

Second
Five-Year Review Report
For The
Caldwell Trucking Co. Superfund Site
Township of Fairfield
Essex County, New Jersey



September 2007

PREPARED BY:
U.S. Environmental Protection Agency
Region 2
New York, New York



139657

Executive Summary

This is the second five-year review for the Caldwell Trucking Company Superfund Site (Site). The Site is located in the Township of Fairfield, Essex County, New Jersey.

The Site has two operable units. Operable Unit 1 (OU1) focused on soil contamination at the Site, and contamination to both public and private potable water wells. The Caldwell Trucking Company Superfund Trust (Trust) has completed all work on the OU1 remedy (OU1). Operable Unit 2 (OU2) addresses remediation of contaminated ground water at the Site. Remedial activities are still ongoing for OU2.

The completed OU1 remedy appears to function as intended by the decision documents and provides short-term protection to human health and the environment. In addition, the presence of a security fence surrounding the Site property restricts access to the Site, providing further protection for human health and the environment. In the future, a Deed Notice will provide long-term protection of the source remedy and prevent improper use of the property.

For OU2, a biological treatment system pilot study was conducted from 2001-2002, and amendments to enhance biodegradation of volatile organic contaminants continues to reduce the concentrations. Since 2005, the Trust has installed monitoring wells and piezometers for hydrologic and contaminant analyses. Work was completed on installation of four remediation wells in June 2007. EPA is currently evaluating results from hydraulic testing of these remediation wells.

As a result of OU2 interim measures taken by EPA, NJDEP, and the Trust, Site impacted ground water, surface water, and sediments are protective of human health and the environment in the short-term. While ground water in the area is not being used as a drinking water supply, the placement of the area downgradient of the Site in the State's Classification Exception Area (CEA) database will provide additional protection of human health and the environment. The remedy for OU2 will be protective of human health and the environment upon completion.

Five Year Review Summary Form

SITE IDENTIFICATION

Site name (from WasteLAN): Caldwell Trucking Company

EPA ID (from WasteLAN): NJD 048798953

Region: 2 State: NJ City/County: Township of Fairfield/Essex County

SITE STATUS

NPL status: Final Deleted Other (specify)

Remediation status (choose all that apply): Under Construction Operating
 Complete

Multiple OUs?* YES

NO

Are site related properties currently in use? YES ALL YES SOME NO
NONE N/A GW

REVIEW STATUS

Lead agency: EPA State Tribe Other Federal Agency

Author name: Thomas Porucznik

Author title: Remedial Project Manager

Author affiliation: EPA

Review period:** 09 / 24 / 2002 to 09 / 24 / 2007

Dates of Site inspections: 06 / 20 / 2007 and 08 / 02 / 2007

Type of review: Post-SARA Statutory Pre-SARA or post-SARA Policy NPL-Removal only Non-NPL Remedial Action Site Regional Discretion

Review number: 1 (first) 2 (second) 3 (third) Other (specify)

Triggering action:

Previous Five-Year Review Report Other (specify)
 Actual RA Onsite Construction or RA Start at OU # _____ Construction Completion

Triggering action date (from WasteLAN): 09 / 24 / 2002

Does the report include recommendation(s) and follow-up action(s)? yes X no

Does the remedy protect the environment?

yes no not yet determined

* ["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, Recommendations and Follow-up Actions:

This report does not identify or recommend any action at this Site needed to protect human health and/or the environment that is not addressed by the remedies selected in the Site decision documents. However, since the Site is not construction complete, there are many ongoing activities at the Site:

Studies are underway for further optimization of the ground-water seep mitigation system.

The ground-water source of contamination of the unnamed stream is being studied.

The Trust continues to sample the five Carlos Drive residences not connected to the municipal water system.

The Trust has conducted a number of studies related to the contaminated ground-water containment system and have installed four recovery wells. EPA is in the process of evaluating the results of the hydraulic testing of these recovery wells.

The Trust is in the process of conducting a Vapor Intrusion Study that includes approximately 120 properties downgradient of the Caldwell Trucking Company Site.

The Trust continues to add biodegradation amendments to the ground water to reduce VOC contaminants.

Protectiveness Statement:

The implemented action (OU1) taken at the Site is protective of human health and the environment in the short-term. Once the Deed Notice is placed on the property, it will be protective in the long-term. The remedy for OU2 will be protective of human health and the environment upon completion, and in the interim, exposure pathways that could result in unacceptable risks are under control.

Other Comments:

None.

Five-Year Review Report

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Five-Year Review Report

I. Introduction

This is the second five-year review for the Caldwell Trucking Company Superfund Site (Site), located in Fairfield Township, Essex County, New Jersey. This review was conducted by United States Environmental Protection Agency (EPA) Remedial Project Manager Tom Porucznik. This five-year review was conducted pursuant to Section 121 (c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), 42 U.S.C. §9601 et seq. and 40 CFR 300.430(f)(4)(ii), and in accordance with the Comprehensive Five-Year Review Guidance, OSWER Directive 9355.7-03B-P (June 2001). The purpose of five-year reviews is to ensure that implemented remedies are protective of human health and the environment and that they function as intended by the decision documents. This document will become part of the Site file.

The Site has two operable units. Operable Unit 1 (OU1) focused on soil contamination at the Site, and contamination to both public and private potable water wells. All work on the OU1 remedy (OU1) has been completed. Operable Unit 2 (OU2) addresses remediation of contaminated ground water at the Site. Remedial activities are still ongoing for OU2.

In accordance with Section 1.2.1 of the five-year review guidance, a statutory review is triggered for this Site since hazardous substances, pollutants, or contaminants remain on-site as a result of a post-SARA ROD Amendment that included in-situ stabilization of the lead contaminated soils. This soil stabilization remedy was the first remedy to be implemented at the Site that allowed hazardous substances, pollutants, or contaminants to remain on-site after CERCLA was amended. In accordance with Section 1.3.3 of the five-year review guidance, a subsequent statutory review is triggered by the signature date of the previous review. The first review for this Site was signed on September 24, 2002.

II. Site Chronology

Table 1 (attached) summarizes the Site related events chronology from discovery to the present.

III. Background

Site Location and Physical Description

The Site is located in Fairfield Township, Essex County, New Jersey. The physical property is an 11.25 acre tract of land located in the eastern portion of the Township between O'Conner Drive and Sherwood Lane, immediately east of Passaic Avenue.

Deepavaal Brook and the Passaic River are significant surface water bodies in the vicinity of the Site. Deepavaal Brook flows to the northeast and discharges to the Passaic River. The Passaic Valley Water Commission has a water intake located on the Passaic River, approximately 2.2 miles downstream of its confluence with Deepavaal Brook.

A ground-water seep is located approximately 0.75 miles northeast of the Site. The seep feeds an unnamed tributary that flows in a northerly direction into Deepavaal Brook.

Site Geology and Hydrology

Fairfield Township is located at the extreme northern edge of the Buried Valley Aquifer System recharge zone. The recharge zone of this aquifer system underlies the central basin of the Passaic River in western Essex and southeastern Morris Counties. This aquifer system is designated as a sole-source aquifer, a designation that indicates that it is the sole or principal source of drinking water in the area. However, at present, it is no longer being used as a source of drinking water in the area. Ground water in the area generally flows in a northerly direction toward the Passaic River.

Three distinct lithologic units have been identified within the unconsolidated deposits underlying the Site. In descending order, the three units are: an upper layer consisting mainly of silty sand (A Zone); a middle layer consisting mainly of silty clay (the Clay Layer); and a basal layer consisting of silt, sand, and gravel with

occasional cobbles and boulders (B Zone). Most private and commercial drinking water wells were screened in the A and B Zones.

The uppermost bedrock zone (C Zone) in the area consists of basalt. In areas that have not been subject to glacial erosion, the surface of the basalt is highly fractured due to the geologic cooling process. The fractured water bearing bedrock zone is defined as the Upper C Zone.

More competent bedrock is exposed in areas where glacial erosion has removed the fractured Upper C Zone. The competent basalt is finely crystalline with few open fractures. This zone, which has been defined as the Lower C Zone, extends down to what has been termed the "hornfels" layer. The hornfels layer, or D Zone, represents an "interflow" sedimentation period between basalt flows.

The D Zone was the primary source of drinking water for the municipal water system prior to the Township of Fairfield decision to abandon its municipal well system and instead purchase water from the Passaic Valley Water Commission.

Land and Resource Use

The Site is located in a mix of light industrial, commercial, and residential areas. The 11.25-acre tract was unimproved prior to 1946 when the Caldwell Trucking Company was incorporated. The Site is surrounded by various industries. About 500 single family homes are located within one mile of the Site. West Essex Regional High School is located adjacent to the southeastern boundary of the Site.

History of Contamination

The Caldwell Trucking Company disposed of residential and commercial septic waste, as well as industrial waste, in unlined lagoons on the Site from the early 1950s until about 1973. When the lagoons were full, they were backfilled and a new series of lagoons was excavated, sometimes over pre-existing lagoons. Liquids from the lagoons were transported to the northwestern portion of the property where they were pumped to a large seepage area. In 1973, the Caldwell Trucking Company stopped land disposal of the waste and installed a series of four underground storage tanks. From 1973 to the early 1980s,

wastes were consolidated in the underground storage tanks prior to disposal off-site. By 1984, the Caldwell Trucking Company stopped using the storage tanks and operated as a transport facility. In 1988, the company ceased the trucking operations and went out of business.

Disposal in the unlined lagoons resulted in the contamination of on-site soils and ground water. EPA identified a variety of hazardous substances at the Site in soils, sludges and ground water. Heavy metals, especially lead, and a variety of volatile and semivolatile organic substances were identified in the soils and sludges. Trichloroethylene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), chloroform and other organic compounds were found in the ground water. The Caldwell Trucking Company's tanks contained lead, volatile and semivolatile organic compounds and some polychlorinated biphenyls (PCBs). Ground-water contamination, consisting primarily of chlorinated volatile organic compounds (VOCs), extends approximately 4000 feet downgradient from the Site to the Passaic River.

Initial Response

In the early 1980s, a number of residents near the Site decided to connect to the municipal water system when they learned about the ground-water contamination. In 1990, EPA implemented several interim measures to reduce the potential for exposure to Site contaminants. Chain link gates and fences were installed at critical points to restrict Site access. The exposed lagoon and the four underground storage tanks were covered and surrounded with snow fencing. Portions of the access road were covered with geotextile fabric and stone to minimize exposure of trespassing dirt bike riders to the lead contaminated surface soils. EPA also posted warning signs on the fences and at the entrance to the Site.

Basis for Taking Action

In 1980, the New Jersey Department of Environmental Protection (NJDEP) began an extensive sampling program of private wells in the Fairfield area. In early 1982, NJDEP notified the Fairfield Township health officer that wells in the area showed extremely high levels of VOCs, and recommended that residents in the area be placed on public water. In December 1982, the Site was proposed for the Federal Superfund National Priorities List (NPL). On

September 8, 1983, EPA placed the Site on the NPL by publication in the Federal Register (48 Fed. Reg. 40658).

IV. Remedial Actions

Remedy Selection

OU1 Remedy Selection

In September 1986, EPA signed a ROD selecting a remedy for OU1. The selected remedial action included:

- Restoring a lost potable water resource by providing treatment, through air stripping, of Municipal Water Supply Well No. 7;
- Providing alternate water supply for residents potentially affected by ground-water contamination from the Site; and,
- Excavating and treating approximately 28,000 cubic yards of contaminated soils and waste via low temperature thermal treatment, and disposing of treated soils in a secure landfill to be constructed at the Site in accordance with Resource Conservation and Recovery Act (RCRA) requirements.

The Township of Fairfield subsequently decided not to use Municipal Well No. 7, relying instead on the Passaic Valley Water Commission as an alternative potable water supply for the entire community. Accordingly, EPA issued an ESD in May 1991, to delete the provision of well-head treatment for Municipal Well No. 7 as a component of the remedy.

During the remedial design for the contaminated soils and waste materials, studies revealed new information about the levels and combinations of contaminants in the soils and sludge materials at the Site. This information indicated that additional treatment before disposal was necessary to conform with RCRA disposal regulations. In February 1993, EPA issued an ESD to explain modifications to this component of the 1986 ROD, and to identify the increased costs. The modified remedy included off-site treatment and disposal of certain waste materials called "California List Wastes", and stabilization of the lead contaminated soils to meet RCRA disposal regulations.

In April 1993, EPA issued a unilateral administrative order (UAO) to 11 PRPs to implement this modified remedy. In February 1994, the PRPs formally requested permission to prepare a focused feasibility study (FFS) to evaluate an alternative remedy for the remaining soil contamination at the Site. The alternate remedy included excavation and off-site disposal of highly contaminated wastes, as described in the existing remedy. In addition, soils with VOC concentrations greater than 100 milligrams per kilogram (mg/kg) would be excavated and disposed of off-site, and the remaining contaminated waste stabilized or solidified in place.

The FFS concluded that a hazardous waste landfill would no longer be necessary because the off-site disposal of highly contaminated wastes, together with on-site stabilization/solidification of the remaining contaminated wastes, would be protective of human health and the environment.

In February 1995, EPA signed a Record of Decision Amendment, formally changing the 1986 ROD remedy to the alternate remedy. The remedial action objectives of the 1995 OU1 ROD Amendment are as follows:

- Prevent exposure through dermal contact with and/or ingestion of California List waste materials.
- Prevent exposure through dermal contact with and/or ingestion of contaminated soil with VOCs greater than 100 mg/kg.
- Prevent exposure through dermal contact with and/or ingestion of contaminated soil containing heavy metals, such as lead, cadmium, and mercury.
- Inhibit leaching of Site contaminants from the soil into the ground water by stabilizing all contaminated soil with concentrations of lead greater than 1000 mg/kg, and cadmium greater than 3 mg/kg.
- Mitigate any unacceptable risks to human or ecological receptors from the inhalation of contaminants released from soil on the Site to the air.

OU2 Remedy Selection

In September 1989, EPA issued the second ROD for the Site selecting a remedy for OU2. The selected remedy requires:

- The installation of ground-water recovery wells at various locations throughout the study area to intercept the entire contaminated ground-water plume and discharge to the Passaic River;
- A technical impracticability waiver for ground water; and,
- A contingency remedy if EPA could not obtain community acceptance regarding access to the properties needed for implementation of the selected containment remedy.

In 1993, EPA determined that local property owners would not provide the necessary access to implement the selected remedy to install ground-water recovery wells at fifteen locations throughout the study area. EPA then issued an ESD explaining its intent to implement the contingency remedy. The contingency remedy included installation of ground-water recovery wells to intercept the most contaminated portions of ground water in the lower water table aquifer (B Zone) and the upper bedrock aquifer (Upper C Zone). The extracted ground water would be treated through an air-stripper and the effluent would be discharged to the Passaic River. The 1993 ESD also included a remedy for the contaminated seep and tributary to the Brook by filling the area with crushed stone and covering it with a layer of soil.

On June 29, 1993, EPA issued a UAO to 15 PRPs to conduct studies to evaluate the current hydrologic conditions in the contaminated ground water aquifers and effects the Site may have on the Passaic River. This study was completed in October 1994.

In November 1994, EPA, NJDEP and the U.S. Department of Interior signed a consent decree with nine PRPs (Caldwell Trucking PRP Group or "Trust"). The Trust agreed to perform the remedial work necessary to contain the contaminated ground-water plume, in addition to the Site work being done according to the UAOs.

In January 2002, EPA entered into a Consent Decree with the Site owners, the OKON Corporation and the O'Connor family. OKON agreed in this Consent Decree to provide the Trust and EPA access to the Site for all remedial efforts. It also agreed to place a Deed Notice on the property when

requested to do so by EPA. The O'Connors have granted and filed an easement to the Trust and EPA along the access road to the property.

Remedy Implementation

OU1 Residential Wells, Site Security, and Soil

Residential Wells - In the summer of 1989, EPA connected 55 homes and nine commercial establishments, which had been using water from the contaminated ground-water plume, to the municipal water system. Some residents along the eastern edge of the plume (Carlos Drive) refused the connection. In 1999, the Trust offered to connect these homes with private wells to municipal water. One resident agreed and was connected to the municipal system. There are still five residences along Carlos Drive not connected to the municipal system. The Trust samples these residential wells as part of their ongoing area-wide ground-water sampling effort. The latest results submitted in 2006 indicated that none of these residential wells exceeded Drinking Water Standards.

Site Security - In May 1994, the Trust installed a seven-foot high security fence around the entire Site. In September 1994, it excavated approximately 1650 cubic yards (2640 tons) of contaminated soil and waste materials and disposed of them off-site.

Soil Remediation - Construction of the soil stabilization phase of the remedial action started in August 1995. In October 1995, the Trust suspended the stabilization activities because of high levels of odors and emissions coming from the soils. In November 1995, it proposed to construct a soil vapor extraction (SVE) system to reduce the levels of odors and emissions during stabilization activities. EPA approved this request and, in June 1996, the Trust started the SVE system.

The SVE system operated from June 1996 to March 1997, and removed over 25,000 pounds of VOCs (over 12 tons) from the soil.

In March 1997, the Trust restarted stabilization activities and completed the work in September 1997. Approximately 40,000 cubic yards (64,000 tons) of contaminated soils were stabilized. In October 1997, the Site owner informed EPA

of a new area of contamination. In September 1998, the Trust stabilized an additional 1,000 cubic yards of lead-contaminated soils. In February 2001, the Trust found additional lead contaminated-soils in the North Lagoon Area of the Site. In August 2001, it delineated the extent of contamination and submitted plans for the cleanup of the contamination.

In July 2003, EPA approved the Remedial Action Work Plan Addendum submitted by the Trust to excavate and stabilize the remaining lead-contaminated soils and restore the wetlands in the area. Approximately 2,500 cubic yards of soil were excavated and stabilized from this area. The Trust completed construction in early 2004, and EPA approved completion of the Soils Remedial Action Completion Report in September 2004.

During FY 2005, the Trust's contractor completed a number of wetlands restoration tasks identified after initial wetlands restoration activities were completed. The first Wetlands Monitoring Report was submitted in January 2007. The overall condition of the wetlands one year after the completion of restoration activities is good. Continuation of proper wetlands monitoring and maintenance will assure continued development of wetlands diversity and control of invasive species.

OU2 Ground Water and Ground-Water Seep

Ground-Water Remediation - In October 2000, the Trust requested permission to pilot test an enhanced biological treatment system in the VOC source area at the Site. From January 2001 to July 2002, the Trust conducted the pilot test. The study focused on the northwestern portion of the Site, and included installing wells to create a test zone into which both nutrients and microorganisms could be injected and ground-water quality improvements could be observed on a continuing basis. Results from the pilot test indicated that the enhanced biological treatment system appeared to be reducing the levels of VOCs in the source area at the Site. The Trust also requested permission from EPA to perform a Focused Feasibility Study for the purpose of amending the current ground-water extraction and treatment system remedy. In May 2003, EPA approved a request by the PRPs to perform a Focused Feasibility Study (FFS) for the purpose of amending the current ground-water extraction and treatment system

remedy. However, EPA and NJDEP could not approve the FFS submitted in January 2004 because the document was deficient for a number of reasons. EPA and NJDEP formally notified the PRPs that the FFS was not approved and that they should begin implementing the original pump and treat remedy as delineated in the 1989 ROD as amended by the 1993 ESD.

The PRPs responded with a request to initiate dispute resolution. In November 2004, EPA and the PRPs agreed to hold the dispute resolution in abeyance while efforts were made to try and work out a compromise.

In March 2005 EPA approved the PRPs work plan and the PRPs initiated field work for recovery well installation. The work plan called for installation of piezometers and recovery wells and required extensive hydraulic testing including pump tests and the collection of analytical data. Work was completed on installation of the remediation wells in June 2007 and results from hydraulic testing of the remediation wells are currently under evaluation by EPA and NJDEP.

Seep Mitigation - In February 1997, EPA modified the ground-water remedial action schedule, and allowed the Trust to test the effectiveness of an innovative technology, an iron reactive wall system, to intercept the contaminated ground water before it discharges at a surface water seep. In May 1998, the Trust completed construction of this system. Monitoring results on the effectiveness of the iron reactive wall indicate that the wall reduces the VOC levels in the seep but not to acceptable levels.

In February 2002, the Trust completed installation of the "supplemental seep remediation system" to further reduce the levels of contamination reaching the surface water bodies.

In addition to work on the remediation wells, the PRPs submitted a pre-design investigation work plan in June 2007 involving installation of eight piezometers to evaluate the remaining ground-water contamination entering the unnamed tributary to Deepavaal Brook from the vicinity of the seep area. This new work was based on several earlier surface water and ground-water studies carried out along the unnamed tributary and vicinity of the seep area in 2004-2005. In early 2006, upgrades began on the Reactive

Iron/Stripper System that treats the ground water emanating from the seep area in order to meet the surface water discharge permit requirements. It was completed in July 2006. A larger stripper and vapor phase carbon units were installed to provide the added capacity required for the treatment of the contaminated ground water emanating from the seep, and to provide the extra capacity for newly identified contaminated ground water that will be extracted within the next year from an area near the unnamed tributary in the vicinity of the existing seep.

The Trust is currently monitoring the performance of the supplemental seep remediation system, including monthly monitoring of the treatment system discharge and downstream surface water. This program includes monthly reporting under a New Jersey Pollutant Discharge Elimination System (NJPDES) Permit equivalent.

Institutional Controls Implementation

A Deed Restriction (Notice) will be filed with the appropriate authority within a year to control future use of the Caldwell Trucking Company Superfund Site and prevent intrusive activities on the property. The fencing of the Site, coupled with these use/deed restrictions, will prevent the Site from being used for intrusive purposes that could create contaminant exposure pathways.

Ground water in the area is not being used as a drinking water supply. Although not required by the ROD, a Classification Exception Area (CEA) was implemented at the Site in accordance with State regulations. The CEA provides notice that there is ground-water contamination in a localized area caused by a discharge at the Site. The areal extent and depth of ground-water contamination will be based on results of ongoing ground-water sampling. The Trust submitted the CEA application and information to NJDEP and EPA in 2003. The NJDEP received the CEA application and included the information in its CEA database. The CEA will continue until ground-water quality standards are achieved.

Operations and Maintenance (O&M)

In February 2006, the Trust completed the most recent area-wide ground-water monitoring event, which included the sampling of approximately 80 wells. Area-wide ground-water

monitoring is conducted approximately every two years. In addition, monthly monitoring of the supplemental seep treatment system discharge and downstream surface water is also conducted. This program includes monthly reporting under a NJPDES permit equivalent. Currently, the Trust conducts inspections of the Site on a quarterly basis.

V. Progress Since the Last Five-Year Review

Since the first five-year review, completed in September 2002, the following activities have occurred at the Caldwell Trucking Company Site:

OU1 - The OU1 RA was completed in September 2004.

The O&M Plan was approved as part of the Remedial Action Completion and Certification Report which marked the completion of all soils remediation. O&M activities include inspecting the stabilized soil and soil cover, the integrity of the drainage channels, access road, and erosion control measures, as well as completing wetland restoration and maintenance activities.

The Trust will prepare and place a Deed Notice on the Caldwell Trucking Company Site property to prevent improper use of the property.

OU2 - The ground-water seep mitigation system has been upgraded and studies are underway for further optimization.

Contamination of the unnamed stream discharging into Deepavaal Brook is being evaluated. Several preliminary studies have shown that contaminated ground water, located below the clay layer not far from the seep mitigation system, is most likely responsible for the VOCs found in the unnamed stream.

In 2003, the Trust provided the NJDEP with the names, addresses, and property block and lot numbers of those properties proposed for inclusion in the Ground-Water Classification Exception Area (CEA). The NJDEP was creating a CEA for the ground-water plume arising from the Caldwell Trucking Company Superfund Site.

There are still five residences along Carlos Drive not connected to the municipal potable water system. The Trust samples these residential wells as part of their ongoing

area-wide ground-water sampling effort. The latest results, submitted in 2006, indicated that none of these residential wells exceeded New Jersey Department of Environmental Protection Ground-Water Quality Standards (NJDEP-GWQS) or National Primary Drinking Water Standard Maximum Contaminant Levels (MCLs). The Trust will continue to monitor these wells as part of the area-wide ground-water sampling effort.

The Trust has conducted a number of studies related to the contaminated ground-water containment system and have installed four recovery wells. EPA is currently evaluating the results of hydraulic testing of the recovery wells.

In the Fall of 2006, the Trust, with EPA approval, began preliminary Vapor Intrusion Study work on approximately ten properties located in an area along Pier Lane where there was a hole in the clay layer, resulting in localized contamination of the surface aquifer (A Zone). The Trust had wanted to limit the Vapor Intrusion study to these ten Pier Lane properties only. However, after EPA held additional discussions with the Trust, the Trust submitted an Amended Expanded Vapor Intrusion Investigation Work Plan which EPA approved in January 2007. The Work Plan included approximately 120 additional properties. In accordance with this expanded Work Plan, the Trust began sampling residential and commercial properties downgradient of the Caldwell Trucking Site in April 2007.

The Trust continues to add biodegradation amendments to the ground water to reduce VOC concentrations.

VI. Five-Year Review Process

Five-Year Review Team

EPA personnel on the five-year review team include Thomas Porucznik (RPM), Julie McPherson (Human Health Risk Assessor), Grant Anderson (Hydrogeologist), Mindy Pensak (Ecological Risk Assessor), Pat Hick (Attorney), and Natalie Loney (Community Involvement Coordinator).

The Trust representatives that assisted EPA in the inspection of the Site and Site vicinity included Chris Young of *de maximis, inc.*, Steve Finn and Marie Lewis of Golder Associates, Inc.

Community Notification and Involvement

The EPA Community Involvement Coordinator for the Caldwell Trucking Superfund Site, Natalie Loney, arranged for a notice to be published in a local newspaper called "The Progress" on August 9, 2007. This notice indicated that EPA was conducting its second five-year review of the Caldwell Trucking Superfund Site and vicinity. This notice also indicated that this five-year review would be completed by the end of September 2007 and that comments on the remedy or the Site were welcome. The notice also identified the local information repositories. Other notifications included the names, address, and phone numbers for Thomas Porucznik (RPM) and Natalie Loney (Community Involvement Coordinator). The EPA representatives have not received any inquiries from area residents in response to the published notice.

Before the Trust began work on the Vapor Intrusion study in April 2007, a Public Meeting/Availability Session was held in the Fairfield Township Town Hall on March 21, 2007. This meeting was requested by the Township of Fairfield. The meeting provided the opportunity for the affected community to ask questions of EPA and the Trust's contractor representatives. This meeting was instrumental in obtaining a high rate of positive responses to the Trust's requests for access to properties lying within the study area.

Document Review

The documents, data, and information which were reviewed in completing the second five-year review are summarized in Table 2 at the end of this document. A listing of acronyms used in this five-year review is provided on the page before Table 1 at the end of this document.

Data Review

A. Soils Data - Since the stabilized/solidified areas are covered by a soil cover, direct exposure to contaminated materials has been interrupted via this exposure pathway. In addition, a fence surrounds the property which prevents unauthorized access to the Site. The remedial action objective has been met with respect to stabilizing contaminated soil throughout the Site containing concentrations of lead greater than 1000 mg/kg, and cadmium

greater than 3 mg/kg. Post-excavation samples were taken to make certain that the action levels were being met.

B. Seep Data - Monthly monitoring is being conducted under a NJPDES Permit Equivalent. EPA believes that these seep remediation systems have reduced the VOC levels in the seep sufficiently to provide protection to human health and the environment for the short-term.

In order to continue to meet the discharge requirements, the seep treatment system has recently been upgraded. This upgrade will enhance the system's ability to meet the discharge criteria.

C. Ground-Water Data - Since the first five-year review, a number of ground-water monitoring reports have been completed. In February 2006, the 2005 area-wide ground-water evaluation was submitted by the Trust. This study and other monitoring reports related to biodegradation progress, piezometer and recovery well studies indicate that the concentrations of ground-water contaminants have been decreasing but remain highly elevated above NJDEP-GWQS. The general trend is for the more highly chlorinated contaminants within a family of compounds (such as PCE, TCE, cis-DEC, vinyl chloride, etc.) to gradually break down to lower chlorinated compounds. Before or during November 2007, the Trust will be submitting an area-wide ground-water study for 2007.

Site Inspection

EPA personnel made two visits to the Site and Site vicinity in order to complete a field evaluation for the five-year review. The first visit took place on Wednesday, June 20, 2007. Tom Porucznik (RPM) and Julie McPherson (Human Health Risk Assessor) visited one of the properties included in the Vapor Intrusion study. They met with Marie Lewis, the Senior Project Scientist from Golder Associates, Inc. Golder Associates is the Trust's contractor that is conducting the Vapor Intrusion study. Gary Newhart (EPA-Environmental Response Team) and Miguel Trespalacios (Response Engineering and Analytical Contract) were also present in their EPA oversight capacity.

The second visit to the Site and vicinity occurred on Thursday, August 2, 2007. Tom Porucznik and Julie McPherson visited the Caldwell Trucking Company Site and

the upgraded seep treatment system. They were accompanied by Chris Young of *de maximis, inc.*, and Steve Finn of Golder Associates, both contractors for the Trust. The Trust representatives provided EPA with an inspection of the Caldwell Trucking Company Site to inspect the remediated soils areas and the condition of the restored wetlands. The Trust also provided an inspection of the seep area.

Interviews

During the June 20, 2007 Site inspection, Tom Porucznik and Julie McPherson of EPA discussed, with the representative from Golder Associates, a number of issues relating to the need to obtain confirmatory samples at certain vapor intrusion study properties.

During the August 2, 2007 Site inspection, representatives from *de maximis, inc.* and Golder Associates took Tom Porucznik and Julie McPherson of EPA on an inspection of the Caldwell Trucking Company Superfund Site property. They also provided an inspection and detailed discussion of the upgraded seep treatment system downgradient of the Site.

VII. Technical Assessment

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

Yes, all components of the remedy are functioning as intended by the decision documents. All residents who provided access were connected to the municipal water system. Contaminated soils were either excavated and disposed of off-site, or stabilized/solidified on-site. Since the stabilized/solidified areas are covered by a soil cover, direct exposure to contaminated materials has been interrupted via this exposure pathway. In addition, a fence surrounds the property which prevents unauthorized access to the Site.

Once completed, the ground-water remedy is expected to reduce and contain the highly contaminated area of ground water; eliminate the risks posed by the seep; and minimize the levels of contamination reaching the Passaic River.

Since the ESD was signed in 1993, several interim actions/studies have been conducted at the Site by the

Trust. Ground-water recovery wells for the pump and treatment system were installed in 2007. It is anticipated that the remedy will be functioning as intended once the pump and treatment system is online.

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

Some chemical specific toxicity values and exposure assumptions have changed since the Site was originally assessed. In order to account for changes in toxicity values and exposure assumptions since the remedial investigation was initiated on the Site, the maximum detected concentrations of the contaminants of potential concern (COPCs) identified during the 2005-2007 sampling events were compared to their respective Region 9 Preliminary Remediation Goals (PRGs), NJDEP-GWQS, and their respective MCLs. The MCL is the highest level of contaminant that is allowed in drinking water. MCLs are promulgated standards that apply to public water systems and are intended to protect human health by limiting the levels of contaminants in drinking water. PRGs are a human health risk based value that is equivalent to a cancer risk of 1×10^{-6} or a Hazard Index of 1. A review of the ground-water data (2005-2007) indicates that concentrations of the site-related contaminants of concern continue to exceed their respective PRGs, NJDEP GWQS and MCLs.

The soil remedy was reviewed to address the protectiveness of the remedy presented in the OU1 ROD Amendment. The cleanup goals established for lead and cadmium in the soil are still valid.

As stated earlier, interim actions (iron reactive barrier and air stripper) have been implemented to attempt to prevent site-related contaminants from impacting the unnamed tributary, Deepavaal Brook and the Passaic River. The NJDEP has provided the Site with a NJPDES Permit for the discharge of treated ground water to the unnamed tributary. The effluent has been sampled on a monthly basis since 2001. The effluent discharges have been in compliance with the NJPDES Limitations for almost all sampling events since 2001. The concentrations of constituents in the seep and the unnamed tributary (May 2007) have been reviewed to determine if the unnamed tributary continues to be impacted by site-related

contaminants. The concentrations of site-related constituents were compared to their respective PRGs, MCLs and NJDEP-GWQS since the surface water area is considered a potable water supply (FW2-NT). The results of this sampling event indicate that site-related contaminants exceed their respective PRGs, NJDEP-GWQS and MCLs and continue to impact the unnamed tributary and Deepaval Brook. As indicated previously, several preliminary studies completed by the Trust have shown that contaminated ground water, located below the clay layer not far from the seep mitigation system, is most likely responsible for the VOCs found in the unnamed stream. The source and location of the ground-water contamination to the unnamed stream discharging into Deepavaal Brook is presently being evaluated by the Trust. This ongoing study should be completed in about six months.

The 2002 five-year review for the Site recommended that the soil vapor intrusion pathway be evaluated to ensure the protectiveness of the remedy. The Trust has installed three mitigation systems since the start of preliminary work in the Fall of 2006. Since April 2007, the Trust is conducting an Expanded Vapor Intrusion Investigation to address the potential for related contaminants volatizing and accumulating in homes located above the plume downgradient of the Caldwell Trucking Company Site. The Trust has nearly completed the first phase of the sampling of the properties whose owners signed access agreements allowing the Trust to take samples. Thus, the investigation to determine if residential and commercial properties are being impacted via this exposure pathway is well underway.

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

There is no other information that calls into question the protectiveness of the remedy.

Technical Assessment Summary

According to the data reviewed, the Site inspection, and the interviews, the OU1 remedy is functioning as intended by the decision documents. The OU1 remedy stabilized the Site contaminants and addressed the potential risks associated with waste materials at the Site. There have been no changes in the physical condition of the Site that

would affect the protectiveness of the OU1 remedy. The OU2 seep mitigation system addressed potential risks associated with discharge of contaminated ground water to surface water. The Trust has already began studying this problem. There are no changes in the toxicity factors for the contaminants of concern used in the baseline risk assessment, and there have been no changes to the standardized risk assessment methodology that could affect the protectiveness of the remedy. There is no other information that calls into question the protectiveness of the remedy.

For OU2, a biological treatment system pilot study was conducted from 2001-2002, and amendments to enhance biodegradation of volatile organic contaminants continues to reduce the concentrations. Since 2005, the Trust has installed monitoring wells and piezometers for hydrologic and contaminant analyses. Work was completed on installation of four remediation wells in June 2007. EPA is currently evaluating results from hydraulic testing of these remediation wells.

As a result of OU2 interim measures taken by EPA, NJDEP, and the Trust, Site impacted ground water, surface water, and sediments are protective of human health and the environment in the short-term. While ground water in the area is not being used as a drinking water supply, the placement of the area downgradient of the Site in the State's Classification Exception Area (CEA) database will provide additional protection of human health and the environment. The remedy for OU2 will be protective of human health and the environment upon completion.

VIII. Issues, Recommendations and Follow-up Actions

This report does not identify or recommend any action at this Site needed to protect human health and/or the environment that is not addressed by the remedies selected in the Site decision documents. However, since the Site is not construction complete, there are many ongoing activities at the Site:

Further studies are underway for further optimization of the ground-water seep mitigation system.

The ground-water source of contamination of the unnamed stream is being studied.

The Trust continues to sample the five Carlos Drive residences not connected to the municipal water system.

The Trust has conducted a number of studies related to the contaminated ground-water containment system and have installed four recovery wells. EPA is in the process of evaluating the results of hydraulic testing of these recovery wells.

The Trust is in the process of conducting a Vapor Intrusion Study that includes approximately 120 properties downgradient of the Caldwell Trucking Company Site.

The Trust continues to add biodegradation amendments to the ground water to reduce VOC contaminants.

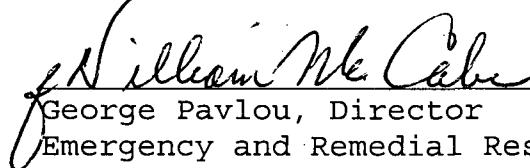
IX. Protectiveness Statement

The implemented action (OU1) taken at the Site is protective of human health and the environment in the short-term. Once the Deed Notice is placed on the property, it will be protective in the long-term. The remedy for OU2 will be protective of human health and the environment upon completion, and in the interim, exposure pathways that could result in unacceptable risks are under control.

X. Next Review

Since hazardous substances, pollutants, or contaminants will remain at the Caldwell Trucking Company Site which do not allow for unlimited use or unrestricted exposure, in accordance with 40 CFR 300.430(f)(4)(ii), the remedial action for the Site shall be reviewed no less than every five years. EPA will conduct another five-year review on or before September 2012, which is five years from this report's approval date.

Approved:


George Pavlou, Director
Emergency and Remedial Response Division

9-26-07
Date

Acronyms used in this Document

ACO	Administrative Consent Order
ARARs	Applicable or Relevant and Appropriate Requirements
CEA	Classification Exception Area
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Act Information System
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Differences
FFS	Focused Feasibility Study
FS	Feasibility Study
MCLs	Maximum Contaminant Levels
mg/kg	milligrams per kilogram
NJDEP	N.J. Department of Environmental Protection
NJPDES	N.J. Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operation and Maintenance
OU1	Operable Unit 1
OU2	Operable Unit 2
OSWER	Office of Solid Waste and Emergency Preparedness
PCBs	Polychlorinated Biphenyls
PCOR	Preliminary Closeout Report
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objective
RAR	Remedial Action Report
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Regional Project Manager
SARA	Superfund Amendments and Reauthorization Act
Site	Caldwell Trucking Company Superfund Site
SVE	Soil Vapor Extraction
SVOCs	Semi-Volatile Organic Compounds
TCE	Trichloroethylene
UAO	Unilateral Administrative Order
U.S.C.	United States Code
VOCs	Volatile Organic Compounds

Table 1 - Chronology of Site Events

Event	Date
George and Rose O'Connor start Caldwell Trucking Company	1946
Waste disposal into unlined lagoons	Early 1950s until 1973
Ground-water contamination identified	1970
Underground storage tanks used for waste handling prior to off-site disposal	1974 to the early 1980s
NJDEP begins extensive sampling in the area	1980
NJDEP recommends that all residents between the Site and the Passaic River be placed on public water	March 1982
Site placed on NPL	September 1983
Initial RI/FS Completed	June 1986
Initial Record of Decision for Site soils and alternate water supplies (OU1)	September 1986
Caldwell Trucking Company ceases operations	1988
EPA connects 55 homes and 9 commercial establishments to municipal water system.	Summer 1989
OU2 RI/FS Completed	July 1989
Record of Decision for OU2	September 1989
Interim Remedial Measures including Site clearing, fencing, covering lagoons, and placing gravel on access roads	1990
ESD issued to address decision not to restore Municipal Water Supply Well Number 7	May 1991
ESD issued to address decision to stabilize contaminated soils	February 1993
ESD issued to address	

decision to implement ground-water contingency remedy	July 1993
PRPs installation of perimeter fence	May 1994
PRPs complete excavation and off-site disposal of PCB and VOC contaminated soils	September 1994
EPA, NJDEP, US Dept. of Interior sign RD/RA Consent Decree with PRP Group	November 1994
OU1 ROD amended to select in-situ stabilization of lead contaminated soils	February 1995
PRPs start soil stabilization PRPs operate Soil Vapor Extraction System	August 1995 June 1996 - March 1997
EPA allows the PRPs to construct and test iron reactive wall at the seep	February 1997
Start of OU2 on-site construction activities	September 1997
Iron reactive wall constructed	May 1998
PRPs complete soil stabilization activities	September 1998
EPA approval of PRP Group pilot test for accelerated biological treatment and construction of a supplemental seep treatment system	December 2000
PRPs identify additional lead contaminated soils	February 2001
Supplemental seep treatment system constructed	February 2002
PRP Group completes accelerated biological treatment pilot test	July 2002
First Five-year review completed	September 2002
EPA approves PRPs' request to develop GW bioremediation FFS	May 2003
EPA approves RA Work Plan Addendum for excavation/stabilization of remaining soils in ENLA	July 2003

EPA disapproves GW bioremediation FFS	January 2004
EPA approves Soils Remedial Action Completion Report	September 2004
PRPs conduct several surface water and ground-water studies to assess and locate the source of contamination of the unnamed tributary to Deepavaal Brook	2004 - 2007
EPA and Trust agree to hold dispute resolution in abeyance while efforts are made to work out a compromise	November 2004
EPA approves Work Plan to implement first phases of GW remedy	March 2005
PRPs begin preparing work plans for a Vapor Intrusion Study	Late 2005
PRPs begin operation of upgraded Seep Treatment System	July 2006
PRPs submit an expanded Vapor Intrusion study Work Plan	October 2006
PRPs submit first Wetlands Monitoring Report	January 2007
EPA approves PRPs' modified expanded Vapor Intrusion Work Plan	January 2007
EPA holds public meeting for VI study	March 2007
PRPs begin work on expanded VI study	April 2007
PRPs complete work on installation of remediation wells along O'Connor Drive	June 2007
Second Five-year review completed	September 2007

Table 2: Documents, Data, and Information Used in Completing Five-Year Review

- Remedial Investigation Report, NUS Corp. 1986
- Feasibility Study, NUS Corp., 1986
- Caldwell Trucking OU1 Record of Decision, EPA, September 1986
- Remedial Investigation Report for Off-Site Area, Ebasco, 1989
- Feasibility Study, Ebasco, 1989
- Caldwell Trucking OU2 Record of Decision, EPA, September 1989
- Explanation of Significant Differences, EPA, May 1991
- Explanation of Significant Differences, EPA, February 1993
- Explanation of Significant Differences, EPA, September 1993
- Unilateral Administrative Order, EPA, April 1993
- Unilateral Administrative Order, EPA, July 1993
- Consent Decree, EPA, NJDEP, Dept. of Interior and Caldwell Trucking PRP Group, November 1994
- Off-Site Ground-water Remediation Pre-Design Investigation Report, Eckenfelder, January 1995
- Focused Feasibility Study, Blasland, Bouck & Lee, Inc., October 1994
- Record of Decision Amendment, EPA, February 1995
- Remedial Action Completion and Certification Report for Operable Unit No. 1, Caldwell Trucking PRP Group, April 1999
- Source Area New Monitoring Wells, Field Investigation and

Sampling Data and Updated Site Conceptual Model, Golder Sierra, May 2000

- Report on Final Design for Supplemental Seep Treatment System Above-Ground Iron Reactor and Air Stripper, Golder Sierra, May 2001
- Area-Wide Ground-water Evaluation, Golder Associates, March 2002
- Caldwell Trucking PRP Group Five-Year Evaluation, Caldwell Trucking PPR Group, August 2002
- Focused Feasibility Study, January 2004
- Source Area Ground-water Remediation, Interim Report, July 2005
- 2005 Area-wide Ground-water Evaluation, February 2006
- Revised Vapor Intrusion Work Plan, April 2006
- Expanded Vapor Intrusion Work Plan, October 2006
- Amended Expanded Vapor Intrusion Work Plan, February 2007
- Revised Draft Technical Memorandum Hydraulic Testing of Remediation Wells, August 2007



REFERENCES

- 1.) BASE MAP TAKEN FROM U.S.G.S. 7.5 MINUTE QUADRANGLES OF POMPTON PLAINS, NJ AND CALDWELL, NJ.

Jul 01, 2002 - 4:30pm

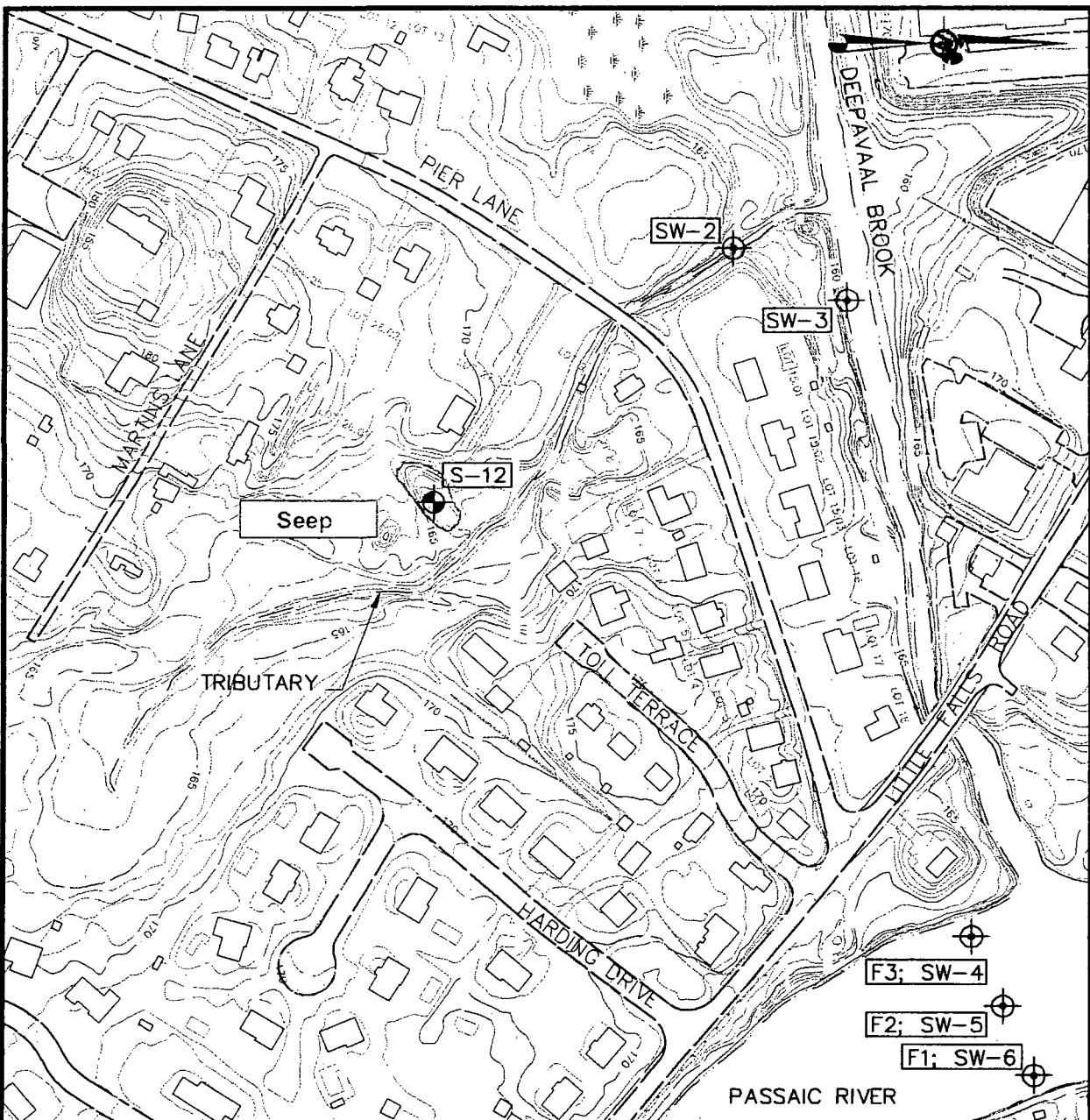
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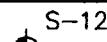
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TITLE						
SITE LOCATION MAP						
PROJECT No.	003-6045	FILE No.	0036045H002			
DESIGN	ACK	07/01/02	SCALE AS SHOWN REV. D			
CADD	AM	07/01/02				
CHECK						
REVIEW						



Figure 1



LEGEND



SEDIMENT SAMPLE ID AND LOCATION



SURFACE WATER SAMPLE ID AND LOCATION

NOTE

- LOCATIONS ARE APPROXIMATE.

REFERENCES

- BASE MAP TAKEN FROM DRAWING NO. C001, ENTITLED "SITE PLAN", PROVIDED BY MCLAREN HART.

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SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RWV
PROJECT			CALDWELL TRUCKING SITE FIVE YEAR REVIEW FAIRFIELD, NEW JERSEY			
TITLE						
SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS						



PROJECT No.	003-5045	FILE No.	0036045H001
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CHECK			
REVIEW			

Figure 2