

# Property Review

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## **American Avionics** 7023 Perimeter Road S. Seattle, WA 98108

Prepared for

Toxics Cleanup Program  
Northwest Regional Office  
Washington State Department of Ecology  
Bellevue, Washington

Prepared by



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**General Facility Information**

Facility Name: American Avionics  
Alternate Names: None  
Facility Physical Address: 7023 Perimeter Road S. (listed in early documents as 7031 Perimeter Road S.)  
Seattle, WA 98108  
Facility Mailing Address: Same  
Facility Telephone Number: 206-763-8530  
Facility Owner: American Avionics, Inc.  
7023 Perimeter Road S.  
Seattle, WA 98108  
Facility Operator: Same  
Contact: Robert Kihlstrom  
Property Owner: King County International Airport  
P.O. Box 80245  
Seattle, WA 98108-0245  
Contact: Rick Renaud, 206-296-7427  
Site Drainage: KC Airport SD#3/PS44 EOF

**Current Facility Information**

NPDES Permit Number: None  
Hazardous Waste Generator ID Number: None  
UST Site ID: None

American Avionics is located on the east side of King County International Airport (KCIA) (Figure 1); the property is leased from KCIA. The site is just over one acre in size; it is paved and relatively flat. It is bounded on the west by KCIA runways and taxiways, on the northwest and southeast by other airport tenant facilities, and on the east by Perimeter Road S.

Stormwater runoff at the site drains to KC Airport SD#3/PS44 EOF.

In 1999, American Avionics completed construction of a two-story office building (identified as Boeing Field Corporate Center II) with an attached aircraft hangar, which occupies almost the entire property. Activities at the site are listed under SIC code 4581 (airports, flying fields, and airport terminal services).

A Voluntary Cleanup (VCP# NW0566) was performed at this site during 1997 to 2000 as described below. The Facility Site ID is 39659753.

*Note: Galvin Flying Service, Inc. is also listed at the same address (7023 Perimeter Road S.).*

## **Inspections**

The Seattle Public Utilities/King County joint inspection team conducted a screening visit to this facility on August 27, 2004. Compliance status was listed as “N/A”. Although the actual inspection report was not available, it is assumed that no potential releases of pollutants to the stormwater system were identified.

*Note: Galvin Flying Service, Inc., listed at the same address (7023 Perimeter Road S.), was inspected on August 11, 2004. The following corrective actions were identified: improve or create spill response procedures; and properly educate employees.*

## **Past Site Use**

Historically, the American Avionics site was occupied by an airplane hanger [1]. Between 1982 and the mid-990s, the site consisted of an asphalt/concrete paved area for storage of light aircraft [1]. Between 1997 and 1999, a two-story office building with an attached aircraft hangar was constructed by American Avionics.

On April 14 and April 27, 2000, Early Notice Letters were sent by Ecology to American Avionics and KCIA, respectively, notifying them that the American Avionics site was being listed as a known or suspected contaminated site [6,8]. An address correction was submitted to American Avionics indicating that the correct site address is 7023 Perimeter Road S. [7].

On October 26, 2000, KCIA submitted an independent cleanup report and requested Ecology review under MTCA’s Voluntary Cleanup Program [9, 10]. (*Note: The site address was listed as 7031 Perimeter Road S.*) Because residual petroleum hydrocarbon contamination above MTCA cleanup levels remain on the property, a Restrictive Covenant was required.

A Restrictive Covenant was filed for this property on November 6, 2001. The covenant stipulates that the existing structure may not be altered, modified, or removed in any manner that may result in the release or exposure to the environment of contaminated soil or create a new exposure pathway. In addition, activities that may result in a release or exposure to the environment, such as drilling, digging, piercing the surface, bulldozing, and earthwork, are prohibited [13].

Ecology issued a determination that no further remedial action is necessary at this site under MTCA [14], and indicated that the site would be removed from the Confirmed and Suspected Contaminated Sites List. The Restrictive Covenant is a condition to maintain the no further action determination.

## **Spills and Releases**

In 1992, GeoEngineers completed a geotechnical engineering study for design of a new office building with an attached aircraft hangar. During the study, a hydrocarbon odor was noted in soil boring B-2 located near the south property boundary [3].

In a letter dated May 5, 1997, EMCON submitted a release report to Ecology on behalf of KCIA [1]. It stated that during demolition and removal of asphalt pavement in November 1996, prior to construction of the office building, stained soils were observed at the northwest and southwest corners and in the center of the proposed building footprint. The source of the contamination was not identified. Sampling and remediation were conducted as described below.

No other information on spills or releases from this facility was identified.

## **Environmental Sampling and Remediation**

After stained soils were observed during removal of asphalt pavement in November 1996, limited sampling of the stained areas was conducted by GeoEngineers on behalf of American Avionics. Eight hand auger borings were completed and one surface sample was collected. Gasoline (TPH-g), diesel (TPH-d), and oil-range hydrocarbons (TPH-O) were detected in soil at concentrations above MTCA Method A cleanup levels [1]. Benzene, ethylbenzene, toluene, and xylenes (BTEX) were not detected. Gasoline-range hydrocarbons were detected at 1,630 mg/kg, significantly higher than the MTCA Method A cleanup level of 100 mg/kg, at a location beneath the proposed offices.

Approximately 15 cubic yards of petroleum-contaminated soil was removed from the immediate vicinity of soil boring SP-12 by EMCON on November 23, 1996. No soil samples were collected from the limits of this excavation. The soil removed from the excavation was treated with cement and used as backfill on the site [3].

Additional soil sampling was conducted by GeoEngineers on December 13, 1996. Soil borings were advanced at 19 locations and a total of 20 samples were analyzed for TPH and BTEX. Halogenated volatile organic compounds (HVOCs) and metals also were analyzed in selected samples. Sample locations were selected based on the location of the hydrocarbon odor observed in 1992 and the surface staining observed as the asphalt/concrete pavement was removed during preparation for site construction. The stained soil covered an area of at least 5,000 sq.ft. [3]. Fill material consisting of gravel with silt, sand and brick/asphalt debris was encountered over most of the site to depths ranging from 1 to 2.5 feet below ground surface (bgs). Native soil, consisting of silt, silty sand and/or sand, was observed directly underlying the fill material [3]. Groundwater was encountered at depths ranging from 5.0 to 7.5 feet bgs.

BTEX and HVOCs were not detected. Chromium, copper, nickel, and zinc were detected at concentrations below the MTCA cleanup levels in the three samples for which metals were analyzed. TPH was detected in four of 20 samples and two samples exceeded MTCA Method A cleanup levels for gasoline or oil-range petroleum hydrocarbons.

Between December 17, 1996 and April 29, 1997, soil samples were collected from the perimeter footing trenches (36 samples) and interior footing trenches (four samples) [3]. In addition, 21 soil samples were obtained from the interior utility trenches, and 23 soil samples were obtained from the perimeter utility trenches. No groundwater sampling was performed.

Chemical analytical results for soil samples from the footing trenches and utility trenches indicated the following [3]:

- Tetrachloroethene (0.11 mg/kg) and 1,2-dichlorobenzene (0.071 mg/kg) were detected at low concentrations in two samples (below MTCA cleanup levels).
- Cadmium (1.8 mg/kg), chromium (4.3 to 12.2 mg/kg), copper (5.2 to 21.4 mg/kg), nickel (2.9 to 6.3 mg/kg), and zinc (12.2 to 51.5 mg/kg) were detected, all at concentrations below MTCA cleanup levels.
- Gasoline, diesel, and/or oil-range hydrocarbons were detected at concentrations exceeding MTCA Method A cleanup levels in 10 samples, at depths ranging from 2 to 6.2 feet bgs in several locations on the site.

From November 1996 through May 1997, cement stabilization was implemented to minimize the volume of soil removed and reduce the potential for offsite migration [9]. Soil excavated for the foundation footings and utilities was field screened for the presence of TPH. Soils suspected of containing TPH were treated/stabilized with cement (approximately 8 to 12 percent by weight). The treated soil was placed either beneath the footing alignment or adjacent to the footings that were subsequently covered by asphalt pavement. The upper one foot of soil beneath the building concrete slab floor was treated/stabilized by mixing with cement. Approximately 1,200 cubic yards of excess soil from the excavation that was not suspected of contamination was placed in a lined and covered stockpile [3].

Representative samples were collected from the bottom of the excavations and analyzed for TPH and BTEX. Selected samples were analyzed for HVOCs and metals. TPH concentrations above MTCA Method A cleanup levels were detected in several locations which are now in the interior portion of the building and are covered by the concrete floor slab and building roof [1]. These residual hydrocarbons were located beneath the hangar and office structure, with small portions located beneath the runway tarmac and pavement, at depths from near the surface to at least 6.2 feet below the ground surface (Figure 2). Residual petroleum hydrocarbon concentrations ranged from 6 to 4,810 mg/kg TPH-G, 10.5 to 4,880 mg/kg TPH-D, and 25 to 485 mg/kg TPH-O [9]. The reported results did not generally match the analytical standards for TPH-G and TPH-D, indicating that the petroleum hydrocarbons were a different fuel type. KCIA's consultant suggested that the fuel product may be highly weathered jet fuel [9].

Due to the presence of HVOCs under the proposed building, a passive vent system was installed below the office area, including a gravel layer with perforated pipe and manifold pipe to vent to the atmosphere [3].

Soil samples were collected from the stockpile; these were analyzed for TPH and BTEX. TPH above MTCA Method A cleanup levels were detected in four of the 10 stockpile samples. The stockpile was then transported to an area on the north side of KCIA due to "construction conflicts." (*Note: the new stockpile location appears to be the area immediately to the east of the Georgetown Steam Plant, near the former North Boeing Field Fire Training Center. The documents reviewed did not provide a map showing the exact location.*) The 1,200 cubic yards of relocated soil was mixed by bulldozers and spread to a thickness of up to 4 feet in the new

stockpile area. In addition, another 200 cubic yards of probable contaminated soil (based on field screening results) was placed on the relocated stockpile on April 10, 1997, with King County's approval [3].

No additional sampling or remediation was conducted prior to construction of the building and hangar [9]. Construction was completed in 1999.

A post-remediation groundwater investigation was conducted at the site in October 1999 after the building construction was complete, as documented in an Independent Cleanup Report prepared by IT Corporation for KCIA [9]. Boring locations were selected to investigate areas where elevated concentrations of TPH were encountered, and areas downgradient of impacted soils. Groundwater in the area generally flows to the west at a depth of approximately 7 feet bgs [9]. Five borings were advanced and completed as monitoring wells. Groundwater was encountered in all borings at approximately 8 feet bgs. Samples were collected through a 2-foot temporary well screen placed in the bottom of each boring. One soil sample and one groundwater sample were collected from each boring. Samples were analyzed for TPH-G, TPH-D, and TPH-O. No petroleum hydrocarbons were detected in any of the soil or groundwater samples [9]. Based on these results, no further action at the site was identified.

None of the samples collected at this site have been analyzed for polynuclear aromatic hydrocarbons (PAHs), phthalates, or PCBs.

In June 2006, KCIA sampled stormwater vaults along the east side of the airport [17]. The American Avionics site drains to oil/water separator 1680. Sediments in this structure contained a variety of contaminants at concentrations above the Sediment Quality Standards (SQS) and/or Cleanup Screening Levels (CSLs). These include:

- zinc (1,240 mg/kg DW),
- phenanthrene (19.1 mg/kg DW, 290 mg/kg OC),
- benzo(a)anthracene (11.6 mg/kg DW, 176 mg/kg OC),
- benzo(a)pyrene (19.0 mg/kg DW, 288 mg/kg OC),
- benzo(b)fluoranthene (30.5 mg/kg DW, 463 mg/kg OC),
- benzo(k)fluoranthene (30.4 mg/kg DW, 461 mg/kg OC),
- benzo(g,h,i)perylene (20.3 mg/kg DW, 308 mg/kg OC),
- chrysene (31.3 mg/kg DW, 475 mg/kg OC),
- dibenzo(a,h)anthracene (4.05 mg/kg DW, 61 mg/kg OC),
- fluoranthene (53.3 mg/kg DW, 809 mg/kg OC),
- indeno(1,2,3-cd)pyrene (18.2 mg/kg DW, 276 mg/kg OC),
- pyrene (38.5 mg/kg DW, 584 mg/kg OC),
- bis(2-ethylhexyl)phthalate (64.3 mg/kg DW, 976 mg/kg OC),
- butylbenzylphthalate (3.04 mg/kg DW, 46 mg/kg OC), and
- total PCBs (1.92 mg/kg DW, 29.2 mg/kg OC).

In addition, MTCA Method A cleanup levels were exceeded for diesel and motor oil. PCBs were primarily Aroclor 1254 and Aroclor 1248, although Aroclor 1260 was also detected.

**Potential for Sediment Recontamination**

The soil stabilization and capping of soil by the hangar and office structure has reduced the potential for residual TPH to migrate to groundwater. The site has been removed from Ecology’s list of known and suspected contaminated sites.

Environmental investigations conducted at American Avionics did not include sampling for PAHs, phthalates, or PCBs. While no information on a potential source of phthalates or PCBs was found, petroleum hydrocarbon spills frequently result in soil and groundwater concentrations of PAHs above regulatory levels. Although no TPH was detected in the five groundwater samples collected at the site in October 1999, it is possible that PAHs may be present in residual contaminated soils and may have been transported to groundwater since that time.

Recent stormwater vault sampling downstream of American Avionics showed concentrations of zinc, PAHs, phthalates, and PCBs above SQS and/or CSL values in stormwater vault 1680. Thus, while other facilities (in addition to American Avionics) also drain to storm vault 1680, it is possible that residual contamination at the American Avionics site is a source of PAHs to the storm drain system.

Based on the facility’s current and past use, the contaminants potentially associated with these uses, and the record of environmental sampling and remediation at the site, this facility does not represent a significant risk of sediment recontamination.

The absence of data on groundwater concentrations of PAHs at the site is considered a data gap.

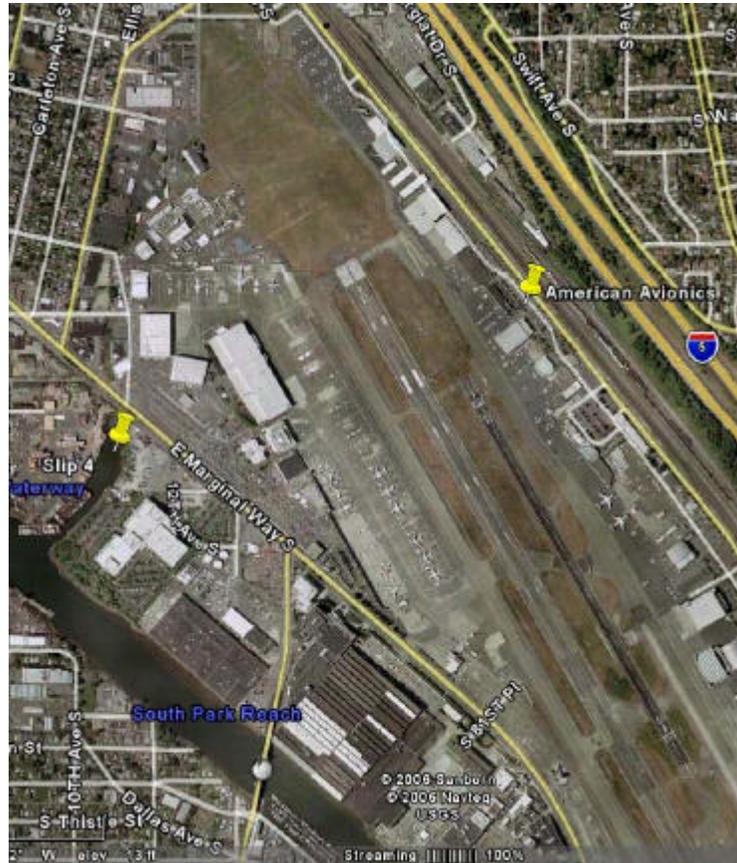
<b>Facility Name</b>	American Avionics
<b>Current Use</b>	Office and Aircraft Hangar
<b>Chemicals of Concern for Sediment Recontamination</b>	PAHs
<b>Pathways to Sediments</b>	KC Airport SD#3/PS44 EOF
<b>Data Gaps</b>	Groundwater data for PAHs

**Documents Reviewed:**

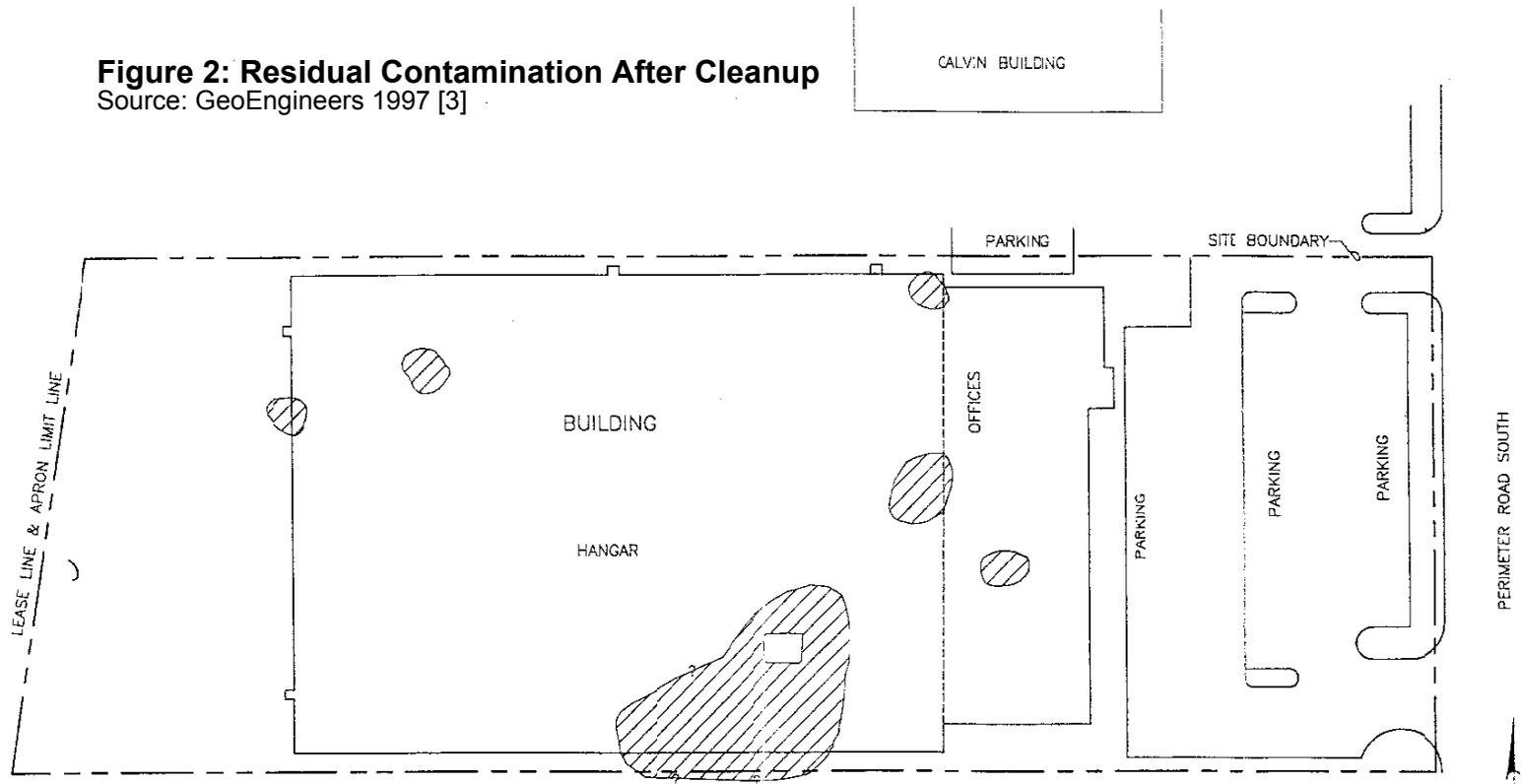
- [1] May 5, 1997 -- Letter from Daniel Balbiani, EMCON, to Washington State Department of Ecology, Re: Release Report for American Avionics, 7031 Perimeter Road South, Boeing Field, Seattle, Washington.
- [2] May 30, 1997 -- Ecology. Environmental Report Tracking System Referral. Incident ID: N26915.
- [3] September 17, 1997 – Report of Environmental Assessment and Monitoring Services, Boeing Field Corporate Center II, Seattle, Washington. Prepared for American Avionics by GeoEngineers, Inc.

- [4] March 10, 2000 – Ecology. Facility/Site Data Entry Form Update. American Avionics/King County International Airport.
- [5] March 10, 2000 – Ecology. Toxics Cleanup Program. Voluntary Cleanup Program Site Summary.
- [6] April 14, 2000 – Certified Mail letter from Sherrie Minnick, Ecology Toxics Cleanup Program, to American Avionics, Re: Early Notice Letter and Site Data Summary.
- [7] April 27, 2000 – Certified Mail letter from Steven W. Bremer, Ecology Toxics Cleanup Program, to Robert Kilstrom, American Avionics, Re: Address correction. Site Data Summary.
- [8] April 27, 2000 – Certified Mail letter from Steven W. Bremer, Ecology Toxics Cleanup Program, to Cynthia Stewart, King County International Airport, Re: Early Notice Letter.
- [9] July 6, 2000 – Letter Report from Daniel Balbiani, IT Corporation, to Steve Bremer, Washington State Department of Ecology, Re: Independent Cleanup Report, American Avionics Property.
- [10] October 17, 2000 – Voluntary Cleanup Form, Request for Assistance/Review Form, submitted by Rick Renaud, King County International Airport.
- [11] October 26, 2000 – Letter from Joseph M. Hickey, Ecology Brownfields and Voluntary Cleanup Program Coordinator to Rick Renaud, King County International Airport, Re: Request for Review, Independent Remedial Action. October 26, 2000.
- [12] Handwritten notes. 2000. Department of Ecology notes summarizing major reports. November 30, 2000 and December 14, 2000.
- [13] King County International Airport. 2001. Letter from Cynthia Stewart, Airport Manager, to Brian Sato, P.E., Washington State Department of Ecology, conveying Restrictive Covenant. November 14, 2001.
- [14] Ecology, Toxics Cleanup Program. 2001. Letter from Brian S. Sato, P.E. to Rick Renaud, King County International Airport, Re: Independent Remedial Action. November 20, 2001.
- [15] Ecology, Voluntary Cleanup Program. 2001. Voluntary Cleanup Program Site Log, submitted by Brian Sato. November 20, 2001.
- [16] Emails. 2001. between Brian Sato, Washington State Department of Ecology, and Rick Renaud, King County International Airport. May – December 2001.
- [17] Email from Bruce Tiffany, King County, to Dan Cargill, Ecology, Re: June 2006 SW Vault Sediment Sampling Data. August 25, 2006.

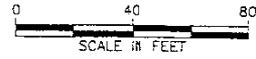
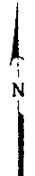
**Figure 1**  
**Site Location: American Avionics**



**Figure 2: Residual Contamination After Cleanup**  
 Source: GeoEngineers 1997 [3]



PERIMETER ROAD SOUTH



EXPLANATION:

 AREAS OF RESIDUAL HYDROCARBONS

Note: The locations of all features shown are approximate.

Reference: Drawing entitled "American Aviaics Building at King County Airport/Boeing Field, Site Plan, Project Information" by Kenneth D. Long & Associates, dated 08/28/96.

