STATEMENT OF BASIS
FOR REMEDY SELECTION AND
CORRECTIVE ACTION COMPLETE WITHOUT CONTROLS DETERMINATION

AT RHONE-POULENC, INC., EAST PARCEL

LOCATED AT 9229 EAST MARGINAL WAY SOUTH
TUKWILA, WA

EPA Identification Number WAD 00928 2302
Administrative Order on Consent 1091-11-20-3008(h)

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
SEATTLE, WASHINGTON

NOVEMBER 2006

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STATEMENT OF BASIS FOR REMEDY SELECTION AND CORRECTIVE ACTION COMPLETE WITHOUT CONTROLS DETERMINATION
Former Rhone-Poulenc, Inc. Facility – East Parcel
EPA ID No: WAD 00929 2302
Administrative Order on Consent 1091-11-20-3008(h)

EXECUTIVE SUMMARY

This document presents the Statement of Basis for the Environmental Protection Agency, Region 10's ("EPA's") proposed remedy selection and determination of "Corrective Action Complete Without Controls" pursuant to Administrative Order on Consent 1091-11-20-3008(h) ("Order") under the Resource Conservation and Recovery Act ("RCRA") for the East Parcel of the former Rhone-Poulenc, Inc. Facility ("Facility"). The Facility is located at 9229 East Marginal Way South, Tukwila, Washington (see Figure 1). This Statement of Basis provides background information and discusses the media-specific cleanup objectives, the interim measure that has been conducted, and the final remedy that EPA is proposing to ensure that human health and the environment are protected. Upon conclusion of the public comment period, EPA will issue a final determination and, if substantive comments are received, a Response to Comments.

Industrial use of the Facility began in the 1930's and continued through 1991 under several different corporations. Originally, the Facility was used for manufacturing of glue, paints, resins, and storing wood preservatives. Vanillin production began in 1952 and continued until the production facility was closed permanently in April 1991. The property was purchased by the current landowner, Container Properties L.L.C. ("Container Properties"), in November 1998.

Investigation and cleanup of the Facility is being conducted under RCRA Administrative Order on Consent 1091-11-20-3008(h) ("Order") by current and former property owners; Container Properties, Rhodia, Inc., and Bayer CropScience. The current and former property owners are collectively referred to as the Respondents. Container Properties is currently redeveloping the property, and is subdividing the site into two separate parcels (the West Parcel and the East Parcel). Both Parcels are subject to the cleanup requirements of the Order. Today's Public Notice and proposed remedy selection pertain only to the East Parcel. Cleanup work on the West Parcel is being conducted on a separate timeline.

Investigations begun by the Respondents in 1985 detected releases of hazardous constituents to soils and ground water. To date, nearly 10 years of quarterly ground water monitoring has been conducted. Investigations of soil and sediment have also been performed. Constituents that have been detected include toluene, metals (copper, arsenic, mercury), and caustic pH. Most of the contamination is located in the former processing and chemical storage areas on the western half of the property, and most of the investigations and interim measures have occurred on the West Parcel. An interim measure was constructed in 2003 on the West Parcel to prevent the ongoing discharge of contaminated ground water into the Duwamish Waterway. This interim measure consists of a subsurface barrier wall enclosing the majority of the contamination, and a ground water extraction and treatment system.

An investigation of the East Parcel was completed in June of 2006. The review of historical chemistry data from a RCRA Facility Investigation ("RFI") conducted in 1995 indicated that ground water beneath the East Parcel had not been impacted by Facility operations, so the 2006 East Parcel Investigation focused on soils. The RFI data indicated that contaminants were present in soils in some areas in concentrations exceeding the Preliminary Remediation Goals ("PRGs"). The East Parcel was divided into seven areas of interest for further investigation. Each area was characterized using a method known as multi-increment sampling. This method divides each area of interest into specific depth zones and uses composites from about 35 locations at each depth zone, within each area of interest, to obtain each sample. The samples are carefully processed prior to analysis. The 2006 investigation confirmed that contaminants were present in the soils of some areas of the East Parcel. Contaminants detected included metals (arsenic, copper, and mercury), polychlorinated biphenyls ("PCBs"), carcinogenic polyaromatic hydrocarbons ("cPAHs"), and toluene.

A voluntary removal action was undertaken on the East Parcel in late summer, 2006. Approximately 5,000 cubic yards of soils containing constituents above the PRGs were excavated and removed. Confirmation sampling verified that contaminated soils were excavated. A small amount of toluene is present in ground water in the southwestern corner of the East Parcel. The completed removal action is expected to result in rapid natural attenuation of the remaining toluene in ground water.

The Respondents have completed a Corrective Measures Study (September 28, 2006) ("CMS") for the East Parcel. The East Parcel CMS recommended that source area excavation and removal be selected as a final remedy.

This Statement of Basis documents EPA's rationale for proposing to select source area excavation and removal as the final remedy for the East Parcel. EPA is also proposing to require a contingent remedy to address any residual toluene in ground water, if source removal does not prove to be an effective ground water remedy within six months.

This Statement of Basis also documents EPA's rationale for proposing to issue a determination of "Corrective Action Complete Without Controls." A "Corrective Action Complete Without Controls" determination means that EPA, under RCRA authority, has determined that human health and ecological risks have been appropriately addressed and that corrective action activities are no longer necessary at this site. EPA is proposing to issue this determination for the majority of the East Parcel at the conclusion of this comment period. This determination would be issued for the remaining section of the East Parcel after confirmation that toluene remediation is complete.

The Statement of Basis summarizes information that can be found in greater detail in reports contained in EPA's files for this Facility (see the References at the end of this document). These documents are being made available for public review during the public comment period, from November 15, 2006 through December 15, 2006. The locations of these documents and the address for submitting written comments are provided in the last section of this Statement of Basis. EPA may modify the proposed final remedy described herein, select another remedy, or require additional work based on new information or on public comments. Therefore, EPA encourages the public to review these documents to gain a more comprehensive understanding of and provide comments on EPA's proposed remedy selection and corrective action complete without controls determination.

FACILITY BACKGROUND

Industrial use of the Facility began in the 1930s and continued through 1991 under several different corporations. Originally, I.F. Laucks operated the Facility and manufactured glue for use in plywood manufacturing. In 1946, the Monsanto Chemical Company ("Monsanto") purchased the Facility. Monsanto continued the manufacture of glue, and also began to manufacture paints and resins, and to store wood preservatives. In 1952, Monsanto began vanillin production at the Facility. Monsanto sold the Facility to Rhone-Poulenc, Inc. in 1986. Rhone-Poulenc continued operating the Facility until it was closed permanently in April 1991. The regulated hazardous waste storage units were certified closed on April 23, 1992, under the jurisdiction of the Washington State Department of Ecology.

Ownership of the property was transferred from Rhone-Poulenc to Rhodia in January, 1998. Rhodia subsequently sold the property to the current owner, Container Properties, in November 1998.

CORRECTIVE ACTION HISTORY

A number of sampling events and several interim measures have been implemented in the course of conducting corrective action at the Facility. This section provides a summary of these events for the Facility in general.

In 1986, Dames and Moore performed a site screening investigation for Rhone-Poulenc. Rhone-Poulenc, in acquiring the property from Monsanto, wanted a thorough understanding of any potential soil or ground water contamination at the Facility. The report documented that wastes and waste materials had been spilled and disposed on site, and concluded that the potential for contamination of ground water at the site existed. The Dames and Moore investigation included installation of eleven ground water monitoring wells, including three dual completion (shallow/deep) wells. These wells were sampled for a range of hazardous constituents. Hazardous constituents, including toluene, were detected in the ground water.

In 1990, EPA performed a RCRA Facility Assessment ("RFA") of the entire Rhone-Poulenc Facility. The RFA determined that hazardous wastes and/or hazardous constituents had been released to the environment from various activities over the course of operations at the site. These activities included but were not limited to pipeline and tank leaks of toluene and caustic, disposal of autoclave scale and other waste materials, and use of waste vanillin black liquor solids for weed control. The RFA concluded that releases to soil and ground water had occurred as a result of past practices at the Facility.

In 1991, an independent site assessment was conducted by Landau Associates for Boeing Environmental Affairs. This site assessment evaluated soil and ground water quality on the terrestrial portion of the property and sediment and seep quality on the marine portion of the property. Constituent levels of concern were detected at numerous areas onsite. The assessment concluded that at least two areas of the Facility would likely require remediation. The cost to remediate these areas was estimated to range from 5.6 to 12.3 million dollars.

In May 1993, Rhone-Poulenc and EPA entered into an Administrative Order on Consent using EPA's corrective action authority in Section 3008(h) of RCRA to address releases of contamination at the Facility. The Order sets forth the process by which an investigation and cleanup of the Facility is to be conducted, and requires the Respondent to perform a RCRA

Facility Investigation (RFI), Interim Measures (IMs) if needed, and a Corrective Measures Study (CMS), as well as the option to conduct the final corrective measure selected by EPA. Additional entities are now subject to the Order. Specifically, Rhone-Poulenc transferred the Facility to Rhodia in January 1998, and Container Properties purchased the Facility in November 1998. Rhone-Poulenc has gone through a variety of corporate transitions, and Bayer CropScience is the current corporate successor. Rhodia, Bayer CropScience, and Container Properties are the Respondents to the Order, and are responsible for carrying out all actions required by the Order.

The RCRA Facility Investigation was completed in 1995, and documented the presence of hazardous constituents in the soils and ground water. Most of the contamination was shown to be located on the western portion of the Facility, in the area of the former processing plant and storage areas. Additional investigations have been completed as needed, including an investigation of the storm and process sewers in 1998, and a Geoprobe investigation focused on delineating the extent of the main plumes of contamination (2001). Quarterly ground water monitoring has been conducted for nearly 10 years.

Based on these investigations, a hydraulic control interim measure was required by EPA in 2000 to stop ongoing releases of hazardous constituents into the Duwamish Waterway. Construction of this interim measure, a subsurface barrier wall and associated ground water pump-and-treat system, was completed in 2003. This system, which is located in the West Parcel, is currently in operation.

Several other voluntary interim measures have been conducted at the Facility, including installation and operation of a soil vapor extraction system to remove toluene from beneath the former tank farm (2000 through 2002), two separate PCB removal actions (1995, 2006), and soil removals on the East Parcel and copper disposal area in the West Parcel (2006).

In the spring of 2006, Container Properties informed EPA that they wished to proceed with redevelopment of the East Parcel. Data from the previous investigations indicated that soils in the East Parcel did contain some contaminants, and that ground water had not been impacted. EPA and the Respondents agreed to separate the East and West Parcels for purposes of completing corrective action. The Parcel boundaries are shown on Figure 2.

The corrective action process is established in the Order. The Order requires that EPA establish cleanup levels, and that the Respondents perform a Corrective Measures Study ("CMS") to evaluate possible remedies. After seeking public comment, EPA then selects a final remedy to be implemented by the Respondents. Following successful implementation of the selected remedy, EPA may issue a determination of Corrective Action Complete either with or without controls. Whether the determination made by EPA includes controls depends on the degree of cleanup. If the cleanup meets unrestricted use cleanup levels, then the determination that corrective action is complete without controls may be issued. If the cleanup does not meet unrestricted use cleanup levels, then EPA will require ongoing operation and maintenance of the remedy, including institutional controls as necessary.

In this case, the Respondents conducted source removal on the East Parcel after evaluating the corrective measure alternatives and prior to EPA's selection of a final remedy. This action was conducted voluntarily in an expedited fashion in order to provide for the sale and redevelopment of the East Parcel. Assuming conditions of the sale are met, the East Parcel will be sold by December 31, 2006. This action was undertaken with the knowledge that EPA could require further actions when selecting a final remedy.

Upon evaluation of the effectiveness of the source removal, EPA has tentatively determined that this action was sufficient. EPA is proposing to select source removal as the final remedy for the East Parcel, and is simultaneously proposing to issue a determination that corrective action is complete on the East Parcel.

CLEANUP LEVELS

In establishing cleanup levels under RCRA, EPA must ensure that contaminant concentrations do not pose unacceptable risks to human health or the environment. Risk is evaluated for each potential exposure pathway based on consideration of current and future uses of the Facility and ground water. Once the beneficial uses are determined, cleanup levels to protect those uses must be established.

The Respondents have stated that their objective is to provide for the sale, redevelopment, and reuse of the East Parcel by achieving a determination that corrective action is complete without land use restrictions. A final cleanup that achieves unrestricted use levels would leave the property available for any potential future use. Cleanup levels must be protective of incidental soil ingestion, vapor intrusion from ground water, and, as the Facility is located on the Duwamish Waterway, it must also be protective of aquatic organisms as well as the people who consume fish and shellfish harvested from the Waterway.

EPA reviewed the RFI Report and other historical sampling information in order to determine the constituents of concern ("COCs") for soil and/or ground water on the East Parcel of the Facility. Metals (arsenic, copper, and mercury), carcinogenic polyaromatic hydrocarbons (cPAHs), and polychlorinated biphenyls (PCBs) had previously been detected in the soils on the East Parcel. No COCs had been detected in the ground water monitoring wells located on the East Parcel.

Soil

On May 10, 2006, EPA established two sets of Preliminary Remediation Goals ("PRGs") for metals, cPAHs, and PCBs in soils on the East Parcel. EPA's letter set forth PRGs for unrestricted use as well as PRGs for industrial use of the property, and indicated that if the unrestricted use PRGs could not be met, land use restrictions would be required. The PRGs were based on Washington State's Model Toxics Control Act ("MTCA") Method A for metals, cPAHs and PCBs, and EPA's Toxic Substances and Control Act ("TSCA") regulation for cleanup of PCBs. For copper, the PRG was based on natural background levels of copper in soil in the Puget Sound area, as established by the Washington State Department of Ecology's *Natural Background Soil Metals Concentrations in Washington State* (October, 1994, Publication #94-115). The PRGs were based on the most stringent of the CULs considered for the various exposure pathways and receptors.

The Respondents have requested that final cleanup levels be established for unrestricted future use. EPA therefore proposes to finalize the May 10, 2006 unrestricted use PRGs as the final soil cleanup levels for metals, cPAHs, and PCBs for the East Parcel (Table 1).

During the course of the 2006 East Parcel soil investigation, one unexpected constituent, toluene, was detected in the deep soil in the southwest corner of the East Parcel. EPA had not established a PRG for toluene, as it had not been previously detected in the East Parcel. In order to complete the East Parcel investigation and Corrective Measures Study in a timely manner, the Respondents calculated an interim cleanup level for toluene in soils based on MTCA Method B.

To determine an appropriate final soil cleanup level, EPA evaluated potentially applicable soil cleanup levels for toluene, including EPA's Region 6 screening levels for direct contact with industrial and residential soil, the MTCA Method C level for industrial soil, the MTCA Modified Method B level for residential soil, and soil cleanup levels for protection of ground water (and thus surface water), as discussed below. The soil cleanup levels must also be protective of terrestrial ecological receptors. For the East Parcel, this determination was made by comparing soil concentrations of individual constituents with those in MTCA Table 749-2.

EPA proposes to select the lowest of these potentially applicable soil cleanup levels as the final soil cleanup level for toluene. In this case, the lowest potentially applicable soil cleanup level is based on protection of drinking water. The proposed final soil cleanup level for toluene is shown on Table 1.

Ground Water

EPA did not establish PRGs for ground water for the East Parcel as COCs had not been detected in this area during the historical ground water monitoring. During the course of the 2006 East Parcel investigation, however, toluene was detected in the ground water in the southwest corner of the East Parcel. In order to complete the East Parcel investigation and Corrective Measures Study in a timely manner, the Respondents calculated an interim cleanup level for toluene based on the MTCA Method B equations for protection of surface water.

To determine an appropriate final ground water cleanup level for toluene, EPA evaluated several potentially applicable criteria. The potentially applicable ground water cleanup levels include MTCA Method A, protection of surface water for ecological receptors and human consumption of fish and shellfish, and vapor intrusion from ground water into indoor air.

In addition to consideration of the MTCA cleanup levels for ground water that discharges to surface water, ground water cleanup levels for toluene also were calculated for adult and child members of the American Indian and Asian and Pacific Islander populations who may harvest fish and shellfish from the Duwamish Waterway.

Consideration of Tribal consumption rates was conducted consistent with the approach being used for the human health risk assessment for the Lower Duwamish Waterway CERCLA Site. In consideration of the size and nature of the habitat in the immediate vicinity of the Facility (Slip 6 and approximately 2 acres of tidal mudflats), EPA decided to utilize the Tulalip Tribes' fish and shellfish consumption rate as a surrogate for the amount of fish and shellfish which could potentially be affected by releases from this Facility (Toy et al., 1996; see also Kissinger, 2005(a)). An assumption was made that adult salmon harvested in the Duwamish Waterway were not likely to have accumulated significant concentrations of contaminants associated with releases from the Facility, based on the relatively short period of their lives spent in the vicinity. The consumption rate for salmon therefore was not included in the

calculation of a ground water cleanup level protective of surface water uses. Tribal child fish and shellfish ingestion rates were assumed to be 40% of the adult consumption rate. In performing this calculation, it was assumed that toluene in ground water migrates undiluted into the surface water and is equally absorbed by all fish and shellfish consumed.

The estimation of the consumption rate of fish and shellfish that are harvested from the Duwamish Waterway for the Asian and Pacific Islander population is based on a statistical treatment of the information in the 1999 report, *Asian and Pacific Islander Seafood Consumption Study* (EPA 910/R-99-003)(Schena et al., 1999; see also Kissinger, 2005(b)). The portion of the consumption rate harvested in King County waters was used as the surrogate for what could be harvested and eaten from the Duwamish Waterway. Because of a lack of data concerning children's fish and shellfish consumption rates for this population, EPA decided to use 40% of the adult consumption rate.

EPA proposes to select the MTCA Method A cleanup level. This level is the lowest of the potentially applicable ground water cleanup levels. The proposed final ground water cleanup level for toluene is shown on Table 2.

Vapor intrusion, which results when volatile contaminants in the subsurface seep into enclosed spaces, was also considered. Because people could be exposed to indoor air in any buildings constructed on the East Parcel, a ground water cleanup level for toluene was estimated using EPA's Johnson-Ettinger vapor intrusion spreadsheet (EPA, 2002) for unrestricted land use, assuming a residential-size building and the MTCA Method B air cleanup level calculated for toluene. The resulting ground water cleanup level, 55 mg/L, is higher than the ground water cleanup level calculated to be protective of drinking water (1 mg/L). Use of the proposed final ground water cleanup level for toluene will therefore also be protective of indoor air exposures.

EAST PARCEL SITE INVESTIGATION

All of the manufacturing and most of the industrial activity occurred on the West Parcel. The East Parcel was used for non-industrial purposes, with most of the area used as parking lots. The East Parcel did include several infrastructure buildings designed to support the manufacturing activities. Buildings present on the East Parcel included a laboratory building, an air compressor station, and a maintenance building. In addition, the RFA identified two former potential waste disposal areas; one identified as a "pilot plant waste" disposal area and one identified as an area used for disposal of sulfuric acid tank solids.

In order to determine the full extent of contamination in the East Parcel, all existing soil and ground water data were reviewed, and the East Parcel Soil Characterization Work Plan was prepared. A list of COCs specific to the East Parcel was developed based on review of existing data, which was contained in the following reports:

1986 – *Phase II Site Screening Investigation Report*, Dames and Moore
1990 – *RCRA Facility Assessment*, EPA (PRC Environmental)
1991—*Site Assessment*, Landau Associates
1995 – *Final RCRA Facility Investigation Report*, CH2M Hill
1998 – *Interim Measures Report – PCB Remediation and Sewer Cleaning*, Rhodia
2001 – *Summer 2001 Geoprobe Investigation Report*, AGI

Historical data from these investigations indicated that soil had been impacted in several areas at concentrations exceeding the PRGs. Constituents of concern (COCs) in soil identified for the East Parcel include metals (arsenic, copper, and mercury), polychlorinated biphenyls (PCBs), and carcinogenic polyaromatic hydrocarbons (cPAHs).

The proposed work was described in the East Parcel Soil Characterization Work Plan, which was approved by EPA on May 23, 2006 and implemented in June of 2006. Seven areas of interest were identified based on the results of the previous investigations, as shown on Figure 3. These investigation areas include the following:

1. The former Maintenance Building Area
2. The former Compressor Area
3. The former Laboratory Area
4. The Sulfuric Acid Tank Waste Solids Disposal Area
5. The Pilot Plant Waste Disposal Area
6. Background Area 1
7. Background Area 2 (Railroad)

A specific subset of the COCs was identified for each of the seven investigation areas. The characterization was based on a “multi-incremental” sampling approach as described in *Guidance for Obtaining Representative Laboratory Analytical Subsamples from Particulate Laboratory Samples,* EPA/600/R-03/027. Each of the seven investigation areas identified above was divided into one or two depth intervals, or “surfaces.” The depth of each surface was selected based on the historical sample results and the amount of fill in each area. In each area, thirty five soil samples were obtained from each surface, and were used to prepare a single multi-increment composite sample representing that surface. At every third boring, duplicate or “archive” samples were collected for each surface, producing 11 discrete archive samples per surface per investigation area.

The multi-incremental sampling approach relied on homogenization of the multi-increment composite sample from each surface to ensure that the sample was representative of that sampling surface. Homogeneity was achieved at the laboratory by grinding the entire multi-increment sample to finer size using specialized grinding equipment, and thoroughly mixing the resulting fine-grained material.

The analytical results for each multi-increment sample were compared to the cleanup levels to determine if the surface represented by the sample was contaminated. If the multi-increment sample concentration was greater than the cleanup level for a constituent, then selected archived samples were analyzed for that constituent to further delineate the contamination.

Soil cores recovered from each sampling location were inspected for visual or olfactory evidence of waste materials, such as oily or discolored deposits or deposits consisting of non-soil materials. When the grid sampling encountered visible evidence of potential buried waste or suspected contamination, EPA was notified and a sample was collected for more detailed analysis. Based on field observations such as color, odor, sheen, and photoionization detector (PID) readings, suspected waste samples were selectively analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), and metals.

Results of this investigation are documented in the *East Parcel Soil Characterization Data Report* (August 8, 2006), and the *East Parcel Soil Characterization and Voluntary Interim Measure Report* (September 29, 2006). The results for each investigation area are summarized below and shown on Figure 4, Table 4, and Table 5.

Former Maintenance Building Area

The former maintenance building was presumed to have contained lubricating oils and solvents based on its use. The RFA reported that waste oils and solvents were disposed of on the ground surface around the maintenance building from 1952 to 1980. Historical sample results showed that metals were detected above their respective soil cleanup levels in shallow soils, and one sample from 7.5 feet below ground surface exceeded the soil cleanup level for cPAHs.

Two multi-increment samples were analyzed from the Maintenance Building Area during the 2006 East Parcel Investigation. The Surface 1 multi-increment sample (0.5 to 1.5 ft) was analyzed for arsenic, copper, and mercury, and the Surface 2 multi-increment sample (7.0 to 8.0 ft) was analyzed for cPAHs. Arsenic, mercury, and cPAHs were detected below their respective soil cleanup levels. Because the Surface 1 copper results (110 mg/kg) exceeded the soil cleanup level (36.4 mg/kg), the discrete archived samples from this area were also analyzed for copper. The discrete sample results showed that the majority of the Former Maintenance Building Area surface soil samples contained copper at concentrations exceeding the soil cleanup level.

During subsequent excavation activities (discussed below), an area of toluene contamination was discovered in the southwest corner of the Former Maintenance Building Area. Because the toluene contamination appeared to be at a depth near the water table (approximately 10 to 15 feet below ground surface), 12 direct push borings were installed around the perimeter of the excavation, and soil and grab ground water samples were collected from the borings. Table 3 presents the analytical results for these samples. The boring locations are shown on Figure 6 of the *East Parcel Soil Characterization and Voluntary Interim Measures Report*. The analytical results show that the toluene-affected soil and ground water were of limited extent, covering the corner area approximately 35 feet east from the East/West Parcel boundary and 75 feet north of the southern property line. The majority of the soil contamination was shown to be just above the water table. Toluene was present at concentrations up to 23,000 mg/kg in the soil, and up to 90 mg/L in the ground water. Historic site drawings show a toluene pipeline on the West Parcel running north-south along the East/West Parcel boundary. Further investigation on the West Parcel has confirmed that the toluene-affected soil is a result of a leak of that pipeline.

Former Compressor Area

The Former Compressor Area includes the location of the former autoclave compressor. Leaks of compressor fluids were noted during the RFA inspection. The compressor fluid used was reported to be Pydraul A, a mineral oil carrier with PCBs formerly manufactured by Monsanto. Rhodia performed a cleanup of the compressor pad in 1995. The compressor pad and surrounding soil were excavated to a depth of 8 feet from an area measuring approximately 16 by 19 feet. However, confirmation sampling results from that cleanup were compared to a restricted use soil cleanup level (10 mg/kg) that is higher than the unrestricted use soil cleanup

level (1 mg/kg) for PCBs. Copper was also detected above the unrestricted use soil cleanup level in three historical sampling locations.

During the 2006 East Parcel investigation, two multi-increment samples were analyzed from the Former Compressor Area. The Surface 1 multi-increment sample (1.5 to 2.5 ft) was analyzed for PCBs, arsenic, copper and mercury. Arsenic and mercury were detected below their respective soil cleanup levels in the Surface 1 sample. The Surface 2 multi-increment sample (7.0 to 8.0 ft) was analyzed for PCBs. PCBs were not detected in the Surface 2 sample.

Because the Surface 1 multi-increment sample copper results exceeded the soil cleanup level at a relatively high concentration (257 mg/kg), the discrete archived samples were not analyzed since it was assumed that copper-affected soils were widespread in this area. PCBs were also detected (7.4 mg/kg) above the soil cleanup level in the Surface 1 multi-increment sample, so the Surface 1 archived samples were analyzed for PCBs. Discrete sample results showed that PCBs were present in only one of 11 upper level archived samples at a concentration that exceeded the soil cleanup level for PCBs. This sample was located in the southwest corner of the Former Compressor Area.

PID readings, odors, and sheens noted in some of the borings led to analyses to evaluate potential COCs. Discrete samples were obtained and analyzed for VOCs and TPH. These samples indicate that toluene was present in these soils. Due to an error in establishing the probable location of the East/West Parcel boundary, however, the affected borings were later determined to be located primarily on the West Parcel, rather than the East Parcel (see Figure 4).

Former Laboratory Area

The area immediately west of the former laboratory building was reportedly used for one-time disposal of vanillin black liquor solids in 1979. Previous sampling investigations detected copper above the soil cleanup level in a surface soil sample, and cPAHs above the soil cleanup level at 2.5 feet below ground surface.

Two multi-increment samples were analyzed from the Former Laboratory Area during the 2006 East Parcel Investigation. The Surface 1 multi-increment sample (0.5 to 1.5 ft) was analyzed for arsenic, copper, and mercury, and the Surface 2 multi-increment sample (2.5 to 3.5 ft) was analyzed for cPAHs. Arsenic and mercury were detected below their respective soil cleanup levels in the Surface 1 sample. cPAHs were not detected in the Surface 2 sample. Because the Surface 1 copper results (40.3 mg/kg) exceeded the soil cleanup level (36.4 mg/kg), the discrete archived samples from this area were analyzed for copper. Discrete results showed copper exceedances in two “clusters” within the Former Laboratory Area, one small cluster at the north of the area, and one larger cluster at the south.

Former Sulfuric Acid Tank Solids Disposal Area

This area is adjacent to the Former Compressor Area, approximately 70 feet north of the former compressor pad. Sulfuric acid tank solids were reportedly buried in this area once in 1969. None of the historical soil samples collected in this area exceeded the soil cleanup level, except for one surface soil exceedance for copper.

During the 2006 East Parcel Investigation, no evidence of contamination was observed in this area. One multi-increment sample (0.5 to 1.5 ft) was analyzed for pH, arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, and silver. Because the sample copper results (41.5 mg/kg) exceeded the soil cleanup level, the discrete archived samples were analyzed for copper. The discrete analytical results showed copper exceedances of the unrestricted soil cleanup level in two “clusters,” one located at the north end of the area, and one at the south end.

Former Pilot Plant Waste Disposal Area

Dames and Moore identified this area as having been used for disposal of pilot plant wastes. I.F. Laucks Company once operated a pilot plant at the site that was used to make glue for plywood manufacturing. This area was used as an asphalt parking lot for the Rhone-Poulenc facility from the 1950s through closure of the plant. None of the previous samples collected in this area exceeded the unrestricted use soil cleanup levels, with the exception of cPAHs in soil samples from two locations.

During the East Parcel fieldwork, no evidence of contamination was observed in this area. Two multi-increment samples were analyzed. Both upper (1.0 to 2.0) and lower (7.0 to 8.0) surface samples were analyzed for cPAHs. Both surfaces in this area had concentrations of cPAHs that were well below the soil cleanup level.

Background Areas

The Background Areas of the East Parcel were not identified as areas of concern in previous investigations. These areas were occupied by a prisoner-of-war camp during the mid-1940s. During operation of the Rhone-Poulenc Facility, these areas were used primarily for parking vehicles. From 1998 through 2004, the Background Areas were used for temporary storage of trailer-mounted cargo containers. Copper was previously detected just above the soil cleanup level in two soil samples collected at depths of 5.0 and 7.5 feet.

Background Area 2 is a 40-foot wide corridor located along the path of the former railroad spur that crossed this part of the property. The areas to the north and south of the former railroad are defined as Background Area 1. During the 2006 East Parcel Investigation, no evidence of contamination was observed in either of the Background Areas. One multi-increment sample (1.0 to 2.0 ft) was analyzed from each of these areas. The multi-increment samples were analyzed for copper and cPAHs. All samples from these areas had concentrations of these analytes that were well below the soil cleanup levels.

Summary of East Parcel Investigation Results

Eleven multi-increment soil samples from the East Parcel were analyzed. Multi-increment samples were selectively analyzed for PCBs, cPAHs, metals, and pH. The only exceedances of the soil cleanup levels were copper in the Surface 1 samples from the Former Compressor Area, Former Maintenance Building Area, Former Laboratory Area, and Former Sulfuric Acid Tank Solids Disposal Area, and PCBs in the Surface 1 sample from the Former Compressor Area.

To better delineate the extent of copper- and PCB-affected soil, all Surface 1 archived samples from the Former Maintenance Building Area, Former Laboratory Area, and Former Sulfuric Acid Tank Solids Disposal Area were analyzed for copper, and all Surface 1 archived samples from the Former Compressor Area were analyzed for PCBs.

Characterization results revealed that in surface soil (0.5 to 2.5 feet), copper was the only widespread contaminant, covering portions of the Former Maintenance Building Area, Former Laboratory Area, and Former Sulfuric Acid Tank Solids Disposal Area, and assumed to cover all of the Former Compressor Area. PCBs were confined to a small area within the southwest portion of the Former Compressor Area.

Discrete sampling in the southwest portion of the Former Maintenance Building Area also revealed toluene in a limited area from 10 to 15 feet below ground surface. Toluene was also encountered in a limited area of the Former Compressor Area along the boundary of the East and West Parcels.

VOLUNTARY REMOVAL ACTION

As discussed above, some soil samples collected during the 2006 East Parcel Investigation contained copper, PCBs, and toluene at concentrations that exceeded the cleanup levels. Due to the limited extent and volume of affected soils, and in order to expedite redevelopment of the East Parcel, Container Properties decided to proceed with soil removal as a voluntary interim measure.

The 2006 East Parcel Investigation showed that copper was the only widespread contaminant on the East Parcel, and that soils affected by PCBs and toluene were confined to small areas along the East/West Parcel property line. Analytical results for the 2006 East Parcel Investigation, as well as historical analytical results that exceeded the cleanup levels, were posted on figures to define the areal extent of the proposed excavations. Cross sections were constructed to further estimate impacted depths.

Excavation of contaminated soils was completed between August 1 and September 23, 2006. As shown on Figure 5, some areas were excavated to two feet below ground surface; some areas were excavated to three feet below ground surface, and two areas were excavated to up to 17 feet below ground surface. Excavations extended up to 10 feet into the West Parcel in order to prevent recontamination. Fugitive dust emissions were controlled during the excavation as appropriate by using water to suppress dust. Photographs of the excavation process are included in Appendix C of the *East Parcel Soil Characterization and Interim Measures Report* (September 29, 2006).

Approximately 3,500 cubic yards of soil was removed from the shallow excavations in the East Parcel and placed within the perimeter of the barrier wall on the West Parcel. Approximately 500 cubic yards of soil was excavated from the deep Former Compressor Area excavation and stockpiled on the East Parcel for off-site disposal. The excavation in the toluene source area (the southwest Former Maintenance Building Area) extended to the south parcel line, at least 10 feet into the West Parcel, and to at least six inches to a foot below the water table. Approximately 1,700 cubic yards of soil were excavated from this area and stockpiled on the East Parcel for off-site disposal.

Upon completion of the deep excavation in the Former Maintenance Building Area, the ground water in the excavation had a slight sheen of toluene. The excavation was repeatedly dewatered and left to recharge over several successive days. A total of 14,000 gallons of contaminated ground water was pumped into a Baker Tank, treated on-site via the approved West Parcel ground water pre-treatment system, and discharged to the sewer.

As noted previously, prior to the 2006 East Parcel Investigation fieldwork, the line dividing the West and East Parcels was incorrectly marked in the field. After characterization samples were collected, the parcel boundary was surveyed and the boundary moved approximately 10 feet to the east. The corrected parcel boundary is illustrated on Figure 3. Moving the boundary 10 feet to the east did not substantially affect the characterization results. Where soil contamination was found to exist on the West Parcel in close proximity to the East Parcel, additional soils were removed to minimize any potential for recontamination from contaminants on the West Parcel.

Soils that were marginally contaminated with copper were placed on the West Parcel within the area enclosed by the barrier wall, adding to the pre-existing grade as part of the reconfiguration of the storm water system. Appendix D of the *East Parcel Soil Characterization and Voluntary Interim Measures Report* contains tables and maps identifying the source and placement locations for all excavated soil placed on the West Parcel. Soils containing toluene and PCBs were stockpiled in a lined and bermed storage pad while awaiting off-site disposal. The excavated areas were backfilled with imported clean fill.

After the excavation was complete, samples were collected from the sidewalls and bottom of each excavation to confirm that all affected soils were removed. Several rounds of confirmation sampling, additional excavation, and repeat confirmation sampling were conducted in some areas. To ensure that removal of all affected soil had been achieved, multi-increment confirmation samples were collected for each of the four investigation areas requiring excavation. Thirty-five soil samples were used to prepare each single multi-increment confirmation sample. Confirmation sampling of the soil was completed between August 7 and September 23, 2006.

Confirmation sample results from the Former Compressor Area indicated that all samples were below the soil cleanup levels. The confirmation sample from the Former Laboratory Area and Former Sulfuric Acid Tank Solids Disposal Area contained copper at concentrations below the soil cleanup level. The confirmation sample from the shallow soils in the Former Maintenance Building Area contained copper below the soil cleanup level. These data are shown on Table 4.

In the deeper excavations, discrete grab samples were collected as confirmation samples for VOC analysis. With two exceptions, sidewall and base confirmation samples contained concentrations of toluene below the soil cleanup level (see Table 5). The two confirmation samples containing toluene at levels above the soil cleanup level (1.02 mg/kg) are located on the south sidewall where excavation extended to the southern property line (530 mg/kg), and at the base of the excavation in the area where toluene had been found in the ground water (4.7 mg/kg).

The results of the 2006 East Parcel Investigation and the post-excavation confirmation sampling demonstrate that soils exceeding cleanup levels in the East Parcel have been removed. Except for one location in the southwest corner of the Former Maintenance Building Area, soil remaining on the East Parcel meets the unrestricted use soil cleanup levels.

Ground water in the southwest corner of the Former Maintenance Building Area contained toluene at concentrations up to 90 mg/L prior to the soil and ground water removal actions. Although the toluene source has been removed, confirmation sampling has not been conducted and some residual toluene may still be present in the ground water at levels above the cleanup level (1.3 mg/L).

CORRECTIVE MEASURES CONSIDERED

The Respondents submitted a Corrective Measures Study for the East Parcel on September 28, 2006. The CMS summarized data collected to date and assessed three corrective measure alternatives:

1. No Action;
2. Source Area Excavation and Removal; and,
3. Ex-situ Bioremediation and Ex-situ Stabilization.

Alternative 1: No Action

Under Alternative 1, no corrective action would be implemented to prevent exposure to soil contamination and the limited ground water contamination in the southwest corner of the East Parcel. This alternative was evaluated to establish a baseline for comparison.

Alternative 2: Source Area Excavation and Removal

Alternative 2 is more fully described in the CMS and in the discussion of the voluntary interim measure above. Alternative 2 would use excavation to remove all source area soils, and allow natural processes to address remaining ground water impacts. Implementation of Alternative 2 would leave the East Parcel “clean,” requiring no long term management controls. Alternative 2 includes the following elements:

- Removal of existing railroad tracks and ties for proper off-site disposal;
- Excavation of approximately 4,200 cubic yards of copper-impacted soil and placement of soil on the West Parcel within the area enclosed by the barrier wall;
- Excavation of approximately 600 cubic yards of soil impacted with toluene and PCBs for disposal at an off-site, permitted landfill;
- Confirmation soil sampling of all excavated areas;
- Grading of the East Parcel with existing, on-site material to promote drainage to the south;
- Natural attenuation of the remaining toluene-impacted ground water.

Alternative 3: Ex-situ Bioremediation and Ex-situ Stabilization

Alternative 3 would use a combination of remediation technologies to treat excavated soil to immobilize contaminants. Impacted soil would be excavated, and treated on-site using ex-situ bioremediation and ex-situ stabilization.

Ex-situ bioremediation would be used to reduce toluene concentrations to acceptable levels. Toluene contaminated soil would be excavated from the affected area and placed in a bermed area on a 40-mil plastic liner. Following excavation, an appropriate mix of nutrients and other amendments would be mixed into the soil to create optimal conditions for aerobic biodegradation of the toluene. The moisture content of the piles would be monitored to ensure optimal moisture content is maintained. The soil piles would be periodically turned to aerate and mix the soil. Once test samples indicate that toluene concentrations had been reduced below the cleanup levels, active bioremediation would be discontinued. Bioremediated soil would be placed back in the excavation, compacted and graded to promote drainage. Institutional controls would not be required of these soils, since they would meet final cleanup levels.

Following the completion of bioremediation activities, ex-situ stabilization using Portland cement as a fixation agent would be used to immobilize soil impacted with metals and/or PCBs. Portland cement was included in the alternative because it has been proven for fixation of metals and PCBs in soil. After confirming attainment of performance criteria, the stabilized soil would be replaced into the excavation, compacted, and graded to restore site drainage. The stabilized soil would be covered by a layer of clean soil at least 1 foot in thickness. Institutional controls would be included in this alternative to identify the location where stabilized material is placed, and to control potential future risks that may result from excavation and construction.

These alternatives were screened using technical criteria (effectiveness, useful life, toxicity, mobility, and volume reduction, long-term operation and maintenance, demonstrated and expected reliability, constructability, implementation time and beneficial results timeframe, and safety), human health and environmental criteria, institutional considerations, and cost, as discussed in the CMS.

EVALUATION OF ALTERNATIVES AND PROPOSED FINAL REMEDY

The corrective measure alternatives were screened against the four general standards and five remedy decision factors set forth in applicable EPA guidance documents. The performance of the proposed remedy and the other alternatives are discussed below.

Four General Standards

1. Overall protection. All of the alternatives, with the exception of the “no action” alternative, would provide adequate protection of human health and the environment by eliminating, reducing, or controlling risk through treatment, engineering controls, or institutional controls. Alternative 2, the proposed remedy, would completely remove the contaminated soils and achieve the proposed cleanup levels in ground water, where Alternative 3 would leave stabilized contaminated soils in place and rely on institutional controls for protection.

2. Attainment of media cleanup standards. Alternative 2 is the only alternative that would achieve media cleanup standards and allow for unrestricted use of the property based on the proposed cleanup levels. Although Alternative 3 would immobilize PCBs and metals in the East Parcel soils, the proposed cleanup levels would not be attained for these constituents.

3. Controlling the sources of release. Both Alternative 2 and Alternative 3 would be effective in reducing further releases of contaminants to the ground water, surface water, air and other soils. Alternative 2 is more effective at controlling the sources of release, however, because all soil exceeding the proposed cleanup levels would be removed from the East Parcel.

4. Compliance with waste management standards. Both Alternative 2 and Alternative 3 would comply with the applicable requirements for the management of solid waste. This would assure that management of wastes is conducted in a protective manner.

Five Remedy Decision Factors

1. Long-term reliability and effectiveness. Alternative 2 would remove all contamination above the proposed cleanup levels and eliminate the long-term risk of exposure at the Eat Parcel. No controls would be needed to provide long-term protection of human health and the environment. The bioremediation and stabilization technologies of Alternative 3 have been well demonstrated at similar sites, however the long-term reliability and effectiveness of Alternative 3 is dependent in part on institutional controls. Alternative 3 does not achieve unrestricted use of the East Parcel.

2. Reduction of toxicity, mobility or volume of wastes. Alternative 2 will completely reduce toxicity, mobility and the volume of wastes because it entails complete removal of contamination exceeding the proposed cleanup levels from the East Parcel. Alternative 3 will reduce the toxicity and mobility of the contaminated soil, but will increase the volume of material, increasing the soil elevation where the stabilized soil is replaced into the excavation.

3. Short-term effectiveness. Both Alternative 2 and Alternative 3 involve excavation and would pose some short-term risk of exposure to contaminated soils during the excavation process. In addition, there is an increased risk of traffic accidents associated with the transport of soil to an off-site disposal facility. Alternative 3 involves extensive handling to excavate, treat and stabilize contaminated soils. In addition, Alternative 3 would also involve increased potential for dust generation relative to Alternative 2. Alternative 2 would address the contaminated soils more rapidly than Alternative 3. The period of operation required to implement Alternative 3 may be eight months, increasing the probability of encountering safety issues.

4. Implementability. The excavation of soil under Alternative 2 involves standard equipment and qualified contractors are readily available. Alternative 3 involves a more complex permitting process, and would require a period as long as eight months to implement. In addition, ex-situ bioremediation and ex-situ stabilization are more specialized technologies than excavation and off-site disposal, and fewer experienced contractors are available.
5. Cost. It is estimated that Alternative 2 would cost approximately $421,000, and Alternative 3 would cost $693,800 to fully implement. In addition, the institutional controls associated with Alternative 3 would involve some long-term operation and maintenance costs not included in this estimate.

In summary, Alternative 2 would eliminate the risk posed to human health and the environment by removing all contamination to the unrestricted use cleanup standards proposed by EPA. Alternative 2 achieves this risk reduction more quickly than any of the other alternatives. Based on the information currently available, Alternative 2 provides the best balance of tradeoffs among the alternatives with respect to the evaluation criteria. EPA believes that Alternative 2 would eliminate the source of releases and comply with applicable standards for management of waste.

The Respondents conducted the proposed removal action as a voluntary interim measure in August of 2006. In addition to the actions detailed above, a total of 14,000 gallons of contaminated groundwater was pumped from the excavation and properly treated as part of the source removal. As previously discussed, confirmation sample results demonstrate that soils exceeding soil cleanup levels have been removed from the East Parcel.

The CMS proposes that further actions are not required to address the limited remaining toluene impacts to ground water. The toluene source has been removed, and natural processes are expected to rapidly address the remaining toluene in ground water. It is anticipated that toluene concentrations in ground water will meet the ground water cleanup level within three to six months.

As confirmation sampling has not yet demonstrated that toluene in ground water is below the cleanup level, EPA is proposing to require a contingent ground water remedy: If the Respondents cannot demonstrate within six months of issuance of EPA's final remedy selection that the concentration of toluene in ground water is significantly reduced or is below the ground water cleanup level, EPA will require submission of a work plan for additional corrective measures for ground water (such as biosparging, bioventing, or ground water pump and treat).

PROPOSED DETERMINATION OF CORRECTIVE ACTION COMPLETE WITHOUT CONTROLS

As discussed above, voluntary source removal has successfully removed all soils from the East Parcel containing contaminants which exceeded the unrestricted use soil cleanup levels. EPA proposes to issue a determination of "Corrective Action Complete Without Controls" for the East Parcel. A "Corrective Action Complete Without Controls" determination means that EPA, under RCRA authority, has determined that human health and ecological risks have been appropriately addressed and that corrective action activities are no longer necessary at this site. This determination confirms that the property is considered suitable for any future use, and may be redeveloped without restrictions.

EPA proposes that this determination be issued at this time for all of the East Parcel except the southwest corner, where toluene may remain in the ground water. This determination will be extended to the remainder of the East Parcel when EPA receives ground water data confirming that toluene levels are below the ground water cleanup level.

OPPORTUNITY FOR PUBLIC COMMENT

EPA requests comments from the community on the proposed final remedy and the proposal to issue a determination of "Corrective Action Complete Without Controls" for the East Parcel of the former Rhone-Poulenc Facility. EPA has established a 30-day public comment period from November 15, 2006 to December 15, 2006 to encourage participation in this decision-making process. EPA will respond to written public comments received during this time period, and will conduct a public meeting if it appears that public interest warrants such a meeting. If EPA determines that a different final remedy is needed or a "Corrective Action Complete Without Controls" determination is inappropriate for the East Parcel, EPA may allow additional time for public comment on the revised Statement of Basis. Public comments will be summarized, along with EPA's response, in the Final Decision and Response to Comments which will be prepared subsequent to the public comment period.

If no substantive comments are received during the public comment period, EPA intends to select source area excavation and removal as the final remedy and finalize the determination of "Corrective Action Complete Without Controls." As discussed above, a determination of "Corrective Action Complete Without Controls" for the entire East Parcel will be issued only after receipt of data confirming that toluene concentrations are below the ground water cleanup level.

As noted, EPA will consider holding a public meeting if there is sufficient interest. If you are interested in attending a public meeting please call Cindy Schuster, EPA Community Involvement Coordinator at (206) 553-1815 or e-mail at schuster.cindy@epa.gov prior to the close of the public comment period.

The Statement of Basis for the Proposed Final Remedy Selection and Determination of "Corrective Action Complete without Controls," the Corrective Measures Study, and documents concerning RCRA investigation and corrective action efforts at the former Rhone-Poulenc East Parcel are available for public review at the following locations during normal working hours:

U.S. Environmental Protection Agency
Region 10 Library
1200 6th Avenue
Seattle, Washington 98101
Local Phone - (206) 553-0256
Toll free in Region 10 - (800) 424-4EPA

These documents are also available on the following website:
www.epa.gov/r10earth/rhone-poulenc.htm

To submit written comments, or to obtain further information, contact:

Christy Brown
U.S. Environmental Protection Agency, Region 10
1200 6th Avenue, Mail Stop AWT-121
Seattle, Washington 98101
(206) 553-8506
brown.christy@epa.gov

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FIGURES

FIGURE 1: Site Vicinity Map

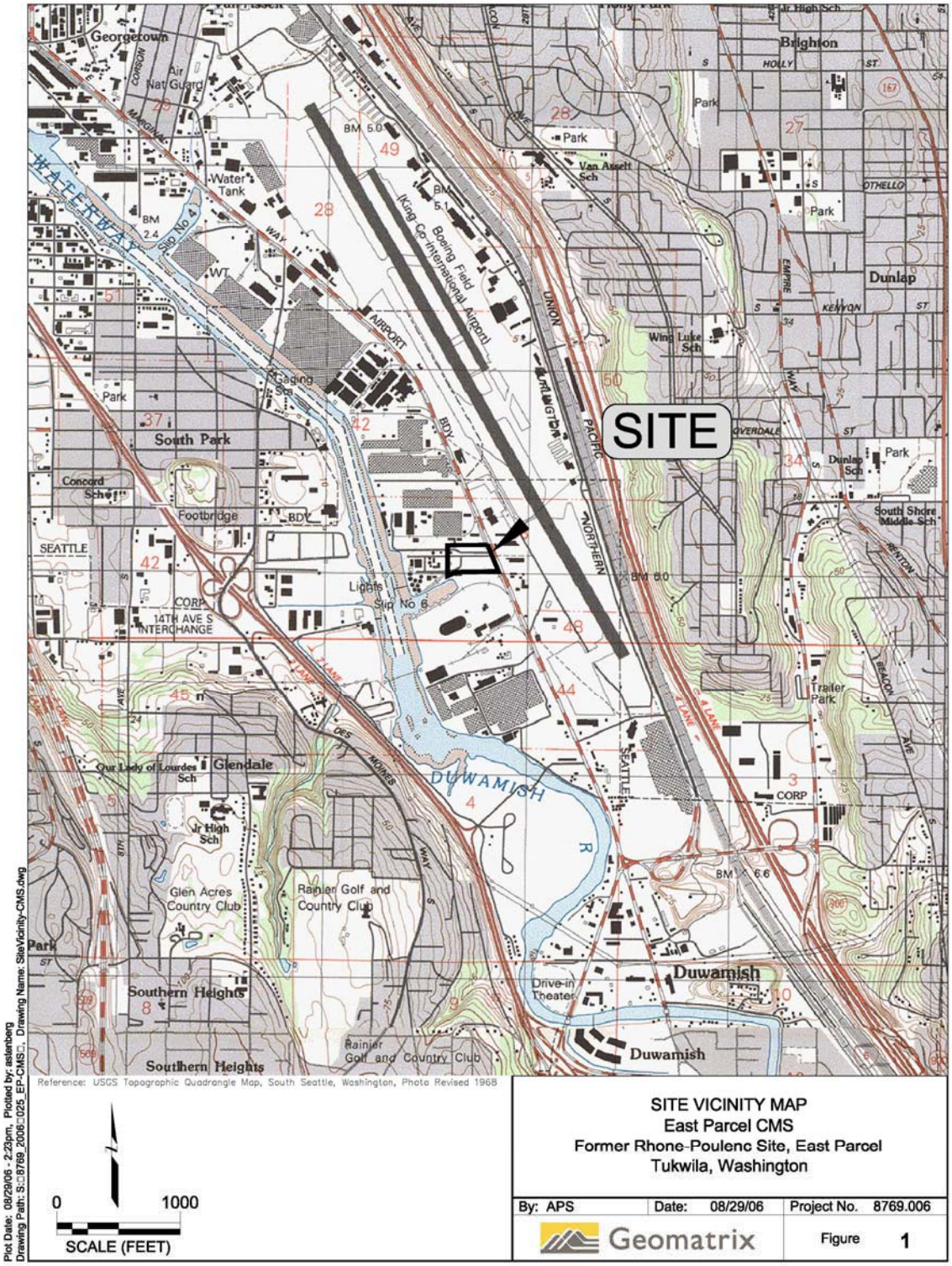


FIGURE 2: Parcel Boundaries

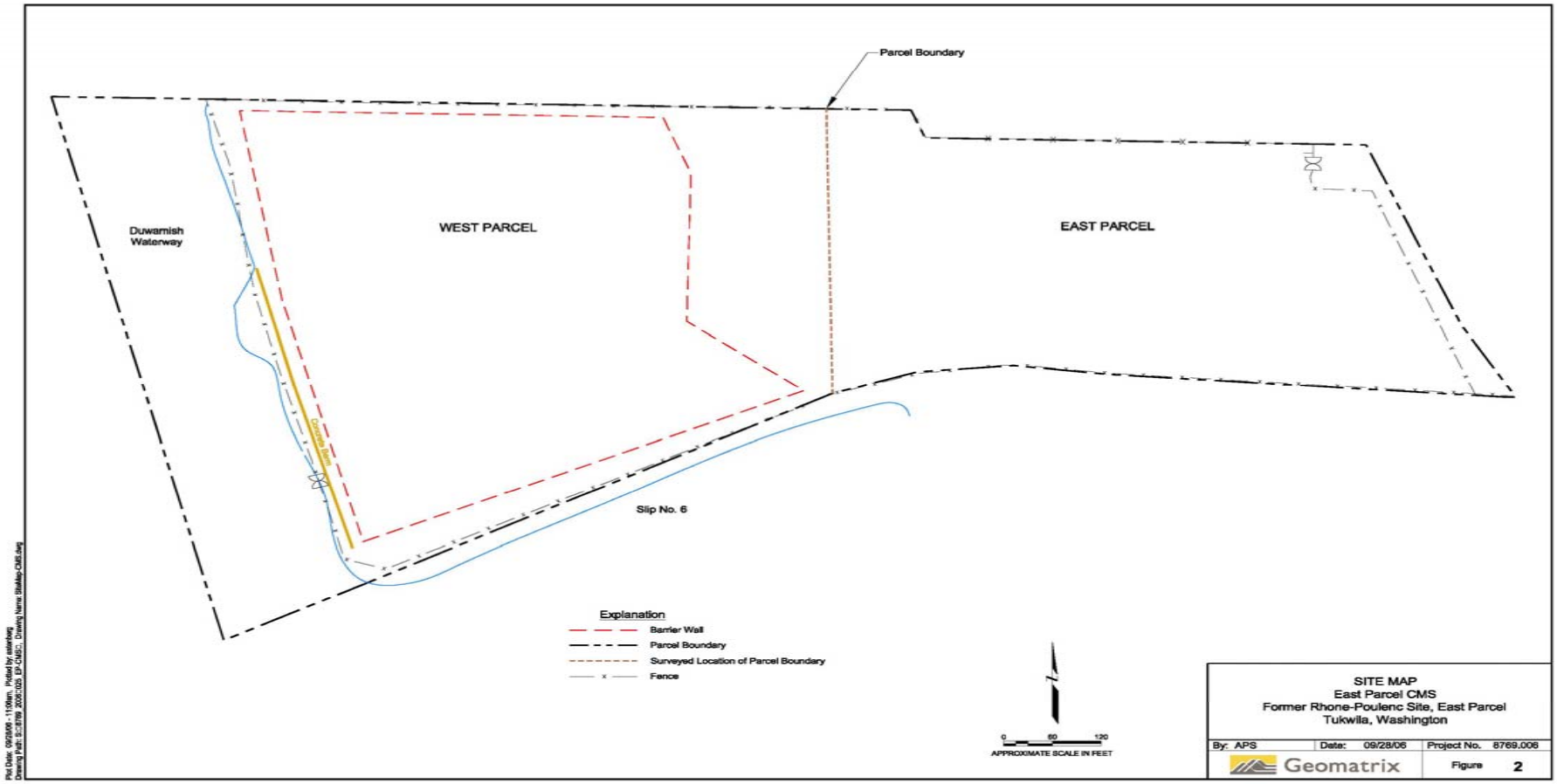


FIGURE 3: East Parcel Investigation Areas

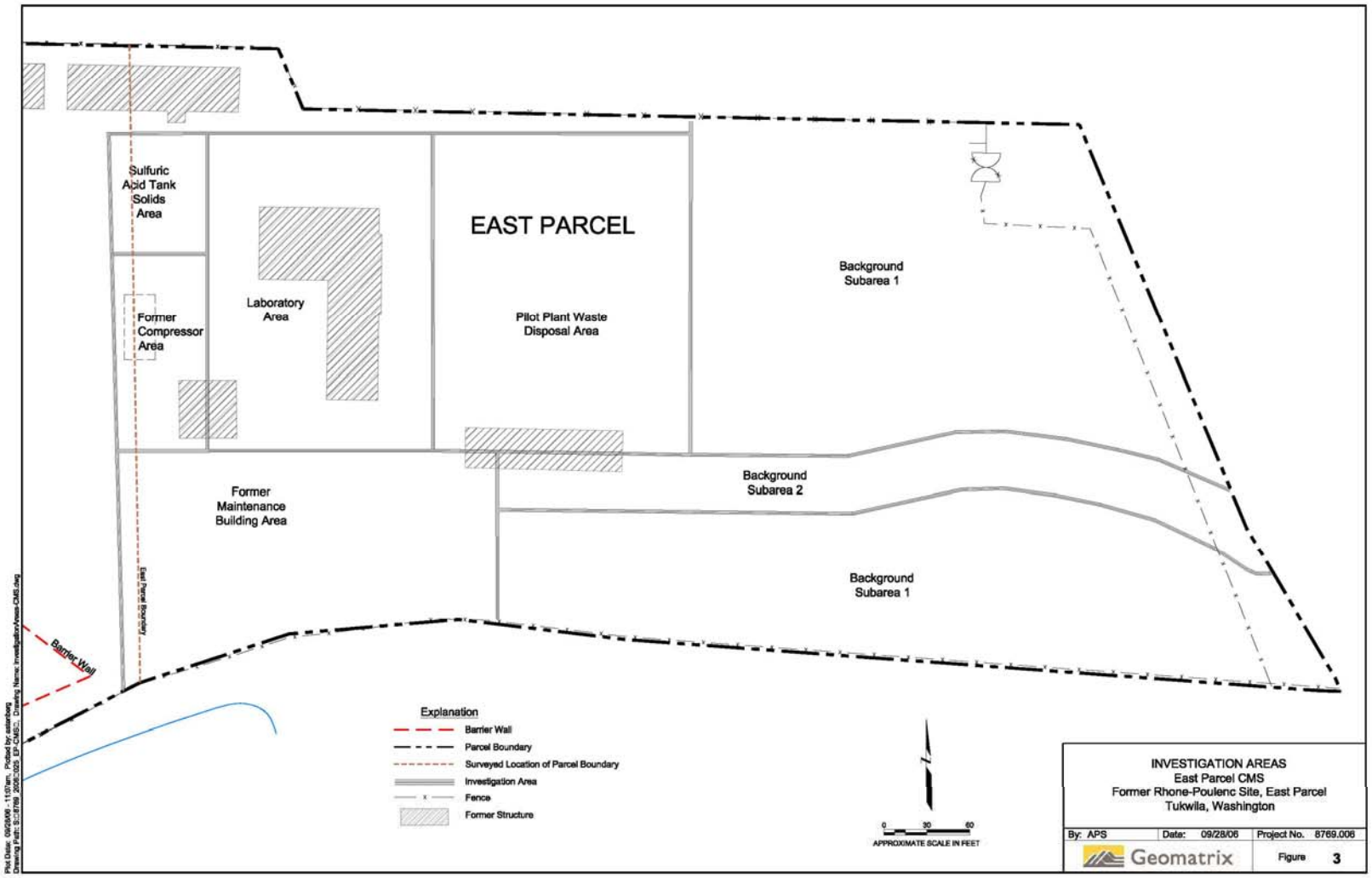


FIGURE 4: 2006 East Parcel Investigation Results

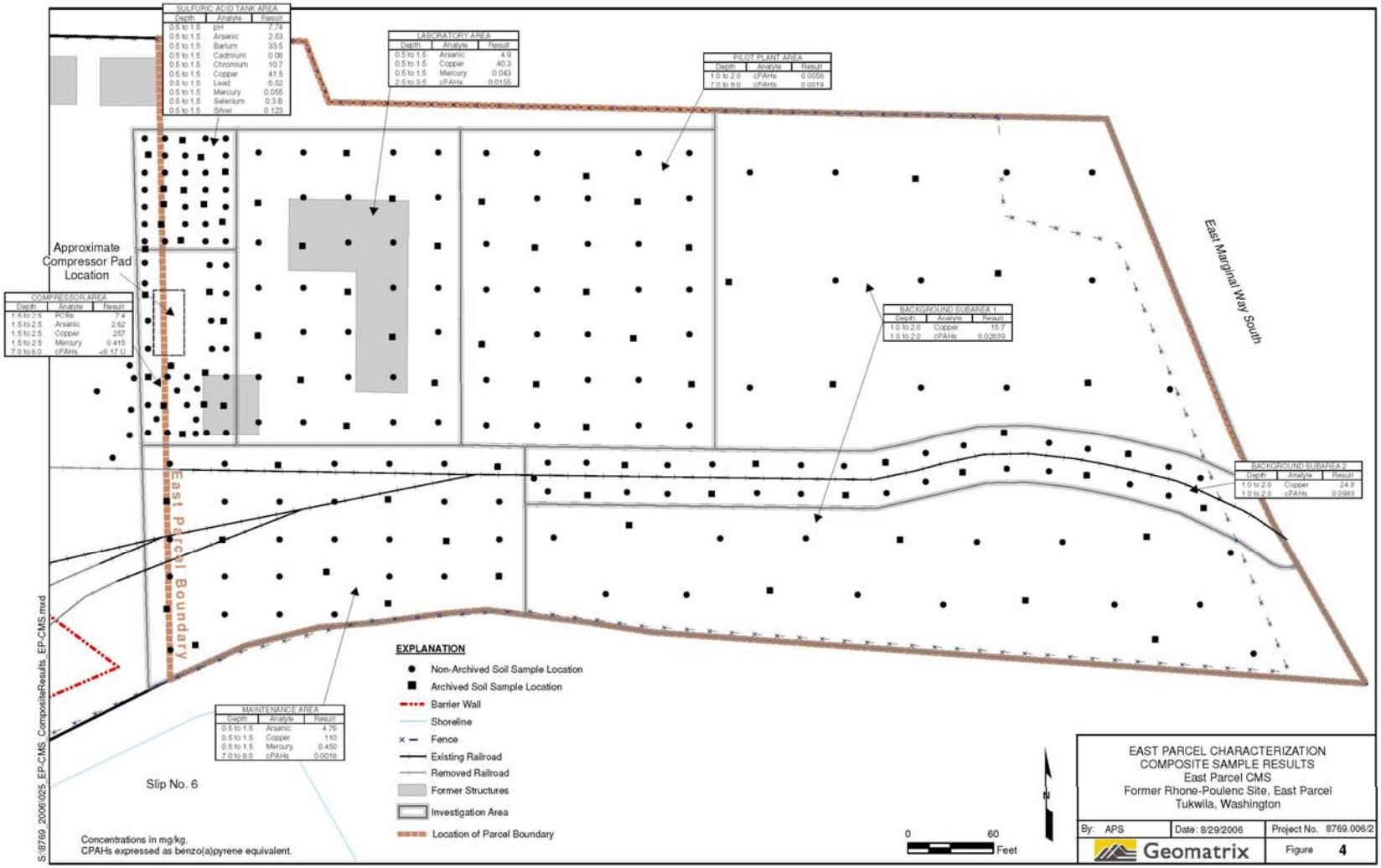
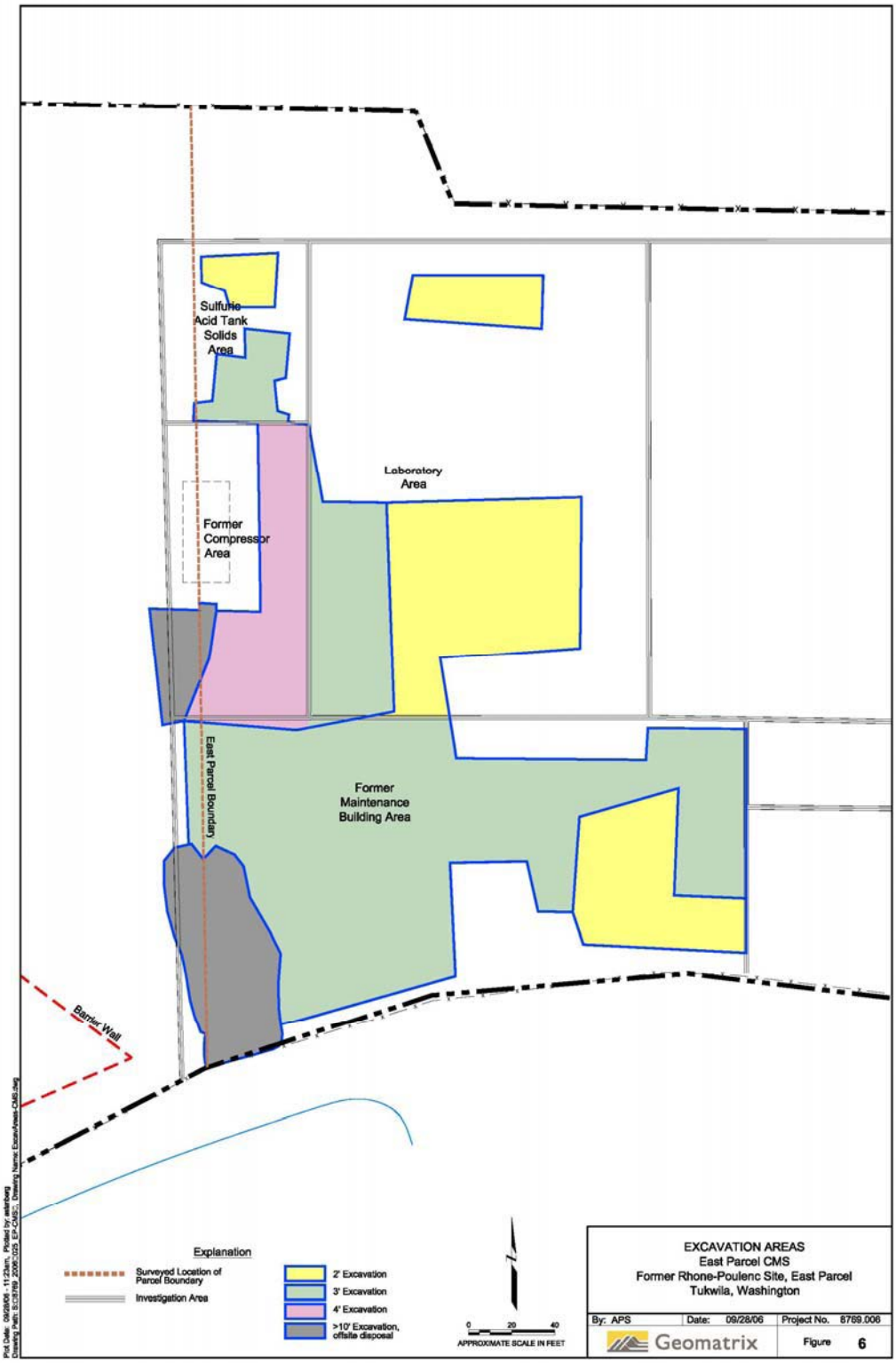


FIGURE 5: Excavation Areas



TABLES

TABLE 1: Soil Cleanup Levels for Unrestricted Land Use

CONSTITUENT	PROPOSED CLEANUP LEVEL MG/KG	BASIS
Arsenic	20	Incidental soil ingestion (MTCA equation 740-2) and leaching to ground water using the 3-phase model (MTCA equation 747-1), adjusted for natural background concentration in soil. From MTCA Method A Table 740-1.
Benzo(a)Pyrene (and other cPAHs)	0.1	Incidental soil ingestion (MTCA equation 740-2), also applied to six other cPAHs as the total toxic equivalent concentration based on B(a)P. This is a particularly protective approach as the other cPAHs are not as carcinogenically potent as B(a)P. From MTCA Method A Table 740-1.
Copper	36.4	Natural background concentration in soil. From MTCA Method A Table 740-1.
Mercury (inorganic)	2	Protection of drinking water at the MCL of 2 ug/L, using the 3-phase model (MTCA equation 747-1). This is considered to be a protective approach as mercury has not been detected in ground water beneath the East Parcel. From MTCA Method A Table 740-1.
Total PCBs	1	From MTCA Method A Table 740-1, based on the federal TSCA regulation for cleanup of PCBs (40 CFR §761.61(a)(4)(i)).
Toluene	0.8	Protection of drinking water, using the 3-phase model (MTCA equation 747-1), where soil contamination is present at or below the water table, and using a site-specific organic carbon content of 0.00358 g/g.

Notes:
mg/kg = milligrams per kilogram

TABLE 2: Ground Water Cleanup Level for Unrestricted Land Use

CONSTITUENT	PROPOSED CLEANUP LEVEL MG/L	BASIS FOR PROPOSED CLEANUP LEVEL:
Toluene	1.0	Protection of drinking water (MTCA Method A).

Notes:
mg/L = milligram per liter

TABLE 3: East Parcel Pre-Excavation Direct Push Boring Sample Analytical Results

Sample ID	**Matrix**	**Depth (feet)**	**Toluene**
Soil Cleanup Level			**1.02 mg/kg**
Ground water Cleanup Level			**1.30 mg/L**
GMX-1	***Soil***	***4.0***	***440*** mg/kg
GMX-1	***Soil***	***8.0***	***5,600*** mg/kg
GMX-1	Water	8 - 13	**32** mg/L
GMX-2	***Soil***	***2.5***	***43*** mg/kg
GMX-2	***Soil***	***8.0***	***20,000*** mg/kg
GMX-2A (dup)	***Soil***	***8.0***	***23,000*** mg/kg
GMX-2	Water	8 - 13	**90** mg/L
GMX-3	Soil	2.0	<0.022U mg/kg
GMX-3	Soil	5.5	<0.022U mg/kg
GMX-3	Water	10 - 15	<0.001U mg/L
GMX-4	Soil	2.0	0.021 mg/kg
GMX-4	Soil	4.0	**1.5** mg/kg
GMX-4	Water	7 - 12	0.0032 mg/L
GMX-5	Water	13 - 18	**4.1** mg/L
GMX-5A (dup)	Water	13 - 18	**3.6** mg/L
GMX-6	Soil	13.0	<0.014U mg/kg
GMX-6	Water	11 - 16	<0.001U mg/L
GMX-7	Soil	13.0	<0.012U mg/kg
GMX-7	Water	11 - 16	<0.001U mg/L
GMX-8	***Soil***	***9.0***	***1,600*** mg/kg
GMX-9	NA		NA
GMX-10	Soil	9.0	<0.033U mg/kg
GMX-10	Water	11 - 16	<0.001U mg/L
GMX-11	NA		NA
GMX-12	NA		NA

Notes:
Bold results exceed cleanup level.
Bold Italic cells indicate that sample locations were excavated.
NA = not analyzed; no evidence of volatile constituents in borehole
mg/kg = milligrams per kilogram
mg/L = milligrams per liter

TABLE 4: East Parcel Confirmation Sample Analytical Results; Composite Samples

Area of Investigation	**Sample ID**	**Depth (feet)**	**cPAHs (mg/kg)**	**Total PCBs (mg/kg)**	**Arsenic (mg/kg)**	**Copper (mg/kg)**	**Mercury (mg/kg)**
Cleanup Level			**0.1**	**1**	**20**	**36.4**	**2**
Background 1	BACK1-1	1.0 to 2.0	0.02549 J				
	BACK1-1 (dup)	1.0 to 2.0	0.02839 J				
Background 2 (railroad)	BACK2-1	1.0 to 2.0	0.0983 J			24.8 J	
Former Compressor Area	COMP-1				2.82		0.415
	COMP-2	7.0 to 8.0		<0.17U			
	COMP-5	4 to 5.5				25.8	
Former Maintenance Building Area	MAINT-1	0.5 to 1.5			4.76		0.45
	MAINT-1 (dup)	0.5 to 1.5			4.56		0.427
	MAINT-2	7.0 to 8.0	0.001761 J				
	MAINT-5	2.0 to 4.0				36.3	
Former Pilot Plant Waste Disposal Area	PILOT-1	1.0 to 2.0	0.005782 J				
	PILOT-2	7.0 to 8.0	0.001865 J				
Former Sulfuric Acid Tank Solids Disposal Area	SULF-1	0.5 to 1.5			2.53		0.055
	SULF-4	2.0 to 3.0				17.1	
Laboratory Area	LAB-1	0.5 to 1.5			4.9		0.043
	LAB-2	2.5 to 3.5	0.0155 J				
	LAB-4	2.0 to 3.0				33.3	

Notes:
mg/kg = milligrams per kilogram

TABLE 5: East Parcel Confirmation Sample Analytical Results; Discrete Samples

Area of Investigation	Sample Location	Sample ID	Depth (feet)	PCBs (mg/kg)	Toluene (mg/kg)
Soil Cleanup Level				**1**	**1.01/18.8**
Former Compressor Area	North Wall	FRP080906 N1	4.0	<0.063U	0.19
		FRP080906 N2	11.0	<0.067U	0.098
	South Wall	FRP080706 S1	8.0	<0.061U	<0.037U
	West Wall	FRP080706 W1	7.0	<0.067U	NA
		FRP080806 W1	6.0	NA	<0.023U
		FRP080706 W2	6.0	<0.063U	NA
		FRP080806 W2	7.0	NA	<0.023U
	East Wall	FRP080706 E1	8.0	<0.063U	0.054
		FRP080706 E2	8.0	<0.062U	NA
		FRP080806 E2	6.0	NA	<0.031U
		FRP080706 E3	7.0	<0.059U	<0.041U
		FRP080706 E4	8.0	<0.063U	<0.040U
	Base	FRP080906 B1	10.0	<0.067U	0.200
		FRP080906 B2	11.0	<0.070U	0.045
		FRP080906 B3	13.0	<0.067U	<0.022U
		FRP081506 B5	16.0	NA	0.070
		FRP081506 B5A (dup)	16.0	NA	0.220
Former Maintenance Building Area	North Wall	RP083106-N3	8.0	NA	<0.021U
		RP083106-N4	8.0	NA	<0.021U
	East Wall	RP082806-E1	8.0	NA	<0.082U
		RP082806-E2	8.0	NA	0.10
	South Wall	RP092306-1	8.0	NA	<0.046U
		RP092306-3	8.0	NA	**530**
	Base	RP082806-B2	11.0	NA	0.47
		RP082806-B3	12.0	NA	**4.7**
		RP082806-B4	12.0	NA	0.16
		RP092306-2	11.0	NA	0.10

Notes:
Bold results exceed cleanup level.
NA = not analyzed.
mg/kg = milligrams per kilogram