Letter Health Consultation

SHERWOOD MEDICAL FACILITY

DELAND, VOLUSIA COUNTY, FLORIDA

EPA FACILITY ID: FLD043861392

SEPTEMBER 4, 2008

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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LETTER HEALTH CONSULTATION

SHERWOOD MEDICAL FACILITY

DELAND, VOLUSIA COUNTY, FLORIDA

EPA FACILITY ID: FLD043861392

Prepared By:

The Florida Department of Health
Division of Environmental Health
Under Cooperative Agreement with the
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry

September 5, 2008

Chuck Luther
Environmental Health Director
Volusia County Health Department
121 Rich Avenue
DeLand, FL 32720

RE: Sherwood Medical NPL Site EPA ID: FLD043861392

Dear Mr. Luther:

The Florida Department of Health (DOH) evaluates the public health significance of Florida hazardous waste sites through a cooperative agreement with the federal Agency for Toxic Substances and Disease Registry (ATSDR) in Atlanta, Georgia. In March 2007, Volusia County Health Department (VCHD) requested assistance in responding to local residents concerned about groundwater contamination from the Sherwood Medical NPL site reaching their private drinking water wells. In addition, residents complained about the appearance, odor and clarity of their drinking water. DOH arranged for funding through the Florida Department of Environmental Protection (DEP) for the VCHD to test private wells in the neighborhoods near the Sherwood facility. DOH analyzed the results (Attachment A) and provided each resident with an explanation of their results. DOH also distributed a fact sheet on the private well testing for the community at large (Attachment B).

Background and Statement of Issues

The Sherwood Medical facility (Attachment C) manufactures medical grade stainless steel and aluminum parts used in disposable hypodermic syringes. Between 1971 and 1980, Sherwood released volatile organic compounds (VOCs) into the groundwater at the site. VOCs have migrated from the site into several private drinking water wells to the north, south and east of the facility (EPA 2004). Starting in June 1996, the Sherwood Medical consultant, Universal Engineering Services, sampled groundwater semi-annually on and off the Sherwood site. The semi annual monitoring plan includes sampling from monitor wells (including the upper Surficial, lower Surficial, upper and lower Floridan), groundwater extraction wells, and private drinking water wells (UES 2007).

Discussion

Prior to 2007, VCHD and EPA sampled a number of private drinking water wells near the Sherwood Medical site. One well, adjacent to the facility was contaminated with VOCs above the drinking water standard and was subsequently replaced by Sherwood Medical. Except for that one well, no VOCs from the Sherwood Medical facility were detected above the drinking water standards. Due to community

concerns and the close proximity of the Sherwood facility, DOH requested a more extensive private drinking water well sampling program to ensure the safety of the drinking water supply.

DOH selected private drinking water wells in close proximity to the facility. Ingestion of water from these private drinking water wells is a completed exposure pathway. The DOH laboratory analyzed water samples from 59 wells for VOCs and chromium (total), chemicals associated with the contaminated groundwater from the Sherwood site. Additionally, DOH analyzed the water samples for nitrates/nitrites, iron, sulfates, manganese, total dissolved solids (tds) and bacteria because of the residents' concerns.

The test results indicated that trichloroethene and cis-1,2-dichloroethene, chemicals associated with Sherwood Medical, had migrated offsite into the groundwater of Cypress Lake Estates. However, the levels found were below the primary drinking water standards and not likely to cause illness. In some cases, the results for the secondary drinking water constituents exceeded standards but were within local groundwater quality ranges. Attachment B provides a complete overview of sampling result details.

Conclusions

The levels of contaminants in private drinking water wells near the Sherwood Medical NPL site are no apparent public health hazard. The current levels of contaminants from Sherwood are not likely to cause symptoms or illness.

Recommendations

EPA should monitor private drinking water wells in Cypress Lake Estates that have contaminants from the Sherwood facility.

Florida DOH, Bureau of Environmental Public Health Medicine, will evaluate any additional private drinking water well test results.

Sincerely,

Elizabeth Tull
Health Assessor
Florida Department of Health
Bureau of Environmental Public Health Medicine

cc: Erik Spalvins, Program Manager EPA Region IV
Judie Kean Program Manager FDEP

References

[EPA] Environmental Protection Agency. 2004. EPA Second Five Year Review for Sherwood Medical Industries NPL Site.

[UES] Universal Engineering Sciences. July through December 2007 Semi-Annual Sampling Report. 2007.

[DEP] Florida Department of Environmental Protection. Standards for Microbiological Contaminants http://www.floridadep.org/water/drinkingwater/st_micro.htm Last viewed August 1, 2008.

[DEP] Florida Department of Environmental Protection. Secondary Drinking Water Standards. http://www.floridadep.org/water/drinkingwater/sec_con.htm Last viewed August 1, 2008.

[DEP] Florida Department of Environmental Protection. Standards for Inorganic Contaminants http://www.floridadep.org/water/drinkingwater/st_inorg.htm Last viewed August 1, 2008.

[DEP] Florida Department of Environmental Protection. DEP Standards for Volatile Organic Contaminants. http://www.floridadep.org/water/drinkingwater/st_vol.htm Last viewed August 1, 2008

Summer 2007 Cypress Lake Estates/Daytona Park Estates/Sherwood Medical Private Well Testing Results

KEY: U= not detected; C= above drinking water standard; A=absent for bacteria; P=bacteria present. Shading represents highest level found of contaminant.

I= the reported value is between the laboratory Minimum Detection Level (MDL) and the laboratory Practical Quantitation Limits (PQL**)**

FLUWID	Sample ID	Contaminants Found													
		Primary								Secondary				Bact	Well Casing Material
		PCE 3ug/L	TCE 3ug/L	cis,DCE 70ug/L	trans,DCE 100ug/L	Chromium 0.1 mg/L	Nitrate 10 mg/L	Nitrite 1mg/L	Total Nitrate+Nitrite 10mg/L	Iron 0.3mg/L	Manganese 0.05mg/L	Sulfate 250mg/L	TDS 500mg/L		
AAK1749	070404-070	U	U	U	U	0.013	U	U	U	5.3 C	0.032	U	250	A	Galv
AAK1771	070323-021	U	U	U	U	0.012	U	U	U	7.4 C	0.035	U	240	P	Galv
AAK1736	070323-027	U	U	U	U	0.011	U	U	U	0.042	0.00017(I)	U	220	A	?
AAK1765	070426-037	U	U	U	U	0.01	U	U	U	0.013	0.00011(I)	U	240	A	?
AAK1762	070321-052	U	U	U	U	0.0098	U	U	U	4.8 C	0.056 C	2.6	180	A	Blk Steel
AAK1755	070404-064	U	U	U	U	0.013	U	U	U	1.7 C	0.021	U	210	A	Galv
AAK1745	070426-040	U	U	U	U	0.013	U	U	U	2.1 C	0.023	U	330	A	Blk Steel
AAK8749	070426-066	U	U	U	U	0.01	U	U	U	0.62 C	0.012	U	260	A	Blk Steel
AAK1764	070323-026	U	U	U	U	0.011	U	U	U	1.9 C	0.017	U	210	P/A	Galv
AAK1751	070328-057	U	U	U	U	0.0065	U	U	U	6.9 C	0.057 C	U	250	A	Galv
AAK1767	070322-002	U	U	U	U	0.014	U	U	U	1.3 C	0.019	U	240	A	Galv
AAK1768	070322-004	U	U	U	U	0.018	U	U	U	2.7 C	0.019	5.2	330	A	Blk steel
AAK1761	070321-053	U	U	U	U	0.013	U	U	U	1.6 C	0.022	U	210	P	Blk steel
AAG8233	070328-054	U	U	0.44 (I)	U	0.0081	U	U	U	0.69 C	0.014	U	230	A	Galv
AAG8232	070412-006	U	U	0.48 (I)	U	0.0088	U	U	U	1 C	0.015	U	270	A	Galv
AAK1732	070426-055	U	U	U	U	0.01	U	U	U	2.3 C	0.02	U	210	A	Blk Steel
AAK1744	070424-021	U	U	U	U	0.013	0.027 (I)	U	0.027 (I)	0.91 C	0.017	U	290	A	Blk Steel
AAK1734	070426-058	U	U	U	U	0.01	U	U	U	3.1 C	0.021	U	240	P	Galv
AAK1779	070426-061	U	U	U	U	0.0061	U	U	U	0.28	0.0096	U	180	A	Galv
AAK1735	070426-067	U	U	1.5	U	0.013	U	U	U	0.025	0.0002 (I)	3.8	300	A	Galv
AAK1738	070426-070	U	U	0.42(I)	U	0.0028	6.4	0.018(I)	6.4	1.6 C	0.018	U	260	A	Galv
AAK1306	070426-050	U	U	0.58	U	0.0088	U	U	U	1.6 C	0.031	3	180	A	Blk Steel
AAK1775	070309-012	U	U	U	U	0.0085	I	U	I	3.7 C	0.023	3.3	210	A	?
AAK1393	070713-025	U	U	U	U	0.006	U	U	U	0.9	0.014	U	140	A	Blk Steel
AAK8746	070309-014	U	U	1.6	U	0.005	U	U	U	0.13	0.0068	2	150	A	Blk Steel
AAK1756	070404-063	U	U	U	U	0.015	U	U	U	0.59 C	0.015	U	260	P	Galv
AAB1159	070426-046	U	U	0.92	U	0.009	U	U	U	0.35 C	0.012	2.5	150	A	Galv
AAK1748	070404-069	U	U	U	U	0.013	U	U	U	0.2	0.016	U	250	A	Galv
AAK8747	070309-013	U	U	U	U	0.0069	U	U	U	4.1 C	0.018	U	190	A	?
AAK1740	070426-044	U	U	0.72	U	0.013	U	U	U	5.6 C	0.047	U	220	A	Galv

Summer 2007 Cypress Lake Estates/Daytona Park Estates/Sherwood Medical Private Well Testing Results

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FLUWID	Sample ID	Contaminants Found													
		Primary								Secondary				Bact	Well Casing Material
		PCE 3ug/L	TCE 3ug/L	cis,DCE 70ug/L	trans,DCE 100ug/L	Chromium 0.1 mg/L	Nitrate 10 mg/L	Nitrite 1mg/L	Total Nitrate + Nitrite10mg/L	Iron 0.3mg/L	Manganese 0.05mg/L	Sulfate 250mg/L	TDS 500mg/L		
AAK1759	070328-063	U	U	U	U	0.011	U	U	U	1.5 C	0.012	2.4	190	P	Galv
AAK1763	070323-024	U	U	U	U	0.0084	U	U	U	1.6 C	0.015	2.4	210	A	Galv
AAK1746	070426-041	U	U	U	U	0.012	U	U	U	1.1 C	0.022	U	290	A	Blk Steel
AAK1747	070328-053	U	U	U	U	0.0078	U	U	U	2.5 C	0.022	U	240	A	Galv
AAK1750	070328-056	U	U	0.30 (I)	U	0.0056	U	U	U	2.5 C	0.015	U	220	A	Galv
AAK1733	070426-057	U	0.55	U	U	0.0091	U	U	U	2.7 C	0.041	U	240	A	Galv
AAF5603	070426-035	U	U	0.64	U	0.012	U	U	U	0.54 C	0.012	3.6	300	A	Blk Steel
AAK1778	070426-054	U	U	0.51	U	0.007	U	U	U	1.4 C	0.014	U	170	A	Galv
AAK1760	070323-023	U	U	U	U	0.012	U	U	U	4.2 C	0.024	U	220	P	Galv
AAK1754	070404-066	U	U	U	U	0.008	U	U	U	1.6 C	0.015	U	240	A	Galv
AAK1753	070404-067	U	U	0.34 (I)	U	0.0083	0.022 (I)	U	0.022 (I)	2 C	0.015	U	230	A	Galv
AAI5776	070328-072	U	U	U	U	0.014	U	U	U	1.2 C	0.012	U	220	A	Blk steel
AAK1739	070426-069	U	U	0.7	U	0.0092	U	U	U	1.1 C	0.016	U	240	A	Galv
AAK1772	070322-001	U	U	U	U	0.011	U	U	U	0.031	0.0055	U	240	A	Black steel
AAK1758	070328-050	U	U	U	U	0.014	U	U	U	1.2 C	0.014	U	250	A	Galv
AAK1742	070426-049	U	U	0.64	U	0.0072	U	U	U	0.41 C	0.014	0.16 (I)	210	A	Galv
AAK1773	070321-048	U	U	U	U	0.011	U	U	U	2.9 C	0.017	U	230	A	Galv
AAK1774	070309-011	U	U	U	U	0.01	U	U	U	2 C	0.02	3.2	360	A	Blk steel
AAF5606	070426-038	U	U	2.1	U	0.01	U	U	U	3.5 C	0.023	3.2	300	A	?
AAG8230	070328-071	U	U	0.63	U	0.014	U	U	U	2.5 C	0.027	U	230	A	Galv
AAI5604	070321-047	U	U	U	U	0.011	U	U	U	3.1 C	0.021	U	190	A	Blk steel
AAK1770	070323-020	U	U	U	U	0.016	U	U	U	1.4 C	0.023	U	360	A	Galv
AAK1737	070426-060	U	U	0.87	U	0.009	U	U	U	1.7 C	0.02	0.18(I)	220	A	Galv
AAK1757	070328-051	U	U	U	U	0.014	0.020 (I)	U	0.020 (I)	2.9 C	0.026	U	270	A	Galv
AAK1743	070412-007	U	U	0.46	U	0.011	U	U	U	0.57 C	0.016	U	290	A	Blk Steel
AAF5608	070426-034	U	U	U	U	0.0084	U	U	U	1.3 C	0.015	U	280	A	Galv
AAK1766	070328-062	U	U	U	U	0.012	U	U	U	0.78 C	0.0093	U	240	A	Galv
AAA4228	070426-047	U	U	U	U	0.0082	U	U	U	1.1 C	0.017	U	180	A	Blk Steel
AAK1769	070322-005	U	U	U	U	0.012	U	U	U	0.99 C	0.016	U	240	A	Galv

Daytona Park and Cypress Lake Estates Update

October 2007

Sherwood Medical (Tyco) Site

Private Drinking Water Well Test Results

About the Florida DOH and ATSDR

The Florida Department of Health (DOH) reviews environmental data taken from sites where chemicals have gotten into the air, soil, or water. As part of this process, we work closely with county health departments (CHD). The federal Agency for Toxic Substances and Disease Registry (ATSDR) funds this program to decide the health risk to nearby residents. DOH reviews sample data from the Florida Department of Environmental Protection (DEP) and the federal Environmental Protection Agency (EPA). We work closely with the Volusia County Health Department (CHD) on this site.

About the Testing

Residents of Cypress Lake Estates and Daytona Park Estates near the former Sherwood Medical (now Tyco) hazardous waste site in DeLand are concerned that groundwater contamination might be getting into their private drinking water wells and might be affecting their health. The Florida DOH and the Volusia CHD tested 59 private drinking water wells nearest to the former Sherwood Medical site and a few farther away for comparison.

Florida DOH and Volusia CHD tested for chemicals associated with contaminated groundwater from the Sherwood site, including:

- Chromium (total)
- Volatile Organic Compounds (VOCs): tetrachoroethylene (PCE), trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE), trans-1,2-dichloroethylene (trans-1,2-DCE), and vinyl chloride

They also tested for chemicals frequently found in private drinking water wells, including:

- Bacteria
- Iron
- Manganese
- Nitrates/nitrites
- Sulfates
- Total dissolved solids (TDS)

Private Well Test Results

Levels of chemicals in 59 Cypress Lake Estates and Daytona Park Estates private drinking water wells are not likely to cause illness. Although Florida DOH and Volusia CHD found cis-1,2-dichloroethylene in many Cypress Lake Estates wells, the levels were well below the drinking water standard and not likely to cause illness. Florida DOH and Volusia CHD did not find any cis-1,2-dichloroethylene in any Daytona Park Estates wells.

Florida DOH and Volusia CHD found naturally occurring minerals such as iron and manganese. Although these minerals are not likely to cause illness, they can give the water a metallic taste and cause staining problems. More information on chemicals in drinking water, sources, and health effects is at www.epa.gov/safewater/mcl.html. Florida DOH and Volusia CHD mailed well owners their test results.

Testing of 59 private drinking water wells in Cypress Lake Estates and Daytona Park Estates found no chemicals at levels likely to cause illness.

Learn more at an open house/information exchange

Tuesday, October 23, 2007

Volusia County Extension Office

3100 E. New York Avenue, DeLand

Please come anytime from 3:00 p.m. to 8:00 p.m.

Chemicals Detected in Private Drinking Water Wells

Chromium

The highest level of chromium detected in any private drinking water well (18 micrograms per liter or ug/L), was more than five times lower than the primary drinking water standard (100 ug/L). There are several types of chromium including chromium VI, a known human carcinogen. The Florida DOH laboratory tested for all types of chromium (total chromium), including chromium VI. The drinking water standard provides a margin of safety even if all of the chromium is chromium VI. **The levels of chromium in Cypress Lake Estates and Daytona Parks Estates private drinking water wells are below drinking water standards and not likely to cause illness.**

Volatile Organic Compounds (VOCs)

Florida DOH and Volusia CHD found cis-1,2-dichloroethylene in 18 Cypress Lake Estates private drinking water wells. The highest level (2.1 ug/L), however, was 33 times lower than the primary drinking water standard (70 ug/L). Although the levels of cis-1,2-dichloroethylene are not likely to cause illness, the pattern of detection suggests the former Sherwood Medical site is the source.

Only one Cypress Lake Estates private drinking water well had trichloroethylene (TCE). The level (0.55 ug/L) was more than five times lower than the primary drinking water standard (3 ug/L). Florida DOH and Volusia CHD did not find either of these two chemicals in any Daytona Park Estates private drinking water wells. They did not find any tetrachloroethene (PCE) or trans-1,2-dichloroethylene (trans-1,2-DCE) in either neighborhood. **The levels of volatile organic compounds (VOCs) in Cypress Lake Estates and Daytona Parks Estates private drinking water wells are below primary drinking water standards and not likely to cause illness.**

Bacteria

Seven of the 59 private drinking water wells tested had bacteria. Septic tanks are the likely source. The Volusia CHD provided these well owners simple procedures to disinfect their wells. **Because bacteria can cause illness, well owners with bacteria should follow the recommended procedures for disinfection.**

Iron

Florida DOH and Volusia CHD found iron above the secondary drinking water standard in 50 of 59 Cypress Lake Estates and Daytona Park Estates private drinking water wells. The highest level (7,400 ug/L) is about 25 times higher than the standard (300 ug/L). Iron is a mineral that occurs naturally in ground water. Although iron is not likely to cause illness, it can give water a metallic taste and can cause orange rust stains on sinks, tubs, and showers. The secondary drinking water standard is set to protect against taste and stains, not for health reasons. Many people use water treatment systems to remove naturally occurring iron. **Levels of iron found in Cypress Lake Estates and Daytona Park Estates private drinking water wells are not likely to cause illness.**

Manganese

Of the 59 private drinking water wells tested, only one (57 ug/L) had manganese above the secondary drinking water standard (50 ug/L). Manganese is a mineral that occurs naturally in ground water. Although manganese is not likely to cause illness, it can give water a metallic taste and can cause staining of laundry. The secondary drinking water standard is set to protect against taste and stains, not for health reasons. **Levels of manganese found in Cypress Lake Estates and Daytona Park Estates private drinking water wells are not likely to cause illness.**

Nitrates and Nitrites

Florida DOH and Volusia CHD detected nitrates in only four of the 59 private drinking water wells tested. The levels in these four wells were all less than the primary drinking water standard. **Levels of nitrates and nitrites found in Cypress Lake Estates and Daytona Park Estates private drinking water wells are not likely to cause illness.**

Sulfate

Although Florida DOH and Volusia CHD found sulfate in 14 of 59 private drinking water wells tested, the highest level (5,000 ug/L), was more than 48 times lower than the primary drinking water standard (250,000 ug/L). **Levels of sulfates found in Cypress Lake Estates and Daytona Park Estates private drinking water wells are not likely to cause illness.**

Total Dissolved Solids (TDS)

The highest level of total dissolved solids (TDS) detected in any Cypress Lake Estate of Daytona Park Estate private drinking water well (360,00 ug/L) was less than the secondary drinking water standard (500,000 ug/L). TDS occur naturally in ground water. Although TDS is not likely to cause illness, it can cause odor, taste, color, corrosion, staining, scaling, and sediment problems. The secondary drinking water standard is set to protect against these problems, not for health reasons. **Levels of TDS found in Cypress Lake Estates and Daytona Park Estates private drinking water wells are not likely to cause illness.**

Future Florida DOH Activities

The Florida DOH plans to publish a health consultation report about this private drinking water well testing later this year.

Other plans include review of the following:

- emissions from the ground water treatment "air strippers" at the former Sherwood Medical site
- area soil samples
- local homegrown fruits and vegetables
- surface water samples, and
- looking for links between reported illnesses and chemicals from the former Sherwood Medical site.

For more information

For questions *about well water testing*,
call **Wendy Howland** with the Volusia CHD at:
386-822-6250.

For questions *about the well water testing results or the Public Health Assessment proces*s, call **Elizabeth Tull** with the Florida DOH at:
877-798-2772
(toll-free during regular business hours).

For questions *about the site cleanup,*
call **Erik Spalvins** with the US EPA at:
404-562-8938, or
call **Jennifer Farrell** with the Florida DEP at:
850-245-8937.

Attachment C
Location of Sherwood Medical Industries Site

FLORIDA DEPARTMENT OF HEALTH

Disclaimer: This product is for reference purposes only and is not to be construed as a legal document. Any reliance on the information contained herein is at the user's own risk. The Florida Department of Health and its agents assume no responsibility for any use of the information contained herein or any loss resulting there from.

DIVISION OF Environmental Health

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CERTIFICATION

The Florida Department of Health, Division of Environmental Health prepared this Health Consultation under a cooperative agreement with the Agency for Toxic Substances and Disease Registry. It followed approved methodology and procedures existing at the time it began and completed editorial review.

Jennifer Freed
Technical Project Officer,
CAT, CAPEB, DHAC

The Division of Health Assessment and Consultation, ATSDR, has reviewed this health consultation, and concurs with its findings.

Alan Yarbrough
Team Lead
CAT, CAPEB, DHAC, ATSDR