1833581

FIRST FIVE-YEAR REVIEW REPORT

FOR

PETROCHEM/EKOTEK
CERCLIS ID: UTD093119196

SALT LAKE CITY
SALT LAKE COUNTY, UTAH

Prepared By:

Utah Department of Environmental Quality
Division of Environmental Response and Remediation

For:
United States Environmental Protection Agency
Region 8
1595 Wynkoop Street
Denver, Colorado 80202-1129

Approved By:

Martin Hestmark
Assistant Regional Administrator
Office of Ecosystem Protection and Remediation

Date:

9/23/10

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LIST OF ACRONYMS

AST	Above ground Storage Tank
ARARs	Applicable or Relevant and Appropriate Requirements
AOC	Administrative Orders on Consent
bgs	below ground surface
BSHW	Bureau of Solid and Hazardous Waste
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
COC	Chemical of concern
DCE	Dichloroethene
DERR	Division of Environmental Response and Remediation
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
ESRC	Ekotek Site Remediation Committee
FCOR	Final Close Out Report
FS	Feasibility Study
ICs	Institutional controls
LNAPL	Light Non-Aqueous Phase Liquid
MCL	Maximum Contaminant Level
mg/kg	milligram per kilogram
mg/kg-day	milligram per kilogram per day
mg/L	milligram per liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PCB	Polychlorinated Biphenyls
PP	Proposed Plan
PRP	Potentially Responsible Party
POTW	Publicly owned treatment works
RAO	Remedial Action Objectives
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RfD	reference dose
RI	Remedial Investigation
ROD	Record of Decision
RSL	Regional Screening Level
SF	Slope Factor
SLVHD	Salt Lake Valley Health Department
SMP	Site Management Plan
SVOC	Semi-volatile organic compound
TCDD	Tetrachlorodibenzo-p-dioxin
TEF	Toxicity Equivalency Factors
UDEQ	Utah Department of Environmental Quality
UPDES	Utah Pollutant Discharge Elimination System
UST	Underground storage tank
UU/UE	Unlimited use and unrestricted exposure

Executive Summary

The Utah Department of Environmental Quality (UDEQ), Division of Environmental Response and Remediation (DERR), in cooperation with the United States Environmental Protection Agency Region 8 (EPA) has conducted the first Five-Year Review of the remedial actions implemented at the Petrochem/Ekotek Superfund Site (Site) located in Salt Lake City, Utah. The review was conducted from April 2015 through August 2016.

The remedy implemented at the Site included: 1) excavation of soil above the Performance Standards specified in the Record of Decision (ROD) and modified by two Explanations of Significant Differences (ESDs), 2) removal of light non-aqueous phase liquid (LNAPL) off of the water table, and 3) groundwater remediation through natural attenuation. The Site achieved construction completion in February 2000 and response actions at the Site were determined to be complete in September 2002 as documented in the Final Close Out Report (FCOR) dated September 30, 2002. The Site was deleted from the National Priorities List (NPL) in June 2003.

The FCOR concluded that five-year reviews were not required for this Site because "hazardous substances above health-based levels were removed from the site." However, in January 2015, a records review of the Site found information suggesting that soil was cleaned up only to industrial levels, not residential levels. An environmental covenant placed on the Site in 2008 recognized the potential issue and restricted land-use to industrial-use. Therefore, EPA determined that a five-year review needed to be conducted to not only evaluate the current protectiveness of the Site, but to also determine if five-year reviews were required for the Site.

The remedy implemented at the Site currently protects human health and the environment because contaminated soil has been excavated, and groundwater concentrations are below the Performance Standards. Institutional controls (ICs) are in place for the Site, but not included in Site decision documents. In order for the remedy to be protective in the long term, statutory five-year reviews should be conducted, the Site decision document should be modified to incorporate appropriate ICs as a remedy component and wells should be installed/sampled to check the current status of groundwater.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Petrochem/Ekotek		
EPA ID: UTD093119196		
Region: 8	**State:** UT	**City/County:** Salt Lake City/Salt Lake County

SITE STATUS	
NPL Status: Deleted	
Multiple OUs? No	**Has the Site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: UDEQ
Author name (Federal or State Project Manager): Katie Crane
Author affiliation: UDEQ Project Manager
Review period: April 2015 – August 2016
Date of Site inspection: June 16, 2015
Type of review: Statutory
Review number: 1
Triggering action date: This is the first five-year review
Due date: September 30, 2016

Five-Year Review Summary Form (continued)

Issues/Recommendations				
Issues and Recommendations Identified in the Five-Year Review:				
OU: Site-wide	**Issue Category:** Remedy Performance			
	Issue: Soil contaminants are above levels that allow for unlimited use and unrestricted exposure.			
	Recommendation: Five-year reviews should be conducted for the Site.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	UDEQ	EPA	9/30/2021
OU: Site-wide	**Issue Category:** Institutional Controls			
	Issue: ICs are not provided for in Site decision documents.			
	Recommendation: The Site decision document should be modified to incorporate appropriate ICs as a remedy component.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	EPA	EPA	12/31/2018
OU: Site-wide	**Issue Category:** Monitoring			
	Issue: There are no viable wells to check the current status of groundwater.			
	Recommendation: Wells should be installed and sampled to check the current status of groundwater and, if necessary, determine a plan of action.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	UDEQ	EPA	12/31/2018

Site Wide Protectiveness Statement	
Protectiveness Determination:	*Addendum Due Date:*
Protective	N/A
Protectiveness Statement:	
The remedy implemented at the Site currently protects human health and the environment because contaminated soil has been excavated, and groundwater concentrations are below the Performance Standards. Institutional controls are in place for the Site, but not included in Site decision documents. In order for the remedy to be protective in the long term, statutory five-year reviews should be conducted, the Site decision document should be modified to incorporate appropriate ICs as a remedy component and wells should be installed/sampled to check the current status of groundwater.	

1.0 Introduction

The purpose of the Five-Year Review is to determine whether the remedial actions at a site are protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review Reports. In addition, Five-Year Review Reports identify issues found during the review, if any, and make recommendations to address them.

The Utah Department of Environmental Quality (UDEQ) in cooperation with the U.S. Environmental Protection Agency Region 8 (EPA) prepared this First Five-Year Review Report pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) §121 and the National Contingency Plan (NCP). CERCLA §121 states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The EPA interpreted this requirement further in the NCP; 40 Code of Federal Regulations (CFR) §300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

This is the first review of the Site. The FCOR concluded that five-year reviews were not required for this Site because "hazardous substances above health-based levels were removed from the site." However, in January 2015, a records review of the Site found information suggesting that soil was cleaned up to only industrial levels, not residential levels and, therefore, hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure. An environmental covenant (EC) placed on the Site in 2008 recognized the potential issue and restricted land-use to industrial-use. Therefore, EPA determined that a five-year review needed to be conducted to not only evaluate the current protectiveness of the Site, but to also determine if five-year reviews were required for the Site.

2.0 Site Chronology

Table 1 - Chronology of Events

Event	Date
Heavy equipment maintenance and repair conducted at the Site.	1949-1975
Oil refinery and oil reclaiming/recycling facility operated on the west side of the Site.	1953-1975
Oil refinery and oil reclaiming/recycling facility operated on the entire Site property.	1975-1988
Ekotek, Inc. received a RCRA Part B permit, for hazardous waste storage and a limited number of activities.	1984
Property leased to Petrochem Recycling, Inc. (Petrochem).	November 1987
Legal action was filed by the State of Utah and the facility was closed due to Petrochem failing to comply with the Order for Compliance.	February 1988
Utah Bureau of Solid and Hazardous Waste requested the US EPA Emergency Response Branch initiate a removal action to stabilize wastes and to inventory potentially hazardous material.	November 1988
Various potentially responsible parties (PRPs) that had wastes stored or processed at the Site joined to form the Ekotek Site Remediation Committee (ESRC).	1988
Preliminary Site investigations began.	1989
The EPA entered into an Administrative Orders on Consent (AOC) with ESRC to complete Emergency Surface Removal activities. In the Emergency Surface action ESRC removed surface and underground storage tanks, containers, contaminated sludges, pooled liquids, and processing equipment from the Site.	August 1989
The Site was placed on the National Priority List (NPL).	October 14, 1992
The EPA entered into an AOC with ESRC to conduct the remedial investigation (RI) and feasibility study (FS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).	July 1992
The FS was completed and included development and evaluation of ten Site-wide remedial alternatives.	January 1995
The EPA issued the Record of Decision (ROD) for the Site, identifying Alternative 10 as the selected remedy for implementation.	September 1996
The EPA entered into an AOC with ESRC for the removal of the sludge and drummed wastes.	December 1997
An Explanation of Significant Differences (ESD) was issued by the EPA to update some of the Performance Standards listed in the ROD.	December 1997
The ESRC completed the removal of the sludge and drummed wastes.	1998
The ESRC and the EPA Region 8 signed a Consent Decree which defined the requirements for the Remedial Design and Remedial Action (RD/RA) phases of the remedy implantation.	February 1998
The Consent Decree was entered.	April 27, 1998
An ESD was issued by the EPA to delete manganese as a contaminant of concern in groundwater and to increase the volume of contaminated soil destined for off-site disposal.	May 1999
Preliminary Close Out Report (PCOR).	April 12, 2000
Final Close Out Report (FCOR).	September 30, 2002
Deletion of Site from the NPL.	June 30, 2003
Environmental Covenant Recorded for Site.	September 2008

3.0 Background

3.1 Physical Characteristics

The Site encompasses approximately seven acres and includes one operable unit (OU), OU1. Operable Unit 1 was divided into two parts: East Site and West Site. The Sites were delineated by a railroad right-of-way that split the property at the time of performed work (see Figure 1).

There are no wetlands or surface water located on the Site. Groundwater was reported at a depth ranging from 15 to 20 feet below ground surface (bgs) in the Groundwater Compliance Monitoring and Data Summary Report (2002). Currently there are no wells on-Site and groundwater depth has not been measured since the wells were abandoned in 2002. The groundwater flow direction is to the northwest and the gradient was reported in the ROD as being relatively flat. The groundwater in the shallow unconfined aquifer (mostly sands and gravels) flows west and northwest. Groundwater in deeper on-Site wells was found to be warmer and higher in electrical conductance than shallow groundwater, indicating that the aquifer is potentially recharged, in part, by the deeper geothermal water from the Warm Springs fault zone.

3.2 Land and Resource Use

The Site is located in a predominantly industrial area of northern Salt Lake City, Utah, with Interstate 15 to the west and the Wasatch Mountains to the east. The Site is bordered by auto salvage yards to the north, and southeast, storage units and residential properties to the south, and commercial properties to the west.

Currently, the Site is owned by Jason Vriens. Approximately four acres on the southeast portion of the Site are used for storing delivery trucks, garbage trucks, and truck parts. The remaining three acres on the northwest side of the Site is leased to Applied Ex, Inc. who uses the Site for concrete/rock crushing, and gravel and soil staging. According to Applied Ex, Inc. all of the materials are brought in and no native soil from the Site has been excavated or incorporated into the soil piles staged on-Site. Additionally, Applied Ex, Inc. owner indicated that fill material was brought in from off-site to level the Site, and build the Site up above the natural grade.

No groundwater wells are located on Site. The closest well is located, up-gradient, approximately a quarter of a mile northeast of the Site, and is not used for drinking water. The closest cross-gradient wells are approximately 0.7 miles from the Site, and the closest down-gradient well is approximately a mile and half northwest of the Site. The closest potential drinking water well is approximately 0.5 miles cross-gradient, and is 65 feet in depth.

3.3 History of Contamination

The Petrochem/Ekotek Site originally operated as a heavy equipment maintenance and repair facility from 1949 to 1975. During that time period, the facility began oil recycling on the west

side of the Site from 1953 to 1975. In 1975 through 1988 the entire Site was used as an oil refinery and oil reclaiming/recycling facility. From 1980 to 1987 the facility operated under Resource Conservation Recovery Act (RCRA) interim status, and received a hazardous waste storage permit in July 1984 for a limited number of activities.

When operations at the Site ceased in February 1988 approximately 60 aboveground tanks (ranging in size from less than 1,000 – 90,000 gallons) were located on the northern portion of the Site. This included: 1) 3,200 drums and 1,500 smaller containers stored in five warehouse buildings and elsewhere on the Site; 2) approximately 1,100 tons of spent filter cake and sugar beet wastes contained on the east side of the Site; and 3) numerous large underground storage tanks located throughout the Site. Additionally, three retention basin/bermed areas used to contain contaminated runoff were present on the Site.

Contaminants associated with the on-Site sources included several organic substances, such as chlorinated solvents, other volatile organic compounds, polynuclear aromatic hydrocarbons, phthalates, pesticides, polychlorinated byphenyls (PCBs; Aroclor 1260), dioxin and furans. Heavy metals were also present in the source areas.

3.4 Initial Response

The Site was placed on the National Priorities List (NPL) on October 14, 1992. Initial response actions addressed the immediate risks to human health and included:

- February 1988 – The Petrochem facility was shut down for failing to comply with the Order for Compliance issued to Petrochem by the Utah State Bureau of Air Quality and the Utah Bureau of Solid and Hazardous Waste (BSHW) for violating their RCRA Part B permit.
- November 1988 – The Utah BSHW requested the EPA Emergency Response Branch initiate a removal action to stabilize wastes and to inventory potentially hazardous material.
- August 1989 – An Emergency Surface Removal was conducted and included the removal and disposal of aboveground and underground storage tanks (ASTs/USTs), processing equipment, containers, pooled liquids, and various sludge piles from the Site.

3.5 Basis for Taking Action

An emergency response action was conducted immediately after the facility was shut down to remove the immediate danger posed by the Site. Following the emergency removal of sludges and liquids on-Site, a Remedial Investigation (RI) took place to quantify and characterize the remaining waste on Site.

Results of the 1994 RI indicated surface soils on the property contained petroleum hydrocarbon contaminants, including semi-volatile organic compounds (SVOCs) and PCBs. Contaminated soil extended to the water table in the area of the former tank farm and processing area where a

groundwater plume of light non-aqueous phase liquids (LNAPL) was present. RI results also indicated vinyl chloride, cis-1,2-dichloroethene (DCE), benzene, and arsenic were present in groundwater at concentrations above their maximum contaminant levels (MCLs).

Risk Assessments conducted for both soil and groundwater at the Site, concluded that both media posed unacceptable carcinogenic and toxic risks to human health. A baseline ecological risk assessment (ERA) was conducted for ecological receptors exposed to chemicals detected in surface soil, which included federally-protected migratory birds and peregrine falcons. The ERA concluded there was a potential chronic risk to on-site migratory birds.

4.0 Remedial Actions

4.1 Remedy Selection

The selected remedy for the Petrochem/Ekotek Site addressed the soil, LNAPL, and groundwater. The ROD was signed by EPA on September 27, 1996, and two subsequent ESDs were signed on December 9, 1997 and May 11, 1999. It should be noted that the ROD refers to Preliminary Remediation Goals (PRGs), but all other documents (including this report) use the term Performance Standards for the action levels selected for the Site. The major components of the remedy selected in the ROD included:

- Demolition of the main concrete warehouse and the metal warehouse.
- Soils exceeding the Hot Spot Performance Standards listed in Table 2 were to be excavated and disposed of off-site.
- Soils exceeding the Soil Performance Standards (Table 3) were to be consolidated in the former tank farm area, and covered with a clean 42-inch soil cap.
- LNAPL-saturated soils were to be excavated and disposed of off-site.
- LNAPL floating on the groundwater was to be removed down to a thickness of 0.02 feet and incinerated off-site.
- Groundwater was to be remediated through intrinsic remediation/natural attenuation (through a combination of biodegradation, dispersion, dilution, and adsorption) to the groundwater Performance Standards listed in Table 4.
- The Site was to be restored by backfilling excavations with clean soil and compacting excavation area, and regrading and hydro seeding the entire Site.

The remedial action objectives (RAOs) in the ROD were as follows:

For soil:

- Protect industrial workers from direct dermal contact or ingestion of on-site surface soils containing chemicals of concern (COCs) in excess of the Performance Standards.
- Protect industrial workers from inhalation of airborne particulate matter from on-site surface soils containing COCs in excess of the Performance Standards.

For groundwater:

- Protect human health from ingestion of on-site groundwater that contains chemicals that exceed the Performance Standards.
- Protect human health from dermal contact with the inhalation of airborne vapors from on-site groundwater that contains chemicals that exceed the Performance Standards.

For surface water:

- Protect water quality of surface water bodies located northwest of the Site from site-related impacts.

Table 2 – Soil Hot Spot Performance Standards

Parameter	Action Level
Benzo(a)anthracene	780 mg/kg
Benzo(a)pyrene	78 mg/kg
Benzo(a)fluoranthene	780 mg/kg
Dibenz(a,h)athracene	78 mg/kg
Indeno(1,2,3-c,d)pyrene	780 mg/kg
PCBs	25 mg/kg*
2,3,7,8-TCDD(TEF)	3.7E-03 mg/kg*
Thallium	160 mg/kg

Notes:
*Standard was revised in the 1997 ESD.
mg/kg: milligrams per kilogram
PCB: Polychlorinated biphenyl
TCDD: tetrachlorodibenzo-p-dioxin
TEF: Toxic equivalence factors

Table 3 - Soil Performance Standards

Parameter	Action Level
Benzo(a)anthracene	7.8 mg/kg
Benzo(a)pyrene	0.78 mg/kg
Benzo(b)fluoranthene	7.8 mg/kg
Dibenz(a,h)athracene	0.78 mg/kg
Indeno(1,2,3-c,d)pyrene	7.8 mg/kg
PCBs	2.7 mg/kg*
2,3,7,8-TCDD(TEF)	3.7E-05 mg/kg*
Thallium	160 mg/kg

Notes:
*Standard was revised in the 1997 ESD.
mg/kg: milligrams per kilogram
PCB: Polychlorinated biphenyl
TCDD: tetrachlorodibenzo-p-dioxin
TEF: Toxic equivalence factors

Table 4 - Groundwater Performance Standards

Parameter	Action Level
Benzene	0.005 mg/L
Chloroform	0.1 mg/L
Cis-1,2-dichloroethene	0.07 mg/L
Vinyl Chloride	0.002 mg/L
Benzo(b)fluoranthene	0.0002 mg/L
Antimony	0.006 mg/L
Arsenic	0.05 mg/L
Beryllium	0.004 mg/L
Mercury	0.002 mg/L
Nickel	001 mg/L
Silver	0.05 mg/L
Thallium	0.002 mg/L

Notes:
Manganese was included as a Groundwater Performance Standard COC in the 1996 ROD, but was removed in the 1999 ESD.
mg/L: milligrams per liter

An ESD was issued by EPA in December 1997 to modify certain remediation criteria established in the 1996 ROD. The changes to the ROD were made as a result of new information the EPA received subsequent to the issuance of the ROD; however, they did not alter the Site-wide remedy presented in the ROD. The differences between the ROD and the ESD are:

- The Soil Performance Standard for 2,3,7,8-TCDD(TEF) was revised from 1.86E-06 to 3.7E-05 mg/kg for a cancer risk of 1E-06.
- The Soil Hot Spot Performance Standard for 2,3,7,8-TCDD(TEF) was revised from 1.86E-04 to 3.7E-03 mg/kg for a cancer risk of 1E-04.
- The Soil Performance Standard for PCBs was revised from 0.15 to 2.7 mg/kg.
- The Soil Hot Spot Performance Standard for PCBs was revised from 10 mg/kg to 25 mg/kg.
- Contingency measures were revised to permit the discharge of groundwater to re-injection wells or to a surface water/storm drain via the substantive requirements of a Utah Pollutant Discharge Elimination System (UPDES) permit, as an alternative to discharge to the publically owned treatment works (POTW).

A second ESD was issued by EPA in May 1999 to modify certain remediation criteria established in the 1996 ROD. The changes to the ROD were made as a result of new information the EPA received subsequent to the issuance of the ROD; however, they did not alter the Site-wide remedy presented in the ROD. The differences between the ROD and the 1999 ESD are:

- Manganese was removed as a groundwater performance standard.
- All soil exceeding the Soil Performance Standards were to be sent off-site to a RCRA permitted landfill.

The two ESDs did not address surface water and defined the RAOs as follows:

For soil:

- Eliminate the pathway of direct exposure of an industrial worker to contaminated soils through excavation and off-site disposal.

For groundwater:

- Eliminate the partitioning of LNAPL of the groundwater through removal and treatment of LNAPL.
- Eliminate the potential for future ingestion of contaminated drinking water through intrinsic remediation and natural attenuation of the groundwater.

4.2 Remedy Implementation

Remedial Design and Remedial Action activities at the Site began in July 1999 and were completed in February 2000. The remedial actions were as follows:

- Drummed wastes remaining from the Emergency Surface Removal Action, the remedial investigation, and any remaining sludge from historical operations were shipped off-site to a Subtitle C Landfill or incinerator for disposal, as appropriate.

- The Site was cleared of all buildings and structures to facilitate soil excavation. Buildings and structures cleared included the main concrete warehouse, the metal warehouse, concrete walks and slabs, asphalt pavement, a portion of the railroad tracks, and underground storage tanks.

- Soils and buried debris exceeding the Soil Spot Performance Standards were excavated and disposed of off-site.

- After the overburden soils were removed, LNAPL floating on the water was removed down to a thickness of 0.02 feet, via a vacuum truck. Soils contaminated with LNAPL from the smear zone and saturated zone were also excavated and removed off-site.

- Site excavations were backfilled with clean soil and compacted. The entire Site was then regraded and hydro-seeded.

- Groundwater was treated through natural attenuation/intrinsic remediation, and monitored until contamination levels were below the Performance Standards.

The FCOR and the Final Remedial Action Report (RA Report) were completed in September 2002. The Site was deleted from the NPL on June 30, 2003.

4.3 Operation and Maintenance

Contaminated soils above the Performance Standard levels identified in the ROD and ESDs, were removed off-site and groundwater was remediated through natural attenuation to the Groundwater Performance Standards identified in the ROD and ESDs. Therefore, the need for Operations and Maintenance (O&M) was eliminated.

Under the 2008 EC, the property owner is required to handle, transport and dispose of contaminated soil in accordance with applicable laws. The owner is also required to develop worker protection and health & safety plans for the excavation/removal of contaminated soil and comply with applicable worker health and safety laws.

5.0 Progress Since the Last Five-Year Review

This is the first Five-Year Review for the Site.

6.0 Five-Year Review Process

6.1 Administrative Components

The first Five-Year Review for the Petrochem/Ekotek Superfund Site was led by Katie Crane, UDEQ Project Manager. The following team members participated in the review:

- Armando Saenz, EPA Project Manager for the Petrochem/Ekotek Site
- Scott Everett, UDEQ Toxicologist
- Dave Allison, UDEQ Public Information Officer

This Five-Year Review consisted of the following activities: review of relevant documents and ARARs, site inspection, public interviews and development of this report.

6.2 Community Involvement

UDEQ conducted community interviews as part of the Five-Year Review process. A public notice was placed in the Deseret News and Salt Lake Tribune newspapers on June 21, 2015, and stated that the Five-Year Review was in progress and requested public input. No comments were received in response to the public notice.

Upon completion of the Five-Year Review report, UDEQ will make the report available to the public in the administrative record located at the UDEQ Superfund Records Center in Salt Lake City, UT.

6.3 Interviews

The UDEQ conducted community interviews with individuals knowledgeable about the Site. The purpose of the interviews was to identify any issues or concerns which may have developed since the Site had been delisted.

Individuals who were interviewed included Jason Vriens the primary property owner and occupant of the Site; Tersea Gray, Bureau Manager of the Salt Lake Valley Health Department (SLVHD); Brian Burton, owner of Applied Ex Inc., an excavation company which leases three acres of the Site; and John Hoggan, Emergency Response Coordinator of the SLVHD.

Reports summarizing the interviews can be found in Attachment E. None of the interviewees expressed any health or environmental concerns and commented that, in their opinion, the remedy remains protective.

6.4 Document Review

This Five-Year Review included a review of relevant site documents including the Final Remedial Action Report and Final Close Out Report. A list of documents reviewed for this Five-Year Review is provided in Attachment B.

6.5 Data and ARARs Reviews

No samples have been collected since deletion of the Site. The data reviewed included the confirmation sample results from the 2002 Final Remedial Action Report and groundwater sampling results presented in the 2002 Groundwater Compliance Monitoring Data Summary Report.

As part of the five-year review, Applicable and Relevant and Appropriate Requirements (ARARs) were reviewed. The primary purpose of this review was to determine if any newly promulgated or modified requirements of federal and state environmental laws have changed the protectiveness of the remedies implemented at the Site. The ARARs reviewed were those included in the Site's decision documents.

Overall, the review does not indicate any substantive changes to regulations that would affect the remedy or its protectiveness. EPA and UDEQ will continue to monitor this Site and any changes in ARARs will be reported.

6.6 Site Inspection

The Petrochem/Ekotek first Five-Year Review Site inspection was completed on June 16, 2015 and was attended by the following individuals:

- Katie Crane, UDEQ Project Manager for the Site
- Dave Allison, UDEQ Community Involvement
- Jason Vriens, Site owner

A Site Inspection Check List was completed and is provided in Attachment C. The purpose of the Site inspection was to assess the protectiveness of the remedy. The Site is currently being used for industrial purposes and no issues were noted during the Site inspection.

7.0 Technical Assessment

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

Yes, the review of documents, ARARs, risk assumptions, and the results of the inspection indicate the remedy is functioning as intended by the 1996 ROD, 1997 ESD and 1999 ESD.

The remedy removed all soil that exceeded the Performance Standards as specified in the above mentioned decision documents. During the 1999 Remedial Action confirmation samples were collected from the bottom and sidewalls of the Site excavations. The excavation Sites were divided into 13 excavation grids, which were divided into a total of 197 sample locations. At least one confirmation sample was collected from each location (see Figure 2). Specific excavation and sample depths were not reported in any of the documents; however, all confirmation samples were subsurface samples.

After reviewing the 2002 Final Remedial Action Report, it was determined that all confirmation soil samples were below the ROD Performance Standards with the exception of results from four sample locations. The following sample results did not meet the Performance Standards:

- The sidewall sample location from the L Grid, located in the southeast corner of the site, had a benzo(a)pyrene result of 1.25 mg/kg, above the 0.780 mg/kg Performance Standard;
- Sample location H41 located on the west sidewall of the LNAPL excavation, had a PCB result of 3.2 mg/kg, above the Performance Standard of 2.7 mg/kg;
- Sample location H7, located on the north wall of the LNAPL excavation, had a dibenz(a,h)anthracene result of 0.969 mg/kg, above the Performance Standard of 0.780 mg/kg; and,
- Sample location J10, located in the center of the J Grid, with a dioxin result of 4.9E-05 mg/kg, above the Performance Standard of 3.7E-05 mg/kg.

The sample locations for each of these failed samples are shown in Figure 2, and all sample exceedances are presented in Table 5.

The L Grid sidewall sample exceedance is thought to be associated with fill soils brought onto the Site (primarily recycled asphalt) and therefore the grid was considered acceptable and closed. The H7, H41, and J10 sample exceedances were considered acceptable because only one of the

nine ROD-listed constituents was detected above the soil Performance Standard and according to the RA Report they were not detected significantly above the Performance Standard.

While the excavations and confirmation sample depths are unclear in the documents, all sample locations were collected below grade and were subsequently filled with clean site backfill and off-site soil. Therefore, it is concluded that the four sample locations which exceeded the Performance Standards were subsurface samples. Based on the visit to the Site and interviews, no digging below grade has been conducted on-site since the remedy was completed and, therefore, the remedy is still considered protective and functioning as intended by the decision documents.

All soil above the Performance Standards described in the decision documents were removed off-site (with the exception of the above mentioned locations). The RA Report concluded that institutional controls were not necessary. Additionally, water-use restrictions at the Site were not necessary because there are no supply wells within the area of impacted groundwater. However, in 2008, an environmental covenant, limiting the Site to industrial use only, was recorded and signed by Salt Lake County, the Site Owner, and the DEQ. The visit confirmed that the Site is currently being used for industrial purposes.

Additionally, a review of the monthly and weekly Progress Reports during construction noted that portions of the rail spur on-site were removed and contaminated soil was excavated in those areas. The rail spur soil excavations are not discussed in the RA Report or the FCOR. It is unclear which portions of the rail spurs were removed and where the soil excavations took place. It is also unclear if soil confirmation samples were collected in these areas and if soil was excavated to Performance Standards. However, if any contaminated soil was left in place, it is below grade and the remedy is functioning as intended.

7.2 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?

Yes, the cleanup levels and RAOs used at the time of remedy selection are still valid. However, the exposure assumptions for inhalation and some of the toxicity data have changed since the Performance Standards were established in the ROD and modified by subsequent ESDs; these changes do not impact the protectiveness of the remedy based on the observations described below.

Performance Standards established for the Site were presented in the September 1996 ROD and modified by two ESDs for the ROD in 1997 and 1999. Because these documents were developed prior to EPA's Risk Assessment Guidance for Superfund (RAGs) Part F (2009) the exposure assumptions for the inhalation exposure pathway were conducted differently than the methods presented in RAGs Part F. The exposure metric used in the ROD used inhalation concentrations

based on ingestion rate and body weight (milligram per kilogram per day (mg/kg-day)). Inhalation intake on a mg/kg-day is no longer estimated during the exposure assessment step of baseline risk assessments. The updated methodology found in EPA's RAGS Part F uses the concentration of chemical in the air, with the exposure metric of micrograms per meter cubed (ug/m^3). While this does not significantly change clean-up levels (i.e. still within the acceptable risk range), it is important to present the most current methodology that is used for the inhalation pathway.

The toxicity reference dose (RfD) for thallium changed from 8E-05 mg/kg-day to 6.00E-06 mg/kg-day; however, based on the Remedial Action confirmation samples, no soil containing thallium above the current industrial screening levels (12 mg/kg) was identified at the Site. Therefore, the change in the thallium RfD does not affect the protectiveness of the remedy. The slope factor (SF) for 2,3,7,8-TCDD has decreased from 1.5E+05 mg/kg-day to 1.3E+03 mg/kg-day; however, due to a change in the absorption (ABS) factor the Performance Standard is still considered protective. The toxicity values for PAHs have not changed.

Groundwater Performance Standards developed for the Site were based on MCLs. Two MCLs have changed since the Performance Standards were established. Groundwater sample results from the final four compliance monitoring events in 2000-2001 are presented in Table 6.

The MCL for arsenic has changed from 0.05 mg/L to 0.01 mg/L. According to the 2000 Groundwater Compliance Monitoring Data Summary Report, arsenic was detected above the Performance Standard of 0.05 mg/L in one well, W-7, at concentrations up to 0.089 mg/L. The well was located north of the Site and determined to be influenced by local geochemical conditions and not from Petrochem/Ekotek Site activities. Therefore, the arsenic observed in monitoring well W-7 was not considered to be an exceedance of the Performance Standard. Based on the Groundwater Compliance Monitoring Data Summary Report, eight wells exceeded the new arsenic MCL at least once within the final four sampling events in 2000 – 2001 before the wells were abandoned. Wells CH-9, CH-10, P-3, P-6a, P-6b, P-5a, and TW-11 had maximum arsenic results of 0.044 mg/L, 0.043 mg/L, 0.011, 0.041 mg/L, 0.039 mg/L, 0.011 mg/L, and 0.011 mg/L respectively. All of the wells were located west of the Site boundary. No other wells exceeded the arsenic MCL of 0.01 mg/L during the last four Site sampling events before well-abandonment and site closure.

The MCL for chloroform has changed from 0.1 mg/L to 0.08 mg/L; however, no sample results reported in the Groundwater Compliance Monitoring Data Summary report exceeded the Performance Standard or the current MCL.

Additionally, in analytical data reported in the Groundwater Compliance Monitoring Data Summary, there were exceedances of Performance Standards/MCLs for antimony, nickel, and

thallium. Antimony results exceeded the Performance Standards/MCL of 0.006 mg/L in four wells during the June 2001 sampling event. The exceedances ranged from 0.0063 mg/L in well W19 to 0.0082 mg/L in well W18. The report noted that sample blank contamination was observed in the initial calibration blank and the subsequent calibration blank and the results were flagged "UB" and considered non-detect. Because the results are only slightly above the MCL, and antimony is a naturally occurring element that is expected in background levels, the antimony exceedances in groundwater do not affect the protectiveness of the remedy.

Nickel was detected in well MW2 during the June 2001 sampling event above the Performance Standard of 0.1 mg/L with a result of 1.3 mg/L. This result was considered an anomaly since all of the other results for nickel were below the Performance Standard or non-detect. Because the 1.3 mg/L result is only slightly above the Performance Standard, nickel is a naturally occurring element that is expected in background levels, and was only detected once above the Performance Standard, the June 2001 nickel groundwater result in MW2 does not affect the protectiveness of the remedy.

Thallium was detected in seven samples during the October 2001 sampling event above the Performance Standard/MCL of 0.002 mg/L, although four of those results were flagged "UB", and considered non-detect, due to the laboratory method blank data contamination and laboratory error. Un-flagged results above the Performance Standard/MCL ranged from 0.0025 mg/L in well W-7 to 0.0028 mg/L in well W-17. Because the detected results were only slightly above the Performance Standard/MCL, and thallium is a naturally occurring element that is expected in background levels, the thallium exceedances in groundwater do not affect the protectiveness of the remedy.

Nickel and silver groundwater COCs do not have MCLs. The toxicity values used to create the nickel and silver PRGs have not changed.

Additionally, there are no groundwater wells within approximately a quarter of a mile of the Site; the closest well is up-gradient from the Site and not used for drinking water. The closest cross-gradient wells are approximately 0.7 miles from the Site and the closest down gradient well is approximately a mile and half northwest of the Site, and the closest potential drinking water well is approximately a half mile cross gradient, to the northeast of the Site. The exposure pathway to groundwater is considered incomplete, and the protectiveness of the remedy is not affected by any of the 2000 – 2001 groundwater exceedances discussed above.

7.3 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 during this Five-Year Review that could call into question the protectiveness of the remedy.

8.0 Issues

Table 7– Summary of Site Issues

Item No.	Issues	Affects Current Protectiveness (Y/N)?	Affects Future Protectiveness (Y/N)?
1	Soil contaminants are above levels that allow for unlimited use and unrestricted exposure.	N	Y
2	ICs are not provided for in Site decision documents.	N	Y
3	There are no viable wells to check the current status of groundwater.	N	Y

9.0 Recommendations and Follow-Up Actions

Table 8 – Recommendations and Follow-Up Actions

Item No.	Issues	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
						Current	Future
1	Soil contaminants are above levels that allow for unlimited use and unrestricted exposure.	Five-year reviews should be conducted for the Site.	UDEQ	EPA	9/30/2021	N	Y
2	ICs are not provided for in Site decision documents.	The Site decision document should be modified to incorporate appropriate ICs as a remedy component.	EPA	EPA	12/31/2018	N	Y
3	There are no viable wells to check the current status of groundwater.	Wells should be installed and sampled to check the current status of groundwater and, if necessary, determine a plan of action.	UDEQ	EPA	12/31/2018	N	Y

10.0 Protectiveness Statement

The remedy implemented at the Site currently protects human health and the environment because contaminated soil has been excavated, and groundwater concentrations are below the Performance Standards. Institutional controls are in place for the Site, but not included in Site decision documents. In order for the remedy to be protective in the long term, statutory five-year reviews should be conducted, the Site decision document should be modified to incorporate appropriate ICs as a remedy component and wells should be installed/sampled to check the current status of groundwater.

11.0 Next Review

Five-year reviews for this Site are now statutory. The next review will be conducted within five years of the completion of this Five-Year Review Report. The completion date is the date shown on the signature page of this report.

Table 5
Remedial Action Confirmation Sample Result Exceedances

Sample ID	Sample Type	Grid	Sample Location	Date Sampled	TPH (mg/kg)[1]	PCBs (mg/kg)	Dioxins (mg/kg)	Benzo(a) anthracene (mg/kg)	Benzo(a) pyrene (mg/kg)	Benzo(b) floranthene (mg/kg)	Dibenz(a,h) anthracene (mg/kg)	Indeno(1,2,3 -c,d) pyrene (mg/kg)	Thallium (mg/kg)
Removal Performance Standard					100,000	2.700	3.70E-05	7.8	0.780	3.4	0.78	7.80	160
EK-SB-B2	Normal	B	B2	November 1, 1999	580	0.031	Not Analyzed	<0.022	0.064	0.03	0.033	0.04	<0.56
GFI-SB-B4	EPA Split Sample		B4	November 1, 1999	340	<0.1	Not Analyzed	0.08	<0. 1	0.06	<0.01	<0.01	8
EK-SB-D1	Normal	D	D1	October 11, 1999	Not Analyzed	0.700	5.31E-08	0.035	0.035	0.036	0.028	0.03	<0.53
EK-SB-D4	Normal		D4	October 11, 1999	Not Analyzed	<0.04	Not Analyzed	1.44	0.540	0.6	0.39	0.18	<0.61
EK-SB-D1O1	Field Duplicate		D7	October 11, 1999	Not Analyzed	1.250	2.05E-07	0.332	0.180	0.19	0.074	0.09	<0.52
EK-SB-D7	Normal			October 11, 1999	Not Analyzed	0.910	9.74E-07	0.0046	<0.0022	0.004	<0.0055	0.00	<0.55
GFI-SB-E2	EPA Split Sample	E	E2	Not reported	Not Analyzed	2.000	Not Analyzed	0.04	0.030	0.04	<0.01	0.02	<0.2
EK-SB-E5	Normal		E5	October 11, 1999	Not Analyzed	0.098	2.44E-08	0.27	0.160	0.17	0.07	0.08	<0.54
EK-SB-E6	Normal		E6	October 11, 1999	Not Analyzed	2.230	Not Analyzed	0.384	0.281	0.32	0.17	0.15	<0.55
EK-SB-E104	Field Duplicate		E7	October 11, 1999	Not Analyzed	1.400	Not Analyzed	0.25	0.190	0.22	0.08	0.12	<0.53
EK-SB-F4	Normal	F	F4	October 11, 1999	Not Analyzed	0.540	5.49E-06	<0.045	0.110	0.15	<0.051	0.07	<0.51
EK-SB-F8	Normal		F8	October 11, 1999	Not Analyzed	0.680	1.18E-06	0.083	0.140	0.17	0.12	0.09	0.1
EK-SB-G1	Normal	G	G1	August 12, 1999	Not Analyzed	0.280	3.30E-08	0.013	0.018	0.03	<0.053	0.01	<0.53
EK-SB-G2	Normal		G2	August 12, 1999	Not Analyzed	0.210	Not Analyzed	<0.022	0.016	0.03	<0.056	<0.022	<0.56
EK-SB-G5	Normal		G5	August 12, 1999	Not Analyzed	0.027	6.30E-08	0.31	0.270	0.15	<0.14	0. 14	<0.54
EK-SB-G105	Field Duplicate			August 12, 1999	Not Analyzed	0.037	1.30E-07	0.27	0.230	0.14	<0.14	0. 14	<0.55
EK-SB-H4	Normal	H	H4	August 24, 1999	7500	0.175	4.80E-08	0.393	0.010	0.051	0.13	<0.01	<0.52
EK-SB-H104	Field Duplicate			August 24, 1999	6200	0.138	3.1 E-08	0.241	<0.0021	0.037	0.132	<0.0021	<0.52
GFl-SB- H4	EPA Split Sample			August 24, 1999	Not Analyzed	0.300	Not Analyzed	<0.1	<0.1	<0.2	<0.1	<0.1	<1
EK-SB-H5	Normal		H5	August 24, 1999	Not Analyzed	0.340	Not Analyzed	0.05	0.085	0.041	0.261	<0.0021	<0.53
EK-SB-H7	Normal		H7	August 24, 1999	Not Analyzed	0.390	Not Analyzed	0.699	0.059	0.1	**0.969***	<0.01	<0.52
Does Not Exceed SL	Normal		H10	August 24, 1999	2000	0.110	3.30E-08	0.056	0.005	0.02	0.12	<0.01	<0.52
GFI-SB-H10	EPA Split Sample			August 24, 1999	Not Analyzed	0.400	Not Analyzed	<0.1	<0.1	<0.2	<0.1	<0.1	<1
EK-SB-H13	Normal		H13	August 24, 1999	Not Analyzed	0.221	Not Analyzed	0.18	0.210	0.093	0.21	<0.01	<0.52
EK-SB-H21	Normal		H21	August 30, 1999	Not Analyzed	0.026	Not Analyzed	0.002	0.024	0.008	0.016	0.02	<0.54
EK-SB-H36	Normal		H36	October 1, 1999	5000	0.670	6.48E-08	1.23	<0.01	<0.01	<0.026	<0.01	<0.52
EK-SB-H39	Normal		H39	October 1, 1999	Not Analyzed	0.510	Not Analyzed	3.54	<0.052	<0.052	<0.13	<0.052	<0.52
EK-SB-H40	Normal		H40	October 1, 1999	1600	1.890	2.18E-07	<0.011	<0.011	<0.011	<0.027	<0.011	<0.54
EK-SB- H41	Normal		H41	October 1, 1999	Not Analyzed	**3.2***	Not Analyzed	<0.010	<0.010	<0.010	<0.025	<0.010	<0.51
GFI-SB-H42	EPA Split Sample		H42	October 1, 1999	Not Analyzed	2.300	Not Analyzed	<0.05	<0.02	<0.05	<0.05	<0.05	<0.20
EK-SB-H42	Normal		H42	October 1, 1999	3100	0.980	<5.44E-06	1.38	<0.054	<0.054	<0.14	<0.054	<0.54
EK-SB-H43	Normal		H43	October 11, 1999	Not Analyzed	2.030	Not Analyzed	0.13	<0.021	<0.021	<0.052	<0.021	<0.52
GFI-SB-H44	EPA Split Sample		H44	October 1, 1999	Not Analyzed	1.200	Not Analyzed	<0.03	<0.02	<0.2	<0.01	<0.006	<0.20
EK-SB- H44	Normal		H44	October 1, 1999	4500	1.170	6.27E-08	<0.022	<0.022	<0.022	<0.055	<0.022	<0.55
EK-SB-H45	Normal		H45	October 1, 1999	Not Analyzed	0.125	Not Analyzed	0.435	<0.010	<0.010	<0.026	<0.010	<0.51
EK-SB-H46	Normal		H46	October 1, 1999	7000	0.270	<7.09E-06	<0.2	<0.2	<0.2	<0.5	<0.2	<0.50

Table 5
Remedial Action Confirmation Sample Result Exceedances

EK-SB-H54	Normal		H54	October 12, 1999	210	0.061	1.98E-06	0.006	0.021	0.03	<0.056	0.01	<0.56
EK-SB-J1	Normal	J	J1	October 12, 1999	Not Analyzed	0.012	Not Analyzed	0.01	0.037	0.046	0.03	0.04	<0.56
EK-SB-J2	Normal		J2	October 12, 1999	Not Analyzed	0.035	Not Analyzed	0.008	0.030	0.03	<0.054	0.02	<0.54
EK-SB-J3	Normal		J3	October 12, 1999	Not Analyzed	0.009	Not Analyzed	0.005	0.010	0.02	0.011	0.01	<0.56
EK-SB-J4	Normal		J4	October 12, 1999	Not Analyzed	0.006	Not Analyzed	0.02	0.140	0.1	0.12	0.16	<0.57
EK-SB-J5	Normal		J5	November 1, 1999	Not Analyzed	<0.037	Not Analyzed	0.062	0.083	0.089	0.054	0.06	<0.56
EK-SB-J9	Normal		J9	November 1, 1999	Not Analyzed	0.098	Not Analyzed	0.012	0.076	0.1	<0.054	0.06	<0.54
EK-SB-J10	Normal		J10	November 1, 1999	Not Analyzed	0.200	**0.000049***	<6.5	<6.5	<6.5	<16.0	<6.5	<0.55
EK-SB-J13	Normal		J13	November 16, 1999	Not Analyzed	0.016	Not Analyzed	0.01	0.054	0.072	<0.027	0.07	<0.54
EK-SB-J14	Normal		J 14	November 1, 1999	Not Analyzed	0.021	Not Analyzed	0.25	<0.021	0.004	<0.053	<0.021	<0.53
EK-SB-J16	Normal		J 16	November 16, 1999	Not Analyzed	0.034	Not Analyzed	0.01	0.059	0.068	<0.029	0.03	<0.57
EK-SB-J18	Normal		J18	November 1, 1999	Not Analyzed	0.085	Not Analyzed	0.25	<0.85	<0.85	<2.1	<0.85	<0.53
EK-SB-J118	Field Duplicate		J18	November 1, 1999	Not Analyzed	0.076	Not Analyzed	1	<0.87	<0.87	<2.2	<0.87	<0.54
GFI-SB-J18	EPA Split Sample		J18	November 1, 1999	Not Analyzed	<0.1	Not Analyzed	0.3	<0.2	0.2	<0.2	<0.2	0.7
EK-SB-J19	Normal		J19	November 1, 1999	Not Analyzed	0.083	Not Analyzed	0.018	0.030	0.04	<0.053	<0.021	<0.53
EK-SB-J20	Normal		J20	August 12, 1999	Not Analyzed	0.012	1.20E-08	0.736	0.562	0.2	0.29	0.23	<0.57
EK-SB-J20a[†]	Resample		J20	September 29, 1999	Not Analyzed	Not Analyzed	Not Analyzed	0.093	0.077	0.075	0.039	0.05	Not Analyzed
EK-SB-K1	Normal	K	K1	November 16, 1999	Not Analyzed	0.218	8.44E-07	0.02	0.040	0.03	<0.054	<0.022	<0.54
EK-SB-K2	Normal		K2	October 25, 1999	Not Analyzed	0.036	Not Analyzed	<0.22	0.300	0.061	<0.54	<0.22	<0.54
EK-SB-K3	Normal		K3	October 25, 1999	Not Analyzed	0.009	Not Analyzed	0.052	0.220	0.22	0.17	0.19	<0.55
EK-SB-K5	Normal		K5	August 12, 1999	Not Analyzed	<0.037	Not Analyzed	0.727	0.649	0.333	<0.028	0.31	<0.56
EK-SB-K5a[†]	Resample		K5	September 29, 1999	Not Analyzed	Not Analyzed	Not Analyzed	0.811	0.598	0.449	0.32	<0.3	Not Analyzed
EK-SB-K6	Normal		K6	November 16, 1999	Not Analyzed	0.120	Not Analyzed	2.3	<0.21	0.099	<0.54	<0.21	<0.54
GFI-SB-K14	EPA Split Sample		K14	October 22, 1999	Not Analyzed	0.200	Not Analyzed	0.09	0.080	0.07	0.01	0.06	0.7
EK-SB-L5	Normal	L	L5	August 12, 1999	Not Analyzed	0.130	Not Analyzed	0.1	0.160	0.063	<0.062	0.09	<0.62
GFI-SB-L5	EPA Split Sample		L5	August 12, 1999	Not Analyzed	0.300	Not Analyzed	<0.1	0.200	<0.2	<0.1	<0.4	<1
EK-SB-L7	Normal		L7	May 12, 1999	Not Analyzed	0.009	Not Analyzed	0.002	0.020	0.005	<0.025	<0.011	<0.56
EK-SB-L10	Normal		L10	August 12, 1999	Not Analyzed	0.048	Not Analyzed	<0.011	0.369	<0.011	<0.026	<0.011	<0.53
EK-SB-L Side Wall	Normal		WALL	May 12, 1999	90	0.019	Not Analyzed	0.619	**1.25[‡]**	0.5	0.599	0.88	Not Analyzed
EK-SB-M7	Normal	M	M7	November 16, 1999	Not Analyzed	0.038	Not Analyzed	0.563	0.043	0.07	<0.028	0.02	<0.56
EK-SB-M9	Normal		M9	December 1, 1999	Not Analyzed	0.046	Not Analyzed	0.0085	0.026	0.021	0.03	0.03	<0.5
EK-SB-M12	Normal		M12	November 16, 1999	Not Analyzed	0.028	9.60E-08	0.025	0.051	0.051	<0.025	0.02	<0.56
EK-SB-M20	Normal		M20	May 12, 1999	Not Analyzed	0.036	Not Analyzed	0.02	0.020	0.01	<0.027	0.02	<0.54
EK-SB-O11	Normal	O	O11	December 3, 1999	460	0.330	Not Analyzed	0.011	0.020	0.01	<0.029	0.02	<0.58
EK-SB-CSS1[1]	Normal	--	Stockpile 1	August 30, 1999	1250	0.039	7.81E-06	0.011	<0.0022	0.001	<0.0055	<0.0022	<0.55

Table 5
Remedial Action Confirmation Sample Result Exceedances

Notes:
Results highlighted in red exceeded the Performance Standard.

1 - Sample collected from clean soil stockpiles used as Site backfill.

* Only one of the constituents was detected about the soil Performance Standard, and the concentration is not significantly above the soil Performance Standard. This single exceedance is not considered significant enough to warrant further excavation. (Explanation given from the 2002 Final Remedial Action Report).

‡ - Exceedance associated will fill soil brought to Site. Grid was closed. (Note from the 2002 Final Remedial Action Report).

Sample exceedances where an additional foot of soil was removed post sample collection are not shown.

Samples were collected at the bottom or sidewall of excavations; however depth depths were not recorded in any of the documents reviewed for this Five Year Review.

ESD - Explanation of Significant Differences
mg/kg - milligrams per kilogram
ROD - Record of Decision
PCB - polychlorinated biphenyls
TPH - total petroleum
hydrocarbons

Table 6
Closeout Sampling Groundwater Results

Well ID		Metals (mg/L)							VOCs (ug/L)				
		Antimony	**Arsenic**	**Beryllium**	**Mercury**	**Nickel**	**Silver**	**Thallium**	**Benzene**	**Chloroform**	**cis-1,2-Dichlorothylene**	**Vinyl Chloride**	**Benzo(b) fluoranthene**
	PRG	0.006	0.05	0.004	0.002	0.1	0.05	0.002	5	100	70	2	0.2
	MCL	0.006	0.01	0.004	NA	NA	NA	0.002	5	80	70	2	NA
P3	12/21/2000	<0.006	0.0098 DT	<0.004	<0.0002	0.0056 DT	<0.01 D	<0.002	<1	<1	<1	<1	<0.2
	3/21/2001	<0.006	0.0082 T	<0.004	<0.0002	0.0041 TBD	<0.005	0.001 T	<1	<1	<1	<1	<0.2
	6/12/2001	<0.006	0.011	<0.004	<0.0002	0.0046 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	10/18/2001	<0.006	0.0088 T	<0.004	0.00011 T	0.0039 T	<0.005	0.0012 T UB	<1	<1	<1	<1	<0.2
P5a	12/20/2000	<0.006	0.0063 T	0.0001 T	<0.0002	0.009 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	3/19/2001	<0.006	<0.01	<0.004	0.0001 T	0.013 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	3/20/01 Filtered	<0.006	<0.01	<0.004	0.0002	0.0051 T	<0.005	<0.002	--	--	--	--	--
	6/12/2001	<0.006	0.0065 T	<0.004	0.0007	0.0056 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	10/18/2001	<0.006	0.011	<0.004	<0.0002	0.0042 T	<0.005	0.0015 T UB	<1	<1	<1	<1	<0.2
P5b (*FD)	12/21/2000*	0.0024 T	<0.01	<0.004	0.0002	<0.04	<0.005	<0.002	<1	<1	0.9 T	0.4 T	<0.2
	3/20/2001*	<0.006	<0.01	<0.004	0.0002	0.001 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/12/2001*	<0.006	0.0069 T	<0.004	<0.002	0.0008 T	0.003 T	<0.002	<1	<1	0.6 T	<1	<0.2
	10/17/2001	<0.006	<0.01	<0.004	<0.002	0.0019 T UB	<0.005	0.0012 T UB	<1	<1	0.5 T	<1	<0.2
P6a	12/21/2000	<0.006	0.041	<0.004	<0.0002	0.0017 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	3/20/2001	<0.006	0.025	<0.004	0.0002	0.0026 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/12/2001	<0.006	0.026	<0.004	<0.0002	0.0009 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	10/17/2001	<0.006	<0.01	<0.004	0.00018 T	0.002 T UB	<0.005	0.0011 T UB	<1	<1	<1	<1	<0.2
P6b	12/21/2000	<0.006	0.0023 T	<0.004	<0.0002	<0.04	<0.005	<0.002	<1	<1	0.4 T	<1	<0.2
	3/20/2001	<0.006	<0.01	<0.004	0.0001 T	0.0015 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/12/2001	<0.006	0.0043 T	<0.004	<0.0002	0.0027 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	10/17/2001	0.0038 TUB	0.039	<0.004	0.00021	0.0013 T UB	<0.005	<0.002	<1	<1	<1	<1	<0.2
P7	12/20/2000	<0.006	0.003 DT	<0.004	<0.0002	0.013 DT	<0.01 D	<0.002	<1	<1	<1	<1	<0.2
	3/19/2001	<0.006	<0.01	<0.004	0.0002	0.021 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/12/2001	<0.006	0.0038 T	<0.004	0.0002	0.039 T	0.0008 T UB	<0.002	<1	<1	<1	<1	<0.2
	10/18/2001	<0.006	0.0066 T	<0.004	0.000081 T	0.019 T UB	<0.005	**0.0022 UB**	<1	<1	<1	<1	<0.2
CH9	12/20/2000	0.0027 T	0.037	<0.004	<0.0002	0.0092 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	3/22/2001	<0.006	0.038	<0.004	0.0002	0.0049 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/12/2001	<0.006	0.037	<0.004	<0.002	0.0031 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	10/17/2001	<0.006	0.044	<0.004	0.0003	0.015 T UB	<0.005	0.0013 T UB	<1	<1	<1	<1	<0.2
CH10	12/20/2000	<0.006	0.04	<0.004	<0.0002	0.0032 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	3/22/2001	<0.006	0.03	<0.004	0.0003	0.0034 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/11/2001	<0.006	0.031	<0.004	<0.002	0.0042 T	0.0009 T UB	<0.002	<1	<1	0.8 T	<1	<0.2
	10/17/2001	<0.006	0.043	<0.004	0.000076 T	0.005 T UB	<0.005	**0.0032 UB**	<1	<1	<1	<1	<0.2
TW11	12/22/2000	<0.006	0.0021 T UB	<0.004	<0.0002	<0.04	<0.005	<0.002	0.3 F	<1	0.4 F	0.3 F	<0.2
	3/21/2001	<0.006	0.011	<0.004	<0.0002	0.0008 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/13/2001	<0.006	0.01 B	<0.004	<0.0002	0.0014 T	<0.005	<0.002	0.3 T	<1	<1	<1	<0.2
	10/17/2001	<0.006	0.005 T	<0.004	0.00062	0.0048 T UB	<0.005	0.00083 T UB	<1	<1	<1	<1	<0.2
TW12	12/22/2000	<0.006	0.0085 TB	<0.004	<0.0002	<0.04	<0.005	<0.002	<1	<1	<1	<1	<0.2

Table 6
Closeout Sampling Groundwater Results

	3/21/2001	<0.006	0.0077 T	<0.004	<0.0002	<0.04	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/13/2001	<0.006	0.0066 T UB	<0.004	<0.0002	0.0017 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	10/18/2001	<0.006	0.0081 T	<0.004	0.00016 T	0.0015 T	<0.005	0.00052 T UB	<1	<1	<1	<1	<0.2
MW2	12/22/2000	<0.006	0.0025 T UB	<0.004	<0.0002	0.0054 F	<0.005	<0.002	<1	<1	<1	<1	0.2 T UB
	3/19/2001	<0.006	0.0052 T	<0.004	<0.0002	0.0043 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/12/2001	<0.006	<0.01	<0.004	0.0004	**1.3**	<0.005	<0.002	<1	<1	<1	<1	<0.2
	10/18/2001	<0.006	0.0044 T	<0.004	0.00012 T	0.0079 T	<0.005	0.00022 UB	<1	<1	<1	<1	<0.2
MW3	12/20/2000	<0.006	0.0012 T	<0.004	<0.0002	0.015 T	<0.005	<0.002	<1	2.2	<1	<1	<0.2
	3/19/2001	<0.006	<0.01	<0.004	<0.0002	0.0089 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/12/2001	0.0035 T	0.0026 T	<0.004	<0.0002	0.002 T	<0.005	<0.002	<1	0.8 T	<1	<1	<0.2
	10/18/2001	<0.006	<0.01	<0.004	0.00011 T	0.003 T	<0.005	<0.002	<1	3.3	<1	<1	<0.2
MW7	12/20/2000	<0.006	<0.01	0.0001 T	<0.0002	0.0013 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	3/21/2001	<0.006	<0.01	<0.004	<0.0002	0.0008 T	0.0007 T	0.0012 T	<1	<1	<1	<1	<0.2
	6/13/2001	<0.006	0.0043 TUB	<0.004	<0.0002	0.0046 T	0.0006 T	<0.002	<1	<1	<1	<1	<0.2
	10/16/2001	<0.006	<0.01	<0.004	0.000092 T UB	0.0011 TUB	<0.005	**0.0026**	<1	<1	<1	<1	<0.2
W7	12/21/2000	<0.006	**0.076**	<0.004	<0.0002	0.032 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	3/19/2001	<0.006	**0.079**	<0.004	0.0003	0.019 T	<0.005	<0.002	<1	<1	<1	<1	<0.2
	6/13/2001	<0.006	**0.089 B**	<0.004	<0.0002	0.026 TB	<0.005	<0.002	<1	<1	<1	<1	<0.2
	10/16/2001	<0.006	0.047	<0.004	0.00042 B	0.022 TB	<0.005	**0.0025**	<1	<1	<1	<1	<0.2
W9	12/21/2000	<0.006	0.0043 TUB	<0.004	<0.0002	0.0062 T	<0.005	<0.002	<1	9.3	<1	<1	<0.2
	3/19/2001	<0.006	0.0021 T	<0.004	<0.0002	0.0056 T	<0.005	<0.002	<1	1	<1	<1	<0.2
	6/13/2001	<0.006	0.0048 T	<0.004	<0.0002	0.0077 T	<0.005	<0.002	<1	0.6 T	<1	<1	<0.2
	10/16/2001	0.0038 TB	0.0048 T	<0.004	0.00016 T	0.023 T	<0.005	<0.002	<1	0.9 T	<1	<1	0.04 T
W15a	12/22/2000	<0.006	<0.01	0.0002 T	<0.0002	0.0016 T	<0.005	<0.002	<1	<1	24	<1	<0.2
	3/22/2001	<0.006	<0.01	0.0001 T	<0.0002	<0.04	<0.005	<0.002	<1	<1	26	<1	<0.2
	6/21/2001	**0.007**	0.0055 T UB	0.0001 T	<0.0002	0.0016 T	<0.005	<0.002	<1	<1	19 J	<1	<0.2
	10/17/2001	<0.006	<0.01	<0.04	0.000078 T	0.0026 T UB	0.0007 T	**0.004 UB**	<1	<1	14	<1	<0.2
W17	12/20/2000	<0.006	<0.05 D	<0.04	<0.0002	**<0.2 D**	<0.025 D	<0.002	<1	<1	5.1	<1	<0.2
	3/21/2001	<0.006	<0.01	0.0001 T	<0.0002	<0.04	<0.005	<0.002	<1	<1	5.3	<1	<0.2
	6/14/2001	**0.0076 UB**	0.0062 T	0.0001 T	<0.0002	0.0013 T	0.0011 B	<0.002	<1	<1	4.3	<1	<0.2
	10/16/2001	<0.006	<0.01	0.00013 T	0.00042 B	0.0013 T UB	<0.005	**0.0028**	<1	<1	3	<1	<0.2
W18	12/19/2000	<0.006	0.011 UBD	0.00013 T	<0.0002	**<0.2 D**	<0.025 D	<0.002	<1	<1	19	<1	<0.2
	3/22/2001	<0.006	<0.01	0.000097 T	<0.0002	<0.04	<0.005	<0.002	<1	<1	16	<1	<0.2
	6/13/2001	**0.0082**	0.0072 TUB	0.0001 T	<0.0002	0.0008 T	0.0004 T	<0.002	<1	<1	11	<1	<0.2
	10/18/2001	<0.006	<0.01	0.0001	0.00009 T	0.0013 T	<0.005	0.0014 T UB	<1	<1	5.2	<1	<0.2
W19	12/21/2000	<0.006	<0.05 D	<0.004	<0.0002	<0.2 D	<0.025 D	<0.002	<1	<1	31	<1	<0.2
	3/22/2001	<0.006	<0.01	0.000085 T	<0.0002	0.0025 T	<0.005	<0.002	<1	<1	39	<1	<0.2
	6/14/2001	**0.0063 UB**	0.0043 T	0.0001 T	<0.0002	<0.04	0.0016 B	<0.002	<1	<1	34	<1	<0.2
	10/19/2001	<0.006	<0.01	0.000096 T	0.000082 T	0.0012 T	<0.005	0.0018 T UB	<1	<1	35	<1	<0.2
W20	12/21/2000	<0.006	<0.05 D	<0.004	<0.0002	<0.2 D	<0.025 D	<0.002	<1	<1	14	<1	<0.2
	3/22/2001	<0.006	<0.01	0.00011 T	0.00025	0.0011 T	<0.005	<0.002	<1	<1	23	<1	<0.2
	6/14/2001	0.0053 T	0.0045 T	0.0001 T	<0.0002	<0.04	0.0008 B	<0.002	<1	<1	19	<1	<0.2
	10/19/2001	<0.006	<0.01	<0.004	0.000062 T	<0.04	<0.005	**0.0022 T UB**	<1	<1	23	<1	<0.2

Table 6
Closeout Sampling Groundwater Results

Notes:

µg/L: micrograms per liter
mg/L: milligrams per liter

MCL: maximum contaminant level
NA: not applicable
PRG: Preliminary Remediation Goals
Results highlighted in red exceeded the MCL
Results highlighted in **red and bold** exceeded the PRG

The following notes are from the Groundwater Compliance Monitoring Data Summary Report:

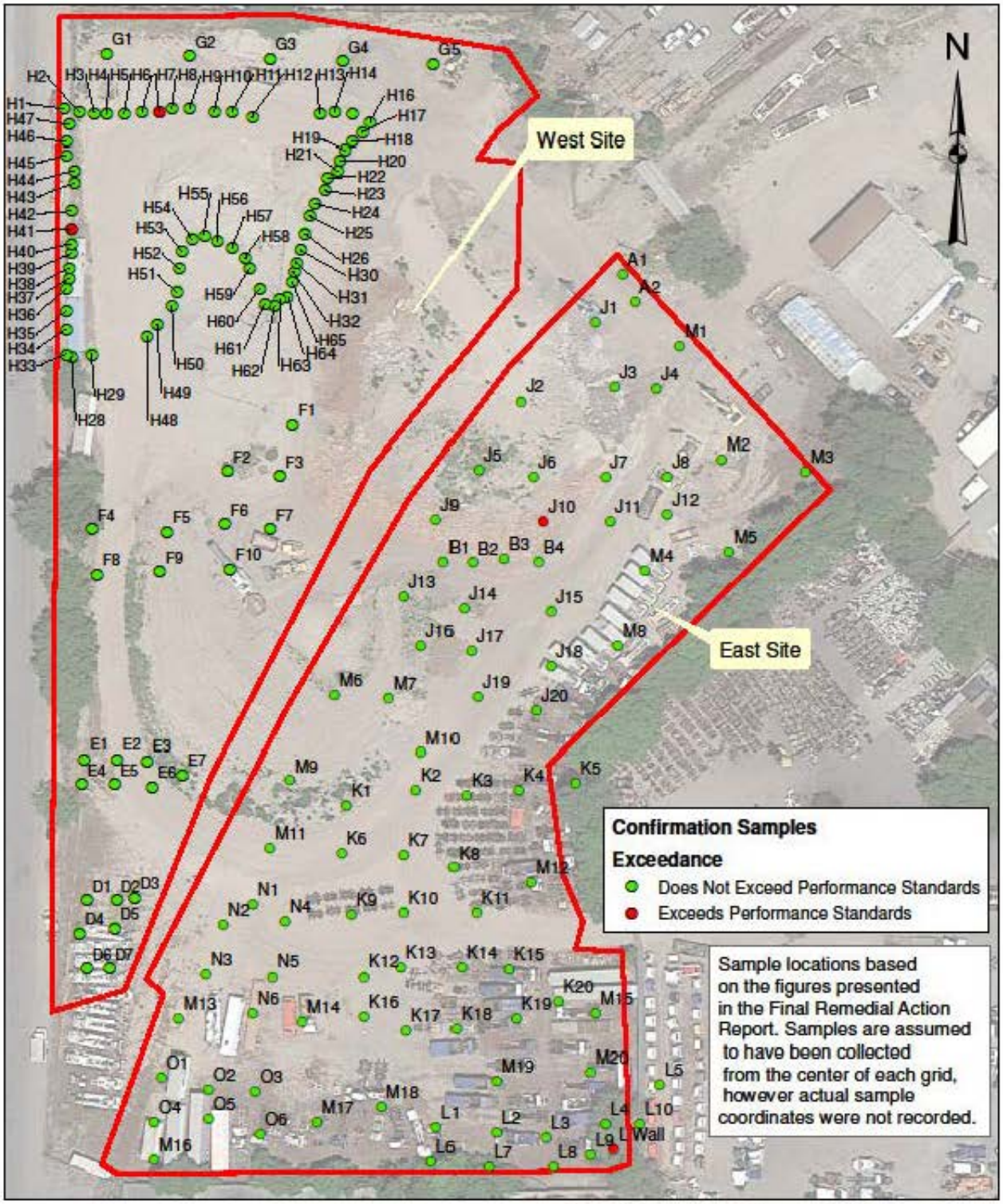
B: Analyte detected in an associated blank
D: Sample dilution required for analysis: reported values reflect the dilution
F: Analyte was positively identified by the reported concentration is estimated, reported concentration is less than the practical quantification limit, but greater than the method detection limit.
J: Data area estimated due to associated quality control data.
T: Analyte was positively identified but the reported concentration is estimated: reported concentration is less than the practical quantification limit, but greater than the method detection limit.
UB: Analyte considered not detected based on associated blank data.

Figures

0 0.05 0.1 0.2 0.3 0.4 Miles

FIGURE 1

Overview Map
Petrochem/Ekotek Site
Salt Lake City, Utah



Confirmation Sample Locations
Petrochem/Ekotek Site
Salt Lake City, Utah

FIGURE 2

Attachment A:
Public Notice

PUBLIC NOTICE

Five-Year Review of Petrochem/Ekotek Superfund Site

Salt Lake County

The Utah Department of Environmental Quality, Division of Environmental Response and Remediation (UDEQ/DERR), in cooperation with the U.S. Environmental Protection Agency (EPA), is conducting a Five-Year review of the former Petrochem /Ekotek Superfund Site located at 1628 North Chicago Street, Salt Lake City, Salt Lake County, Utah.

The purpose of a Five-Year review is to determine whether or not the cleanup and other actions taken at the site are protective of human health and the environment. The review includes physically inspecting the site, examining any data and maintenance records, as well as interviews with stakeholders. UDEQ/DERR and EPA will prepare a report for public review summarizing the results this year.

The site was placed on the National Priorities List (NPL) in 1992 as the area was used for oil refining from 1953 to 1978, and later converted into a hazardous waste storage/treatment and petroleum recycling facility from 1980 to 1988.

Cleanup activities included the removal of above-ground and underground storage tanks, containers, contaminated sludge, pooled liquids, and processing equipment from the site. Wastes and solvents from used petroleum products had contaminated surface and subsurface soils, as well as groundwater. The cleanup was completed in 2000 and the site was deleted from the National Priorities List in 2003.

You can also find information about the Petrochem /Ekotek Superfund Site on the EPA Website at: **http://www2.epa.gov/region8/petrochem-ekotek**

If you would like more information about the review or would like to participate in an interview, please contact:

Katie Crane
UDEQ Project Manager
Phone: 801-536- 4169
E-Mail: kcrane@utah.gov

Dave Allison
UDEQ Community Involvement
Phone: 801-536-4479
E-Mail: dallison@utah.gov

Attachment B:
List of Documents Reviewed

Attachment B: List of Documents Reviewed

Environmental Covenant, Petrochem/Ekotek Site. September 2008.

EPA Superfund Record of Decision: Petrochem Recycling Corp./Ekotek Plant. September 1996.

EPA Superfund Explanation of Significant Differences: Petrochem Recycling Corp./Ekotek Plant. December 1997.

EPA Superfund Explanation of Significant Differences: Petrochem Recycling Corp./Ekotek Plant. May 1999.

Final Baseline Human Health Risk Assessment, Petrochem/Ekotek Site. August 1994.

Final Design Submittal for the Soil & LNAPL Remediation. December 1998.

Final Remedial Action Report, Petrochem/Ekotek Site. September 2002.

Final Remediation Action Confirmation Sampling and Performance Standard Verification Plan, Petrochem/Ekotek Site. May 1999.

Final Remedial Action Groundwater Monitoring Plan, Petrochem/Ekotek Site, June 1999.

Final Remediation Action Work Plan, Petrochem/Ekotek Site. May 1999.

Final Remedial Design Work Plan, Petrochem/Ekotek Site. April 1998.

Well Abandonment Plan, Petrochem/Ekotek Site. June 2002.

Preliminary Site Close Out Report, Petrochem/Ekotek Site. April 2000.

Revision to the Ground-Water Compliance Monitoring and Data Summary Report, Petrochem/Ekotek Site. May 2002.

Attachment C:
Site Inspection Check List

Site Inspection Checklist

I. SITE INFORMATION	
Site name: Petrochem/Ekotek	**Date of inspection: June 17, 2015**
Location and Region: Salt Lake City, UT/EPA Region 8	**EPA ID: UTD093119196**
Agency, office, or company leading the Five-Year Review: UDEQ	**Weather/temperature:**

Remedy Includes: (Check all that apply)

- Landfill cover/containment
- Access controls
- X Institutional controls
- • Groundwater pump and treatment
- • Surface water collection and treatment
- • Other_____
- _____
- • Monitored natural attenuation
- • Groundwater containment
- • Vertical barrier walls

Attachments: • Inspection Narrative attached •

II. INTERVIEWS (Check all that apply)

1. **O&M Site manager** _____ _____ _____
   Name Title Date
   Interviewed • at Site • at office • by phone Phone no. _____
   Problems, suggestions; • Report attached _____
   _____

2. **O&M staff** _____ _____ _____
   Name Title Date
   Interviewed • at Site • at office • by phone Phone no. _____
   Problems, suggestions; • Report attached _____
   _____

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

Agency:
Contact: _____ _____ _ _____
Name Title Date Phone no.
Problems; suggestions; •
_____

Agency:
Contact: ___ _____
Name Title Date Phone no.
Problems; suggestions; •
_____

Agency: SLCO
Contact: _____ _____
Name Title Date Phone no.
Problems; suggestions; •
_____

Agency: Salt Lake Valley Health Department
Contact: Teresa Gray, Bureau Manger and John Hoggan, Emergency Response Coordinator
Name Title
July 6, 2015
Date Phone no.
Problems; suggestions; • Report attached _____See Attachment E
_____

4. **Other interviews** (optional) • See Attachment E

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

1. **O&M Documents**
   - O&M manual • Readily available • Up to date X N/A
   - As-built drawings • Readily available • Up to date X N/A
   - Maintenance logs • Readily available • Up to date X N/A

   Remarks_____

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

   Remarks_____

3. **O&M and OSHA Training Records** • Readily available • Up to date X N/A

   Remarks_____

4. **Permits and Service Agreements**
   - Air discharge permit • Readily available • Up to date X N/A
   - Effluent discharge • Readily available • Up to date X N/A
   - Waste disposal, POTW • Readily available • Up to date X N/A
   - Other permits_____ • Readily available • Up to date X N/A

   Remarks_____

6. **Settlement Monument Records** • Readily available • Up to date X N/A

   Remarks_____

7. **Groundwater Monitoring Records** • Readily available • Up to date X N/A

   Remarks_____

8. **Leachate Extraction Records** • Readily available • Up to date X N/A

   Remarks_____

9. **Discharge Compliance Records**
   - Air • Readily available • Up to date X N/A
   - Water (effluent) • Readily available • Up to date X N/A

   Remarks_____

10. **Daily Access/Security Logs** • Readily available • Up to date X N/A

    Remarks_____

IV. O&M COSTS

1. **O&M Organization**
   - State in-house
   - Contractor for State X N/A
   - PRP in-house
   - Contractor for PRP X N/A
   - Federal Facility in-house
   - Contractor for Federal Facility X N/A
   - 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_____ _____ • Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ • Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ • Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ • Breakdown attached
   Date Date Total cost

   From_____ To_____ _____ • 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 X Applicable • N/A

A. Fencing

1. **Fencing damaged** • Location shown on Site map • Gates secured X N/A
   Remarks_____

B. Other Access Restrictions

1. **Signs and other security measures** • Location shown on Site map X N/A
   Remarks_____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented • Yes X No • N/A
Site conditions imply ICs not being fully enforced • Yes X No • N/A

Type of monitoring (*e.g.*, self-reporting, drive by) Site Visit
Frequency _____
Responsible party/agency UDEQ
Contact _____ _____ _____ _____
Name Title Date Phone no.

Reporting is up-to-date • Yes • No X N/A
Reports are verified by the lead agency • Yes • No X N/A

Specific requirements in deed or decision documents have been met • Yes • No X N/A
Violations have been reported • Yes • No X N/A
Other problems or suggestions: • Report attached

_____
_____
_____
_____

2. **Adequacy** • ICs are adequate • ICs are inadequate X N/A
Remarks_____
_____
_____

D. General

1. **Vandalism/trespassing** • Location shown on Site map X No vandalism evident
Remarks_____
_____

2. **Land use changes on Site** X N/A
Remarks_____
_____

3. **Land use changes off-site** X N/A
Remarks_____
_____

VI. GENERAL SITE CONDITIONS

A. Roads • Applicable X N/A

1. **Roads damaged** • Location shown on Site map • Roads adequate X N/A
Remarks_____
_____

B. Other Site Conditions

Remarks _____

_____

_____

_____

_____

_____

VII. LANDFILL COVERS • Applicable X N/A

A. Landfill Surface

1. **Settlement** (Low spots) • Location shown on Site map • Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

2. **Cracks** • Location shown on Site map • Cracking not evident
   Lengths_____ Widths_____ Depths_____
   Remarks_____
   _____

3. **Erosion** • Location shown on Site map • Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

4. **Holes** • Location shown on Site map • Holes not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

5. **Vegetative Cover** • Grass • Cover properly established • No signs of stress
   • Trees/Shrubs (indicate size and locations on a diagram)
   Remarks_____
   _____

6. **Alternative Cover (armored rock, concrete, etc.)** • N/A
   Remarks_____
   _____

7. **Bulges** • Location shown on Site map • Bulges not evident
   Areal extent_____ Height_____
   Remarks_____
   _____

8. **Wet Areas/Water Damage** • Wet areas/water damage not evident
   - Wet areas • Location shown on Site map Areal extent_____
   - Ponding • Location shown on Site map Areal extent_____
   - Seeps • Location shown on Site map Areal extent_____
   - Soft subgrade • Location shown on Site map Areal extent_____

   Remarks_____
   _____

9. **Slope Instability** • Slides • Location shown on Site map • No evidence of slope instability
Areal extent_____
Remarks_____
_____

B. Benches • Applicable • N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** • Location shown on Site map • N/A or okay
Remarks_____
_____

2. **Bench Breached** • Location shown on Site map • N/A or okay
Remarks_____
_____

3. **Bench Overtopped** • Location shown on Site map • N/A or okay
Remarks_____
_____

C. Letdown Channels Applicable •X 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** • Location shown on Site map • No evidence of settlement
Areal extent_____ Depth_____
Remarks_____
_____

2. **Material Degradation** • Location shown on Site map • No evidence of degradation
Material type_____ Areal extent_____
Remarks_____
_____

3. **Erosion** • Location shown on Site map • No evidence of erosion
Areal extent_____ Depth_____
Remarks_____
_____

4. **Undercutting** • Location shown on Site map • No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____
_____

5. **Obstructions** Type_____ • No obstructions
• Location shown on Site map Areal extent_____
Size_____
Remarks_____
_____

6. **Excessive Vegetative Growth** Type_____
• No evidence of excessive growth
• Vegetation in channels does not obstruct flow
• Location shown on Site map Areal extent_____
Remarks_____
_____

D. Cover Penetrations • Applicable X N/A

1. **Gas Vents** • Active • Passive
• Properly secured/locked • Functioning • Routinely sampled • Good condition
• Evidence of leakage at penetration • Needs Maintenance
• N/A
Remarks_____
_____

2. **Gas Monitoring Probes**
• Properly secured/locked • Functioning • Routinely sampled • Good condition
• Evidence of leakage at penetration • Needs Maintenance • N/A
Remarks_____
_____

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

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

5. **Settlement Monuments** • Located • Routinely surveyed • N/A
Remarks_____
_____

E. Gas Collection and Treatment • Applicable X N/A

1. **Gas Treatment Facilities**
   - • Flaring • Thermal destruction • Collection for reuse
   - • Good condition • Needs Maintenance

   Remarks_____
   _____

2. **Gas Collection Wells, Manifolds and Piping**
   - • Good condition • Needs Maintenance

   Remarks_____
   _____

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

   Remarks_____
   _____

F. Cover Drainage Layer • Applicable X N/A

1. **Outlet Pipes Inspected** • Functioning • N/A

   Remarks_____
   _____

2. **Outlet Rock Inspected** • Functioning • N/A

   Remarks_____
   _____

G. Detention/Sedimentation Ponds • Applicable X N/A

1. **Siltation** Areal extent_____ Depth_____ • N/A
   - • Siltation not evident

   Remarks_____
   _____

2. **Erosion** Areal extent_____ Depth_____
   - • Erosion not evident

   Remarks_____
   _____

3. **Outlet Works** • Functioning • N/A

   Remarks_____
   _____

4. **Dam** • Functioning • N/A

   Remarks_____
   _____

H. Retaining Walls • Applicable X N/A

1. **Deformations** • Location shown on Site map • Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks_____
   _____

2. **Degradation** • Location shown on Site map • Degradation not evident
   Remarks_____
   _____

I. Perimeter Ditches/Off-site Discharge • Applicable X N/A

1. **Siltation** • Location shown on Site map • Siltation not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

2. **Vegetative Growth** • Location shown on Site map • N/A
   • Vegetation does not impede flow
   Areal extent_____ Type_____
   Remarks_____
   _____

3. **Erosion** • Location shown on Site map • Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

4. **Discharge Structure** • Functioning • N/A
   Remarks_____
   _____

VIII. VERTICAL BARRIER WALLS • Applicable X N/A

1. **Settlement** • Location shown on Site map • Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

2. **Performance Monitoring** Type of monitoring_____
   • Performance not monitored
   Frequency_____ • Evidence of breaching
   Head differential_____
   Remarks_____
   _____

C. Treatment System • Applicable X N/A

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

   Remarks_____
   _____

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

   Remarks_____
   _____

3. **Tanks, Vaults, Storage Vessels**
   - • N/A • Good condition • Proper secondary containment • Needs Maintenance

   Remarks_____
   _____

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

   Remarks_____
   _____

5. **Treatment Building(s)**
   - • N/A • Good condition (esp. roof and doorways) • Needs repair
   - • Chemicals and equipment properly stored

   Remarks_____
   _____

6. **Monitoring Wells** (pump and treatment remedy)
   - • Properly secured/locked • Functioning • Routinely sampled • Good condition
   - • All required wells located • Needs Maintenance • N/A

   Remarks_____
   _____

D. Monitoring Data X NA

1. Monitoring Data
   - • Is routinely submitted on time • Is of acceptable quality

2. Monitoring data suggests:
   - • Groundwater plume is effectively contained • Contaminant concentrations are declining

D. Monitored Natural Attenuation X NA

1. **Monitoring Wells** (natural attenuation remedy)
   - Properly secured/locked
   - Functioning
   - Routinely sampled
   - Good condition
   - All required wells located
   - Needs Maintenance
   - N/A

Remarks_____
_____

X. OTHER REMEDIES

No remedies are currently applied at the Site.

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 Narrative_____
_____
_____
_____
_____
_____
_____
_____
_____

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.

Attachment D:
Site Photos

Photo No. 1 – Soil and gravel piles located on the North side of the Site.

Photo No. 2 – Gravel piles located on the northeast side of the Site; photo looking north.

Photo No. 3 – Gravel piles located on the northwest side of the Site; note the piles are above grade.

Photo No. 4 – Truck parts and garbage trucks stored on the southeast side of the Site.

Photo No. 5 – Truck parts stored on the southeast and central portions of the Site.

Photo No. 6 – Locked gate to the Site.

Attachment E:
Interview Summary Reports

Petrochem/Ekotek Superfund Site
Five-Year Review
Interview of Community Members

Site Name: Petrochem/Ekotek EPA ID: UTD093119196	Date: 17 June 2015 Time: 8:30 AM
Type of Contact: ☐ Telephone ☐ Email X Visit	Contact Made By: Katie Crane and Dave Allison, Utah Department of Environmental Quality
Person Contacted	
Name: Jason Vriens	Organization: Site Property Owner
Address: Vriens Truck Parts 1575 North Beck St. Salt Lake City, Utah 84116	Telephone Number: (801) 521-2002 Email Address: jfrotus@aol.com

1. **How long have you lived in the vicinity of the Petrochem/Ekotek Superfund Site or how long has your organization had an interest in the Petrochem/Ekotek Superfund Site?** Jason Vriens is the property owner of the former Petrochem/Ekotek Superfund Site since 2007. Mr. Vriens' company, Vriens Truck Parts, is located adjacent to the Site selling and recycling differentials, transmissions, engines, cabs and hoods for heavy-duty trucks since 1995. Mr. Vriens purchased the 6.6 acre property on a tax sale with the former Site owner through Salt Lake County. Mr. Vriens also leases 3.3-acres of the Site to an excavation company, Applied Ex Inc., which uses the Site to crush rock materials and stage soil from construction Sites for re-use.

2. **Are you aware of the Petrochem/Ekotek Superfund Site and the response work that was taken or is underway to address environmental contamination?** Mr. Vriens is aware of the Site and cleanup history. Vriens' company has been located next to the Site since 1995 and at the time of some of the cleanup activities.

3. **What's your overall impression (your general sentiment) of the response work taken/underway that was completed at the Petrochem/Ekotek Superfund Site?** Mr. Vriens looked into purchasing the property, was informed of the cleanup conditions. Considering the significant expense by the EPA, approximately 10 million dollars, he felt assured there are not any health or environmental issues with the property.

4. **What would you say are the effects that past operations had on the community surrounding the Petrochem/Ekotek Superfund Site?** Mr. Vriens has not experienced or noticed any residual implications from the properties previous use history as an oil recycling facility. Mr. Vriens understands the property soils are cleaned to an industrial standard which is used to stage semi-trucks and parts.

5. **Over the past five years, have there been any events, incidents, or activities at the Petrochem/Ekotek Superfund Site that concern you? If so, please provide details.** Mr. Vriens was aware of some community concerns at the time of the cleanup and some of the attention with responsible parties. Mr. Vriens said the cleanup resolved any contamination concerns with the property.

6. **Are you aware of any unusual activities at the Petrochem/Ekotek Superfund Site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give dates, details, and outcomes if known.** No incidents have ever occurred requiring local authorities to respond. Mr. Vriens said the fenced property has only had some theft to the truck parts or batteries stage on Site. No instances compromising the Site conditions.

7. **Do you feel well informed about the activities and progress over the last five years at the Petrochem/Ekotek Superfund Site? Do you know how to contact the Environmental Protection Agency and/or UDEQ-DERR if you have questions or concerns about the Petrochem/Ekotek Superfund Site? Also, do you feel the Agencies communicate with the public or respond effectively to their comments?** As the property Site is cleaned-up, Mr. Vriens has not needed any information over the last five years and not had any communication from UDEQ or EPA since buying the property. Establishing contacts during the Five-Year Review will provide contacts for any future questions.

8. **Are you aware of any concerns about Petrochem/Ekotek Superfund Site impacts on development activities, land use, or groundwater use?** Mr. Vriens said there are no concerns he is aware of regarding any Site conditions with the property.

9. **Do you have any additional comments, suggestions, or recommendations regarding the Petrochem/Ekotek Superfund Site management (for example, questions pertaining to institutional controls)?** Mr. Vriens would like copies of any maps, environmental covenant, or cleanup related Site documents for his records. Mr. Vriens knows he has paperwork regarding the Site cleanup, however, he is not sure where it is located. Mr. Vriens also wanted to be contacted with any future developments regarding the property.

   Mr. Vriens suggested speaking to Applied Ex, Inc., the excavation company leasing some of the property to stage construction soil and crush rock, for the Five-Year Review interviews.

Petrochem/Ekotek Superfund Site
Five-Year Review
Interview of Local Agencies

Site Name: Petrochem/Ekotek EPA ID: UTD093119196	Date: 6 July 2015
Type of Contact: Telephone	Contact Made By: Dave Allison, Utah Department of Environmental Quality
Person Contacted	
Name: Teresa Gray, Bureau Manager John Hoggan, MST, LEHS Emergency Response Coordinator	Organization: Salt Lake Valley Health Department
Address: Bureau of Water Quality and Hazardous Waste 788 East Woodoak Lane (5380 South) Murray, UT 84107	Telephone Number: (385) 468-3860 Email Address: www.slcohealth.org

1. **Is your organization/department aware of the Petrochem/Ekotek Superfund Site and the actions taken/underway to address environmental contamination?** The Salt Lake Valley Health Department (SLVHD), Bureau of Water Quality and Hazardous Waste, maintains approval authority to sign off on development or building permit applications within the Salt Lake County. Any contaminated properties, such as at Superfund Sites, is of interest to the department to protect the public's health, safety, and welfare.

2. **Are you aware of the Petrochem/Ekotek Superfund Site and the response work that was taken or is underway to address environmental contamination?** SLVHD staff said they were aware of the cleanup of the Petrochem Site and general details regarding the nature of the contamination as a former oil recycling operation.

3. **What's your overall impression (your general sentiment) of the response work taken/underway that was completed at the Petrochem/Ekotek Superfund Site?** SLVHD considers the Site cleaned-up according to the EPA and UDEQ determinations.

4. **What would you say are the effects that past operations had on the community surrounding the Petrochem/Ekotek Superfund Site?** SLVHD staff were not aware of any effects to the community other to the extent contaminated property was remediated in the north Salt Lake City area.

5. **Over the past five years, have there been any events, incidents, or activities at the Petrochem/Ekotek Superfund Site that concern you? If so, please provide details.** No reported incidents were reported to the SLVHD over the last five years.

6. **Are you aware of any unusual activities at the Petrochem/Ekotek Superfund Site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give dates, details, and outcomes if known.** SLVHD staff was not aware of any reported incidents or emergency responses from UDEQ or EPA for the Petrochem/Ekotek Site.

7. **Do you feel well informed about the activities and progress over the last five years at the Petrochem/Ekotek Superfund Site? Do you know how to contact the Environmental Protection Agency and/or UDEQ-DERR if you have questions or concerns about the Petrochem/Ekotek Superfund Site? Also, do you feel the Agencies communicate with the public or respond effectively to their comments?** SLVHD said they know how to contact the UDEQ and EPA and were not aware of any recent updates or progress for the former Petrochem/Ekotek Superfund Site since the cleanup was completed.

8. **Are you aware of any concerns about Petrochem/Ekotek Superfund Site impacts on development activities, land use, or groundwater use?** Based upon the Five-Year Review, the SLVHD wanted more information on the current land use of the property and did not find any existing required permits. The SLVHD contacted Bryan Burton at Applied Ex Inc., and is requiring a permit regarding his construction excavation operations at the former Petrochem/Ekotek Superfund Site. Applied Ex Inc. leases 3.3 –acres at the Site to manage construction debris using a rock crusher and staging soil.

9. **Do you have any additional comments, suggestions, or recommendations regarding the Petrochem/Ekotek Superfund Site management (for example, questions pertaining to institutional controls)?** The SLVHD requested to be updated as necessary regarding the Site status in the future.

10. **Do you have any additional comments?** No additional comments.