

JULY 28, 2015

TO

Maureen Barnes, Real Estate Services

FROMShannon Straws, Environmental Affairs Division ^{SS}**SUBJECT**

Environmental Cleanup – Former Ambaum Substation

SITE ADDRESS: 1006 SW 144TH ST, BURIEN, WA

In consideration of the potential disposition of the former Ambaum Substation property we have, at your request, evaluated the environmental conditions of the property. This Memorandum summarizes the outcome of this work and the current status of the property with respect to potential chemical contaminants related to former Seattle City Light operations.

City Light Operational History - The Ambaum site was purchased by City Light in 1948 for the purpose of establishing a 4 kV Substation at the location. The site was decommissioned in August 1991, and substation equipment was removed in December 1991. Thereafter the site was occasionally used for storage but remained primarily unoccupied and consisted of the original concrete transformer pad surrounded by fencing. The remainder of the parcel was vegetated with grass, shrubs, and trees and included an asphalt driveway. The property is located within a commercial zone along Ambaum Way.

Environmental Investigations – Three environmental investigations were completed by consultants to City Light: Raven, 1992, Herrera 2001, and Hart Crowser 2013 & 2015.

Summary of Results – Sampling was based on potential chemical contaminants that could be associated with former Seattle City Light operations. Results were compared to Ecology MTCA (2007) residential cleanup levels. In the 1992 site assessment, the concrete pad was sampled by collecting subsamples from 4 areas and compositing the material from each area. Four composite soil samples were also collected from areas within the fenced transformer yard adjacent to the concrete pad. PCBs were detected above screening levels in all concrete samples and 2 of the composite soil samples. Samples of conduit runs were also collected and tested for the presence of asbestos. The westernmost pipe conduit was found to contain asbestos.

Herrera conducted a limited investigation within the fenced transformer yard in 2001; this assessment also looked at the areas of PCB detections from the 1992 study. Five composite soils samples were collected during this investigation to evaluate petroleum hydrocarbons and pesticides near the pad,

and four discrete soil samples were taken to confirm the 1992 PCB detections. All analytes tested during the 2001 investigation were found to be below laboratory detection limits. The previous (1992) PCB detections were thereby determined to be of questionable quality.

In 2012-13 Hart Crowser conducted additional sampling to further characterize the site. Ten composite soil samples were collected from across the site to evaluate for heavy metals, pesticides, and herbicides. Samples indicated that concentrations of lead and arsenic were present within the southwest corner of the fenced transformer yard, arsenic was present along the west property line, and the pesticides DDT and/or Dieldrin were located in landscaped areas, all at levels above MTCA cleanup levels. No herbicides were detected in exceedance of MTCA cleanup levels.

Eleven hand-augured core samples were taken at 8-10" to evaluate the extent of the soil contamination. Pesticide contamination was found to extend below 10" in the southwest corner of the property.

Supplemental concrete sampling was done in 2015 by Hart Crowser for concrete disposal purposes. Concrete samples were taken from the areas noted in the original 1992 Raven report as having PCB concentrations. None of the supplemental concrete samples were found to have detectable levels of PCBs.

Cleanup of the site was based on comparison of sample analysis results to current Ecology MTCA (2007) unrestricted cleanup levels.

Removal and Cleanup Confirmation – Soil excavation and removal was completed by NRC Environmental Services with oversight by Hart Crowser in May of 2015. The removal action consisted of removing soils across the majority of the site to 10" below ground surface (bgs) and soils in the southwest corner to 30" bgs. Initial confirmation soil samples showed contamination extended to further depths, therefore additional excavation was undertaken. The additional depths of excavation varied across the site from 16" bgs to 24" bgs in specific areas.

Metal and pesticide contaminated soils removed from the property were transported to Waste Management's Alaska Street transfer facility per pre-approved Bill of Lading. The material was disposed of at Waste Management's Columbia Ridge landfill in Arlington, OR.

The concrete transformer pad and the majority of the substation yard fencing were also removed during cleanup activities. These materials were transported to Republic Service's 3rd & Lander transfer facility for disposal at their Roosevelt Regional Landfill in Roosevelt, WA.

Soil Vactoring – In an effort to preserve large trees located on this property, and those on adjacent properties, special methods were used to remove soil from tree root systems while minimizing damage to the roots themselves. NRC used vactor trucks to remove soil from the excavation areas while using pressurized air or water to mechanically separate the soil from the roots. A certified arborist was onsite during all vactor work to monitor best practices for tree survival. Areas of vactor removal were backfilled immediately upon receipt of acceptable confirmation sample results, and extra attention was paid to filling in void spaces created by tree roots.

Areas outside of root zones were backfilled with Type 17 material to approximately 8-10" below grade. Then approximately 8-10" of Cedar Grove 60/40 mix was placed on top of the T-17. In treed areas Cedar Grove 60/40 mix was used to backfill and Cedar Grove Arborist mulch was placed in areas where

tree roots are present. All remaining areas were seeded and protected with straw mulch by City Light vegetation crews.

Asbestos Conduit – A certified asbestos contractor, Walker Specialty Construction, Inc, removed the asbestos containing conduit which day lighted at the concrete transformer pad once the concrete was broken up for removal. A portion of the conduit was removed from the area directly underneath the pad; additional amounts of conduit remain buried on the site. While not encountered within the removed runs, lead wiring may be present within remaining conduit runs.

Summary – All associated reports, documents, sketches/figures and analytical reports are on file with City Light Environmental Affairs.

Closure

Based on the foregoing, chemical contaminants that could be associated with former Seattle City Light operations are currently either not detected or are at or below Washington Department of Ecology residential cleanup levels on the property. No further action concerning potential contaminants from former Seattle City Light operations is required on this property.

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CC: Devereaux, W.

