

Mission:

To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.



Rick Scott
Governor

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Surgeon General and Secretary

Vision: To be the **Healthiest State** in the Nation

September 24, 2018

Charles R. Nimmo
Environmental Specialist III
Drycleaning and Waste Cleanup Programs
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 4520
Tallahassee, Florida 32399-2400

Re: Letter Health Consultation: Jasper Laundry & Dry Cleaners [DEP ID Eric_4671]

Dear Mr. Nimmo:

The Florida Department of Health (DOH), Public Health Toxicology Section is committed to ensuring that people at contaminated sites have the best information available to understand the chemicals and the health risks.

We understand that a community member living adjacent to the back of Jasper Laundry & Dry Cleaners Site (Site) is concerned that some of the Site's activities may could cause a potential health risk. DOH investigated these concerns to ensure the health and safety of the community members.

Based on a review of available environmental data (groundwater and soil) at the Site, DOH does not expect that the community member's health is at risk due to the Site's activities.

The following paragraphs explain how we assessed the risk:

Site Description

Jasper Laundry & Dry Cleaners Site is located in Jasper, Hamilton County, Florida with a listed address as 214 Martin Luther King Drive, Jasper, Florida (Figure 1).

According to the current owner the property has been in the family since 1946 and has since then been operated as drycleaner. It is known that some drycleaning operations have occurred on the property prior to 1946 but it is unknown in what year operations of the original drycleaners began. Operation have been ceased in approximately 2012. After 2012, some automotive repair has may occurred inside the former drycleaners building.

In 1996, soil samples collected by Anderson Columbia Environmental, Inc from depth of 3 feet below land surface (bls) showed tetrachloroethene (PCE) concentration of 1,055 milligrams per kilogram (mg/kg). These concentration were above health screening level and could have possibly caused a concern to the public health.

Environmental Data

Groundwater on and near the Site was sampled from four different sampling intervals: 8 – 14ft below land surface (bls), 19 – 28ft bls, 29 – 39 bls, and 39 – 50ft bls. Soil at the adjacent property of concern (ID SB-53) was sampled at 0.5ft bls. Data from groundwater and soil samples were provided by DEP. Further, DOH used a 2016 DOH potable well survey from the Site to assess the presence of drinking wells within a ¼ and ½ mile radius (Figure 1).

Risk Evaluation

Screening and Identifying Contaminants of Concerns

To evaluate the risk of harm to public health from site-related chemicals, DOH determines the contaminated media and the relative contamination levels. It screens the site-related data using comparison values (CVs). Each CV is a concentration for a chemical in the environment (i.e. water or soil) below which DOH does not expect harm to the public health. DOH identifies contaminants higher than their CVs or those that are considered carcinogenic for further evaluation. For this consultation, the Agency for Toxic Substances and Disease Registry's (ATSDR's) cancer risk evaluation guides (CREG) were used as CVs. Both TCE and PCE are considered carcinogenic and were chosen as the contaminants of concern.

Exposure Pathways

Once the first step of screening has been conducted, DOH looks at ways people could be exposed to contaminated media, called exposure pathways. Chemical contamination in the environment can harm your health but only if you have contact with those contaminants (exposure). Without contact or exposure, there is no harm to health. If there is contact or exposure, how much of the contaminants you contact (concentration), how often you contact them (frequency), for how long you contact them (duration), and the hazard level of the contaminant (toxicity) all determine the risk of harm.

Exposures occur if a contamination source has all of the following:

- an environmental medium to hold or transport it; like air, soil, or water
- an exposure point where people contact it
- an exposure route through which it enters the body
- an exposed population who contact it.

The identification of an exposure pathway does not necessarily mean that harm to health will occur.

Results and Findings

Table 1 shows an overview of the maximum concentration detected for trichloroethylene (TCE) and PCE in groundwater and soil (SB-53) at and near the Site and compares the findings with the ATSDR's CREG values.

Groundwater

The maximum TCE and PCE concentration found in groundwater at and nearby the Jasper Laundry & Dry Cleaners Site exceeded the respective ATSDR CREG comparison values of 0.43 and 12 microgram / liter (Table 1). Though, ingestion of the groundwater with these concentration is unlikely as water is municipally applied. No potable (drinking) wells were found near the Site (Figure 1). Therefore, groundwater ingestion is an eliminated exposure pathway.

In the future, new, private wells near the site could be a potential pathway. Therefore, we recommend controls that would prevent the construction of new, potable wells near the site.

Surface soil

No TCE and PCE was detected in the surface soil. Therefore, exposure to surface soil via incidental ingestion is an eliminated exposure pathway. Contaminated subsurface soils may exist, though community members do not have access.

Conclusions

DOH concludes that presently there is no potential to harm human health via contact to surface soil (0 – 0.5ft bls) at the adjacent property with the soil sample ID SB-35, nor to groundwater. We do recommend that control measures are taken to prevent the construction of a private well that is intended for drinking near the site. Groundwater from the area is contaminated at levels that could cause harm if someone is directly drinking it.

Detailed information about the contaminant of concerns and their characteristics are enclosed in Attachment 1 and 2.

If you have any questions or comments concerning this letter, please contact the Health Risk Assessment Program at 877-798-2772.

Sincerely,



Kendra F. Goff, PhD, DABT, CPM
Chief and State Toxicologist



Gladys A. Liehr, PhD, FCCM
Environmental Administrator

Enclosure

Letter Preparation

This report was supported in part by funds provided through a cooperative agreement with the Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services. The findings and conclusions in these reports are those of the Florida Department of Health and do not necessarily represent the views of the Agency for Toxic Substances and Disease Registry or the U.S. Department of Health and Human Services. This document has not been revised or edited to conform to ATSDR standards.

Table 1: Maximum TCE and PCE concentrations found in groundwater collected at and near Jasper Laundry & Dry Cleaners Site, as well as in surface soil collected at the adjacent property (SB-53).

Medium	Sample Interval/ID	TCE	PCE
Groundwater (µg/L)	8 – 14ft bls	278	4,148
	19 – 28ft bls	100.6	4,600
	29 – 39ft bls	19	601
	39 – 50ft bls	65.8	48.7
	ATSDR CREG	0.43	12
Soil (mg/kg)	SB-53 0-0.5ft (SB-53)	0.00098 U	0.0012 U
	ATSDR CREG	5.6	180

ATSDR

CREG

µg/L

U

- Agency for Toxic Substances and Disease Registry
- ATSDR's Cancer Risk Evaluation Guides for 10⁻⁶ excess cancer risk
- microgram per liter
- Below Laboratory Detection Limit

Figure 1. Site Location.

ERIC_4671
 JASPER DRY CLEANERS
 214 SW 1ST AVE
 JASPER, FL 32052

Latitude/Longitude: 30.517463 -82.950037
 DDMSS: 30 31 2.8668 82 57 0.1332
 Number of large public wells (>150,000 gpd) within the 1/2 mile: 0
 Number of small public and private wells within the 1/4 mile: 0



Sample Results--Drycleaner*

- ★ >1/2 MCL/HAL
- <1/2 MCL/HAL
- Low-level Detect
- ▲ Sampled, no detect
- ▶ Not sampled within last year (3 years if large Community PWS)
- ⊕ No sample found for this analysis

SDWA PWS Wells

PS	Design Capacity <150,000 gpd
P150	≥150,000 gpd

- Facility Type**
- Ⓟ Petroleum
 - Ⓟ Proximity Threat
 - Ⓟ Drycleaner
 - Ⓟ Toxics
 - Ⓟ Other
 - Ⓞ Cattle Dip Vat



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* The following chemicals were used for the Solvent Indicator analysis: Tetrachloroethylene, Trans-1,2-Dichloroethylene, Cis-1,2-Dichloroethylene, 1,2-Dichloroethane, Trichloroethylene, 1,1-Dichloroethylene, and Vinyl Chloride

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Trichloroethylene - ToxFAQs™

CAS # 79-01-6

This fact sheet answers the most frequently asked health questions (FAQs) about trichloroethylene. For more information, call the CDC Information Center at 1-800-232-4636. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Trichloroethylene is used as a solvent for cleaning metal parts. Exposure to very high concentrations of trichloroethylene can cause dizziness, headaches, sleepiness, incoordination, confusion, nausea, unconsciousness, and even death. The Environmental Protection Agency (EPA) and the International Agency for Research on Cancer (IARC) classify trichloroethylene as a human carcinogen. Trichloroethylene has been found in at least 1,045 of the 1,699 National Priorities List sites identified by the EPA.

What is trichloroethylene?

Trichloroethylene is a colorless, volatile liquid. Liquid trichloroethylene evaporates quickly into the air. It is nonflammable and has a sweet odor.

The two major uses of trichloroethylene are as a solvent to remove grease from metal parts and as a chemical that is used to make other chemicals, especially the refrigerant, HFC-134a. Trichloroethylene was once used as an anesthetic for surgery.

What happens to trichloroethylene when it enters the environment?

- Trichloroethylene can be released to air, water, and soil at places where it is produced or used.
- Trichloroethylene is broken down quickly in air.
- Trichloroethylene breaks down very slowly in soil and water and is removed mostly through evaporation to air.
- It is expected to remain in groundwater for long time since it is not able to evaporate.
- Trichloroethylene does not build up significantly in plants or animals.

How might I be exposed to trichloroethylene?

- Breathing trichloroethylene in contaminated air.
- Drinking contaminated water.
- Workers at facilities using this substance for metal degreasing are exposed to higher levels of trichloroethylene.
- If you live near such a facility or near a hazardous waste site containing trichloroethylene, you may also have higher exposure to this substance.

How can trichloroethylene affect my health?

Exposure to moderate amounts of trichloroethylene may cause headaches, dizziness, and sleepiness; large amounts may cause coma and even death. Eating or breathing high levels of trichloroethylene may damage some of the nerves in the face. Exposure to high levels can also result in changes in the rhythm of the heartbeat, liver damage, and evidence of kidney damage. Skin contact with concentrated solutions of trichloroethylene can cause skin rashes.

There is some evidence exposure to trichloroethylene in the work place may cause scleroderma (a systemic autoimmune disease) in some people. Some men occupationally-exposed to trichloroethylene and other chemicals showed decreases in sex drive, sperm quality, and reproductive hormone levels.

How likely is trichloroethylene to cause cancer?

There is strong evidence that trichloroethylene can cause kidney cancer in people and some evidence for trichloroethylene-induced liver cancer and malignant lymphoma. Lifetime exposure to trichloroethylene resulted in increased liver cancer in mice and increased kidney cancer and testicular cancer in rats.

The National Toxicology Program (NTP) has determined that trichloroethylene is a "known human carcinogen". The EPA and the International Agency for Research on Cancer (IARC) have determined that trichloroethylene is "carcinogenic to humans."

Trichloroethylene

CAS # 79-01-6

How can trichloroethylene affect children?

It is not known whether children are more susceptible than adults to the effects of trichloroethylene.

Some human studies indicate that trichloroethylene may cause developmental effects such as spontaneous abortion, congenital heart defects, central nervous system defects, and small birth weight. However, these people were exposed to other chemicals as well.

In some animal studies, exposure to trichloroethylene during development caused decreases in body weight, increases in heart defects, changes to the developing nervous system, and effects on the immune system.

How can families reduce the risk of exposure to trichloroethylene?

- Avoid drinking water from sources that are known to be contaminated with trichloroethylene. Use bottled water if you have concerns about the presence of chemicals in your tap water. You may also contact local drinking water authorities and follow their advice.
- Discourage your children from putting objects in their mouths. Make sure that they wash their hands frequently and before eating.
- Prevent children from playing in dirt or eating dirt if you live near a waste site that has trichloroethylene.
- Trichloroethylene is used in many industrial products. Follow instructions on product labels to minimize exposure to trichloroethylene.

Is there a medical test to show whether I've been exposed to trichloroethylene?

Trichloroethylene and its breakdown products (metabolites) can be measured in blood and urine. However, the detection of trichloroethylene or its metabolites cannot predict the kind of health effects that might develop from that exposure. Because trichloroethylene and its metabolites leave the body fairly rapidly, the tests need to be conducted within days after exposure.

Has the federal government made recommendations to protect human health?

The EPA set a maximum contaminant goal (MCL) of 0.005 milligrams per liter (mg/L; 5 ppb) as a national primary drinking standard for trichloroethylene.

The Occupational Safety and Health Administration (OSHA) set a permissible exposure limit (PEL) of 100 ppm for trichloroethylene in air averaged over an 8-hour work day, an acceptable ceiling concentration of 200 ppm provided the 8 hour PEL is not exceeded, and an acceptable maximum peak of 300 ppm for a maximum duration of 5 minutes in any 2 hours.

The National Institute for Occupational Safety and Health (NIOSH) considers trichloroethylene to be a potential occupational carcinogen and established a recommended exposure limit (REL) of 2 ppm (as a 60-minute ceiling) during its use as an anesthetic agent and 25 ppm (as a 10-hour TWA) during all other exposures.

References

This ToxFAQs™ information is taken from the 2014 Toxicological Profile for Trichloroethylene (Draft for Public Comment) produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services.

Where can I get more information?

For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology and Human Health Sciences, 1600 Clifton Road NE, Mailstop F-57, Atlanta, GA 30329-4027.

Phone: 1-800-232-4636.

ToxFAQs™ on the web: www.atsdr.cdc.gov/toxFAQs.

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

Tetrachloroethylene - ToxFAQs™

CAS # 127-18-4

This fact sheet answers the most frequently asked health questions (FAQs) about tetrachloroethylene. For more information, call the CDC Information Center at 1-800-232-4636. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Tetrachloroethylene is a manufactured chemical used for dry cleaning and metal degreasing. Exposure to very high concentrations of tetrachloroethylene can cause dizziness, headaches, sleepiness, incoordination, confusion, nausea, unconsciousness, and even death. Tetrachloroethylene has been found in at least 945 of the 1,699 National Priorities List sites identified by U.S. Environmental Protection Agency (EPA).

What is tetrachloroethylene?

Tetrachloroethylene is a nonflammable colorless liquid. Other names for tetrachloroethylene include perchloroethylene, PCE, perc, tetrachloroethene, and perchlor. Most people can smell tetrachloroethylene when it is present in the air at a level of 1 part in 1 million parts of air (1 ppm) or more.

Tetrachloroethylene is used as a dry cleaning agent and metal degreasing solvent. It is also used as a starting material (building block) for making other chemicals and is used in some consumer products.

What happens to tetrachloroethylene when it enters the environment?

- Tetrachloroethylene can be released into air, water, and soil at places where it is produced or used.
- Tetrachloroethylene breaks down very slowly in the air and so it can be transported long distances in the air. Half of the amount in the air will degrade in approximately 100 days.
- Tetrachloroethylene evaporates quickly from water into air. It is generally slow to break down in water.
- Tetrachloroethylene may evaporate quickly from shallow soils or may filter through the soil and into the groundwater below. It is generally slow to break down in soil.

How might I be exposed to tetrachloroethylene?

- When you bring clothes from the dry cleaners, they will release small amounts of tetrachloroethylene into the air.

- When you drink water containing tetrachloroethylene, you are exposed to it. You might also be exposed to tetrachloroethylene that is released into the air during showering and bathing.
- People residing near contaminated sites or dry cleaning locations may be exposed to higher levels than the general population.
- People working in the dry cleaning industries or using metal degreasing products may be exposed to elevated levels of tetrachloroethylene.

How can tetrachloroethylene affect my health?

Breathing high levels of tetrachloroethylene for a brief period may cause dizziness or drowsiness, headache, and incoordination; higher levels may cause unconsciousness and even death.

Exposure for longer periods to low levels of tetrachloroethylene may cause changes in mood, memory, attention, reaction time, and vision.

Studies in animals exposed to tetrachloroethylene have shown liver and kidney effects, and changes in brain chemistry, but we do not know what these findings mean for humans.

How likely is tetrachloroethylene to cause cancer?

Studies in humans suggest that exposure to tetrachloroethylene might lead to a higher risk of getting bladder cancer, multiple myeloma, or non-Hodgkin's lymphoma, but the evidence is not very strong.

Tetrachloroethylene

CAS # 127-18-4

In animals, tetrachloroethylene has been shown to cause cancers of the liver, kidney, and blood system.

EPA considers tetrachloroethylene likely to be carcinogenic to humans by all routes of exposure. The International Agency for Research on Cancer (IARC) considers tetrachloroethylene probably carcinogenic to humans. The Department of Health and Human Services (DHHS) considers tetrachloroethylene to be reasonable anticipated to be a human carcinogen.

How can tetrachloroethylene affect children?

It is not known whether children are more susceptible than adults to the effects of tetrachloroethylene.

A few studies in humans have suggested that exposure to tetrachloroethylene increased the numbers of babies with birth defects, but these studies were not large enough to clearly answer the question. Studies in animals exposed by inhalation or stomach tube have not shown clear evidence of specific birth defects.

How can families reduce the risks of exposure to tetrachloroethylene?

- Tetrachloroethylene has been found in low levels in some food. You can minimize the risk of your family's exposure by peeling and thoroughly washing fruits and vegetables before cooking.
- Use bottled water if you have concerns about the presence of tetrachloroethylene in your tap water. You may also contact local drinking water authorities and follow their advice.
- Prevent children from playing in dirt or eating dirt if you live near a waste site that has tetrachloroethylene.
- Tetrachloroethylene is widely used as a scouring solvent that removes oils from fabrics, as a carrier solvent, as a fabric finish or water repellent, and as

a metal degreaser/cleaner. Follow instructions on product labels to minimize exposure to tetrachloroethylene.

Is there a medical test to show whether I've been exposed to tetrachloroethylene?

Tetrachloroethylene and its breakdown products (metabolites) can be measured in blood and urine. However, the detection of tetrachloroethylene or its metabolites cannot predict the kind of health effects that might develop from that exposure. Because tetrachloroethylene and its metabolites leave the body fairly rapidly, the tests need to be conducted within days after exposure.

Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Administration (OSHA) has set an 8-hour time weighted average permissible exposure limit of 100 ppm, an acceptable ceiling exposure limit of 200 ppm, and a maximum peak of 300 ppm (not to be exceeded for more than 5 minutes of any 3-hour period).

The National Institute for Occupational Safety and Health (NIOSH) recommends that workplace exposure to tetrachloroethylene be minimized due to concerns about its carcinogenicity.

References

This ToxFAQs™ information is taken from the 2014 Toxicological Profile for Tetrachloroethylene (Draft for Public Comment) produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services in Atlanta, GA

Where can I get more information?

For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology and Human Health Sciences, 1600 Clifton Road NE, Mailstop F-57, Atlanta, GA 30329-4027.

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