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FEASIBILITY STUDY WORK PLAN

AGRI-TECH AND YAKIMA STEEL FABRICATORS
6 AND 10½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

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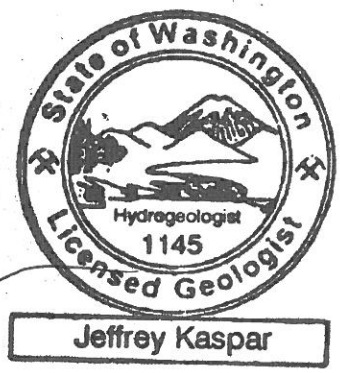

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1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this Feasibility Study Work Plan (FS Work Plan) on behalf of Yakima Steel Fabricators, Inc. (YSF) and Agri-Tech, Inc. (Agri-Tech) for the YSF and Agri-Tech facilities located at 6 and 10½ East Washington Avenue in Yakima, Washington (herein referred to as the Site) (Figure 1). The Site includes Yakima County Tax Parcel Nos. 19133141009 and 19133141409 (Figure 2). The FS Work Plan describes the work to be performed for the Feasibility Study (FS) and the schedule for implementation. The work is being conducted to meet the requirements of Agreed Order No. DE 6091 (Agreed Order) entered into by the Washington State Department of Ecology (Ecology) and YSF pursuant to the authority of the Washington State Model Toxics Control Act, as established in Section 050(1) of Chapter 70.105D of the Revised Code of Washington, with an effective date of October 27, 2008. The Agreed Order was issued in accordance with the provisions of the Washington State Model Toxics Control Act Cleanup Regulation (MTCA), as established in Chapter 173-340 of the Washington Administrative Code (WAC 173-340).

A remedial investigation (RI) was completed on behalf of Agri-Tech and YSF in June 2004 pursuant to Ecology Agreed Order No. DE 97TC-C154 issued for the Site on October 6, 1997. Results from the RI were summarized in the Revised Remedial Investigation Report dated June 10, 2004, prepared by Farallon (2004b) (RI Report). The RI Report documents that concentrations of hazardous substances exceeding the preliminary screening levels established for the Site were detected in soil and groundwater. The preliminary screening levels for the constituents of potential concern (COPCs) identified in the RI Report were established as MTCA Method B soil cleanup levels protective of a potable groundwater source (WAC 173-340-747). Upon completion, the RI Report fulfilled the requirements for delineation of the COPCs identified at the Site as stipulated in Agreed Order No. DE 97TC-C154.

Agreed Order No. DE 6091 was issued in October 2008 to complete an FS and address the data gaps in the RI identified by Ecology following supplemental site investigation work completed by Ecology in July 2007 in Area 3 of the Site, located on the southern portion of the YSF property (Figure 3). This FS Work Plan presents the basis for the scope of work for performing additional site investigation activities to refine the understanding of COPCs in Area 3 of the Site and to complete an FS that will provide the basis for development of a Cleanup Action Plan for the Site.

1.1 PURPOSE AND SCOPE

As established in WAC 173-340-350(8), the purpose of an FS is to develop and evaluate technically feasible cleanup alternatives to enable selection of a cleanup action for a site in accordance with WAC 173-340-360. The purpose of the work described in this FS Work Plan is to provide the framework for developing and evaluating appropriate cleanup alternatives for use in selecting a cleanup action for the Site.

As mandated by Ecology in the Agreed Order, the FS Work Plan also includes an additional remedial investigation component. The purpose of the additional site investigation work is to

address data gaps pertaining to the distribution of COPCs at Area 3 of the YSF property. In addition to addressing the data gaps identified by Ecology, Farallon will perform groundwater monitoring and sampling to evaluate current groundwater conditions and facilitate evaluation of potential technically feasible remedial alternatives for groundwater.

1.2 WORK PLAN ORGANIZATION

Section 2 of the FS Work Plan presents a summary of the physical setting, ownership history, 2007 soil sampling data collected by Ecology and Environmental Partners, Inc. of Issaquah, Washington (EPI), and subsequent to the cleanup excavation activities conducted by the Burlington Northern Santa Fe Railway Company (BNSF) at the Bay Chemical Company (Bay Chemical) site. Section 3 discusses the data gaps identified following July 2007 soil sampling activities conducted on the southern portion of the YSF property and how they will be addressed. Section 4 presents the scope of work for the additional site investigation, including soil sampling, groundwater monitoring and sampling, and sediment sampling. The technical approach for completing the FS is described in Section 5. Section 6 presents a schedule for completing the work elements of the FS Work Plan as required by the Agreed Order. A list of the documents used in preparing the FS Work Plan is provided in Section 7.

2.0 SITE DESCRIPTION AND BACKGROUND

A summary of the physical setting, ownership history, 2007 soil sampling, and subsequent cleanup excavation activities conducted by BNSF at the Bay Chemical site is provided in the following sections. Additional information regarding Site features, ownership and operation, historical Site use, surrounding properties, Yakima Railroad Area (YRRA) sites, previous investigations, and the physical and environmental setting of the Site are provided in detail in the RI Report (Farallon 2004b).

2.1 PHYSICAL SETTING AND SITE FEATURES

As defined in the Agreed Order, the Site includes the YSF property (Yakima County Tax Parcel No. 19133141009) and the Agri-Tech property (Yakima County Tax Parcel No. 19133141409) (Figure 2). The Site is located in the northeast corner of the southeast quarter of Section 31, Township 13 North, Range 19 East of the Willamette Meridian. The approximate latitude and longitude of the Site is North 46 degrees, 34 minutes latitude, West 120 degrees, 29 minutes longitude. The Site is approximately 7.23 acres in area and located in an area of Yakima zoned for light industrial use. Site topography is relatively flat, with less than 5 feet of relief across the approximately 7.23-acre area. The Site slopes very slightly to the southeast, following the regional topographic trend of the Ahtanum Valley. The current Site grade is the result of fill and grading activities conducted in the late 1970s. Farallon understands that the zoning for properties south of the Site recently was changed from light industrial to a commercial status to allow for commercial redevelopment.

The YSF property includes a single-story steel-framed, aluminum-sided building measuring approximately 225 by 225 feet that is subdivided into three areas (Figure 2). The western portion of the YSF building was constructed in 1980, and currently is used for steel fabrication and business offices. The central portion of the building is used for steel fabrication and loading of finished product, and the eastern portion is used for steel storage. The floors of the central and eastern portions of the building are paved with asphalt; the floor of the western portion of the building is paved with concrete. The exterior areas immediately north, south, and west of the YSF building are paved with asphalt. The remaining areas of the YSF property are unpaved. A pond classified by the Yakima County Assessor's Office as a potential wetland is located near the southern boundary of the YSF property.

The Agri-Tech property includes a 20,625-square-foot single-story cinder block slab-on-grade building measuring approximately 164 by 124 feet that was constructed in 1982. The building was constructed by Team Research Engineering Corporation, which owned the property prior to its purchase by Agri-Tech in 1989. The interior of the building consists of a concrete floor slab. The northern, southern, and western areas immediately surrounding the building are asphalt-paved. A concrete slab is present along the eastern portion of the building extending to the property boundary.

The property adjacent to the west of the Site (Yakima County Tax Parcel No. 19133141010) was previously owned by Northern Pacific Railroad, predecessor of Burlington Northern Santa Fe

Railway. This property was leased to Bay Chemical, a manufacturer of soil micronutrients, from 1963 to late 1975 or early 1976. Three parcels adjoin the eastern side of the Site: the Reiland property (Yakima County Tax Parcel No. 19133141406), the Matthews property (Yakima County Tax Parcel No. 19133232433), and the GJS Investments, L.L.C. property (Yakima County Tax Parcel No. 19133232408). Yakima County Tax Parcel No. 19133141408 is located adjacent to the northwest. The Isaak property (Yakima County Tax Parcel No. 19133141005) and the Columbia Investment property (Yakima County Tax Parcel No. 19133141011) also adjoin the northern property boundary of the Site. The Bradley property (Yakima County Tax Parcel No. 19133233009) adjoins the southern property boundary of the Site.

2.2 SITE HISTORY

The Site was developed in 1947 by the Yakima Farmers Supply Company (Yakima Farmers Supply). Historical documents indicate that Yakima Farmers Supply was a cooperative of farmers, but do not include names of cooperative members. Yakima Farmers Supply filed for bankruptcy in 1971. Receivership of the title and ownership of the Site from 1971 to 1978 remain unknown. The Site was owned and operated from 1978 to 1989 by ANCO Industrial Park. After removing all of the former Yakima Farmers Supply improvements and grading the Site, ANCO Industrial Park sold various parcels of the Site between 1978 and 1989.

YSF purchased Yakima County Tax Parcel No. 19133141009 in 1979 and constructed the current building in 1980. YSF historically has operated as a steel fabrication facility. Available Site documents do not indicate that the steel fabrication operations on the YSF property required the use or storage of the COPCs identified in the RI Report, with the exception of diesel fuel. Diesel fuel and oil used for vehicle and equipment maintenance have been stored in an aboveground storage tank on the YSF property and used for Site equipment such as forklifts and cranes. The oil products were stored inside the YSF building. YSF continues to operate but under new ownership. The property was not sold to the new owner/operator of the YSF business.

Team Research Engineering Corporation purchased Yakima County Tax Parcel No. 19133141409 in 1980 and constructed the current Agri-Tech building in 1982. Team Research Engineering Corporation operated as a veterinary/pharmaceutical supply company until 1989. Agri-Tech purchased Yakima County Tax Parcel No. 19133141409 in 1989 and operated a fruit packing supplies and equipment sales and service business. Available documentation did not indicate when Agri-Tech discontinued that business operation, nor whether historical operations on the Agri-Tech property required the use or storage of the COPCs identified in the RI Report. The Agri-Tech building was vacant in 1997 and was leased to various tenants between 1997 and 2003. Property use from 2003 to 2009 has not been researched as a component of this FS Work Plan.

Agri-Tech and YSF entered into Agreed Order No. DE 97TC-C154 with Ecology on October 6, 1997 to conduct an RI at the Site. The objective of the RI was to collect, develop, and evaluate sufficient information for the Site to enable development of a scope of work for conducting an FS in accordance with WAC 173-340-350(8) and selection of a cleanup action in accordance with WAC 173-340-360 through 173-340-390. The RI addressed characterization of the nature

and extent of the COPCs identified for the Site, which included halogenated and non-halogenated volatile organic compounds, pesticides, herbicides, petroleum hydrocarbon-related compounds, polychlorinated biphenyls (PCBs), and heavy metals. The COPCs identified for the Site were associated with operations of former Site owner Yakima Farmers Supply.

The selection of COPCs was based also on surrounding property use. Ecology identified the west-adjacent Bay Chemical site as a potential source of metals and requested that the metals identified on the Bay Chemical site be included as COPCs during the RI (Farallon 2004b). Tetrachloroethene (PCE) also was identified by Ecology as a COPC, initially due to releases of this compound associated with various up-gradient sources in the YRRA that were migrating down-gradient toward and potentially onto the Site. However, Ecology identified a potential source of PCE at the Site in the former Yakima Farmer Supply Waste Pit (Area 1) during installation of a monitoring well for the YRRA investigation. PCE subsequently was included as a COPC for the Site. In addition, if a compound was detected in soil and/or groundwater during the RI, it was included for consideration for the RI until additional data were collected to eliminate it as a defined COPC.

SECOR International Incorporated (SECOR) conducted an RI (SECOR RI) for the Cameron Yakima Working Group that included an evaluation of the known historical sources of PCE and the distribution of PCE in the YRRA. The YRRA, as defined by Ecology in the Consent Decree (CY-96-3196-WFN) dated May 5, 1997 entered into with the Cameron Yakima Working Group, consists of approximately 6 square miles of primarily commercial and industrial properties that parallel the north to south trending railroad corridor that extends from the northern portion of Yakima south to Union Gap.

The YRRA includes 13 subfacilities that have been identified by Ecology as potential sources of releases of PCE. Although each subfacility has not been included in the YRRA Consent Decree, each potentially liable person has been responsible for conducting site investigations to ascertain whether a release of PCE has occurred at their facility and whether that release is contributing to the regional PCE plume in the YRRA area. The findings of the SECOR RI indicate that there are multiple subfacilities located up-gradient of the Site that have concentrations of PCE in groundwater that are equal to or greater than the concentrations of PCE detected in up-gradient monitoring well MW-1 and cross-gradient monitoring wells MW-3 and MW-5 at the Site (Figure 3). The results of the RI performed at the Site have confirmed that the sources of PCE identified at the Site are not contributing to the YRRA regional groundwater plume based on the groundwater analytical data that indicate that the concentrations of PCE entering the Site from up-gradient off-Site sources within the YRRA are comparable to concentrations of PCE at down-gradient monitoring wells at the Site. The groundwater sampling results obtained during the FS will be used to further assess the potential for contribution of PCE from the Site to the YRRA. Prospective remedial alternatives for the Site will include measures to control potential contributions to the YRRA regional plume.

During completion of the RI, Ecology indicated that MTCA Method B soil and groundwater cleanup levels will be evaluated as the selected preliminary screening levels for the identified COPCs (Farallon 2004b). Ecology further indicated that a comparison of the standard MTCA Method B and modified MTCA Method B soil and groundwater cleanup levels was to be

performed. Modified MTCA Method B soil and groundwater cleanup levels were calculated using the Ecology (2001) *Worksheet for Calculating Soil Cleanup Levels for Unrestricted and Industrial Land Use*. Following review of the information derived from the screening level comparison, the most stringent values were selected for each COPC and medium of concern. The preliminary cleanup level of 5.0 micrograms per liter was retained for PCE in groundwater based on the consistent use of this value throughout the YRRA. MTCA Method A values for unrestricted land use were selected for lead and total petroleum hydrocarbons as diesel-range organics (DRO) and as oil-range organics (ORO) because standard MTCA Method B cleanup levels do not exist and modified MTCA Method B cleanup levels could not be calculated using the data collected during the RI. Ecology concurred with the selection of the preliminary cleanup levels for the COPCs. The preliminary screening levels are presented in the RI and in Tables 1 through 4 herein.

Ecology acknowledged the termination of Agreed Order No. DE 97TC-C154 and completion of the RI work after approving the RI Report dated June 10, 2004 (Farallon 2004b). Farallon (2004a) also prepared a Technical Memorandum Regarding Preliminary Evaluation of Technically Feasible Remedial Alternatives, which included a brief description of prospective cleanup alternatives that could be evaluated during completion of an FS. The technical memorandum was provided to Ecology.

2.3 2007 SOIL SAMPLING

In 2007, Plaintiffs Mr. Merv Wark, Ms. Sharon Wark, and YSF entered into litigation against Ecology seeking reimbursement of funds expended to complete the RI and the RI Report (Washington State Office of the Attorney General 2007). During the course of litigation, Ecology and EPI conducted additional soil sampling on the southern portion of the YSF property. EPI was contracted by YSF as an expert witness for the Plaintiffs. Ecology reported that the analytical results from the soil sampling identified detectable concentrations of several COPCs, including ORO, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), metals, organochlorine pesticides, and volatile organic compounds (VOCs) (Ecology 2008a, 2008b, 2008f). Farallon used the sampling data provided by Ecology and EPI to plot the test pit locations depicted on Figure 3. The analytical data are presented on Figures 4 and 5 and in Tables 1 through 4. The test pit locations recorded by Ecology using global positioning coordinates do not appear to coincide with the established sampling grids at all locations. Farallon therefore is uncertain of the accuracy of the test pit locations. The test pit locations for EPI appear to correspond with the sampling grid data provided. Farallon estimated the test pit locations using the EPI Site Plan. Resolving the test pit locations may not be necessary to address the data gaps for soil quality. The sections that follow present the results of the 2007 sampling event.

2.3.1 Petroleum Hydrocarbons

A summary of the analytical results for the soil samples analyzed for petroleum hydrocarbon constituents and cPAHs are presented in Table 1. One of the four soil samples collected from sampling grids B and H (Figure 3) contained a concentration of ORO that exceeded the preliminary screening level of 2,000 milligrams per kilogram (mg/kg). The soil sample collected

from Pit B at an estimated depth of 0.5 foot below ground surface (bgs) contained the only concentration of ORO above the preliminary screening level. Pit B is located proximate to the area used for fueling forklifts and a crane with diesel fuel. Soil samples collected in this area at a depth of approximately 1.25 feet bgs contained concentrations of ORO below the preliminary screening level. Concentrations of ORO at sampling grid H were below the preliminary screening level.

Concentrations of cPAHs also were detected in surficial soil samples collected by Ecology at sampling grids B and H where concentrations of ORO were detected. The concentration of total cPAHs detected in a soil sample collected from Pit H exceeded the MTCA Method A cleanup level of 0.1 mg/kg.

The concentrations of ORO were interpreted by the laboratories as being lube oils. Diesel fuel was not detected at concentrations above the preliminary screening level of 2,000 mg/kg. The areas sampled likely were representative of minor surficial oil leaks from the YSF equipment and are not anticipated to be representative of significant releases of ORO. The affected area at sampling grid B was removed during the cleanup activities conducted by BNSF at the Bay Chemical site (Figure 3). No further investigation of ORO or cPAHs is recommended at this time. One noted exception will be the sampling soil and sediment within the wetland area of Area 3 described in Section 4.1.3. Samples from the wetland will be screened for the presence or absence of petroleum hydrocarbons and if present quantified to evaluate whether further investigation or cleanup is required.

2.3.2 Metals

Table 2 presents a summary of the analytical results for the soil samples analyzed for metals. Metals detected that were not previously identified as COPCs during the RI (Farallon 2004b) but were analyzed by Ecology and/or EPI include manganese and thallium. The soil sample collected from Ecology Pit D (Figure 3) contained the only concentration of manganese exceeding the Ecology Method B cleanup level of 11,000 mg/kg. Concentrations of thallium at all sample locations were below the laboratory practical quantitation limit (PQL) or low enough to warrant no further investigation. There currently is no established MTCA cleanup level for thallium.

Concentrations of one or more metals exceeding either the preliminary screening level or MTCA Method B cleanup levels were detected in the soil samples collected from sampling grids A through E, H, and M (Table 3; Figure 4). The soil sample collected from Pit M contained the only concentration of copper above the MTCA Method B cleanup level. Neither Ecology nor EPI noted any unusual conditions at this location that would explain this single anomalous detection of copper.

The origin of the metals detected at YSF is believed to be the adjacent Bay Chemical site. With the exception of the single detection of copper (Test Pit M), all other metals identified at the Site have been detected at the Bay Chemical site. The site investigation work to be performed will include analyses for metals that were detected at concentrations exceeding the preliminary

screening levels, or MTCA Method B cleanup levels where no screening level has been established, including antimony, arsenic, cadmium, copper, lead, manganese, mercury, and zinc.

2.3.3 Organochlorine Pesticides

A summary of the analytical results for soil samples that contained concentrations of organochlorine pesticides is presented in Table 3. Several pesticides identified as COPCs were detected at concentrations exceeding the preliminary screening levels presented in the RI, including aldrin; alpha chlordane; 4,4-DDD; 4,4-DDE; dieldrin; and heptachlor epoxide. The locations of the samples and analytical results are presented on Figure 5 and include sampling grids A, C, D, G, H, I, J, K, L, M, and N. The analytical results of soil samples collected from test pits within many of these grids included PQLs that were not sufficiently low to determine whether a concentration of an analyte exceeded the preliminary cleanup level. Farallon noted these occurrences as exceeding the preliminary screening level. Further investigation will be performed in sampling grids where concentrations of the analyte were below a PQL that was greater than a preliminary screening level for a COPC.

The cleanup at the Bay Chemical site resulted in removal of substantial amounts of soil containing pesticides along the western portion of the Site. The Bay Chemical site cleanup activities were performed following Ecology's test pit sampling in July 2007. Farallon understands that no testing for pesticides was performed during the BNSF cleanup activities at the Bay Chemical site to profile the waste soil removed to the containment cell.

2.3.4 Volatile Organic Compounds

A summary of the analytical results for soil samples that contained concentrations of VOCs detected above the laboratory PQL is presented in Table 4. A concentration of PCE of 0.101 mg/kg, which exceeds the preliminarily screening level of 0.053 mg/kg was detected in the soil sample collected from Ecology Pit B at a depth of 0.5 foot bgs. In addition, the laboratory PQLs for the VOCs 1,2-dichloropropane and 1,1-dichloroethene (1,1-DCE) exceed their respective preliminary screening levels for soil samples collected from sampling grids B and H. The affected area of sampling grid B was excavated during the cleanup activities at the Bay Chemical site (Figure 5). Approximately 4 to 6 feet of soil was removed. No testing for VOCs was required by Ecology during the cleanup activities. No excavation was performed at sampling grid H.

2.4 BAY CHEMICAL SITE CLEANUP ACTIVITIES

Investigations conducted at the west-adjacent Bay Chemical site determined that operations conducted at that property had resulted in metals-contaminated soil and groundwater that extended onto the Site (Ecology 2008d, 2008e). An Ecology-approved cleanup action was initiated by BNSF at the Bay Chemical site in 2007 and completed in late 2008. Farallon understands that the cleanup action consisted of: 1) excavation of soil containing concentrations of metals at or above the established property-specific cleanup levels; 2) consolidation and placement of the excavated soil in a containment area on the property; 3) groundwater monitoring and sampling; and 4) implementation of institutional controls. Farallon also understands that a report documenting the results of the Bay Chemical site cleanup action has not

yet been completed. Farallon was provided with the information that during the course of the cleanup action, portions of the western side of the Site were excavated (Ecology 2008d and Ecology 2008e) (Figure 3). Additional details regarding excavation depths and limits are provided in Section 3, Data Gaps.

3.0 DATA GAPS

This section presents a discussion of the data gaps identified by Ecology relating to the understanding of the distribution of COPCs in soil at Area 3 on the southern portion of the YSF property. Farallon also has included a discussion of data gaps with respect to evaluation of groundwater conditions.

3.1 SOIL QUALITY

The Agreed Order has indicated that the results of the soil sampling conducted by Ecology and EPI in 2007 identified data gaps in the RI work that needed to be addressed prior to completion of the FS and selection of cleanup alternatives for the Site. The cleanup activities performed by BNSF at the Bay Chemical site from late July through early October 2007 resulted in removal of approximately 5,543 cubic yards of soil from the western portion of the Site, based on the excavation limits and approximate depths provided to Farallon by Ecology (2008d). The excavation limits and approximate depths are depicted on Figures 3, 4, and 5. The cleanup activities consisted of excavation of the western portion of the Site that contained metals and other COPCs, including but not limited to organochlorine pesticides, PCE, DRO, and ORO. BNSF was not required to analyze soil samples collected from the Site for COPCs other than metals. Therefore, a data gap exists regarding assessment of the vertical distribution of the COPCs identified by Ecology and EPI in 2007 (Figures 3, 4, and 5).

Ecology (2008c through 2008f) has recommended that soil samples be collected at the interface of the clean fill imported to the Site and the underlying native soil to assess the potential vertical distribution of organochlorine pesticides, PCE, DRO, and ORO, where appropriate. These samples also may be used as confirmation samples to support a conclusion that no further cleanup action is necessary in the areas of the Site excavated during the BNSF cleanup excavation activities at the Bay Chemical site. Farallon understands that soil confirmation sampling data for metals from the cleanup excavation activities at the Bay Chemical site indicate no further action is necessary to address metals contamination in the western portion of the Site. Farallon has not been provided with data from the confirmation soil sampling conducted during the cleanup activities at the Bay Chemical site.

Farallon understands from discussions with Ecology (2008c) that excavation at the Bay Chemical site continued until concentrations of the target metals were below the property-specific cleanup levels established for that site. One area where excavation was halted before cleanup could be completed was in the vicinity of the former Yakima Farmers Supply waste pit that straddles the Agri-Tech and YSF property boundaries in the north-central portion of the Site (Figure 3). Excavation activities could not be performed in this area due to the documented presence of other organic contaminants that were not suitable for placement in the containment cell (Farallon 2004b). Imported clean fill was placed into the excavated areas of the Site for restoration, and asphalt pavement was replaced where necessary.

Farallon understands that monitoring well MW-5, located in Area 3 on the southern portion of the YSF property, was decommissioned during the excavation activities at the Bay Chemical

site. Monitoring wells MW-10 and MW-11 were installed by BNSF in 2008 to replace MW-5 (Figure 3).

The lateral and vertical distribution of metals, organochlorine pesticides, and VOCs at Area 3 on the southern portion of the YSF property requires further refinement outside the areas excavated during the cleanup activities at the Bay Chemical site, where concentrations of cadmium; copper; lead; 4,4-DDD; 4,4-DDE; dieldrin; aldrin; heptachlor epoxide; 1,1,-DCE; and 1,2-dichloropropane exceeding the preliminary screening levels established during the completion of the RI have been detected (Figures 4 and 5). Sampling performed by Ecology and EPI was limited to depths ranging from the ground surface to 28 inches bgs, which was inadequate to define the distribution of COPCs present in all areas tested. The metals and organochlorine pesticides are randomly distributed across the southern portion of the Site, with exceedances of preliminary screening levels having no readily distinguishable pattern. It is unlikely that a specific source area would be identified through extensive sampling in this area. However, Farallon will perform supplemental sampling to refine the understanding of the distribution of contamination to facilitate selection of an appropriate remedial alternative. Possible sources for contamination in this area may include, but may not be limited to, distribution of the COPCs caused by drainage from the former Yakima Farmers Supply waste pit that extended to this portion of the Site, windblown deposition of metals associated with operations at the Bay Chemical site, grading and filling activities performed by ANCO Industrial Park prior to occupation of the Site by YSF, grading and construction activities by YSF, and/or continued erosion of surficial soil.

3.2 GROUNDWATER QUALITY

Groundwater sampling has not been performed at the Site since 2002. Farallon will conduct supplemental groundwater monitoring and sampling to assess current groundwater quality at the Site and assess the stability of COPCs in the former Yakima Farmers Supply waste pit.

Groundwater sampling also will be performed to further assess the potential for application of monitored natural attenuation as part of a remedial alternative for groundwater at the former Yakima Farmer Supply waste pit. Farallon conducted a preliminary evaluation of groundwater geochemistry in 2002. The results indicated that groundwater conditions at the waste pit and near the pond area were anaerobic and that degradation compounds of PCE were identified at monitoring wells in these locations. The presence of the degradation compounds of PCE indicated that reductive dechlorination likely was occurring. Further investigation therefore is recommended to assess whether monitored natural attenuation or enhanced bioremediation are technically feasible remedial alternatives.

3.3 SEDIMENT QUALITY

Assessment of soil and sediment quality within the boundaries of the wetland near the southern boundary of the YSF property was not conducted during the Remedial Investigation. Based on the current understanding of the Site, the wetland includes both areas that are saturated/inundated with water year round and areas that are exposed seasonally, which are inundated with water only during times when regional irrigation practices are occurring between Spring and Fall. For

the purpose of the FS Work Plan the materials sampled from the portion of the wetland that is saturated year-round will be referred to as sediment and the materials sampled from the areas that are seasonally exposed will be referred to as soil. Farallon understands that the seasonally exposed materials may also be considered sediment if they are within the footprint of the pond and subject to sediment rather than soil cleanup standards. Assessment of soil and sediment quality in the wetland area is necessary to evaluate whether implementation of cleanup activities in this area will be necessary.

4.0 SUPPLEMENTAL SAMPLING AND MONITORING

The purpose of the supplemental monitoring and sampling at Area 3 of the Site is to address the data gaps discussed in Section 3 and provide additional information to support remedy decision-making as described in the Agreed Order. The supplemental monitoring and sampling program will provide sufficient data to further refine the conceptual site model for use in developing and evaluating potentially feasible remedial technologies for selection of a cleanup action for the Site.

The scope of work for the additional characterization effort at the Site includes the following:

- Supplemental soil sampling to define the lateral and vertical distribution of soil contamination in those portions of Area 3 of the Site that were not excavated during the cleanup action at the Bay Chemical site;
- Groundwater monitoring and sampling of the existing monitoring well network; and
- Sediment and soil sampling within the wetland area located near the southern boundary of the Site.

The scope of work described below is anticipated to be sufficient to provide the data necessary to proceed with the FS. Specific details on the sampling and analysis of soil, groundwater, and sediment are provided in the Sampling and Analysis Plan (SAP), provided in Appendix A. Quality assurance requirements for the supplemental sampling and monitoring are detailed in the Quality Assurance Project Plan, provided as Appendix B. A general description of the scope of work for the sampling activities is provided below.

4.1 FIELD PROGRAM

The monitoring and sampling field program will include supplemental soil sampling, groundwater monitoring and sampling, and sediment sampling. A copy of the Health and Safety Plan for the Site is provided as Appendix C. A summary of the scope of work for each work element is provided below.

4.1.1 Supplemental Soil Sampling

Supplemental soil sampling activities will be conducted to determine the effectiveness of the cleanup action performed at the Bay Chemical site in removing metals, organochlorine pesticides, petroleum hydrocarbons, and VOC contamination identified by Ecology and EPI during the July 2007 site investigation. These work elements include establishing a grid system over Area 3 on the southern portion of the YSF property where the extent of soil contamination is undetermined, advancing a test pit(s) within each sampling grid, and collecting soil samples for laboratory analysis for COPCs in Area 3, which include the following:

- Metals—antimony, arsenic, cadmium, copper, lead, manganese, mercury, and zinc;
- Organochlorine pesticides—aldrin; alpha chlordane; dieldrin; 4,4-DDD; 4,4-DDE; and heptachlor epoxide; and

- VOCs—PCE; 1,2-dichloropropane; and 1,1-DCE.

A grid square system will be established using 100- by 100-foot sections, replicating the grid system previously established for the 2007 Ecology site investigation. Test pits within each grid square will be completed using a backhoe. Soil samples will be collected at the interface of the clean fill placed as part of the cleanup action at the Bay Chemical site during restoration activities following the cleanup action excavation, and native soil in areas on the western border of the Site where the 2007 site investigation indicated that concentrations of COPCs were present at concentrations exceeding RI preliminary screening levels. Ecology has requested this sampling be conducted to confirm that the COPCs have been removed and/or to assess vertical distribution of the COPCs.

Soil samples will be collected between approximately 1 foot and 4 feet bgs in areas outside the limits of the Bay Chemical site cleanup excavation. These depths are considered adequate based on information provided to Farallon by Ecology (2008d) on the excavation limits and depths and the typical distribution of metals detected during the Bay Chemical site cleanup excavation. In addition, the concentrations of COPCs detected during the 2007 sampling by Ecology and EPI further support the selected sampling interval. Soil samples will be screened in the field for the presence of volatile organic vapors using a photoionization detector, and for metals using an x-ray fluorescence spectrometer. During excavation, a Test Pit Log form will be completed by a Field Geologist/Scientist for each test pit. The Test Pit Log will include lithologic descriptions of soil encountered using the Unified Soil Classification System. Additional details regarding specific sampling methods and laboratory analyses are discussed in the SAP, provided in Appendix A.

4.1.2 Groundwater Monitoring and Sampling

A single groundwater monitoring and sampling event will be conducted to establish current groundwater quality conditions and to further assess the potential for monitored natural attenuation at the waste pit. The event will consist of groundwater monitoring and sampling at monitoring wells WDOE-6, MW-1 through MW-4, MW-6, MW-7A, MW-7B, MW-10, and MW-11. Details regarding specific sampling methods and laboratory analysis are provided in the SAP (Appendix A).

4.1.3 Sediment and Soil Sampling

Assessment of sediment and soil quality in the wetland area will be conducted to evaluate whether cleanup of this area is necessary. The assessment will include collection of sediment and soil samples from the wetland area. Sediment and soil samples will be collected at six locations within the boundaries of the wetland area. Three soil samples will be collected in areas that are seasonally exposed during periods when regional irrigation is not occurring and three sediment samples will be collected in areas within the saturated portion of the wetland. The locations of the samples will be determined in the field with concurrence from Ecology.

The soil samples will be submitted for analysis of the constituents of concern for this area, which include petroleum hydrocarbons, VOCs, metals, and organochlorine pesticides. The sediment samples collected for bioassay testing and physical analysis. If sediment samples fail the

bioassay testing, chemical analysis of archived sediment samples will be conducted to identify the constituents of concern for cleanup in this area and compared to the soil results from the sample locations not inundated with water throughout the year. Details regarding the sampling activities for the wetland area are provided in the SAP (Appendix A).

5.0 FEASIBILITY STUDY TECHNICAL APPROACH

This section presents the elements that will be included in the FS for the Site in accordance with Ecology guidance and the provisions specified in WAC 173-340-350(8) and WAC 173-340-360. The objective of the FS process is to make an informed risk-based selection of a cleanup action alternative(s) most appropriate for the Site. The FS process includes identifying applicable regulatory requirements, establishing cleanup action objectives and preliminary cleanup standards that are protective of human health and the environment, identifying and evaluating potentially applicable cleanup technologies, and incorporating the cleanup technologies into cleanup action alternatives to address the contaminants and contaminated media identified at the Site. The cleanup action alternatives will then be evaluated against specific criteria pertaining to permanence, effectiveness, implementability, and cost to facilitate selection of a preferred Site remedy. Each of the components involves consideration of Site-specific data and the findings of the human health and ecological risk analysis. The following sections describe the general tasks that will be performed as part of the FS for the Site.

5.1 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

MTCA requires that cleanup actions comply with applicable state and federal laws, which are defined as "legally applicable requirements and those requirements that the department determines...are relevant and appropriate requirements" (WAC 173-340-200). The state and federal laws and regulations as well as local regulatory requirements applicable to the cleanup action alternatives identified for evaluation at the Site will be identified in the FS Report. Ecology will make the final determination as to whether the requirements have been appropriately identified and are legally applicable or relevant and appropriate.

5.2 CLEANUP STANDARDS

MTCA requires the establishment of appropriate cleanup levels and cleanup standards for a release of a hazardous substance at a site. A cleanup level is defined in MTCA as the "concentration of a hazardous substance in soil, water, air, or sediment that is determined to be protective of human health and the environment under specified exposure conditions" (WAC 173-340-200).

MTCA provides alternative methods for establishing cleanup levels. Under MTCA Method A, groundwater and soil cleanup levels are set at concentrations that are at least as stringent as those specified in Tables 720-1 and 740-1, respectively, of WAC 173-340-700 and in applicable state and federal laws. Method A is applicable to sites that may involve a relatively routine cleanup action or few hazardous substances. MTCA Method B provides for determination of cleanup levels for all media and sites as standard and site-specific cleanup levels. Under MTCA Method B, cleanup levels are established with consideration of applicable state and federal laws, and the risk equations and other requirements specified in WAC 173-340-720 through 173-340-760. Farallon does not anticipate that MTCA Method C cleanup levels will be deemed applicable to the Site. The FS report will present a discussion of appropriate cleanup standards and levels for the Site in order to facilitate comparison of potential cleanup alternatives. The preliminary

cleanup standards and level alternatives presented in the RI will be reviewed and discussed with Ecology prior to completion of the FS. The selected cleanup standards and levels for the cleanup action determined in the FS will be included in a Cleanup Action Plan for the Site.

5.3 CLEANUP ACTION ALTERNATIVES

This section describes the FS process by which applicable cleanup action alternatives will be developed and evaluated for the Site. The objective of the FS process is to develop a range of technically feasible cleanup action alternatives for detailed analysis. The process of developing cleanup action alternatives consists of three phases: development of general response actions, identification and screening of cleanup technologies and process components, and development of cleanup action alternatives.

MTCA allows for an initial screening of cleanup action alternatives, when appropriate, to reduce the number of alternatives carried to detailed analysis. MTCA stipulates that a cleanup action alternative may be eliminated from further consideration in the FS if it consists of one or both of the following:

- An alternative that does not meet the minimum requirements specified in WAC 173-340-360, including those alternatives for which costs are clearly disproportionate; and/or
- An alternative or component that is not technically feasible.

Farallon will conduct an initial screening of preliminary cleanup alternatives to determine which meet the minimum MTCA requirements for cleanup and are technically feasible to implement, and will provide an overview of the screening process and the results in the FS documentation. The cleanup action alternatives will be screened to meet cleanup action objectives to protect human health and the environment by eliminating, reducing, or otherwise controlling risks posed through each complete exposure pathway and migration route, as required by WAC 173-340-350.

5.4 CLEANUP ACTION ALTERNATIVE SELECTION

The process for selecting a cleanup action alternative for the Site is described in this section. The primary criteria for evaluating cleanup action alternatives are the minimum requirements established by MTCA. As defined in WAC 173-340-360, the selected cleanup action must meet the following minimum threshold requirements:

- Protect human health and the environment;
- Comply with the cleanup standards (WAC 173-340-700 through 173-340-760);
- Comply with applicable state and federal laws; and
- Provide for compliance monitoring (WAC 173-340-410 and WAC 173-340-720 through 173-340-760).

In addition, the selected cleanup action will:

- Use permanent solutions to the maximum extent practicable, as defined in WAC 173-340-360(3);
- Provide for a reasonable restoration time frame, as defined in WAC 173-340-360(4); and
- Consider public concerns (WAC 173-340-600).

Additional requirements will be considered in the FS during the development and evaluation of cleanup action alternatives. These requirements involve groundwater cleanup actions, cleanup actions for soil and sediment (if necessary), institutional/engineering controls, wetlands restoration, vapor intrusion, and remediation levels.

A comparative analysis of the cleanup action alternatives that meet the MTCA minimum threshold requirements will be conducted in the FS based on the following evaluation criteria:

- Protectiveness: Overall protectiveness of human health and the environment;
- Permanence: The degree to which the alternative permanently reduces the toxicity, mobility, or volume of hazardous substances;
- Cost: The costs to implement the alternative, conduct long-term monitoring and maintenance activities, and maintain institutional controls;
- Effectiveness over the long term: The degree of certainty in meeting cleanup action objectives, the reliability of the alternative, the magnitude of residual risk, and the effectiveness of controls;
- Management of short-term risks: The risk to human health and the environment associated with construction and implementation of the cleanup action alternative;
- Technical and administrative implementability: Technical feasibility of the cleanup action alternative and integration with Site operations, and degree of compliance with administrative and regulatory requirements; and
- Consideration of public concerns: Whether the community has concerns regarding the alternative and, if so, the extent to which the alternative addresses those concerns.

The comparative analysis that will be provided in the FS documentation will provide the basis for selection of a preferred cleanup action alternative. In accordance with MTCA, preference will be given to the cleanup action alternative that uses permanent solutions to the maximum extent practicable.

5.5 FEASIBILITY STUDY REPORT

A Draft FS Report presenting the components of the FS process described above will be completed in accordance with the requirements of the Agreed Order in a manner that is consistent with Ecology guidance and the provisions specified in MTCA for identifying, evaluating, and selecting cleanup actions.

6.0 SCHEDULE

The schedule for the work to be performed at the Site pertaining to completion of the FS is discussed in this section, and is based on the scheduling requirements outlined in Exhibit C of the Agreed Order. Farallon will prepare the Final FS Work Plan and provide it to Ecology within 30 days of receiving written comments from Ecology on the Revised Draft FS Work Plan. Farallon will conduct the sampling activities described in Section 4 and provide the analytical results to Ecology within 60 days of the issuance of written approval by Ecology of the Final FS Work Plan. Farallon will complete a Draft FS Report and provide it to Ecology for comment within 120 days of the issuance of written confirmation by Ecology that the remedial investigation work is complete and no further investigation to support evaluation of feasible remedial alternatives appears necessary. Farallon will revise the Draft FS Report and submit the Final FS Report to Ecology within 60 days of receipt of Ecology comments on the draft document, in accordance with the requirements of the Agreed Order.

7.0 BIBLIOGRAPHY

Farallon Consulting, L.L.C. (Farallon). 2004a. Technical Memorandum Regarding Preliminary Evaluation of Technically Feasible Remedial Alternatives. From Jeff Kaspar, Senior Project Manager. To Marv Wark, Yakima Steel Fabricators. June 9.

———. 2004b. Revised Remedial Investigation Report, Agri-Tech and Yakima Steel Fabricators, 6 and 10 1/2 East Washington Avenue, Yakima, Washington (RI Report). Prepared for Yakima Steel Fabricators. June 10.

Washington State Department of Ecology (Ecology). 2008a. E-mail Message Regarding Agri-Tech/YSF Data. From Brian Deeken, Project Manager. To Jeff Kaspar, Senior Project Manager, Farallon Consulting, L.L.C. October 8.

———. 2008b. E-mail Message Regarding Agri-Tech/YSF Data. From Brian Deeken, Project Manager. To Jeff Kaspar, Senior Project Manager, Farallon Consulting, L.L.C. October 8.

———. 2008c. E-mail Message Regarding Yakima Steel FS Work Plan. From Brian Deeken, Project Manager. To Jeff Kaspar, Senior Project Manager, Farallon Consulting, L.L.C. December 2.

———. 2008d. E-mail Message Regarding Yakima Steel FS Work Plan. From Brian Deeken, Project Manager. To Jeff Kaspar, Senior Project Manager, Farallon Consulting, L.L.C. December 8.

———. 2008e. E-mail Message Regarding Yakima Steel FS Work Plan. From Brian Deeken, Project Manager. To Jeff Kaspar, Senior Project Manager, Farallon Consulting, L.L.C. December 10.

———. 2008f. E-mail Message Regarding Test Pit Locations. From Brian Deeken, Project Manager. To Jeff Kaspar, Senior Project Manager, Farallon Consulting, L.L.C. December 11.

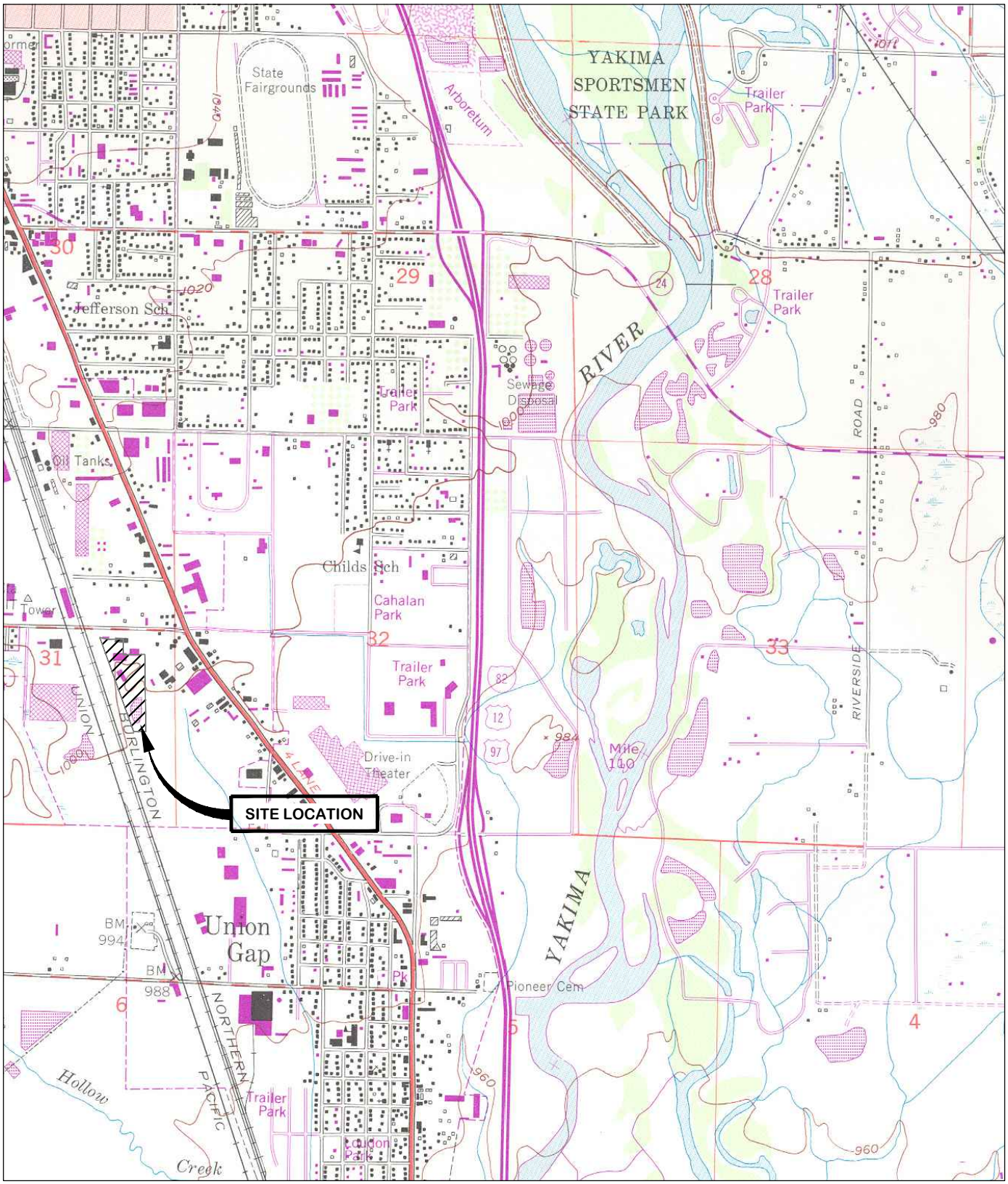
———. 2010. Letter Regarding Comments on AgriTech/Yakima Steel Fabricators Feasibility Study Work Plan. From Norman D. (Norm) Peck, Project Coordinator. To Jeff Kaspar, Farallon Consulting, L.L.C. August 2.

Washington State Office of the Attorney General. 2007. Plaintiff's and Defendant's Stipulated Findings of Fact and Conclusions of Law No. 05-2-02060-1 between Merv Wark, Sharon Wark, and Yakima Steel Fabricators, Inc. and Washington State Department of Ecology. September 28.

FIGURES

FEASIBILITY STUDY WORK PLAN
Agri-Tech and Yakima Steel Fabricators
6 and 10½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001



REFERENCE: 7.5 MINUTE USGS QUADRANGLE YAKIMA SOUTH, WASHINGTON. DATED 1953 AND PHOTOREVISED 1981

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 1

SITE VICINITY MAP
YSF/AGRI-TECH FS WORK PLAN
6 & 10 1/2 EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765-001

Drawn By: DEW	Checked By: BC	Date: 5/3/11	Disk Reference: 765001a

LEGEND

SITE BOUNDARY

TAX PARCEL BOUNDARY

FENCE

RAILROAD

PARCEL # 19133141010

FORMER BAY CHEMICAL PROPERTY

- ASPHALT -

PARCEL # 19133141408

AGRI-TECH BUILDING

PARCEL # 19133141409

BUILDING

EAST WASHINGTON AVENUE

CONCRETE PAD

PARCEL # 19133141005

OFFICES

FABRICATION AREA

YAKIMA STEEL FABRICATORS BUILDING

FABRICATION AND LOADING AREA

EDGE OF PAVEMENT

- ASPHALT -

- GRAVEL -

PARCEL # 19133141011

- ASPHALT -

BUILDING

BNSF RAILROAD SPUR

PARCEL # 19133114003

STEEL STORAGE AREA

- DITCH -

OLD BARB WIRE FENCE

TYPE 3 WETLANDS AREA (EXISTING POND)

- GRAVEL -

PARCEL # 19133141009

- GRAVEL -

- GRAVEL -

UNPAVED ROAD

- DITCH -

- DITCH -

PARCEL # 19133232408

PARCEL # 19133232433

CASCADE AUTO RECYCLING

PARCEL # 19133141406

PARCEL # 19133233009

0 80

APPROXIMATE SCALE IN FEET

N

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Issaquah, WA 98027

FIGURE 2

SITE PLAN AND TAX PARCEL LOCATIONS
YSF/AGRI-TECH FS WORK PLAN
6 & 10 1/2 EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765-001

Drawn By:JK	Checked By:BC	Date:5/3/11	Disk Reference:765001a

LEGEND

- APPROXIMATE BOUNDARY OF FORMER YAKIMA FARMERS SUPPLY WASTE PIT
- **AREA 1** FORMER YAKIMA FARMERS SUPPLY WASTE PIT LOCATION
- **AREA 2** FORMER YAKIMA FARMERS SUPPLY LIME AND SULFUR STOCKPILE LOCATIONS
- **AREA 3** POTENTIAL PETROLEUM RELEASE AREA
- SITE BOUNDARY
- TAX PARCEL BOUNDARY
- FENCE
- RAILROAD

- B-2 — SOIL BORING LOCATION AGRA EARTH AND ENVIRONMENTAL INC. (1997)
- SP-27 — DIRECT PUSH SOIL BORING LOCATION AGRA EARTH AND ENVIRONMENTAL INC. (1997)
- TP-4 — TEST PIT LOCATION PLSA ENGINEERING (1993)
- PIT B — WASHINGTON STATE DEPARTMENT OF ECOLOGY (ECOLOGY) TEST PIT (JULY 2007)
- TP-2 — ENVIRONMENTAL PARTNERS, INC. TEST PIT (2007)
- M — ECOLOGY SAMPLING GRID DESIGNATION
- MW-6 — SHALLOW BAY CHEMICAL SITE MONITORING WELL INSTALLED BY PACIFIC GROUNDWATER GROUP (1994)
- MW-7A — SHALLOW MONITORING WELL INSTALLED BY FARALLON (2002)
- MW-7B — DEEP MONITORING WELL INSTALLED BY FARALLON
- MW-2 — SHALLOW MONITORING WELL INSTALLED BY AGRA EARTH & ENVIRONMENTAL, INC. (1997)
- MW-4 — DEEP MONITORING WELL INSTALLED BY AGRA EARTH & ENVIRONMENTAL, INC. (1997)
- MW-5 — DECOMMISSIONED WELL DURING BAY CHEMICAL CLEANUP
- WDOE-6 — MONITORING WELL INSTALLED BY ECOLOGY (1992)
- MW-10 — BAY CHEMICAL MONITORING WELL (2009)

NOTE:

1. LOCATIONS OF ALL TEST PITS BY ECOLOGY ARE APPROXIMATED. COORDINATES PROVIDED BY ECOLOGY DID NOT PLOT IN CORRESPONDING SAMPLING GRID IN ALL CASES. FARALLON SHIFTED TEST PIT LOCATIONS TO THE APPROPRIATE SAMPLING GRID AND ESTIMATED THE TEST PIT LOCATION ON BEST AVAILABLE INFORMATION.
2. FIGURE INCLUDES INFORMATION PRESENTED IN COLOR. PHOTOCOPYING MAY NOT BE APPROPRIATE.

BAY CHEMICAL CLEANUP AREA
APPROXIMATE EXCAVATION DEPTH IN FEET BELOW GROUND SURFACE

- 0-2
- 2-4
- 4-6
- >6

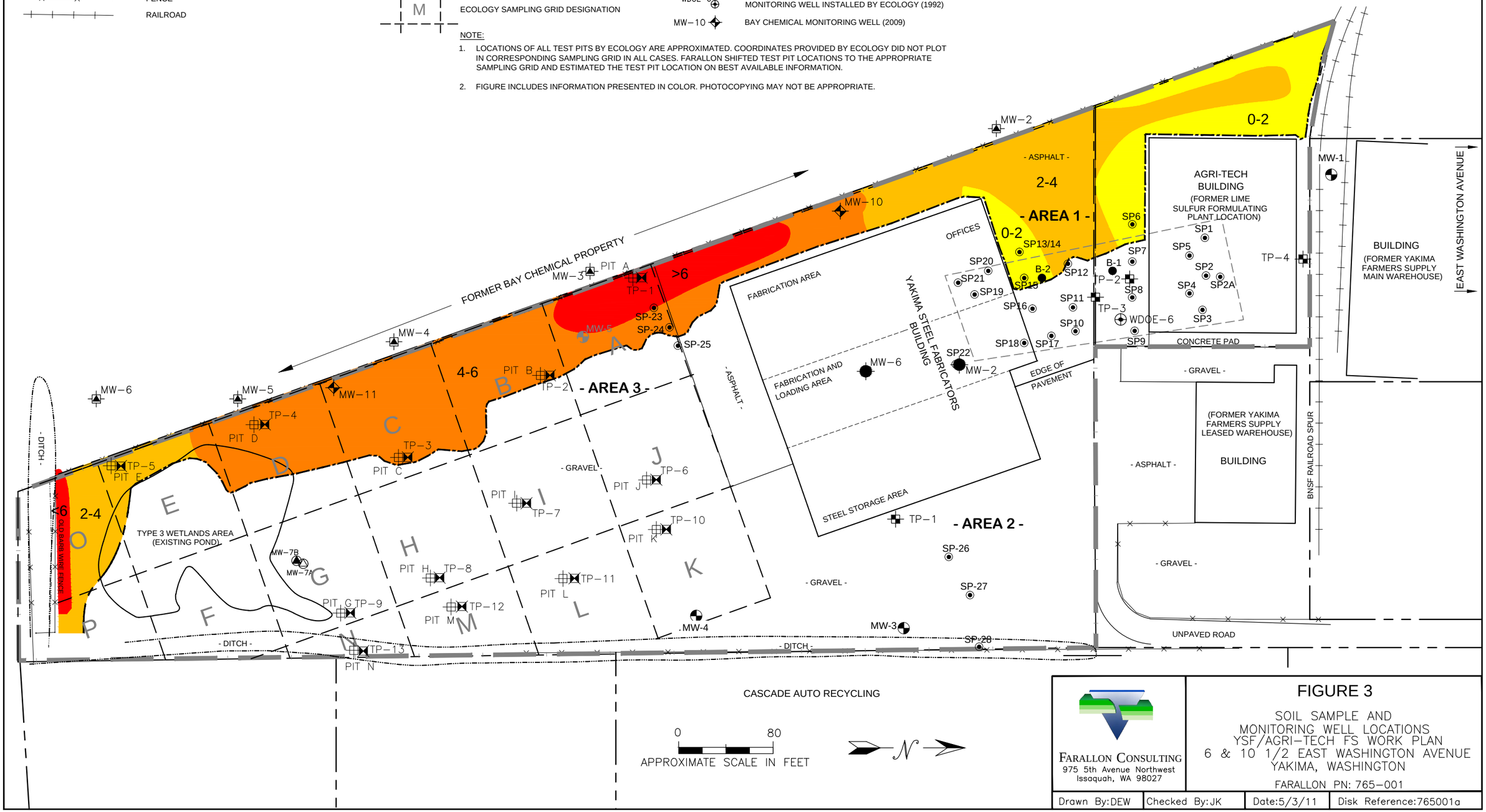

FIGURE 3

SOIL SAMPLE AND MONITORING WELL LOCATIONS
YSF/AGRI-TECH FS WORK PLAN
6 & 10 1/2 EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765-001

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

Drawn By: DEW	Checked By: JK	Date: 5/3/11	Disk Reference: 765001a

LEGEND

- APPROXIMATE BOUNDARY OF FORMER YAKIMA FARMERS SUPPLY WASTE PIT
- **AREA 1** FORMER YAKIMA FARMERS SUPPLY WASTE PIT LOCATION
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- RAILROAD
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- TP−2 — ENVIRONMENTAL PARTNERS, INC. TEST PIT (2007)
- M — ECOLOGY SAMPLING GRID DESIGNATION

SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM
DEPTH IN INCHES BELOW GROUND SURFACE

BOLD = INDICATES CONCENTRATION EXCEEDS WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD B CLEANUP LEVELS PRESENTED IN THE REMEDIAL INVESTIGATION REPORT (FARALLON 2004)

< = INDICATES CONCENTRATIONS NOT DETECTED AT OR ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

NA = NOT ANALYZED

Sb = ANTIMONY
As = ARSENIC
Cd = CADMIUM
Cr = CHROMIUM
Cu = COPPER
Pb = LEAD
Mn = MANGANESE
Hg = MERCURY
Ni = NICKEL
Ag = SILVER
Tl = THALLIUM
Zn = ZINC

BAY CHEMICAL CLEANUP AREA
APPROXIMATE EXCAVATION DEPTH IN FEET BELOW GROUND SURFACE

- 0-2
- 2-4
- 4-6
- >6

NOTE:

1. LOCATIONS OF ALL TEST PITS BY ECOLOGY ARE APPROXIMATED. COORDINATES PROVIDED BY ECOLOGY DID NOT PLOT IN CORRESPONDING SAMPLING GRID IN ALL CASES. FARALLON SHIFTED TEST PIT LOCATIONS TO THE APPROPRIATE SAMPLING GRID AND ESTIMATED THE TEST PIT LOCATION ON BEST AVAILABLE INFORMATION.
2. FIGURE INCLUDES INFORMATION PRESENTED IN COLOR. PHOTOCOPYING MAY NOT BE APPROPRIATE.

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
0	NA	2.9	**15.3**	NA	57.9	762	515	NA	NA	NA	NA	3,100

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
24"	NA	<5.0	**330**	NA	1,820	**22,500**	**12,500**	NA	NA	NA	NA	**123,000**

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
26"	**65**	<5.0	**310**	490	2,000	**27,000**	NA	**14**	110	43	39	**140,000**

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
6"	NA	13	**7.6**	NA	944	674	645	NA	NA	NA	NA	2,200

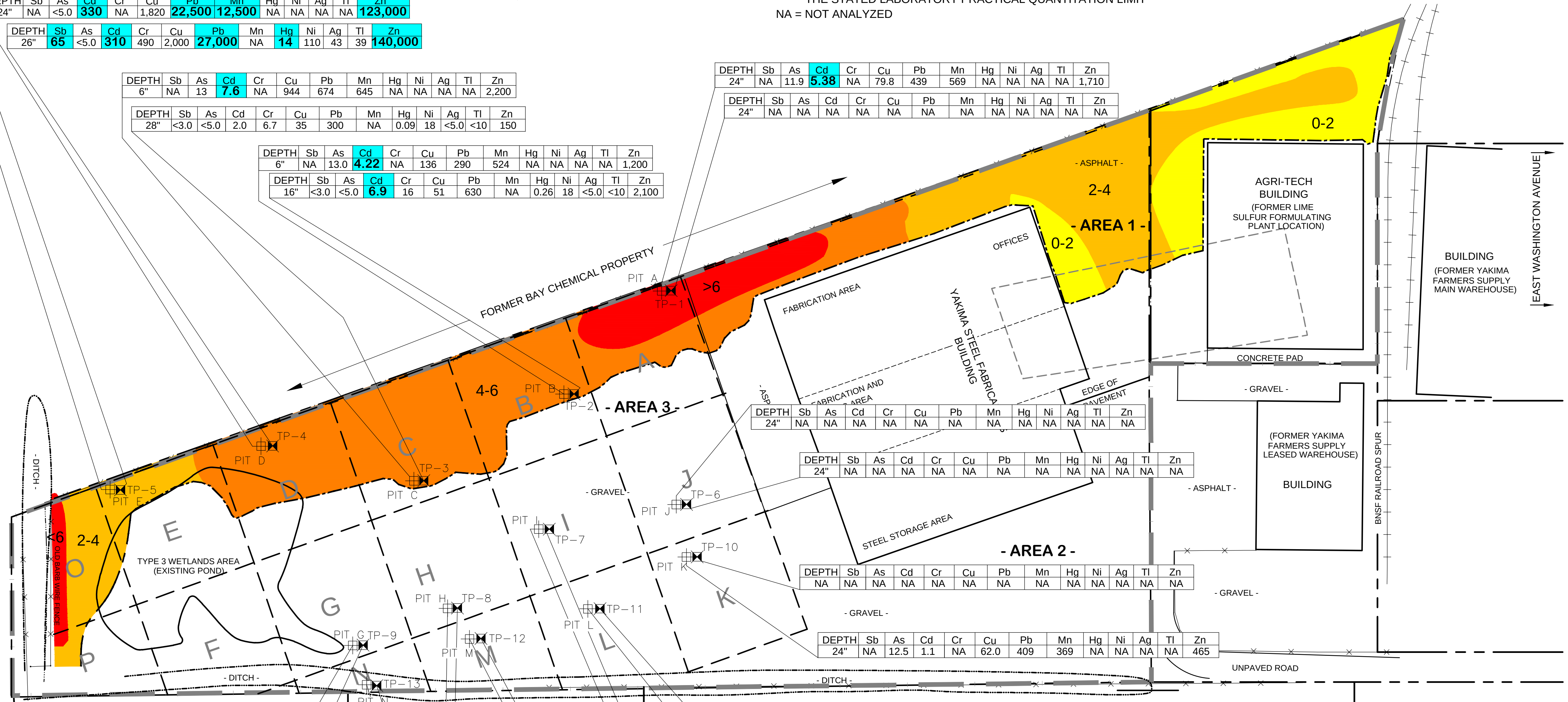
DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
28"	<3.0	<5.0	2.0	6.7	35	300	NA	0.09	18	<5.0	<10	150

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
6"	NA	13.0	**4.22**	NA	136	290	524	NA	NA	NA	NA	1,200

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
16"	<3.0	<5.0	**6.9**	16	51	630	NA	0.26	18	<5.0	<10	2,100

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
24"	NA	11.9	**5.38**	NA	79.8	439	569	NA	NA	NA	NA	1,710

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
24"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA



DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
24"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
24"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
24"	NA	12.5	1.1	NA	62.0	409	369	NA	NA	NA	NA	465

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
6"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
18"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

CASCADE AUTO RECYCLING

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
12"	<3.0	<5.0	1.3	15	22	170	NA	0.23	20	<5.0	<10	310

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
12"	NA	6.17	0.67	NA	30.4	212	336	NA	NA	NA	NA	369

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
0	NA	1.5	<0.10	NA	77.4	5.67	160	NA	NA	NA	NA	69

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
0	<3.0	<5.0	1.2	8.6	21	31	NA	0.04	21	<5.0	<10	99

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
0.5"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
12"	<0.3	<5.0	**2.9**	15	82	**2,800**	NA	0.09	22	<5.0	<10	1,700

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
18"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
18"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DEPTH	Sb	As	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Ag	Tl	Zn
0	NA	8.12	**4.3**	NA	**5,560**	433	2,270	NA	NA	NA	NA	995

N

0 100
APPROXIMATE SCALE IN FEET

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 4

CONCENTRATIONS OF METALS IN SOIL
YSF/AGRI–TECH FS WORK PLAN
6 & 10 1/2 EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765–001

Drawn By:DEW | Checked By:JK | Date:5/3/11 | Disk Reference:765001a

LEGEND

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- RAILROAD

PIT B — WASHINGTON STATE DEPARTMENT OF ECOLOGY (ECOLOGY) TEST PIT (JULY 2007)

TP–2 — ENVIRONMENTAL PARTNERS, INC. TEST PIT (2007)

M — ECOLOGY SAMPLING GRID DESIGNATION

SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM
DEPTH IN INCHES BELOW GROUND SURFACE

BOLD = INDICATES CONCENTRATION EXCEEDS WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD B CLEANUP LEVELS PRESENTED IN THE REMEDIAL INVESTIGATION REPORT (FARALLON 2004)

< = INDICATES CONCENTRATIONS NOT DETECTED AT OR ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

NA = NOT ANALYZED

BAY CHEMICAL CLEANUP AREA

APPROXIMATE EXCAVATION DEPTH IN FEET BELOW GROUND SURFACE

- 0-2
- 2-4
- 4-6
- >6

NOTE:

1. LOCATIONS OF ALL TEST PITS BY ECOLOGY ARE APPROXIMATED. COORDINATES PROVIDED BY ECOLOGY DID NOT PLOT IN CORRESPONDING SAMPLING GRID IN ALL CASES. FARALLON SHIFTED TEST PIT LOCATIONS TO THE APPROPRIATE SAMPLING GRID AND ESTIMATED THE TEST PIT LOCATION ON BEST AVAILABLE INFORMATION.
2. FIGURE INCLUDES INFORMATION PRESENTED IN COLOR. PHOTOCOPYING MAY NOT BE APPROPRIATE.

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
0	<0.00096	<0.00096	<0.0019	0.004	<0.0019	<0.00096

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
NA	NA	NA	NA	NA	NA	NA

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
24"	<0.0048	<0.012	<0.0097	0.014	**0.018**	<0.014

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
26"	**<0.01**	NA	<0.01	0.02	**0.03**	<0.01

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
6"	<0.0049	<0.0049	<0.0098	<0.0098	**<0.0098**	<0.0049

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
28"	NA	NA	NA	NA	NA	NA

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
6"	<0.00097	<0.00097	<0.0019	0.0033	<0.0019	<0.00097

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
16"	NA	NA	NA	NA	NA	NA

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
24"	**<0.020**	**0.820**	<0.0039	0.059	**<0.0056**	**<0.020**

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
24"	NA	NA	NA	NA	NA	NA

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
24"	**0.043**	0.190	<0.039	0.022	**0.250**	**<0.019**

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
24"	**0.02**	NA	<0.01	0.02	**0.17**	<0.01

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
NA	NA	NA	NA	NA	NA	NA

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
24"	<0.0020	0.0094	<0.0040	0.0055	**<0.0040**	<0.0020

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
18"	**<0.01**	NA	<0.01	0.06	<0.01	<0.01

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
6"	<0.00098	<0.011	**0.400**	**1.200**	**<0.039**	<0.020

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
0	<0.0098	<0.0026	<0.0020	0.014	**0.017**	<0.00098

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
0	**<0.01**	<0.01	<0.01	<0.01	**<0.01**	<0.01

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
6"	<0.0010	<0.0010	<0.0020	0.09	<0.0020	<0.0010

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
12"	**<0.01**	NA	<0.01	0.02	**0.01**	<0.01

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
12"	**<0.01**	NA	<0.01	<0.01	**<0.01**	<0.01

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
0	<0.0048	0.043	<0.0096	0.0060	**<0.0096**	<0.0048

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
18"	**<0.01**	NA	<0.01	<0.01	**0.09**	<0.01

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
18"	<0.0050	<0.0050	<0.0099	<0.0099	**<0.0099**	**<0.025**

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
NA	NA	NA	NA	NA	NA	NA

DEPTH	ALDRIN	ALPHA CHLORDANE	4,4-DDD	4,4-DDE	DIELDRIN	HEPTACHLOR EPOXIDE
0	<0.0049	<0.0049	<0.0098	0.011	**<0.0098**	<0.013

FORMER BAY CHEMICAL PROPERTY
PIT A
TP–1
PIT B
TP–2
TP–3
PIT C
TP–4
PIT D
TP–5
PIT E
TP–6
PIT J
TP–7
PIT I
TP–8
PIT H
TP–9
PIT G
TP–10
PIT K
TP–11
PIT L
TP–12
PIT M
TP–13
PIT N
- AREA 1 -
- AREA 2 -
- AREA 3 -
- ASPHALT -
- GRAVEL -
- DITCH -
- OLD BARB WIRE FENCE -
TYPE 3 WETLANDS AREA (EXISTING POND)
STEEL STORAGE AREA
OFFICES
FABRICATION AREA
YAKIMA STEEL FABRICATION BUILDING
EDGE OF PAVEMENT
CONCRETE PAD
AGRI-TECH BUILDING (FORMER LIME SULFUR FORMULATING PLANT LOCATION)
BUILDING (FORMER YAKIMA FARMERS SUPPLY MAIN WAREHOUSE)
BUILDING (FORMER YAKIMA FARMERS SUPPLY WAREHOUSE)
EAST WASHINGTON AVENUE
BNSF RAILROAD SPUR
UNPAVED ROAD
CASCADE AUTO RECYCLING
0-2
2-4
4-6
>6

0 100
APPROXIMATE SCALE IN FEET

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 5

CONCENTRATIONS OF ORGANOCHLORINE PESTICIDES
YSF/AGRI-TECH FS WORK PLAN
6 & 10 1/2 EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765-001

Drawn By: DEW	Checked By: JK	Date: 5/3/11	Disk Reference: 765001a

TABLES

FEASIBILITY STUDY WORK PLAN
Agri-Tech and Yakima Steel Fabricators
6 and 10½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

Table 1
July 2007 Soil Analytical Results for Petroleum Hydrocarbons and cPAHs
Agri-Tech and Yakima Steel Fabricators
Yakima, Washington
Farallon PN: 765-001

Test Pit Identification	Sampled By	Sample Grid	Sample Date	Approximate Sample Depth (feet bgs)	Analytical Results (milligrams per kilogram)								
					TPH[1,3]	cPAHs[2,3]							
					ORO	Dibenzo(a,h) anthracene	Benzo (b) fluoranthene	Chrysene	Benzo (a) anthracene	Indeno (1,2,3-cd) pyrene	Benzo(k) fluoranthene	Benzo (a) pyrene	Total cPAHs
Pit B	Ecology	B	07/09/07	0.5	**114,000**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	0.015	<0.1
Pit H	Ecology	H	07/09/07	0.5	1,800	<0.010	0.060	0.052	0.038	0.024	0.063	0.058	**0.295**
TP-2	EPI	B	07/09/07	1.25	570	--	--	--	--	--	--	--	--
TP-8	EPI	H	07/09/07	1.0	560	--	--	--	--	--	--	--	--
Preliminary Screening Level					**2,000** [4]	**0.1** [5]	**0.1** [5]	**0.1** [5]	**0.1** [5]	**0.1** [5]	**0.1** [5]	**0.1** [5]	**0.1** [5]

NOTES:

Results in **bold** denote concentrations at or above the Preliminary Screening Level indicated.

< denotes analyte not detected at or above the laboratory reporting limit listed.

- denotes sample not analyzed.

[1] Analyzed by Northwest Method NWTPH-Dx.

[2] Analyzed by U.S. Environmental Protection Agency Method SW8270D. Only cPAHs are tabulated.

[3] Compound was not retained as a COPC following completion of the June 2004 Revised Remedial Investigation Report.

[4] Preliminary screening level as identified in the June 2004 Revised Remedial Investigation Report based on Site-specific MTCA Method B cleanup

[5] Cleanup levels based on toxicity equivalency factor method using cleanup level of 0.1 milligram per kilogram (mg/kg) for benzo(a)pyrene. Total cPAHs must be less than 0.1 mg/kg in accordance with Section 708(8) of Chapter 173-340 of the Washington Administrative Code.

COPC = constituent of potential concern

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

Ecology = Washington State Department of Ecology

EPI = Environmental Partners, Incorporated

MTCA = Washington State Model Toxics Control Act Cleanup Regulation

ORO = total petroleum hydrocarbons as oil-range organics

Table 2
July 2007 Soil Analytical Results for Metals
Agri-Tech and Yakima Steel Fabricators
Yakima, Washington
Farallon PN: 765-001

Test Pit Identification	Sampled By	Sample Grid	Sample Date	Approximate Sample Depth (feet bgs)	Analytical Results (milligrams per kilogram)											
					Antimony [1,3]	Arsenic [1,3]	Cadmium [1,4]	Chromium [1,3]	Copper [1,3]	Lead [1,3]	Manganese [1,3]	Mercury [2,4]	Nickel [1,3]	Silver [1,3]	Thallium [1,3]	Zinc [1,4]
Pit A	Ecology	A	07/09/07	2.0	-	11.9	**5.38**	-	79.8	439	569	-	-	-	-	1,710
Pit B	Ecology	B	07/09/07	0.5	-	13.0	**4.22**	-	136	290	524	-	-	-	-	1,200
Pit C	Ecology	C	07/09/07	0.5	-	13.0	**7.6**	-	944	674	645	-	-	-	-	2,200
Pit D	Ecology	D	07/09/07	2.0	-	**55**	**330**	-	1,820	**22,500**	**12,500**	-	-	-	-	**123,000**
Pit E	Ecology	E	07/09/07	0.0	-	2.9	**15.3**	-	57.9	762	515 J	-	-	-	-	3,100
Pit K	Ecology	K	07/09/07	2.0	-	12.5	1.1	-	62.0	409	369	-	-	-	-	465
Pit L	Ecology	L	07/09/07	1.0	-	6.17	0.67	-	30.4	212	336	-	-	-	-	369
Pit M	Ecology	M	07/09/07	0.0	-	8.12	**4.3**	-	**5,560**	433	2,270	-	-	-	-	995
Pit N	Ecology	N	07/09/07	0.0	-	1.5	<0.10	-	77.4 J	5.67	160	-	-	-	-	69
TP-2	EPI	B	07/09/07	1.25	<3.0	<5.0	**6.9**	16	51	630	-	0.26	18	<5.0	<10	2,100
TP-3	EPI	C	07/09/07	2.25	<3.0	<5.0	2.0	6.7	35	300	-	0.09	18	<5.0	<10	150
TP-4	EPI	D	07/09/07	2.0	**65**	<5.0	**310**	490	2,000	**27,000**	-	**14**	110	43	39	**140,000**
TP-8	EPI	H	07/09/07	1.0	<3.0	<5.0	**2.9**	15	82	**2,800**	-	0.09	22	<5.0	<10	1,700
TP-11	EPI	L	07/09/07	1.0	<3.0	<5.0	1.3	15	22	170	-	0.23	20	<5.0	<10	310
TP-13	EPI	N	07/09/07	0.0	<3.0	<5.0	1.2	8.6	21	31	-	0.04	21	<5.0	<10	99
Preliminary Screening Level					**32** [5]	**20** [5]	**2.0** [5]	**2,000** [5]	**2,960** [5]	**1,000** [5]	**11,000** [6]	**2.0** [5]	**NE**	**400** [5]	**NE**	**24,000** [5]

NOTES:

Results in **bold** denote concentrations at or above the Preliminary Screening Level indicated.

< denotes analyte not detected at or above the reporting limit listed.

- denotes sample not analyzed.

[1] Analyzed by U.S. Environmental Protection Agency (EPA) Method 200 Series or 6010.

[2] Analyzed by EPA Method 7471.

[3] Constituent was not retained as a COPC following completion of the June 2004 Revised Remedial Investigation Report.

[4] Identified and retained as COPC in June 2004 Revised Remedial Investigation Report.

[5] Preliminary screening level as identified in June 2004 Revised Remedial Investigation Report based on MTCA Method B cleanup levels.

[6] Washington State Department of Ecology Cleanup Levels and Risk Calculations under MTCA, Version 3.1 Standard Method B Formula Values for Soil (Unrestricted Land Use) - Direct Contact (Ingestion Only) and Leaching Pathway, https://fortress.wa.gov/ecy/clarc/Reporting/ChemicalQuery.aspx

bgs = below ground surface

COPC = constituent of potential concern

Ecology = Washington State Department of Ecology

EPI = Environmental Partners, Incorporated

J = The analyte was positively identified. The associated numerical result is an estimate.

MTCA = Washington State Model Toxics Control Act Cleanup Regulation

NE = not established

Table 3
July 2007 Soil Analytical Results for Pesticides
Agri-Tech and Yakima Steel Fabricators
Yakima, Washington
Farallon PN: 765-001

Test Pit Identification	Sampled By	Sample Grid	Sample Date	Approximate Sample Depth (feet bgs)	Analytical Results (milligrams per kilogram) [1]												
					Aldrin [2]	Alpha Chlordane [3]	Chlordane [2]	4,4'-DDD [3]	4,4'-DDE [3]	4,4'-DDT [2]	Dieldrin [3]	Endosulfan Sulfate [2]	Endrin [3]	Heptachlor Epoxide [3]	Endrin Aldehyde [2]	Gamma Chlordane [2]	Heptachlor [3]
Pit A	Ecology	A	07/09/07	2.0	**<0.020**	**0.820 P**	--	<0.0039	0.059 P	0.26	**<0.0056**	<0.064	<0.0039	**<0.020**	<0.0039	0.82 P	0.043
Pit B	Ecology	B	07/09/07	0.5	<0.00097	<0.00097	--	<0.0019	0.0033	0.011 P	<0.0019	<0.0019	<0.0019	<0.00097	<0.0019	<0.00097	<0.00097
Pit C	Ecology	C	07/09/07	0.5	<0.0049	<0.0049	--	<0.0098	<0.0098	0.036	**<0.0098**	<0.0098	<0.0098	<0.0049	<0.0098	<0.0049	<0.0049
Pit D	Ecology	D	07/09/07	2.0	<0.0048	<0.012	--	<0.0097	0.014 P	0.058 P	**0.018**	<0.0097	<0.0097	<0.014	<0.0097	<0.0016	<0.0048
Pit E	Ecology	E	07/09/07	0.0	<0.00096	<0.00096	--	<0.0019	0.004 P	0.0035	<0.0019	<0.0019	<0.0019	<0.00096	<0.0019	<0.00096	<0.00096
Pit G	Ecology	G	07/09/07	0.5	<0.00098	<0.011	--	**0.400**	**1.20**	0.240	**<0.039**	<0.039	<0.039	<0.020	<0.039	<0.020	<0.020
Pit H	Ecology	H	07/09/07	0.5	<0.0010	<0.0010	--	<0.0020	0.09	0.110	<0.0020	<0.0020	<0.0020	<0.0010	<0.0020	<0.0010	<0.0010
Pit I	Ecology	I	07/09/07	1.5	<0.0050	<0.0050	--	<0.0099	<0.0099	0.067	**<0.0099**	<0.0099	<0.0099	**<0.025**	<0.0099	<0.026	<0.0050
Pit J	Ecology	J	07/09/07	2.0	**0.043**	0.190 P	--	<0.039	0.022 P	0.130	**0.250**	<0.039	<0.039	**<0.019**	<0.039	0.190	<0.019
Pit K	Ecology	K	07/09/07	2.0	<0.0020	0.0094	--	<0.0040	0.0055	0.016	**<0.0040**	<0.0040	<0.0040	<0.0020	<0.0040	0.0086	<0.0020
Pit L	Ecology	L	07/09/07	1.0	<0.0048	0.043 P	--	<0.0096	0.0060 J	0.049	**<0.0096**	<0.0096	<0.0096	<0.0048	<0.0096	0.034 P	<0.0048
Pit M	Ecology	M	07/09/07	0.0	<0.0049	<0.0049	--	<0.0098	0.011	0.026 P	**<0.0098**	<0.00989	<0.0098	<0.013	<0.0098	<0.0049	<0.0049
Pit N	Ecology	N	07/09/07	0.0	<0.00098	<0.0026	--	<0.0020	0.014	0.013	**0.017**	<0.0020	<0.0020	<0.00098	<0.0020	0.0016	<0.00098
TP-4	EPI	D	07/09/07	2.0	**<0.01**	--	<0.02	<0.01	0.02	0.08	**0.03**	<0.01	<0.01	<0.01	<0.01	--	<0.01
TP-6	EPI	J	07/09/07	2.0	**0.02**	--	0.16	<0.01	0.02	0.05	**0.17**	<0.01	<0.01	<0.01	<0.01	--	<0.01
TP-7	EPI	I	07/09/07	1.5	**<0.01**	--	<0.02	<0.01	<0.01	0.08	**0.09**	<0.01	0.02	<0.01	1.9	--	<0.01
TP-8	EPI	H	07/09/07	1.0	**<0.01**	--	<0.02	<0.01	0.02	0.04	**0.01**	<0.01	<0.01	<0.01	<0.01	--	<0.01
TP-9	EPI	G	07/09/07	1.5	**<0.01**	--	<0.02	<0.01	0.06	0.04	**<0.01**	<0.01	<0.01	<0.01	<0.01	--	<0.01
TP-11	EPI	L	07/09/07	1.0	**<0.01**	--	0.13	<0.01	<0.01	0.07	**<0.01**	<0.01	<0.01	<0.01	<0.01	--	<0.01
TP-13	EPI	N	07/09/07	0.0	**<0.01**	--	<0.02	<0.01	<0.01	<0.01	**<0.01**	<0.01	<0.01	<0.01	<0.01	--	<0.01
Preliminary Screening Level					**0.00503** [4]	**0.258** [4]	**2.9** [4]	**0.335** [4]	**0.446** [4]	**3.485** [4]	**0.0028** [4]	**4.301** [4]	**0.0404** [4]	**0.0161** [4]	**NE**	**NE**	**0.22** [4]

NOTES:

Results in **bold** denote concentrations at or above the Preliminary Screening Level indicated.

< denotes analyte not detected at or above the reporting limit listed.

- denotes sample not analyzed.

[1] Analyzed by U.S. Environmental Protection Agency Method 8081.

[2] Compound was not retained as a COPC following completion of the June 2004 Revised Remedial Investigation.

[3] Identified and retained as a COPC in the June 2004 Revised Remedial Investigation Report.

[4] The preliminary screening level as identified in the June 2004 Revised Remedial Investigation Report. The screening level is based on MTCA Method B cleanup levels protective of groundwater.

bgs = below ground surface

COPC = constituent of potential concern

Ecology = Washington State Department of Ecology

EPI = Environmental Partners, Incorporated

J = estimated concentration when the value is less than laboratory-established reporting limits

MTCA = Washington State Model Toxics Control Act Cleanup Regulation

NE = not established in Cleanup Levels and Risk Calculations database

P = The analyte was detected on both chromatographic columns, but the quantified values differ by ≥40 percent relative percent difference with no obvious chromatographic interference.

Table 4
July 2007 Soil Analytical Results for Volatile Organic Compounds
Agri-Tech and Yakima Steel Fabricators
Yakima, Washington
Farallon PN: 765-001

Test Pit Identification	Sampled By	Sample Grid	Sample Date	Approximate Sample Depth (feet bgs)	Analytical Results (milligrams per kilogram) [1]																		
					Benzene [2]	Ethylbenzene [2]	m,p-Xylene [2]	o-Xylene [2]	Toluene [2]	Naphthalene [2]	n-Butylbenzene [2]	Sec-Butylbenzene [2]	Isopropylbenzene [2]	Methylene Chloride [2]	4-Methyl-2-Pentanone [2]	n-Propylbenzene [2]	Acetone [2]	1,2,4-Trimethylbenzene [2]	1,3,5-Trimethylbenzene [2]	1,2-Dichloropropane [3]	Chloroform [2]	PCE [3]	1,1-DCE [2]
Pit B	Ecology	B	07/09/07	0.5	0.0015	0.011	0.048	0.0370	0.010	0.032	0.0071	0.0028	0.0033	0.0047	0.020	0.015	0.174	0.208	0.062	**<0.0032**	<0.0016	**0.101**	**<0.0016**
Pit H	Ecology	H	07/09/07	0.5	<0.0017	0.00019	0.00089	<0.00087	<0.00087	<0.0017	<0.0017	<0.0017	<0.00087	<0.002	<0.0035	<0.00087	0.057	<0.0017	<0.00087	<0.0017	0.00025	0.00038	**<0.00087**
TP-8	EPI	H	07/09/07	1.0	<0.010	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.050	<0.010	<0.010	**<0.010**	<0.010	<0.010	**<0.010**
Preliminary Screening Level					**NE**	**6.048** [5]	**9.144** [5]	**9.144** [5]	**7.271** [5]	**1,600** [4]	**NE**	**NE**	**NE**	**1,300** [4]	**NE**	**NE**	**3.21** [5]	**NE**	**NE**	**0.0031** [5]	**164** [5]	**0.053** [5]	**0.0005** [5]

NOTES:

Results in **bold** denote concentrations at or above the Preliminary Screening Level indicated.

< denotes analyte not detected at or above the reporting limit listed.

- denotes sample not analyzed.

[1] Analyzed by U.S. Environmental Protection Agency Method 8260.

[2] Compound was not retained as a COPC following completion of the June 2004 Revised Remedial Investigation Report.

[3] Identified and retained as a COPC in the June 2004 Revised Remedial Investigation Report.

[4] Washington State Department of Ecology Cleanup Levels and Risk Calculations under MTCA, Version 3.1 Standard Method B Formula Values for Soil (Unrestricted Land Use) - Direct Contact (Ingestion Only) and Leaching Pathway, https://fortress.wa.gov/ecy/clarc/Reporting/ChemicalQuery.aspx

[5] Preliminary screening level as identified in the June 2004 Revised Remedial Investigation Report. Screening level is based on MTCA Method B cleanup levels protective of groundwater.

1,1-DCE = 1,1-dichloroethene

bgs = below ground surface

COPC = constituent of potential concern

Ecology = Washington State Department of Ecology

EPI = Environmental Partners, Incorporated

MTCA = Washington State Model Toxics Control Act Cleanup Regulation

NE = not established

PCE = tetrachloroethene

APPENDIX A
SAMPLING AND ANALYSIS PLAN

FEASIBILITY STUDY WORK PLAN
Agri-Tech and Yakima Steel Fabricators
6 and 10½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

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SAMPLING AND ANALYSIS PLAN

APPENDIX A OF THE FEASIBILITY STUDY WORK PLAN

AGRI-TECH & YAKIMA STEEL FABRICATORS, INC.
6 AND 10½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

Submitted by:
Farallon Consulting, L.L.C.
975 5th Avenue Northwest
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Farallon PN: 765-001

For:
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Yakima, Washington

May 3, 2011

Prepared by:

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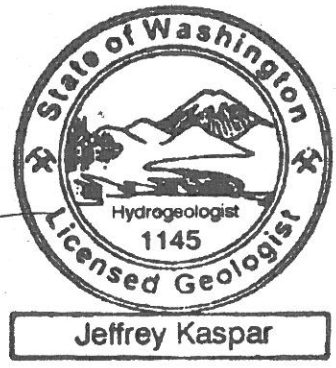

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Senior Project Manager

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FIGURES

Figure A-1 *Grid Map*
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ATTACHMENT

Attachment A Forms

1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this Sampling and Analysis Plan (SAP) as part of the Feasibility Study (FS) Work Plan for the Yakima Steel Fabricators, Inc. (YSF) and Agri-Tech, Inc. (Agri-Tech) facilities located at 6 and 10½ East Washington Avenue in Yakima, Washington (herein referred to as the Site). The SAP has been prepared in accordance with the Washington State Model Toxics Control Act Cleanup Regulation (MTCA), as established in Chapter 173-340 of the Washington Administrative Code. The scope of work has been developed to meet the requirements set forth under Agreed Order No. DE 6091 dated October 27, 2008 entered into by the Washington State Department of Ecology (Ecology) and YSF.

1.1 PURPOSE

The purpose of a SAP is to define the specific requirements for sample collection and analytical activities to ensure that they are conducted in accordance with technically acceptable protocols and that the results meet the data quality objectives. A SAP presents site-specific protocols pertaining to sampling equipment and procedures and sample handling and analysis. Sampling objectives, sample locations, and measurement frequencies also are described. The SAP further provides a basis for conducting field activities and a mechanism for complying with quality assurance requirements.

The specific purposes of this SAP are to:

- Provide the basis for conducting and documenting the field activities to address the data gaps described in Section 3 of the FS Work Plan;
- Describe the sample locations, sample quantities, analytical methods, and documentation protocols for the sampling program; and
- Describe the equipment, procedures, and methodology to be used for soil, groundwater, and sediment sample collection and analysis.

1.2 ORGANIZATION

The SAP includes a description of the performance and confirmation monitoring activities for soil and groundwater and is organized as follows:

- **Section 2—Soil Sampling and Analysis**: This section describes the sampling locations and frequency, sample identification, sample collection and handling procedures, and analytical procedures for the soil sampling activities. The quality assurance/quality control (QA/QC) procedures for the soil sampling activities are discussed in the Quality Assurance Project Plan (QAPP) (Appendix B of the FS Work Plan).
- **Section 3—Groundwater Sampling and Analysis**: This section describes the sampling locations and frequency, sample identification, sample collection and handling procedures, and analytical procedures for the groundwater monitoring and sampling component of the FS Work Plan. The QA/QC procedures for the groundwater monitoring and sampling are included in the QAPP (Appendix B of the FS Work Plan).

- **Section 4—Wetland Area Soil and Sediment Sampling:** This Section describes the sampling locations and frequency, sample identification, sample collection and handling procedures, bioassay testing, and physical/chemical analytical procedures that will be completed in the wetland area. The QA/QC procedures for the sampling are included in the QAPP (Appendix B of the FS Work Plan).
- **Section 5—Management of Investigation-Derived Waste:** This section summarizes the handling and disposal procedures for waste soil and wastewater generated during the sampling and decontamination activities.
- **Section 6—Field Documentation**: This section presents a summary of the field documentation for the sampling activities.

2.0 SOIL SAMPLING AND ANALYSIS

The supplemental soil sampling activities will address the two data gaps relating to the understanding of the distribution of constituents of potential concern (COPCs) at the Site. The first data gap involves assessment of concentrations of COPCs on the western portion of Area 3 of the Site that may remain following the cleanup action performed at the Bay Chemical site in 2008. The soil samples collected may be used as confirmation samples if concentrations of COPCs are below the preliminary cleanup levels that will be established during completion of the FS. The second data gap involves further assessment of the distribution of COPCs identified in soil samples collected in the central and eastern portions of Area 3 by Ecology and Environmental Partners, Inc. of Issaquah, Washington (EPI) in July 2007. The soil samples collected will be used to refine the understanding of the distribution of COPCs and evaluate whether cleanup is required. The following sections describe the soil sampling locations and the procedures to address these data gaps.

2.1 WESTERN PORTION OF AREA 3

Soil samples will be collected from test pits to be excavated proximate to the sampling locations completed by Ecology and/or EPI that contained concentrations of one or more COPCs exceeding the preliminary screening levels set forth in the *Revised Remedial Investigation Report, Agri-Tech and Yakima Steel Fabricators, 6 and 10 1/2 East Washington Avenue, Yakima, Washington* dated June 10, 2004, prepared by Farallon (Revised RI Report) or where the laboratory practical quantitation limit (PQL) was greater than the preliminary screening level (Figure A-1). This includes the areas proximate to test pits A/TP-1, B/TP-2, C/TP-3, and D/TP-4 (Figure A-1). Soil samples from the lateral and vertical limits of the Bay Chemical site excavation were analyzed for metals but no other COPCs. The COPCs detected during the July 2007 Ecology and EPI sampling event included tetrachloroethene (PCE) at test pit B/TP-2; alpha chlordane at test pit A/TP-1; and dieldrin at test pit D/TP-4. In addition, COPCs that were not detected above the laboratory PQL but where the laboratory PQL was not sufficient to meet the preliminary cleanup level included 1,2-dichloropropane and 1,1-dichlorethene at test pit B/TP-2; aldrin, dieldrin, and heptachlor epoxide at test pit A/TP-1; dieldrin at test pit C/TP-3; and aldrin at test pit D/TP-4.

Elevated concentrations of total petroleum hydrocarbons as oil-range organics (ORO) were detected at a depth of 6 inches below ground surface (bgs). However, a sample collected from approximately 26 inches bgs contained concentrations of ORO below the preliminary soil screening level of 2,000 milligrams per kilogram (mg/kg) established in the Revised RI Report. The soil in this area requires no further investigation for petroleum compounds. Additional characterization of the soil at and below the interface of the fill from the Bay Chemical site cleanup excavation and native soil will be performed to assess whether concentrations of COPCs other than metals remain in this portion of the Site.

A minimum of three test pits will be excavated within each sampling grid requiring further characterization. Soil samples from each test pit will be collected from the interface of the fill from the Bay Chemical site cleanup excavation and native soil, and from approximately 1 foot

below the interface. In areas where soil was not excavated during the Bay Chemical site cleanup action did not excavate soil, test pits will be excavated to a depth of up to 4 feet bgs. Soil samples will be collected and analyzed at a frequency as described in Section 2.2.

Soil within each test pit will be screened for evidence of contaminants. Farallon will note changes in color, stained soil, unusual odors, photoionization detector (PID) readings, and changes in soil types. These data will be used to identify soil samples for laboratory analysis. A minimum of one soil sample per test pit location in the Bay Chemical site cleanup area will be analyzed for organochlorine pesticides. Soil samples from sampling grid B will also be analyzed for volatile organic compounds. Additional details on the specific sampling protocols follow in Sections 2.3 through 2.5.

2.2 CENTRAL AND EASTERN PORTIONS OF AREA 3

Soil samples will be collected from the 100- by 100-foot sampling grid squares from which Ecology and/or EPI identified concentrations of COPCs exceeding the preliminary screening levels established in the Revised RI Report or where the laboratory PQLs were not sufficiently low to determine whether a COPC exceeds the preliminary screening level. This includes sampling grids G through N. The COPCs in these areas are primarily organochlorine pesticides.

Concentrations of total carcinogenic polycyclic aromatic hydrocarbons (cPAHs) above the MTCA Method A cleanup level of 0.1 mg/kg were detected in a near-surface soil sample collected by Ecology at an oil-stained area in sampling grid H. Concentrations of cPAHs are not expected to be extensive and will not be analyzed at all sampling locations unless evidence of oil staining is observed. The distribution of cPAHs typically is limited to the immediate area of oil staining. Farallon recommends that oil-stained areas be addressed during cleanup, if necessary, and that the focus of the sampling to be performed not include testing of oil-stained surficial soil associated with minor releases from forklifts and cranes used by YSF. Farallon understands that the current business owner has improved housekeeping practices on the southern portion of the Site and for equipment used, further reducing the likelihood of inclusion of cPAHs or petroleum hydrocarbons as constituents of concern during the cleanup action.

During the investigation of the oil-stained area at sampling grid H, Ecology and EPI also analyzed soil for the presence of volatile organic compounds (VOCs). The laboratory PQLs for the compounds 1,1-dichloroethene and 1,2-dichloropropane were greater than the preliminary screening levels. Neither of these compounds is associated with releases of motor oil. Due to the absence of a suspected source of these compounds, testing at sampling grid H will not include analysis of VOCs unless field observations and screening indicate that a source of VOCs other than surficial oil staining is present.

Concentrations of metals will be assessed to confirm that the Bay Chemical site cleanup action was sufficient and no further action is required. A single anomalous concentration of copper was detected at sampling grid M. The source and distribution of copper will be further assessed during the sampling program.

The organochlorine pesticides detected were also identified in the former Yakima Farmers Supply waste pit. The distribution of these pesticides appears random. An exception is sampling grid G that includes an area where YSF previously had accepted fill material believed to be clean fill. When tested, the fill contained detectable concentrations of 4,4-DDD; 4,4-DDE; and 4,4-DDT. Although the clean fill was removed by the party that provided it, confirmation sampling was not performed. The July 2007 sampling results at sampling grid G indicate that residual fill material likely is still present in this area. The sampling program will identify the distribution of this fill to facilitate cleanup. Soil sampling in sampling grids G through N will focus on assessing the presence or absence of organochlorine pesticides and their distribution to facilitate determination of an appropriate cleanup approach, if required.

A minimum of three test pits will be excavated within each sampling grid square requiring further characterization. An x-ray fluorescence spectrometer (XRF) unit will be used to screen discrete soil samples collected from the following depth intervals for metals:

- Zero to 6 inches bgs;
- Six to 12 inches bgs;
- Twelve to 24 inches bgs;
- Twenty-four to 36 inches bgs; and
- Thirty-six to 48 inches bgs.

Soil within each test pit will be screened for other evidence of contaminants. Farallon will note changes in color, stained soil, unusual odors, PID readings, and changes in soil types. These data will be used to identify soil samples for laboratory analysis. A minimum of two soil samples per test pit location will be analyzed for metals and organochlorine pesticides. Two soil samples per test pit from sampling grid H will also be analyzed for VOCs. Additional detail on the specific sampling protocols follows.

2.3 SOIL SAMPLE IDENTIFICATION

Each soil sample collected from the test pits will have a unique sample identifier. The number will include a prefix identifying the grid square "A" and the test pit number, the date, and the depth interval at which the sample was collected.

For example, a soil sample collected from Test Pit 1 in Grid Square A on December 15, 2010 at a depth interval of 5 to 5.5 feet bgs would be identified as ATP1-121510-5/5.5. The sample identification will be placed on the sample label, the Field Report form, and the Chain of Custody form.

2.4 SOIL SAMPLE COLLECTION AND HANDLING PROCEDURES

Test pits will be excavated, and soil samples will be collected using a backhoe or a track hoe. Health and safety procedures for soil sampling and collection are provided in the Health and

Safety Plan (HASP) which is included as Appendix C of the FS Work Plan. The samples will be handled in accordance with the procedures described below:

- Soil samples will be collected directly from the sidewalls or bottom of each test pit using a plunger-type soil sampler at depths less than 48 inches bgs in accordance with U.S. Environmental Protection Agency (EPA) Method 5035A protocols. Soil samples will be collected from the bucket of the backhoe or track hoe using either stainless steel sampling equipment or dedicated plastic sample equipment once sampling depths exceed 48 inches bgs. Non-dedicated sampling equipment will be decontaminated between uses, as appropriate.
- Information logged during test pit excavation activities will include at a minimum: global positioning system coordinates, sample depth, Unified Soil Classification System descriptions, soil moisture and occurrence of groundwater, physical indications of contamination such as odors or staining, and field-screening results using a PID or XRF unit.
- The sample will be transferred immediately into a laboratory-supplied sample container, with care taken to minimize disturbance. Care will be taken not to handle the seal or lid of the container when the sample is placed into the container. Containers will be filled to eliminate headspace, and the seals/lids will be secured. Custody seals will be placed on each container. Soil samples collected for analysis of metals and organochlorine pesticides will be placed in a 4-ounce glass jar with a Teflon-lined cap and no preservative. Soil samples collected for analysis of VOCs will be collected using EPA Method 5035A protocols.
- The sample container will be labeled with the media, date, time sampled, sample identification and number, project name, project number, and sampler's initials.
- The sample will be logged on a Chain of Custody form and placed into a cooler at approximately 4 degrees Celsius for transport to the laboratory under chain-of-custody protocols within 24 hours of sample collection.
- Waste soil will be placed back into each test pit following sample collection.
- Disposable sampling, health and safety supplies, and equipment will be discarded in an appropriate waste dumpster at the Site.
- The test pit locations will be plotted on a scaled site map using the global positioning system coordinates. A measuring tape or other measuring device also will be used to estimate test pit locations. Both methods will be compared, and the test pits will be plotted accordingly.

2.5 ANALYTICAL PROCEDURES

Select soil samples from the following sampling grids will be analyzed for the following COPCs:

- Organochlorine pesticides from sampling grids A, C, D, and G through N by EPA Method 608/8081.

- Antimony, arsenic, cadmium, copper, lead, manganese, mercury, and zinc from sampling grids A through E, H, and M by EPA Method 6000/7000 series modified.
- Soil samples found by laboratory analysis to contain greater than 1,000 mg/kg lead will be submitted for analysis following extraction using the Toxicity Characteristic Leaching Procedure (TCLP), EPA Method 131. This determination will be based on the results of the total metals analysis.
- VOCs from sampling grids B and H by EPA Method 8260B.

Farallon will provide the laboratory with the PQLs that are necessary to evaluate whether concentrations of COPCs are present at or above the preliminary screening levels.

3.0 GROUNDWATER SAMPLING AND ANALYSIS

The supplemental groundwater sampling and monitoring activities will be conducted to establish current groundwater conditions and to assess whether monitored natural attenuation may be a potential remedial alternative for groundwater at the former Yakima Farmer Supply waste pit area. Health and safety procedures for the groundwater sampling and monitoring activities are provided in the HASP which is included as Appendix C of the FS Work Plan. The following sections present the procedures that will be followed in conducting the sampling and monitoring activities.

3.1 GROUNDWATER SAMPLE LOCATIONS

The groundwater sampling and analysis program will include monitoring wells MW-1 through MW-4, MW-6, MW-7A, MW-7B, WDOE-6, and monitoring wells MW-10 and MW-11 (Figure A-2). Monitoring wells MW-10 and MW-11 were installed on the Site by BNSF as replacements for monitoring well MW-5. Monitoring well MW-5 was decommissioned during the cleanup activities at the Bay Chemical site (Figure A-2).

3.2 GROUNDWATER SAMPLE IDENTIFICATION

Groundwater samples collected from monitoring wells at the Site will be assigned a unique sample number. The number will include the well identification (e.g., MW2) and the sample date (e.g., 060110).

For example, a groundwater sample collected from groundwater monitoring well MW-2 sampled on December 15, 2010 would be numbered MW2-121510. The sample identification will be placed on the sample label, the Field Report form, and the Chain of Custody form. Groundwater samples will be collected and handled in accordance with the procedures described below.

3.3 GROUNDWATER SAMPLE COLLECTION AND HANDLING PROCEDURES

Groundwater samples will be collected and handled in accordance with the procedures described below:

- The locking well cap will be removed from each monitoring well, and the groundwater level will be allowed to equilibrate to atmospheric pressure.
- The depth-to-groundwater will be measured from the surveyed location at each monitoring well casing to the nearest 0.01 foot using an electronic water-level measuring device. Groundwater level measurements at the on-Site monitoring wells will be taken within a 2-hour period. The depth to the monitoring well bottom also will be measured to evaluate siltation of the monitoring wells. Reusable equipment will be decontaminated between uses.
- Each monitoring well will be purged at a low-flow rate using a pumping device (centrifugal, bladder, or peristaltic) with the intake placed approximately 2 to 3 feet below the water table. Temperature, pH, conductivity, and dissolved oxygen will be

monitored during purging to determine when stabilization of these parameters occurs. Oxidation-reduction potential also will be measured as a component of the monitored natural attenuation evaluation. These water quality measurements will be taken using a flow-through cell during purging of the monitoring wells.

- Groundwater samples will be collected following stabilization of temperature, pH, conductivity, and dissolved oxygen. The samples will be collected directly from the low-flow pump outlet. If the monitoring well is completely dewatered during purging, samples will be collected after sufficient recharge has occurred to allow filling of the sample containers.
- Water samples will be transferred immediately into laboratory-supplied sample containers, with care taken to minimize turbulence. Care will be taken to not handle the seal or lid of the container when the sample is placed into the container. The containers will be filled to eliminate headspace, and the seal/lid will be secured.
- The sample container will be labeled with the medium, date, time sampled, well identification and number, project name, project number, sampler's initials, and preservative(s), if any.
- Information will be logged on a Chain of Custody form, and the sample will be placed into a cooler maintained at approximately 4 degrees Celsius for transport to the laboratory.
- Chain-of-custody protocols will be maintained during sample transport and submittal to the laboratory.
- One QA/QC sample (a rinsate blank) will be collected for this sampling event. A trip blank also will be included with the samples collected and submitted for analysis if necessary.
- Purge water will be placed into a labeled container on the Site pending receipt of waste profiling results.
- Disposable sampling and health and safety supplies and equipment will be disposed of in an appropriate waste dumpster at the Site.
- Well caps and monuments will be secured following sampling. Damaged or defective well caps or monuments will be noted and scheduled for replacement, if necessary.

A Well Purging and Sampling Data form will be used to record the depth to groundwater, well purging information, and other pertinent hydrologic measurements and supplementary information collected during groundwater performance and confirmation sampling at each monitoring well. The form will be completed by the Field Scientist at the time of sample collection. These forms will be maintained in the project file. A copy of the Well Purging and Sampling Data form is included in Attachment A.

3.4 ANALYTICAL PROCEDURES

Analytical testing of groundwater samples will include laboratory analysis of groundwater samples for the COPCs, other general water quality parameters, and field measurements taken at the time of sample collection. Groundwater samples will be submitted to an Ecology-certified analytical laboratory for analysis on a standard 5- to 10-working-day turnaround or within the applicable holding time for the requested analysis. Groundwater samples will be submitted to the laboratory within 24 hours of collection.

Groundwater samples from monitoring wells WDOE-6, MW-1 through MW-4, MW-6, MW-7A, MW-7B, MW-10, and MW-11 will be analyzed for:

- VOCs by EPA Method 8260B (two 40-milliliter containers with hydrochloric acid preservative);
- Organochlorine pesticides by EPA Method 608/8081 (one 1-liter amber glass container with no preservative); and
- Total and dissolved metals (antimony, arsenic, cadmium, copper, lead, manganese, mercury, and zinc) by EPA Method 6000/7000 series modified (two 500-milliliter plastic containers with nitric acid preservative; dissolved metals samples will be filtered in the field).

In addition to the analysis for the COPCs, groundwater samples collected from the monitoring wells will include field measurement of the following parameters:

- Temperature;
- pH;
- Conductivity;
- Dissolved oxygen; and
- Oxidation-reduction potential.

Groundwater samples collected from monitoring wells MW-1, MW-2, MW-6, MW-7A, and WDOE-6 will also be analyzed for the following water quality parameters:

- Alkalinity by EPA Method 310.1 (500-milliliter plastic container with no preservative);
- Sulfate by EPA Method 300.0 (500-milliliter plastic container with no preservative);
- Nitrate by EPA Method 300.0 (500-milliliter plastic container with sulfuric acid preservative);
- Total organic carbon by EPA Method 415.1 (500-milliliter plastic container with sulfuric acid preservative);
- Chloride by EPA Method 300.0 (500-milliliter plastic container with no preservative);
- Ferrous iron measured directly in the field using a Hach test kit; and

- Methane, ethane, and ethene by gas chromatograph equipped with a flame-ionization detector (40-milliliter container with hydrochloric acid preservative).

These supplementary measurements and analytical results will be used to assess geochemistry in and outside the waste pit, assess the dispersion characteristics of the dissolved-phase plume(s), and assess whether monitored natural attenuation may be a potential remedial alternative for the waste pit area.

4.0 WETLAND AREA SOIL AND SEDIMENT SAMPLING

Assessment of soil and sediment quality within the boundaries of the wetland area located near the southern boundary of the YSF property has not been conducted during the Remedial Investigation. The wetland area includes both areas that are seasonally dry during periods when regional irrigation is not occurring and areas that are saturated/inundated year round. For the purpose of the FS Work Plan the materials sampled from the portion of the wetland that is saturated year-round will be referred to as sediment and the materials sampled from the areas that are seasonally exposed will be referred to as soil. Farallon will conduct an assessment of sediment and soil quality in the wetland area to evaluate whether cleanup of this area of the Site is necessary. The assessment will include a combination of bioassay testing, physical analysis, and chemical analysis. The following sections present the procedures that will be followed in conducting the soil and sediment sampling activities.

4.1 SOIL AND SEDIMENT SAMPLE LOCATIONS

Soil and sediment samples from the wetland area will be collected at six locations within the wetland area. Three soil samples will be collected in areas that are seasonally exposed during periods when regional irrigation is not occurring and three sediment samples will be collected in areas that are saturated year round within the pond. The locations will be selected in the field with the concurrence of Ecology and may include areas from grid squares E, D, F, G, O, and/or P (Figure A-1). Soil samples will be collected at two depth intervals including 0 to 4 inches bgs and 1 to 3 feet bgs. Sediment samples will be collected from a single depth interval of 0 to 4 inches bgs.

4.2 SAMPLE IDENTIFICATION

Each soil and sediment sample collected from the wetland area will have a unique sample identifier. The number will include a prefix identifying the grid square, the sample identifier "WetSoil," or "WetSed" and the date the sample was collected.

For example, a sediment sample collected from Grid Square E on December 15, 2011 would be identified as E-WetSed-121511. The sample identification will be placed on the sample label, the Field Report form, and the Chain of Custody form.

4.3 SOIL AND SEDIMENT SAMPLE COLLECTION AND HANDLING PROCEDURES

Soil samples within the wetland area will be collected using a backhoe or trackhoe and will follow the same procedure described in Section 2.4. Sediment samples within the wetland area will be collected using a hand-held drive sampler. The general procedure will be to use a hand-held drive sampler to collect the sample in a 2-inch-diameter brass liner. Sediment samples will be transferred to an appropriate laboratory-supplied container.

Sediments and soil samples from within the wetland area will be described in accordance with the USCS, and notations of unusual odor, discoloration, sheen, or other evidence of potential

contamination will be recorded. Split samples will be collected at each sampling location and depth interval for future chemical analysis if necessary.

4.4 ANALYTICAL PROCEDURES

The soil samples will be submitted for laboratory analysis of the following COPCs:

- Organochlorine pesticides by EPA Method 8081A;
- Antimony, arsenic, cadmium, copper, lead, manganese, mercury, and zinc by EPA Method 6000/7000 series modified;
- VOCs by EPA Method 8260B; and
- Petroleum hydrocarbons by Northwest Method NWTPH-HCID using a silica gel cleanup. If gasoline, diesel, or oil-range organics are identified, they will be quantified using the appropriate Northwest petroleum hydrocarbon analytical methodology.

The sediment samples will be submitted for the following laboratory bioassay tests and physical analysis:

- Amphipod mortality (*Hyalella azteca*);
- Midge larvae mortality (*Chironomus tentans*);
- Midge larvae growth (*Chironomus tentans*);
- Microtox®100% porewater extract (*Virio fischeri*);
- Grain size;
- Total solids;
- Total volatile solids; and
- Total organic carbon.

If necessary, archived sediment samples will be submitted for laboratory analysis of the following COPCs:

- Organochlorine pesticides by EPA Method 8081A;
- Antimony, arsenic, cadmium, copper, lead, manganese, and zinc by EPA Method 6000/7000 series modified;
- VOCs by EPA Method 8260B; and
- Petroleum hydrocarbons by Northwest Method NWTPH-HCID using a silica gel cleanup. If gasoline, diesel, or oil-range organics are identified, they will be quantified using the appropriate Northwest petroleum hydrocarbon analytical methodology.

5.0 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

Wastewater will be generated by the groundwater sampling and equipment decontamination activities. Because the wastewater and other products generated during the supplemental sampling and monitoring activities may be contaminated, they will be containerized and disposed of properly upon receipt of analytical results.

Wastewater will be segregated as suspected clean and contaminated and stored in 55-gallon drums on the Site. No wastewater will remain on the Site longer than 90 days after generation. Wastewater generated during the sampling and monitoring activities will be documented on a Waste Inventory form.

Waste profiles will be developed using groundwater analytical data collected during the monitoring activities. An appropriate disposal option will be selected based on the analytical data. Waste profiles and manifests will be provided to the generator for approval prior to transport of the materials off the Site. The waste profiles will be provided to the selected treatment, storage, and disposal facility. Wastewater will be removed by a licensed transporter using labeled U.S. Department of Transportation-approved containers. Documentation for wastewater will be maintained in the project file.

Disposable personal protective clothing (e.g., Tyvek suits, rubber gloves, boot covers) and disposable sampling devices (e.g., plastic scoops, bailers) will be cleaned, placed into plastic garbage bags, and disposed of as nonhazardous waste.

6.0 FIELD DOCUMENTATION

Documentation of field activities will be included on Field Report forms, Log of Test Pit forms, Well Purging and Sampling Data forms, Waste Inventory Tracking Sheets, sample and waste material labels, and Chain of Custody forms. Documentation generated during the field program will be retained in the project file and included in the reports prepared, as appropriate.

6.1 FIELD REPORT FORM

Field personnel will be required to keep a daily log of field activities on a Field Report form. Field notes will be as descriptive and inclusive as possible so as to allow an independent party to reconstruct the sampling situation from the recorded information. Language will be objective, factual, and free of inappropriate terminology. A summary of each day's events will be completed on a Field Report form. At a minimum, field documentation will include the date, job number, project identification and location, weather conditions, sample collection data, personnel present and their responsibilities, field equipment used, and any activities performed in a manner other than as specified in the SAP or the FS Work Plan. In addition, if other forms or documents are completed or used (e.g., well-head survey, maps), they will be cited in and attached to the Field Report form. Field personnel will sign the Field Report form. A copy of the Field Report form is provided in Attachment A.

6.2 LOG OF TEST PIT FORM

A Log of Test Pit form will be prepared by the Field Scientist for each test pit excavated during soil sampling activities. The log will include hydrologic conditions, lithologic descriptions using the Unified Soil Classification System, and information on the potential presence of contamination. A copy of the Log of Test Pit form is provided in Attachment A.

6.3 WELL PURGING AND SAMPLING DATA FORM

A Well Purging and Sampling Data form will be used to record the depth to groundwater, well purging information, and other pertinent hydrologic measurements and supplementary information collected during groundwater performance and confirmation sampling at each monitoring well. The form will be completed by the Field Scientist at the time of sample collection. These forms will be maintained in the project file. A copy of the Well Purging and Sampling Data form is included in Attachment A.

6.4 WASTE INVENTORY TRACKING SHEET

A Waste Inventory Tracking Sheet will be used to document and track wastes generated during the supplemental sampling and monitoring activities. This sheet will include information on the type and origin of waste, sample container, date generated, date removed from the Site, transporter, and disposal location. A copy of the Waste Inventory Tracking Sheet is included in Attachment A.

6.5 SAMPLE LABEL

Sample labels will be completed in indelible ink and affixed to the corresponding sample container immediately prior to sample collection. The label will indicate the medium, date, time sampled, sample identification and number, project name, project number, sampler's initials, and analyte preservative(s), if any.

6.6 WASTE MATERIAL LABEL

Waste material labels will be completed in indelible ink and affixed to the corresponding waste container immediately upon filling. The label will include the job number and name, the address of the property where the waste was generated, contents of the container, operation, date, consultant's name and telephone number, and sampler's initials.

6.7 CHAIN-OF-CUSTODY FORM

The protocols to be followed whenever samples are collected, transferred, stored, analyzed, or destroyed have been established to create an accurate written record that traces possession and handling of a sample from the moment of its collection through analysis and reporting of analytical values. This written record, the Chain of Custody form, will be completed by the field sampling team at the time a sample is obtained.

Samples submitted to the analytical laboratory are accompanied by the Chain of Custody form. This form is checked for accuracy and completeness, signed, and dated by the laboratory sample custodian accepting the sample. At the laboratory, each sample is assigned a unique sequential laboratory identification number that is stamped or written on the Chain of Custody form.

Samples are held in the Sample Control Room in accordance with internal chain-of-custody protocols under appropriate storage conditions (e.g., ambient, refrigeration, frozen). The laboratory Project Manager assigned to a particular client is responsible for tracking the status of the samples throughout the laboratory. Samples signed out of the Sample Control Room are recorded in a sample control logbook by the analyst who will prepare the samples for analysis.

The Chain of Custody form includes the site name, sample identification number (assigned by the sampler in the field), sample date, sample location, and type of analysis required (if any). Whenever a sample is transferred from one party to another, both parties sign the Chain of Custody form and record the date and time of the transfer. Adherence to these protocols ensures sample integrity from collection through analysis.

FIGURES

SAMPLING AND ANALYSIS PLAN
Agri-Tech & Yakima Steel Fabricators
6 and 10½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

LEGEND

- APPROXIMATE BOUNDARY OF FORMER YAKIMA FARMERS SUPPLY WASTE PIT
- **AREA 1** FORMER YAKIMA FARMERS SUPPLY WASTE PIT LOCATION
- **AREA 2** FORMER YAKIMA FARMER SUPPLY LIME AND SULFUR STOCKPILE LOCATIONS
- **AREA 3** POTENTIAL PETROLEUM RELEASE AREA
- SITE BOUNDARY
- TAX PARCEL BOUNDARY
- FENCE
- RAILROAD
- APPROXIMATE EXTENT OF BAY CHEMICAL CLEANUP AREA

- PIT B — WASHINGTON STATE DEPARTMENT OF ECOLOGY (ECOLOGY) TEST PIT (JULY 2007)
- TP–2 — ENVIRONMENTAL PARTNERS, INC. TEST PIT (2007)
- M — ECOLOGY SAMPLING GRID DESIGNATION
- GRID SQUARES REQUIRING FURTHER CHARACTERIZATION

NOTE:

1. LOCATIONS OF ALL TEST PITS BY ECOLOGY ARE APPROXIMATED. COORDINATES PROVIDED BY ECOLOGY DID NOT PLOT IN CORRESPONDING SAMPLING GRID IN ALL CASES. FARALLON SHIFTED TEST PIT LOCATIONS TO THE APPROPRIATE SAMPLING GRID AND ESTIMATED THE TEST PIT LOCATION ON BEST AVAILABLE INFORMATION.
2. FIGURE INCLUDES INFORMATION PRESENTED IN COLOR. PHOTOCOPYING MAY NOT BE APPROPRIATE.

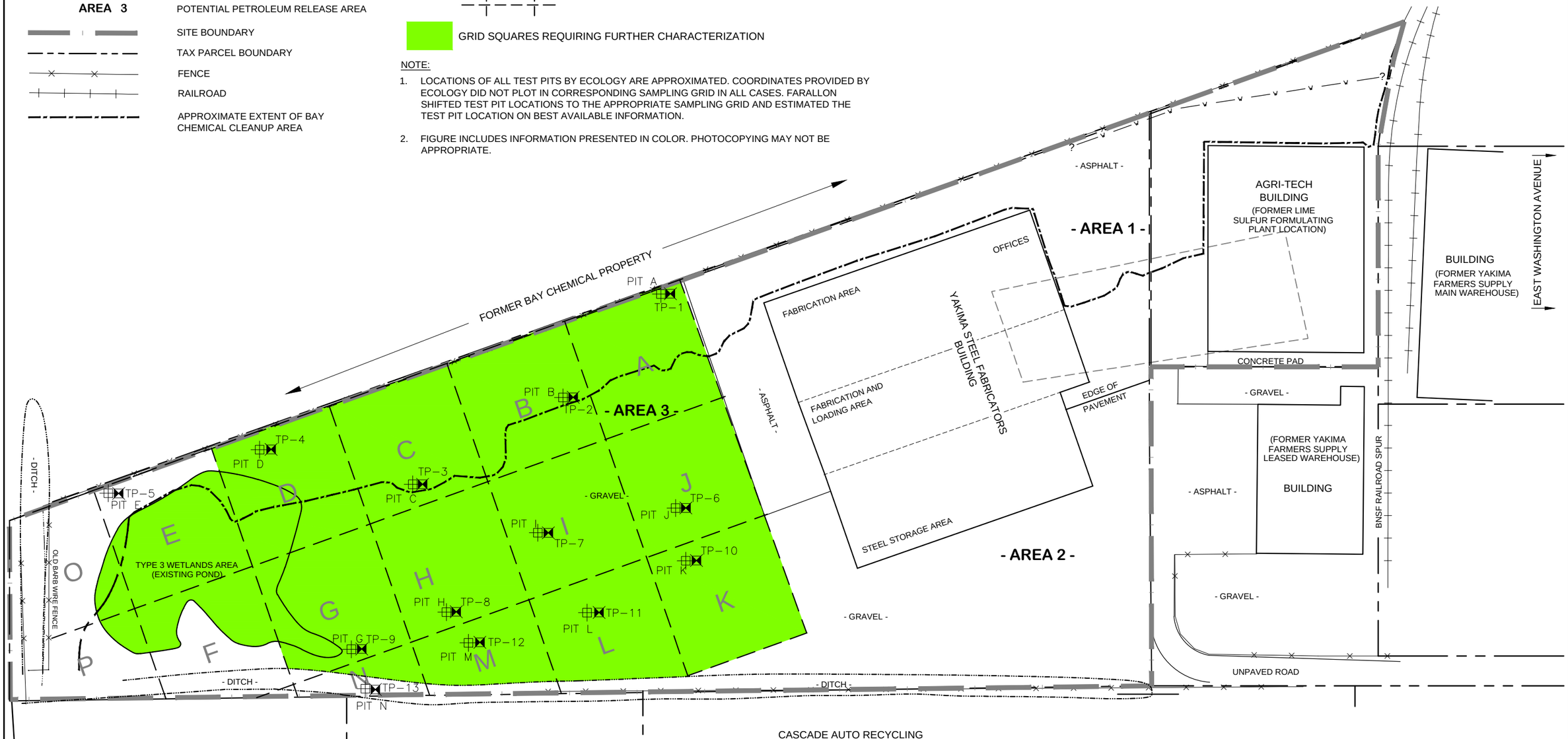

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FIGURE A-1

GRID MAP
YSF/AGRI-TECH FS WORK PLAN
6 & 10 1/2 EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

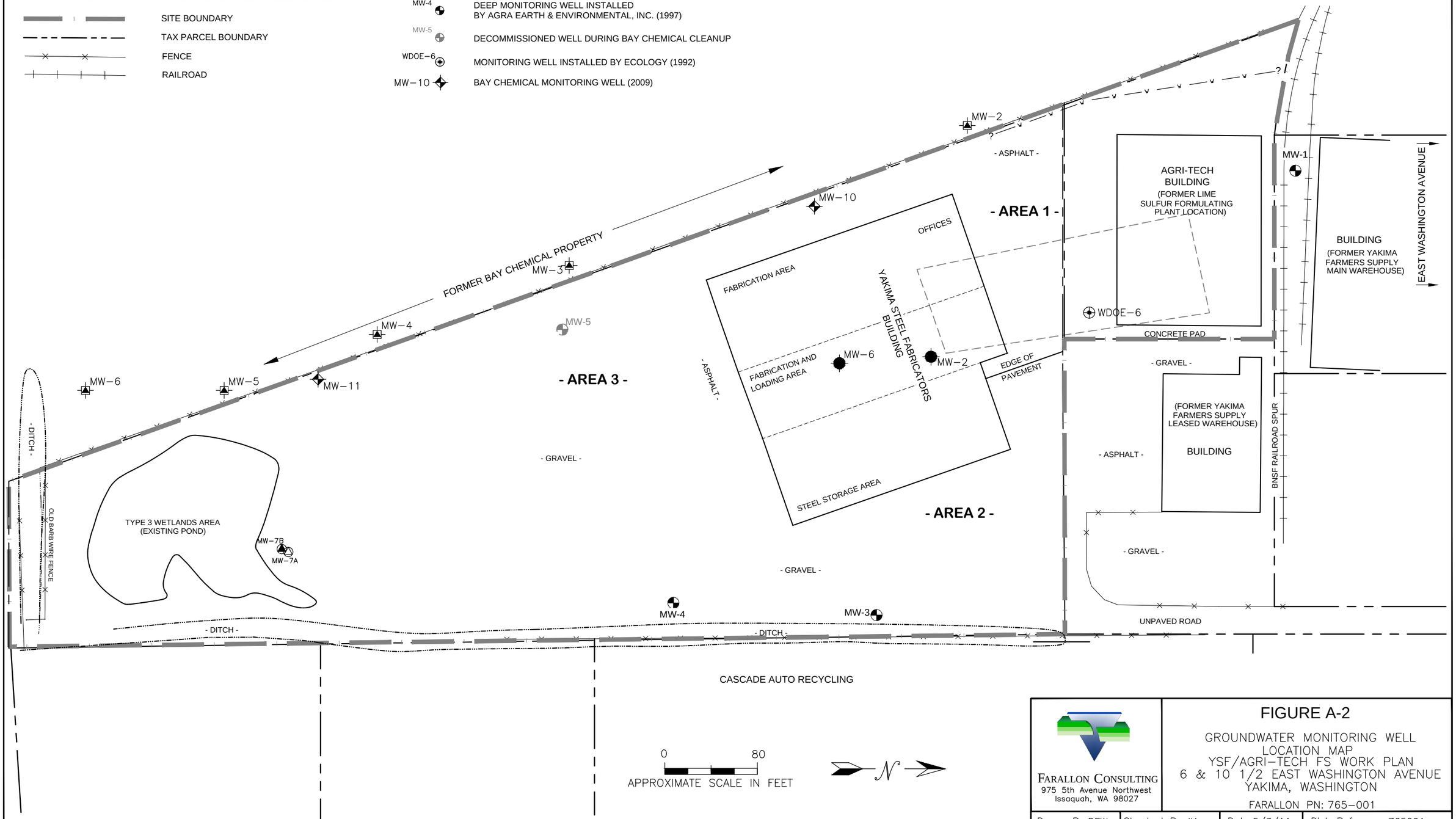
FARALLON PN: 765-001

Drawn By: DEW	Checked By: JK	Date: 5/3/11	Disk Reference: 765001a

LEGEND

- APPROXIMATE BOUNDARY OF FORMER YAKIMA FARMERS SUPPLY WASTE PIT
- **AREA 1** FORMER YAKIMA FARMERS SUPPLY WASTE PIT LOCATION
- **AREA 2** FORMER YAKIMA FARMER SUPPLY LIME AND SULFUR STOCKPILE LOCATIONS
- **AREA 3** POTENTIAL PETROLEUM RELEASE AREA
- SITE BOUNDARY
- TAX PARCEL BOUNDARY
- FENCE
- RAILROAD

- MW-6 SHALLOW BAY CHEMICAL SITE MONITORING WELL INSTALLED BY PACIFIC GROUNDWATER GROUP (1994)
- MW-7A SHALLOW MONITORING WELL INSTALLED BY FARALLON (2002)
- MW-7B DEEP MONITORING WELL INSTALLED BY FARALLON
- MW-2 SHALLOW MONITORING WELL INSTALLED BY AGRA EARTH & ENVIRONMENTAL, INC. (1997)
- MW-4 DEEP MONITORING WELL INSTALLED BY AGRA EARTH & ENVIRONMENTAL, INC. (1997)
- MW-5 DECOMMISSIONED WELL DURING BAY CHEMICAL CLEANUP
- WDOE-6 MONITORING WELL INSTALLED BY ECOLOGY (1992)
- MW-10 BAY CHEMICAL MONITORING WELL (2009)



0 80
APPROXIMATE SCALE IN FEET

N

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE A-2

GROUNDWATER MONITORING WELL LOCATION MAP
YSF/AGRI-TECH FS WORK PLAN
6 & 10 1/2 EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765-001

Drawn By: DEW	Checked By: JK	Date: 5/3/11	Disk Reference: 765001a

ATTACHMENT A
FORMS

SAMPLING AND ANALYSIS PLAN
Agri-Tech & Yakima Steel Fabricators
6 and 10½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

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consulting

FIELD REPORT

Page ___ of ___

Date: _____ **Project #:** _____ **Task #:** _____

Project: _____ **Site Address:** _____

Client: _____ **Contractor:** _____

Weather: _____ **Temp:** _____

Equipment Used: _____

Hours: _____ _____ **Mileage:** _____ **Project Manager:** _____

Contractor *Staff*

Prepared By: _____ **Reviewed By:** _____

Comments:

FARALLON
consulting

FIELD REPORT (continued)

Page ___ of ___

Project: _____ **Date:** _____ **Project #:** _____ **Task #:**_____

FARALLON CONSULTING
320 3rd Avenue NE
Issaquah, WA 98027

Log of Test Pit:

Client:
Project:
Location:

Farallon PN:

Logged By:

Date/Time Started:
Date/Time Completed:
Equipment:
Excavating Company:
Excavating Foreman:
Excavating Method:

Sampler Type:
Depth of Water (ft bgs):
Total Excavation Depth (ft bgs):

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	PID (ppm)	Sample ID	Sample Analyzed
0						
5						
10						
15						

LOW FLOW WELL PURGING AND SAMPLING DATA

		WELL NO:
DATE:	PROJECT NAME:	PROJECT NO:
WEATHER CONDITIONS:		
WELL DIAMETER (IN.) ☐ 1 ☐ 2 ☐ 4 ☐ 6 ☐ OTHER		
SAMPLE TYPE: ☐ GROUNDWATER ☐ WASTEWATER ☐ SURFACE WATER ☐ OTHER		
WELL DEPTH (TOC) FT.	DEPTH TO WATER BEFORE PURGING (TOC) FT.	
LENGTH OF WATER FT.	CALCULATED ONE WELL VOLUME[1]: GAL.	
DEPTH OF SAMPLE POINT FT.	ESTIMATED VOLUME PURGED GAL.	
EQUIP. DECON. ☐ ALCONOX WASH ☐ LIQUINOX WASH ☐ DIST/DEION 1 RINSE ☐ DIST/DEION 2 RINSE ☐ OTHER		
CONTAINER PRESERVATION: ☐ LAB PRESERVED ☐ FIELD PRESERVED		
WATER ANALYZER:	PUMP TYPE:	TUBING:

ACTUAL TIME (min)	FLOW RATE (ml/min)	DEPTH TO WATER (feet)	TEMP ☐ °F ☐ °C	SPECIFIC CONDUCT.	pH	DISS. OXYGEN (mg/l)	TURBIDITY (NTU)	ORP (mV)	REMARKS
			(+/- 0.1°)	(+/- 3%)	(+/- 0.1)	(+/- 10%)	(NA)	(+/- 10 mV)	(EVIDENT ODOR, COLOR, PID)
	INITIAL		--	--	--	--	--	--	

DEPTH TO WATER AFTER PURGING (TOC) FT.	SAMPLE FILTERED ☐ YES ☐ NO SIZE _____
NOTES:	SAMPLE TIME: ID#
	DUPLICATE ☐ TIME: ID#:
	EQUIP. BLANK: ☐ TIME: ID#:
	PREPARED BY:

[1] A 1 FOOT LENGTH OF WATER = 0.05 GAL IN 1" DIA. PIPE 0.17 GAL IN 2" DIA PIPE 0.65 GAL IN 4" DIA PIPE 1.5 GAL IN 6" DIA PIPE

DRUM INVENTORY

Date: _____

Site Name/Location: _____ Farallon PN: _____ Field Staff: _____

# of Soil Drums	How Full	**# of Decon Water Drums**	How Full	**# of Groundwater Drums**	How Full
Total:		**Total:**		**Total:**	

Location of Drums (sketch or describe):	**For PM**	Date Removed:
	Disposal Location:	
	Transporter:	

APPENDIX B
QUALITY ASSURANCE PROJECT PLAN

FEASIBILITY STUDY WORK PLAN
Agri-Tech and Yakima Steel Fabricators
6 and 10½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

FARALLON consulting

975 5th Avenue Northwest, Issaquah, Washington 98027
Tel: (425) 295-0800 Fax: (425) 295-0850
www.farallonconsulting.com

QUALITY ASSURANCE PROJECT PLAN

APPENDIX B OF THE FEASIBILITY STUDY WORK PLAN

AGRI-TECH & YAKIMA STEEL FABRICATORS, INC.
6 AND 10½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

Submitted by:
Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027

Farallon PN: 765-001

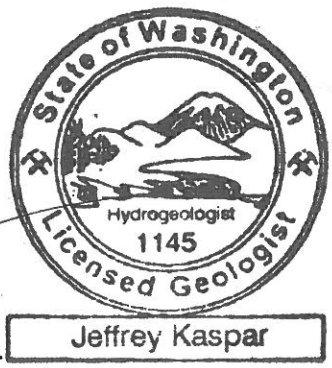
For:
Yakima Steel Fabricators, Inc.
6 East Washington Avenue
Yakima, Washington

May 3, 2011

Prepared by:

Brett T. Carp
Environmental Scientist

Reviewed by:



Jeffrey Kaspar, L.G., L.H.G.
Senior Project Manager

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1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this Quality Assurance Project Plan (QAPP) on behalf of Yakima Steel Fabricators, Inc. (YSF) and Agri-Tech, Inc. (Agri-Tech) for the YSF and Agri-Tech facilities located at 6 and 10½ East Washington Avenue in Yakima, Washington (herein referred to as the Site). This QAPP is part of the Feasibility Study Work Plan (FS Work Plan) and has been developed to provide specific requirements for quality assurance/quality control (QA/QC) procedures during pending investigation activities at the Site. The overall objective of the Feasibility Study (FS) for the Site is to develop and evaluate technically feasible cleanup alternatives to enable selection of a cleanup action in accordance with Section 360 of Chapter 173-340 of the Washington Administrative Code (WAC 173-340-360).

The FS is being conducted to meet the requirements of Agreed Order No. DE 6091 (Agreed Order) entered into by the Washington State Department of Ecology (Ecology) and YSF with an effective date of October 27, 2008 pursuant to the authority of the Washington State Model Toxics Control Act, as established in Section 050(1) of Chapter 70.105D of the Revised Code of Washington. This QAPP has been prepared in accordance with the Washington State Model Toxics Control Act Cleanup Regulation (MTCA), as established in WAC 173-340-350. As stated in Ecology's *Guidelines for Preparation of Quality Assurance Project Plans for Environmental Studies* (Ecology Publication No. 01-03-003, February 2001) the purpose of this QAPP is to:

- Assist the project manager and project team to focus on the factors affecting data quality during the planning stage of the project;
- Facilitate communication among field, laboratory, and management staff as the project progresses;
- Document the planning, implementation, and assessment procedures for QA/QC activities for the cleanup action;
- Ensure that the data quality objectives (DQOs) are achieved; and
- Provide a record of the project to facilitate final report preparation.

The DQOs for the project include both qualitative and quantitative objectives, which define the appropriate type of data, and specify the tolerable levels of potential decision errors that will be used as a basis for establishing the quality and quantity of data needed to support the cleanup action. To ensure that the DQOs are achieved, this QAPP details aspects of sample collection and analysis including analytical methods, QA/QC procedures, and data quality reviews. This QAPP describes both quantitative and qualitative measures of data to ensure that the DQOs are achieved.

1.1 SITE DESCRIPTION AND BACKGROUND

A summary of the Site and Site historical operations and previous environmental investigations conducted at the Site by Farallon and others are presented in Section 2 of the FS Work Plan. The

results of the remedial investigation conducted at the Site are summarized in the Revised Remedial Investigation Report dated June 10, 2004, prepared by Farallon (Revised RI Report).

The Revised RI Report documents that concentrations of hazardous substances exceeding the preliminary screening levels established for the Site were detected in soil and groundwater. The preliminary screening levels for the constituents of potential concern (COPCs) identified in the Revised RI Report were established as MTCA Method B soil cleanup levels protective of a potable groundwater source (WAC 173-340-747).

1.2 PROJECT OBJECTIVES

The purpose of the work described in this FS Work Plan is to provide the framework for developing and evaluating appropriate cleanup alternatives for use in selecting a cleanup action for the Site. As mandated by Ecology in the Agreed Order, the FS Work Plan also includes an additional remedial investigation component. The purpose of the additional site investigation work is to address data gaps pertaining to the distribution of COPCs at Area 3 of the YSF property as discussed in Section 3 of the FS Work Plan. In addition to addressing the data gaps identified by Ecology, Farallon will perform groundwater monitoring and sampling to evaluate current groundwater conditions and facilitate evaluation of potential technically feasible remedial alternatives for groundwater.

2.0 PROJECT ORGANIZATION

The project organization for completion of the FS, including identification of key personnel and their responsibilities, is described below.

The FS will be conducted on behalf of YSF and Agri-Tech. Farallon has been contracted by YSF and Agri-Tech to plan and execute the FS. The project contact for YSF is:

Mr. John Gehlsen
6 East Washington Avenue
Yakima, Washington 98101
Telephone: (509) 575-1570
Fax: (509) 453-3697

The Project Manager and primary contact for Farallon is Mr. Jeffrey Kasper, L.G., L.H.G., Senior Project Manager. The QA/QC Officer is Mr. Brett T. Carp, Project Scientist. The technical advisor for the cleanup action is Mr. Clifford T. Schmitt, L.G., L.H.G., Principal Hydrogeologist. The document control clerk is Ms. Beth Roberts, Office Administrator. The contact information for Farallon is:

Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027
Telephone: (425) 295-0800
Fax: (425) 295-0850

Ecology has jurisdiction over the FS and the work will be conducted under the Agreed Order. The Project Manager for Ecology is:

Ms. Brianne Plath
Washington State Department of Ecology
Central Regional Office
15 West Yakima Avenue, Suite 200
Yakima, Washington 98902-3452
Telephone: (509) 454-7835
Fax: (509) 575-2809

2.1 RESPONSIBILITIES OF KEY PERSONNEL

The responsibilities of the key personnel involved in the FS are described in the sections below.

2.1.1 Project Manager

The Project Manager has overall responsibility for developing the QAPP, monitoring the quality of the technical and managerial aspects of the project, and implementing the QAPP and corresponding corrective measures, where necessary.

2.1.2 Project QA/QC Officer

The QA/QC Officer has the responsibility to monitor and verify that the work is performed in accordance with the FS Work Plan, including the Sampling and Analysis Plan (SAP) (Appendix A of the FS Work Plan) and the QAPP, and other applicable procedures. The QA/QC Officer also has the responsibility to assess the effectiveness of the QA/QC program, and to recommend modifications to the program, when applicable. The QA/QC Officer is responsible for ensuring that the personnel assigned to the project are trained relative to the requirements of the QA/QC program, and for reviewing and verifying the disposition of nonconformance and corrective action reports.

2.1.3 Project Staff

Members of the project staff are responsible for understanding and implementing the QA/QC program as it relates to the cleanup action project objectives.

2.1.4 Regulatory Agency

Ecology will be the lead regulatory agency. The FS is being conducted under the Agreed Order and in accordance with WAC 173-340-350.

3.0 DATA QUALITY OBJECTIVES

The DQOs for this project will be used to develop and implement procedures to ensure that the data collected are of sufficient quality to adequately address the objectives of the FS at the Site, as defined in the FS Work Plan. Observations and measurements will be made and recorded in such a manner as to yield results representative of the media and conditions observed and/or measured. Representativeness will be achieved through strict adherence to the SAP, provided in Appendix A of the FS Work Plan. Goals for representativeness will be met by ensuring that sampling locations are selected properly, that a sufficient number of samples are collected, and that field-screening and laboratory analyses are conducted properly.

The quality of the laboratory data will be assessed on the bases of precision, accuracy, representativeness, completeness, and comparability. Definitions of these parameters and the applicable QC procedures are described in Sections 3.1 through 3.5 below. Quantitative DQOs for applicable parameters (e.g., precision, accuracy, completeness) are provided following each definition. Laboratory DQOs have been established by the analytical laboratory, and are specified in the analytical laboratory's Quality Assurance Plan, which is kept on file at the Farallon office.

3.1 PRECISION

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of two or more measurements compared to their average values. Precision is calculated from results of duplicate sample analyses. Precision is quantitatively expressed as the relative percent difference (RPD), and is calculated as follows:

$$RPD = \frac{(C_1 - C_2)}{(C_1 + C_2)/2} \times 100$$

Where:

RPD = relative percent difference

C_1 = larger of the two duplicate results (i.e., the highest detected concentration)

C_2 = smaller of the two duplicate results (i.e., the lowest detected concentration)

Quantitative RPD criteria for laboratory duplicate results have been developed by the U.S. Environmental Protection Agency (EPA) for inorganic chemical analysis. The criteria are ± 20 percent for water samples and ± 35 percent for soil samples. There are no specific RPD criteria for organic chemical analyses.

3.2 ACCURACY

Accuracy is a measure of the closeness (bias) of the measured value to the true value. The accuracy of chemical analytical results is assessed by "spiking" samples in the laboratory with known standards (a surrogate or matrix spike [MS] of known concentration), and determining the

percent recovery. Accuracy is measured as the percent recovery (%R), and is calculated as follows:

$$\%R = \frac{(M_{sa} - M_{ua})}{C_{sa}} x\ 100$$

Where:

%R = percent recovery

M_{sa} = measured concentration in spiked aliquot

M_{ua} = measured concentration in unspiked aliquot

C_{sa} = actual concentration of spike added

Laboratory matrix spike and surrogate analyses will be carried out at the analytical laboratory in accordance with EPA SW-846 requirements for organic and inorganic chemical analyses. The frequency for both matrix spikes and matrix spike duplicates will be one each per batch of 20 samples or less for both soil and groundwater samples. Quantitative percent recovery criteria have been developed by EPA for laboratory matrix spikes for inorganic analysis. The criteria are 75 to 125 percent when the sample concentration exceeds the spike concentration by a factor of four or more. There are no specific accuracy criteria for organic analyses. Where EPA and Ecology have not provided data validation guidelines, laboratory-derived control limits will be used to assess surrogate recovery and matrix spike results.

The accuracy of sample results can be affected also by introduction of contaminants to the sample during collection, handling, and/or analysis. Contamination of the sample can occur because of improperly cleaned sampling equipment, exposure of the samples to chemical concentrations in the field or during transport to the laboratory, or exposure to chemical concentrations in the laboratory. To ascertain that the samples collected are not contaminated, laboratory method blank samples will be analyzed.

3.2.1 Laboratory Method Blanks

The laboratory will run method blanks at a minimum frequency of 5 percent, or one per batch, to assess potential contamination of the sample at the laboratory.

3.2.2 Trip Blanks

Laboratory-supplied trip blanks will accompany each shipment containing samples from the field to the analytical laboratory for analysis of volatile organic compounds by EPA Method 8260B to assess the integrity of the sample containers during transport.

3.2.3 Duplicate Samples

Duplicate samples will be used to measure field variability and sampling consistency. Duplicate samples will be obtained using identical sampling protocols for the appropriate medium sampled. The duplicate sample will be submitted to the laboratory with a "blind" sample identifier such that the laboratory cannot recognize the sample as a duplicate. The collection of the duplicate

sample and the selected "blind" identifier will be stated in the field documentation for sample collection.

3.3 REPRESENTATIVENESS

Representativeness is a qualitative assessment of how closely the measured results reflect the actual concentration or distribution of the constituent concentrations in the matrix sampled. The sampling plan design, sample collection techniques, sample handling protocols, sample analysis methods, and data review procedures have been developed to ensure that the results obtained are representative of Site conditions. These issues are addressed in detail in the SAP (Appendix A of the FS Work Plan), and in this document.

3.4 COMPLETENESS

Completeness is defined as the percentage of measurements judged to be valid. Results will be considered valid if they are not rejected during data validation (see Section 6, Data Management, Reduction, Review, and Reporting). Completeness (C) is calculated as follows:

$$C = \frac{(Number\ of\ Valid\ Measurements)}{(Total\ Number\ of\ Measurements)} x\ 100$$

The target completeness goal for the FS will be 95 percent for a given analysis.

3.5 COMPARABILITY

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. The use of standard EPA, Ecology, ASTM International, and American Petroleum Institute methods and procedures for both sample collection and laboratory analysis will make the data collected comparable to both internal and other data generated.

4.0 DATA COLLECTION APPROACH

Procedures that will be used to collect, preserve, transport, and store samples are described in the SAP (Appendix A of the FS Work Plan). The sampling protocols will be performed in accordance with generally accepted environmental practices, and will meet or exceed current regulatory standards and guidelines. Sampling procedures may be modified, if necessary, to comply with amendments to current regulations, methods, or guidelines.

5.0 ANALYTICAL PROCEDURES

Chemical and physical analyses to be conducted during this project are discussed in the SAP (Appendix A of the FS Work Plan). Container types, holding times, analytical methods, practical quantitation limits, and method detection limits will be in accordance with current regulatory guidelines, and will be modified, if necessary, to comply with amendments to current regulations, methods, or guidelines.

OnSite Environmental Inc. of Redmond, Washington (OnSite) has been selected as the laboratory to conduct the analysis of the samples collected for the FS. OnSite will conduct analyses for the COPCs on soil and groundwater samples collected during the execution of the supplemental monitoring and sampling effort of the FS. OnSite is accredited by Ecology, and meets the QA/QC requirements of Ecology and EPA. The contact for OnSite is:

Mr. David Baumeister
OnSite Environmental Inc.
14648 Northeast 95th Street
Redmond, Washington 98052
Telephone: (425) 883-3881

A copy of the Laboratory Quality Assurance Manual from OnSite is on file at Farallon for review and reference, and will be followed by the laboratory throughout the FS. Ecology will have access to laboratory personnel, equipment, and records pertaining to sample collection, transportation, and analysis. The specific analytical methods, sample preservation methods, and container requirements are defined in the SAP (Appendix A of the FS Work Plan).

6.0 DATA MANAGEMENT, REDUCTION, REVIEW, AND REPORTING

This section outlines the procedures to be followed for the inventory, control, storage, and retrieval of data collected throughout the FS. The procedures contained in the QAPP are designed to ensure that the integrity of the collected data is maintained for subsequent use. Moreover, project-tracking data (e.g., schedules, progress reports) will be maintained to monitor, manage, and document the progress of the FS.

6.1 DATA TYPES

A variety of data will be generated by the FS, including laboratory analytical data and manually recorded field data. Laboratory analytical data will be transmitted to Farallon as an electronic file, which will facilitate subsequent validation and analysis of these data while avoiding transcription errors that may occur with computer data entry.

6.2 DATA TRANSFER

Procedures for controlling the receipt and distribution of incoming data packages to Farallon and outgoing data reports from Farallon are outlined in the sections below.

6.2.1 Receipt of Data and Reports

Incoming data packages such as those from field personnel, laboratories (e.g., groundwater and soil analytical data) will be filed by project task, subject heading, and date. If distribution is required, the appropriate number of copies will be made and distributed to appropriate persons or agencies.

6.2.2 Outgoing Data and Reports

A transmittal sheet will be attached to all outgoing project data and reports. A copy of each transmittal sheet will be kept in the administrative and project files. The Project Manager and QA/QC Officer will review all outgoing reports and maps.

6.3 DATA INVENTORY

Procedures for the filing, storage, and retrieval of project data and reports are discussed below.

6.3.1 Document Filing and Storage

As previously discussed, project files and raw data files will be maintained at Farallon's office. Files will be organized by project tasks or subject heading, and maintained by the document control clerk. Hard copy project files will be archived for a minimum of 3 years after completion of the project. Electronic copies of files will be maintained in a project directory, and backed up on a daily, weekly, and monthly basis.

6.3.2 Access to Project Files

Access to project files will be controlled and limited to YSF and its authorized representatives, Ecology, and Farallon personnel. When a hard copy file is removed, a sign-out procedure will be used to track custody of the file. If a document is to be used for an extended period, a copy of the document will be produced, and the original will be returned to the project file. Electronic access to final reports, tables, and figures will be write-protected in the project directory.

6.4 DATA REDUCTION AND ANALYSIS

The Project Manager and QA/QC Officer are responsible for data review and validation. Data validation parameters are outlined in Section 3, Data Quality Objectives. The particular type of analyses and presentation method selected for any given data set will depend on the type, quantity, quality, and prospective use of the data. The analysis of project data will require data reduction for preparation of tables, charts, and maps. To ensure that data are accurately transferred during the reduction process, two data reviews will be performed: one by the QA/QC Officer or Project Manager, and another by the Project Principal prior to issuing the documents. Any incorrect transfers of data will be highlighted and corrected.

6.4.1 Data Reporting Formats

Physical and chemical characterization information developed in connection with the FS will be presented in the formats described below:

6.4.1.1 Maps

Plan maps needed to illustrate results of the FS will be assembled or prepared. The maps may include but are not limited to plan maps of the Site showing sampling locations and chemical concentrations and groundwater elevation contour maps.

6.4.1.2 Summary Tables and Plots

Laboratory reports will be sorted according to various parameters to summarize gathered information for easier assimilation and presentation. Groundwater and soil sampling and analysis data will be sorted several ways, including by sample number, constituent, and date of sample collection. The sorting parameters will be chosen based on determination of the most appropriate format, and the utility of that format in demonstrating the physical and chemical characteristics of interest. Summary tables of chemical concentrations in soil and groundwater will be generated.

6.4.1.3 Cross-Sections

Cross-sections or vertical profiles may be generated from field data to display Site stratigraphy or other aspects of the FS.

7.0 QUALITY CONTROL PROCEDURES

This section provides a description of the QC procedures for both field activities and laboratory analysis. The field QC procedures include standard operating procedures for sample collection and handling, equipment calibration, and field quality control samples.

7.1 FIELD QUALITY CONTROL

Field QC samples (e.g., field duplicate samples) to be collected during this project are described in the SAP (Appendix A of the FS Work Plan). The purpose of these samples is discussed in Section 3, Data Quality Objectives. Standard operating procedures also will be implemented during field-screening activities. The procedural basis for these field data collection activities will be documented on the Field Report forms, as described in Section 5 of the SAP (Appendix A of the FS Work Plan). Any deviation from established protocols will be documented on the Field Report forms.

7.2 LABORATORY QUALITY CONTROL

Analytical laboratory QA/QC procedures are provided in the laboratory Quality Assurance Plan that is on file at the Farallon office.

7.3 DATA QUALITY CONTROL

All data generated by OnSite will undergo two levels of QA/QC evaluation: one by the laboratory and one by Farallon. As specified in OnSite's laboratory Quality Assurance Plan, the laboratory will perform initial data reduction, evaluation, and reporting. The analytical data will then be validated at the Farallon office under supervision of the QA/QC Officer. The following types of QC information will be reviewed, as appropriate:

- Method deviations;
- Sample transport conditions (temperature and integrity);
- Sample extraction and holding times;
- Method reporting limits;
- Blank samples;
- Duplicate samples;
- Surrogate recoveries;
- Percent completeness; and
- RPD (precision).

Farallon will review field records and the results of field observations and measurements to ensure that procedures were properly performed and documented. The following elements will be included in the review of field procedures:

- Completeness and legibility of field logs;
- Preparation and frequency of field QC samples;
- Equipment calibration and maintenance; and
- Chain of Custody forms.

7.4 DATA ASSESSMENT PROCEDURES

The Project Manager and QA/QC Officer are responsible for data review and validation. Upon receipt of each data package from the laboratory, calculations for precision, accuracy, and completeness will be performed using the equations presented in Section 3, Data Quality Objectives. Results will be compared to quantitative DQOs, where established, or qualitative DQOs. Data validation parameters also are outlined in Section 3, Data Quality Objectives.

8.0 PERFORMANCE AND SYSTEM AUDITS

Performance audits will be completed for both sampling and analysis work. Field performance will be monitored through regular review of field notebooks, field measurements, and Chain of Custody forms. The Project Manager and/or the QA/QC Officer also may perform periodic on-Site review of work in progress.

Accreditation of the analytical laboratory by Ecology for each analytical method demonstrates the laboratory's ability to properly perform the requested methods. Therefore, a system audit of OnSite will not be conducted.

The Project Manager and/or QA/QC Officer will frequently oversee communication with the analytical laboratory while samples are being processed and analyzed at the laboratory. This oversight will allow Farallon to assess progress toward meeting the DQOs, and to take corrective measures if problems arise.

The analytical laboratory will be responsible for identifying and correcting (as appropriate) any deviation from performance standards as discussed in the laboratory Quality Assurance Plan. During sample analysis, the laboratory will communicate to the Project Manager or the QA/QC Officer any deviation to the performance standard, and the appropriate corrective measure(s). Corrective action is discussed in Section 10.

9.0 PREVENTIVE MAINTENANCE

Operation and maintenance manuals will accompany the field parameter analysis and measurement equipment. Included in these manuals will be procedures for calibration, operation, and troubleshooting. Maintenance activities will be documented in the project Field Report forms and/or equipment logbooks. A schedule of preventive maintenance activities also will be maintained. In addition, spare parts and tools will be included in each equipment storage case to minimize equipment downtime.

10.0 CORRECTIVE ACTION

Corrective actions will be the joint responsibility of the Project Manager and the QA/QC Officer. Corrective procedures may include:

- Identifying the source of a discrepancy or violation;
- Reanalyzing samples if holding-time criteria permit;
- Resampling and analyzing;
- Remeasuring a parameter;
- Evaluating and amending sampling and analytical procedures; and/or
- Qualifying data to calculate the level of uncertainty.

During field sampling operations, the Project Manager and field team members will be responsible for identifying and correcting a protocol that may compromise the quality of the data. Corrective actions taken will be documented in the field notes.

11.0 QUALITY ASSURANCE REPORTS

The Feasibility Study Report will include a QA section, which will summarize the data quality of the deliverables that are generated during the project. This summary will include at a minimum:

- An assessment of data accuracy and completeness;
- The results of performance and/or system audits; and
- Identification of significant QA problems and the impact on the DQOs.

APPENDIX C
HEALTH AND SAFETY PLAN

FEASIBILITY STUDY WORK PLAN
Agri-Tech and Yakima Steel Fabricators
6 and 10½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

FARALLON consulting

975 5th Avenue Northwest, Issaquah, Washington 98027
Tel: (425) 295-0800 Fax: (425) 295-0850
www.farallonconsulting.com

HEALTH AND SAFETY PLAN

APPENDIX C OF THE FEASIBILITY STUDY WORK PLAN

AGRI-TECH & YAKIMA STEEL FABRICATORS, INC.
6 AND 10½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

Submitted by:
Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027

Farallon PN: 765-001

For:
Yakima Steel Fabricators, Inc.
6 East Washington Avenue
Yakima, Washington

May 3, 2011

HEALTH AND SAFETY PLAN
REVIEW AND APPROVAL

Client: Yakima Steel Fabricators
Facility Name: Yakima Steel Fabricators
Project Name: FS Work Plan
Project Number: 765-001
Start Date: May 9, 2011
End Date: November 30, 2011

Plan Expiration Date: November 30, 2011 (*Last day of expected field work or no longer than 6 months*).

APPROVED BY:

Jeff Kaspar
Project Manager
Signature — *Date*: 5/3/11

Richard McManus
Office Health and Safety Coordinator
Signature — *Date*: 5/3/11

Brett T. Carp
Site Health and Safety Officer
Signature — *Date*: 5/3/11

Clifford T. Schmitt
Principal-in-Charge
Signature — *Date*: 5/3/2011

This Health and Safety Plan (HASP) was written for the use of Farallon Consulting, L.L.C. (Farallon) and its employees. It may be used also by trained and experienced Farallon subcontractors as a guidance document. However, Farallon does not guarantee the health or safety of any person entering this Site.

Due to the potentially hazardous nature of the site and the activities occurring thereon, it is not possible to discover, evaluate, or provide protection for all possible hazards that may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but does not eliminate, the potential for injury. The health and safety guidelines in this HASP were prepared specifically for this site, its conditions, purposes, dates of field work, and personnel, and must be amended if conditions change.

Farallon claims no responsibility for the use of this HASP by others. This HASP will provide useful information to subcontractors and will assist them in developing their own HASP, but it should not be construed as a substitute for their own HASP. Subcontractors should sign this HASP (see *Health and Safety Plan Acknowledgment and Agreement Form*, Attachment 1) as an acknowledgement of hazard information and as notice that this HASP does not satisfy their requirement to develop their own HASP.

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1.0 SCOPE OF WORK

This Health and Safety Plan (HASP) was prepared for the use of Farallon personnel while performing the additional characterization activities at the Site. The purpose of the additional characterization is to address the data gaps discussed in Section 3 of the Revised Feasibility Study Work Plan dated April 15, 2010 (FS Work Plan). The work is being conducted to meet the requirements of Agreed Order No. DE 6091 entered into by the Washington State Department of Ecology (Ecology) and Yakima Steel Fabricators, Inc., (YSF) pursuant to the authority of the Washington State Model Toxics Control Act, as established in Section 050(1) of Chapter 70.105D of the Revised Code of Washington, with an effective date of October 27, 2008.

The scope of work for the additional characterization effort at the Site includes supplemental groundwater monitoring and sampling of the existing monitoring well network and supplemental soil sampling to define the lateral and vertical distribution of soil contamination in Area 3 of the Site. The tasks will be conducted in a manner consistent with the methods and assumptions outlined in the FS Work Plan.

2.0 BACKGROUND INFORMATION

The Site includes the YSF property (Yakima County Tax Parcel No. 19133141009) and the Agri-Tech property (Yakima County Tax Parcel No. 19133141409). The Site is located in the northeast corner of the southeast quarter of Section 31, Township 13 North, Range 19 East of the Willamette Meridian. The approximate latitude and longitude of the Site is North 46 degrees, 34 minutes latitude, West 120 degrees, 29 minutes longitude. The Site is approximately 7.23 acres in area and located in an area of Yakima zoned for light industrial use. Site topography is relatively flat, with less than 5 feet of relief across the approximately 7.23-acre area. The Site slopes very slightly to the southeast, following the regional topographic trend of the Ahtanum Valley. The current Site grade is the result of fill and grading activities conducted in the late 1970s.

The YSF property includes a single-story steel-framed, aluminum-sided building measuring approximately 225 by 225 feet that is subdivided into three areas. The western portion of the YSF building was constructed in 1980, and currently is used for steel fabrication and business offices. The central portion of the building is used for steel fabrication and loading of finished product, and the eastern portion is used for steel storage. The floors of the central and eastern portions of the building are paved with asphalt; the floor of the western portion of the building is paved with concrete. The exterior areas immediately north, south, and west of the YSF building are paved with asphalt. The remaining areas of the YSF property are unpaved. A pond classified by the Yakima County Assessor's Office as a potential wetland is located near the southern boundary of the YSF property.

The Agri-Tech property includes a 20,625-square-foot single-story, cinder block slab-on-grade building measuring approximately 164 by 124 feet that was constructed in 1982. The building was constructed by Team Research Engineering Corporation, which owned the property prior to its purchase by Agri-Tech in 1989. The interior of the building consists of a concrete floor slab. The northern, southern, and western areas immediately surrounding the building are asphalt-paved. A concrete slab is present along the eastern portion of the building extending to the property boundary.

A remedial investigation (RI) was completed at the Site on behalf of Agri-Tech and YSF in June 2004 pursuant to Ecology Agreed Order No. DE 97TC-C154 issued for the Site on October 6, 1997. Results from the RI were summarized in the Revised Remedial Investigation Report dated June 10, 2004, prepared by Farallon (RI Report). The RI Report documents that concentrations of hazardous substances exceeding the preliminary screening levels established for the Site were detected in soil and groundwater. The preliminary screening levels for the constituents of potential concern (COPCs) identified in the RI Report were established as MTCA Method B soil cleanup levels protective of a potable groundwater source (WAC 173-340-747).

Agreed Order No. DE 6091 was issued in October 2008 to complete an FS and address the data gaps in the RI identified by Ecology following supplemental site investigation work completed by Ecology in July 2007 in Area 3 of the Site, located on the southern portion of the YSF

property. This HASP was prepared for the use of Farallon personnel while performing the additional characterization activities at the Site as part of the FS.

3.0 DRUG AND ALCOHOL POLICY

It is Farallon's policy to maintain a drug-free workplace. Farallon has a responsibility to all of its staff members to provide a safe and inoffensive work environment, and a responsibility to its clients to provide accurate and consistent service. For these reasons, Farallon prohibits the following behavior by staff members in the field:

- Use of tobacco in any form by any person at any time in sensitive or hazardous areas that may pose a health and safety or environmental risk. The Site Health and Safety Officer (SHSO) may designate an area away from hazards that is safe for tobacco use;
- Possession or consumption of alcohol, or being under the influence of alcohol during field activities;
- Abuse of prescription and/or over-the-counter drugs in such a manner as to negatively impact performance or field safety; and
- Possession, use, sale, or being under the influence of illicit drugs while in the field or during any work hours.

Violation of any of the above codes of conduct is grounds for immediate removal from the project site and discipline in accordance with Farallon company policy. If an incident occurs as a result of an employee's actions, drug and alcohol testing will be performed in accordance with Farallon company policy.

4.0 WEAPONS POLICY

Farallon employees, contractors, subcontractors, and their employees working at the site are to ensure that they do not bring weapons onto the work site. Weapons include but are not limited to guns, knives, and explosives. Tools that are used during the course of field events, including but not limited to box knives, are exempt from this weapons policy. All vehicles and persons can be subjected to search while working at the property.

Failure to comply with the weapons policy can result in disciplinary action for the individual(s) involved in accordance with Farallon company policy.

5.0 INCIDENT PREPAREDNESS AND RESPONSE

Farallon employees and subcontractors working on site must be prepared to respond appropriately to an incident involving injury, illness, death, spills, or utility breaches. This section outlines the degree of preparedness required for employees at a work site, and describes the actions to be taken in the event of a health and safety incident.

5.1 HEALTH AND SAFETY PREPAREDNESS

All individuals working at the site are required to be familiar with the contents of this HASP. Additionally, the items on the following health and safety preparedness list should be reviewed prior to the commencement of work and during daily health and safety meetings:

- The directions to the hospital (provided in Attachment 2);
- The locations of first aid kits, personal eye washes, and fire extinguishers;
- The locations of the keys to site vehicles; and
- Hand sign language providing for the immediate stoppage of work (such as a horizontal hand movement in front of the neck).

Additional topics for daily health and safety meetings are included in Attachment 3, Potential Topics for Daily Health and Safety Meeting. Participation in daily health and safety meetings should be documented in the Daily Health and Safety Briefing Log (Attachment 4).

5.2 INJURY OR ILLNESS

If an injury or illness occurs, the following actions should be taken, regardless of the severity of the injury or illness:

- Stop work.
- Determine whether emergency response staff (e.g., fire, ambulance) are necessary. If so, dial 911 on a cell phone or the closest available telephone. Describe the location of the injured person and provide other details as requested. If an individual requires non-emergency medical care at a hospital, follow the directions to the nearest hospital, which are provided in Attachment 2. IF EMERGENCY MEDICAL CARE IS NEEDED CALL 911.
- Administer first aid to the individual immediately, using the first aid kit provided in the site vehicle. Use the bloodborne pathogens kit and personal eyewash, as needed.
- Notify the SHSO immediately. The SHSO is responsible for preparing and submitting an Incident Report form to Farallon's Health and Safety Coordinator (HSC) within 24 hours of the incident, and for notifying the employee's supervisor and the Principal in Charge. The Incident Report form is provided in Attachment 5.

- ***All incidents must be reported to the HSC within 24 hours; however, the actual investigation need not be completed within 24 hours.*** **A telephone message that includes the date, time, and general incident circumstances should be left at one of the following numbers if the HSC cannot be reached directly:**
    - HSC work phone: (425) 295-0800
    - HSC cell phone: (425) 466-1032
    - If the HSC cannot be located contact the Principal-in-Charge.
- The SHSO will assume responsibility during a medical emergency until emergency response personnel arrive at the site.

5.3 REPORTING PROCEDURES FOR MINOR CUTS, SCRATCHES, BRUISES, ETC.

Every occupational illness or injury is to be reported immediately by the employee to the SHSO. The SHSO is to complete the Incident Report form provided in Attachment 5, and report the incident to the HSC.

5.4 NEAR MISSES

A near miss is defined as an incident in which no personal injury is sustained and no property damage is incurred, but where injury and/or property damage could have occurred under slightly different timing or location.

In the event of a near miss, the following actions are to be taken:

- Stop work.
- Report the near miss to an SHSO immediately.
- The SHSO is to report the near miss to the HSC and complete the Near Miss Report form in Attachment 6.
- Resume work upon satisfactory resolution of the near-miss condition and documentation of the corrective action(s) taken by the SHSO.

5.5 MEDICAL INCIDENTS NOT REQUIRING AMBULANCE SERVICE

Medical incidents not requiring ambulance services include injuries and conditions such as minor lacerations, and sprains. In the event of an injury, an illness, or a condition that does not require ambulance service, the following actions are to be taken:

- Stop work.
- Administer first aid as necessary to stabilize the individual for transport to the hospital.
- The SHSO is to facilitate prompt transportation of the individual to the hospital. Directions to the nearest hospital are provided in Attachment 2.

- A representative of Farallon or the subcontractor is to drive the individual to the medical facility and remain at the facility until the individual is able to return to the jobsite, or arrangements for further care have been established.
- If the driver is not familiar with the route to the hospital, a second person who is familiar with the route is to accompany the driver and the injured employee to the hospital.
- If it is necessary for the SHSO to accompany the injured employee to a medical facility, provisions must be made for another employee who is trained and certified in first aid to act as the temporary SHSO before work at the jobsite can resume.
- If the injured employee is able to return to the jobsite the same day, he/she is to bring a statement from the doctor that provides the following information:
  - Date of incident
  - Employee's name
  - Diagnosis
  - Date he/she is able to return to work, and whether regular or light duty
  - Date he/she is to return to the doctor for a follow-up appointment, if necessary
  - Signature and address of doctor
- The SHSO is to complete the Incident Report form provided in Attachment 5, and report the incident to the HSC.
- If the injured employee is unable to return to the jobsite the same day, the employee who transported him/her should bring the statement from the doctor back to the jobsite. The information on this statement should be reported to the HSC immediately.

5.6 EMERGENCY CASES REQUIRING AMBULANCE SERVICE

In the event of an injury or illness that requires emergency response and transport to a hospital by ambulance the following actions should be taken:

- **Dial 911** to request ambulance service.
- Notify the SHSO.
- Administer first aid until the ambulance service arrives.
- One designated company representative should accompany the injured employee to the medical facility and remain there until final diagnosis, treatment plan, and other relevant information has been obtained.
- The SHSO is to complete the Incident Report form provided in Attachment 5, and report the incident to the HSC immediately.

5.7 EMPLOYEE DEATH, OR HOSPITALIZATION OF THREE OR MORE EMPLOYEES

The procedures outlined in Section 6.2 should be followed in the event of an employee injury or illness. If an employee fatality occurs, the HSC, local emergency personnel and the coroner must be notified **immediately**. **The HSC will initiate the required State of Washington Department of Labor and Industries and Occupational Safety and Health Administration (OSHA) notifications within 8 hours of a fatality or the hospitalization of three or more employees.**

5.8 RESPONSE TO SPILLS OR UTILITY BREACHES

The location of underground utilities (e.g., product, sewer, telephone, fiber optic) and facilities (e.g., USTs, septic tanks, utility vaults) is to be noted prior to commencement of intrusive subsurface work activities. Use the public and private locate services as required and complete the Utility Clearance Log (Attachment 7). If a utility line or tank is breached or a spill or release occurs, the event is to be documented on the Incident Report form provided in Attachment 5 as soon as possible. The date, time, name of the person(s) involved, actions taken, and discussions with other affected parties are to be included. The SHSO, Project Manager (PM) and client are to be notified immediately. The PM is to notify the regulatory authority and/or utility company, as necessary.

In the event of a spill or release, the following actions should be taken:

1. Stay upwind of the spill or release.
2. Don appropriate personal protective equipment (PPE).
3. Turn off equipment and other sources of ignition.
4. Turn off pumps and shut valves to stop the flow or leak.
5. Plug the leak or collect drippings, when possible.
6. Use sorbent pads to collect the product and impede its flow, if possible.
7. Dial 911 or telephone the local fire department immediately if a fire or another emergency situation develops.
8. Inform the Farallon PM of the situation.
9. Determine whether the client would like Farallon to repair the damage or would rather use an emergency repair contractor.
10. Advise the client of spill discharge notification requirements, and establish who will complete and submit the required forms. ***Do not report or submit information to an agency without the client's consent.*** Document each interaction with the client and regulators, and note in writing names, titles, authorizations, refusals, decisions, and commitments to any action.

11. Do not transport or approve transportation of contaminated soils or product until proper manifests have been completed and approved. Be aware that soil and/or product may meet criteria for hazardous waste.
12. Do not sign manifests as a generator of wastes. Contact the PM to discuss waste transportation.

5.9 NOTIFICATIONS

A spill or release requires completion of an Incident Report form (provided in Attachment 5) per Farallon's Health and Safety program. **The PM must involve the client and/or generator in the incident reporting process. The client and/or generator is under obligation to report the incident to the appropriate government agency(ies). If the spill extends into waterways, the Coast Guard and the National Response Center must be notified immediately by the client or with his permission (800 424-8802).**

5.10 SHUTOFF VALVES AND/OR SWITCHES FOR UTILITIES AND PRODUCTS

Before starting work, locate and list below the location of utility and product line shutoff valves and switches on the project site. Review the location of shutoff valves and switches with field personnel before beginning work.

The shutoff valves and/or switches for electrical, natural gas, gasoline, water lines, etc. will be determined prior to conducting field activities at the Site. There are no known underground gas or gasoline lines at the Site.

6.0 EMERGENCY RESPONSE AND EVACUATION PLAN

Farallon personnel and subcontractors working on site are to be aware of site-specific emergency and evacuation procedures, including alarm systems and evacuation plans and routes. If an incident occurs that requires emergency response, such as a fire or spill, **CALL 911 and request assistance**. Farallon staff, subcontractors, and/or others working in an area where an emergency occurs are to evacuate to a safe location away from the incident area, preferably upwind, and take attendance.

For this project the emergency evacuation gathering location is the northern entrance of the site adjacent to Washington Avenue.

If the emergency causes the route to be obstructed, Farallon personnel and subcontractors are to move to an open area upwind of the hazard area, and remain there until instructed by emergency response personnel (e.g., police, fire, ambulance personnel, paramedics) to do otherwise.

Subcontractors have the responsibility to account for their own employees and provide requested information to emergency response personnel immediately upon request. Farallon staff, subcontractors, and/or contractors may not reenter the scene of the emergency without specific approval from emergency response personnel.

7.0 LOCAL EMERGENCY CONTACT NAMES AND TELEPHONE NUMBERS

Local emergency response personnel can be contacted at the following numbers. Directions and a map to the hospital are included in Attachment 2.

Emergency Contact	Name and Location	Telephone No.
Hospital	Yakima Regional Medical 110 South 9th Avenue Yakima, Washington 98902	(509) 575-5000
Police	Union Gap Police Department 1800 Rainier Place Union Gap, Washington 98903	(509) 248-0430 Or **911**
Fire	Union Gap Fire Department 107 West Ahtanum Road Union Gap, Washington 98903	(509) 452-6706 Or **911**
National Response Center		**1-800-424-8802**
Washington State Department of Ecology		**(360) 407-6300**
Poison Control		**1-800-424-5555**

8.0 PROJECT PERSONNEL AND RELEVANT INFORMATION

Questions about this project that are posed by neighbors, the press, or other interested parties should be directed to the Principal in Charge at Farallon: (425) 295-0800.

Yakima Steel Fabricators, Inc. 765-001	General Project Responsibilities	Field Personnel Training Dates			Medical Surveillance Date
		40-Hour HAZWOPER	8-Hour Refresher	CPR/ First Aid	
Site Health and Safety Officer Brett T. Carp Office: (425) 295-0800	Implement this HASP. Has authority to stop work. Perform air quality tasks. Take charge of all incidents. Review subcontractor's HASP.	3/4/2005	1/2011	11/2010	11/2010
Farallon Personnel TBD Office (425) 295-0800	Be familiar with HASP requirements and the Farallon Accident Prevention Program and Hazardous Waste Operations Program				
Subcontractor Project Manager TBD Office:	Oversee work of own staff. Ensure that their own HASP is site-specific.				
Subcontractor Personnel TBD	Be familiar with HASP requirements				
Principal-in-Charge Clifford T. Schmitt Office: (425) 295-0800 Cell: (425) 765-3365	Provide immediate support upon notice of any incident.	NA	NA	NA	NA
Health and Safety Coordinator Richard McManus Office (425) 295-0800 Cell: (425) 466-1032	Provide support in implementing HASP. Provide immediate support upon notice of any incident.	NA	NA	NA	NA
YFS Site John Gehlsen Office: (509) 575-1570	Provide known analytical data from work performed by others. Provide notice of site hazards. Provide access to site. Provide information regarding available emergency supplies at the site.	NA	NA	NA	NA

9.0 POTENTIAL AIRBORNE CONTAMINANTS

The potential airborne contaminants of concern in the immediate vicinity at the site are listed in the table on the following page. The table should be reviewed, and any questions directed to the SHSO.

POTENTIAL AIRBORNE CHEMICALS ON SITE FOR THIS PROJECT
REVIEW THIS TABLE AND CONTACT THE SHSO WITH ANY QUESTION

Chemical (or Class)	OSHA PEL ACGIH TLV	Other Pertinent Limits	Properties	Routes of Exposure or Irritation	Acute Health Effects	Chronic Health Effects/ Target Organs
Tetrachloroethene (Perchloroethylene)	PEL - 100 ppm TLV - 25 ppm	PEL Ceiling - 200 ppm TLV STEL – 100 ppm IDLH - 150 ppm NIOSH considers this compound to be a carcinogen	Colorless liquid with a mild, chloroform-like odor	Inhalation; skin absorption; ingestion; eye contact	Irritation to eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; vertigo (an illusion of movement); dizziness; lack of coordination; headache; skin erythema (redness)	Somnolence (sleepiness, unnatural drowsiness); liver damage; potential occupational liver carcinogen. **Target Organs:** Eyes, skin, respiratory system, liver, kidneys, CNS
Vinyl chloride	PEL - 1 ppm TLV - 1 ppm	NIOSH considers this material to be a carcinogen	Liquid with a pleasant odor at high concentrations	Inhalation; dermal; eye contact	Weakness; abdominal pain; pallor or cyanosis of extremities; liquid—frostbite	Gastrointestinal bleeding; enlarged liver; potential occupational liver carcinogen; damage to CNS, blood, respiratory system, lymphatic system
Organochlorine Pesticides (Endrin)	PEL – 0.1 mg/m^3 [skin]	IDLH – 2 mg/m^3	Colorless to tan, crystalline solid with a mild, chemical odor	Inhalation; skin absorption; ingestion; contact	Epileptiform convulsions; stupor; headache; dizziness; abdominal discomfort; nausea; vomiting; insomnia; aggressiveness; confusion; drowsiness; lassitude; anorexia;	Liver Damage/ Central Nervous System; Liver

NOTES:
ACGIH = American Conference of Governmental Industrial Hygienists
AIHA = American Industrial Hygiene Association
AIHA WEEL = AIHA-set workplace environmental exposure limits
C = ceiling limit
CNS = central nervous system
CVS = cardiovascular system
IDLH = immediately dangerous to life or health
mg/m^3 = milligrams per cubic meter
NIOSH = National Institute for Occupation Safety and Health
OSHA = Occupation Safety and Health Administration
PEL = permissible exposure limit
ppm = parts per million
RBC = red blood cells
REL = recommended exposure limit set by National Institute for Occupational Safety and Health (NIOSH)
Skin = skin absorption
STEL = short-term exposure limit
TLV = threshold limit value set by ACGIH
TWA = time-weighted average

10.0 POTENTIAL SITE HAZARDS AND APPROPRIATE PRECAUTIONS

The following tables list potential hazards and appropriate precautions associated with planned field work:

10.1 TEST PIT EXCAVATION ACTIVITIES

Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
Clear excavation locations.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves.	Traffic hazards, overhead and underground installations, product releases, property damage, dealer inconvenience.	• Refer to Utility Clearance Log. • Coordinate with facility contact (or designee) to minimize potential conflicts. • Review proposed locations against available construction drawings and known utilities, tanks, product lines, etc. • Mark out the proposed excavation locations. • Call the underground utility locating service for public line location clearance. Obtain a list of utilities being contacted. If necessary, coordinate private line locator for private property.
Set up necessary traffic control.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves.	Being struck by vehicle during placement. Vehicle accident as a result of improper traffic control equipment placement.	• Use buddy system to place traffic control. • Implement traffic control plan as required.
Set up exclusion zone(s) and stockpile area and establish work areas/heavy equipment pathways.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves.	Injury or exposure to public or other onsite personnel. Slip or fall hazards. Onsite vehicular accident with heavy equipment.	• Implement exclusion zone set-up instructions. • Establish clear walking paths between work stations.

Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
Hand digging/post-holing where necessary to expose and protect underground installations as needed.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves. Respirator with organic vapor cartridges, chemical-resistant gloves, chemical-resistant apron as required.	Damage to lines and associated physical hazards or property damage. Back strain. Injury or vehicle damage from falling into a hole.	• Use hand tools whenever possible. • Use proper lifting techniques. • Barricade or cover holes until job has been completed.
Assist with set up of heavy equipment.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves.	Damage caused by heavy equipment while accessing set-up location. Being struck by equipment.	• Verify a clear pathway to excavation and stockpiling locations. • Provide hand signals and guidance to driver as needed to place rig. • Visually inspect equipment (fire extinguisher on board, no oil or other fluid leaks, cabling and associated equipment in good condition, pressurized hoses secured with whip-checks or adequate substitute, jacks in good condition). • Maintain eye contact with operator.
Commence excavation.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves. Respirator with organic vapor cartridges, chemical-resistant gloves, chemical-resistant apron as required.	Heat or cold exposure. Exposure to chemical hazards. Hitting an underground or overhead utility. Flammable or oxygen-deficient atmosphere from accumulated vapors. Trip or fall. Side wall cave-in. Equipment failure. Noise.	• Monitor weather conditions and take breaks as needed for cold or hot weather. Conduct air monitoring as presented in Attachment 8. Include Lower Explosive Limit (LEL) and oxygen (O_2) monitoring. If >10% LEL or O_2 <19.5%, discontinue work or ventilate area with explosion-proof equipment. • Maintain required excavation set-backs for workers and equipment. Monitor condition of side walls and surrounding ground conditions. • Keep work area clear of tripping or slipping hazards. Perform periodic visual inspections of heavy equipment and keep equipment a minimum of 5 feet from excavation edge, or one foot away from the edge for every foot of depth, if greater than 5 feet deep. • Perform necessary soil classification. Slope or bench walls, or shore excavation to prevent cave-in. Keep all spoils > 2 feet from excavation edge. Keep excavation entry controlled and equipped with required ladders and crosswalks.

Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
Collect samples in accordance with sampling plan.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves. Respirator with organic vapor cartridges, chemical-resistant gloves, chemical-resistant apron as required.	Cave-in of side wall if entering excavation. Injury from heavy equipment. Exposure to site contaminants.	• Stay out of excavation whenever possible (collect samples from backhoe bucket). • Use agreed-upon hand signals with heavy equipment operators. • Monitor air around excavation in accordance with the protocol presented in Attachment 8.
Store excavated materials according to site-specific requirements.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves. Respirator with organic vapor cartridges, chemical-resistant gloves, chemical-resistant apron as required.	Exposure to public. Traffic hazard, obstruction, or inconvenience to business operation. Improper storage or disposal.	• Have necessary storage containment and labeling available onsite. • Place materials in isolated location away from traffic and other site functions. • Stockpile excavated materials on suitable plastic or in appropriately designed container. Cover with plastic, and barricade access to waste in accordance with local regulations. • Coordinate proper disposal offsite, where applicable.
Backfill excavation.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves. Respirator with organic vapor cartridges, chemical-resistant gloves, chemical-resistant apron as required.	Being struck by heavy equipment. Side wall collapse. Damage or accidents resulting from subsequent subsidence.	• Use agreed-upon hand signals with heavy equipment operators. • Compact soils to meet specifications. • Maintain eye contact with equipment operators.
Clean site. Demobilize.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves.	Traffic. Safety hazard left on site. Lifting hazards.	• Use buddy system to remove traffic control, as necessary. • Leave site clear of refuse and debris. • Notify business personnel of departure. • Use proper lifting techniques or use mechanical assistance.
Package and deliver samples to laboratory.		Back strain. Traffic accidents	• Handle and pack bottles carefully (e.g., bubble wrap bags). • Use proper lifting techniques. • Apply safe driving practices

Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
General			
Typical work.	Steel-toed and -shank shoes, hard hat, safety glasses with side shields, hearing protection, reflective safety vest, and leather gloves for non-chemical aspects of the work. If equipment contamination is suspected, wear chemical-resistant gloves during decontamination of equipment.	Weather-related incidents: automobile accidents, slips or falls.	• Check weather reports daily. Project visits are not to be performed during inclement weather. Sampling may be performed during light rain mist. Wear raincoats. • Drive at the speed limit or less as needed to keep safe distance from vehicle in front. Avoid short stops.
No eating, drinking, or smoking on-site. No contact lenses to be worn on-site. No facial hair that would interfere with respirator fit.			
A safety meeting will be held each day, even if only one person is working on the project on any given day.			• Topics are always to include the work scheduled for that day, and restatement of hazards and the means to avoid them. Other topics may include sampling in general, and advances in technology and how they may be applied to the project. Use the *Daily Health and Safety Briefing Log* provided in Attachment 4 to log the topics discussed.

10.2 MONITORING WELL SAMPLING/GAUGING

Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
Mobilize with equipment/supplies suitable for sampling.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves.	Vehicle accident. Lifting hazards. Delay or unsafe performance of work due to lack of necessary equipment on site. Cross-contamination of wells.	Follow safe driving procedures. Use proper lifting techniques. Review work plan to determine equipment/supply needs. Verity that all sampling/gauging equipment has been decontaminated. Bring ice for sample storage. Review the HASP. Gather the necessary PPE.
Set up necessary traffic control.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves.	Struck by vehicle during placement. Vehicle accident as a result of improper traffic-control equipment placement.	Use buddy system for placing traffic control. Refer to the traffic control plan section of the HASP (which may include specific requirements based on encroachment permit).
Set up exclusion zone(s).	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves.	Struck by vehicle. Slip or fall hazards to workers.	Face incoming traffic. Implement exclusion zone setup instructions of the HASP (e.g., barricades, caution tape, cones). Set up work area free of trip hazards.
Gauge water levels and product thickness (where applicable) in wells.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves. Respirator with organic vapor cartridges, chemical-resistant gloves, chemical-resistant apron as required.	Back strain. Inhalation of, or dermal exposure to, chemical hazards. Repetitive motion.	Wear required PPE. Initiate air quality monitoring in accordance with the HASP. Maintain a safe distance from wellhead. Bend at knees rather than at waist.

Job Steps	Personal Protective Equipment	Potential Hazard	Critical Actions
Purge well(s) and collect purge water.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves. Respirator with organic vapor cartridges, chemical-resistant gloves, chemical-resistant apron as required.	Cross-contamination. Back strain. Inhalation of, or dermal exposure to, chemical hazards. Slip or fall. Contaminated water spill.	Decontaminate purging equipment between each sampling location. Use proper lifting techniques. Use PPE and conduct monitoring in accordance with the HASP. Keep work area clear of tripping or slipping hazards. Store purge water in appropriate containers.
Collect samples in accordance with sampling plan.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves. Respirator with organic vapor cartridges, chemical-resistant gloves, chemical-resistant apron as required.	Cross-contamination. Back strain. Inhalation of, or dermal exposure to, chemical hazards. Slip or fall. Improper labeling or storage. Injury from broken sample bottle (e.g., cut, or acid burn).	Decontaminate sampling equipment between each well (unless disposable equipment). Use proper lifting techniques. Use PPE in accordance with the HASP. Label samples in accordance with sampling plan. Keep samples stored in suitable containers, at correct temperature, and away from work area. Handle bottles carefully.
Dispose of or store purge water on site.	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves. Respirator with organic vapor cartridges, chemical-resistant gloves, chemical-resistant apron as required.	Back strain. Exposure to contaminants. Damage or injury from improper use of on-site treatment system equipment. Improper storage or disposal.	Use suitable equipment to transport water (e.g., pumps, drum dollies). Wear PPE in accordance with the HASP. Review any necessary instructions for use of on-site treatment systems. Label storage containers properly and locate in an isolated area away from traffic and other site functions. Coordinate off-site disposal, where applicable.
Clean site/demobilize	Reflective vest, steel-toed and -shank shoes, hard hat, safety glasses with side shields, ear plugs or ear muffs, work gloves.	Traffic. Safety hazard left on site. Lifting hazard.	Use buddy system to remove traffic control, as necessary. Leave site clear of refuse and debris. Notify business personnel of departure, and of any purge water left on site. Use proper lifting techniques.
Package and deliver samples to laboratory.		Bottle breakage. Back strain.	Handle and pack bottles carefully (e.g., bubble wrap bags). Use proper lifting techniques.

11.0 WASTE CHARACTERISTICS

Waste anticipated to be generated on the project site:

Type(s): ☒ Liquid ☐ Solid ☐ Sludge ☐ Other_____

The approximate volume for each anticipated waste stream:

Waste: Purge and Decon Water Approximate Volume: Two 55-gallon drums

Waste: Approximate Volume:

Waste: Approximate Volume:

Characteristics:

☐ Corrosive ☐ Flammable/Ignitable ☐ Radioactive ☒ Toxic

☐ Reactive ☐ Unknown ☐ Other *(specify)* _____

12.0 TRAFFIC CONTROL

Work on this project site will be performed in areas of uncontrolled traffic access. Traffic control/warning devices will be placed around the work area to prevent undesirable interface between pedestrian and automotive traffic and project workers and equipment. These devices may include:

- Cones;
- Tubular markers;
- Barricades;
- Temporary fencing; and
- Barricade tape.

The traffic control/warning devices will be placed around the work in such a way that traffic access is inhibited (i.e. place cones less than 8 feet apart so cars cannot easily drive through work area without moving a cone). Barricade tape or temporary fencing will be used to inhibit access to the work area in locations where pedestrians will be encountered.

ATTACHMENT 1
HEALTH AND SAFETY PLAN ACKNOWLEDGEMENT AND AGREEMENT FORM

HEALTH AND SAFETY PLAN
Yakima Steel Fabricators, Inc.
6 and 10 ½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

HEALTH AND SAFETY PLAN ACKNOWLEDGMENT AND AGREEMENT FORM

(All Farallon and subcontractor personnel must sign)

This Health and Safety Plan (HASP) has been developed for the purpose of informing Farallon employees of the hazards they are likely to encounter on the project site, and the precautions they should take to avoid those hazards. Subcontractors and other parties at the site must develop their own HASP to address the hazards faced by their own employees. Farallon will make a copy of this HASP available to subcontractors and other interested parties to fully disclose hazards we may be aware of, and to satisfy Farallon's responsibilities under the Occupational Safety and Health Administration (OSHA) Hazard Communication standard. Similarly, subcontractors and others on site are required to inform Farallon of any hazards they are aware of or that their work on site might possibly pose to Farallon employees, including but not limited to Material Safety Data Sheets for chemicals brought on site. This plan should NOT be understood by contractors to provide information pertaining to all of the hazards that a contractor's employees may be exposed to as a result of their work.

All parties conducting site activities are required to coordinate their activities and practices with the project Site Health and Safety Officer (SHSO). Your signature below affirms that you have read and understand the hazards discussed in this HASP, and that you understand that subcontractors and other parties working on site must develop their own HASP for their employees. Your signature also affirms that you understand that you could be prohibited by the SHSO or other Farallon personnel from working on this project for not complying with any aspect of this HASP.

Name	Title	Signature	Company	Date

ATTACHMENT 2
DIRECTIONS TO HOSPITAL

HEALTH AND SAFETY PLAN
Yakima Steel Fabricators, Inc.
6 and 10 ½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

MAPQUEST.

Trip to 6 E Washington Ave

Yakima, WA 98903-1617
3.23 miles - about 8 minutes

Notes

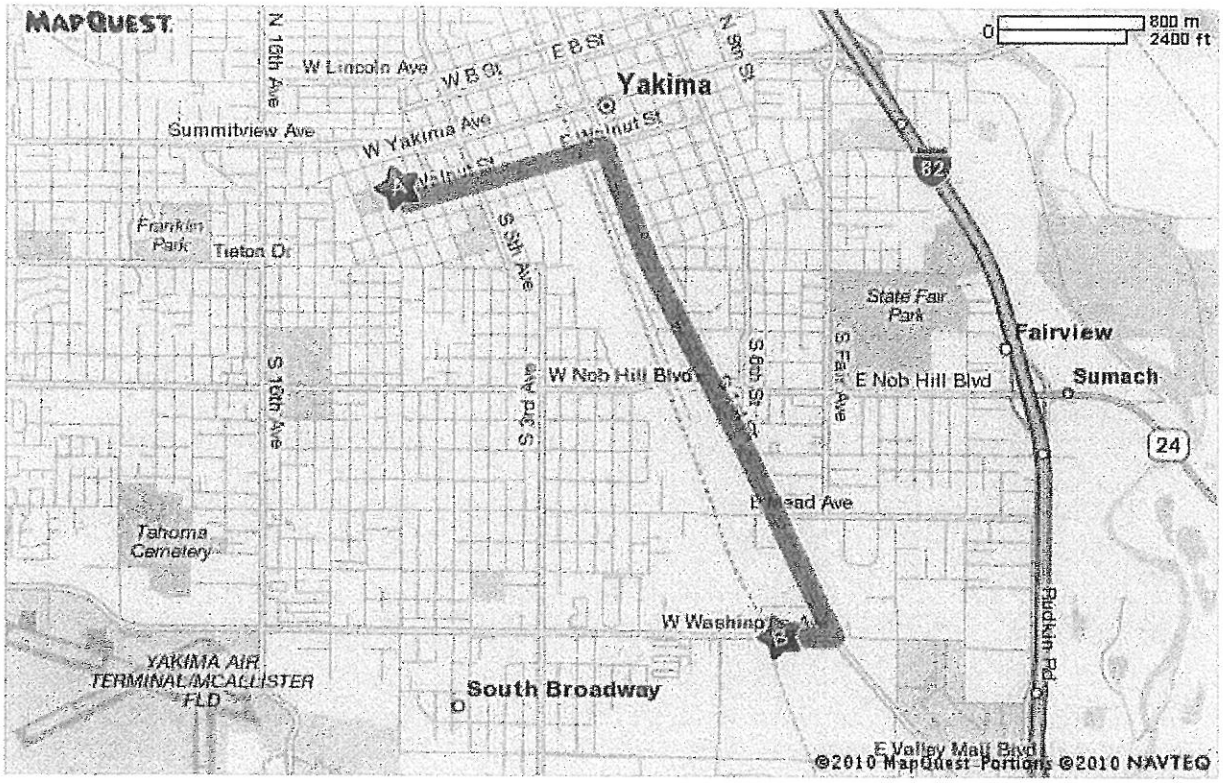
Yakima Regional Med & Cardiac - (509) 575-5000
110 S 9th Ave, Yakima, WA 98902

START	1. Start out going **SOUTHEAST** on **S 9TH AVE** toward **W WALNUT ST**.	go 0.1 mi
	2. Turn **LEFT** onto **W WALNUT ST**.	go 0.7 mi
	3. Turn **RIGHT** onto **S 1ST ST**.	go 2.2 mi
	4. Turn **RIGHT** onto **E WASHINGTON AVE**.	go 0.2 mi
END	5. **6 E WASHINGTON AVE** is on the **LEFT**.	go 0.0 mi

6 E Washington Ave, Yakima, WA 98903-1617

Total Travel Estimate : 3.23 miles - about 8 minutes

Route Map Hide



ATTACHMENT 3
POTENTIAL TOPICS FOR DAILY HEALTH AND SAFETY MEETING

HEALTH AND SAFETY PLAN
Yakima Steel Fabricators, Inc.
6 and 10 ½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

POTENTIAL TOPICS FOR DAILY HEALTH AND SAFETY MEETING

- ☐ Emergency response plan, emergency vehicle (full of fuel) and muster point
- ☐ Route to medical aid (hospital or other facility)
- ☐ Work hours. Is night work planned?
- ☐ Hand signals around heavy equipment
- ☐ Traffic control
- ☐ Pertinent legislation and regulations
- ☐ Above- and below-ground utilities (energized or de-energized)
- ☐ Material Safety Data Sheets
- ☐ Reporting an incident: to whom, what, why, and when to report
- ☐ Fire extinguisher and first aid kit locations
- ☐ Excavations, trenching, sloping, and shoring
- ☐ Personal protective equipment and training
- ☐ Safety equipment and training
- ☐ Emergency telephone location(s) and telephone numbers (in addition to 911)
- ☐ Eye wash stations and washroom locations
- ☐ Energy lock-out/tag-out procedures. Location of "kill switches," etc.
- ☐ Weather restrictions
- ☐ Site security. Site hazards. Is special waste present?
- ☐ Traffic and people movement
- ☐ Working around machinery (both static and mobile)
- ☐ Sources of ignition, static electricity, etc.
- ☐ Stings, bites, large animals, and other nature-related injuries and conditions
- ☐ Working above grade
- ☐ Working at isolated sites
- ☐ Decontamination procedures (for both personnel and equipment)
- ☐ How to prevent falls, trips, sprains, and lifting injuries
- ☐ Right to refuse unsafe work
- ☐ Adjacent property issues (e.g., residence, business, school, daycare center)

ATTACHMENT 4
DAILY HEALTH AND SAFETY BRIEFING LOG

HEALTH AND SAFETY PLAN
Yakima Steel Fabricators, Inc.
6 and 10 ½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

DAILY HEALTH AND SAFETY BRIEFING LOG

Date	
Start Time	
Issues Discussed	
1.	
2.	
3.	
4.	
5.	
Attendees	
Print Name	**Signature**
Meeting Conducted by	
Name (Site Health and Safety Coordinator)	**Signature**

ATTACHMENT 5
INCIDENT REPORT FORM

HEALTH AND SAFETY PLAN
Yakima Steel Fabricators, Inc.
6 and 10 ½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

INCIDENT REPORT

NEAR MISS, ACCIDENTAL INJURY, OCCUPATIONAL ILLNESS, OR WORK PLACE INCIDENT

INCIDENT TYPE **(TO BE COMPLETED BY HEALTH AND SAFETY COORDINATOR)** | **INCIDENT DATE**

- ☐ FATALITY
- ☐ LOST WORKDAY (LW)
- ☐ LW RESTRICTED DUTY
- ☐ OSHA MEDICAL OR ILLNESS WITHOUT LW
- ☐ FIRST AID
- ☐ INDUSTRIAL NON-RECORDABLE
- ☐ NON-INDUSTRIAL
- ☐ OFF-THE-JOB INJURY
- ☐ MOTOR VEHICLE ACCIDENT
- ☐ FIRE
- ☐ SPILL/LEAK
- ☐ PRODUCT INTEGRITY
- ☐ EQUIPMENT
- ☐ BUSINESS INTERRUPTION
- ☐ GENERAL LIABILITY
- ☐ CRIMINAL ACTIVITY
- ☐ NOTICE OF VIOLATION
- ☐ NEAR MISS

This report must be completed by the employee or Health and Safety Coordinator immediately upon learning of the incident. The completed report must be reviewed and signed by a Farallon Principal within 24 hours of the incident, even if employee is not available to review and sign. Employee or employee's doctor must submit a copy of the doctor's report, and any subsequent exams, to Richard McManus at Farallon within 24 hours of the initial exam. After hours or weekends, telephone Mr. McManus via cell phone: (425) 466-1032.

EMPLOYEE INFORMATION

LAST NAME	FIRST NAME AND MIDDLE INITIAL	TITLE	DATE OF BIRTH

EMPLOYMENT STATUS ☐ FULL-TIME ☐ PART-TIME ☐ HOURLY-AS-NEEDED | LENGTH OF EMPLOYMENT

DATE OF INJURY OR ONSET OF ILLNESS (MM/DD/YYYY) | TIME OF EVENT OR EXPOSURE ☐ AM ☐ PM

INJURY OR ILLNESS INFORMATION

EXACT LOCATION OF INCIDENT (GEOGRAPHICAL LOCATION, FLOOR, BUILDING, ETC.)

COUNTY | ON EMPLOYER'S PREMISES? ☐ YES ☐ NO

COMPLETE DESCRIPTION OF INCIDENT; INCLUDE SPECIFIC ACTIVITY AT TIME OF INCIDENT (e.g., Lifting, Pushing, Walking)

DESCRIBE THE EQUIPMENT, MATERIALS, OR CHEMICALS THAT DIRECTLY HARMED THE EMPLOYEE (e.g., the machine that the employee struck or that struck the employee; the vapor inhaled; the material swallowed; what the employee was lifting or pulling)

DESCRIBE THE SPECIFIC INJURY OR ILLNESS (e.g., cut, strain, fracture, skin rash)

BODY PART(S) AFFECTED (e.g., back, left wrist, right eye)

DATE EMPLOYER NOTIFIED | TO WHOM REPORTED

MEDICAL PROVIDER INFORMATION (e.g., hospital, doctor, clinic)

NAME AND ADDRESS OF MEDICAL CARE PROVIDER | TELEPHONE NO.

TREATED IN EMERGENCY ROOM? ☐ NO ☐ YES | HOSPITALIZED OVERNIGHT AS INPATIENT? ☐ NO ☐ YES

INCIDENT REPORT, CONTINUED

SEVERITY OF INJURY OR ILLNESS	TIME LOSS (Check all that apply)	PHASE OF WORKDAY
☐ NO TREATMENT REQUIRED	☐ NO TIME LOSS	☐ PERFORMING NORMAL WORK DUTIES
☐ FIRST AID ONLY	☐ RETURN TO WORK THE NEXT DAY	☐ MEAL PERIOD
☐ MEDICAL TREATMENT	☐ RESTRICTED ACTIVITY:	☐ REST PERIOD
☐ FATALITY (ENTER DATE):	BEGIN DATE	☐ ENTERING/LEAVING
	RETURN DATE	☐ CHRONIC EXPOSURE
	☐ LOST WORKDAY, NOT AT WORK:	☐ OTHER (SPECIFY):
	BEGIN DATE	
	RETURN DATE	

MOTOR VEHICLE ACCIDENT		PROFESSIONAL DRIVER? ☐ YES ☐ NO	
TOTAL YEARS DRIVING	COMPANY VEHICLE? ☐ YES ☐ NO	VEHICLE TYPE	
NO. OF VEHICLES TOWED	NO. OF INJURIES	NO. OF FATALITIES	

THIRD PARTY INCIDENTS		
NAME OF OWNER	ADDRESS	TELEPHONE NO.
DESCRIPTION OF DAMAGE		
INSURANCE INFORMATION		
WITNESS NAME	ADDRESS	PHONE NO.
WITNESS NAME	ADDRESS	PHONE NO.

REVIEWED BY			
NAME (PRINT)	SIGNATURE	TITLE	DATE

ATTACHMENT 6
NEAR MISS REPORT FORM

HEALTH AND SAFETY PLAN
Yakima Steel Fabricators, Inc.
6 and 10 ½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

NEAR MISS REPORT

This report is to be filled out by any employee involved in or witnessing a near miss. A near miss is an incident that did not result in any personal injury, property damage, or work interruption. It is a very important indicator of potentially harmful future accident.

Project No. _____ Project Name _____

Project Address _____

Date of incident: _____ Time:_____ ☐ AM ☐ PM

Exact location of incident _____

_____

Description of incident or potential hazard _____

_____

_____

_____

_____

_____

_____

Corrective action taken _____

_____

_____

_____

_____

_____

Employee Signature _____ Date _____

Printed Name _____

Supervisor Signature _____ Date _____

Printed Name _____

ATTACHMENT 7
UTILITY CLEARANCE LOGS

HEALTH AND SAFETY PLAN
Yakima Steel Fabricators, Inc.
6 and 10 ½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

UTILITY CLEARANCE LOG

Project Name: _____ **Project Number:** _____

Location: _____ **Date of Work:** _____

Instructions. This log must be completed by a Farallon staff member **before** any Farallon-directed excavation (e.g., test pit excavation) or drilling operation.

DRILLING OR EXCAVATION WORK MAY NOT COMMENCE UNTIL UTILITY LOCATES HAVE BEEN COMPLETED
(See the One-Call Utility Locate Request Procedure on the following page)

Farallon is responsible for having underground utilities and structures located and marked when drilling or directing test pit excavation operations. Any drilling or excavation within 2 feet of a marked utility must be done with hand tools.

Owners of underground utilities are required by law to mark underground facilities on public and private property. Owners of underground utilities are **not required** to mark existing service laterals or appurtenances. Utility owners in Washington are required to subscribe to the One-Call service.

Private utility locate services must be hired to locate service laterals and other buried utilities (e.g., on-site electric distribution lines, irrigation pipes) on private property.

Re-mark after 10 days or maintain as appropriate.

Utility Locate Checklist

☐ Attach map showing drilling and/or excavation sites and known utilities

☐ Attach copy of One-Call Utility Notification Ticket (http://www.searchandstatus.com/)

One-Call Utility Notification Ticket Number: _____

☐ Attach copy of Side Sewer Card (available for City of Seattle; check municipality for availability)

☐ Attach copy of Private Locate Receipt

☐ Photograph all excavation and/or drilling locations and download to project file

☐ Review utilities with Site Contact:

Name: _____ Phone: _____

Utilities and Structures

Utility Type	Utility Name	Public Utilities Marked (Y/N)	Private Utilities/Laterals Marked (Y/N)	Marking Method (Flags, paint on pavement, wooden stakes, etc.)
Petroleum product lines				
Natural gas line				
Water line				
Sewer line				
Storm drain				
Telephone cable				
Electric power line				
Product tank				
Septic tank/drain field				
Other				

Farallon Consulting, L.L.C.

Field Team Leader: _____ Date: _____

Electric = **RED**	*Gas-Oil-Steam =* **YELLOW**	*Comm-CATV =* **ORANGE**	*Water =* **BLUE/PURPLE**	*Sewer =* **GREEN**	*Temp Survey =* **PINK**

ONE-CALL UTILITY LOCATE REQUEST PROCEDURE

THE ONE-CALL UTILITY NOTIFICATION CENTER REQUIRES 48 HOURS NOTICE TO MARK UTILITIES BEFORE YOU CAN DIG OR DRILL

Washington: 1-800-424-5555
Oregon: 1-800-332-2344

Washington state law states that "before commencing **any** excavation," the excavator or driller must provide notice to all owners of underground utilities by use of the One-Call locator service, and that the excavator or driller shall not dig or drill until all known utilities are marked. To fully comply with the law, you **must** take the following steps:

1. **Call before you dig or drill:** Notify the One-Call Utility Notification Center (OCUNC) a minimum of 48 hours (two full business days) before digging or drilling. Provide the following **required** information:
    a. Your name and phone number, company name and mailing address, and Farallon Account Number 25999.
    b. The type of work being done.
    c. Who the work is being done for.
    d. The county and city where the work is being done.
    e. The address or street where the work is being done.
    f. Marking Instructions: "Generally locate entire site including rights-of-way and easements"

    Provide the following information if applicable or requested:
    a. The name and phone number of an alternate contact person.
    b. If the work is being done within 10 feet of any overhead power lines.
    c. The nearest cross street.
    d. The distance and direction of the work site from the intersection.
    e. Township, range, section, and quarter section of the work site.

2. **Record the utilities that will be notified:** OCUNC will tell you the utilities that are on or adjacent to the site, based on their database. Record the name(s) of the utility on the reverse side of this form.

3. **After the 48-hour waiting period, confirm that the utility locations have been marked:** Before digging or drilling, walk the site and confirm that the utility companies have marked the utility locations in the field.

4. **If a locate appears to be missing:** If a utility locate appears to be missing and the utility company has not notified you that there are no utilities in the area, call OCUNC and:

    a. Provide the OCUNC locate number.
    b. Clearly state which utility has not been marked. The call is being recorded.
    c. Ask for a contact person at that utility.
    d. Call the contact person for the missing utility locate: Determine why there is no utility locate in the field.
    e. Record the reason(s) for the missing locate(s): There are valid reasons that locates do not appear in the field (e.g., there are no utilities located on the site or the utility has been abandoned). However, IF THEY ARE LATE, **YOU MUST WAIT** TO DRILL OR DIG. If the utility fails to mark a locate within the required 48 hours (two full business days), the utility is liable for delay costs.

5. **Hand dig within 2 feet of a marked utility:** When digging or drilling within 2 feet of any marked utility, the utility must be exposed first by using hand tools.

Electric = **RED**	*Gas-Oil-Steam =* **YELLOW**	*Comm-CATV =* **ORANGE**	*Water =* **BLUE/PURPLE**	*Sewer =* **GREEN**	*Temp Survey =* **PINK**

ATTACHMENT 8
AIR MONITORING TABLE AND FORMS

HEALTH AND SAFETY PLAN
Yakima Steel Fabricators, Inc.
6 and 10 ½ East Washington Avenue
Yakima, Washington

Farallon PN: 765-001

ACTION LEVEL TABLE FOR AIR MONITORING

The Air Monitoring table (following page) presents protocol for monitoring ambient air for constituents of concern and other parameters that may affect worker safety. Please note the following with respect to use of this table:

- The Level for Respirator Use indicates the concentration at which a respirator must be donned. It does not require that the job stop. The respirator is a piece of equipment that is to be used while determining why a concentration has reached that level. Implement engineering controls such as water mist, spray foam, plastic cover, etc. to reduce the concentration.

- The Level for Work Stoppage indicates the concentration at which work on the job must stop. Determine why a concentration has reached that level, and how it can be decreased. Site evacuation is not necessary at this level. Stopping work does not imply that the concentration level will decrease. Implement engineering controls to reduce the concentration; resume work when it is safe to do so.

- These values can be modified under particular site conditions and with specific knowledge of the contaminant(s). Should such conditions arise, contact Farallon's Health and Safety Officer, Richard McManus at (425) 295-0800.

AIR MONITORING

Chemical (or Class)	Monitoring Equipment	Task	Monitoring Frequency and Location	Level for Respirator Use	Level for Work Stoppage
Volatile Organic Vapors	Flame ionization detector (FID)/ photoionization detector (PID) as appropriate for chemicals of concern. Read manual to determine. Draeger Tube for vinyl chloride (Model 1/a; Part Number 67 28031). Draeger Tube for benzene (Model 0.5/a).	From start of mobilization to completion and demobilization.	Sampling should be continuous during the project while disturbing potentially contaminated soil, uncovering and/or removing tanks and piping, or drilling —at least every 15 minutes in the breathing zone. Sample at the exclusion zone boundaries every 30 minutes. Continuously sample during each soil and groundwater sampling interval. If 10 parts per million (ppm) in breathing zone, collect a Draeger Tube for benzene and/or vinyl chloride (depending upon contaminants of concern).	20 ppm above background sustained in breathing zone for 2 minutes, and no benzene and/or vinyl chloride tube discoloration. If a color change appears on the tube for benzene or vinyl chloride at 10 ppm on FID/PID, don respirator. If no Draeger Tube is available, the level for respirator use is to be 5 ppm.	50 ppm above background in breathing zone and no vinyl chloride or benzene tube discoloration. Stop work if tube indicates > 1 ppm for benzene or vinyl chloride. If no Draeger Tube is available, stop work at 25 ppm.

AIR MONITORING EQUIPMENT CALIBRATION/CHECK LOG

Date	Instrument/ Model No.	Serial No.	Battery Check OK?	Zero Adjust OK?	Calibration Gas (ppm)	Reading (ppm)	Leak Check	Performed By	Comments

AIR MONITORING LOG

Date	Time	Location	Source/Area/ Breathing Zone	Instrument	Concentration/Units	Sampled by