contaminados, muestreo de suelo, un programa comunitario de salud y controles institucionales. La EPA completó el remedio en 2017 y disminuyó el riesgo a la salud humana y medioambiente. Actualmente la EPA propuso borrar el OU1 de la lista de prioridades nacionales (NPL, por sus siglas en inglés) para el 2019.

Esta es la tercera revisión de cada cinco años en el VB/I-70. La EPA espera completar la revisión para el verano de 2019. Si le interesa proveer comentarios acerca de la revisión de cada cinco años, favor de hacerlo a más tardar el 30 de abril de 2019. Se puede comunicar con los siguientes representantes de la EPA para proveer sus comentarios.

Jennifer Chengo, EPA Community Involvement Coordinator,
US EPA Region 8, 1595 Wynkoop St. Denver, CO 80202
(303) 312-6601, chengo.jennifer@epa.gov
Puede enviar sus comentarios en español a:
Jesse Aviles, EPA Remedial Project Manager,
US EPA Region 8,
1595 Wynkoop St. Denver, CO 80202
(303) 312-6227, Aviles.jesse@epa.gov

The Denver Post, LLC

PUBLISHER'S AFFIDAVIT

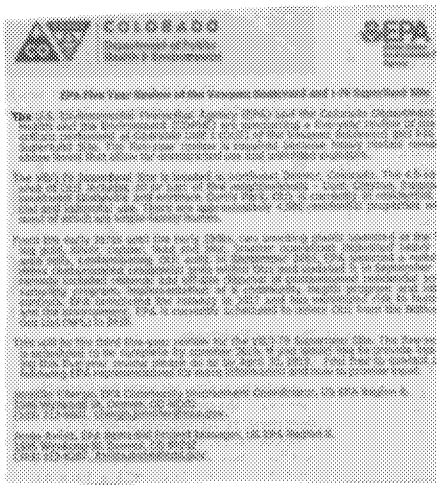
City and County of Denver)
State of Colorado)
)

The undersigned Nicole Maestas being first duly sworn under oath, states and affirms as follows:

1. **He/she is the legal Advertising Reviewer of The Denver Post, LLC, publisher of *The Denver Post* and *Your Hub*.**
2. ***The Denver Post* and *Your Hub* are newspapers of general circulation that have been published continuously and without interruption for at least fifty-two weeks in Denver County and meet the legal requisites for a legal newspaper under Colo. Rev. Stat. 24-70-103.**
3. **The notice that is attached hereto is a true copy, published in *The Denver Post* on the following date(s):**

April 11, 2019

Nicole Maestas
Signature



Subscribed and sworn to before me this 11 day of April, 2019.

Notary Public

KAY C DAPICE
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 19934012654
MY COMMISSION EXPIRES AUGUST 19, 2021

(SEAL)

APPENDIX E – INTERVIEW FORMS/COMMUNITY INVOLVEMENT SUMMARY

2019 VB/I-70 FYR and CIP Update Community Interview Questions

During the FYR period, EPA met with nine individuals as part of the simultaneous FYR and CIP update community interview period. These individuals included local government officials, members of the CAG and local residents. These nine interview responses have been summarized below into one interview form.

1. **What neighborhood do you live in and when did you move to the area?**

   Most individuals interviewed either live within OU1 or lived in the area recently. Several expressed that they have an active interest in the Site, but do not live within the OU1 boundary. About half have lived in the area for 10+ plus years, while about half are relatively new to the area.

2. **Why are you interested in the VB/I-70 Superfund Site?**

   Multiple residents expressed that they are interested in the Site because they live in the area and they care for the well-being of their community. This interest also stems from concern that there may be negative health effects as a result of contamination attributed to the Site. Two individuals who do not live in the OU1 area are interested because they have a general interest in all Colorado Superfund sites and also have concerns that the OU1 cleanup may not have been comprehensive enough. Several individuals also expressed that they believe it is good to be actively engaged within your own community. Finally, several individuals also stated they are interested because of the many development projects occurring around OU1. The local government official stated that they are interested because they have been involved in the area for a very long time.

3. **Are you aware of the former environmental issues at the VB/I-70 site and the cleanup activities that have taken place to date?**

   Yes, all individuals interviewed expressed that they are aware of the former environmental issues at the Site and the cleanup activities that have taken place to date.

4. **Are you aware that EPA has proposed to delist the residential soils portion (Operable Unit 1) of the Site from the NPL?**

   Almost every individual interviewed was aware that EPA has proposed to delist OU1 from the NPL. One individual was not aware and questioned why it was that EPA wanted to delist this portion.

5. **Was your property sampled during investigations or the residential soil cleanup actions?**

   Of those individuals interviewed who live within OU1, all had their properties sampled by EPA during either investigations or the cleanup action phase. Two individuals confirmed that they had their property excavated during the cleanup action phase.

6. **In your opinion, what were the effects of the residential soil cleanup on the community?**

   Several individuals expressed that they only know what EPA told them and the results of the investigations – that the contamination wasn't actually that bad. However, many in the community were left with questions of what exactly the health effects were and the effects of contaminants that were not attributed to the Site. Individuals also mentioned that the cleanup resulted in community mistrust of EPA. In addition, several individuals expressed that the cleanup helped some, but that it may not be enough because soils were only removed to 12 inches. Finally, several individuals communicated that the cleanup

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was majorly beneficial for the area and that they were fortunate that something happened to resolve the problem.

a) **Do you think EPA did a good job explaining the risks during the cleanup?**

Overall, most individuals interviewed believe EPA did a good job explaining the risks during the cleanup. However, several expressed that EPA did not. One individual added that risk is a very difficult thing to explain, but that EPA could have done better.

b) **Can you think of anything EPA could have done during the residential soil cleanup to better communicate the risks?**

One individual felt that there was nothing more that EPA could have done. Some individuals mentioned that EPA could have been more responsive to community requests for meetings and requests for relevant information. One individual expressed that EPA could have been more truthful during the public meetings. In addition, several individuals mentioned that EPA could have put out more one-page fact sheets that would really help a lay person understand what's going on the at the Site. Finally, one individual stressed that EPA could do more to communicate how we should use the land, especially in regard to gardening.

7. **Have you ever received any communication from local, state or other federal agency officials about the cleanup, and/or restrictions (ICs) at the Site?**

For those individuals who live or lived within the OU1 area, most confirmed that they received at least some communication from agency officials, but that it wasn't always adequate. Some noted that if hadn't been for other community members bringing attention to the Site, they never would have known. Others noted that EPA should have sent information about the Site to communities who live outside the OU1 area. Several individuals mentioned that they did not receive any communication at all from agency officials.

8. **How do you learn about what's happening at the Site now?**

Several individuals mentioned that they find most information about the Site through their own research or through attending the CAG or public meetings. Some individuals confirmed that they receive emails about the Site from EPA and that has been good. Others mentioned that both the EPA and city of Denver's websites have been helpful sources of information.

9. **What type of information do you feel that you need or want regarding the VB/I-70 Superfund Site?**

Some individuals mentioned that would like more information about risks from the Site. One individual noted that they would like as close to the raw data as possible concerning sampling during the investigations. Several individuals mentioned that the documents at the site repository need to be regularly checked to make sure everything is there because they are often missing. In addition, individuals expressed that information about the Site needs to be more digestible for lay people who might not understand all the technical language. One individual stressed that they would like more information available for people who have recently moved to the area, so they can easily find out information about their property. This same individual mentioned he would like to know which properties in OU1 have restrictions on them.

10. **Who would you contact if you have questions or concerns, or need information about the Site?**

Almost all individuals interviewed mentioned that they would either contact Jesse Aviles, the site RPM, or Jennifer Chergo, the site CIC. Several individuals mentioned that CDPHE has helped in the past when they wanted more information about the Site.

11. **What is the best way to keep the community informed about activities at the VB/I-70 Superfund Site?**

    Several individuals mentioned that flyers posted at community hub areas would be a great way to keep the community informed. Several others mentioned that EPA attendance at neighborhood and public meetings would be a starting point. A few individuals mentioned that social media is a great way, especially NextDoor. Finally, several individuals mentioned that keeping the website up-to-date and continually sending emails is another great way.

12. **Where do you get local news information? Local television, radio stations, newspapers, the internet?**

    Some individuals mentioned that they get their local news from television and newspapers, especially the Denver Post. Other individuals mentioned that they get it from all online sources – whether that be online newspapers or blogs. Several individuals also mentioned that many members of the community most likely get it from social media, so increasing social media posts could be a great option. One individual noted that most of the Spanish-speaking population gets it from Telemundo or Univision.

13. **Do you currently have any concerns about potential risks from the Site?**

    Many individuals mentioned that they are mostly concerned with all the development projects surrounding the Site and the possibility of those projects exposing contamination. Several individuals continued to stress that they don't believe EPA did all they could to address the contamination at the Site and that more could be done. One of these individuals is concerned that the current cleanup levels are not stringent enough. Another individual believes that the major source of contamination was not identified and there was not enough testing performed. A few individuals mentioned that it didn't seem EPA did enough research into the Swansea smelter. Finally, some individuals noted they have no site concerns.

14. **Are you aware of any community concerns regarding the Site or its operation and administration?**

    Several individuals continued to stress that many community members are concerned about health issues within the community. In addition, several individuals continued to mention that there is a severe distrust of EPA within the community. A few individuals confirmed they are aware of many of the concerns that the CAG has brought up but weren't sure how rooted they were in science. Finally, many of the individuals confirmed that many community members are concerned that the surrounding development projects could potentially pose a risk to their community. A few individuals mentioned that they are not aware of any community concerns regarding the Site.

15. **Can you suggest other community members who would be interested in talking with us about the Site?**

    Most individuals interviewed suggested at least one other community member. A few did not have anyone they could think of.

16. **Is there anything else you would like to add?**

    Most individuals interviewed had nothing to add. One individual continued to stress that there's more that EPA can do at this site to protect the community. Another individual mentioned again that there should be something in place to relay information about a property when prospective purchasers are considering purchasing a property within OU1.

APPENDIX F – SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST	
I. SITE INFORMATION	
Site Name: Vasquez Boulevard and I-70	**Date of Inspection:** [FORMTEXT]
Location and Region: Denver, CO; Region 8	**EPA ID:** CO0002259588
Agency, Office or Company Leading the Five-Year Review: [FORMTEXT]	**Weather/Temperature:** [FORMTEXT]

Remedy Includes: (Check all that apply)

[FORMCHECKBOX] Landfill cover/containment [FORMCHECKBOX] Monitored natural attenuation

[FORMCHECKBOX] Access controls [FORMCHECKBOX] Groundwater containment

[FORMCHECKBOX] Institutional controls [FORMCHECKBOX] Vertical barrier walls

[FORMCHECKBOX] Groundwater pump and treatment

[FORMCHECKBOX] Surface water collection and treatment

[FORMCHECKBOX] Other: [FORMTEXT]

Attachments: **[FORMCHECKBOX]** Inspection team roster attached [FORMCHECKBOX] Site map attached

II. INTERVIEWS (check all that apply)

1. **O&M Site Manager** [FORMTEXT] Name [FORMTEXT] Title [FORMTEXT] Date

Interviewed [FORMCHECKBOX] at site [FORMCHECKBOX] at office [FORMCHECKBOX] by phone Phone: [FORMTEXT]

Problems, suggestions [FORMCHECKBOX] Report attached: [FORMTEXT]

2. **O&M Staff** [FORMTEXT] Name [FORMTEXT] Title [FORMTEXT] Date

Interviewed [FORMCHECKBOX] at site [FORMCHECKBOX] at office [FORMCHECKBOX] by phone Phone: [FORMTEXT]

Problems/suggestions [FORMCHECKBOX] Report attached: [FORMTEXT]

3. **Local Regulatory Authorities and Response Agencies** (i.e., state and tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices). Fill in all that apply.

Agency [FORMTEXT]
Contact [FORMTEXT] Name [FORMTEXT] Title [FORMTEXT] Date [FORMTEXT] Phone No.

Problems/suggestions [FORMCHECKBOX] Report attached: [FORMTEXT]

Agency [FORMTEXT]
Contact [FORMTEXT]Name [FORMTEXT] Title [FORMTEXT] Date [FORMTEXT] Phone No.

Problems/suggestions [FORMCHECKBOX] Report attached: [FORMTEXT]

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Agency [FORMTEXT]
Contact [FORMTEXT] Name | [FORMTEXT] Title | [FORMTEXT] Date | [FORMTEXT] Phone No.
Problems/suggestions [FORMCHECKBOX] Report attached: [FORMTEXT]

Agency [FORMTEXT]
Contact [FORMTEXT] Name | [FORMTEXT] Title | [FORMTEXT] Date | [FORMTEXT] Phone No.
Problems/suggestions [FORMCHECKBOX] Report attached: [FORMTEXT]

Agency [FORMTEXT]
Contact [FORMTEXT] Name | [FORMTEXT] Title | [FORMTEXT] Date | [FORMTEXT] Phone No.
Problems/suggestions [FORMCHECKBOX] Report attached: [FORMTEXT]

4. **Other Interviews** (optional) **[FORMCHECKBOX]** Report attached: [FORMTEXT]

[FORMTEXT]

[FORMTEXT]

III. ON-SITE DOCUMENTS AND RECORDS VERIFIED (check all that apply)

1. **O&M Documents**

[FORMCHECKBOX] O&M manual	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	**[FORMCHECKBOX]** N/A
[FORMCHECKBOX] As-built drawings	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	**[FORMCHECKBOX]** N/A
[FORMCHECKBOX] Maintenance logs	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	**[FORMCHECKBOX]** N/A

Remarks: [FORMTEXT]

2. **Site-Specific Health and Safety Plan** [FORMCHECKBOX] Readily available [FORMCHECKBOX] Up to date **[FORMCHECKBOX]** N/A

[FORMCHECKBOX] Contingency plan/emergency response plan [FORMCHECKBOX] Readily available [FORMCHECKBOX] Up to date **[FORMCHECKBOX]** N/A

Remarks: [FORMTEXT]

3. **O&M and OSHA Training Records** [FORMCHECKBOX] Readily available [FORMCHECKBOX] Up to date **[FORMCHECKBOX]**

				N/A
	Remarks: [FORMTEXT]			
4.	**Permits and Service Agreements**			
	[FORMCHECKBOX] Air discharge permit	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORM CHECK BOX] N/A
	[FORMCHECKBOX] Effluent discharge	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORM CHECK BOX] N/A
	[FORMCHECKBOX] Waste disposal, POTW	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORM CHECK BOX] N/A
	[FORMCHECKBOX] Other permits: [FORMTEXT]	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORM CHECK BOX] N/A
	Remarks: [FORMTEXT]			
5.	**Gas Generation Records**	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORM CHECK BOX] N/A
	Remarks: [FORMTEXT]			
6.	**Settlement Monument Records**	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORM CHECK BOX] N/A
	Remarks: [FORMTEXT]			
7.	**Groundwater Monitoring Records**	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORM CHECK BOX] N/A
	Remarks: [FORMTEXT]			
8.	**Leachate Extraction Records**	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORM CHECK BOX] N/A
	Remarks: [FORMTEXT]			
9.	**Discharge Compliance Records**			

	[FORMCHECKBOX] Air	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORMCHECKBOX] N/A
	[FORMCHECKBOX] Water (effluent)	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORMCHECKBOX] N/A
	Remarks: [FORMTEXT]			
10.	**Daily Access/Security Logs**	[FORMCHECKBOX] Readily available	[FORMCHECKBOX] Up to date	[FORMCHECKBOX] N/A
	Remarks: [FORMTEXT]			

IV. O&M COSTS

1. **O&M Organization**

[FORMCHECKBOX] State in-house [FORMCHECKBOX] Contractor for state

[FORMCHECKBOX] PRP in-house [FORMCHECKBOX] Contractor for PRP

[FORMCHECKBOX] Federal facility in-house [FORMCHECKBOX] Contractor for Federal facility

[FORMCHECKBOX] [FORMTEXT]

2. **O&M Cost Records**

[FORMCHECKBOX] Readily available [FORMCHECKBOX] Up to date

[FORMCHECKBOX] Funding mechanism/agreement in place [FORMCHECKBOX] Unavailable

Original O&M cost estimate: [FORMTEXT] [FORMCHECKBOX] Breakdown attached

Total annual cost by year for review period if available

From: [FORMTEXT]	To: [FORMTEXT]	[FORMTEXT]	[FORMCHECKBOX] Breakdown attached
Date	Date	Total cost	
From: [FORMTEXT]	To: [FORMTEXT]	[FORMTEXT]	[FORMCHECKBOX] Breakdown attached
Date	Date	Total cost	
From: [FORMTEXT]	To: [FORMTEXT]	[FORMTEXT]	[FORMCHECKBOX] Breakdown attached
Date	Date	Total cost	
From: [FORMTEXT]	To: [FORMTEXT]	[FORMTEXT]	[FORMCHECKBOX] Breakdown attached
Date	Date	Total cost	
From: [FORMTEXT]	To: [FORMTEXT]	[FORMTEXT]	[FORMCHECKBOX] Breakdown attached
Date	Date	Total cost	

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

Describe costs and reasons: [FORMTEXT]

V. ACCESS AND INSTITUTIONAL CONTROLS [FORMCHECKBOX] Applicable [FORMCHECKBOX

] N/A

A. Fencing

1. **Fencing Damaged** [FORMCHECKBOX] Location shown on site map [FORMCHECKBOX] Gates secured [FORMCHECKBOX] N/A

Remarks: [FORMTEXT]

B. Other Access Restrictions

1. **Signs and Other Security Measures** [FORMCHECKBOX] Location shown on site map [FORMCHECKBOX] N/A

Remarks: [FORMTEXT]

C. Institutional Controls (ICs)

1. **Implementation and Enforcement**

Site conditions imply ICs not properly implemented [FORMCHECKBOX] Yes [FORMCHECKBOX] No [FORMCHECKBOX] N/A

Site conditions imply ICs not being fully enforced [FORMCHECKBOX] Yes [FORMCHECKBOX] No [FORMCHECKBOX] N/A

Type of monitoring (e.g., self-reporting, drive by): [FORMTEXT]

Frequency: [FORMTEXT]

Responsible party/agency: [FORMTEXT]

Contact	[FORMTEXT]	[FORMTEXT]	[FORMTEXT]	[FORMTEXT]
	Name	Title	Date	Phone no.

Reporting is up to date	[FORMCHECKBOX] Yes	[FORMCHECKBOX] No	[FORMCHECKBOX]N/A
Reports are verified by the lead agency	[FORMCHECKBOX] Yes	[FORMCHECKBOX] No	[FORMCHECKBOX] N/A
Specific requirements in deed or decision documents have been met	[FORMCHECKBOX] Yes	[FORMCHECKBOX] No	[FORMCHECKBOX] N/A
Violations have been reported	[FORMCHECKBOX] Yes	[FORMCHECKBOX] No	[FORMCHECKBOX] N/A

Other problems or suggestions: [FORMCHECKBOX] Report attached

2. **Adequacy** [FORMCHECKBOX] ICs are adequate [FORMCHECKBOX] ICs are inadequate [FORMCHECKBOX] N/A

Remarks: [FORMTEXT]

D. General

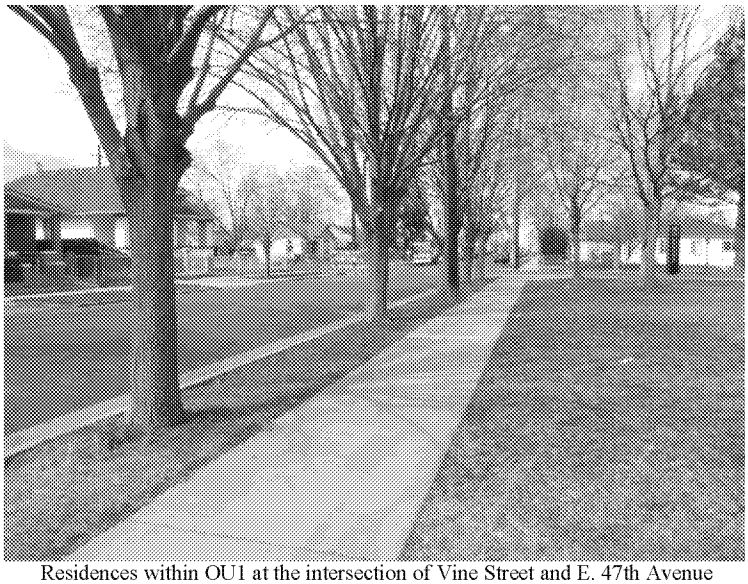
1. **Vandalism/Trespassing** [FORMCHECKBOX] Location shown on site map [FORMCHECKBOX]

	No vandalism evident Remarks: [FORMTEXT]
2.	**Land Use Changes On Site** [FORMCHECKBOX] N/A Remarks: [FORMTEXT]
3.	**Land Use Changes Off Site** [FORMCHECKBOX] N/A Remarks: [FORMTEXT]
VI. GENERAL SITE CONDITIONS	
VII. LANDFILL COVERS [FORMCHECKBOX] Applicable [FORMCHECKBOX] N/A	
VIII. VERTICAL BARRIER WALLS [FORMCHECKBOX] Applicable [FORMCHECKBOX] N/A	
IX. GROUNDWATER/SURFACE WATER REMEDIES [FORMCHECKBOX] Applicable [FORMCHECKBOX] N/A	
X. OTHER REMEDIES	
If there are remedies applied at the site and not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A.	**Implementation of the Remedy**
	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 designed to accomplish (e.g., to contain contaminant plume, minimize infiltration and gas emissions). [FORMTEXT]
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. [FORMTEXT]
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. [FORMTEXT]
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. [FORMTEXT]

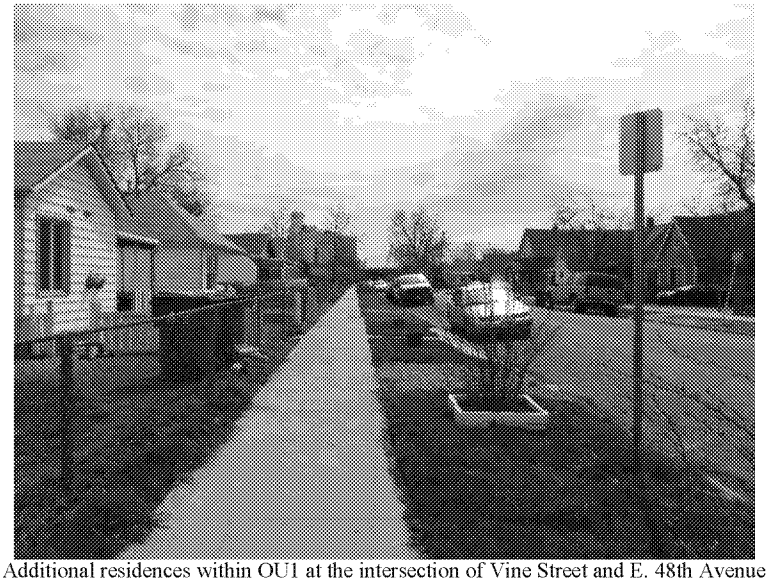
Site Inspection Roster:

- Jesse Aviles, EPA RPM
- Treat Suomi, Skeo
- Brice Robertson, Skeo

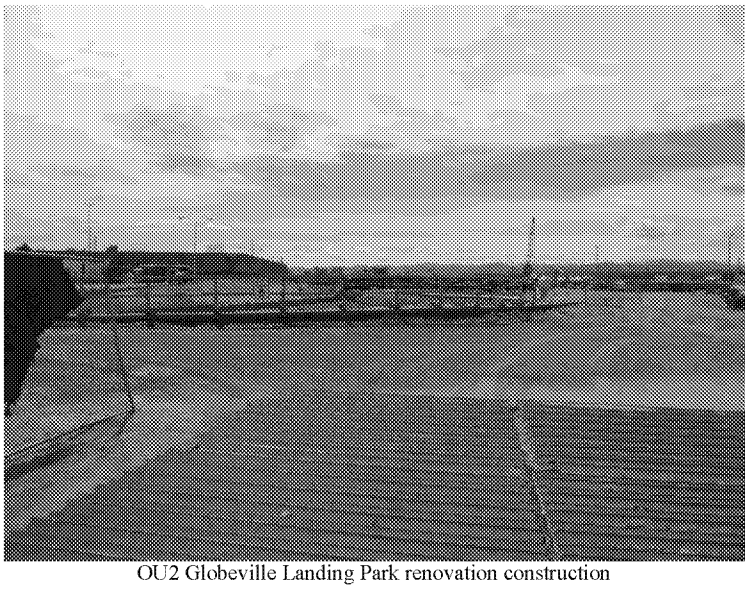
APPENDIX G – SITE INSPECTION PHOTOS



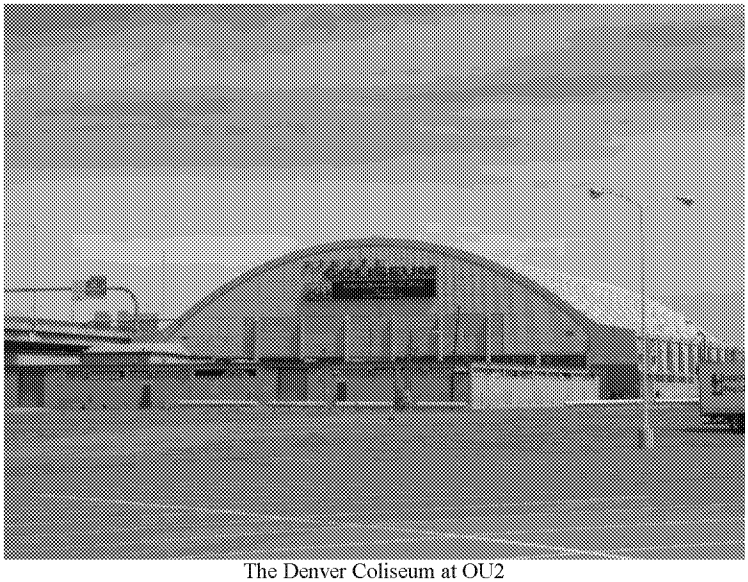
Residences within OU1 at the intersection of Vine Street and E. 47th Avenue



Additional residences within OU1 at the intersection of Vine Street and E. 48th Avenue



OU2 Globeville Landing Park renovation construction



The Denver Coliseum at OU2

APPENDIX H – INSTITUTIONAL CONTROL SUPPLEMENTAL INFORMATION

Table H-1: Properties with Notice of Environmental Conditions

Property Address	Property Parcel ID	Reception Number	Date Recorded
4344 STEELE ST	160762423	2014059506	5/23/2014
3928 STEELE ST	160772305	2014074076	6/25/2014
3541 STEELE ST	160777781	2014074072	6/25/2014
3430 JACKSON ST	160778966	2014074069	6/25/2014
3311 SAINT PAUL ST	160784222	2014088507	7/24/2014
3421 VINE ST	160801429	2014074067	6/25/2014
3351 GAYLORD ST	160802191	2014074066	6/25/2014
3624 GILPIN ST	160805556	2014074075	6/25/2014
3548 MARION ST	160806811	2014074073	6/25/2014
3518 MARION ST	160806862	2014074070	6/25/2014

Table H-2: Properties with Notice of Potential Environmental Conditions

Property Address	Property Parcel ID	Reception Number	Date Recorded
5125 STEELE ST	160638587	2014074146	6/25/2014
4976 FILLMORE ST	160640417	2014074144	6/25/2014
4823 STEELE ST	160641375	2014074143	6/25/2014
5017 ADAMS ST	160643696	2014074145	6/25/2014
4644 WILLIAMS ST	160756121	2014088509	7/24/2014
4675 HIGH ST	160756245	2015098106	7/16/2015
4685 HIGH ST	160756261	2015098105	7/16/2015
4780 SAINT PAUL CT	160762911	2014074142	6/25/2014
4735 MILWAUKEE ST	160763331	2014074141	6/25/2014
4653 COLUMBINE ST	160765066	2014074138	6/25/2014
4657 COLUMBINE ST	160765074	2014074139	6/25/2014
4611 CLAYTON ST	160765384	2014074137	6/25/2014
4431 ELIZABETH ST	160766836	2014074135	6/25/2014
2736 E 44TH AVE	160768251	2014074081	6/25/2014
4114 STEELE ST	160771121	2014074133	6/25/2014
3986 ADAMS ST	160772461	2014074132	6/25/2014
3811 MADISON ST	160773816	2014074131	6/25/2014
3626 MADISON ST	160776009	2014074124	6/25/2014
3434 GARFIELD ST	160778851	2014074111	6/25/2014
3737 FILLMORE ST	160781029	2014074129	6/25/2014
3620 CLAYTON ST	160781649	2014074122	6/25/2014
3528 COLUMBINE ST	160782777	2014074118	6/25/2014
3324 ELIZABETH ST	160784664	2014074109	6/25/2014
3526 GAYLORD ST	160800465	2014074117	6/25/2014
3244 HIGH ST	160802646	2014074106	6/25/2014
3753 FRANKLIN ST	160804207	2014074130	6/25/2014
3514 WILLIAMS ST	160805955	2014074115	6/25/2014
1526 E 35TH AVE	160807729	2014074078	6/25/2014
3439 WILLIAMS ST	160808326	2014074112	6/25/2014
1633 E 33RD AVE	160809152	2014074079	6/25/2014
3326 MARION ST	160809527	2014074110	6/25/2014
3242 WILLIAMS ST	160810169	2014074105	6/25/2014
4115 GARFIELD ST	162873094	2014074134	6/25/2014
5190 MILWAUKEE ST	163041691	2014074147	6/25/2014
3611 MILWAUKEE ST	163126327	2014074121	6/25/2014
2626 BRUCE RANDOLPH AVE	160784753	2014074080	6/25/2014

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Property Address	Property Parcel ID	Reception Number	Date Recorded
3227 MILWAUKEE ST #5	162924098	2014074082	6/25/2014
3500 BRUCE RANDOLPH AVE	160779440	2014074114	6/25/2014
3541-3547 COLUMBINE ST	160782912	2014074119	6/25/2014
3624-3626 JOSEPHINE ST	160781355	2014074123	6/25/2014
4447 COOK ST VCNT	160762024	2014074136	6/25/2014
4677 HIGH ST	160756253	2015098103	7/16/2015
4679 HIGH ST	160756261	2015098104	7/16/2015

APPENDIX I – SAMPLE INFORMATIONAL LETTERS

Date

Name
Address 1
Address 2
City, State, Zip

RE: Property Address

To whom it may concern…

This letter serves to inform you that the yard soil at the property listed above has elevated levels of lead and/or arsenic. Lead is a heavy metal and arsenic is a metal-like element. Both can cause serious health problems in people who are exposed via contaminated soil, dust, or other means. Steps you can take to reduce exposure to these possible contaminants in your soil are provided in the attached information sheet.

As part of the Vasquez Boulevard & Interstate 70 (VB/I-70) Superfund Site, the U.S. Environmental Protection Agency (EPA) and the Colorado Department of Public Health and the Environment (CDPHE) conducted a thorough environmental investigation and cleanup of residential soils in your area from 1999-2014. This involved sampling each residential property if the property owner provided written access. EPA and CDPHE were granted access to sample this property, and the sampling showed that the soil had lead or arsenic above acceptable levels. However, despite numerous attempts over many years, including mailings, meetings, flyers, door-to-door efforts and more, we were not granted access from the property owner(s) to clean up this property.

This annual letter is a means of informing future buyers and current and future residents, including residents, that the soil at this property has lead and/or arsenic at levels EPA considers unacceptable. EPA also recorded a Notice of Environmental Conditions in the property file for this property at the city and county of Denver Clerk and Recorder's office to inform future buyers of these known conditions at this property. In addition, an annual letter is mailed to both the property address and the property owner's address, if different.

Please refer to the "***Ways to protect your health by keeping dirt from getting into your house and into your body***" handout enclosed with this letter. You may obtain additional information at the following Website: [HYPERLINK "http://www.cdc.gov/nceh/lead/tips.htm"]. You may also contact Fonda Apostolopoulos at the Colorado Department of Public Health and the Environment at 303-692-3411 for further information.

For more information, please visit the EPA VB/I-70 Website at [HYPERLINK "http://www2.epa.gov/region8/vasquez-boulevard-i-70"].

Sincerely,

ED_002842A_00003813-00036

Date

Name
Address 1
Address 2
City, State, Zip

Date

RE: Property Address

To whom it may concern…

This letter serves to inform you that the yard soil at the property listed above *may* have elevated levels of lead and/or arsenic. Lead is a heavy metal and arsenic a metal-like element. Both can cause serious health problems in people who are exposed via contaminated soil, dust, or other means. Steps you can take to reduce exposure to these possible contaminants in your soil are provided in the attached information sheet.

As part of the Vasquez Boulevard & Interstate 70 (VB/I-70) Superfund Site, the U.S. Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE) conducted a thorough environmental investigation and cleanup of residential soils in your area from 1999-2014. This involved sampling each residential property if the property owner provided written access. Despite numerous attempts over many years, including mailings, meetings, flyers, door-to-door efforts and more, we were not granted access from the property owner(s) to sample this property. Thus, we can only tell you that your yard *may* have lead or arsenic at levels that would pose a health risk.

For perspective, of the thousands of properties that EPA and CDPHE did sample, approximately 20 percent had lead and/or arsenic in soil at levels posing unacceptable risk. The rest of the properties sampled, the majority, had levels of lead and/or arsenic below our level of concern and required no further action.

Although EPA and CDPHE do not have soil sampling data for this property, EPA and CDPHE consider it important to inform future buyers and current and future residents, including residents, that this property *may* have soil contamination. Accordingly, EPA recorded a Notice of Potential Environmental Conditions with the the city and county of Denver Clerk and Recorder's office. In addition, this letter is mailed annually to both the property address and the property owner's address, if different.

Please refer to the ***Ways to protect your health by keeping dirt from getting into your house and into your body*** handout enclosed with this letter. You may obtain additional information at the following Website : [HYPERLINK "http://www.cdc.gov/nceh/lead/tips.htm"]. You may also contact Fonda Apostolopoulos at the

Colorado Department of Public Health and the Environment at 303-692-3411 for further information.
For more information about the VB/I-70 Superfund Site, please visit [HYPERLINK "http://www2.epa.gov/region8/vasquez-boulevard-i-70"].

Sincerely,