

Memo

To: Ecology's File
Through: Andrew Smith, P.E., Unit Supervisor
From: Mohsen Kourehdar, P.E., Cleanup Project Manager
Date: 12/20/2015
Re: Briggs Nursery, Facility Site ID No. 35797926
Memo Substitution for Cleanup action plan and Cleanup Report
(Basis for No Further Action)

Project History

In 2004, Briggs Nursery entered into Agreed Order (AO) No. 1315 with Ecology to conduct a remedial investigation/feasibility (RI/FS) study, and a risk assessment of soil, sediment, groundwater, and surface water potentially contaminated with pesticides, metals, polychlorinated biphenyls (PCBs), and dioxins/furans at the Briggs Nursery site. The AO was public noticed and a public meeting was held on August 24, 2005.

The total size of Briggs Nursery is 120 acres. For practical purposes, the site was broken up into three areas, and two separate RI/FS studies were initiated for Areas 1 and 2, and Area 3. Based on the results of these studies, two interim remedial action work plans were developed and were public noticed.

One interim action implemented at the site for Areas 1 and 2 included excavation of 13,500 cubic yards of dieldrin-contaminated soil exceeding the MTCA Method B soil cleanup level of 0.0625 mg/kg. The contaminated soil was transported and disposed at the Briggs farm property located in Porter, Grays Harbor County under an approved grade and fill permit (permit number 2005-0123) by Grays Harbor County. When approving the grade and fill permit, the Grays Harbor County knew that the soil was coming from a MTCA cleanup site.

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The second interim action included excavating approximately 1,811 tons of soil contaminated with dieldrin and PCBs from Area 3 and disposing these soils at Roosevelt Regional Landfill, which is a subtitle D Landfill.

Following the two interim actions, it was determined that residual concentrations of dioxins/furans above the Method B soil cleanup level existed in five kettles at the Briggs Nursery site. To protect human health, institutional controls in the form of fencing and signage were required around the five kettles at the site. Mr. Briggs completed and recorded five restrictive covenants with Thurston County for the property underlying the five kettles, which required the placement and maintenance of fences and signs to be performed by Briggs Village, LLC (the owner of the kettles).

Following implementation of the two interim cleanup actions, all of the soil exceeding MTCA Method B soil cleanup levels for unrestricted land use for dieldrin and PCBs was excavated and removed from the site. Therefore, no further remediation of soil was required at the Briggs Nursery site. Groundwater testing showed there was no impact from the nursery operation to the groundwater at the site. The risk posed by dieldrin contaminated sediment and surface water in the five kettles was reduced by institutional controls limiting access to the kettles.

Cleanup actions conducted at the site to date are documented in the reports listed below. Generation of a separate cleanup action plan (CAP) was not necessary and will not be written for this cleanup. These reports are as follows:

- Interim Remedial Action Work Plan for Areas 1, 2, dated April 2005 by Entrix, Inc¹.
- Remedial Investigation/Feasibility Study Report for Work Areas 1 and 2, dated February 2006 by Entrix, Inc.
- Interim Remedial Action Work Plan for Area 3, dated August 2007 by Entrix, Inc.
- Remedial Investigation/Feasibility Study Report for Work Area 3, dated February 2008 by Entrix, Inc.

¹ Entrix Inc. is now Cardno-Entrix.

Change of Responsibility of the Restrictive Covenants for the Kettle Parcels

The risk posed by sediment and water in the five kettles was reduced by institutional controls to limit human access to the kettle bottoms. The institutional controls include restrictive covenants, warning signs, and fencing. The signage and fencing around the five kettles needs to be maintained to limit human access to the kettle bottoms. Since institutional controls are in place at the site, a periodic review is required to be conducted by Ecology every 5 years to ensure the site remains protective of human health and the environment.

The restrictive covenants for the five kettles were signed by Mr. Gary E. Briggs and Joseph T. Amoroso, Vice President, ADC Real estate Group, LTD. In 2014, Ecology sent letters to Gary E. Briggs and Joseph T. Amoroso, reminding them that they were responsible for maintenance of fences and signs that surround the kettles. They never responded to the letters sent by Ecology.

In 2013, Thurston County foreclosed on the property underlying the kettles due to the owner not paying the property taxes. Thurston County is now the new owner of kettles and are responsible for maintenance of the fences and signs around the kettles. After several emails and correspondence with Thurston County, the County took responsibility to comply with requirements of the restrictive covenants. The letter from the County which states they would maintain the kettles' fences and signs in accordance with the restrictive covenants is in Ecology's Document Storage and Retrieval System (DSARS).

Unresolved Issue - Site's Contaminated Soil Disposal

The interim action implemented at the Briggs site for Areas 1 and 2 included excavation of 13,500 cubic yards of dieldrin-contaminated soil exceeding the MTCA Method B soil cleanup level of 0.0625 mg/kg. The soil was transported and disposed at the Briggs farm property located near Porter, Grays Harbor County. The soil was disposed at this farm following an approval of a grade and fill permit (permit number 2005-0123) by Grays Harbor County. When approving the grade and fill permit, Grays Harbor County knew that the soil was coming from a MTCA cleanup site. The County justified in their SEPA/DNS document that dieldrin has a half-life of 5 years and is insoluble in water. The County required Briggs Nursery to put a restrictive covenant on the farm with a condition that there be annual planting and harvesting of pumpkins to

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occur for three years until 2008. Mr. Gary Briggs signed the restrictive covenant. Planting and harvesting pumpkins was intended to be part of the soil remediation at the farm. In an e-mail dated February 11, 2008, from Brain Shea with Grays Harbor County, he stated "planting and harvesting was less successful than anticipated" and the restrictive covenant should be extended to October 31, 2010. Mr. Shea also stated that "This would allow for the completion of the three year planting cycle envisioned in the original covenant." After this e-mail, there is no paper trail in Ecology's nor Grays Harbor County files regarding whether the planting and harvesting of pumpkins occurred.

The Ecology file showed that in 2008 Michael W. Mayberry, with Owens Davies, P.S., who represented Mr. Briggs, informed Ecology that information will be provided after October 31, 2008 (after the pumpkin crop is harvested). There was no correspondence in the file after the 2008 that described planting and harvesting pumpkins at the Porter farm. In 2014, Ecology e-mailed Michael Mayberry and asked about the soil remediation project and pumpkin planting and harvesting operation. Mr. Mayberry responded via e-mail that he does not represent Gary Briggs anymore and does not have any information about the project.

In 2014, Ecology contacted Grays Harbor County several times to ask about pumpkin planting and harvesting and whether there was a remediation report they have on file. The County never returned Ecology's phone calls. Ecology also researched the County's file for a soil remediation report related to pumpkin planting and harvesting. There was no soil remediation report related to treatment of contaminated soil on file at the County.

The property (Tax Parcel Number 170529340010) where the contaminated soil was disposed is currently owned by James and Christin Kershaw. Ecology contacted James Kershaw several times during 2014-2015 to see if he knows the location of where the dieldrin contaminated soil was disposed on his property, and if Ecology could take some soil samples from the disposed soil area to determine the level of dieldrin in the soil transported from the Briggs Nursery. Mr. Kershaw never answered or returned Ecology's phone calls.

Conclusions

1. The average weighted dieldrin concentration in the top 6 inches of soil at the Briggs Nursery was 0.25 mg/kg (RI/FS, 2005, Page 8-11). This value is approximately 4 times higher than Site's MTCA Method A Soil Cleanup level of 0.0625 mg/kg for dieldrin. The highest concentrations observed at the site were in the top 6 inches and concentrations dropped with depth to below Method A level for dieldrin. The 13,500 cubic yards of contaminated soil was transported to the Porter farm and tilled into clean soil. Diluting of the top six inches with the deeper soil at the Briggs Nursery site, and the additional tilling of these diluted soils with cleaner soils at the farm near Porter would have lowered the average concentration of dieldrin in the soils at the Porter farm.
2. Dieldrin has a half-life of 5 years in temperate soil (ToxGuide for Dieldrin by ATSDR, 309-00-2/60-57-1, September 2002). The soil was disposed at the Porter farm approximately 10 years ago. With a half-life of 5 years, the estimated concentrations would be close to the cleanup level.
3. Dieldrin has low solubility in water and is a hydrophobic chemical that adsorbs to organic particles in soil. Therefore, dieldrin is not likely to leach into the groundwater. In addition, the testing of 6 groundwater monitoring wells at the Briggs Nursery site did not show any contamination with dieldrin after more than 30 years of nursery operation.

Due to following circumstances and operations, we believe the dieldrin contaminated soils that were transported from the Briggs Nursery site and disposed at the Porter farm located in Grays Harbor County, is not a threat to human health and the environment, because:

1. The initial concentration of dieldrin at Briggs Nursery was relatively low;
2. The mixing of the highest dieldrin contaminated soil (0.25 mg/kg) with cleaner soil during stockpiling operations on the Briggs Nursery site;
3. The tilling of the contaminated soil from Briggs Nursery site into the clean soil at the Porter farm;
4. There would have been a four-time reduction of dieldrin concentration due to a five-year half-life;

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5. The threat to the human health via ingestion and dermal contact is low, and;
6. Groundwater monitoring data at Briggs site showed the threat to groundwater is also low on the Porter farm.