UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

November 29, 2018

MEMORANDUM

Subject: Browns Tree Care Dump – evaluation of air sampling results

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To: Matthew Loesel
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Summary:

The memorandum provides an evaluation of air sampling results for the Browns Tree Care Dump facility near Bella Vista, Arkansas. Air samples for semivolatile organic compounds (SVOCs) and volatile organic compounds (VOCs) were collected on November 10, 2018.

Location 7 (on-site) typically had the highest concentration of SVOCs and VOCs. The other sample locations (Locations 6, 8, 9 and 10 (background) had similar levels of SVOCs and VOCs. All SVOCs and VOCs were below their respective screening level except for benzene.

Benzene was detected at all five locations with only Location 7 (on-site) exceeding the non-cancer screening level. Off-site, benzene doesn't appear to present an unacceptable health risk.

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Semivolatile organic compounds (SVOCs):

- Phenol – Location 7 (on-site) had the highest concentration (2.1 µg/m^3) and the other sample locations were within a factor of 2 of the background level (2.1 µg/m^3). The screening level for phenol is 210 µg/m^3; therefore, phenol is unlikely to cause adverse health effects.

- 2-methylphenol (o-cresol) - Location 7 (on-site) had the highest concentration (1.3 µg/m^3) and the other sample locations were similar to the background level (0.016 µg/m^3). The screening level for o-cresol is 630 µg/m^3; therefore, o-cresol is unlikely to cause adverse health effects.

- 4-methylphenol/3-methylphenol - Location 7 (on-site) had the highest concentration (2.2 µg/m^3) and the other sample locations were similar to the background level (0.036 µg/m^3). The screening level for 4-methylphenol/3-methylphenol is 630 µg/m^3; therefore, 4-methylphenol/3-methylphenol is unlikely to cause adverse health effects.

- 2,4-dimethylphenol - Location 7 (on-site) had the highest concentration (0.94 µg/m^3) and wasn't detected at the background location. There is no EPA screening level for2,4-dimethylphenol. The screening level for phenol of 210 µg/m^3 is used as a surrogate; therefore, 2,4-dimethylphenol is unlikely to cause adverse health effects.

- Naphthalene - Location 7 (on-site) had the highest concentration (1.6 µg/m^3) and the other sample locations were similar to the background level (0.037 µg/m^3). The non-cancer screening level for naphthalene is 3.1 µg/m^3; therefore, naphthalene is unlikely to cause adverse non-cancer health effects.

- 2-methylnaphthalene - Location 7 (on-site) had the highest concentration (0.91 µg/m^3) and the other sample locations were similar to the background level (0.023 µg/m^3). There is no EPA screening level available for 2-methylnaphthalene and the non-cancer screening level for naphthalene of 3.1 µg/m^3 is used as a surrogate. Therefore, 2-methylnaphthalene is unlikely to cause adverse non-cancer health effects.

- Acenaphthene - Location 7 (on-site) had the only detection at a concentration of 0.049 µg/m^3. There is no EPA screening level for acenaphthene and the non-cancer screening level for naphthalene of 3.1 µg/m^3 is used as a surrogate. Therefore, acenaphthene is unlikely to cause adverse non-cancer health effects.

- Dibenzofuran - Location 7 (on-site) had the highest concentration (0.19 µg/m^3) and wasn't detected at the background location. There is no EPA screening level for dibenzofuran and the non-cancer screening level for tetrahydrofuran of 2,100 µg/m^3 is used as a surrogate. Therefore, dibenzofuran is unlikely to cause adverse non-cancer health effects.

- Fluorene - Location 7 (on-site) had the highest concentration (0.097 µg/m^3) and wasn't detected at the background location. There is no EPA screening level for fluorene and the non-cancer

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screening level for naphthalene of 3.1 µg/m^3 is used as a surrogate. Therefore, fluorene is unlikely to cause adverse non-cancer health effects.

- Phenanthrene - Location 7 (on-site) had the highest concentration (0.11 µg/m^3) and the other sample locations were similar to the background level (0.032 µg/m^3). There is no EPA screening level for phenanthrene and the non-cancer screening level for naphthalene of 3.1 µg/m^3 is used as a surrogate. Therefore, phenanthrene is unlikely to cause adverse non-cancer health effects.

- Anthracene - Location 7 (on-site) had the only detection at a concentration of 0.02 µg/m^3. There is no EPA screening level for anthracene and the non-cancer screening level for naphthalene of 3.1 µg/m^3 is used as a surrogate. Therefore, anthracene is unlikely to cause adverse non-cancer health effects.

- Fluoranthene - Location 7 (on-site) had the only detection at a concentration of 0.023 µg/m^3. There is no EPA screening level for fluoranthene and the non-cancer screening level for naphthalene of 3.1 µg/m^3 is used as a surrogate. Therefore, fluoranthene is unlikely to cause adverse non-cancer health effects.

- Pyrene - Location 7 (on-site) had the only detection at a concentration of 0.018 µg/m^3. There is no EPA screening level for pyrene and the non-cancer screening level for naphthalene of 3.1 µg/m^3 is used as a surrogate. Therefore, pyrene is unlikely to cause adverse non-cancer health effects.

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Volatile organic compounds (VOCs):

- Ethanol – Ethanol was detected a similar concentration at four out of five locations, including the background, with a range of 5.8 µg/m^3 to 22 µg/m^3. There is no EPA screening level for ethanol and the screening level for methanol of 21,000 µg/m^3 is used as a surrogate. Therefore, ethanol is unlikely to cause adverse health effects.

- Acetone - Location 7 (on-site) had the only detection at a concentration of 100 µg/m^3. Acetone has a screening level of 32,000 µg/m^3. Therefore, acetone is unlikely to cause adverse health effects. In addition, acetone is a common laboratory contaminant.

- 2-propanol (isopropanol) - Location 7 (on-site) had the only detection at a concentration of 26 µg/m^3. Isopropanol has a screening level of 210 µg/m^3. Therefore, isopropanol is unlikely to cause adverse health effects.

- Hexane – Hexane was detected a similar concentration at three out of five locations, including the background, with a range of 4.2 µg/m^3 to 9.4 µg/m^3. Hexane has a screening level of 730 µg/m^3. Therefore, hexane is unlikely to cause adverse health effects.

- 2-butanone (methyl ethyl ketone (MEK)) - Location 7 (on-site) had the only detection at a concentration of 38 µg/m^3. MEK has a screening level of 5,200 µg/m^3. Therefore, MEK is unlikely to cause adverse health effects. In addition, MEK is a common laboratory contaminant.

- Tetrahydrofuran - Location 7 (on-site) had the only detection at a concentration of 34 µg/m^3. the screening level for tetrahydrofuran is 2,100 µg/m^3; therefore, tetrahydrofuran is unlikely to cause adverse non-cancer health effects.

- 2,2,4-Trimethylpentane – 2,2,4-Trimethylpentane was detected at all five locations with a range of 5.1 µg/m^3 to 22 µg/m^3 and with the Location 10 (background) having the highest level. There is no EPA screening level for 2,2,4-trimethylpentane and the screening level for n-pentane of 1,000 µg/m^3 is used as a surrogate. Therefore, 2,2,4-trimethylpentane is unlikely to cause adverse health effects.

- Benzene - Location 7 (on-site) had the highest concentration (100 µg/m^3) and the other sample locations were similar to the background level (3.8 µg/m^3). Benzene has a non-cancer screening level of 31 µg/m^3. Location 7 was the only location to exceed the screening level.

- Heptane - Heptane was detected a similar concentration at three out of five locations, including the background, with a range of 3.9 µg/m^3 to 8.1 µg/m^3. Heptane has a screening level of 420 µg/m^3. Therefore, heptane is unlikely to cause adverse health effects.

- Toluene - Location 7 (on-site) had the highest concentration (72 µg/m^3) and the other sample locations were similar to the background level (24 µg/m^3). Toluene has a screening level of 5,200

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µg/m^3. No location exceeded the screening level. Therefore, toluene is unlikely to cause adverse effects.

- Ethyl benzene - Ethyl benzene was detected a similar concentration at three out of five locations, including the background, with a range of 4.2 µg/m^3 to 13 µg/m^3. Ethyl benzene has a non-cancer screening level of 1,000 µg/m^3. Therefore, ethyl benzene is unlikely to cause adverse non-cancer health effects.

- m,p-Xylene - m,p-Xylene was detected a similar concentration at three out of five locations, including the background, with a range of 15 µg/m^3 to 24 µg/m^3. m,p-Xylene has a screening level of 100 µg/m^3. Therefore, m,p-Xylene is unlikely to cause adverse health effects.

- o-Xylene - o-Xylene was detected a similar concentration at three out of five locations, including the background, with a range of 5.3 µg/m^3 to 10 µg/m^3. o-Xylene has a screening level of 100 µg/m^3. Therefore, o-xylene is unlikely to cause adverse health effects.

- 4-Ethyltoluene – 4-Ethyltoluene was detected a similar concentration at three out of five locations, including the background, with a range of 5.8 µg/m^3 to 6.7 µg/m^3. There is no EPA screening level for 4-ethyltoluene and the screening level for toluene of 5,200 µg/m^3 is used as a surrogate. Therefore, 4-ethyltoluene is unlikely to cause adverse health effects.

- 1,2,4-Trimethylbenzene - 1,2,4-Trimethylbenzene was detected a similar concentration at three out of five locations, including the background, with a range of 4.9 µg/m^3 to 5.7 µg/m^3. 1,2,4-Trimethylbenzene has a screening level for toluene of 63 µg/m^3 and is unlikely to cause adverse health effects.

- Methyl Acetate - Location 7 (on-site) had the only detection at a concentration of 38 µg/m^3. There is no EPA screening level for methyl acetate and the screening level for ethyl acetate of 73 µg/m^3 is used as a surrogate. Therefore, methyl acetate is unlikely to cause adverse health effects.

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