

Health Consultation

Technical Document Review: Streamlines Remedial Investigation

NOCATEE HULL CREOSOTE

NOCATEE, DE SOTO COUNTY, FLORIDA

EPA FACILITY ID: FLD980709398

SEPTEMBER 30, 2002

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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Prepared by:

Florida Department of Health
Bureau of Environmental Epidemiology
Under a Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

Foreword

The Florida Department of Health has prepared this health consultation in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR, an agency of the U.S. Department of Health and Human Services, is the principal federal public health agency responsible for health issues related to hazardous waste. This health consultation was prepared in accordance with methodologies and guidelines developed by ATSDR.

The purpose of a health consultation is to identify and prevent or mitigate harmful human health effects resulting from exposure to hazardous substances in the environment at geographical locations, or sites. Health consultations focus on specific health issues to assist DOH in responding quickly to requests from concerned citizens or state and local agencies for health information on hazardous substances. The Florida Department of Health evaluates sampling data collected from a hazardous waste site, determines whether human exposures have occurred or possibly could occur in the future, reports any potential harmful health effects, and recommends actions to protect public health.

For additional information or questions regarding the Florida Department of Health, ATSDR, or the contents of this health consultation, please contact the author, Connie Garrett.

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Background and Statement of Issues

The Florida Department of Health (DOH) conducted this technical document review in response to a request from the U.S. Environmental Protection Agency (EPA). This review provides comments on the October 2001, Streamlined Remedial Investigation (SRI), Baseline Risk Assessment (BRA) and Ecological Risk Assessment (ERA) for the Nocatee/Hull former creosote wood-treating site in DeSoto County, Florida. This report, prepared in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR), summarizes the DOH response. As requested by EPA, DOH comments were restricted to substantive issues that could affect the characterization of risk or could impact the subsequent evaluation of clean-up alternatives during the feasibility study.

The Nocatee/Hull former creosote wood-treating site is located on the west side of Hull Avenue, 1.8 miles south of the intersection of Hull Avenue and Route 17, in DeSoto County, Florida. Most of the area surrounding the site is rural residential and agricultural. Grassy fields cover much of the flat eastern half of the 98-acre site. The western half of the site primarily contains trees in the Peace River flood plain. Charlotte Harbor & Northern Railway Company, and later the Seaboard Railroad Company, preserved railroad ties and timbers on the original 22.4-acre site during 1913 to 1952. The process wastes included steam and vacuum vapor condensate from the pressure-treatment cylinder, drippings, and sludge. Site investigators estimate wood-treating operations could have produced 5,000 gallons of condensate per day.

When the site was operational in the past, workers separated the condensate into oil and water fractions in two sumps, then piped the water fraction to a borrow pit west of the cylinder. CSX Transportation, Inc.(CSXT), the present site owners, purchased additional acreage in 1996, when site investigations found wood-treating chemicals in soil, sediments, and groundwater west of the original site. Site investigations also identify creosote components and arsenic in soil and groundwater in the former timber-processing and -drying areas. A culvert underneath Hull Avenue conveys surface water runoff from the site to Oak Creek via a drainage area which runs through Oak Creek Estates – a small trailer park (and one non-mobile home)—east of the site. Creosote components and arsenic are found in sediments, soil, and groundwater near this drainage area in the Oak Creek Estates neighborhood

Local Land Use and Demographics The areas north and south of the site contain citrus groves. The Peace River flood plain (west) and the areas near Oak Creek (east) contain thick wetlands vegetation. North, east, and south of the site are single family homes (Figure 1). In 1990, about 119 persons lived within 1 mile of the site. About 23% of these were 19 years of age or less. The race/ethnicity of residents were as follows: approximately 9% were black/African American, 85% were white, and 6% were Hispanic/Latino. The average per capita income was \$10,494, and 16.8% of the population (20 persons) had incomes below the poverty level (Bureau of the Census 1990).

Natural Resource Use The surficial aquifer is used as a drinking-water source by nearby residents (ESE 1984). In this area, the surficial aquifer consists of 60 feet of very fine-grained sand. In 1999, CSXT's consultants found 44 potable wells, including four that served multiple homes and two church wells within one mile of the site (Gannett Fleming, 1999). Depth

information is available for only six of these wells. CSXT reports the most shallow well as 12 feet deep. The next most shallow well is 70 feet. On the site, the water table is 16 feet or less below the land surface.

Below the surface sand layers are phosphatic limestone, dolomite, and clay layers that together make up the Floridan Aquifer. The Floridan Aquifer is artesian here; there is a flowing irrigation well on the site (ESE 1984).

DOH does not know if hunting or fishing occurs on or near the site.

Public Health Issues Community members have asked if chemicals from the site could have harmed them. Florida Department of Health (FDOH) staff are not aware of any residents who are currently exposed (or who were exposed in the past) to site-related contaminants at levels likely to cause increased risk of illness. One private well located east of the site (PW-01) contains low levels of benzene. This well has a filter, supplied and maintained by Florida Department of Environmental Protection (FDEP), that removes benzene and other chemicals from the water. An increased risk of illness is not expected for the people using this well due to the low level (2 micrograms per liter of benzene), and the short period of time exposure could have occurred (at most 13 months). The staff of DeSoto County Health Department and/or the staff of CSXT's consultant, Gannett Fleming, samples this well and other nearby private wells every 3 months. At this time, no other private wells have shown chemicals levels above the primary drinking water standards. FDEP also will supply filters to any other private well in the area that has chemicals above their respective Maximum Concentration Levels (MCL). MCLs are enforceable Primary Drinking Water Standards in Florida. Currently, these private wells are being sampled every 3 months.

CSXT installed a 6-foot, chain-link fence in January 2001, to restrict access to off-site areas of contaminated soil. In the past, area residents could have come into contact with off-site soil contaminants while digging or gardening in the soil. Currently, trees and grass generally provide dense groundcover in the Hull area; therefore, ingestion of, or skin contact with, levels of chemicals in off-site soil is unlikely to cause illness. Children who come into contact with soil and ingested soil containing the highest levels of arsenic found off site during a period of 1 year or longer would be at a slightly increased risk of skin cancer.

FDOH has been evaluating the effects of the Nocatee/Hull creosote site on human health since 1999, when EPA first asked FDOH to respond to health concerns expressed by members of the nearby community. FDOH completed a health assessment on the site in early 2002. FDOH has worked with various federal, state, and local agencies and the community to address community health concerns since becoming involved with this site. This technical document review, and any future documents FDOH may write, are part of an on-going FDOH effort respond to those concerns.

Discussion

The primary purpose of the CSXT Streamlined Remedial Investigation (SRI, Gannett Fleming, 2001) is the determination of the nature and extent of contamination associated with the Nocatee/Hull former creosote wood-treating site. The SRI includes a Baseline Risk Assessment (BRA) and a Ecological Risk Assessment (ERA), respectively, evaluate the potential current and future adverse health effects and ecological effects associated with contaminants found on and near the site *without* any remedial actions. EPA will use these data and assessments to support decisions about the necessity for site cleanup and to aid in decisions about the extent of clean-up activities and selection of clean-up technologies.

FDOH had much of the data that is contained in the SRI because it was in the Streamlined Remedial Investigation Data Summary (Gannett Fleming, 2000); however, the SRI contains many maps and aerial photographs that were not included in the SRI Data Summary.

The following comments summarize FDOH's current issues and concerns regarding the Streamlined Remedial Investigation, Baseline Risk Assessment and Ecological Risk Assessment and Appendices.

1. *Executive Summary, page 2, paragraph 5* states "Shallow groundwater in this area revealed no constituents of concern above the EPA Primary Drinking Water Standards. Intermediate groundwater has been affected by low concentration of polynuclear aromatic hydrocarbons (PAHs). Total carcinogenic PAHs exceed ATSDR cancer screening values of 0.005 micrograms per liter Cancer Risk Evaluation Guide for one excess cancer in 1 million people. (CREG) and the Primary Drinking Water Standard for Florida (0.2 micrograms per liter). Ten of 43 groundwater samples contained PAH concentrations that were above the CREG.
2. *Executive Summary, paragraph 3, line 5* states "Evidence is clear from the results of years of monitoring that the former creosote wood-treating plant is not affecting drinking water quality in the area". Naphthalene is not a common component of gasoline, but it is found in creosote. The naphthalene found in one private well (PW-01) (Figure 2) indicates that the risk of contamination from creosote components to other drinking water wells in the are real. The filter on PW-01 is for benzene, another component of creosote, and pre-filter well samples continue to detect benzene that exceeds the Florida Primary Drinking Water Standard of 1.0 parts per billion (ppb).
3. *Section 1, Introduction, Page 1-2, paragraph 2, line 6* states, "In fact, there have been no exceedences of EPA MCLs in potable-well monitoring dating back to 1987. Drinking water quality in the area has not been affected by past activities at the former creosote wood-treating plant". FDOH received a letter from Bill Denman, EPA Project Manager, stating of the relevant state and federal regulations, EPA always enforces the more stringent of the two standards as the MCL. Thus, EPA will enforce the Florida MCL of 1 $\mu\text{g/L}$ for benzene (EPA's federal MCL is 5 $\mu\text{g/L}$). Differing MCLs notwithstanding, neither Gannet Fleming or CSXT knows how the benzene (71 ppb) found in off-site

monitoring well MW-13, or potable well PW-01, came to be there. Because benzene is a component of creosote and creosote has been found east of Hull Avenue, the writers cannot be sure that activities at the former creosote wood-treating plant did not affect groundwater on the east side of Hull Avenue. Consider again the naphthalene comment from *issue # 2* above and that naphthalene was found at 62 ppb in the September 28, 2000, (before filter) sample of private well PW-01.

4. *Section 2, Historical Data Summary, Page 2-2, paragraph 4, line 2* states only that iron at (1,800 $\mu\text{g/L}$) exceeds the State of Florida Secondary Drinking Water Standard. However, "lead (22 $\mu\text{g/L}$)" is above the Florida (and federal) Primary Drinking Water MCL of 15 $\mu\text{g/L}$, and "boron (1,100 $\mu\text{g/L}$)" is above the Florida Guidance Concentration of 630 $\mu\text{g/L}$.
5. *Section 2, Historical Data Summary, Page 2-2, paragraph 4, line 5* states that none of the metals in the Private well exceeded Drinking Water Standards: 22 $\mu\text{g/L}$ lead is above the Florida and Federal Primary Drinking water MCL of 15 $\mu\text{g/L}$.
6. *Section 2, Historical Data Summary, Page 2-3, paragraph 2, line 7&8* states "Only one sample (NC-1) exceeded USEPA Industrial RBCs for benzo[a]pyrene [190 milligrams per kilogram (mg/kg)]." In Table 2-2, NC-1 lists benzo(a)anthracene at 190 mg/kg (RBC of 7.8 mg/kg), benzo(b,k)fluoranthene at 270 mg/kg (RBC of 7.8 mg/kg), benzo(a)pyrene at 240 (RBC at 0.78 mg/kg), indeno(1,2,3-cd)pyrene at 120 mg/kg (RBC of 7.8 mg/kg), and dibenzo(a,h)anthracene at 46 mg/kg (RBC of 0.78 mg/kg).
7. *Section 2, Historical Data Summary, Page 2-13, paragraph 1, line 2* states "None of the compounds exceeded USEPA standards". MWs 1, 2, 3, 5, 6, and 8 exceeded the cadmium drinking water standard of 5 $\mu\text{g/L}$, and MW-6 exceeded the arsenic standard the next time these wells were sampled in March 1984, one month after these sample were taken). So, the writers need to delete the following sentence, which states, "Additionally, no exceedences of laboratory detection limits for any compound were noted for the six on-site wells." Indeed, metals are elements, not compounds, but this is not true or accurate, and it is misleading. Conversely the authors' discussion of the metals analyses on page 2-19 (see next comment) omits the fact that some levels exceeded the drinking water standards.
8. *Section 2, Historical Data Summary, Page 2-19, paragraph 2, line 2* states only that "Metal concentrations in groundwater are summarized in Table 2-6." Although the next paragraph points out that none of the PAH values exceeded drinking water standards, it fails to state *in this paragraph* that arsenic was found at levels exceeding the drinking water standard.
9. In *Section 2, Historical Data Summary, Page 2-21, paragraph 1, line 3* add "Table 2-8 and" before Table 2-9 (Table 2-8 contains the surface water data).

10. *Section 2, Historical Data Summary, Page 2-21* [Table] If the units are correct for reported results in Table 2-8 for metals; arsenic and chromium exceeded the Florida Drinking Water Primary Maximum Concentration Levels in the June 1987 row of this unlabeled table (which reports the April 1987 sampling results), and in the December 1987 row (which reports the October 1987 sampling results). FDOH, however, does not believe the writers intended to use milligrams per liter (mg/L, or parts per million) for metals units reported in water in Table 2-8.

The exceedences column in this unlabeled table should include MW-6 for chromium in January 1987 (145 µg/L) and MW-6 for arsenic in November 1988.

11. *Section 2, Historical Data Summary -* A general comment about PAHs: Of the individual chemicals that make up the PAH group, only 15 are associated with cancer in animals or humans, and some are more or less toxic than benzo[a]pyrene. Relative toxicity is calculated using factors that relate toxicity of individual PAHs to benzo[a]pyrene (B[a]P). ATSDR multiplies individual PAH component amounts detected by their Toxicity Equivalence Factor, then adds the relative amounts to a total amount which is equivalent to the toxicity of benzo[a]pyrene.

Polynuclear Aromatic Hydrocarbons	Toxicity Equivalency Factor*
Dibenzo[a,h]anthracene	5
Benzo[a]pyrene	1
Benzo[a]anthracene	0.1
Benzo[b]fluoranthene	0.1
Benzo[k]fluoranthene	0.1
Indeno[1,2,3-c,d]pyrene	0.1
Anthracene	0.01
Benzo[g,h,i]perylene	0.01
Chrysene	0.01
Acenaphthene	0.001
Acenaphthylene	0.001
Fluoranthene	0.001
Fluorene	0.001
Phenanthrene	0.001
Pyrene	0.001

Source: ATSDR, 1995b.

*The analytical values for each of the PAH components are multiplied by the corresponding toxicity factor and the resulting values are summed. The summed value is compared with the screening value for benzo[a]pyrene which is 0.1 mg/kg (or ppm).

Carcinogenic PAHs

EPA Region 4 has adopted a similar toxicity equivalency factors (TEFs) methodology, as an interim procedure, for carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) on the Target Compound List, until more definitive agency guidance is established. These TEFs are based on the relative potency of each compound relative to that of benzo(a)pyrene (BaP). The following TEFs should be used to convert each cPAH concentration to an equivalent concentration of BaP (EPA, 1993).

EPA Region 4 Toxic Equivalence Factors for cPAHs

Compound	TEF*
Benzo(a)pyrene	1.0
Benzo(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.001
Dibenzo(a,h)anthracene	1.0
Indeno(1,2,3-c,d)pyrene	0.1

Source: U.S. Environmental Protection Agency.

*TEF (Toxic Equivalence Factor).

Although Volume I, Part A of the Risk Assessment Guidelines, recommends that dermal exposure to carcinogenic PAHs *not* be assessed quantitatively, the Region 4 Office of Technical Services differs from this viewpoint. Dermal contact with cPAHs should be assessed using the appropriate oral Cancer Slope Factors and their Toxic Equivalence Factors (TEFs) with a default absorption efficiency of 50% (Semi-Volatile Organic Compounds).

As with the ingestion and dermal exposure routes, concentrations of inhaled cPAHs should be assessed as benzo(a)pyrene equivalents. Provisional inhalation toxicity values for the carcinogenic PAHs have been developed by National Center for Environmental Assessment based on a hamster inhalation study using benzo(a)pyrene. The inhalation slope factor is 3.1 milligrams benzo[a]pyrene per kilogram body weight per day dose (mg/kg/day)-1 and the inhalation unit risk is 0.88 milligrams per cubic meter (mg/m³)-1 (NCEA, 1994).

The writers of the SRI did not follow either the ATSDR or EPA guidelines for evaluating carcinogenic PAHs. In section 2, the writers only look at benzo[a]pyrene; they used no

Toxicity Equivalency Factors nor calculated any sums. This is unrepresentative, especially because dibenz[a,h]anthracene is five times as toxic as benzo[a]pyrene. Later when the writers look at total PAHs, they screen the individual PAH levels first and then add together only totals for those PAHs which exceeded their screening values.

The method FDOH used is more lenient than that usually allowed by EPA. The risk-based screening process also should have considered those chemicals for which no detection occurred--*if* the chemical is considered to be a potential site contaminant. At a minimum, half of the practical quantitation limit (PQL) should have been assigned to these chemicals. This approach is consistent with EPA Superfund Risk Assessment Guidance, which states that a zero value should not be used in the place of the sample quantitation limit, or half of the sample quantitation limit – *unless* site-specific information indicates that a chemical is not likely to be present in a sample. The guidance also indicates that the non-detected results should not be omitted from the risk assessment. Such an approach would result in even greater values than would be calculated using ATSDR's procedures.

12. *Section 3, Study Area Investigation, Page 3-4, paragraph 4, line 9* states "Previous business operations, especially if debris such as vehicles has been buried, would *be* likely be responsible for affected media in this area." Take out the extra "be". What about the concrete drainage ditch mentioned on page 3-3 that started in the creosote treating area and ended at the drainage ditch next to Hull road? There is a culvert under Hull Road that has been sampled, and the results shows PAHs present on both sides of the road. MW-6 on the west side of Hull Avenue near this culvert showed PAH contamination in the past.

13. *Section 3, Study Area Investigation, Page 3-6, paragraph 2, line 2* states "Prior studies had shown PAHs in sediments at the down gradient end of the borrow pit, and in the drainage ditch running under Oak Creek Road." There are also PAHs on both sides of the culvert running under Hull Avenue. FDOH references Lisa Shall's (Department of Environmental Protection - South District) memo to Jim McCarthy (Department of Environmental Protection - Tallahassee Headquarters) of March 2, 1998, and Black and Veatch's data (attached).

14. *Section 3, Study Area Investigation, Page 3-13, paragraph 1, line 3* states "Sample CP-04 was selected for analysis of Volatile Organic Aromatics, Polychlorinated Biphenyls, PAHs, phenols and Target Analyte List metals." From a health standpoint, it is important to know what the highest levels are likely to be. The choice of CP-04 as the location to run the full suite of tests means that the sample may have been biased more than ten times lower than the highest screening value found at the site.

15. *Section 3, Study Area Investigation, Figure 3-1.* What is the current status of the pipe line that flows southeast of the site? Does the pipeline still discharge into the ditch next to

Hull Avenue? The map in Figure 3-1 does not show the location of the culvert under Hull Road that Black and Veatch show on their maps of this area.

16. *Section 4, Physical Characteristics of the Study Area, Pages 4-17 and 4-18.* On the basis of this site-specific hydrogeology and Figures 7-7 and 7-8, it appears there is little separation between the shallow and intermediate water systems, either vertically or with respect to potentiometric surface measurements.
 17. *Section 4, Physical Characteristics of the Study Area, Page 4-20, paragraph 2* states “The Study Area contains 19 residences in the 45-acre Oak Creek area, six of which are not currently occupied. The 13 occupied residence are predominantly mobile homes, with single or two-person occupancy. Two families with children are known to be resident in the Oak Creek subdivision south of the Study Area, however no families have been noted residing within the Study Area during field activities during 1999 through 2001. Beth Copeland, FDOH, Community Involvement Coordinator, and Connie Garrett, FDOH, Environmental Specialist, saw a woman with two small children at a trailer on the east side of Oak Creek Road north of the sediment trap on the day before the FDOH open house in August 2001. Children’s toys were seen in the yard.
 18. *Section 6, Nature and Extent of Environmental Impacts, Page 6-4, paragraph 3, lines 3 through 6* state “PAHs detected in surface soils in the former creosote wood-treating plant are dried in nodules and have no apparent viscosity. Due to these characteristics, the PAHs detected in surface soils are not considered as a source area for continued impact to deeper soils or groundwater.” The next paragraph discusses PAH levels in the surface soil. On the basis of the analytical results, FDOH wondered if Gannett Fleming removed the creosote nodules discussed in paragraph 3 before homogenizing the soil samples.
 19. *Section 6, Nature and Extent of Environmental Impacts, Page 6-16, paragraph 2, line 7* states “therefore surface soil sample ES-SS-30 defines the southern extent of impacted soils.” What about Black & Veatch’s samples NH-SS-10 and NH-SS-11? They used FDEP residential Soil Cleanup Target Levels. FDOH considered EPA’s Residential Based Cleanup soil numbers. The chain-link fence that encloses the area of soil contamination does not enclose the area of these samples. NH-SS-0 exceeds EPA’s Residential Based Cleanup soil numbers for benzo[k]fluoranthene and benzo[a]pyrene, NH-SS-11 exceeds the Residential Based Cleanup soil numbers for benzo-(k)fluoranthene, benzo[a]pyrene, benzo(a)anthracene, and chrysene. The dibenzo[a,h]anthracene value also exceeds the EPA Residential Based Cleanup soil numbers, but it has an “I” qualifier (less than the minimum Practical Quantitation Limit and \geq the Minimum Detection Level, *attached are their values and locations.*
 20. *Section 6, Nature and Extent of Environmental Impacts, Page 6-17, paragraph 5* states “All areas with PAH concentrations exceeding USEPA Residential RBCs in surface soil
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- were fenced in as part of the CSXT Control Measures Plan.” FDOH repeats comment 19 and further comments that it appears data showing PAHs on either side of the culvert under Hull Avenue are not being addressed.
21. *Section 6, Nature and Extent of Environmental Impacts, Page 6-23, paragraph 3* states “East of the former creosote wood treating plant area, in the Oak Creek area, the shallow monitoring well MW-13 contained detectable concentrations of total xylenes (0.15 mg/L), benzene (0.071 mg/L), chloroform (0.0017 mg/L), ethylbenzene (0.14 mg/L), styrene (0.0054 mg/L), and toluene (0.047 mg/L). It is likely that these are not site-related constituents. There are several septic tanks close to this well location, and these constituents are found in home cleaning products that may have been discharged to the septic system. These constituents were not detected in any of the other wells sampled.” Benzene was found in 4 of 44 on-site well samples at levels above 1 ppb. The highest level FDOH identified was 23 ppb. Although all of the benzene in MW-14 may not be attributable to site-related contaminants, some could be. This is especially true because one of the private wells also contains naphthalene, as did a considerable number of the intermediate monitoring wells (see the results reported on pages 6-23 and 6-24).
22. *Section 6, Nature and Extent of Environmental Impacts, Figure 6-9.* FDOH wonders if some of the homes on Hull Avenue have been adequately tested with respect to private well water quality and soil in the yards—on the basis of the 1943 aerial photo (attached), the location of the old ditches (especially the southern one on this photo), and the culvert. Several lots on Hull Avenue, across from the former drain pipe and culvert, contained houses that appeared to be uninhabited; however, a few of these houses did appear to be inhabited.
23. *Section 7, Fate and Transport of Constituents, Page 7-3, paragraph 1, line 5* states “No significant areas of bare soil have been observed in the Study Area. During field activities, no clouds of fugitive dust have been noted.” Under dry conditions, mowing creates a great deal of dust, and the roads on the site are made of sand. EPA should 1) recommend that mowing be done when the grass is wet, 2) restrict vehicle access, 3) recommend that the mower(s) wear respiratory protection.
24. *Section 7, Fate and Transport of Constituents, Page 7-3, paragraph 2, line 4* states “Volatile Organic Compounds (VOCs), primarily BTEX (the authors are using BTEX to stand for Benzene, Ethylbenzene, Toluene and Xylene, not really an acronym, more of a special use abbreviation), were only detected in two isolated areas of shallow groundwater.” BTEX is not a chemical, and the use of this abbreviation does not seem to fit. The writers are referring to the light chemical fractions of gasoline; benzene, toluene, ethylbenzene and xylene. Characterizing this groundwater contamination as a gasoline plume is probably inaccurate. Contrary to what would be expected in a gasoline plume, the groundwater results at one of the private wells *have not shown high levels of xylene,*
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and the ethylbenzene and toluene levels also are quite low. A gasoline plume usually contains benzene levels that are lower than the other three chemicals, and the xylene levels may be greater than the combined values of benzene, toluene, and ethylbenzene.

25. *Section 7, Fate and Transport of Constituents, Page 7-4, paragraph 2, line 3* states “The associated with petroleum-derived products are BTEX isomers.” FDOH has the same comment as above about the use of “BTEX.” Xylene is the only one of these four chemicals with isomers, and it was not elevated in one of the private wells. FDOH believes the discussion of methyl tert-butyl ether (MTBE) and chlorinated ethanes *is not* relevant in this paragraph or in the next paragraph. MTBE and chlorinated ethanes were not detected in other private wells (Tables 2-21 and 2-22).

26. *Section 7, Fate and Transport of Constituents, Page 7-4, paragraph 4, line 1* “MTBE is specific to gasoline, whereas the BTEX group is found with other petroleum fuels and products.” Omit MTBE from this paragraph because it was not identified in any of the groundwater samples from off-site monitoring or drinking water wells.

27. *Section 7, Fate and Transport of Constituents, Page 7-10, paragraph 1* discusses transport of PAHs from the soil into groundwater. As a part of this discussion, the writers should add information about the drainage pipes that formerly conveyed waste condensate to the barrow pit and to the edge of the property.

28. *Section 7, Fate and Transport of Constituents, Page 7-12, paragraph 2, line 1* states “Storm water in this area flows west to east through heavily wooded land, and drains through a series of man-made ditches to a culvert under Oak Creek Road.” The SRI shows the location of a drainage pipe that starts near the former treating cylinder and empties into a ditch west of Hull Avenue. Black & Veatch showed a culvert under Hull Avenue near the end of that drainage pipe that may have provided a venue under the road and into these man-made ditches.

29. *Section 7, Fate and Transport of Constituents, Page 7-13, paragraph 2, line 4* states “and chemicals are expected to have migrated vertically and horizontally to the maximum extent possible during this time.” The FDEP requires a series of measurements showing chemicals have approached an asymptote on a graph before it will accept such a statement. Some of the areas of soil and groundwater contamination were just delineated for the first time from single data points sampled for *this* SRI.

30. *Section 7, Fate and Transport of Constituents, Page 7-16, paragraph 3, line 1* states “Affected surface and subsurface soil are known to be present in the wooded area on the west side of Oak Creek Road.” The writers likely meant both sides of Oak Creek Road (otherwise, why did CSXT fence both sides of the road?)

31. *Section 7, Fate and Transport of Constituents, Page 7-18, paragraph 4, line 1* states “No VOCs have been detected in intermediate depth groundwater. No metals have been detected in concentrations exceeding NPDWS.” MW-8 contained acutely toxic levels of dibenzofurans in a 1997 groundwater sample. Are any intermediate wells located down gradient of MW-8?

32. *Section 7, Fate and Transport of Constituents, Page 7-19, paragraph 1, line 4* states “However, PAHs and metals have relatively low solubilities, and dissolved constituents traveling in storm water would not be considered a significant transport mechanism.” The resident living north of the site said that during sheet flow (flood conditions) there was a “sheen” on the water crossing her property from the site. This resident asked whether it is safe to let horses graze there. FDOH also questioned whether soil could be contaminated south of the site, in the orange groves that border the site but are up gradient of a small creek that incises a plateau.

33. *Section 7, Fate and Transport of Constituents, Page 7-19, paragraph 2, line 7-10* states, “The affected soil and sediment on the east side of Hull Road, in the Oak Creek area, have also been defined and there is no a connection or distinct pathway from the former creosote wood treating plant area. The origin and transport mechanism of the material on the east side of Hull Road is unknown”. Again, FDOH has not seen data that address groundwater or soil south of the south ditch (see attached photograph). FDOH compiled a map for use in the 2002 public health assessment that contained available data and tried to show the sampling locations on the 1943 aerial photo that appeared in Appendix F of the SRI.

34. *Section 7, Fate and Transport of Constituents, Table 7-1* BG-SS-08 has 400.4 µg/kg total PAHs in surface soil. FDOH questions if this level is representative of a background level, because BG-SS-08 it is not located close to an asphalt road (another source of PAHs).

35. *Section 8, Human Health Risk Assessment, Page 8-11, paragraph 5* states “There are two aquifers that may have been impacted by Study Area related constituents from which groundwater may be drawn for consumption, the surficial and the Floridan aquifers.” According to published sources (see pages 4-16 and 4-17 in this SRI), the Floridan aquifer is probably 300 feet or more below the level of land surface at this location. It is artesian and mineralized. The author probably did not mean that this aquifer was used for drinking. The on-site Floridan aquifer well was used for irrigation. Only the upper and lower parts of the Surficial Aquifer were tested by the monitoring wells, which are at most 38 feet deep and still in sand. The Intermediate Aquifer begins with the upper part of the Peace River formation, which is a limestone. The Intermediate Aquifer also is mostly confined and artesian. FDOH is not aware of any information that indicates the Intermediate Aquifer is contaminated below the site.

36. *Section 8, Human Health Risk Assessment, Page 8-15, paragraph 3* states “In addition, all of the detected concentrations of arsenic in intermediate and shallow groundwater both west and east of Hull Road were less than the MCL for arsenic in drinking water. In an April 19, 2000, meeting between USEPA and CSXT, USEPA agreed that NPDWS could be used to evaluate groundwater. All of the above rationale (sic) seem to indicate that the potential risks from arsenic in groundwater are overestimated and possibly nonexistent. Therefore, arsenic has been eliminated as a potential COC.” FDOH believes that this discussion should be removed on the basis of a letter from Mr. Bill Denman, EPA Project Manager, dated October 26, 2001, stating that, “The Maximum Contaminant Level (MCL) which is deemed acceptable at a Superfund site is determined by a comparison of the Federal and State promulgated drinking water standards. EPA enforces the more stringent of the two standards as the MCL.”
37. *Section 8, Human Health Risk Assessment, Page 8-20, paragraph 5, line 3*, states “Because the extent of the groundwater plumes have not been fully delineated, the 95% Upper Confidence Level was determined for each groundwater data set.” FDOH believes the extent of the groundwater plumes *had* been delineated.
38. *Section 8, Human Health Risk Assessment, Page 8-52, paragraph 4*, states “As discussed in previous sections of the SRI, the maximum areas of soil impacts are contained within an eight-foot high chain link fence. Public access to the majority of the Oak Creek soil grid area has effectively been eliminated by installation of the fence. Therefore, exposure pathways to the surface soil and subsurface soil within the grid area would technically be considered incomplete, and risks presented in this evaluation are most likely overestimated for current receptors.” FDOH agrees with this statement, but it would like to review the data from the area of the south ditch (1943 aerial photo).
39. *Section 8, Human Health Risk Assessment, Page 8-53, paragraph 1* states “Arsenic is (sic) surface soil contributed to a cumulative risk level which exceeded the USEPA acceptable risk range for both the adult and child residential receptor.” PAHs, as well as arsenic, also may be associated with the southern ditch. Although CSXT and Gannett Fleming argued to the contrary in an April 10, 2002, conference call from the EPA Region IV offices, FDOH believes there still may be some off-site soil which has not been characterized.
40. *Section 8, Human Health Risk Assessment, Page 8-53, paragraph 3* states “However, the unacceptable cancer risks resulted from a single detection of primarily benzo(a)pyrene in both intermediate and shallow groundwater. The intermediate sample location (IMW-38) and the shallow sample location (SMW-27) are almost co-located. Concentrations of carcinogenic PAHs in this area may not be representative of concentrations in the general groundwater plumes.” FDOH notes that a private well is located quite near this location; *thus, the PAH detects are important and relevant*, even if they are not representative, especially because the depths of private wells in this area are unknown.
-

41. *Section 8, Human Health Risk Assessment, Section 8.0 Tables* FDOH General Comment: when the writers address the individual PAHs, as done in Section 8.0 tables, all of the known levels of the carcinogenic PAHs do not count toward the total; therefore, the correct dose will be smaller, as will the calculation of increased cancer risk. This is done consistently. See the discussion in issue/concern #11.

42. *Section 8, Human Health Risk Assessment, Page 9-14, paragraph 2* states, "Major migration pathways for chemicals at this site have included runoff into surface drainage ways and transport in the downgradient direction, West of Hull Road, a currently non-functional concrete drain formerly connected the central part of the former creosote wood treating plant area to the borrow pit. This pipe currently contains sections that are crushed and clogged and does not represent a functioning conduit to the borrow pit." FDOH would like to know if the current description of the concrete pipe connecting the central part of the former creosote wood treating plant and the borrow pit matches the current description of the pipe from the central part of the former creosote wood-treating plant leading to the culvert under Hull Avenue. This pipe is shown on Figures 2-1, 2-1, 2-5, 3-1, 4-2, 4-5, 6-1, 6-2, 6-6, 6-7, 7-1, 7-3, 7-4, 7-5, 7-9, 7-10, 8-1, 9-2, 10-1, 10-4 and 10-5 but it is not discussed in terms of its past or current status.

43. *Section 8, Human Health Risk Assessment, Page 9-47, paragraph 1, line 2* states, "No organic constituents were present in the former creosote wood treating plant area in surface soil at concentrations above phytotoxic screening values". FDOH notes that, nonetheless, grass coverage was patchy in this area in August 2000, and in November 1999, but not on other areas of the site.

44. *Section 9, Ecological Risk Assessment, Figure 9-4* (attached) The "forested flood plain" east of Hull Avenue in this map is the same size, shape and location as the "cleared area" at the end of the ditch in the 1943 aerial photo.

45. *Section 10, Summary and Conclusions, Page 10-2, paragraph 3, line 6* states "no exceedence of USEPA MCLs has been detected". Florida Maximum Concentration Levels, which are enforceable drinking water standards, were exceeded (change in accordance with EPA Remedial Project Manager Bill Denman's letter of October 26, 2001).

46. *Section 10, Summary and Conclusions, Page 10-10, paragraph 5, line 4* states "Groundwater exposures for west of Hull Road were not separated into the former *next page* creosote wood treating area and the borrow pit area. Therefore, the results for groundwater will only be presented in connection with the former creosote wood treating plant area." However, *Page 10-11, paragraph 3, line 8* addresses groundwater contamination on the

western edge of the site states "For groundwater, PAHs were retained as final COCs for both intermediate and shallow groundwater." FDOH does not agree that only PAHs are COCs because of the following:

- dibenzofurans were found in MW-8 in 1997 at 14 $\mu\text{g/L}$,
- in 1985 1,000 $\mu\text{g/l}$ pentachlorophenol was found in MW-8,
- in 1987 arsenic was measured in MW-8 at 73.9 $\mu\text{g/L}$, and
- 6.570 $\mu\text{g/L}$ naphthalene were measured in MW-8 in 1988.

Apparently, the contamination from the borrow pit is extensive.

47. *Section 10, Summary and Conclusions, Page 10-12, paragraph 4, line 4* This section refers to off-site contamination in the Oak Creek flood plain and ditch. The writers state "access to this area is currently limited by a chain link fence installed by CSXT as a control measure, thus, there is currently no complete exposure pathway. Therefore, there are no final COCs for this area." The issue of the pipe drain from the site and the culvert are not addressed here.
48. *Section 10, Summary and Conclusions, Page 10-13, paragraph 2* states "No final COCs were retained for the subsurface soil." This section also refers to off-site contamination in the Oak Creek flood plain and ditch. FDOH is not comfortable with the stated conclusion, because it appears to likely that the area was used as a percolation pond in the past and may be the source of private well contamination in the area.
paragraph 3, line 4 states "The concentrations of CPAHs at these three wells seem indicative of an isolated area of impacted groundwater." FDOH would like to know if PAHs would be present in the groundwater if a monitoring well were to be installed near the terminus of the south ditch (identified on the 1943 aerial photo).
49. *Section 10, Summary and Conclusions, Page 10-20* The same comment as 42 applies here as well. When PAHs are addressed individually like this, all the known levels of the carcinogenic ones do not count toward the total; therefore, the dose will be smaller, as will Apparently, the calculation of increased cancer risk.
50. *Section 10, Summary and Conclusions, Page 10-22, paragraph 1* states "These wells are MW-8 located west of the borrow pit, and SMW-27 located east of Oak Creek Road. Temporary monitoring wells were placed immediately downgradient of these two locations, and these wells did not exceed future adult resident Remedial Goal Options." Was EPA aware that these MWs would be temporary? If the plume migrates to the east or west in the

future, how would the migration be detected? FDOH suggests that a new and permanent MW be installed both here and near the terminus of the south ditch (on the 1943 aerial photo).

Child Health Initiative

Children can be uniquely vulnerable to the hazardous effects of environmental contaminants. When compared to adults—pound for pound of body weight—children drink more water, eat more food, and breathe more air. Children have a tendency to play closer to the ground and often put their fingers in their mouths. These facts lead to an increased exposure to contaminants in various environmental media (e.g., water, soil, air). Additionally, the fetus is highly sensitive to many chemicals, particularly with respect to potential impacts on childhood development. For these reasons, ATSDR believes that it is extremely important to consider the specific impacts that contaminants may have on children. As a result, ATSDR requires children's health issues to be specifically addressed in all of the documents addressing public health that are cooperatively produced by FDOH and ATSDR.

The Nocatee/Hull Creosote site is located in an area where children potentially could have been exposed to contaminants through the soil, water, sediment, and air pathways in the past. Currently the site is fenced and is posted with warning signs. Off-site areas of soil contamination have been fenced by the current site owner (attached).

FDOH conducted a detailed evaluation of the site data and reviewed all available historical documents as part of the Nocatee/Hull Creosote site public health assessment. Any substantive issues or concerns about human health, beyond those identified in the public health assessment or this technical document review, will be provided to EPA as FDOH becomes aware of them.

Conclusions

FDOH classified the Nocatee Hull Creosote site as a "no apparent public health hazard" in its 2002 Nocatee/Hull public health assessment. The most frequent occurrences of contaminants and the highest levels of contamination are in on-site soil and groundwater. Because no one is living on the site, it is unlikely that anyone is currently exposed to on-site contaminants. Deed restrictions should prevent people from living on the site, both now and in the future. Deed restrictions also will prevent future use of on-site groundwater for drinking water, and prevent contact with contaminated soil before remedial activities are undertaken to clean up contamination on the site. FDOH is not aware of any current exposures to off-site contamination. This technical document review has not changed the FDOH public health classification of the site.

FDOH review comments on the Streamlined Remediation Investigation (Gannett Fleming, 2001) fell into eight broad categories, including the use of more stringent screening values. The EPA

project manager advocated the use of more stringent screening values in his letter of October 31, 2001 (attached). Issues or concerns numbered 1, 4, 5, 7, 8, 37, and 46 specifically address changes to the document that would result from the use of these more stringent screening values.

Many other concerns of FDOH address the accuracy of document information which characterize the location of off-site contamination. If the locations of chemicals from past operations are not identified, EPA and its partners cannot recommend the appropriate measures to help nearby residents avoid exposure. Issues and concerns numbered 2, 3, 12, 13, 15, 18, 22, 25, 26, 27, 34, 39, 40, 45, and 48 address the association of off-site contamination with site operations, and 20, 21, 23, 28, 29, 30, 31, 33 and 43 address the location of off-site contamination.

Only issue/concern number 43 addressed on-site contamination. Omissions were addressed in 8, 9, and 10, and accuracy was addressed in 35, 36, 38, 41, 44, 47, 48, and 49.

Concern number 14 addressed not choosing the area with the most contamination from a subset of on-site data to calculate exposure levels. Other exposure-related comments were addressed in issues/concerns numbered 24, 41, and 49.

A final issue/concern raised was the appropriate screening of carcinogenic PAHs, which was discussed in concerns numbered 16, 11, 19, 42 and 50.

Recommendations

This technical document review did not change the recommendations FDOH proposed in its 2002 Nocatee/Hull Creosote site public health assessment:

1. Prevent use of contaminated groundwater (on and off the site),
2. Prevent long-term contact with contaminated soil (on and off the site), and
3. Control dust generation during future clean-up actions (both on and off the site).

It has been several months since FDOH submitted a *draft* of its comments on the SRI technical document to EPA. Since then, EPA asked for FDOH's recommendations for long-term monitoring of off-site private wells. FDOH agreed to allow the monitoring schedule to be changed to a yearly basis, except for PW-04, which has not been sampled as frequently as the other wells in the past. FDOH also relayed information from an Oak Creek Estates resident to

EPA, CSXT, and Gannett Fleming. This resident reported seeing a sheen on water that was standing overnight in the toilet of his residence and wondered if the sheen could be site related. Gannett Fleming agreed to contact the resident to get additional information to verify whether or not that well had been sampled in the past. CSXT has agreed to sample this well within the time frame suggested by the resident, one year, if no recent information on the well is available.

Public Health Action Plan

This section describes ATSDR and/or FDOH planned activities at this site. The purpose of a Public Health Action Plan is to reduce any existing exposure to health hazards and to prevent any exposures from occurring in the future. ATSDR and/or FDOH will do the following:

1. FDOH, Bureau of Environmental Epidemiology staff will inform and educate nearby residents about the public health risks associated with this site and discuss the health concerns, if any, of the residents.
2. FDOH, Bureau of Environmental Epidemiology staff will recommend that FDEP and [Florida's] Southwest Water Management District add this site to their list of delineated areas.
3. FDOH, Bureau of Environmental Epidemiology staff will continue to work with EPA and FDEP to assure that the site is monitored or cleaned up to protect public health.

The conclusions and recommendations in this report are based on a review of available information. When additional information becomes available, FDOH, Bureau of Environmental Epidemiology staff will evaluate it to determine what additional recommendations are needed, if any.

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- Department of Environmental Protection. 1999. Drinking Water Standards, Monitoring, and Reporting. Chapter 62-550.
- Environmental Science and Engineering. 1984. Environmental Assessment, Nocatee/Hull Site, prepared for Seaboard, June 29, 1984.
- Gannett Fleming. October 2001. Draft Streamlined Remedial Investigation–Nocatee/Hull Former Creosote Wood Treating Plant Site, Hull (Nocatee), Florida.
- Gannett Fleming, Inc. 1999. Potable Well Survey (one-mile radius), prepared for CSX Transportation, June 29, 1999.
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- U.S. Environmental Protection Agency, 1993. Provisional Guidance for Qualitative Risk Assessment of Polycyclic Aromatic Hydrocarbons, EPA/600/R93/089, July 1993.

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ATSDR Designated Reviewer

Debra Gable

Technical Project Officer

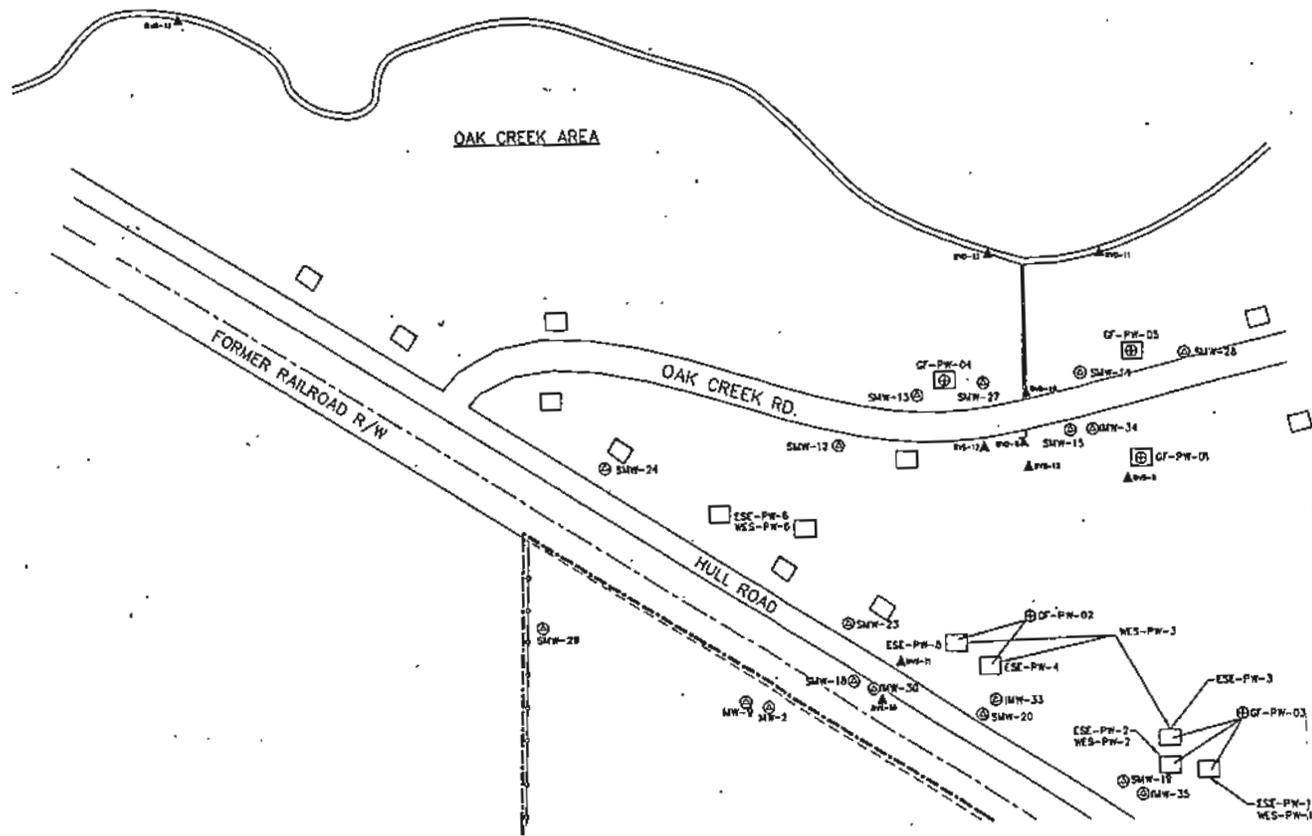
Division of Health Assessment and Consultation

Agency for Toxic Substances and Disease Registry

Glossary

Agency for Toxic Substances and Disease Registry (ATSDR)	The principal federal public health agency involved with hazardous waste issues, responsible for preventing or reducing the harmful effects of exposure to hazardous substances on human health and quality of life. ATSDR is part of the U.S. Department of Health and Human Services.
Aquifer	An underground formation composed of materials such as sand, soil, or gravel that can store and/or supply groundwater to wells and springs.
Carcinogen	Any substance that can cause or contribute to the production of cancer.
Chronic	A long period of time. A chronic exposure is one which lasts for a year or longer.
Contaminant	Any chemical that exists in the environment or living organisms that is not normally found there.
Dose	A dose is the amount of a substance that gets into the body through ingestion, skin absorption, or inhalation. It is calculated per kilogram of body weight per day.
Exposure	Contact with a chemical by swallowing, by breathing, or by direct contact (such as through the skin or eyes). Exposure may be short-term (acute) or long-term (chronic).
Groundwater	Water found underground that fills pores between materials such as sand, soil, or gravel. In aquifers, groundwater often occurs in quantities where it can be used for drinking water, irrigation, and other purposes.

Hazardous substance	Any material that poses a threat to public health and/or the environment. Typical hazardous substances are materials that are toxic, corrosive, ignitable, explosive, or chemically reactive.
Indeterminate public health hazard	Sites for which no conclusions about public health hazard can be made because data are lacking.
Inorganic	Compounds composed of mineral materials, including elemental salts and metals, such as iron, aluminum, mercury, and zinc.
Media	Soil, water, air, plants, animals, or any other part of the environment that can contain contaminants.
Monitoring wells	Special wells drilled at locations on or off a hazardous waste site so water can be sampled at selected depths and studied to determine the movement of groundwater and the amount, distribution, and type of contaminant.
Organic	Compounds composed of carbon, including materials such as solvents, oils, and pesticides which are not easily dissolved in water.
Remedial investigation	A study designed to collect the data necessary to determine the nature and extent of contamination at a site.
Route of exposure	The way in which a person may contact a chemical substance that includes ingestion, skin contact and breathing.
U.S. Environmental Protection Agency (EPA)	Established in 1970 to bring together parts of various government agencies involved with the control of pollution.
Volatile organic compound (VOC)	An organic (carbon-containing) compound that evaporates (volatilizes) easily at room temperature. A significant number of the VOCs are commonly used as solvents.



LEGEND

- ⊙ IMW INTERMEDIATE MONITORING WELL
- ⊙ SMW SHALLOW MONITORING WELL
- ⊕ PRIVATE POTABLE WELL
- ▲ PWS-12 SOIL BORING LOCATION
- FENCE LINE
- RESIDENCE
- CSXT PROPERTY LINE

SOIL (BVS-#) & SEDIMENT (BYD-#) SAMPLES COLLECTED BY BLACK & VEATCH, INC., NOVEMBER, 1997

ESE-PW-8 ESE PRIVATE POTABLE WELL DESIGNATION
 WES-PW-4 YES PRIVATE POTABLE WELL DESIGNATION
 GF-PW-05 GF PRIVATE POTABLE WELL DESIGNATION

PRIVATE POTABLE WELL CORRESPONDENCE

ESE NAME	WES NAME	GF NAME
ESE-PW-1	WES-PW-1	GF-PW-01 (Hoodland)
ESE-PW-2	WES-PW-2	GF-PW-03
ESE-PW-3	WES-PW-3	GF-PW-03
ESE-PW-4	WES-PW-3	GF-PW-02 (Wilson)
ESE-PW-5	WES-PW-3	GF-PW-02
ESE-PW-6	WES-PW-6	---
---	---	GF-PW-04 (Thompson)
---	---	GF-PW-04 (Foye)
---	---	GF-PW-05 (Fleming)

NOTE: CERTAIN POTABLE WELLS SERVICE MULTIPLE RESIDENCES



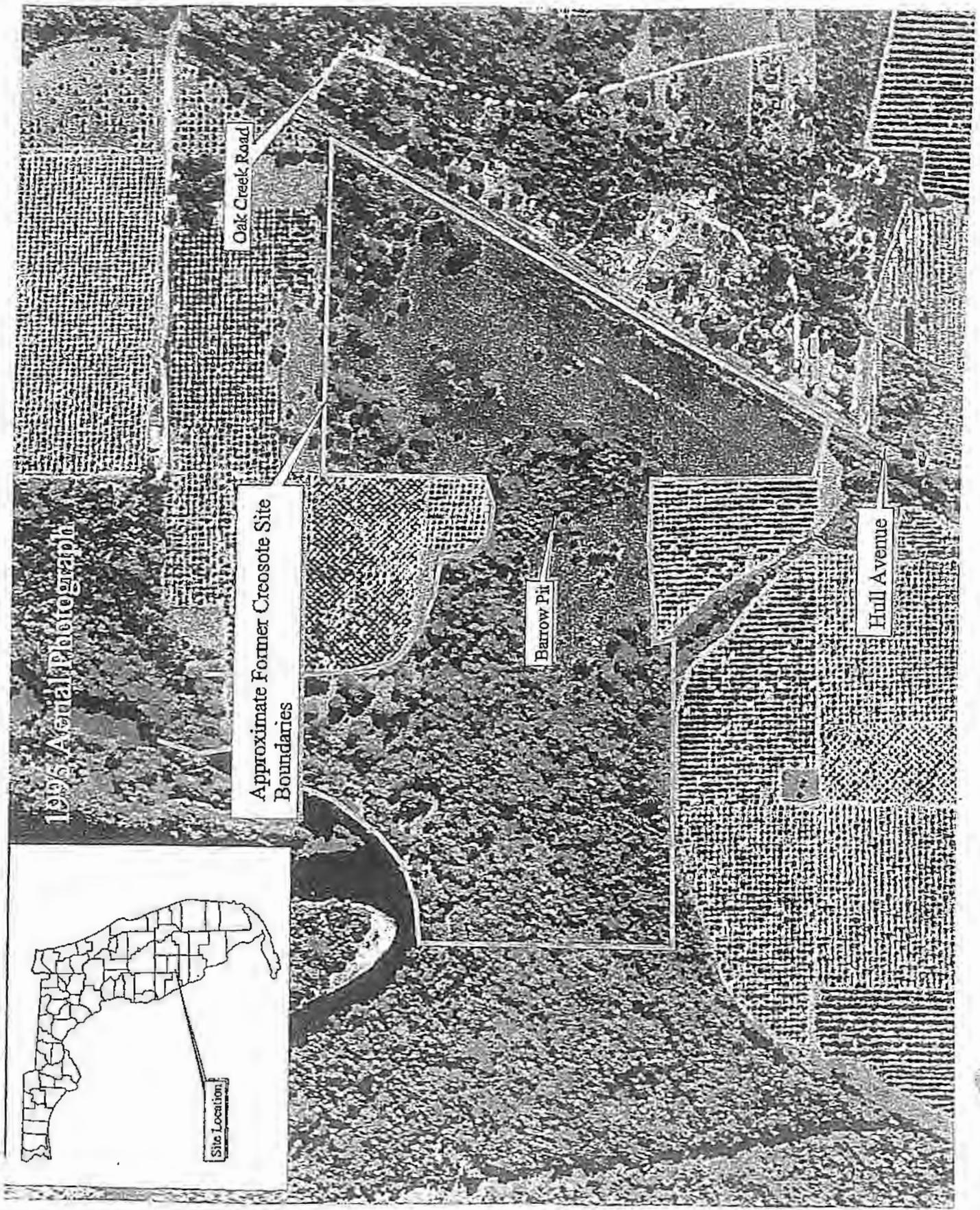
Figure 2

HISTORICAL SAMPLING LOCATIONS
OAK CREEK AREA
 NOCATEE/HULL FORMER CREOSOTE
 WOOD TREATING PLANT SITE

APPENDICES

ATTACHMENT A:

Memorandum from the Florida Department of Environmental Protection that details the discovery of creosote on both sides of the culvert underneath Hull Avenue, and Map from Black and Veatch 1998 showing location of the culvert under Hull Avenue



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 manner. Any reproduction is
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Figure 1



DEPT. OF ENVIRONMENTAL PROTECTION
SOUTH DISTRICT, P. O. Box 2549, FT. MYERS, FL 33902-2549
TELEPHONE NO.: (941) 332-6975 FAX NO.: (941) 332-6969
SUNCOM NO.: 748-6975 FAX SUNCOM NO: 748-6969

FAX TRANSMITTAL LETTER

TO:

NAME: Jim McCarthy DATE: 3/2/98

AGENCY: DEP

TELEPHONE NO.: _____ FAX NO.: (850)922-4368

NUMBER OF PAGES INCLUDING COVER SHEET: 2

FROM:

NAME: Lisa Schall

IF ANY PAGES RE NOT CLEARLY RECEIVED, PLEASE CALL IMMEDIATELY!

COMMENTS: _____

date: 2/26/98 11:40:53 AM
from: Lisa Schall FTM
subject: Nocatee/Hull Site
to: Jim McCarthy TAL
cc: Jeffrey Gould FTM

Hi Jim,

Thanks for keeping us updated on the Nocatee/Hull site. We were surprised to learn that CSX may not take responsibility for the creosote along Oak Creek Rd. Yesterday (2/25), Jeff and I installed a couple soil borings next to Hull Rd., between MW-6R (former waste pit) and the Oak Creek Rd. culvert. I will fax a site map showing the boring locations.

Boring 1 was installed in a low area on the west side of Hull Rd., adjacent to a small culvert that went under Hull Rd. and into an easterly drainage area. This boring was located about 22 ft. north of the Thedford's mailbox (7286 SW 11). We noted a slight creosote odor at 2.5 ft. The odor was much stronger at 4 ft., and a notable silvery sheen was observed. The boring was terminated at 4.5 ft., where the creosote odor and silver sheen was quite strong.

Boring 2 was installed on the east side of the Hull Rd. culvert, about 25 ft. east of the road, in a vegetated drainage area. Here we noted a substantial creosote odor and sheen in the first 6 inches. The strong odor and sheen continued to a depth of 1 ft. From 1 ft. to 4.5 ft. the odor was slight, but a sheen was not observed. This boring was also terminated at 4.5 ft. (The same table was encountered at approximately 1 ft. in both borings.)

It appears that creosote is somehow migrating from the CSX site towards the culvert. I did speak with a local property owner, Calvin Boggess, a couple weeks ago. Jeff and I thought he had worked at the wood treating facility years ago, but it turns out that a friend of his, Mr. Yeats (now deceased), had worked there. Mr. Yeats told Calvin that there was a housing settlement for utility workers to the east of Hull Rd., back when the facility was in operation. Calvin thought it unlikely that waste would have been buried in any particular area, since many workers and their families were living there. Of course, it would be nice to have historic aerials to confirm this.

Now, I just wanted to pass this information along to you. Perhaps it could be of some use.

Schall

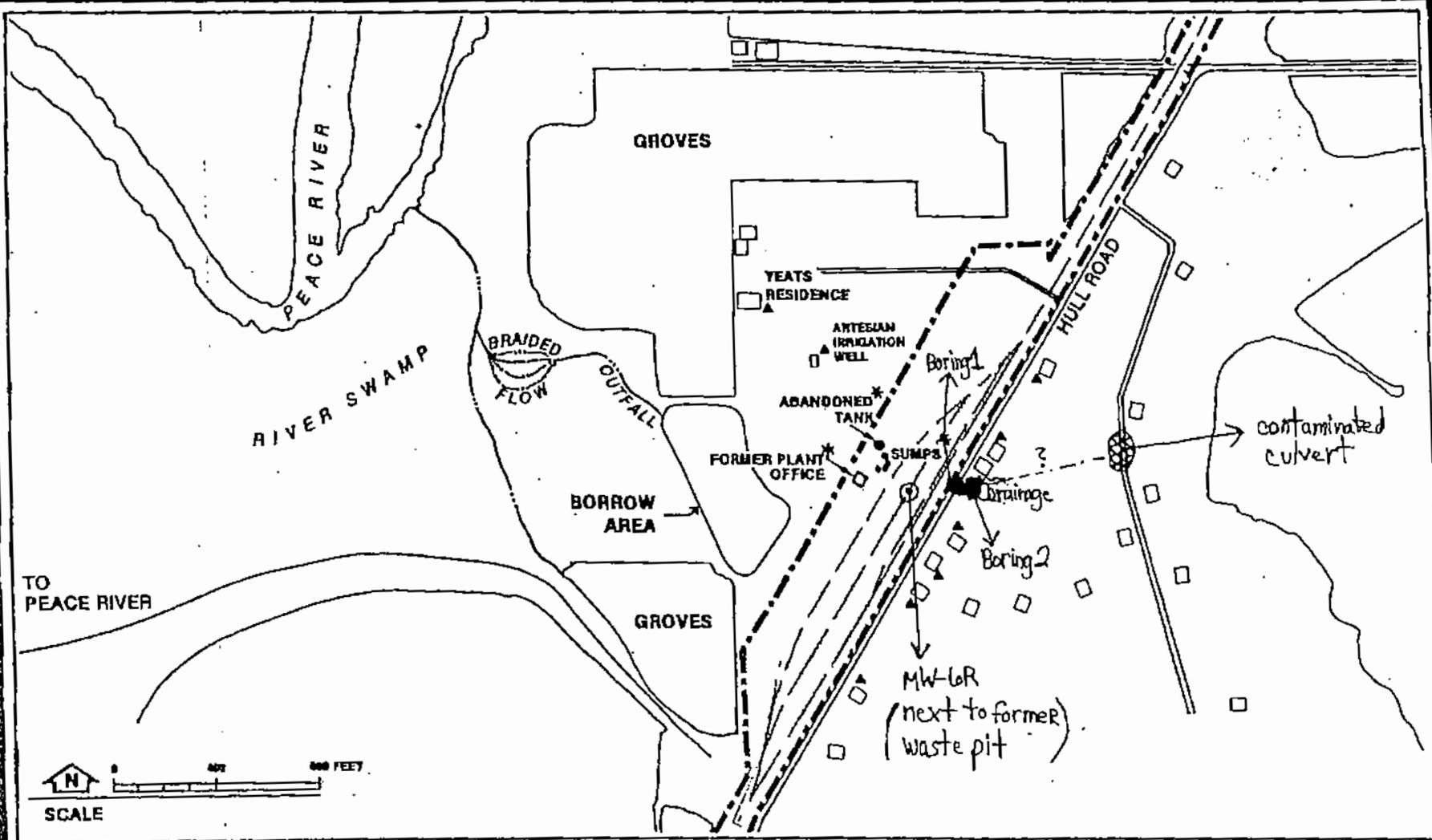


Figure 1
SITE AREA

Nocatee/Hull Site Visit
2/25/98

- KEY
- SEABOARD PROPERTY LINE
 - ▲ PRIVATE WELLS
 - - - - - ABANDONED RAILROAD ROW
- * OFFICE, TANK, AND SUMPS WERE REMOVED IN 1984.

CSX TRANSPORTATION
NOCATEE — HULL SITE

SOURCE: ESE, 1985.

Final
EXPANDED SITE INSPECTION REPORT

BUREAU OF WASTE CLEANUP

JUN 03 1998

TECHNICAL REVIEW SECTION

Nocatee Hull Creosote Site
Hull, De Soto County, Florida
EPA ID N° FLD980709398
WasteLAN N° 00904

Prepared Under
FDEP Contract N° HW368

For The
Florida Department of Environmental Protection
Division of Waste Management

Prepared By:

Black & Veatch Special Projects Corp.
BVSPC Project N° 40876.110

Scott J. Holcombe

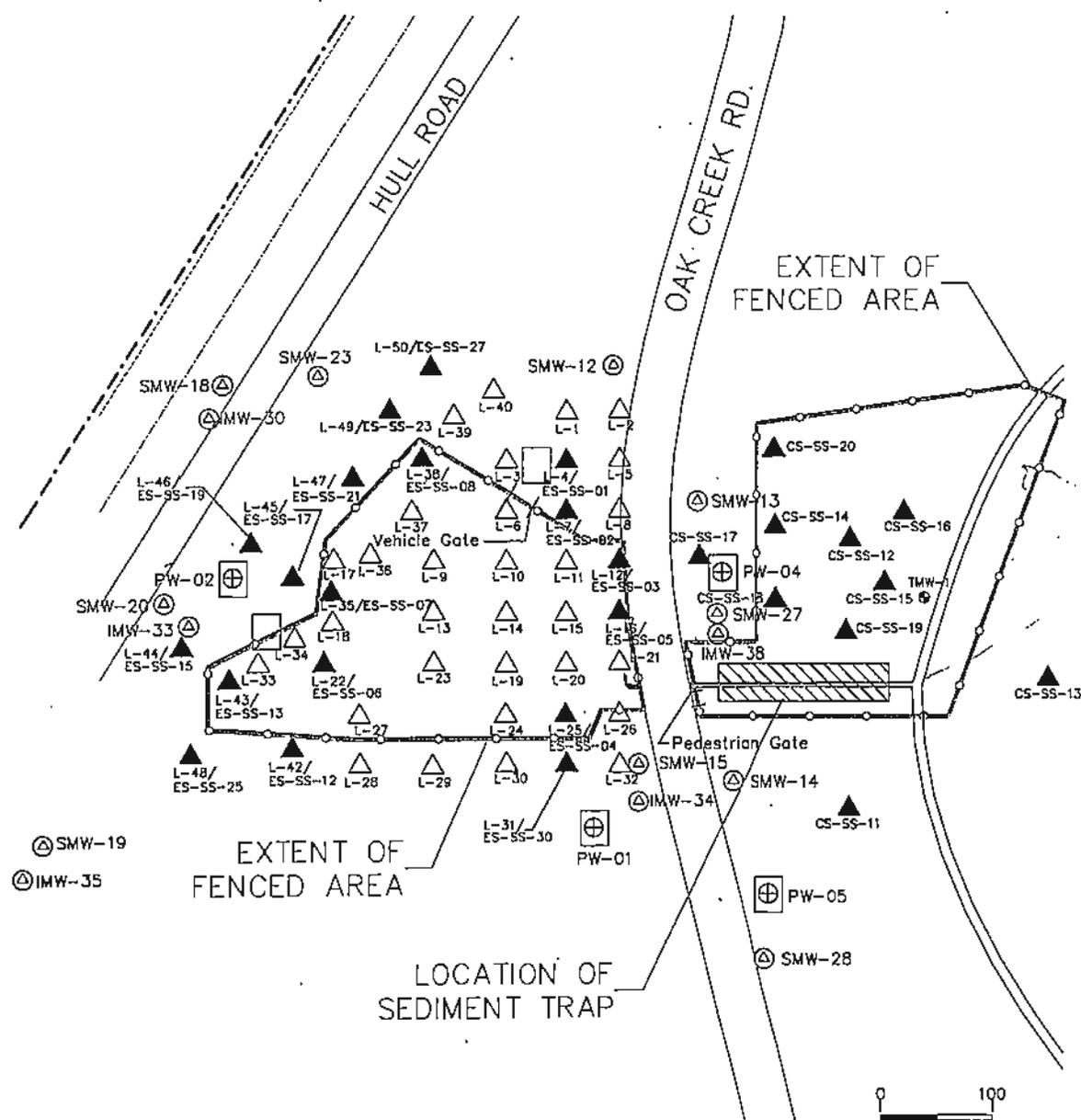
Scott J. Holcombe, P.E. No. 50355

June 3, 1998

Date

ATTACHMENT B

Figure 6-4 from the Streamlined Remedial Investigation and the Gannett Fleming map showing the area that was fenced off (in figure 6-4 of the SRI).



LEGEND

- ⊕ IMW INTERMEDIATE MONITORING WELL
- ⊙ SMW SHALLOW MONITORING WELL
- ⊙ MW MONITORING WELL
- ⊙ TMW TEMPORARY MONITORING WELL
- ⊕ PW PRIVATE POTABLE WELL
- ▲ SLL SOIL SAMPLE LOCATION
- △ SLSL SOIL SCREENING LOCATION
- RESIDENCE
- CSXT PROPERTY LINE

**SURFACE SOIL SAMPLING
LOCATIONS AND
LOCATION OF
CONTROL MEASURES
OAK CREEK AREA**

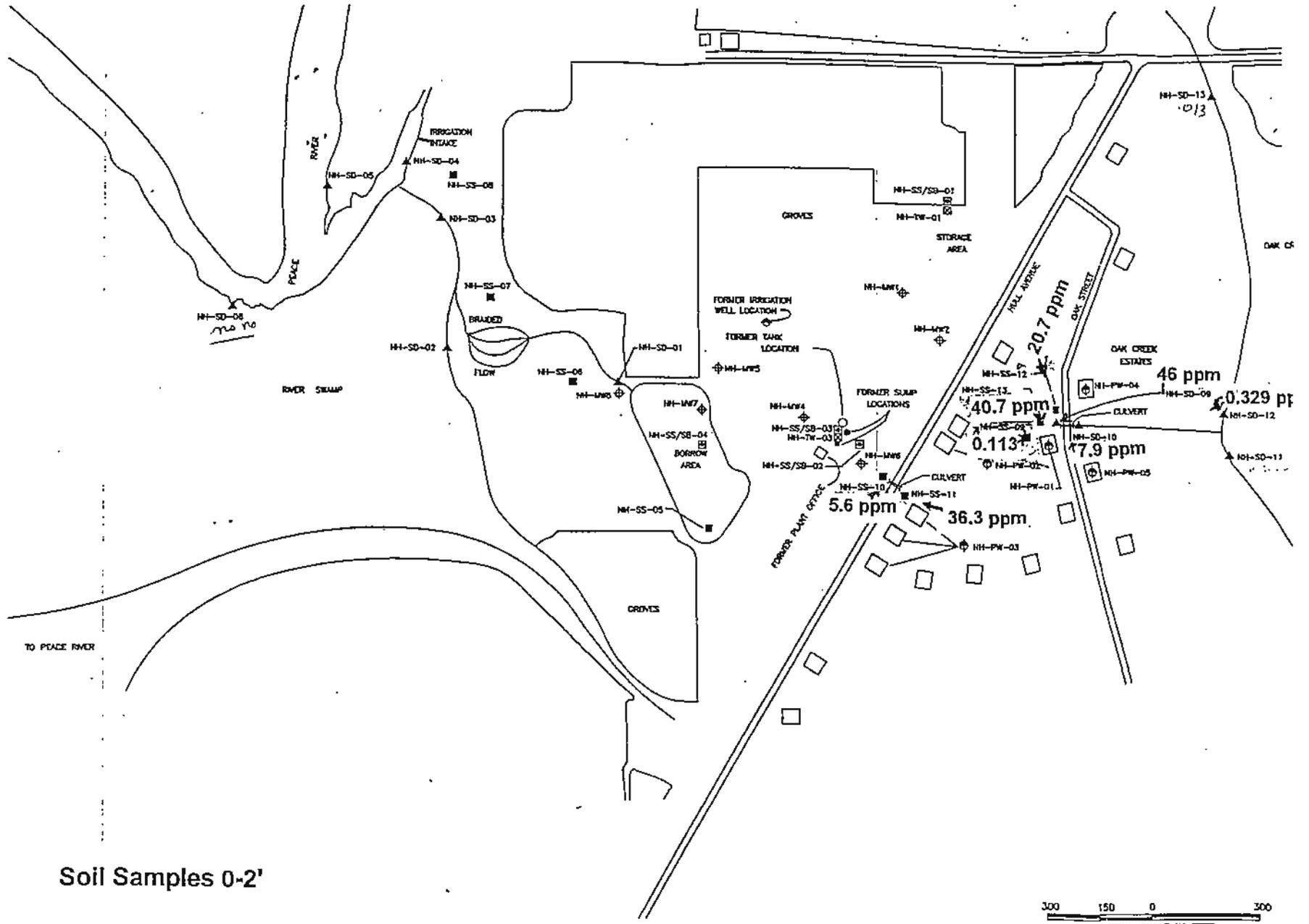
NOCATEE/HULL FORMER CREOSOTE
WOOD TREATING PLANT SITE
HULL (NOCATEE) FLORIDA

ATTACHMENT C

Map from Black and Veatch, June 1998.

The Florida Department of Health added the TEFs for PAHs with values exceeding the screening value for benzo[a]pyrene 0.1 mg/kg or ppm.

Locations of PAH TEQs that exceeded the Screening Value of 0.100 ppm



Soil Samples 0-2'

NOTE: SAMPLE LOCATIONS OTHER THAN EXISTING MONITORING WELLS ARE APPROXIMATE.



6/3/98

NOCATEE HULL CREOSOTE
HULL, DESOTO COUNTY, FLORIDA

SAMPLE LOCATION MAP

ATTACHMENT D

Scanned image of a 1943 aerial photo containing features identified in 1998 by the U.S. Geological Survey, and included in the SRI. The Florida Department of Health used *ArcView*[®] (computer program Version 3.2, Redlands CA, ESRI, 2001) in a geographical information system to overlay this image with features identified in the SRI (the pipes and sump) and by Black and Veatch (the culvert under Hull Avenue).

ATTACHMENT E

The following attachment shows the area that is currently fenced off as a forested flood plain. It is in the same location and is the same shape as the cleared area in the 1943 aerial photos shown in the old aerial photographs.

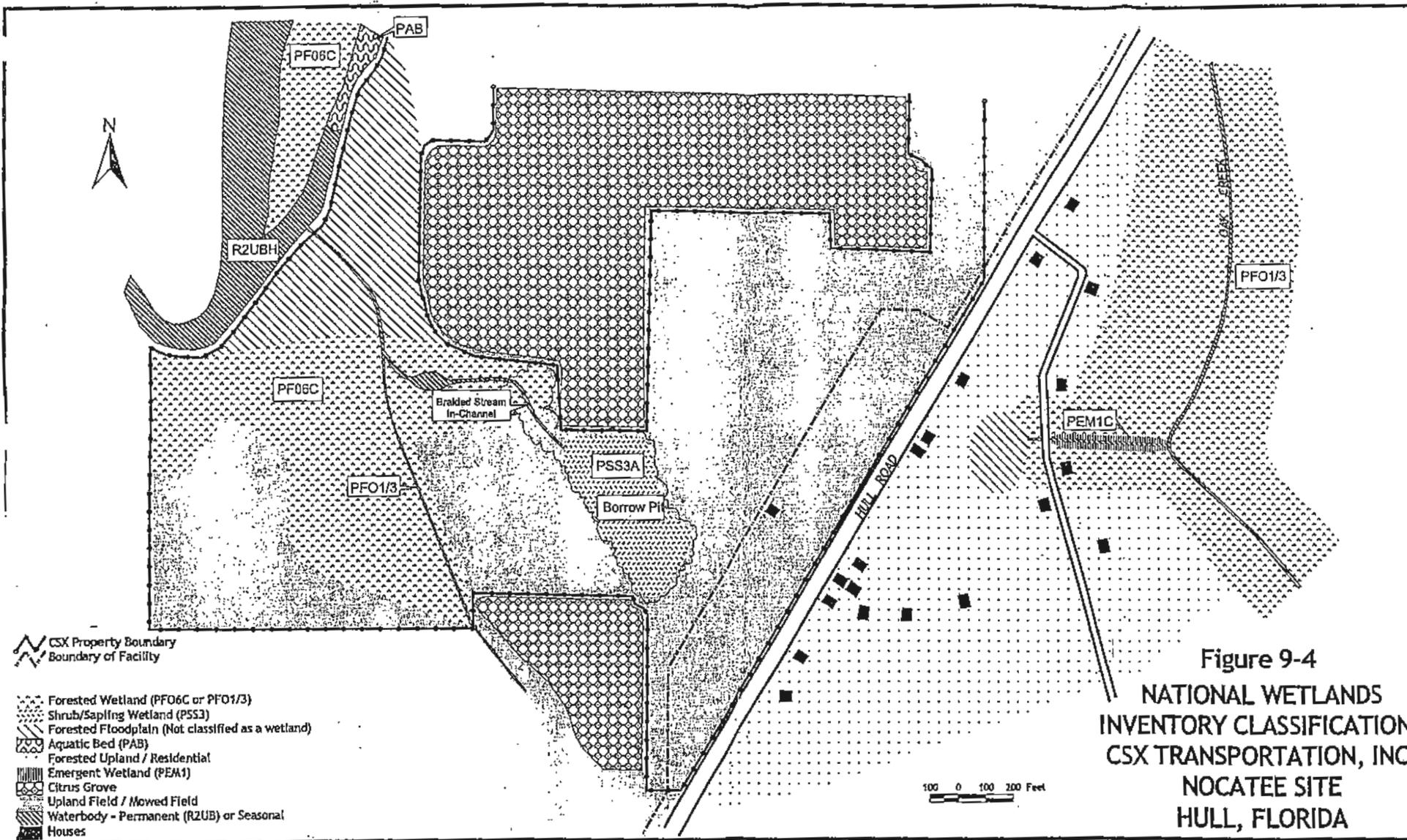


Figure 9-4
 NATIONAL WETLANDS
 INVENTORY CLASSIFICATIONS
 CSX TRANSPORTATION, INC.
 NOCATEE SITE
 HULL, FLORIDA

ATTACHMENT F

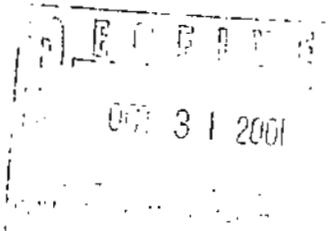
The following attachment is a letter from the U.S. Environmental Protection Agency stating that the more stringent screening values should be used at this site.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

October 26, 2001



Ronald N. Leins
Gannett Fleming, Inc.
WestLake Corporate Center; Ste. 150
9119 Corporate Lake Drive
Tampa, FL 33634

Dear Mr. Leins,

The purpose of this letter is to provide EPA's comments on the June 12, 2001, quarterly potable well sampling results report dated, August 31, 2001, for the Nocatee Hull creosote wood treating site in Nocatee, Florida. Please ensure these comments are addressed in future submittals.

1. **Table 1:** The Maximum Contaminant Level (MCL) which is deemed acceptable at a Superfund site is determined by a comparison of the Federal and State promulgated drinking water standards. EPA enforces the more stringent of these two standards as the MCL. For the following contaminants, a more stringent State standard exists. Please revise the tables and use the more stringent levels as MCLs.

Contaminant	Federal MCL (ug/l)	Florida MCL (ug/l)
benzene	5	1
carbon tetrachloride	5	3
1,2 dichloroethane	5	3
tetrachloroethene	5	3
trichloroethene	5	3
vinyl chloride	2	1

2. **Table 1:** The primary drinking water standard for 1,1,1-trichloroethane should be 200 ug/l rather than 2,000 ug/l.

Sincerely,

William C. Denman, P.E.
Remedial Project Manager

cc: Connie Garrett, Florida Department of Health
Arena Lightbourn, EPA/OTS

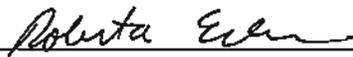
Certification

The Florida Department of Health, Bureau of Environmental Epidemiology, prepared this health consultation on the Nocatee/Hull Creosote Site Technical Document Review under a cooperative agreement with the Agency for Toxic Substances and Disease Registry. The Florida Department of Health followed ATSDR-approved methodology and procedures in existence when this review began.



Debra Gable
Technical Project Officer,
SPS, SSAB, DHAC

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



Roberta Erlwein
Section Chief,
SSAB, DHAC,
ATSDR