

First Five-Year Review Report

for

Intermountain Waste Oil Refinery (IWOR) Superfund Site

Bountiful City

Davis County, Utah

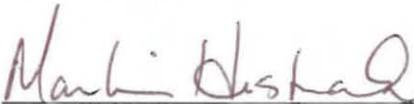
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9/29/08

**Intermountain Waste Oil Refinery
Five-Year Review Report**

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List of Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
DERR	Division Environmental Response and Remediation (Utah)
DPE	Dual Phase Extraction
IWOR	Intermountain Waste Oil Refinery
LTRA	Long-Term Response Action
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU1	Operable Unit 1
OU2	Operable Unit 2
PCE	tetrachloroethene
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objective
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SDWA	Safe Drinking Water Act
TCE	trichloroethylene
UDEQ	Utah Department of Environmental Quality
VOC	Volatile Organic Compound

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Intermountain Waste Oil Refinery Executive Summary

The remedies for the Intermountain Waste Oil Refinery (IWOR) Superfund Site (Site) in Bountiful, Utah included institutional controls, ground water pump and treatment with dual phase extraction, and groundwater monitoring. The Site achieved construction completion with the signing of the Preliminary Close Out Report on October 1, 2004. The trigger for this Five-Year Review was the start of Operable Unit 1 (OU1) Remedial Action (RA) September 23, 2003.

The assessment of this Five-Year Review found that the remedies are working in accordance with the requirements of the Record of Decisions (RODs). The threats have been addressed and the remedies are expected to be protective as long as the groundwater cleanup goals continue to be met as verified through the ongoing OU2 Long-Term Response Action, which is expected to continue for several more years.

There has been a new contaminant, PCE, which has been detected periodically above MCLs. Its occurrence will be evaluated further and referred to the assessment program for determination of its source.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name: Intermountain Waste Oil Refinery (IWOR)		
EPA ID: UT0001277359		
Region: 08	State: UT	City/County: Bountiful City, Davis County
SITE STATUS		
NPL status: Final		
Remediation status Long Term Remedial Action On Going - OU2		
Multiple OUs? YES	Construction completion date: 10 / 01 / 2004	
Has site been put into reuse? YES		
REVIEW STATUS		
Lead agency: EPA		
Author name: Lisa Lloyd		
Author title: Project Manager	Author affiliation: EPA	
Review period:** 04 / 10 / 2008 to 9 / 29 / 08		
Date(s) of site inspection: 04 / 10 / 2008		
Type of review: Post-SARA		
Review number: 1 (first)		
Triggering action: Actual RA Start at OU#1		
Triggering action date: 09 / 23 / 2003		
Due date (five years after triggering action date): 09 / 23 / 2008		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

There have been two groundwater monitoring events in the past year that have shown increases in the trichloroethylene (TCE) concentrations. Groundwater monitoring frequency has been increased to assure that the TCE concentrations do not continue to increase to levels substantially above MCLs. Currently groundwater TCE concentrations at the boundary are below MCLs.

Tetrachloroethene (PCE), which was not observed during the RI and most of the RA, has shown up in a groundwater monitoring well. It is believed that the source of this contamination is from a source different than the IWOR Site. Numerous other PCE groundwater Superfund sites are nearby. This contamination will be re-evaluated and then referred to the Superfund site assessment program for determination of the contaminant source.

Recommendations and Follow-up Actions:

As noted above, the frequency of groundwater monitoring has been increased. Additionally, possible other response actions have been discussed in meetings with EPA, UDEQ, and EPA's contractor. Further evaluation of additional response actions will be conducted after the October 2008 groundwater sampling event.

The PCE data needs to be provided to the UDEQ and EPA site assessment programs so the source of the PCE can be determined.

Protectiveness Statement(s):

The remedy at OU1 and OU2 is expected to be protective upon completion [of OU2 LTRA] or is protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risk are being controlled.

Other Comments:

The current land owner will be building on the Site and will meet the institutional control requirement to have a soil vapor mitigation system as part of their building.

Intermountain Waste Oil Refinery Five-Year Review Report

I. Introduction

The purpose of a Five-Year Review is to determine whether the remedy at a site is 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 identify recommendations to address them.

In summary, this Five-Year Review:

- was conducted by the EPA project manager with support from the state project manager during the spring and summer of 2008;
- covered the entire Site and both Operable Unit 1 (soils and subsurface soils) and Operable Unit 2 (groundwater);
- is the first Five-Year Review for the Site; and
- was triggered under statute by the OU1 remedial action start date, September, 23, 2003.

The Agency is preparing this Five-Year Review pursuant to 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 agency interpreted this requirement further in the National Contingency Plan (NCP); 40 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.

The United States Environmental Protection Agency (EPA), Region 8, conducted the Five-Year Review of the remedies implemented at the Intermountain Waste Oil Refinery (IWOR) Superfund Site (Site) in Bountiful, Utah. The review was conducted mainly by the EPA Site project manager with assistance from the EPA Site attorney and enforcement specialist and Utah state project manager. The review was conducted for the entire site from March 2008 through September 2008. This report documents the results of the review.

A five-year review is required by statute if hazardous substances, pollutants, or contaminants are left on site above levels that allow for unlimited use and unrestricted exposure. The review is needed since the potential for contaminated vapor accumulation in a future building does not allow for unrestricted use.

II. Site Chronology

Significant Site events are listed in Table 1.

Table 1: Chronology of Site Events

Event	Date
Initial discovery and preliminary investigation by Utah Department of Environmental Quality	1996 - 1999
NPL listing	May 11, 2000
Time Critical Removal action	August 2001
ROD signature OU1	November 26, 2001
OU2 Groundwater investigation	2000 - 2004
Administrative Order on Consent	December 20, 2005
Remedial Action start and completion OU1 (no design)	September 23, 2003 and September 24, 2003, respectively
ROD signature OU2	August 4, 2004
Superfund State Contract signature	August 18, 2004
Actual remedial action start OU2 (no design)	August 10, 2004
Construction completion date (preliminary close out report)	October 1, 2004
Final Close-out Report	Planned for FY 2011

III. Background

Physical Characteristics

The Site is located in the City of Bountiful, Davis County, Utah, at 995 South 500 West. The Site covers approximately two acres and is located along a commercial corridor. The Site is mostly flat with a slightly lower elevation to the west nearest 500 West, Figure 1. The buildings that once stood on the Site and one adjacent property have been demolished and at the time of the April Site inspection, only a small amount of demolition debris remained, (See Appendix 1 – Photos from Site Inspection). There are 10 groundwater monitoring wells on the Site, (Figure 2).

Land and Resource Use

A number of different operations have been reported to have taken place at the Site including: a brick manufacturing facility, an asphalt business, handling and processing of waste oil, a petroleum trucking business, and an oil-blending business.

At the start of the oil blending business, green bottoms (a fraction of crude oil) were blended with diesel fuel and sold for dust control at coal mines. Over subsequent years, used oil replaced the green bottoms and the end product was sold to cement kilns for use as fuel. The used oil was collected from facilities in Utah, Nevada, Idaho, and Wyoming. Waste sludge was reportedly disposed of in an off-site landfill and wastewater that may have remained after the treatment process was boiled off at the Site. Above ground tanks used by Intermountain Oil Company were located in an unpaved area surrounded by a soil berm.

The business was cited a number of times by the Davis County Health Department and the State of Utah. Neighbors of the site complained of odors and health problems, which they believed were associated with the wastes at the Site. The owners took steps to resolve some of these problems. The company forfeited its permit to operate on May 3, 1993. Also in 1993, the owners dismantled the equipment and consolidated some wastes and soils into a pile, then covered some of the area with several inches of gravel.

The Site was not used commercially from the early 1990s until late 2006 when it was purchased by a non-profit along with several adjacent properties. The new owner, an irrigation district, is placing these properties back into productive use. The owner has demolished the old buildings and cleaned up much of the “dirty” (but nonhazardous) soil and debris, and is working on plans to build an office and garage.

The shallow groundwater remains contaminated with low levels of TCE and PCE. This shallow aquifer is not currently used as a drinking water source.

Initial Response and Investigation

The initial sampling was conducted by UDEQ during 1996-1999. Several solvents (bromochloromethane, 1,1-dichloroethane, and 1,1,1-trichloroethane) were identified in the sump located east of the laboratory. Groundwater samples collected from an on-site monitoring well contained solvents (1,2-dichloroethane, 1,2-dichloroethene (cis-1,2-DCE), and trichloroethylene) (TCE). The Site was proposed for placement on the National Priorities List (NPL) in October 1999.

EPA finalized the Site on the Superfund NPL on May 11, 2000. EPA also began the remedial investigation (RI). The Site was divided into two operable units (OUs): Operable Unit 1 (OU1) addressed the near surface soil contamination and potential sources, including tanks, drums, and containers; while OU2 addressed the groundwater contamination.

In August 2001 during the OU1 RI, an EPA time critical removal occurred. The work included removing and disposing of principle threat waste, mainly containers and their contents. The removal included: all the chemicals located in the laboratory building; 21 55-gallon drums and numerous 5-gallon containers holding various chemicals or oily mixtures; two trailer tanks and their contents; piping and scrap equipment; empty tanks; the contents of an underground storage tank; and contents of the sump stored above ground in the southeast portion of the Site. The removal addressed most of the suspected sources that had resulted in soil vapor and groundwater contamination. Also, in 2001, the OU2 groundwater investigation field work began with the installation of monitoring wells.

Basis for taking Action

Under OU1, a human health and screening level ecological risk assessment was completed to determine the risk from soil contamination. There were no ecological concerns. The human health risk assessment determined accumulation of contaminant vapors inside a building constructed on the Site would likely create unacceptable risk. This potential risk was from volatile organic compounds (VOCs) that remained in the soil after suspected sources were removed and that could accumulate in buildings to levels of concern. The potential for future indoor vapor risk is the reason for the required Five-Year Review.

The OU2 risk assessment looked at the potential exposure pathways for the groundwater contamination at the Site. PCE was not detected during the OU2 RI nor found on site in soil, sumps or containers. For groundwater, the only chemical that contributed non-cancer or cancer risk above a level of concern was trichloroethylene (TCE). For non-cancer and cancer risk, the exposure pathway of primary concern was ingestion, with a contribution from inhalation of vapors during water use. The potential sources of this contamination had been removed from the Site, and the RI data indicated that the extent of the contamination is relatively small. Currently, no one is using the shallow groundwater for drinking and there are not immediate future plans to use this aquifer for drinking water. However, the State of Utah considers the aquifer as a potential drinking water source.

IV. Remedial Actions

For the purposes of Site investigation and clean up, the Site was divided into two operable units:

- Operable Unit 1 (OU1) - included soils, tanks, containers, and other potential contamination sources; and
- Operable Unit 2 (OU2) – groundwater.

Remedial Action OU1

The Record of Decision (ROD) for OU1 was signed on November 26, 2001. The selected remedy included two components: (1) the establishment of a Land Use Control

(institutional control); and (2) removal of an underground storage tank (UST) which was discovered during the OU2 investigation.

Workers and future residents were assumed to be the primary populations exposed to contaminated soil under the then current and anticipated future land uses. The risk assessment identified volatile organic compounds (VOCs) as contaminants of potential concern (COPCs). Cancer risks were within or below EPA's risk range for all scenarios. Non-cancer risks exceed a level of concern ($HQ > 1$) in soils in several areas of the Site. Risks were primarily due to inhalation of vapors from 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene, with smaller contributions from naphthalene, hexane, and cis-1,2-dichloroethene in some locations. Therefore, the primary OU1 RAO addressed VOC contaminated vapors as described below.

In addition, OU1 addressed potential sources of contamination. Most of the potential contamination sources, such as laboratory chemicals, tanks, drums, and sump contents, were removed during the OU1 removal action. Based on this information, the RAOs for IWOR as listed in the OU1 ROD are:

- Prevent exposure of workers and future residents from inhalation of contaminated vapors intruding from soil to indoor air. Non-cancer risks should be reduced to within or below a level of concern ($HQ < 1$); and
- Remove potential sources of soil and/or groundwater contamination.

The OU1 ROD required any buildings constructed on the Site to have a system that would prevent soil vapors from entering the buildings. The specifications of this requirement were formalized in an Environmental Notice and Institutional Control and filed with the Davis County Recorder's Office. This Environmental Notice and Institutional Control was developed in accordance with the Utah Environmental Institutional Control Act, which gives the Utah Department of Environmental Quality the authority to enforce this institutional control. The UST was removed during OU2 groundwater monitoring well installation field work.

Since the remedial action involved only an institutional control, there was no remedial design period. The remedial action start as listed in EPA's database is September 23, 2003, and end date is the date the Environmental Notice was recorded, September 24, 2003.

A check at the Recorder's office in April 2008 showed that the Environmental Notice is attached to a record search of the Site property. The new owner, who is planning a building on the Site, is aware of the vapor mitigation requirement, has discussed the requirement with EPA and UDEQ, and is planning the design of the building to meet the requirement.

Remedial Action OU2

The ROD for OU2 was signed August 4, 2004. The OU2 selected remedy was a combination of two proposed alternatives plus the disposal of the containers in the garage. This remedy also established an institutional control, (called a land use control in the ROD), restricting the development of groundwater wells for consumptive use. In order to accelerate the cleanup, the selected remedy included using dual phase extraction (DPE) in conjunction with groundwater pump and treatment. Additionally, the containers in the garage were disposed of properly so as to prevent future risks. Per the Utah Environmental Institutional Control Act, an

environmental notice and institutional control preventing the installation of groundwater wells for consumptive use was placed on the three Site parcels.

The groundwater aquifer addressed by OU2 at the Site is a potential future source of drinking water. The remediation goal is to protect potential future residents or workers from risks associated with the possible groundwater ingestion or inhalation of vapors from the groundwater during use. The remedial action objectives outlined in the OU2 ROD are:

- Restore the aquifer to beneficial use (drinking water standards) within a reasonable time frame;
- Prevent exposure to contaminated ground water through ingestion of contaminated ground water, or inhalation of vapors during use; and
- Prevent the future contamination of ground water that is currently uncontaminated.

The contaminant of concern, trichloroethene (TCE), has a maximum concentration limit (MCL) of 5 micrograms per liter ($\mu\text{g/l}$). The most stringent standards for drinking water are the MCLs defined in the clean Water Act. Since trichloroethylene (TCE), was the only contaminant of concern, treatment of the groundwater to drinking water standards for TCE concentrations would restore the aquifer to beneficial use.

The groundwater pump and treatment system operation began under a treatability study during the RI, so no remedial design period was needed. The main part of the remedial action is pumping and treating groundwater from two wells. The well near the source area also had a soil vapor extraction (part of dual phase extraction (DPE)) that operated until October 2005. Groundwater extracted from the monitoring wells MW-02 and MW-04 were treated with granular activated carbon.

Although the treatment system performance criteria, (TCE below the MCL for 6 consecutive months), was achieved in May 2005, the system was kept operational due to elevated PCE concentrations. After discussion and review of the data, it was determined that the PCE was from a source other than the Site and the clean up goal for the groundwater pump and treatment was determined to be achieved in February 2006. Since then, the groundwater has been monitored twice per year as part of the ongoing Long-Term Response Action (LTRA). The determination of operational and functional and start of LTRA occurred with the signing of the interim RA report on September 27, 2005. Recently, the groundwater monitoring has been increased to quarterly periods due to the issue further explained below.

After shutting down the pump and treatment system, groundwater monitoring showed that the TCE concentrations remained below the MCL until the October 2007 sampling. The October 2007 results indicated monitoring well MW-04 had 8 $\mu\text{g/l}$ TCE. The TCE contamination has since dropped below the MCL. Continued monitoring will be conducted to assure the TCE remains below the MCL. If the contamination levels increase, then further evaluation of possible alternatives, including restarting the groundwater pump and treatment system, will be evaluated.

The goal of reducing further groundwater contamination was accomplished through the removal of contamination sources. The goal of preventing exposure to contaminated groundwater was achieved through the placement of the Environmental Notices and Institutional Controls that were recorded on May 24, 2005, which prohibits installation of groundwater wells at the Site. Since the contaminant sources and soil contamination was addressed in OU1 through removal actions and an IC, there were no additional soil remedial action objectives for OU2.

Remedial Action Costs

There were no costs associated with the remedial action for OU1 since the main action was placement of an IC. (The UST was addressed as part of the OU2 RI field work.) The RA (includes LTRA period) costs for OU2 have been slightly over the ROD estimate. However, several sampling events have been added during the active RA and LTRA periods. Additionally, the ROD estimate did not detail some of the RA work, such as disposal of well drill cuttings that were stored in drums on the Site.

The estimated costs of the OU2 RA as describe in the ROD were approximately \$625,000. The contractor cost for installation and operation of the RA from its start until June 2008 is approximately \$664,000. Since RA is being conducted as a fund lead project, the contractor costs are the cost for operating and maintaining the system, including sampling event costs. Since the treatment system operation was shut down, the costs are mainly associated with the RA groundwater monitoring. Thus, the most recent yearly costs were less than at the start of RA.

Enforcement Actions

There has been only one enforcement action related to implementation of the RODS. For OU1, a Unilateral Administrative Order, effective on September 23, 2003, required the defunct Intermountain Oil Company (site owner) to record the Environmental Notice with the Davis County Recorder's office for the OU1 remedial action.

Additionally, in 2006, EPA and Intermountain Oil Company entered into an Administrative Order on Consent effective April 20, 2006, whereby the net proceeds from the sale of the property were transferred to EPA and placed in a special account for this Site. This settlement was in the amount of \$117,530.81. A reasonable steps comfort letter, pursuant to the bona fide prospective purchaser provisions ("BFPP") of CERCLA, was issued to the new owner, Bountiful Subconservacy District.

V. Progress Since the Last Review

This is the First Five Year Review for this Site.

VI. Five-Year Review Process

Community Relations

A newspaper announcement for the start of the Five-Year Review was published in the Davis County Clipper on April 10, 2008. Since the Site is small with simple remedial actions

and little to no community concerns, no additional community involvement activities were conducted. As noted in the interview section of this report, the surrounding residents and local government representatives have been generally pleased with the progress of the Site investigation and clean up. A community fact sheet is planned for after the Five-Year Review report. This fact sheet will update the community on the findings of the Five-Year Review as well as the progress of Site clean up and redevelopment.

Document Review

Documents reviewed during the Five-Year Review process include the following.

- Record of Decision (ROD) Operable Unit 1 (OU1), November 2002;
- ROD OU2, August 2004;
- Preliminary Closeout Report, October 2004;
- Interim RA Report, September 2005;
- September 2006 fact sheet;
- CERCLIS Scap 2 report;
- IWOR Environmental Notice and Institutional Controls; and
- IWOR Operation and Maintenance Plan, March 2005.

Additionally, the latest groundwater sampling summary was consulted. As noted previously, the RODs for both OUs listed the remedial action objectives, clean up goals, as well as ARARs.

Data Review

Graphs summarizing the groundwater and soil vapor extraction sampling results for monitoring wells MW-02 and MW-04 are Figures 3 and 4, respectively. Although all 10 wells are sampled twice per year, these are the only wells that have recently shown significant concentrations of TCE.

As one can see from the graphs, the groundwater TCE concentrations have been below MCLs in both wells since December 2004 except October 2007 and January 2008 in MW-04. As a result of the increased levels of TCE in MW-04, the frequency of monitoring has been increased from two times per year to quarterly. A number of potential response options were discussed in a May 2008 meeting between EPA, UDEQ, and EPA's contractor. The decision was made to obtain a full year of quarterly data prior to conducting any additional cleanup activities. Thus, after the October 2008 groundwater sampling results are reviewed, it will be determined if additional monitoring or response activities are needed.

PCE was non-detect (depicted on the graphs as at the MCL) throughout the RI. During the groundwater pump and treatment stage, there were several detections of PCE in MW-02 and MW-04, as shown in the Figures. Since then, and including after the shut down of the active groundwater pump and treatment (depicted as "post RA" on the figures), PCE in MW-02 has been both above and below the MCL. However, it has remained below the MCL in MW-04 which is up gradient of MW-02. This, as well as other factors, has led to the conclusion that the PCE appears to be from a different source, potentially pulled towards the well during the

pumping phase. Although it will be re-evaluated in the fall of 2008, it will be referred to the Superfund Site Assessment Program to determine what source of PCE may be impacting this monitoring well.

Site Inspection

The Site inspection was completed on April 10, 2008, in conjunction with a semi-annual sampling event. The inspection was conducted by the EPA and UDEQ project managers. Photos from the Site inspection are included as Attachment 1. Given the factors described below in combination with the small size of this unoccupied Site, an inspection form was not completed. Most items on the multi-page form would be 'not applicable' so the relative information is provided here in the text.

The inspection included observing and reviewing sampling procedures with the EPA contractor, inspecting each well head and observing general site conditions. The current owner had demolished most of buildings at the time of the inspection, so the Site was a flat, mostly bare parcel. Currently there is no active groundwater pump and treatment or other activities occurring at the site. There was nothing unusual to note other than "junk" left at the time of the property sale had been removed, improving the appearance of the property. Additionally, it was noted that dirty, but non-hazardous soil, had been removed by the current land owner. One item noted was that one of the well heads was missing a lock. This item was passed on to the EPA contractor to correct.

Additionally, it was verified at the Davis County Recorder's office that the Environmental Notice and Institutional Controls appeared in a property record search.

Interviews

Five interviews were conducted. None of the interviewees noted any concerns that needed to be addressed at the Site. Most of the interviewees seemed pleased with the clean up of the Site. As noted by many, the Site appearance has continually improved since EPA began its investigation work. These interviews are consistent with past public input which has been positive.

The following is a list of individuals interviewed for this Five-Year Review. A summary of each interview is included as Attachment 2.

- Wes White, Manager, Bountiful Irrigation (current property owner);
- Robert Rasmussen, Owner/Manager, AAMCO (owner and manager of adjacent business);
- Paul Rowland and Todd Christensen, City Engineer and Asst City Engineer, City of Bountiful Engineers Office;
- Jerry Thompson, Rob Nunn, and Dee Jette, Manager and Env. Health Scientists, Davis County, Environmental Health Services Division, Water Resources Bureau; and
- Jack & Sharon Moss, Long-time adjacent residents.

The UDEQ project manager participated in all but one interview.

VII. Technical Assessment

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

Yes. The institutional controls are recorded properly and the current owner is planning future work to meet the terms of the institutional controls. The OU2 groundwater pump and treatment system while operating was successful in containing the plume to the Site and reducing TCE levels to concentrations below the MCL. There has recently been a slight increase in groundwater TCE levels that is being addressed through the ongoing OU2 LTRA. As of April 2008, the groundwater monitoring indicates that TCE is below MCLs at the boundary of the Site.

Although PCE has been found in the groundwater, it was not addressed in the decision documents since it was never found during the RIs or been tied to previous Site operations. The source of the PCE appears to be other than from the Site and an official referral to the Superfund assessment program should be made.

There have been no other issues with the RA that requires further discussion or attention.

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

Yes. There have been no changes in Site conditions or groundwater MCLs that would suggest any changes in the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) are needed.

There have been no human health or eco risks that have changed that could impact the remedies. A review of the ARARs listed in both the OU1 and OU2 RODs was completed, including state ARARs. There are no ARARs that have changed that would impact the RAOs.

There has been a new contaminant, PCE, which has been detected periodically above MCLs. Its occurrence will be evaluated further and potentially referred to the site assessment program for determination of its source (different the IWOR Site).

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 to question the protectiveness of the remedies at the IWOR Site.

Technical Assessment Summary

IWOR is a small and noncontroversial site, where, in general, clean up has progressed smoothly and with community support. There is nothing noted during the review that suggest the remedy should be changed. All evidence supports the conclusion that the OU1 and OU2 remedies are working properly as intended by the OU1 and OU2 RODs.

There is a contaminant (PCE) that has shown up in groundwater monitoring that appears to be from another source and needs to be referred to site assessment program. Additionally, the OU2 LTRA needs to continue to assure that TCE is adequately addressed.

The IWOR Site demonstrates success of cleaning up an abandoned industrial parcel adjacent to a residential area so a party is willing to purchase it and put it back into productive use.

VIII. Issues

The potential issue is being addressed under the ongoing OU2 LTRA through the continued monitoring of groundwater for TCE. If TCE levels continue to increase above the MCL, additional groundwater pump and treatment or other action may be needed.

Table 2: Issues

Issues	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
TCE has increased above MCL once or twice but remains below MCL at boundary	N	no ¹
PCE has bounced around above and below the MCL in one well	N	no ²

¹ LTRA addressing TCE groundwater contamination ongoing

² Appears to be from a source other than the IWOR Site

IX. Recommendations and Follow-up Actions

Since the LTRA for OU2 which addresses groundwater contamination is ongoing, the issue related to TCE will be addressed. EPA and UDEQ plan to continue to work with the current land owner as he constructs a building on the Site that will meet the terms of the Environmental Notice and Institutional Control.

Table 3: Recommendations and Follow-up Actions

Issue	Recommendations and Follow-up Actions	Party Responsible	Milestone Date	Affects Protectiveness (Y/N)	
				Current	Future
1	Continue LTRA to assure TCE is addressed	EPA	9/30/2010	N	no
2	Re-evaluate PCE and refer to site assessment program for determination of source	EPA	By June 2009	N	no

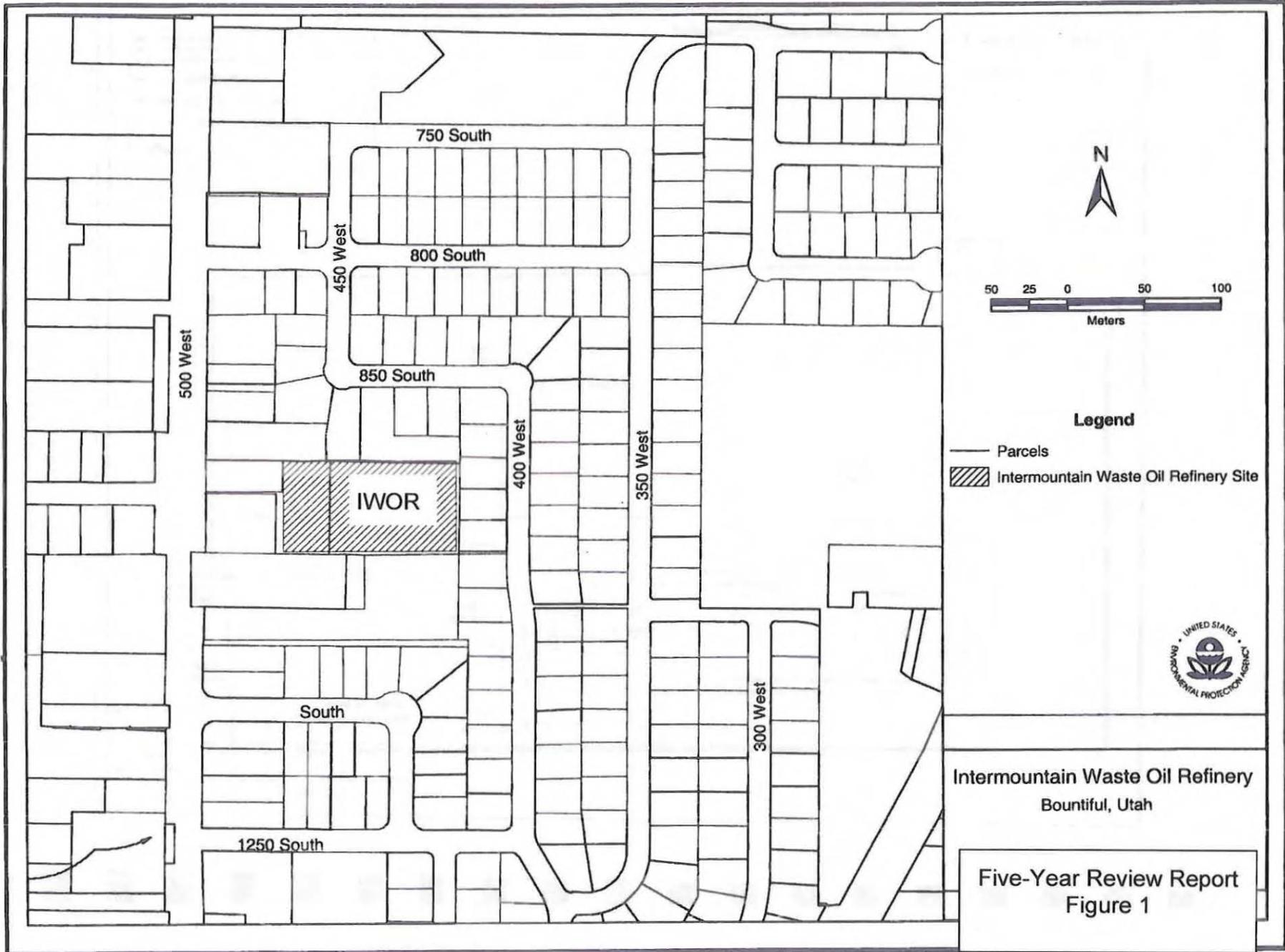
X. Protectiveness Statement

The remedy at OU1 and OU2 is expected to be protective upon completion [of OU2 LTRA] or is protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risk are being controlled.

The protectiveness is based on the current conditions and continuation of LTRA which is addressing the TCE groundwater contamination. Additionally, it appears the PCE contamination is from source other than the IWOR Site and thus, needs to be addressed through other means.

XI. Next Review

The next Five-Year Review will be conducted in 2013 and will be due on September 23, 2013.



Intermountain Waste Oil Refinery
Bountiful, Utah

Five-Year Review Report
Figure 1

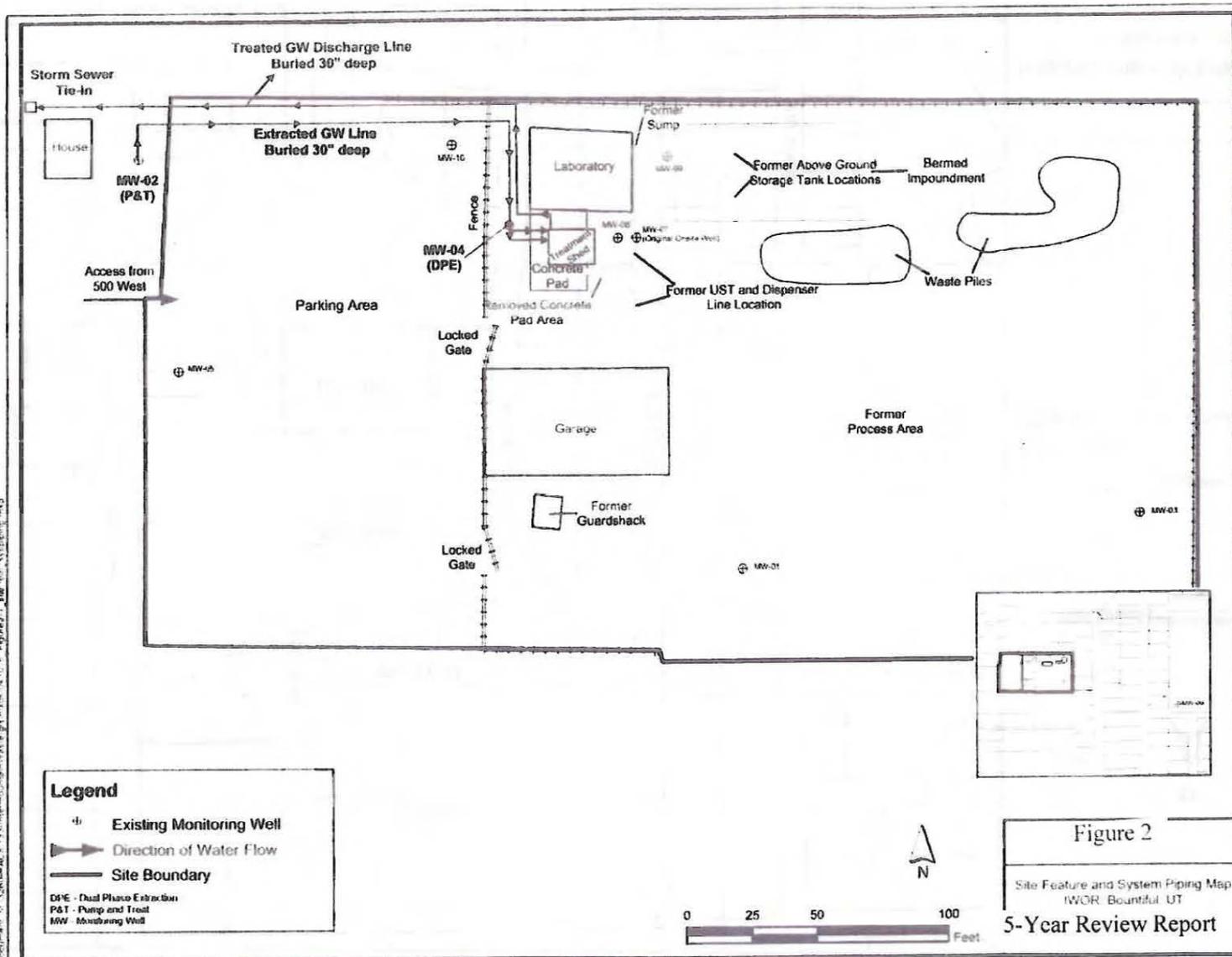
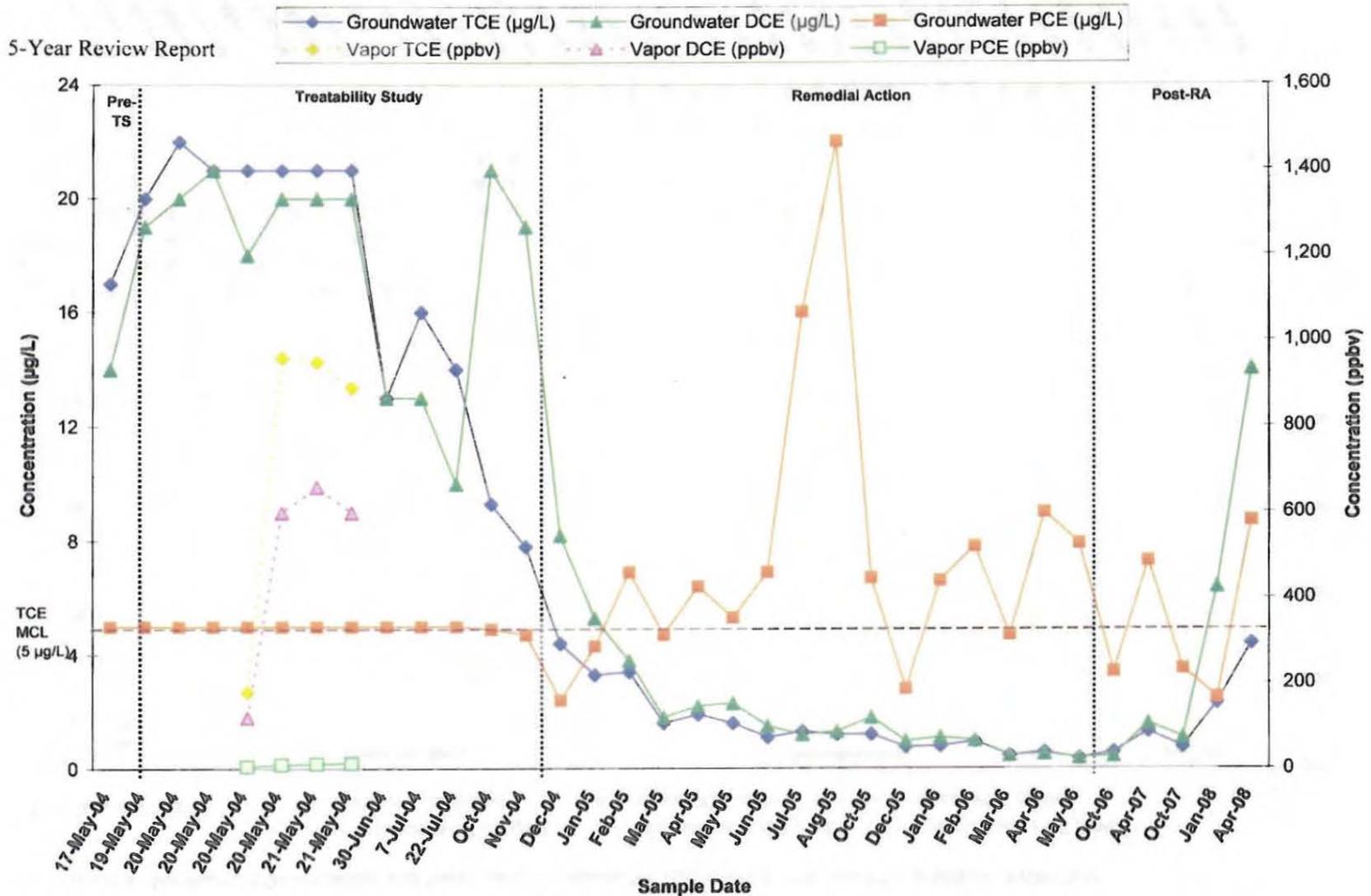


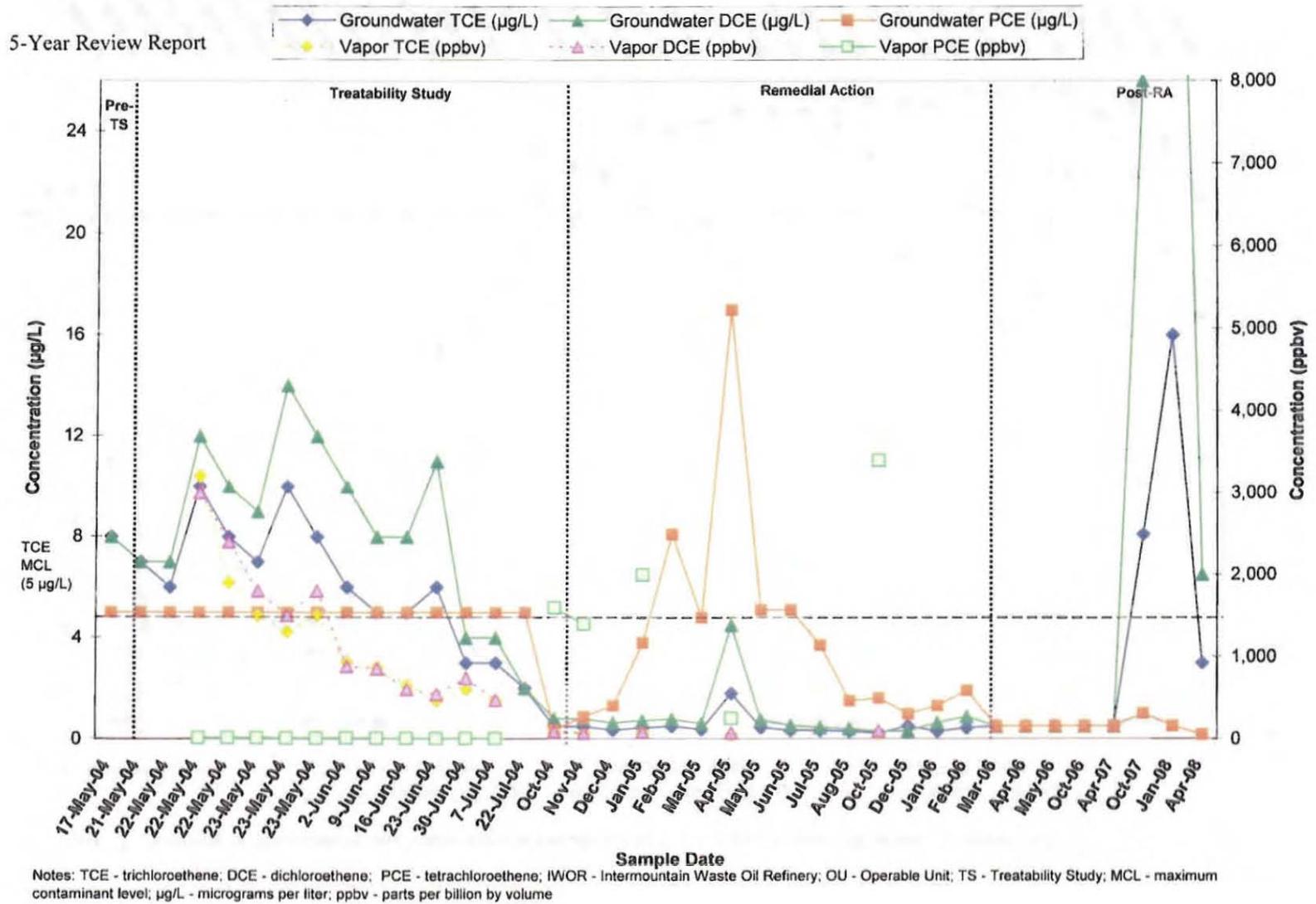
Figure 3 Summary of Groundwater and Vapor Sample Results for TCE, *cis*-1,2-DCE, and PCE at MW-02, IWOR OU2



Notes: TCE - trichloroethene; DCE - dichloroethene; IWOR - Intermountain Waste Oil Refinery, OU - Operable Unit; TS - Treatability Study; MCL - maximum contaminant level; µg/L - micrograms per liter; ppbv - parts per billion by volume

A

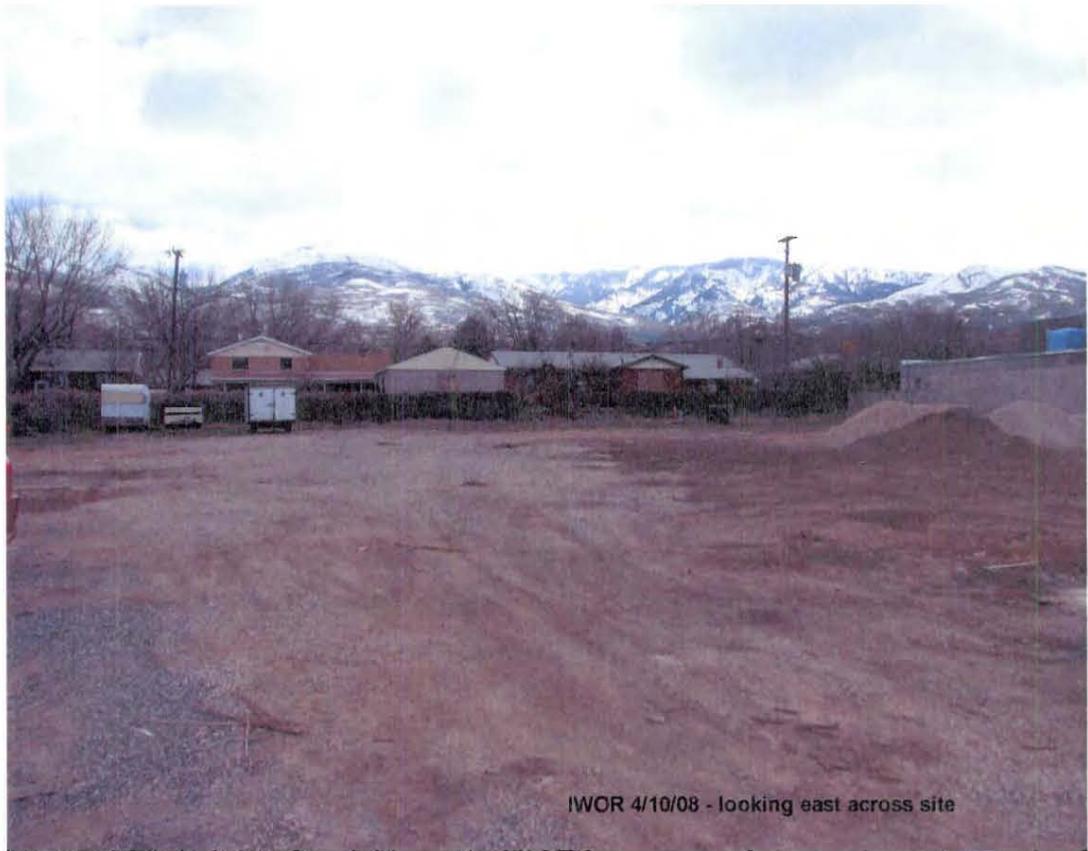
Figure 4 Summary of Groundwater and Vapor Sample Results for TCE, cis-1,2-DCE, and PCE at MW-04, IWOR OU2



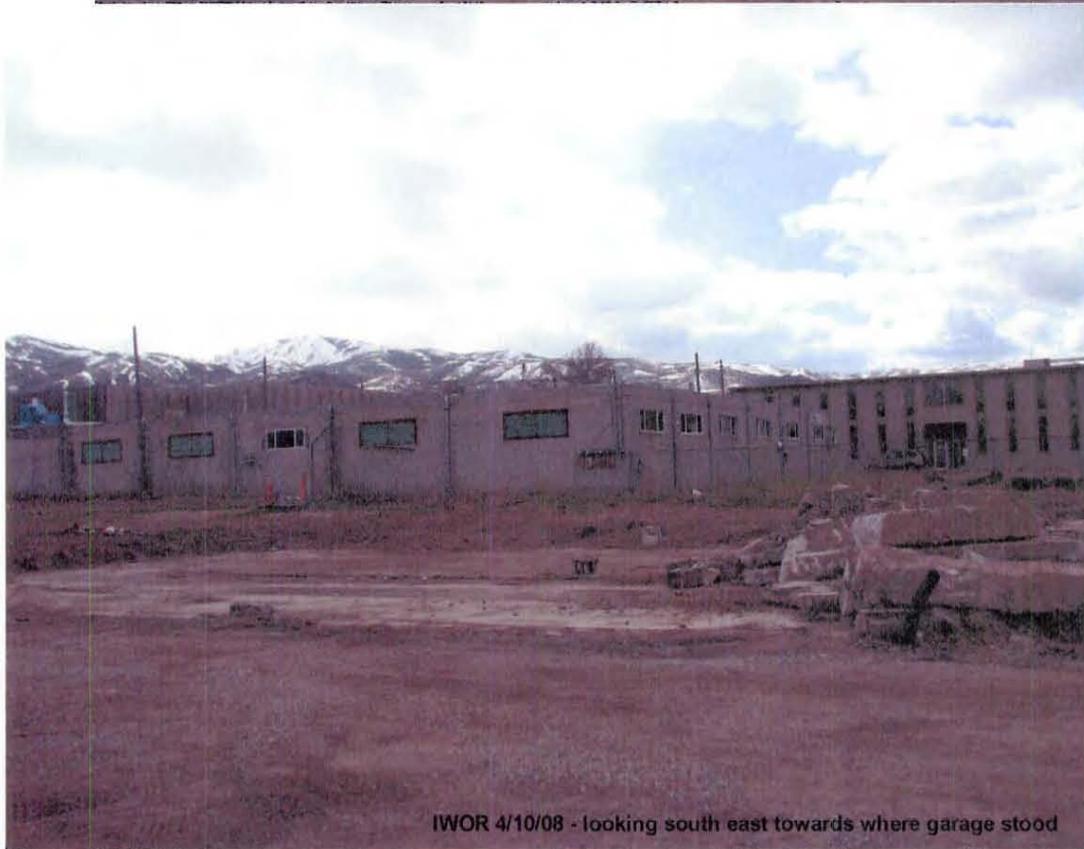
A

**Intermountain Waste Oil Refinery (IWOR) Superfund Site
Five-Year Review Report**

**Attachment 1
Photographs from Site Inspection**



IWOR 4/10/08 - looking east across site



IWOR 4/10/08 - looking south east towards where garage stood



IWOR 4/10/08 - looking northwest towards well MW-02 and 500 West



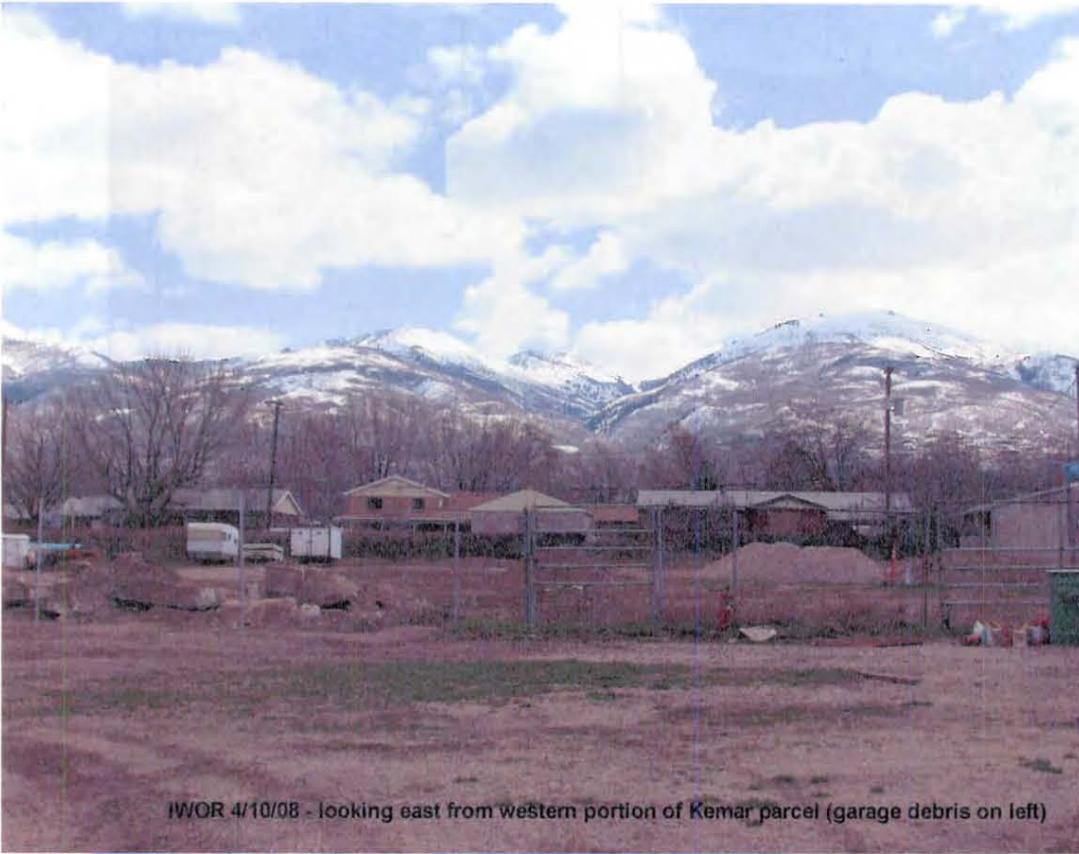
IWOR 4/10/08 - MW-04 and showing piping for treatment system



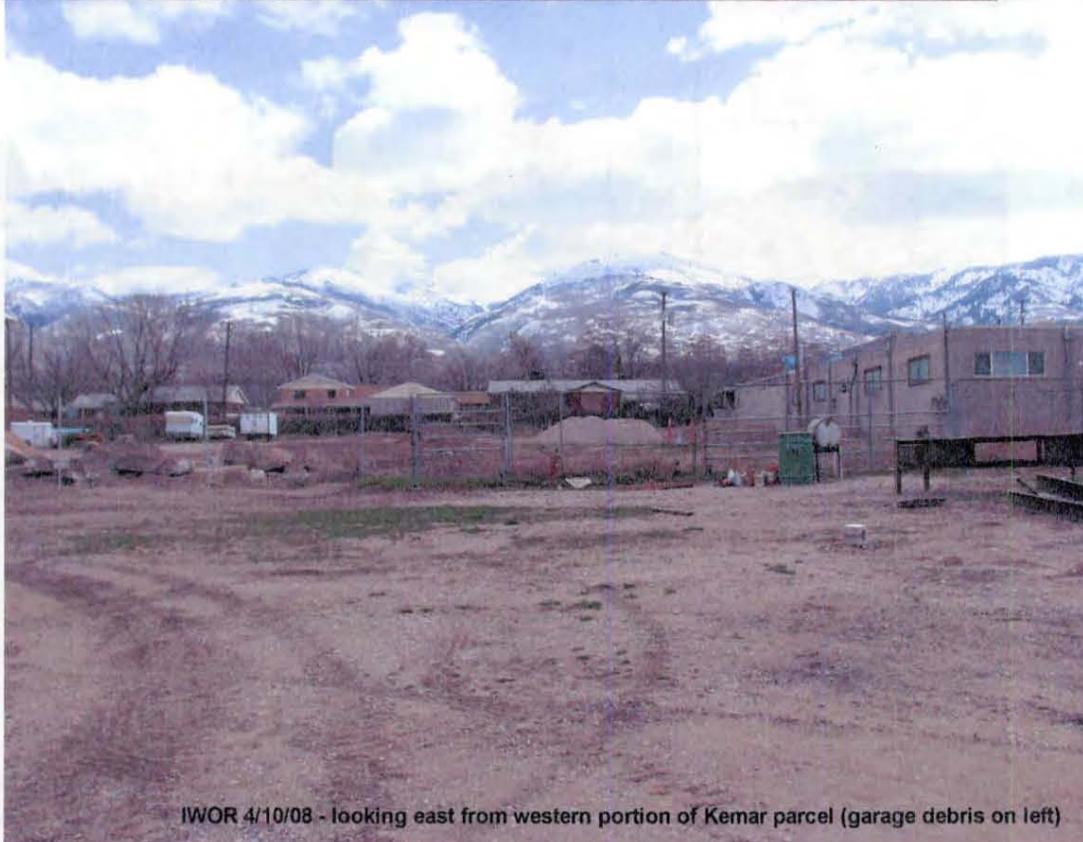
IWOR 4/10/08 - MW-04 and showing piping for treatment system



IWOR 4/10/08-10-09



IWOR 4/10/08 - looking east from western portion of Kemar parcel (garage debris on left)



IWOR 4/10/08 - looking east from western portion of Kemar parcel (garage debris on left)



IWOR 4/10/08 - garage debris and foundation



IWOR 4/10/08 - garage debris and foundation



IWOR 4/10/08 - MW-10



IWOR 4/10/08 - MW-1



IWOR 4/10/08 - looking from MW-1 towards north



IWOR 4/10/08 - looking from MW-1 towards west



Intermountain Waste Oil Refinery (IWOR) Superfund Site
Five-Year Review Report

Attachment 2
Interview Records

INTERVIEW DOCUMENTATION FORM

The following is a list of individual interviewed for this five-year review. See the attached contact record(s) for a detailed summary of the interviews.

Name	Title/Position	Organization	Date
Wes White	Manager	Bountiful Irrigation (current property owner)	4/10/08
Robert Rasmussen	Owner/Manager	AAMCO	4/10/08
Paul Rowland Todd Christensen	City Engineer and Asst City Engineer	City of Bountiful Engineers Office	6/16/08
Jerry Thompson Rob Nunn Dee Jette	Manager Env. Health Scientist Env. Health Scientist	Davis County Davis County, Environmental Health Services Division, Water Resources Bureau	6/18/08
Jack & Sharon Moss	Long-time adjacent residents		6/18/08

Five-Year Review Interview Record

Site Name: Intermountain Waste Oil Refinery		EPA ID No.: UTD 0001277359
Type: Visit		4/10/08
Location of Visit: Bountiful Water Subconservancy District Office (Bountiful Irrigation)		1 p.m.
Contact Made By: Lisa Lloyd (EPA) and Tony Howes (UDEQ)		
Individual Contacted		
Name: Wes White	Title: Manager	Organization: Bountiful Irrigation
Telephone No: 801-295-5573	Address: 385 West 500 South Bountiful, Utah 84010	
Summary Of Conversation		
<p>1. What is your overall impression of the project? (general sentiment)</p> <p>Project went well – have taken a lot of ‘stuff’ off the site – lots of junk on site [even though EPA removed a lot through their work]</p>		
<p>2. What effects have site operations had on the surrounding community?</p> <p>None known</p>		
<p>3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.</p> <p>No, they have heard from a few neighbors with minor comments on their work at site but nothing related to the environmental [EPA] clean up.</p>		
<p>4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.</p> <p>No</p>		
<p>5. Do you feel well informed about the site’s activities and progress?</p> <p>Yes</p>		
<p>6. Do you have any comments, suggestions, or recommendations regarding the site’s management or operation?</p> <p>It was a dirty site – they have taken lots off of the property (non hazardous soil and other junk).</p>		
<p>7. Any other comments you want to make?</p> <p>No</p>		

Five-Year Review Interview Record

Site Name: Intermountain Waste Oil Refinery		EPA ID No.: UTD 0001277359
Type: Visit Location of Visit: AAMCO office		4/10/08 About noon
Contact Made By: Lisa Lloyd (EPA) and Tony Howes (UDEQ)		
Individual Contacted		
Name: Robert Rasmussen	Title: owner/manager	Organization: AAMCO (adjacent business)
Telephone No: Phone: (801) 298-3288		Address: 1025 S 500 West Bountiful, Utah
Summary Of Conversation		
<p>1. What is your overall impression of the project? (general sentiment)</p> <p>Went well – not been a problem for us.</p> <p>2. What effects have site operations had on the surrounding community?</p> <p>Glad that there is now another entrance to the site and they do not need use easement through AAMCO.</p> <p>3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.</p> <p>No</p> <p>4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.</p> <p>No</p> <p>5. Do you feel well informed about the site's activities and progress?</p> <p>For the most part.</p> <p>6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?</p> <p>Would like to see [current] owner put a fence up between properties at the side of AAMCO property as the public uses their driveway and AAMCO parking lot as turn around and drive fast through parking lot.</p>		

Five-Year Review Interview Record

Site Name: Intermountain Waste Oil Refinery		EPA ID No.: UTD 0001277359
Type: Phone		6/16/08 2 p.m.
Contact Made By: Lisa Lloyd (EPA) and Tony Howes (UDEQ)		
Individual Contacted		
Name: Paul Rowland Todd Christensen	Title: City Engineer and Asst City Engineer	Organization: City of Bountiful, Engineers Office
Telephone No: 801-298-6125		Address: Bountiful, Utah

Summary Of Conversation

1. What is your overall impression of the project? (general sentiment)

Site project going well – very good.

2. What effects have site operations had on the surrounding community?

Outside of immediate site – not aware of any neighbors that have brought any concerns to the City; not aware either way (positive or negative); not intrusive to neighbors.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.

No

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

No

5. Do you feel well informed about the site's activities and progress?

Were informed quite a bit because of use of storm water drain for low flow output from treatment system.

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

None

7. Any other comments you want to make?

For other clean ups in the area, would like to see the pump and treatment water put to beneficial use, especially when pumping large volumes of water. (During conversation we noted that water law may limit the ability to do this.)

Five-Year Review Interview Record

Site Name: Intermountain Waste Oil Refinery		EPA ID No.: UTD 0001277359
Type: Phone		6/18/06 9 a.m.
Contact Made By: Lisa Lloyd (EPA) and Tony Howes (UDEQ)		
Individual Contacted		
Name: Jerry Thompson, Rob Nunn, & Dee Jette	Title: Manager and staff	Organization: Davis County, Environmental Health Services Division, Water Resources Bureau
Telephone No: 801-451-3296		Address: Davis County, Utah

Summary Of Conversation

1. **What is your overall impression of the project? (general sentiment)**
Overall, not a lot of noise – recently not much happening at site (environmental cleanup).
2. **What effects have site operations had on the surrounding community?**
None known
3. **Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.**
No
4. **Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.**
No
5. **Do you feel well informed about the site's activities and progress?**
Have not heard too much recently.
6. **Do you have any comments, suggestions, or recommendations regarding the site's management or operation?**
None – maybe could contact county more frequently with updates – probably should provide the updates to Louis Cooper, (Manager of Food & Facilities Bureau and/or Dave Spence (Manager of Waste Management & Environmental Response Bureau).

Five-Year Review Interview Record

Site Name: Intermountain Waste Oil Refinery		EPA ID No.: UTD 0001277359
Type: Phone		6/18/08 1 p.m.
Contact Made By: Lisa Lloyd (EPA)		
Individual Contacted		
Name: Jack and Sharon Moss	Title: long time resident – backyard adjacent to site	Organization:
Telephone No:		Address: Bountiful, Utah
Summary Of Conversation		
<p>1. What is your overall impression of the project? (general sentiment)</p> <p>Made progress once operations [of old waste refinery] stopped.</p>		
<p>2. What effects have site operations had on the surrounding community?</p> <p>No</p>		
<p>3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.</p> <p>No</p>		
<p>4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.</p> <p>No – grapes at fence block view of site so have not seen anything recently.</p>		
<p>5. Do you feel well informed about the site's activities and progress?</p> <p>EPA folks have done a good job; got rid of what has been needed; wondered about barrels that were near backyard but a mute point now as they are gone; felt EPA kept us informed of the progress.</p>		
<p>6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?</p> <p>Took a long time to get started [after old refinery shut down]; once started, then saw progress.</p>		
<p>7. Any other comments you want to make?</p> <p>Glad to see the clean up going and the refinery gone. Would like to see the current owner take care of weeds near property line.</p>		