Revised Interim Action Work Plan

Colville Post and Pole
Stevens County, Washington

for
Washington State Department of Ecology

January 16, 2015

GeoEngineers
Earth Science + Technology

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File No. 0504-098-00

January 16, 2015

Prepared for:

Washington State Department of Ecology
Toxics Cleanup Program – Eastern Region Office
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INTRODUCTION

GeoEngineers, Inc. has prepared this Revised Interim Action Work Plan (IAWP) for the Colville Post and Pole Inc. (CPPI) site located at 396 Highway 395 North near Colville in Stevens County, Washington (herein referred to as the "Site"). The Site location relative to surrounding properties is depicted on Vicinity Map, Figure 1. The Site is currently managed by the Washington State Department of Ecology (Ecology); previous assessment and removal activities were conducted by the United States Environmental Protection Agency (EPA).

Ecology plans to conduct a Remedial Investigation/Feasibility Study (RI/FS) at the site to determine the extent of contamination and screen potential cleanup actions. However, prior to initiating the formal RI/FS process, Ecology recognizes the need to conduct an Interim Action to prepare the Site for future assessment and remedial actions and to reduce continuing sources of contamination, particularly to surface water. The focus of the Interim Action will be to remove and dispose debris that: (1) restricts access to areas requiring assessment during the planned RI/FS field activities; and (2) is an obvious environmental concern based on the debris type and location (such as treated lumber located in or near surface water features). The other goal of the Interim Action is to conduct a limited soil and groundwater assessment in the northern portion of the Site, where the bulk of operations historically occurred and limited prior assessment data are available. Chemical analytical data obtained during the Interim Action assessment will be used to focus future RI efforts.

SITE DESCRIPTION AND BACKGROUND

The Site is about 23 acres and formerly was occupied by the CPPI wood-treating facility. The Site is located north of the Colville River, south of a BNSF Railway right-of-way (ROW) and tracks, east of a residential/agricultural property, and west of the former Bonanza Mill site (a former metals beneficiation facility). U.S. Highway 395 is located north of the ROW. The Site is generally flat and vegetated with native grasses, shrubs, trees and other plants. Previous assessments identified wetland areas, including streams draining to the Colville River, in the central and southern portions of the Site. These wetland areas likely are remnant meanders of the Colville River (Ecology and Environment, Inc., 2009). Current Site features and historic operational areas are depicted on Historical Site Features and Assessment Areas, Figure 2.

Based on boring logs from previous assessments, the Site geology consists generally of fill material underlain by silt, sand and gravel layers. A clay layer was consistently encountered between 12 to 24 feet below ground surface (bgs) and appeared to be located beneath the entire Site. The clay layer reportedly is hundreds of feet thick (Herrera, 2003). Groundwater depths ranged from 1 to 9 feet bgs during previous assessment and remediation activities conducted by the EPA. Groundwater flow direction generally is to the west-southwest (Ecology and Environment, 2010).

CPPI and its predecessors operated a wood-treating facility at the Site from sometime in the 1940s until January 2005. CPPI treated various wood products in dip tanks located inside a dedicated treatment building using a solution consisting of about 95 percent diesel and 5 percent pentachlorophenol (PCP). CPPI used above-ground storage tanks (ASTs) to store both diesel and PCP/diesel solutions. Freshly treated wood products were placed above drip pads to allow the excess PCP solution to drain into a sump; the

recovered PCP solution was then stored in a separate tank. Former key facility features are depicted on Figure 2.

During a site reconnaissance conducted April 25, 2014, GeoEngineers and Ecology observed debris scattered throughout the Site (including within ponded surface water in wetland areas) as well as several large debris stockpiles. Observed debris consisted of wood waste, treated and un-treated lumber, scrap metal, concrete (including foundations that appeared to formerly support ASTs), tires, vehicle maintenance waste and solid waste. Treated lumber was observed near and in surface water in multiple locations. A large wood waste pile was observed approximately in the center of the property.

PREVIOUS ENVIRONMENTAL ACTIONS

For assessment purposes, EPA divided the Site into the following four decision areas:

- Process Area – About 1 acre in the northern portion of the site. Wood-treating and maintenance activities generally occurred in this area. The treatment building, dip tanks, drip pads and ASTs were located in this area.
- North Stockpile Area – About 7 acres in the northwest area of the site. Historically this area primarily was used to store un-treated wood products. Treated wood, equipment and wood waste also were stored in this area.
- South Stockpile Area – About 6½ acres located generally south of the Process Area. Treated wood products and abandoned ASTs were stored in this area. Bark and sawdust wood waste also was accumulated in this area.
- Drainage Area – About 8 acres consisting of two drainage ditches and low areas adjacent to the Colville River.

The four decision areas are depicted in Figure 2.

The following list briefly describes the reported releases, assessment activities and remediation actions conducted at the site:

- 1989 – Reportedly a 10,000-gallon AST containing PCP wood-treating solution ruptured and released solution to the ground (EPA, 2006). No records were available that documented the release was addressed.
- 1991 – CPPI hired Century West Engineering Corporation (Century West) to conduct a limited site assessment and remediation. Century West focused their activities near the ASTs. Soil and groundwater samples were contaminated with PCP and heavy oils. About 50 cubic yards of contaminated soil was excavated and stockpiled on site. No documentation was available describing the location of the contaminated stockpile or whether it was ever disposed off-site.
- 1991 – Ecology followed up Century West's assessment with an investigation that included collecting soil samples from the treated-wood storage area, near the dip tanks, potential run-off areas, and a background sample. The investigation concluded that soil contamination was restricted to the area near the ASTs (Ecology, 1994).

- 1994 to 1997 – CPPI's consultants (Total Consultants, Inc. and Techcon) conducted limited site assessment and remediation activities near the ASTs. Remediation activities included installing former monitoring wells MW-1 through MW-4. Subsequent sampling and analysis of groundwater samples indicated MW-3 was contaminated with total phenol and heavy oil. About 150 cubic yards of PCP-contaminated soil was excavated near the ASTs and stockpiled on site in 1997. The stockpile location was not recorded in the documentation available. An additional 20 cubic yards of contaminated soil was removed from near the treatment building and stockpiled onsite at an undocumented location (EPA, 2006).
- 2002 – EPA's consultant, Herrera Environmental Consultants, Inc. (Herrera), conducted a Removal Site Evaluation (RSE). The RSE included surface soil, subsurface soil, sediment, groundwater and surface water sampling. Limited free product was observed in Process Area soil and groundwater and surface soils contained PAHs, PCPs, dioxins, petroleum hydrocarbons and VOCs at "elevated…concentrations" (Herrera, 2003).
- January 2005 – Wood-treating operations ceased and shortly after the EPA initiated the Phase I Removal Action (RA) (Ecology and Environment, Inc., 2009). The Phase I RA was conducted to dispose excess wood-treating solution and to secure the facility to reduce the direct-contact risk. Removal actions included removing wood-treating solution from tanks and sumps, collecting and analyzing sediment and soil samples, and fencing the Process Area to limit access.
- June 2005 – EPA returned to the site to conduct a Phase II RSE (Herrera, 2005). EPA's contractors collected and analyzed surface soil samples, subsurface soil samples and groundwater samples. Eight new monitoring wells (W-01 through W-08) were installed. Ground-penetrating radar was used to search the site for additional buried tanks (only a small pile of scrap metal was found in the South Stockpile Area). The Phase II RSE identified free product in the Process Area and a PCP groundwater plume extending from the Process Area to the west (the interpreted groundwater flow direction) through the North Stockpile Area to the western property boundary. PCP, petroleum hydrocarbon, and dioxin contamination were confirmed in subsurface and surface soil.
- Fall 2006 through March 2007 – The EPA conducted the Phase II RA from September 2006 through March 2007 (Ecology and the Environment, Inc., 2009). The contaminant action levels established by the EPA for the RA included:
    - PCP in soil: 8 milligrams per kilogram (mg/kg), based on the Model Toxics Control Act (MTCA) Method B cleanup level (Method B CUL) at the time of the RA (the current Method B CUL is 2.5 mg/kg, however this does not account for the protection of groundwater or ecological receptors).
    - PCP in sediment: 0.36 mg/kg, based on research conducted by the Oak Ridge National Laboratory.
    - Dioxins/furans in soil: 1 microgram per kilogram (µg/kg). The current Method B CUL is 1.1×10^{-5} mg/kg, however this does not account for the protection of ecological receptors.
- EPA demolished the treatment and storage buildings. Contaminated debris (concrete and wood) and drummed wastes were characterized and disposed according to their contaminant levels at appropriate facilities. After building demolition, EPA's contractor excavated soil and sediment to the action levels described above. Site excavations included the following:

- Main Excavation Area – This excavation was located in the Process Area near the wood treatment building. Confirmation sidewall and base soil samples were analyzed either using a field kit or laboratory testing. The excavation measured about 165 feet by 50 feet and was extended vertically about 9 feet. Free product was observed floating on groundwater in the bottom of the excavation. Floating product recovery skimmers were used to capture about 300 gallons of free product. EPA reported that soil instability and groundwater prevented complete contaminated soil excavation. Contaminant concentrations, based on either field test kits or laboratory results, in 19 soil confirmation samples exceeded the established action levels for PCP.
- South Stockpile Area – Contaminated soil mounds were present in the South Stockpile Area, possibly the stockpiled material from the historic remediation actions described above. Targeted excavation addressed the identified contaminated areas. Confirmation soil sample contaminant concentrations were less than the established action levels except at one sample location. Two additional sample locations adjacent to the wetlands contained dioxins at concentrations greater than the MTCA Method B CUL.
- North Stockpile Area – This area also was used during the RA as a contaminated stockpile staging area. After the stockpiles were disposed, about 6 inches of soil was removed from the staging area and replaced with imported topsoil. No confirmation samples were collected from this area.
- Drainage Area (Channel) – The wetland area located south of the Process Area (described as a pond) was excavated until confirmation samples indicated the sediment PCP concentration was less than the established action level. The excavation was about 175 feet long by 50 feet wide and ranged between 1 to 4 feet in depth. Sediment confirmation sample PCP concentrations were less than the action levels.
- Railroad ROW – A ROW section located north of the Process Area was previously used to store treated wood products. An area about 90 feet long and 10 feet wide and 2 feet deep was excavated. PCP concentrations in soil confirmation samples were less than the establish action levels except at one sample location.
- Contaminated soil was stockpiled, profiled and disposed off-site. Stockpiles containing PCP concentrations less than 74 mg/kg (the land disposal restriction [LDR] limit) were disposed at a Subtitle C landfill. Approximately 4,811 tons of soil with PCP concentrations less than the LDR were disposed at Waste Management's Subtitle C landfill located in Arlington, Oregon. Most of the stockpiled soil with PCP concentrations less than the LDR also contained dioxins/furans at concentrations greater than applicable LDRs. To avoid the additional expense of treating this soil, a variance was obtained (based on adjusted concentrations using toxic equivalency factors) to directly dispose the soil. An additional 2,180 tons of soil with PCP concentrations greater than the LDR were treated prior to disposal at the same facility.
- Each excavated area (except the North Stockpile Area) was backfilled with imported pit run gravel to the original site grade. About 1 foot of topsoil was imported and spread over each excavated area, including the North Stockpile Area. The site was hydroseeded with a wild grass mixture in the spring of 2007.
- During backfill operations, six product recovery wells (RW-01 through RW-06) were installed in the Process Area to continue removing product. The recovery wells operated from about December 2006 to October 2008; only about 21 liters of product were recovered during the operational period.

- June 2005 to August 2009 – EPA conducted groundwater monitoring from June 2005 to August 2009. In 2010, EPA concluded that the groundwater plume had stabilized and contaminant concentrations were declining. EPA decommissioned each of the 22 existing monitoring wells in 2010.

CONTAMINANTS OF CONCERN

Based on the historical assessment data available, the site contaminants of concern (COCs), in both soil and groundwater, primarily include the chemicals used to treat the various wood products. The following COCs were detected during previous assessment actions at concentrations greater than their respective regulatory levels:

- Semi-volatile organic compounds (SVOCs) including PCP and polycyclic aromatic hydrocarbons (PAHs);
- Diesel-range petroleum hydrocarbons (DRPH);
- Dioxins; and
- Metals (arsenic, cadmium and mercury).

Soil and groundwater samples collected during the Interim Action assessment will be analyzed for SVOCs (and DRPH as indicator contaminants. Dioxins and metals will be addressed during the RI/FS.

PROPOSED INTERIM ACTIONS

General

Based on the review of the previous efforts at the Site, additional assessment and remediation is needed to comply with MTCA regulations and obtain a No Further Action determination for the Site. This Interim Action will consist of removing potential sources of contamination from surface water, consolidating debris, and conducting a limited subsurface assessment. GeoEngineers will provide the project management and field oversight during the Interim Action.

Permitting

Because the proposed Interim Action involves working in and around wetlands, several permits might be required. To determine the permits required and apply for them, a Joint Aquatic Resource Permit Application (JARPA) will likely be submitted to the federal, state and local agencies that might have jurisdiction. Potential permits include:

1. Hydraulic Project Approval (HPA) – Washington Department of Fish and Wildlife. The HPA permit is required for projects, including debris removal, in state waters. This permit often requires State Environmental Policy Act (SEPA) compliance.
2. Conditional Use Permit (CUP) Stevens County, Washington. The CUP is required for projects in wetlands or near shorelines to confirm the project complies with development regulations.
3. Nationwide Permit (NWP) 38, Cleanup of Hazardous and Toxic Waste – United States Army Corps of Engineers (USACE). This NWP is required to contain, remove or stabilize hazardous wastes in the waters of the United States, including wetlands. A Pre-Construction Notification must be submitted to the USACE before beginning construction. Section 401 and 404 permits might also be required.

Surface Water and General Site Debris Consolidation and Removal

During the April 2014 site reconnaissance, treated lumber and other debris were observed in and adjacent to surface water features (wetlands). In addition to the debris impacting surface water features, scattered debris was observed throughout the Site. On-site consolidation to assist in future off-site disposal of the

debris is included in the Interim Action to minimize their effect as continuing sources of surface water degradation and contamination and to provide safe and unrestricted access for future actions associated with the RI/FS. This task will include:

1. GeoEngineers will assist Ecology with obtaining the permits deemed to be required to conduct the Interim Action.
2. A qualified contractor will be retained to remove debris, especially treated lumber, from in and around surface water using mechanical equipment. The contractor also will consolidate debris located throughout the site including locating and stockpiling treated lumber. Debris will be segregated and placed in designated stockpiles located in the North Stockpile Area. Stockpile locations will be selected so that stockpiles will not be a hindrance to future site assessment and mitigation actions. Depending on the characteristics of the debris and its likelihood to be a continuing source of soil or groundwater contamination, the contractor might need to construct a bermed and lined stockpile area. Debris removal also will include breaking up the remaining concrete footings located in the Process Area. The contractor will place concrete debris in a separate stockpile.
3. A GeoEngineers field representative will assist the contractor in identifying and segregating Site debris based on its likely future disposal requirements (treated or untreated lumber, scrap metal, concrete, solid waste, etc.). The field representative also will estimate the debris stockpile volumes for use during preparation of the FS and assist Ecology in identifying and coordinating off-site disposal options.

Soil and Groundwater Assessment

A limited soil and groundwater assessment will be conducted during the Interim Action. The purpose of site assessment activities will be to obtain preliminary data in an effort to focus the scope of the RI. Interim Action explorations will be sited in the central and northwest portions of the Site and will be advanced using direct-push drilling techniques. The goals of the Interim Action assessment include:

1. Defining the top of the underlying clay deposit and investigating the subsurface for potential paleochannels where dense non-aqueous phase liquid (DNAPL) contaminants (like PCP) might accumulate and represent a long-term source. Paleochannels might also provide preferential pathways for groundwater contamination.
2. Obtaining preliminary soil and groundwater screening and/or chemical analytical data. Based on the historical data, the Process Area was the primary source of PCP and petroleum contamination. The Interim Action explorations generally will be located west (downgradient) from the Process Area to obtain preliminary data regarding the extent of soil and groundwater contamination. The data will be used during the RI to place monitoring wells and focus other investigation efforts.
3. Measuring the wood waste pile thickness to estimate the volume for future disposal. The pile also will be assessed for the COCs listed above.

The locations of the proposed borings are depicted on Proposed Direct-Push Boring Locations, Figure 3. Soil and groundwater sampling procedures are described in the Sampling and Analysis Plan (SAP) (GeoEngineers 2014). Sample quality assurance and control requirements are described in the Quality Assurance Project Plan (included as Appendix A of the SAP) and the site specific health and safety plan (HASP), which is included in Appendix B of the SAP. Specific tasks associated with the Interim Action site assessment are listed below:

1. Coordinate a utility locate using the one-call system and a private utility locator.
2. Subcontract a qualified driller to advance about 28 direct-push soil borings at the approximate locations depicted on Figure 3. The borings will be advanced to about 1 to 2 feet below the top of the underlying clay layer. We expect to encounter the clay at depths ranging between 12 to 24 feet bgs. The soil recovered from the borings will be logged and field screened, and select samples will be obtained for potential chemical analysis at an accredited laboratory. For cost estimating purposes, we assume two soil samples per boring will be analyzed for DRPH using Northwest Method NWTPH-Dx and SVOCs (including PCP and PAHs) using EPA Method 8270C.
3. Collect groundwater grab samples from the direct-push boring locations for screening and potential analysis. Drill casing or temporary PVC casing and screen will be left in place in select borings for a minimum of 1 hour prior to collecting a groundwater sample. Groundwater will be purged from each temporary sampling point using a peristaltic pump for about 15 minutes before obtaining a groundwater sample for screening and analysis. The boring locations will be abandoned in accordance with Washington State regulations after obtaining groundwater samples. We estimate groundwater samples will be collected for screening and chemical analysis from the eight soil borings indicated on Figure 3. Groundwater samples will be analyzed for DRPH and SVOCs using the methods listed above. Soil and groundwater samples will be submitted for chemical analysis on a standard turn-around time.
4. Investigation-derived waste (IDW) will be drummed, labeled, profiled and disposed. A qualified contractor will be subcontracted to provide IDW disposal services.
5. Prepare a draft and final Interim Action Report in accordance with Washington Administrative Code (WAC) 173-340-430. The report will include the results from site assessment activities, summarize the contractor's actions to remove and consolidate debris, and summarize volume estimates of debris stockpiles. The report will be submitted to Ecology for review and comment before being finalized.

SCHEDULE

Site assessment activities are expected to require about 3 days to complete and contractor debris consolidation is expected to require about a week. Scheduling will be coordinated to the extent practicable to minimize travel to and from the Site. Optimally, assessment and debris consolidation will occur in late summer or fall to take advantage of the seasonally low water elevations in the adjacent Colville River and the site surface water features. Per WAC 173-3430-600(16), a 30-day public comment period is required before implementing the proposed interim action. The proposed Interim Action schedule includes:

1. Finalize Interim Action Work Plan – September 2014
2. Project permitting – September/October 2014
3. 30-day public comment period – October 2014
4. Select and contract Interim Action contractor(s) – October 2014
5. Interim Action field work – November 2014

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FIGURES

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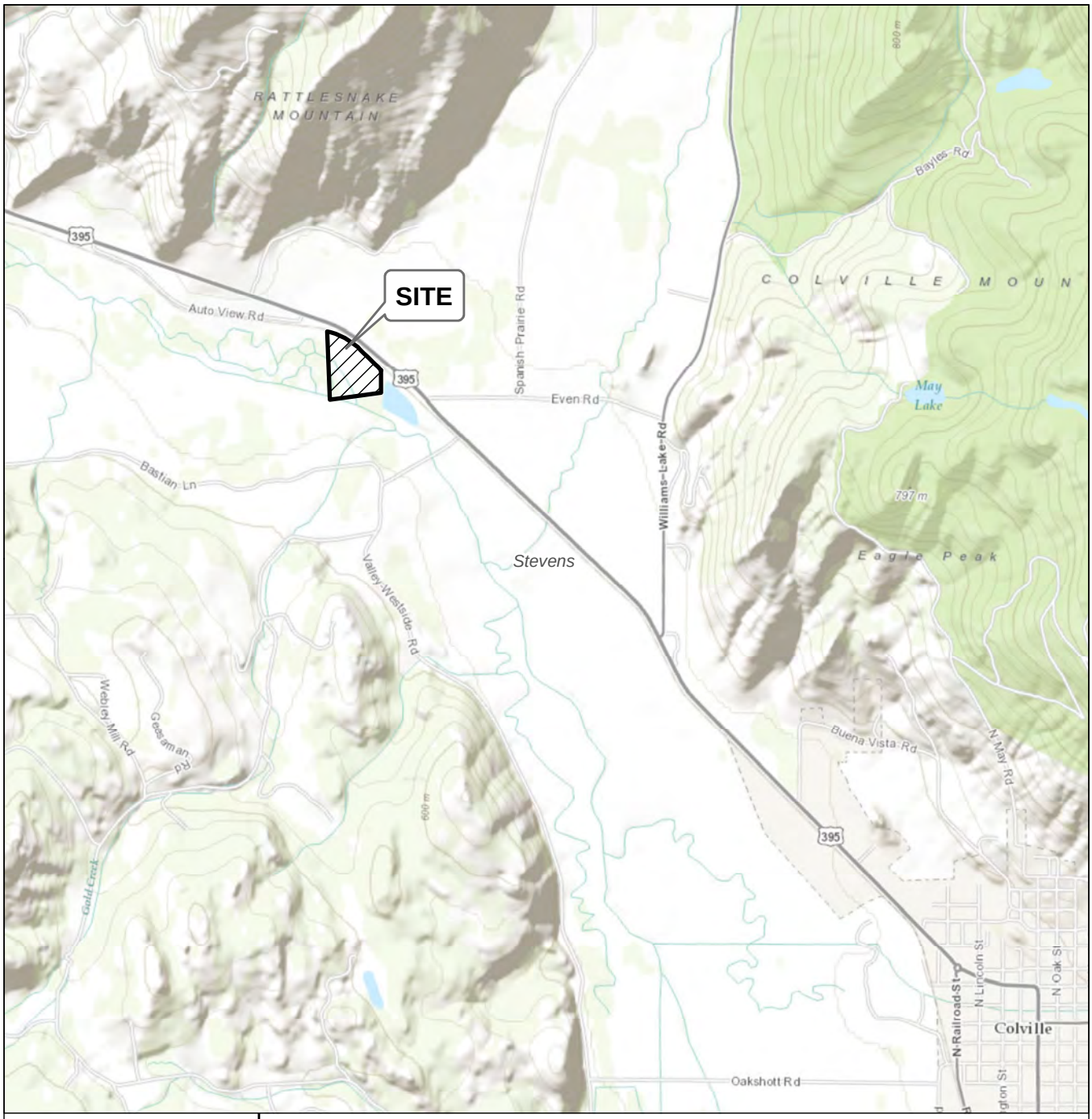

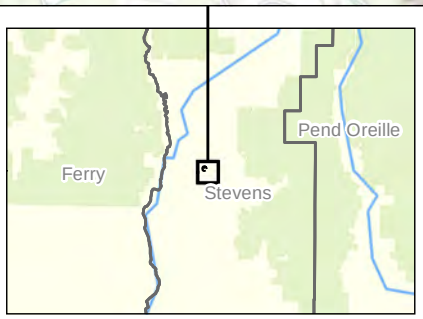

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Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
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Base map from ESRI Data Online.
Projection: NAD 1983, UTM Zone 11 North.

Vicinity Map

Colville Post and Pole
Colville, Washington

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Figure 1

Map Revised: 30 January 2014 ccabrera

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Legend

- Property Boundary
- Wetland Boundary (Herrera 2005)
- Decision Area Boundary (Herrera 2003)

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Data Source: 2004 Aerial base from Goole Earth Pro.
Site and wetland boundary figures provided by EPA and Washington Department of Ecology.

Projection: NAD 1983 UTM Zone 11N

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Historical Site Features and Assessment Areas

Colville Post and Pole
Colville, Washington

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Figure 2

Map Revised: 18 July 2014 maugust

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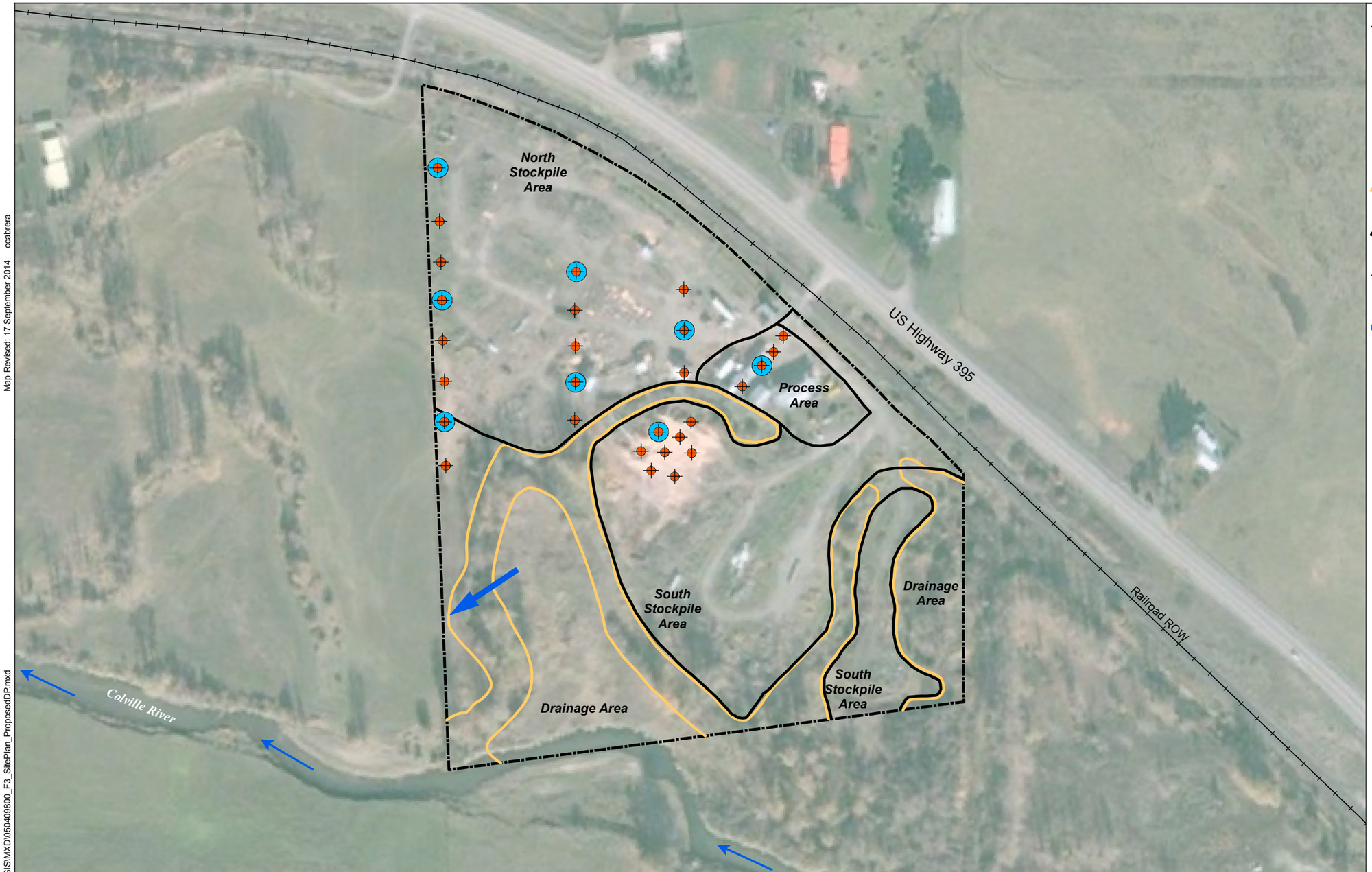

Legend

- Proposed Direct-Push Soil Boring Location
- Proposed Groundwater Grab Sampling Location
- Property Boundary
- Wetland Boundary (Herrera 2005)
- Decision Area Boundary (Herrera 2003)
- Railroad
- Groundwater Flow Direction (based on historical groundwater measurements)

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Data Source: 2011 Aerial base from ESRI ArcGIS Data Online.
Site and wetland boundary figures provided by EPA and Washington Department of Ecology.

Projection: NAD 1983 UTM Zone 11N

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Proposed Direct-Push Boring Locations

Colville Post and Pole
Colville, Washington

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Figure 3

Map Revised: 17 September 2014 ccabrera
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