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644SERBSF10,637

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Site ID (Document ID):	NCD000609974
Document Name (DocType):	Preliminary Assessment/Site Inspection (PA/SI)
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Description:	Amended Site Re-Assessment Report
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NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

MICHAEL F. EASLEY, GOVERNOR
WILLIAM G. ROSS, JR., SECRETARY
DEXTER R. MATTHEWS, DIRECTOR

NCDENR

December 11, 2002

Ms. Jennifer Wendel
NC Site Management Section Chief
EPA Region IV Waste Division
61 Forsyth Street, SW 11th Floor
Atlanta, Georgia 30303

RE: Addendum to the April 15, 2002 Site Re-Assessment Report
Union Oil Company, S.E. Terminal Site
NCD 000 609 974
Greensboro, Guilford County, North Carolina

Dear Ms. Wendel:

This letter is an addendum to the amended Site Re-assessment Report dated April 15, 2002. On the basis of the original Site Re-assessment Report dated May 25, 2000, the Union Oil S.E. Terminal site was recommended and tasked for an Expanded Site Inspection (ESI). However, based on information gathered for this ESI during an extensive on-site reconnaissance, off-site target search, and additional sampling data gathered during the Texaco Site Re-assessment Report, the NC Superfund Section is recommending that the site still receive a No Further Remedial Action Planned status (NFRAP).

In May 2000, the NC Superfund Section recommended in a Site Re-Assessment that the Union Oil S.E. Terminal site proceed with an Expanded Site Inspection (Reference 1). This recommendation was based on the lack of data collected within the surface water pathway during the previous investigations as well as the number of targets downstream within the 15-mile

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surface water pathway. As stated in the Site Re-assessment, the City of High Point serves approximately 78,000 people from the intake on High Point Lake (or City Lake) approximately 6 miles downstream of the site. The Cities of Jamestown and Archdale both purchase water from the City of High Point. The City of Jamestown serves approximately 4,400 people and the City of Archdale serves another 10,000 people. Portions of the 15-mile pathway are also fisheries; however, the unnamed tributary that drains the site is not. During information gathering for the ESI reconnaissance, a potential wetland was discovered along the surface water pathway using the Department of Interior National Wetland Inventory Map. On the map, this wetland is located approximately 0.5 mile from the Probable Point of Entry (PPE) of the site.

On February 26, 2002, the NC Superfund Section conducted an extensive on-site reconnaissance and off-site target search of the Union Oil S.E. Terminal site to determine sampling locations for the pending ESI investigation. During this reconnaissance, the NC Superfund Section concluded that it would be difficult to adequately demonstrate attribution from the site to the surface water pathway and to any downstream targets. Runoff from numerous other properties near the site with similar contamination issues may significantly influence this pathway of concern (Reference 2).

Although no samples were collected for this site re-assessment, samples for the Texaco, Inc. Site (Texaco) in Greensboro were collected in April 2002 and are applicable to the surface water pathway with target-specific sampling locations (Reference 3). Texaco is located at 101 Chimney Rock Road, Greensboro, North Carolina. The Texaco site is located less than a quarter of a mile from the Union Oil site. The Texaco and Union Oil sites share the lower portion of the 15-mile surface water pathway and the downstream targets (surface water intake and fishery) (Figure 1). The sites have separate surface water pathways for the first 3.6 miles. Texaco's pathway flows from the site into the Long Branch River which flows for 3.6 miles until it enters the East Fork Deep River. The Union Oil site discharges into an unnamed tributary which then flows into the East Fork Deep River. During the Texaco sampling event, samples (TEX-05-SD and TEX-06-SD) were collected on the East Fork Deep River as attribution or background samples for the Texaco site. Sample TEX-05-SD can also serve as a downstream sample for the Union Oil site. The second background sample, TEX-06-SD, was also collected for the Texaco site on the East Fork Deep River. This sample was collected upstream of the confluence of the unnamed tributary and the East Fork Deep River and therefore serves as a background sample for the Union Oil site. A downstream release sample, TEX-04-SD, was also collected as a release sample for the Texaco site which is an appropriate downstream release sample for the Union Oil site. Sample TEX-04-SD was collected at the entrance to High Point Lake, the location of the surface water intake and fishery. See Figure 1 for a map of the sampling locations that were collected for the Texaco site. Reference 3 is a copy of the complete Texaco, Inc. Site Re-Assessment Report.

Considering TEX-06-SD as a background sample and TEX-05-DS and TEX-04-SD as release samples, no observed releases were identified at the fishery (approximately 3.5 miles downstream from Union Oil) or at the lake which supplies the surface water intake (approximately 6 miles downstream). A copy of the summary data table as well as the raw data sheets from the Texaco Site Re-Assessment Report sampling can be found in Reference 3.

This site was initially recommended for further action based on the downstream fishery and surface water intakes for the Cities of High Point and Jamestown located 6 miles downstream. However, based on the location of the surface water intake 6 miles downstream, on all the site attribution issues gathered during a site reconnaissance, and the sampling data collected for the Texaco site, the NC Superfund Section is still recommending that the site be reconsidered for a No Further Remedial Action Planned status (NFRAP). If you have any questions regarding this amended report, please contact Stephanie Grubbs at (919) 733-2801 ext. 315.

Sincerely,

Stephanie K. Grubbs
Hydrogeologist
NC Superfund Section

Jim Bateson, Head
Site Evaluation and Removal Branch
NC Superfund Section

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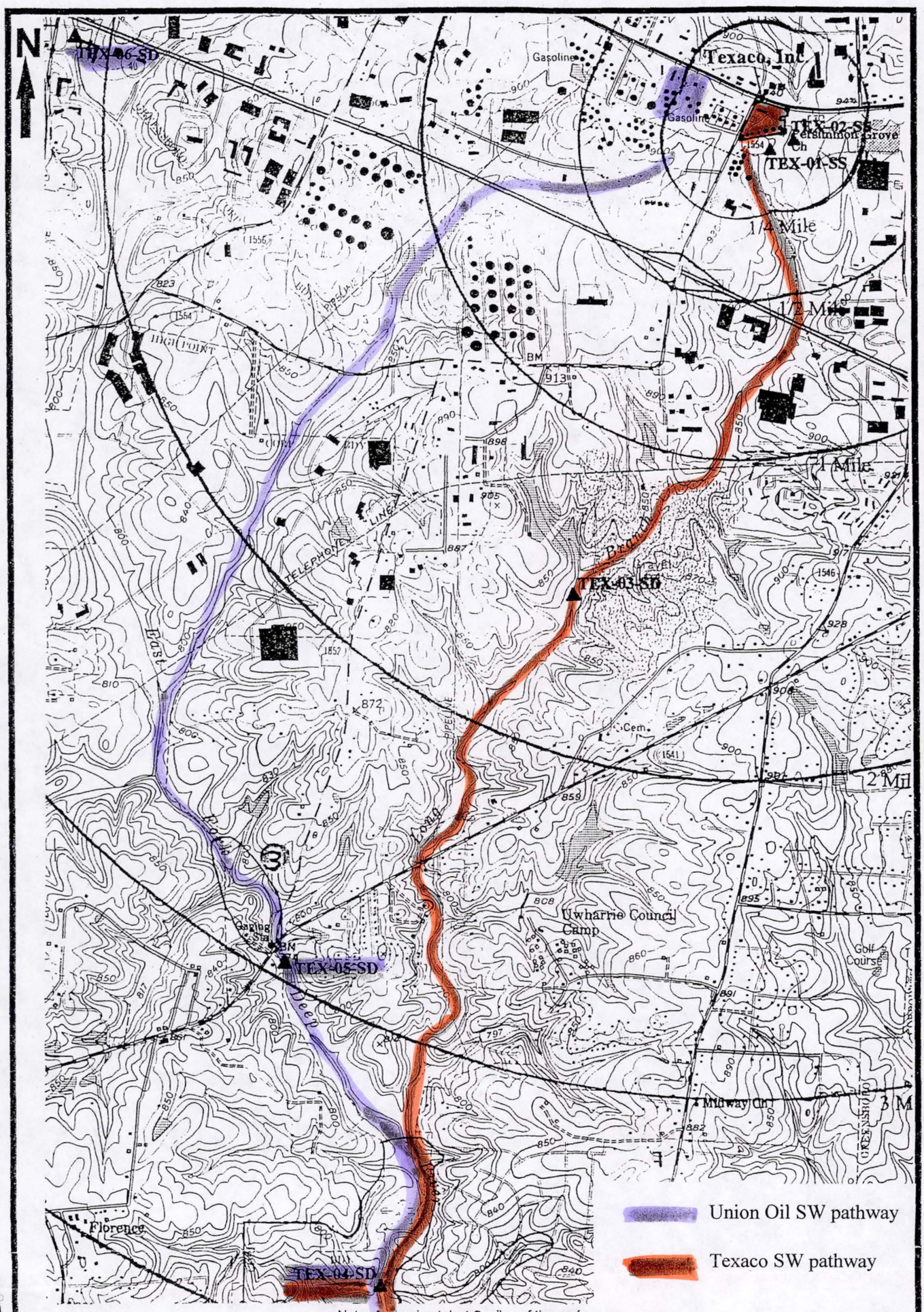

▲ Sampling Locations

Note: Approximately 4.2 miles of the surface water pathway is shown. High Point Lake is located further south of the map edge.

Source: Modified from USGS, Guilford, N. C. Quadrangle, revised 1994.

NCDENR	TITLE: Off-Site Sample Location Map	EDITED BY: Kyle Hagen SCALE: 1" = 2000' DATE: 03/19/02
	SITE NAME: Texaco, Inc. LOCATION: Greensboro, Guilford County, NC US EPA ID # NCD 096 165 121	FIGURE 1

Reference 1

NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

WILLIAM L. MEYER
DIRECTOR

May 25, 2000

Ms. Jennifer Wendel
NC Site Management Section Chief
EPA Region IV Waste Division
61 Forsyth Street, SW 11th Floor
Atlanta, Georgia 30303

RE: Site Re-Assessment Report
Union Oil Company, S.E. Terminal Site
NCD 000 609 974
Greensboro, Guilford County, North Carolina

Dear Ms. Wendel:

The Union Oil S.E. terminal is located on the western side of Greensboro, NC (Figure 1). The site was purchased by Gulf Oil Company in 1980 and in 1985 purchased by Standard Oil of Ohio. The current owner, as of the 1992 Site Inspection (SI), is British Petroleum Oil (Reference 1). The site is a tank farm consisting of four tanks with a combined capacity of 185,000 barrels inside one bermed area and seven tanks with a combined capacity of 331,000 barrels in the second bermed area. The wastes generated are American Petroleum Institutes (API) slop oil solids, API separator sludge, and leaded tank bottoms.

According to the Site Inspection, Union Oil Company first entered the North Carolina RCRA program on August 14, 1980 (Reference 1). The facility filed a Part A application for a Hazardous Waste Permit on November 7, 1980. Union Oil Co. was deleted as a treater, storer, and disposer under RCRA on March 4, 1982. Union Oil Co. was in full compliance with generator standards during an inspection on March 23, 1982. On March 30, 1984, the facility's interim status was terminated. The site was again found in compliance during a generator inspection in October 1987. The facility is currently listed as a generator under RCRA and was granted a National Pollutant Discharge Elimination System (NPDES) permit, which expired June 30, 1981.

A Preliminary Assessment conducted in January 1985 recommended the site proceeded to a Phase I Screening Site Inspection (SSI) on a low priority basis (Reference 2). In 1990, a Phase I SSI was conducted and numerous drinking water

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wells, one within 100 feet from the facility, were observed (Reference 3). The report also made comments regarding the site's surface water pathway, stating that the site drains 1,000 feet southwest into an unnamed tributary which flows for 0.25 miles to Long Branch (Figure 1). Long Branch flows for another 2.75 miles and empties into the Deep River. The Deep River then flows for 1.5 miles into High Point Lake, which discharges back into the Deep River. The City of High Point obtains its water supply from an intake located in the Deep River, 6.8 miles downstream of the facility. The Jamestown Water Department obtains its water from the treatment facility on the Deep River 10.1 miles downstream from the facility. The City of Greensboro obtains its water from Lake Townsend, Lake Higgins, and Lake Brandt, all of which are located upstream of the site. Based on the information collected, the site was then recommended for a Phase II SSI on a medium priority basis.

The Phase II investigation was conducted by the NC Superfund Section in 1992 (Reference 1). This investigation also referred to the surface water pathway as of concern due to the fact that two surface water intakes are located along the 15-mile pathway. During the Phase II, groundwater monitoring wells were sampled at the site. These wells contained acetone, benzene, toluene, xylenes$_{(total)}$, naphthalene, 2-methylnaphthalene, several BNA TIC's and two VOA TIC's, as well as calcium, lead, manganese, and sodium. The site lies within the Carolina Slate Belt which consists of fractured metamorphic bedrock, granite, gabbro, and diorite, overlain by an interconnected saprolite layer.

As of October 1999, Gene Moa with the Environmental Health Division of the Guilford County Health Department stated that there was one well within the North Market Street and Highway 421 area and that the well had served a mobile home park (Reference 4). This well is now unused and the community is supplied municipal water. The well was sampled in 1998 and no contaminents were detected. The Guilford County Health Department works under a Memorandum Of Agreement (MOA) with the Division of Water Quality to conduct the Greenboro tank farm investigations.

The surface water pathway, as described previously, had not been sampled during either of the Phase I or Phase II investigations. According to the SI, no wetlands, sensitive environments or habitats occur along the 15-mile surface water pathway (Reference 1).

Although, the surface water pathway is of concern based on the surface water intake and the fisheries located within the 15-mile target distance limit. The City of High Point serves approximately 78,000 people from the intake on High Point Lake

(or City Lake) approximately 6 miles downstream of the site (Reference 5). The Cities of Jamestown and Archdale both purchase water from the City of High Point. The City of Jamestown serves approximately 4,400 people and the City of Archdale serves another 10,000 people (Reference 5). During the 1992 SI investigation, the City of Jamestown also had a surface water intake on the Deep River but has subsequently discontinued the use and the city currently purchases water from High Point and Greensboro.

Portions of the 15-mile pathway are also fisheries. The unnamed tributary that drains the site is not a fishery. The SI stated that downstream of the tributary, the Long Branch and the Deep River are lightly fished and High Point Lake is heavily fished (Reference 1). High Point Lake is approximately 4.5 miles downstream of the site.

Previously the site was recommended for no further action (Reference 6). Although upon further review of the surface water pathway the site requires additional investigation. Therefore, for purposes of site prioritization relative to other sites, the surface water pathway appears to be of great enough concern to consider further effort under CERCLA. If you have any questions, please contact me at (919) 733-2801 ext. 315.

Sincerely,

Stephanie K. Grubbs

Stephanie K. Grubbs
Hydrogeologist
Special Remediation Branch
NC Superfund Section

enclosure

Reference 2

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

MICHAEL F. EASLEY, GOVERNOR
WILLIAM G. ROSS, JR., SECRETARY
DEXTER R. MATTHEWS, DIRECTOR

NCDENR

April 15, 2002

Ms. Jennifer Wendel
NC Site Management Section Chief
EPA Region IV Waste Division
61 Forsyth Street, SW 11th Floor
Atlanta, Georgia 30303

RE: Amended Site Re-Assessment Report
Union Oil Company, S.E. Terminal Site
NCD 000 609 974
Greensboro, Guilford County, North Carolina

Dear Ms. Wendel:

This letter is to amend the original Site Re-assessment Report dated May 25, 2000. On the basis of the original Site Re-assessment Report, the Union Oil S.E. Terminal site was recommended and tasked for an Expanded Site Inspection (ESI)(Reference 1) . However, based on information gathered for this ESI during an extensive on-site reconnaissance and off-site target search, the NC Superfund Section is recommending that the site now receive a No Further Remedial Action Planned status (NFRAP).

The Union Oil S.E. terminal is located on the western side of Greensboro, NC (Figure 1). The current owners of the property are British Petroleum Oil and TransMontaigne Inc. (Reference 2). The site is a bulk petroleum distribution center or tank farm consisting of seven above-ground tanks ranging from approximately 41,600 to 81,000 barrels in volume (Reference 3).

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Since 1946 the site has been used as a bulk petroleum distribution terminal (Reference 2). No records of waste disposal exist for operations prior to 1980. On-site disposal of tank sludges and leaded tank bottoms are suspected to have occurred between 1946 and 1980. Since 1980, no on-site waste disposal has occurred (Reference 4). The wastes generated are American Petroleum Institutes (API) slop oil solids, API separator sludge, and leaded tank bottoms (Reference 4).

Previous investigations for the site include a Preliminary Assessment conducted in January 1985 in which the site was recommended for further investigation on a low priority basis (Reference 5). In 1990, a Phase I SSI was conducted and numerous drinking water wells, one within 100 feet from the facility, were observed (Reference 6). The report also made reference to targets along the site's surface water pathway and identified the potential to release to a surface water intake (Reference 6). The site was then recommended for a Phase II SSI on a medium priority basis. In 1992, a Phase II investigation was conducted by the NC Superfund Section (Reference 4). On-site soil samples were collected during the Phase II SSI. Toluene, ethylbenzene, xylene, barium, calcium, cobalt, copper, manganese, nickel, and zinc were detected at significant levels above background. On-site monitoring wells were sampled and significant levels of acetone, benzene, toluene, ethylbenzene, xylene, naphthalene, and 2-methylnaphthalene were detected. This investigation also referred to the groundwater and surface water pathways as areas of concern, although no surface water pathway samples were collected. The site was recommended for further action (Reference 4).

Based on information collected for the original Site Re-assessment, the Environmental Health Division of the Guilford County Health Department stated that there was one well within the North Market Street and Highway 421 area (Reference 7). This well had served a mobile home park but is currently unused and the community is supplied municipal water. The well was sampled in 1998 and no contaminants were detected. The Guilford County Health Department works under a Memorandum Of Agreement (MOA) with the NC Division of Water Quality to conduct the Greensboro tank farm investigations (Reference 7). Therefore, the groundwater pathway is no longer a concern for this investigation.

In May 2000, the NC Superfund Section recommended in a Site Re-Assessment that the Union Oil S.E. Terminal site proceed with an Expanded Site Inspection (Reference 1). This recommendation was based on the lack of data collected within the surface water pathway during the previous investigations as well as the number of targets downstream within the 15-mile surface water pathway. As stated in the Site Re-assessment, the City of High Point serves approximately 78,000 people from the intake on High Point Lake (or City Lake) approximately 6 miles downstream of the site (Reference 8). The Cities of Jamestown and Archdale both purchase water from the City of High Point. The City of Jamestown serves approximately 4,400 people and the City of Archdale serves another 10,000 people (Reference 8). Portions of the 15-

mile pathway are also fisheries; however, the unnamed tributary that drains the site is not. During information gathering for the ESI reconnaissance, a potential wetland was discovered along the surface water pathway using the Department of Interior National Wetland Inventory Map (Figure 2). On the map, this wetland is located approximately 0.5 mile from the Probable Point of Entry (PPE) of the site.

On February 26, 2002, the NC Superfund Section conducted an extensive on-site reconnaissance and off-site target search of the Union Oil S.E. Terminal site to determine sampling locations for the pending ESI investigation (Reference 9). During this reconnaissance, the NC Superfund Section concluded that it would be difficult to adequately demonstrate attribution from the site to the surface water pathway and to any downstream targets. Runoff from numerous other properties near the site with similar contamination issues may significantly influence this pathway of concern.

The entire Union Oil S.E. Terminal facility discharges to a location (intermittent drainage ditch) via several stormwater drains. This is also the discharge location for the groundwater remediation system currently under a NPDES permit. Several feet downgradient of this discharge location is the discharge point for the adjacent property owned by High Rise Service, Inc. (HRS Inc.). HRS Inc. is also a bulk distribution center consisting of approximately 8 above-ground tanks. Further downgradient along the drainage path, the ditch becomes perennial (location of the site PPE) at a major roadway, Burnt Poplar Road. The drainage from Burnt Poplar, as well as, the major roadway east of the site, is diverted to this location at the site's PPE. After the unnamed tributary crosses under Burnt Poplar via a culvert, another drainage ditch that parallels the road enters the tributary. Several feet downstream from this convergence is another branch entering the pathway. This branch flows into the tributary via a culvert and drains the former Ashland Tank farm. This facility is now abandoned but the tanks are still in place. Downstream of the Ashland attribution location, the petroleum bulk distribution plant of Plantation Pipeline, Inc. (formerly Shell Oil) discharges into the unnamed tributary. Plantation Pipeline is the bulk distribution facility west of Union Oil S.E. Terminal. After this convergence, the tributary flows directly adjacent to a parking lot that allows parking for city/county school buses and cars in need of repair. This parking lot also drains into the tributary via a ditch which is highly discolored. The pathway continues down the tributary to the approximate location of the potential downstream wetland. However, a newly developed road has been constructed at this location, and the wetland is no longer an issue in the investigation. Once the surface water pathway crosses under this newly developed road, it flows south under Interstate 40 via a culvert, and then past Colonial Pipeline Inc. Colonial Pipeline Inc. is another bulk petroleum distribution facility consisting of at least 54 above-ground storage tanks (Figure 1). The surface water pathway then flows for approximately 4.5 miles to enter High Point Lake or City Lake (the location of the surface water intake). Please see Figure 3 for a detailed sketch of the surface water pathway adjacent to the site and Figure 2 for a map of the remaining 6-mile surface water pathway to the surface water intake location at High Point Lake (or City Lake) (Reference 9).

This site was initially recommended for further action based on the downstream fishery and surface water intakes for the Cities of High Point and Jamestown located 6 miles downstream. If any site contaminants are detected within the sediments or aqueous samples of the unnamed tributary at the PPE, the site will yield a score greater than 28.5 based on *potential* to release to a surface water intake that serves approximately 90,000 people. However, based on the location of the surface water intake 6 miles downstream and on all the site attribution issues gathered during the recent site reconnaissance, the NC Superfund Section is recommending that the site be reconsidered for a No Further Remedial Action Planned status (NFRAP). If you have any questions regarding this amended report, please contact Stephanie Grubbs at (919) 733-2801 ext. 315.

Sincerely,

Stephanie K. Grubbs
Stephanie K. Grubbs
Hydrogeologist
NC Superfund Section

Jim Bateson
Jim Bateson, Head
Site Evaluation and Removal Branch
NC Superfund Section

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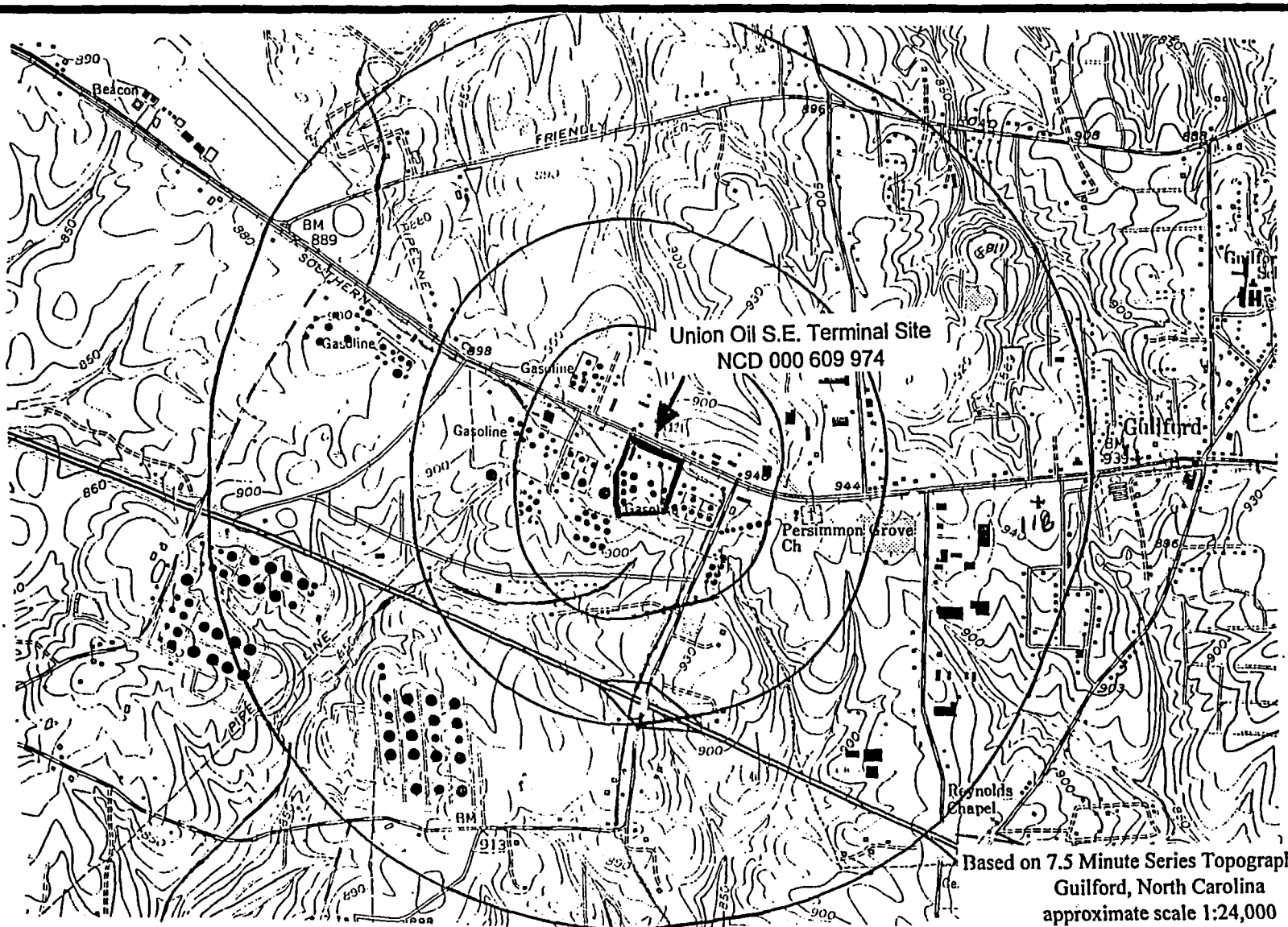


NCDENR

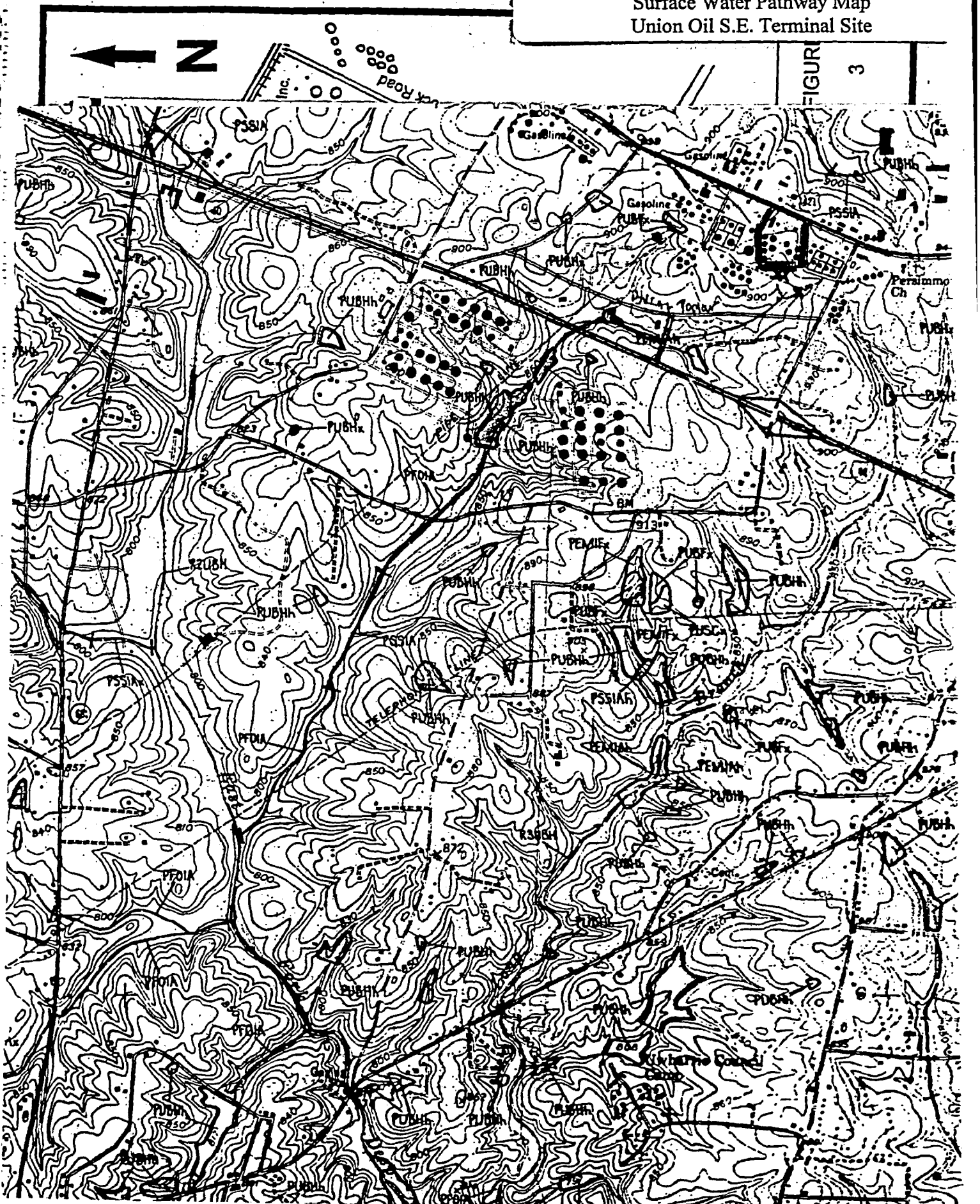
TITLE: 1-Mile Radius Site Map

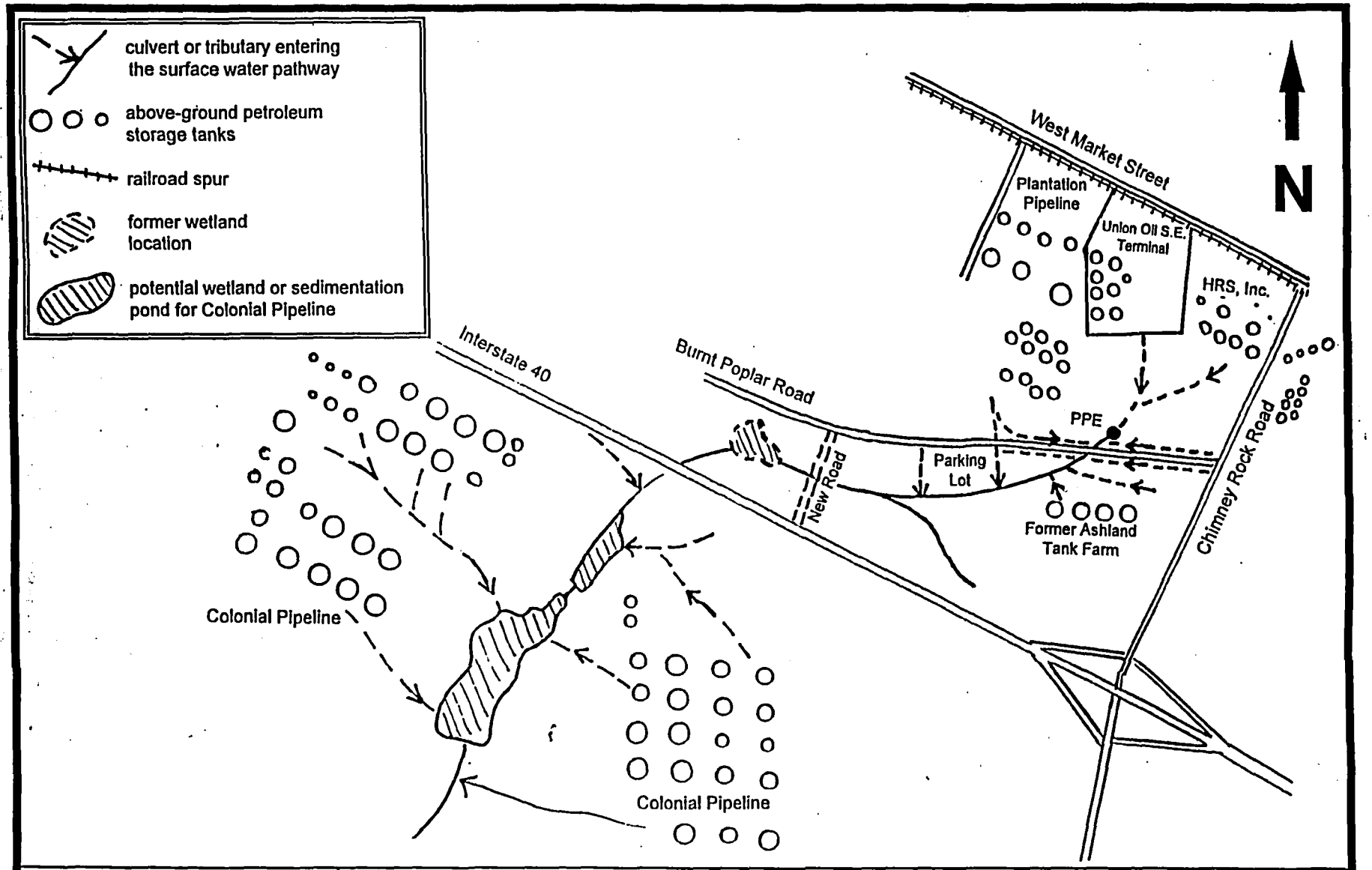
SITE NAME: Union Oil S.E. Terminal
LOCATION: Greensboro, Guilford County, NC
US EPA ID #; NCD 000 609 974

DRAWN BY: S. Grubbs
SCALE: not to scale
DATE: 04/4/02

FIGURE
1

Figure 2
Wetland Inventory Map &
Surface Water Pathway Map
Union Oil S.E. Terminal Site





NCDENR

TITLE: Detailed surface water pathway map

SITE NAME: Union Oil S.E. Terminal
LOCATION: Greensboro, Guilford County, NC
US EPA ID #; NCD 000 609 974

DRAWN BY: S. Grubbs
SCALE: not to scale
DATE: 04/4/02

FIGURE 3

Reference 3

North Carolina
Department of Environment and Natural
Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Director

NCDENR

June 28, 2002

Ms. Jennifer Wendel
NC Site Management Section
US EPA Region IV Waste Division
61 Forsyth Street, 11th Floor
Atlanta, GA 30303

Subject: Revised Site Re-Assessment Report
Texaco, Inc., Greensboro
Greensboro, Guilford County, NC
US EPA ID: NCD 096 165 121

Dear Ms. Wendel:

Enclosed please find a revised Site Re-Assessment completed by the North Carolina Superfund Section (Section) for the Texaco, Inc. site (US EPA ID: NCD 096 165 121). Your office tasked the Section to perform an Expanded Site Inspection (ESI) of the site, on the basis of the Section's original Site Reassessment, dated June 30, 2000. During reconnaissance prior to ESI sampling, Section Staff confirmed that nearby groundwater targets at the site no longer exist, and that the site's potential for impact on fisheries and wetlands could be assessed with a limited number of samples. The Section collected six surface water pathway samples at the site in April 30, 2002. This revised SRR is based on the results of that sampling and on revision of groundwater target information. The NC Superfund Section recommends that the Texaco, Inc. Site be assigned a "No Further Remedial Action Planned" status under CERCLA. A revised PreScore package for the site will be forwarded under separate cover.

The Texaco, Inc. site is located at 101 Chimney Rock Road in Greensboro, Guilford County, North Carolina. The site is located in the United States Geologic Survey (USGS) Guilford 7.5' quadrangle, at latitude 36° 04' 31.3" and longitude 79° 55' 07.6" (Attachment 1). The site is situated on 10.52 acres in a heavily industrialized area on the western side of Greensboro (Attachment 2). The facility is currently a Bulk Petroleum Distribution Terminal and consists of nine bulk aboveground storage tanks, an office/warehouse building, and a petroleum loading rack (Figure 1). The site is surrounded by a six foot chain-linked fence topped with barbed wire. Access to the site is via a guarded gate (Attachment 3).

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The site began operations as a bulk petroleum storage terminal for Texaco, Inc. in April 1951 (Attachment 4). In 1988 Texaco, Inc. formed Star Enterprise, a 50/50 joint venture with Saudi Refining Inc., to refine, distribute and market Texaco-branded products in the Eastern United States which included this petroleum distribution terminal in Greensboro. Star Enterprise ran this terminal until 1998 when Shell Oil Co., Texaco Inc., and Saudi Aramco initiated a joint venture combining their eastern U.S. refining and marketing assets under the name Motiva Enterprises LLC, in which Shell owns 35% of Houston-based Motiva, while Texaco and Aramco each own 32.5% of the joint venture (Attachment 5). The wastes currently generated at the site consist of American Petroleum Institute (API) separator sludge, API separator slop oil, and tank bottoms. Since 1980 no onsite waste disposal has occurred. No records exist of waste disposal practices prior to 1980 but tank sludge and petroleum additives are suspected to have been disposed of on-site prior to 1980 (Attachment 3).

The Preliminary Assessment, dated January 16, 1985, and performed by the North Carolina Superfund Section, recommended the site proceed to a Phase I Screening Site Inspection (SSI) on a low priority basis (Attachment 6). On May 15, 1990, the Phase I SSI performed by NUS Corporation, a Field Investigation Team (FIT) contractor for the United States Environmental Protection Agency (EPA), Region IV, recommended the site proceed to a Phase II SSI on a medium-priority basis (Attachment 7).

On October 29, 1992 the North Carolina Superfund Section along with NUS Corporation completed a Phase II SSI. This Phase II SSI report was based on sampling performed on June 10, 1991 by the FIT contractor, NUS Corporation, and the NC Superfund Section. The purpose of this investigation was to collect information concerning conditions at the site sufficient to assess the threat posed to human health and environment and to determine the need for additional investigation under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or other authority and, if appropriate, support evaluation using the Hazard Ranking System (HRS) for proposal to the National Priorities List (NPL) (Attachment 3).

During the Phase II SSI a total of twenty (20) environmental samples were collected at the site. Nine (9) of these were groundwater samples (MW02, MW03, MW04, MW06, MW07, MW10, MW16, MW23, MW24) taken from monitoring wells throughout the site. Five (5) surface soil samples (SS01 - SS05), one sediment sample (SD01), and five (5) soil boring samples (SB01 - SB05) were collected to characterize the site. The analytical results from the monitoring well samples indicated there was evidence of a hazardous contaminant release to the groundwater at the site. The Level 1 concentrations found in the groundwater wells were alpha BHC (0.18 ppb), beta BHC (0.16 ppb), 1,2-dichloroethane (26 ppb), barium (390 ppb), benzene (20 & 440 ppb), chromium (51 ppb), lead (27 ppb), manganese (5,500 & 7,900 ppb), nickel (40 ppb), vanadium (160 ppb), and zinc (160 ppb). The analytical results from the soil boring and surface soil samples indicated that there was evidence of a hazardous contaminant release to soil at the site. Level 1 concentrations in the surface soil were found of arsenic (2.7 mg/kg), barium (340 mg/kg), beryllium (1.4 mg/kg), calcium (5,900 mg/kg), cobalt (89 mg/kg), lead (35 mg/kg), magnesium (6,900 mg/kg), manganese (8,700 mg/kg), nickel (50 mg/kg), potassium (240 mg/kg), sodium (390 mg/kg), acetone (680 ppb), toluene (47 ppb), and bis(2-ethylhexyl)phthalate (1,400 ppb). Level 1 concentrations in the

subsurface soil were found of barium (220 mg/kg), calcium (5,600 mg/kg), copper (140 mg/kg), magnesium (11,000 mg/kg), nickel (23 mg/kg), potassium (4,300 mg/kg), sodium (330 mg/kg), benzene (130 ppb), ethyl benzene (290 ppb), naphthalene (560 ppb), and 2-methyl naphthalene (1,200 ppb) (Attachment 3).

On June 30, 2000, the North Carolina Superfund Section completed a Site Re-Assessment on the Texaco, Inc. site. This report determined that there were sufficient targets within the 15-mile surface water pathway for the site to proceed to an Expanded Site Inspection. The primary targets were the wetlands, fishery, and the nearby public water supply well. This re-assessment focused on review of 1992 data from the Phase II SSI (Attachment 8). Although the nearby public water supply well is no longer in operation, the wetlands and the fishery still remain the primary targets. Therefore, the six additional soil samples collected on April 30, 2002 and discussed later in this report are used to fully evaluate the impact to the targets and revise the 2000 Site Re-Assessment.

The site's 15-mile surface water pathway contains a municipal surface water intake, wetland frontage, and portions that are classified as fisheries. Site storm water runoff drains approximately 200 feet south into the Long Branch stream. Long Branch flows approximately 3.6 miles and joins the East Fork Deep River. The East Fork Deep River flows approximately 1000 feet until it enters High Point Lake. After traveling approximately 2.1 miles through High Point Lake, it exits as Deep River and continues for the remainder of the 15-mile surface water pathway (Figure 2). Long Branch is not considered a fishery, while East Fork Deep River, High Point Lake, and Deep River are all considered fisheries. High Point Lake is also considered a major recreational area (Attachment 3).

A 0.26 mile stretch of soil classified as a hydric soil type is located along Long Branch approximately 1.5 miles downstream from the PPE. This area is considered the nearest wetland with approximately 0.52 mile of wetland frontage (Attachment 9).

The primary surface water intake for the City of High Point is located on High Point Lake near the dam, approximately 5.9 miles downstream of the PPE (Figure 2). The back-up intake, used during spill events from tank farms or other incidences, is located on Oak Hollow Lake upstream on the West Fork Branch of the Deep River. Over 100,000 people are served by these two drinking water intakes in High Point and surrounding cities (Attachment 10). The nearest resident is located approximately 1,500 feet northwest of the site, across Market Street, in the Airport Mobile Home Park (Attachment 3). Currently the residents in High Point and Greensboro use municipal water from surface water intakes. According to the North Carolina Public Water Supply database, there are two public water supply wells used by the Huntington Woods Mobile Home Park located approximately 3.75 miles southeast of the site. There are no other public water supply wells utilized within 4 miles of the site (Attachment 11).

The possibility of overland runoff leads to the potential contamination of surface water and the contamination of fisheries, wetland frontage, and the public water supply intake. Therefore, the surface water pathway is a potential pathway of concern.

Although the 1991 Phase II SSI sampling indicated contamination of groundwater, the facility implemented an approved Corrective Action Plan through remediation of dissolved-phase hydrocarbons using air sparging and soil vapor extraction technologies from July 1994 through August 1996. The monitoring wells on the site continue to be gauged and sampled on an annual basis (Attachment 12). Therefore, due to the remediation of groundwater on the site and the lack of nearby groundwater users, the groundwater pathway is not considered a pathway of concern.

The likelihood of human exposure to contamination via the soil exposure pathway is not considered a pathway of concern due to the small quantity of nearby residents and the limited access to the site by the security fence and guarded entrance gate.

On April 30, 2002, NC Superfund staff collected six soil/sediment samples in support of this Revised Site Re-Assessment to determine total inorganic concentrations at the target and background locations (Figures 1 and 3). The first soil sample, TEX-01-SS, was taken from the dry ditch approximately 80 feet downstream of the north side storm water discharge point and approximately 125 feet downstream of the pond discharge point. This sample was taken to establish an observed release of contaminants off the site. A background soil sample, TEX-02-SS, was taken approximately 25 feet southeast of the southeast corner of the security fence. This sample was taken to provide a background soil sample. The third sample, TEX-03-SD, was taken from the nearest wetland on Long Branch located inside the Martin Marietta Pomona Quarry. This sediment sample was taken to establish an observed release to 0.1 mile wetland frontage. The fourth sample, TEX-04-SD, was collected from a point on the East Fork Deep River downstream of its confluence with Long Branch. This sample point is located approximately 120 feet north of the City of High Point lift station at the end of Sunnyvale Drive. TEX-04-SD was taken to establish an observed release to a fishery. The fifth sample, TEX-05-SD, was a sediment sample taken from East Fork Deep River approximately 250 feet south of the Wendover (SR 1541) bridge. The sample was taken as a background sample. The sixth sample, TEX-06-SD, was a sediment sample collected from East Fork Deep River approximately 100 feet south of the culvert for Albert Pick Road. This sample was also taken as a background sample (Attachment 13; Figures 1 and 3). The following table shows the analytical results for these six samples (Attachment 14).

Site Re-Assessment Analytical Results
Texaco, Inc.
NCD 096 165 121
Greensboro, Guilford Co., North Carolina

Contaminant	TEX-01-SS* (mg/kg)	TEX-02-SS background (mg/kg)	TEX-03-SD (mg/kg)	TEX-04-SD (mg/kg)	TEX-05-SD background (mg/kg)	TEX-06-SD background (mg/kg)
Arsenic	10.5	1	<1	<1	<1	<1
Barium	37.5	59	26	61	33	24
Calcium	390	409	418	363	299	105
Chromium	35	27	33	17	17	7
Cobalt	17	12	6	10	6	4
Copper	18	18	13	19	9	14.5
Iron	24,535	19,925	12,781	12,423	9,960	5,495
Lead	28	18	4	8	6.5	4
Manganese	663	571	128	209	320	206
Magnesium	664	1,211	2,925	2,030	965	885
Nickel	5.5	8.5	9	9	4.5	5
Potassium	150	150	498	746	348	650
Sodium	50	50	50	100	50	50
Vanadium	94	59	32	40	33	15
Zinc	105	26	42	44	25	24.5

*Shaded areas indicate concentrations three times greater than the background concentrations.
(See Attachment 14 for analytical results.)

These results indicate that observed releases of arsenic (10.5 mg/kg) and zinc (105 mg/kg) have occurred in the drainage ditch from the site storm water discharges. Although the drainage ditch shows an observed release, no observed release was documented in the wetland, TEX-03-SD, or the fishery, TEX-04-SD, of the contaminants found on the site during the Phase II SSI sampling event or the site re-assessment sampling event. Therefore, due to the distance downstream of the nearest wetland (1.5 miles) and the fishery (3.6 miles) from the site and the fact that no observed releases were identified at these two targets, no contamination of these two targets or the surface water intake (5.9 miles downstream) are expected given the age the site.

Based on the data collected during the Phase II SSI and site re-assessment sampling, no observed release was documented in the nearest wetland or the fishery. Therefore, the NC Superfund Section recommends that the Texaco, Inc. site be assigned a "No Further Remedial Action Planned" status under CERCLA.

If you have any questions, please contact Kyle R. Hagen at (919) 733-2801 ext. 299 or by e-mail at kyle.hagen@ncmail.net.

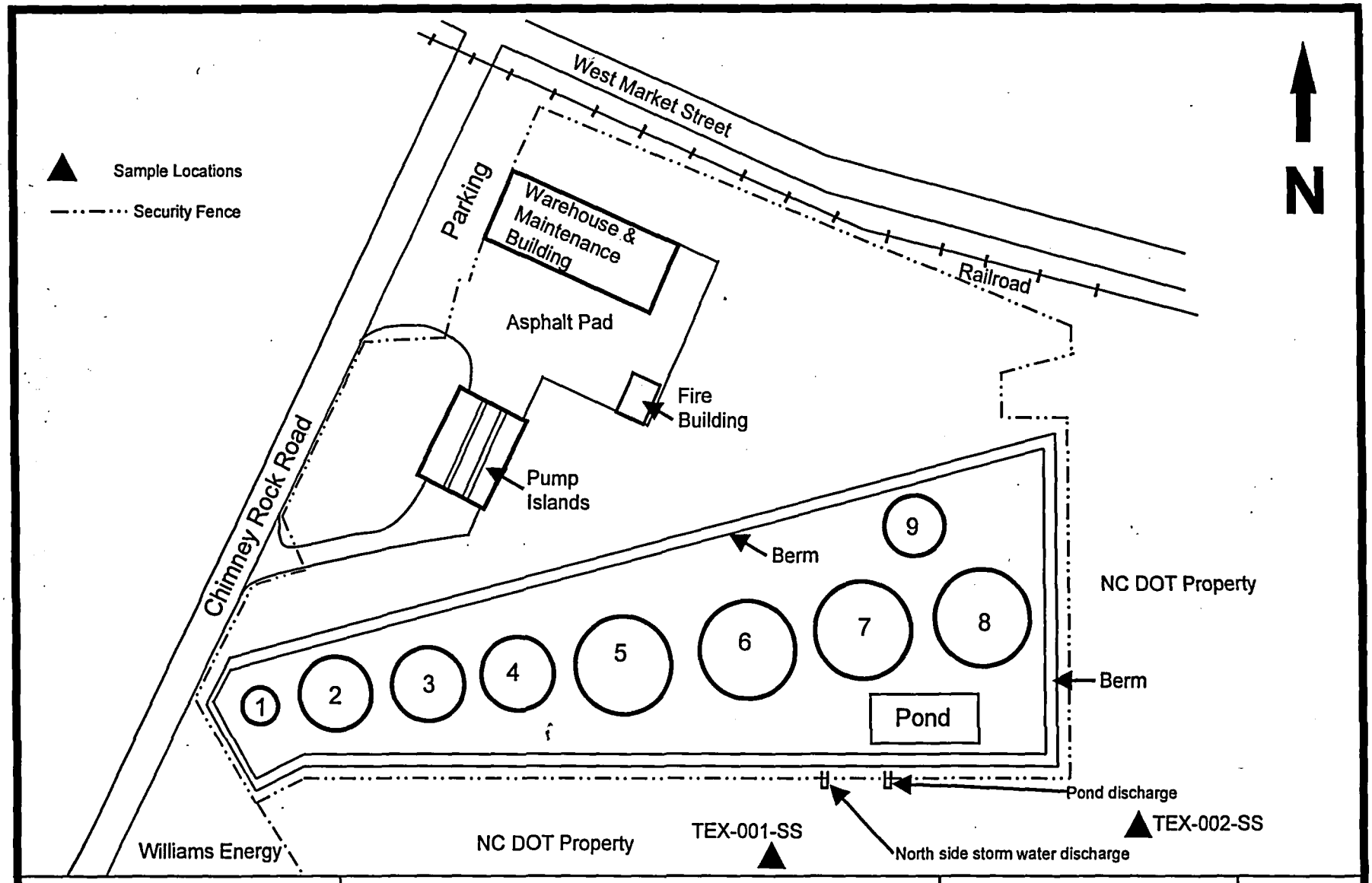
Sincerely,

Kyle R. Hagen
Environmental Engineer
Site Evaluation and Removal Branch
NC Superfund Section

Jim Bateson, Head
Site Evaluation and Removal Branch
NC Superfund Section

Attachments

cc: Scott Ross
File
cc: (letter only)
Charlotte Jesneck



NCDENR

TITLE: Site Map/Sample Locations

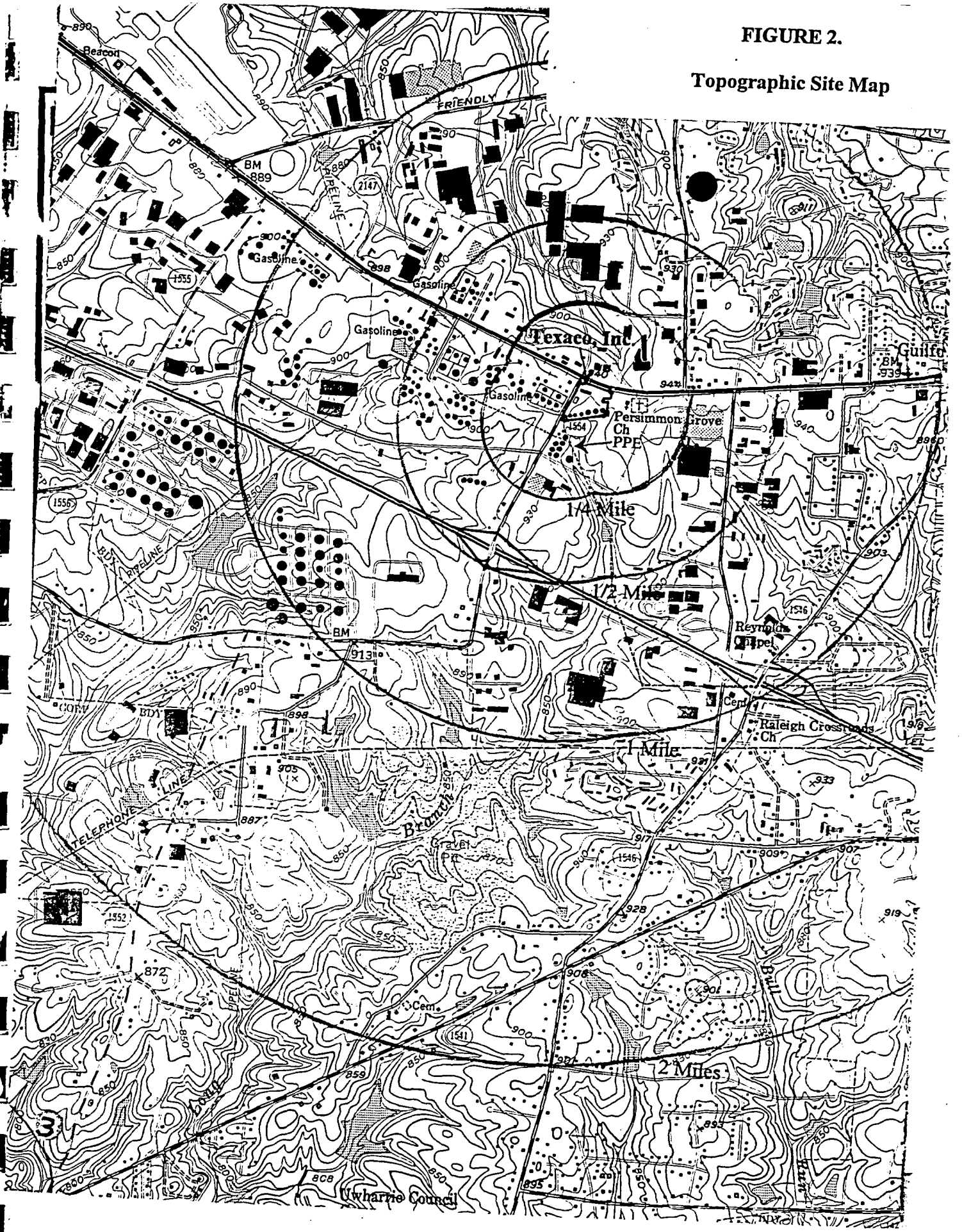
SITE NAME: Texaco, Inc.
LOCATION: Greensboro, Guilford County, NC
US EPA ID #: NCD 096 165 121

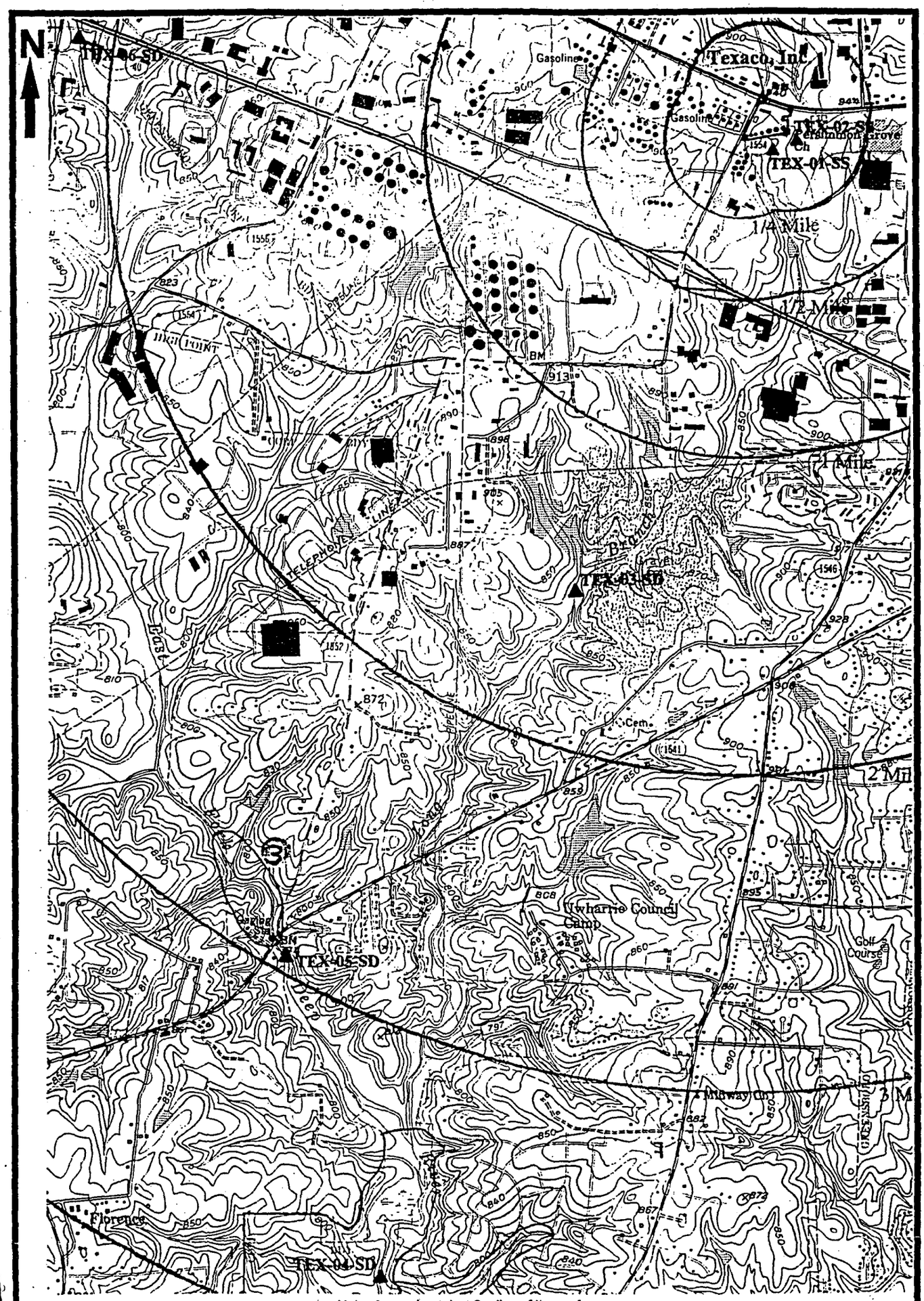
DRAWN BY: Kyle Hagen
SCALE: not to scale
DATE: 06/25/02

FIGURE 1

FIGURE 2.

Topographic Site Map





▲ Sampling Locations

Note: Approximately 4.2 miles of the surface water pathway is shown. High Point Lake is located further south of the map edge.

Source: Modified from USGS, Guilford, N. C. Quadrangle, revised 1994.

NCDENR	TITLE: Off-Site Sample Location Map	EDITED BY: Kyle Hagen SCALE: 1" = 2000' DATE: 03/19/02
	SITE NAME: Texaco, Inc. LOCATION: Greensboro, Guilford County, NC US EPA ID # NCD 096 165 121	FIGURE 3

LATITUDE AND LONGITUDE CALCULATION WORKSHEET #2

LI USING ENGINEER'S SCALE (1/60)

SITE NAME: Texaco, Inc. CERCLIS #: NCD 096 165 121

AKA: Star Enterprise, Motiva Enterprises SSID: n.a.

ADDRESS: 101 Chimney Rock Road

CITY: Greensboro STATE: NC ZIP CODE: 27409

SITE REFERENCE POINT: Northwest corner of warehouse building.

USGS QUAD MAP NAME: Guilford, NC TOWNSHIP: - N/S RANGE: - E/W

SCALE: 1 : 24,000 MAP DATE: 1994 SECTION: - 1/4 - 1/4 - 1/4

MAP DATUM [1927] 1983 (CIRCLE ONE) MERIDIAN: -

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 7.5' MAP (attach photocopy)

LONGITUDE: 79 ° 52 ' 30.00 " LATITUDE: 36 ° 0 ' 0.00 "

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LONGITUDE: 79 ° 55 ' 0.00 " LATITUDE: 36 ° 2 ' 30.00 "

CALCULATIONS: LATITUDE (7.5' QUADRANGLE MAP)

A) NUMBER OF RULER GRADUATIONS FROM LATITUDE GRID LINE TO SITE REF POINT: 367

B) MULTIPLY (A) BY 0.3304 TO CONVERT TO SECONDS:

A X 0.3304 = 121.26 "

C) EXPRESS IN MINUTES AND SECONDS (1' = 60") : 2 ' 1.26 "

D) ADD TO STARTING LATITUDE: 36 ° 2 ' 30.00 " + 2 ' 1.26 "

SITE LATITUDE: 36 ° 4 ' 31.26 "

CALCULATIONS: LONGITUDE (7.5' QUADRANGLE MAP)

A) NUMBER OF RULER GRADUATIONS FROM RIGHT LONGITUDE LINE TO SITE REF POINT: 23

B) MULTIPLY (A) BY 0.3304 TO CONVERT TO SECONDS:

A X 0.3304 = 7.60 "

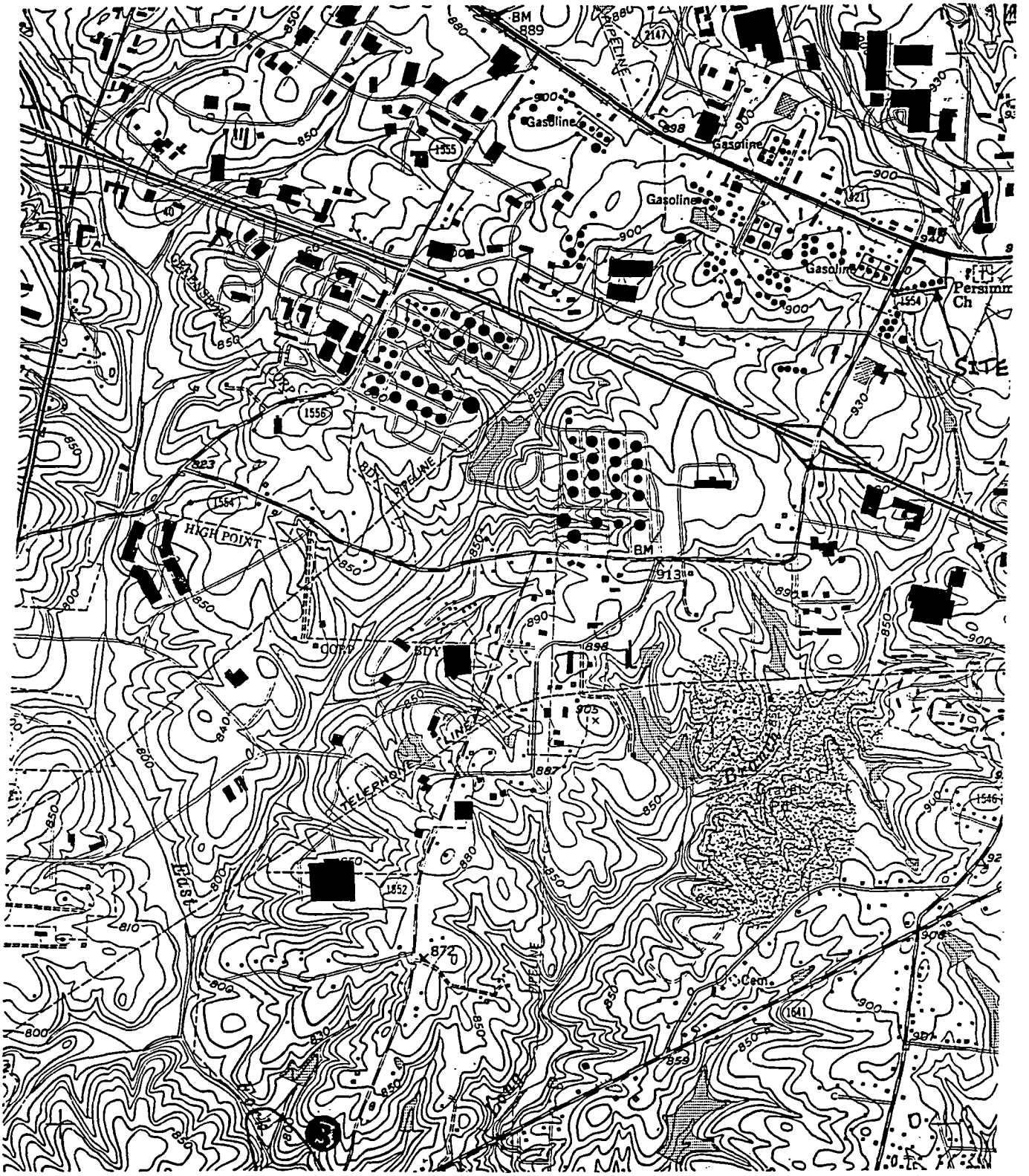
C) EXPRESS IN MINUTES AND SECONDS (1' = 60") : 0 ' 7.60 "

D) ADD TO STARTING LATITUDE: 79 ° 55 ' 0.00 " + 0 ' 7.60 "

SITE LONGITUDE: 79 ° 55 ' 7.60 "

INVESTIGATOR: Kyle R. Hagen DATE: 03/07/2002

SITE NAME: Texaco, Inc. NUMBER: NCD 096 165 121



TOPOGRAPHIC MAP QUADRANGLE NAME: Guilford, NC SCALE: 1 : 24,000

COORDINATES FROM LOWER RIGHT (SOUTHEAST) CORNER OF 2.5' GRID CELL:

LATITUDE: 36 ° 2 ' 30.00 " LONGITUDE: 79 ° 55 ' 0.00 "

Memorandum

Date: June 27, 2002

To: File

From: Kyle R. Hagen
Environmental Engineer
NC Superfund Section

Subject: Tax Map and Real Property Information
Texaco, Inc.
Greensboro, Guilford County, NC
US EPA ID: NCD 096 165 121

The attachment Real Property Tax Listing is a print out of the property formerly known as Texaco, Inc. but is now listed as Motiva Enterprises LLC from the website ***www.co.guilford.nc.us***.

Both the attached Real Property Tax Listing and the Guilford County Tax Map show information corresponding to the parcel number, 00-94-7029-0-0929-W-008, which represents the following:

township:	00
acl:	94
map #:	7029
subdivision:	0
block:	0929
direction:	W
lot:	008

The acreage for the Texaco, Inc. property is listed as 10.52 acres.

Attachments:
Guilford County Tax Map - Friendship Township
Real Property Tax Listing from ***www.co.guilford.nc.us***

TWP-ACL-MAP---BLCK-DIR-LOT-LS-SPL (Inquire)
00 94 7029 0 0929 W _ 008 _ _ ACTION: INQUIRE

LISTING: 3764214
OWNER: MOTIVA ENTERPRISES LLC
C/O EQUIVA SERVICES LLC
PROPERTY TAX DEPT
PO BOX 4369
HOUSTON TX 77210 4369

PROPERTY VALUES:

BUILDING:	104,700
OBXF:	760,000
LAND:	499,400
MARKET:	1,364,100
ASSESSED:	1,364,100
DEFERRED:	

USE: 48 WAREHOUSES NBH: 16000 N OF I40 NEAR 68&AIRPORT
MODEL: 6 WAREHOUSE/INDUSTRIAL CARDS: ___

SALE?	BOOK/PAGE	DEED DATE	INST	STAMPS	ABBREVIATED LEGAL DESCRIPTION
_	4774 0225	10/01/1998	WD	3140.00	10.52 AC MORRIS & PETTY 10.52 AC

NUMBER	DIR	STREET NAME	TYPE
101	S	CHIMNEY ROCK	RD

VBR: B STATUS: 7 CLASS: I LAST UPDATE: 03/27/2002 08:08
NETTIE TAXBILL

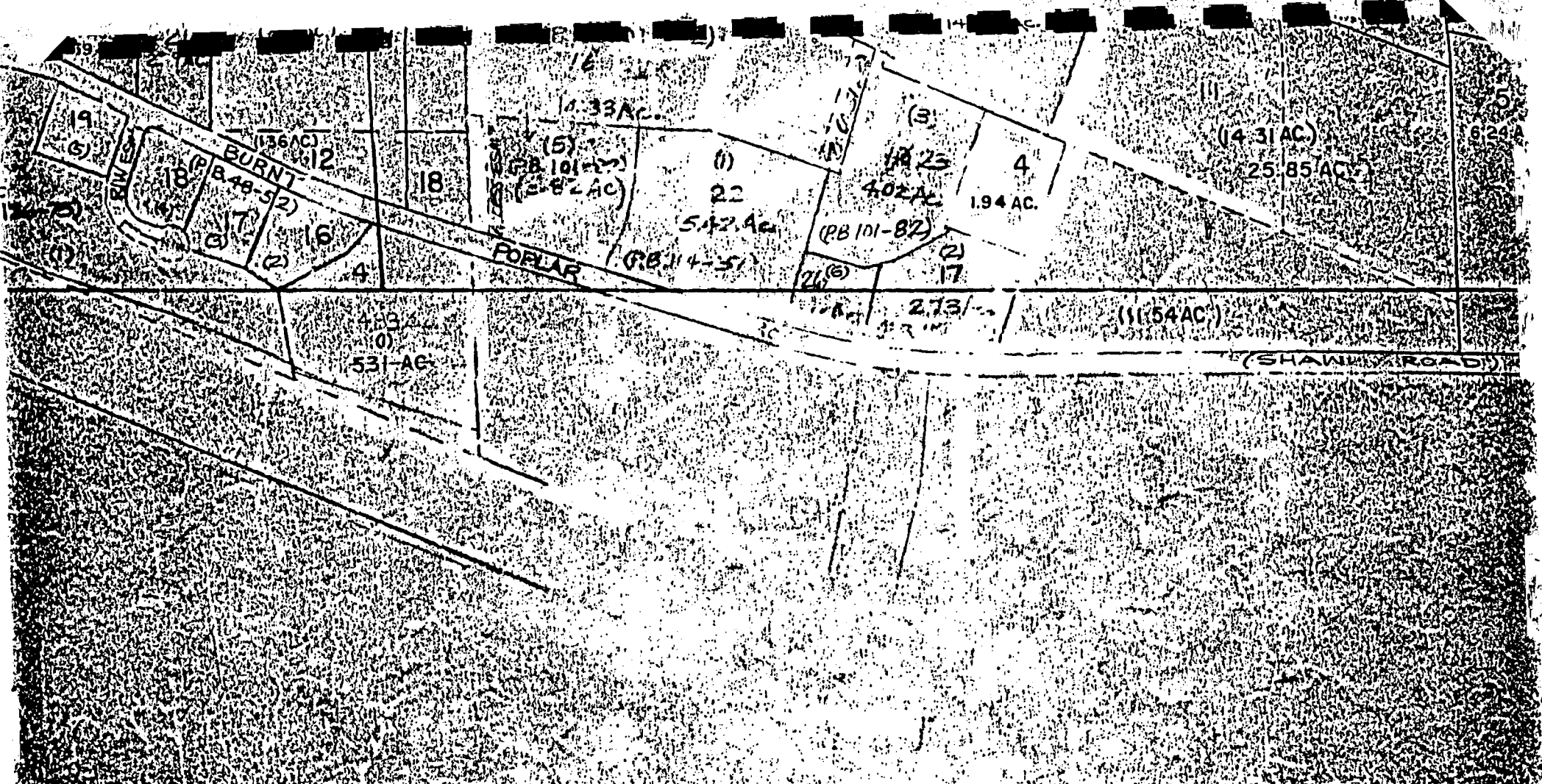
REALMNT READ REAL PROPERTY JUN 24, 2002, 4:04 PM

TWP-ACL-MAP---BLCK-DIR-LOT-LS-SPL (Add, Change, Delete, Inquire)
00 94 7029 0 0929 W _ 008 _ _ ACTION: INQUIRE

RATE CODE: 01

LENDER: MORTGAGE HOLDER MORTGAGE NUMBER PAID FROM ESCROW? (Y/N)

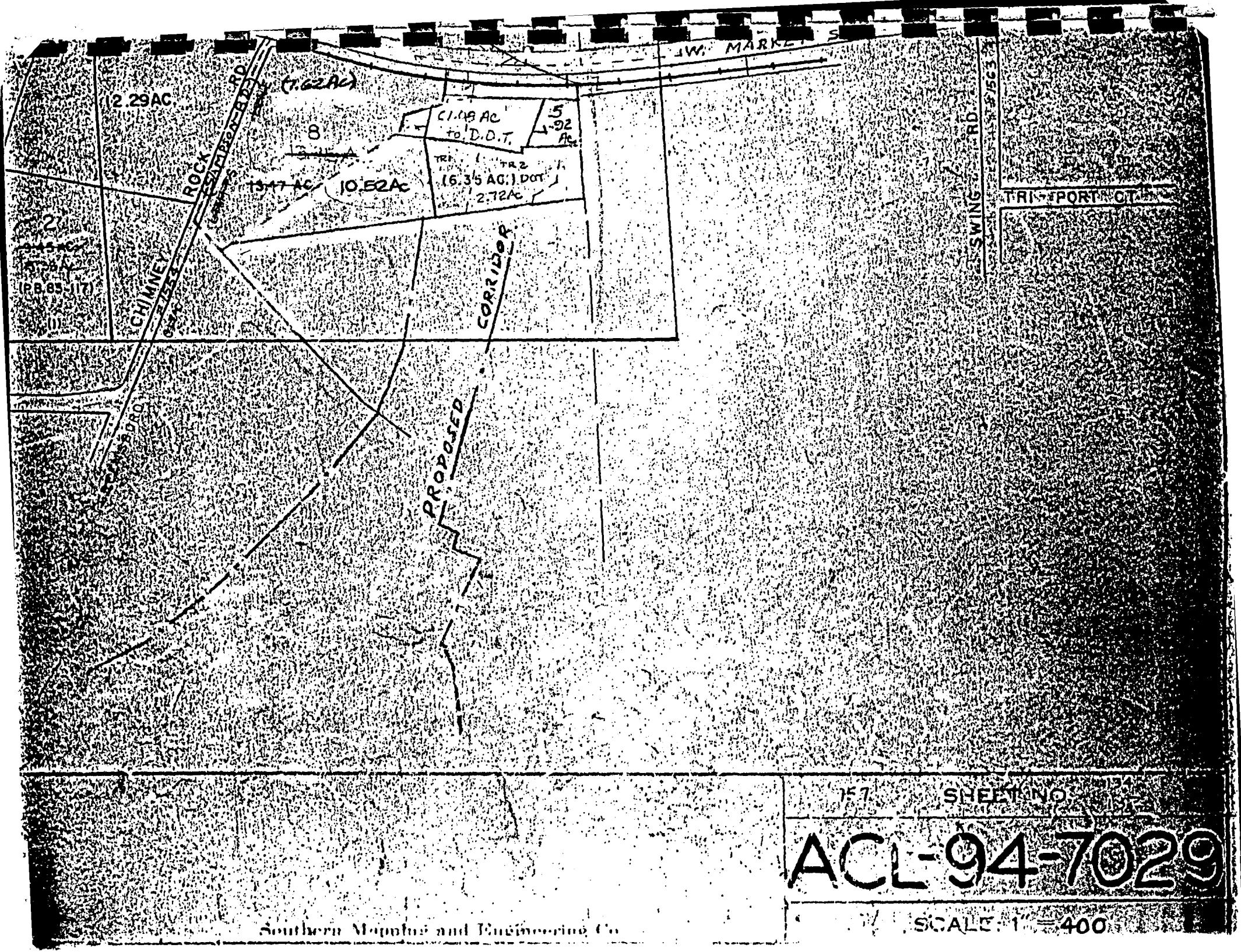
COMMENTS: PT(2.83AC)INTO R/W 5384-926
& 930



7031

ORD COUNTY TAX MAPS

RIENDSHIP TOWNSHIP


W. MARKET
(7.62AC)
12.29AC.
8
C1.08 AC
to D.D.T.
5
.02
AC.
TR1
TR2
(6.35 AC.) DOT
2.72AC
13.47 AC
10.52AC
ROCK
CHIMNEY
RD.
2
(P.B.85-117)
(1)
CORRIDOR
PROPOSED
SWING
RD.
#563
TRI-PORT CT.
157
SHEET NO.
ACL-94-7029
Southern Mapping and Engineering Co.
SCALE: 1" = 400'

Attachment 3

STATE OF NORTH CAROLINA

Department of Environment, Heath, and Natural Resources

Division of Solid Waste Management
Superfund Section

SCREENING SITE INVESTIGATION REPORT

Texaco, Inc., Greensboro
Greensboro, Guilford County, North Carolina
NCD 096 165 121

October 29, 1992

By:

Division of Solid Waste Management
Superfund Section

State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor
William W. Cobey, Jr., Secretary

William L. Meyer
Director

October 29, 1992

Mr. Craig Benedikt
NC CERCLA Project Officer
EPA Region IV Waste Division
345 Courtland Street, NE
Atlanta, Georgia 30365

CERCLA

RE: Site Inspection
Texaco Inc., Greensboro, NCD 096 165 121
Greensboro, Guilford County, North Carolina

Dear Mr. Benedikt:

Enclosed herewith is the Site Inspection (SI) by the North Carolina Superfund Section for Texaco, Inc., Greensboro (NCD 096 165 121).

The NC Superfund Section is recommending that the site proceed to the Expanded Site Investigation stage on a medium priority basis.

If you have any questions, please contact me at (919) 733-2801.

Sincerely,

Harry Zinn
Environmental Engineer
Contracts Management Branch
NC Superfund Section

HZ\gj

Enclosure

cc: Dexter Matthews
file

EXECUTIVE SUMMARY

Texaco, Inc., Greensboro began operations in 1976 and is still active today. The site is a tank farm consisting of nine tanks inside a bermed area. Texaco, Inc., Greensboro entered the North Carolina RCRA system on November 14, 1980. On July 14, 1982 Texaco, Inc. was deleted as a storer of hazardous waste. On December 31, 1985 Texaco, Inc. was deleted as a transporter of hazardous waste and is currently classified as a generator. The hazardous wastes currently generated are, American Petroleum Institutes (API) slop oil solids, API separator sludge, and leaded tank bottoms.

The site lies within the Carolina Slate Belt of the Piedmont Physiographic Province, which is characterized by gently rolling topography with moderately steep slopes along the drainage ways. The slate belt consists of folded and fractured metamorphic bedrock, granite, gabbro and diorite, overlain by residual material termed saprolite. The groundwater used by some of the residents in the area is obtained from the saprolite/bedrock hydrologic system. The rest of the people obtain their drinking water from surface water intakes located both upstream and downstream from the site.

A Preliminary Assessment (PA) performed by the North Carolina Department of Environment, Health, and Natural Resources, Superfund Section recommended the site proceed on a low priority basis. Consequently, on June 10, 1991 the North Carolina Superfund Section along with NUS Corporation conducted a Phase II Site Screening Investigation.

A total of twenty (20) environmental samples were collected at the site. Results of the sampling event indicate surface soils are contaminated with metals and volatile organic compounds, soil borings are contaminated with metals, volatile organic compounds, and base neutral extractable compounds, and the shallow groundwater is contaminated with metals, volatile organic compounds, and base neutral extractable compounds. No drinking water wells were tested, however, contamination of the drinking water is suspected. No sampling of the surface water was performed, however, fisheries, surface water intakes, and a recreational area located downstream from the site are suspected of being contaminated. Therefore, the North Carolina Superfund Section is recommending that the site proceed to the Expanded Site Investigation (ESI) stage on a medium priority basis.

Attachment 4

Memorandum

Date: April 10, 2002

To: File

From: Kyle R. Hagen KRH
Environmental Engineer
NC Superfund Section

Subject: Site History

Texaco, Inc.
Greensboro, Guilford County, NC
EPA ID: NCD 096 165 121

Kyle Hagen called Larry Couch, the Motiva Terminal Operator (704-399-3301) for both the Charlotte and Greensboro bulk distribution terminals, on April 10, 2002. I asked him to verify some dates on the site history for the Motiva Terminal. He verified that Texaco, Inc. built the site in 1951 and began its operation. In 1989 Star Enterprise took over ownership and operation of the facility. In 1998 Motiva Enterprises LLC took over ownership and operation of the facility.

Attachment 5

A Brief History Of Major Oil Companies In The Gulf Region

With Corporate Contact Information

Compiled By
Eric V. Thompson

Petroleum Archives Project
Arabian Peninsula and Gulf Studies Program
University of Virginia

Prepared with support from
The Kuwait Foundation for the Advancement of Sciences

Amoco

1889: Standard Oil (Indiana) founded as subsidiary of Standard Oil Trust

1911: Standard Oil of Indiana founded with dissolution of Standard Oil

1910s: Standard Oil of Indiana purchases Pan American Petroleum

1914: Standard Oil of Indiana licenses "thermal cracking" process for producing gasoline to competing oil companies

1925: Standard Oil of Indiana acquires controlling interest in Pan American Petroleum and Transport Company

1932: Standard Oil of Indiana sells Venezuela operation to Jersey

1954: Pan American and Standard of Indiana merge, new company is called American Oil Company [Amoco]

Sun Company Inc.

1886: Robert Pew founds Sun Oil Company

1901: New Jersey Oil and Gas incorporated

1968: Sun buys Sunray (DX)

1971: Sun Oil Company reorganized and renamed Sun Company Incorporated

Corporate Offices:

Ten Penn Center 1801 Market Street
Philadelphia Pa 191031699
Telephone: 215-977-3000

Texaco

1897: Joe Cullinan founds Texas Fuel Company

1903: Joe Cullinan and Arnold Schlaet found The Texas Oil Company in Beaumont, Texas

1906: Texas Oil Company registers the trademark name, "Texaco"

1930s: Texas Oil Company joins with Standard Oil of California (later Chevron), to found the Arab-American Oil Company [Aramco]

1936: Texas Oil Company purchases half interest in Bahrain Petroleum and California-Arabian Standard Oil Company (Calarabian) from Socal

1936: Texas Oil Company joins with Standard Oil of California (later Chevron), to found the Arab-American Oil Company [Aramco]

1936: California-Texas company, Caltex, founded as a joint venture between Socal and Texas Oil Company as outlet for future oil production in Bahrain and Saudi Arabia

1954: Consortium of oil companies, including British Petroleum, Exxon, Socony, Texas Oil, Socal, Gulf, Royal Dutch/Shell Group, and CFP form the Iranian Oil Participants Ltd. (IOP) and negotiate agreement with Iranian government and for oil production in Iran

1956: Texas Oil Company acquires Regent Oil, a British company

1959: Texas Oil Company purchases the Paragon group of companies

1959: Texas Oil Company adopts the name Texaco for all of its businesses

1962: Texaco acquires White Fuel Corporation

1964: Purchases Superior Oil Company Venezuela

1984: Texaco acquires Getty Oil Company

1988: Texaco Forms Star Enterprise, a 50/50 joint venture with Saudi Refining Inc., to refine, distribute and market Texaco-branded products in the Eastern U.S.

1995: Texaco and Norsk Hydro formed a joint venture, Hydro Texaco, to market petroleum products throughout Scandinavia

1998: Texaco acquires Monterey Resources, a California based independent oil and gas producer

1998: Texaco and Shell Oil form downstream alliance in the Western U.S.

1998: Shell Oil Co., Texaco Inc. and Saudi Aramco initiate joint venture combining their eastern U.S. refining and marketing assets under the name Motiva Enterprises LLC, paralleling a joint venture launched by Shell and Texaco under the name Equilon Enterprises LLC for their Midwest, Southwest and West Coast downstream assets; Shell to own 35% of Houston-based Motiva, while Texaco and Aramco will each own 32.5%

Corporate Offices:

Texaco Inc.
2000 Westchester Ave.
White Plains, NY 10650
(9140 253-4000

Union Oil (Unocal)

1890: Union Oil formed in California by merger of Hardison & Stewart Oil Company, the Sespe Oil Company, and the Torrey Canyon Oil Company

1917: Union purchases Pinal-Dome Oil Company

1922: Shell buys 25% of Union Oil of California

1922: Shell Union Oil Corporation formed to consolidate Shell interests in the US with those of the Union Oil Company of Delaware

1965: Union acquires Pure Oil

1983: Union Oil changes name to Unocal

1992: Ashland Chemical acquires most of Unocal's chemical distribution business, establishing the IC&S Division

PRELIMINARY ASSESSMENT

Texaco, Inc.

Greensboro, Guilford County, North Carolina

NCD 096 165 121

January 1985

CERCLA

Attachment 7

NUS CORPORATION
1927 LAKESIDE PARKWAY
SUITE 514
TUCKER, GEORGIA 30084
404-938-7710

C-586-5-0-57

May 15, 1990

Mr. A.R. Hanke
Site Investigation and Support Branch
Waste Management Division
Environmental Protection Agency
345 Courtland Street, N. E.
Atlanta, Georgia 30365

Date: _____
Site Disposition: _____
EPA Project Manager: _____

Subject: Screening Site Inspection, Phase I
Texaco, Inc.
Greensboro, Guilford County, North Carolina
EPA ID No. NCD096165121
TDD No. F4-8911-75

Dear Mr. Hanke:

FIT 4 conducted a Phase I Screening Site Inspection at Texaco, Inc. in Greensboro, Guilford County, North Carolina. The inspection included a review of EPA and state file material, completion of a target survey, and a drive-by reconnaissance of the facility and surrounding area.

This facility is owned and operated by Texaco, Inc. Texaco, Inc. began operations at this facility in 1976 and is still active (Refs. 1, 2). The facility is situated on 12.2 acres among several other depot facilities in a rural area of Greensboro (Ref. 1). Texaco, Inc. is located on Highway 421 and Chimney Rock Road (Ref. 1).

Texaco, Inc. is a storage facility for both leaded and unleaded gasoline. It is provided gasoline by Colonial Pipeline. Hazardous waste is generated only when sludge is removed from a storage tank. The sludge is pumped directly from the plant storage tank to a contractor's tank truck. The waste is picked up by Crawford Petro Enterprises and transported to Caldwell Systems. The tanks are pumped out once every 3 to 5 years as needed (Ref. 3). When the tank bottoms were pumped out in 1988, 39,600 pounds of leaded sludge were recovered (Ref. 4). Leaded tank sludge may have been buried onsite prior to 1980 (Ref. 2).

Texaco filed a RCRA Part A hazardous waste permit application for storage on November 14, 1980 (Ref. 5). On January 21, 1982, a RCRA interim status inspection was conducted by the state at the Texaco facility. The purpose of the survey was to inspect the facility for compliance with applicable regulations; no major violations were noted (Ref. 3). On July 14, 1982, Texaco, Inc. was deleted as a storer of hazardous waste (Ref. 6). On November 16, 1983, the Texaco, Inc. facility informed the Department of Human Resources that the company would not file a Part B application (Ref. 7). On March 13, 1984, the facility was advised that the plant had been denied a permit as a hazardous waste treatment, storage, or disposal facility, and its interim status had been formally terminated (Ref. 7). On December 31, 1985, Texaco, Inc. was deleted as a transporter of hazardous waste and is currently classified as a generator (Refs. 8, 9).

Texaco, Inc. is located within the Carolina Slate Belt of the Piedmont Physiographic Province (Refs. 10, 11, p. 76). The area is characterized by gently rolling topography with moderately steep slopes along the drainage ways (Ref. 12). The region has a temperate climate (Refs. 8, 12, 13). Total annual precipitation averages about 45 inches with a net annual precipitation of 4 inches (Refs. 13, p. 3; 14; 15). The 1-year, 24-hour rainfall is approximately 3.0 inches (Ref. 16).

The geology of the slate belt consists of folded and fractured metamorphic bedrock overlain nearly everywhere by residual material termed saprolite (Refs. 11, p. 77, plate 1; 5, p. 3; 17, pp. 9-10). The saprolite ranges in thickness from a few feet near rock outcrops to more than 100 feet in interstream areas with an average thickness of 30 feet on most hills and ridges (Refs. 13, p. 38; 14, p. 3). Metamorphic rock types in the area include highly altered granite, gabbro, and diorite (Refs. 10; 11, p. 77, plate 1).

The saprolite and bedrock act as a single hydrologic system, and there is no confining layer present between them. In the saprolite, groundwater occurs within intergranular pore spaces (Ref. 14, p. 4). In the bedrock, groundwater occurs primarily within joints, fractures, and other secondary openings (Ref. 11, plate 1). The frequency, size, and interconnection of both joints and fractures diminishes with depth (Ref. 14, p. 4). There are few open fractures at depths greater than 400 feet (Ref. 13, p. 12).

Saprolite typically has a hydraulic conductivity of less than 1×10^{-7} cm/sec and acts as a reservoir which slowly feeds water into the underlying bedrock (Refs. 14, pp. 3, 7; 18). It is also the unit from which most domestic water supplies in the region are obtained (Ref. 11, pp. 23, 77-78). The water is supplied to both dug and bored wells that are completed within the saprolite at, and just below, the water table (Ref. 11, pp. 77-78). The depth to the water table in the facility area is about 15 feet below land surface (Ref. 13, pp. 7, 59).

Ninety-nine percent of Greensboro is on municipal water (Ref. 19). The 4-mile radius surrounding Texaco, Inc. is served by municipal water and private wells. There are two municipal water systems that supply water to areas within 4 miles of the facility: the Guilford County Water Department and the High Point Water Department (Ref. 20). The Guilford County Water Department is the primary supplier of water to areas within 4 miles of the facility. The water department provides service to approximately 66,000 connections. This system obtains its water supplies from lakes Brandt, Higgins, and Townsend; none of these lakes would be affected by surface drainage from the facility (Refs. 19, 20).

The High Point Water Department provides service to a relatively small portion of the study area located approximately 3 miles southwest of the facility (Ref. 20, 21). This system serves approximately 30,000 connections within the city limits with water obtained from High Point Lake and Oak Hollow Lake (Refs. 21, 22). High Point Lake which is the primary source for the system's water supplies has an intake is located approximately 5.25 miles downstream of the facility (Refs. 18, 21). Oak Hollow Lake, located approximately 5.25 miles southwest of the facility, is currently used as a back-up water supply for the system and is not located downstream of the facility (Refs. 20, 22).

Based on information obtained from Guilford County Water Department, the areas surrounding the facility are not served by a municipal system and are assumed to use private wells (Ref. 18). A house count on a topographic map of the study area revealed about 150 homes that use private wells within a 3-mile radius. There are 200 homes within 3 to 4 miles that utilize private wells. The actual house count may be larger considering the ages of the topographic maps (Ref. 20). The nearest residence with a well is one-half mile from the facility (Ref. 1). The average depth of a well in Guilford County is 150 feet (Ref. 18).

Surface water runoff drains 200 feet into Long Branch Stream, which enters the East Fork of the Deep River 3.5 miles downstream. The Deep River continues one-half mile then enters High Point Lake.

Another water system along the migration pathway is the Jamestown Water Department's Oakdale treatment plant, which obtains surface water from the Deep River. The intake for this system is located 6 miles downstream from the facility and provides approximately 1,000 residences and 150 businesses with potable water (Ref. 23).

High Point Lake and Deep River are known to be used for recreational fishing. There are no known commercial uses of High Point Lake or the Deep River (Ref. 24). According to the Flood Insurance Rate Map, there are no flood plains near Texaco, Inc. (Ref. 25).

The facility is surrounded by a 6-foot fence with barbed wire. There are also a guarded gate and posted warning signs. Railroad tracks, mature trees, and major roads surround the facility (Ref. 1). There are 318 people within a 1-mile radius and 31,416 people within a 4-mile radius of the facility (Refs. 26, 27). The nearest residence is located 1,550 feet from the facility (Ref. 1) There are no schools or day-care centers within 1 mile of the facility (Ref. 1). There are no sensitive environments within the 4-mile radius. Nestronia (Nestronia umbellula) and the Greensboro burrowing crayfish (Cambarus catagius) are state-designated threatened species found in Guilford County (Ref. 28).

Based on the results of this evaluation, FIT 4 recommends that a Phase II of this Screening Site Inspection be conducted at Texaco, Inc. on a medium-priority basis. If you have any comments or questions about this Phase I SSI, please contact me at NUS Corporation.

Very truly yours,

Simonia DeLaine
Project Manager

Approved:

SD/tb

Enclosures

cc: Kelly Cain

Attachment 8

NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

AMES B. HUNT JR.
OVERNOR

ILL HOLMAN
ECRETARY

ILLIAM L. MEYER
IRECTOR

June 30, 2000

Ms. Jennifer Wendel
NC Site Management Section
US EPA Region IV Waste Division
61 Forsyth Street, 11th Floor
Atlanta, GA 30303

Subject: Site Re-Assessment Report
Texaco, Inc., Greensboro
Greensboro, Guilford County, NC
US EPA ID: NCD 096 165 121

Dear Ms. Wendel:

Enclosed please find a Site Re-Assessment completed by the North Carolina Superfund Section for the Texaco, Inc., Greensboro Site (US EPA ID: NCD 096 165 121). The Texaco, Inc., Greensboro site is located at 101 Chimney Rock Road in Greensboro, Guilford County, North Carolina (Figure 1). The site is located in the United States Geologic Survey (USGS) Guilford 7.5' quadrangle, at latitude 36° 04' 31.3" and longitude 79° 55' 07.6" (Ref. 1).

The site is situated on 12.2 acres in a heavily industrialized area on the western side of Greensboro (Ref. 2). The facility is currently a Bulk Petroleum Distribution Terminal and consists of nine bulk aboveground storage tanks, an office/warehouse building, and a petroleum loading rack (Figure 2). The site is surrounded by a six foot chain-linked fence topped with barbed wire. Access to the site is via a guarded gate. Texaco, Inc., Greensboro has operated the site as a Bulk Petroleum Distribution Terminal since its formation in 1976. The wastes currently generated at the site consist of American Petroleum Institute (API) separator sludge, API separator slop oil, and leaded tank bottoms. Since 1980 no onsite waste disposal has occurred. No records exist of waste disposal practices prior to 1980 but tank sludge and petroleum additives are suspected to have been disposed of on-site prior to 1980 (Ref. 3).

The Preliminary Assessment, dated January 16, 1985, and performed by the North Carolina Department of Environment, Health, and Natural Resources, Super-

1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605
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fund Section, recommended the site proceed to a Phase I Screening Site Inspection (SSI) on a low priority basis (Ref. 4). On May 15, 1990, the Phase I SSI performed by NUS Corporation, a Field Investigation Team (FIT) contractor for the United States Environmental Protection Agency (EPA), Region IV, recommended the site proceed to a Phase II SSI on a medium-priority basis (Ref. 2).

On June 10, 1991 the North Carolina Superfund Section along with NUS Corporation conducted a Phase II SSI. The purpose of this investigation was to collect information concerning conditions at the site sufficient to assess the threat posed to human health and environment and to determine the need for additional investigation under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or other authority and, if appropriate, support evaluation using the Hazard Ranking System (HRS) for proposal to the National Priorities List (NPL) (Ref. 3).

During the Phase II SSI a total of twenty (20) environmental samples were collected at the site. Nine (9) of these were groundwater samples (MW02, MW03, MW04, MW06, MW07, MW10, MW16, MW23, MW24) taken from monitoring wells throughout the site (Figure 2). Five (5) surface soil samples (SS01 - SS05), one sediment sample (SD01), and five (5) soil boring samples (SB01 - SB05) were collected to characterize the site. These twenty (20) environmental samples provided the basis for the Phase II SSI recommendation and the recommendation made within this re-assessment (Ref. 3).

Analytical results indicate that there is evidence of the hazardous contaminant release to the groundwater at the site. Three monitoring well samples (MW02, MW03, and MW04) taken from the tank area inside the berm resulted in Level 1 concentrations of Alpha BHC (0.18 ppb), Beta BHC (0.16 ppb), Benzene (20 ppb), and Lead (27 ppb). One monitoring well sample (MW06) taken from the southern portion of the truck loading area produced a cumulative Level 1 concentration of Barium (390 ppb), Chromium (51 ppb), Nickel (40 ppb), Vanadium (160 ppb), and Zinc (160 ppb). One monitoring well sample (MW07) taken from the northern portion of the truck loading area provided Level 1 concentrations of Benzene (20 ppb) and Manganese (7,900 ppb). One monitoring well sample (MW10) collected from the northeast portion of the site and up gradient of the rest of the site produced a Level 1 concentration of Manganese (5,500 ppb). One monitoring well sample (MW16) collected along the east side of the warehouse and maintenance building resulted in a Level 1 concentration of Benzene (440 ppb). The sample (MW23) was collected from a well located in the vicinity of MW16 and provided a Level 1 concentration of 1,2-dichloroethane (26 ppb). Figure 2 shows a map of these nine (9) monitoring well locations. Since groundwater contamination has occurred on-site and several homes in the area utilize the saprolite/bedrock aquifer as their source of drinking water, drinking water contamination may have occurred. Therefore, the groundwater pathway is a pathway of concern (Ref. 3).

Analytical results from the soil boring and surface soil samples indicate that there is evidence of a hazardous contaminant release to soil at the site. One surface soil sample (SS02) collected from a point west of the truck loading area resulted in a Level 1 concentration of Toluene (47 ppb). One soil boring sample (SB02) taken from the same spot as SS02 resulted in Level 1 concentrations of Benzene (130 ppb) and Ethyl Benzene (290 ppb). One surface soil sample (SS03) collected from a point located in the western portion of the tank area inside the berm resulted in a Level 1 concentration of Bis(2-ethylhexyl)phthalate (1400 ppb). One surface soil sample (SS04) taken from a point located in the middle portion of the tank area inside the berm resulted in a Level 1

concentration of Acetone (680 ppb). On-site workers should be advised of the potential hazards that exist due to exposure to these organics. Due to the relatively small quantity of residences, nearby targets, and the limited access of the site, the likelihood of human exposure to contamination via the soil exposure pathway is not considered a pathway of concern (Ref. 3).

The site's 15-mile surface water pathway contains municipal surface water intakes, wetland frontage, and is classified as a fishery. Site storm water runoff drains 200 feet south into the Long Branch stream. The Long Branch flows 5.0 miles and joins the East Fork Deep River. The East Fork Deep River flows approximately 500 feet until it enters High Point Lake. After traveling 2.3 miles through High Point Lake, it exits as Deep River and flows as such for the remainder of the 15-mile migration pathway. The Long Branch is not fished, East Fork Deep River and Deep River are lightly fished, and High Point Lake is heavily fished and considered a major recreational area. A 1.7-acre parcel of soil classified as a hydric soil type is located on the Long Branch approximately 4.0 miles downstream from the site. This area shall be considered a wetland with 500 feet of frontage. The two surface water intakes for the City of High Point and Jamestown Water Department are both located below High Point Lake dam 6.8 and 10.1 miles downstream from the site, respectively. Further consideration of the intakes for potential surface water contamination was discarded since all potential contaminants from the site would be diluted due to the flow rates of High Point Lake and Deep River. Along the site's 15-mile surface water pathway the possibility of overland runoff and/or groundwater to surface water interface leads to the suspicion of contaminated surface water and the contamination of fisheries and wetland frontage. Therefore, the surface water pathway is a potential pathway of concern (Ref. 3).

Based on the data collected during the 1991 Phase II SSI, the limited scope of the 1991 Phase II SSI sampling events, the proximity of the site to wetlands and the East Fork Deep River fishery, and the potential threat to an adjacent public water supply well serving an estimated 17 residents, the NC Superfund Section recommends that the Texaco, Inc., Greensboro, site proceed to the Expanded Site Investigation (ESI) phase.

If you have any questions, please contact me at (919) 733-2801 ext. 299 or by e-mail at kyle.hagen@ncmail.net.

Sincerely,

Kyle R. Hagen, E.I.T.
Environmental Engineer
Site Evaluation and Removal Branch
NC Superfund Section

Dan J. LaMontagne, E.I.T., Head
Site Evaluation and Removal Branch
NC Superfund Section

Attachments

cc: Scott Ross
File
cc: (letter only)
Charlotte Jesneck

Attachment 9

Memorandum

Date: June 26, 2001

To: File

From: Kyle R. Hagen
Environmental Engineer
NC Superfund Section

Subject: Nearest Wetland along the 15-mile surface water pathway
Texaco, Inc.
Greensboro, Guilford County, NC
US EPA ID: NCD 096 165 121

A review of the 1: 24000 scale National Wetland Inventory map, Guilford, N.C., identified 1,400 feet or 0.26 mile of palustrine (PEM1Ah) EPA jurisdictional wetland frontage located approximately 1.5 miles downstream of the PPE. This area is considered the nearest wetland with approximately 0.52 mile of wetland frontage.

The previous measurements were taken using an American Map Corp. Map Measurer and the National Wetland Inventory map.

Memorandum

Date: April 29, 2002

To: File

From: Kyle R. Hagen
Environmental Engineer
NC Superfund Section

Subject: Surface water intakes along the 15-mile surface water pathway
Texaco, Inc., Greensboro, Guilford County, NC
US EPA ID: NCD 096 165 121

Today I spoke with Bill Frazier, Water Quality Management Laboratory Supervisor, for the City of High Point (336-883-3167). He stated that the current population served by the High Point Lake surface water intake is 89,147 people. He stated that this number combined with the water they sell to the cities of Jamestown, Archdale, and parts of Greensboro, exceeds 100,000 users. He stated that the surface water intake is located at the dam for High Point Lake. He gave me directions to both the fishery access sample point near one of the City of High Point's lift stations at the end of Sunnyvale Dr. He also gave me directions to one of my background sample points where the East Fork Deep River crosses underneath Wendover which is SR 1541.

Memorandum

Date: March 7, 2002

To: File

From: Kyle R. Hagen
Environmental Engineer
NC Superfund Section

Subject: Community Well Usage Within 4.0 Mile Radius.
Texaco, Inc.
Greensboro, Guilford County, NC
US EPA ID: NCD 096 165 121

Community wells identified from the Public Water Supply Database were plotted on the topographic map to determine which wells were within the 4.0 mile radius for the site. The following wells were found to be within a 4.0 mile radius of the subject site:

Well Identification	Population Served	Distance Radius (miles)
Huntington Woods MHP Well #1	290	3 - 4
Huntington Woods MHP Well #2	290	3 - 4

Attachments:
Community well list from the Public Water Supply Database.

Texaco, Inc.
Greensboro, Guilford County, North Carolina
NCD 096 165 121
Public Water Supply Database
35° 57' 30" to 36° 08' 00" Latitude
79° 50' 00" to 80° 00' 00" Longtitude
March 7, 2002

PWS ID	System Name	PWS Type	Population	Source Name	Source Type	Source Availability	Latitude	Longitude
0241020	HIGH POINT, CITY OF	C	80485	CITY LAKE	S	P	355944.9	795643.32
0241020	HIGH POINT, CITY OF	C	80485	OAK HOLLOW LAKE	S	P	360043.4	795911.95
0241030	JAMESTOWN, TOWN OF	C	3600	HIGH POINT, CITY OF	P	P	355930	795615
0241111	HUNTINGTON WOODS MHP	C	290	WELL #1	G	P	360115.5	795348.94
0241111	HUNTINGTON WOODS MHP	C	290	WELL #2	G	P	360114.7	795344.49
0241193	BON AIRE ACRES	C	81	WELL #1	G	P	360751.1	795716.85
0241198	LAUREL ACRES	C	55	WELL #1	G	P	360751.6	795940.2
0241492	CEDARWOOD SWIM & RACKET CLUB	N	240	WELL #1	G	P	360115.1	795606.8
0241505	TWIN OAKS GOLF COURSE	N	50	WELL #1	G	P	360217.4	795438.18
0241511	LONGVIEW GOLF COURSE	N	70	WELL #1	G	P	360603.2	795436.68
0241519	VICKERY CHAPEL UMC	N	40	WELL #1	G	P	355745.3	795355.65
0241540	BALLINGER ACADEMY	P	100	WELL #1	G	P	360447.9	795414.68
0241558	BEL AIR GOLF CLUB & RESTAURANT	N	25	WELL #1	G	P	360728.7	795724.49
0241572	MOOSE LODGE #685	N	100	WELL #1	G	P	360007.1	795039.22
0241609	TRI CITY JUNIOR ACADEMY	P	90	WELL #1	G	P	360344.4	795913.44
0241630	FRIENDLY ROAD INN	N	50	WELL #1	G	P	360509	795432.59
0241652	COLONIAL PIPELINE COMPANY	P	25	WELL #1	G	P	360417.5	795614.05
0241657	TRIAD CHILD CARE	P	115	WELL #1	G	P	360730.5	795750.34
0241666	BEL-AIR GOLF CLUB-17TH HOLE	N	25	WELL #1	G	P	360725.6	795706.56
0241686	HOLE IN THE WALL RESTAURANT	N	25	WELL #1	G	P	360745.8	795743.68
0241712	CAROLINA GOLF CENTER	N	25	WELL #1	G	P	360716.1	795755.67
0276030	ARCHDALE, CITY OF	C	8500	HIGH POINT, CITY OF	P	P	355930	795615

PWS I.D. = Public Water Supply System Identification Number
PWS Type: C = Community, P = Private (non-transient, non-community), N = Non-Community, R = Campground
Pop. = Population served by Water System
Source Type: S = Surface Water Intake, G = Groundwater, W = Purchase ground, P = Purchase surface
Source Avail: P = Permanent

Attachment 12

Anna J. Tillman, P.G.
Science & Engineering, Environmental Geologist

EQUIVA SERVICES LLC
Shell, Texaco & Saudi Aramco Working Together

July 12, 2001

Ms. Kelly C. Gage
Environmental Specialist
Guilford County – Dept. of Public Health
1100 East Wendover Street
Greensboro, NC 27405

APR 22 2002

Re: Transmittal of Annual Report
Motiva Enterprises Cost Center #58063
Greensboro Bulk Terminal
101 Chimney Rock Road, Greensboro, NC

Dear Ms. Gage:

Enclosed is one copy of the Annual Groundwater Monitoring Report for the above referenced facility. Also, I would like to notify you that I am changing consultants. The new consultant is Pangean Solutions and their project manager is Rebecca Andresen. Rebecca can be reached at (770) 926-8883. Please call me at (404) 417-1974 if you have any questions or comments.

Sincerely,
Equiva Services LLC on Motiva Enterprises LLC

Anna J. Tillman, P.G.
Environmental Geologist

Enclosure

Cc: Ms. Rebecca Andresen, Pangean Solutions

D:\data\files\northcarolina\projects\101Annualrptcvl

1691 Arrowhead Trail, NE Atlanta, GA 30345

ANNUAL REPORT
(April 30, 2000 – April 30, 2001)
Motiva Enterprise Greensboro Terminal
101 Chimney Rock Road
Greensboro, North Carolina

Prepared For:
Equiva Services, LLC
1691 Arrowhead Trail NE
Atlanta, Georgia 30345

Prepared By:
Applied Earth Sciences, Inc.
814 Davidson Drive
Concord, North Carolina

AES Project Number: 069-00103-01

Steven E. Irminger P.E. No.21005
Senior Engineer 6/5/01

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TITLE PAGE

Site Name / Current Property Owner:	Motiva Enterprises
Site Location:	101 Chimney Rock Road Greensboro, North Carolina
Groundwater Incident No.:	7705
Risk Classification:	Intermediate
Land Use Category:	Commercial/Industrial
Current Property Owner Representative:	Anna Tilman Equiva Services, LLC 1691 Arrowhead trail NE Atlanta, Georgia 30345 (404) 321-0695
Consultant/Contractor:	Applied Earth Sciences, Inc. 814 Davidson Drive Concord, North Carolina 28025 (704) 795-7075
Release Information:	Date Discovered: 1989 Estimated Quantity: Unknown Cause of Release: Fuel storage and Dispensing activities Source of Release: Fuel storage and dispensing activities Contents: Gasoline, diesel fuel, and kerosene
Latitude and Longitude of Release:	N36° 04' 31" W79° 55' 7"
Seal and Signature of Certifying P.E.	Steven E. Irminger P.E. No. 21005

1.0 INTRODUCTION

The following sections include site-specific information as well as a background of environmental activities previously conducted at this site.

1.1 Site Location

The Motiva Enterprises facility is located at 101 Chimney Rock Road in Guilford County, Greensboro, North Carolina. The location of the site is shown on a portion of a United States Geological Survey (USGS) 7.5 minute topographic quadrangle map as **Figure 1**. Properties in the immediate vicinity of the site are used primarily for bulk petroleum storage and industrial purposes. The Motiva Enterprises terminal facility stores gasoline and diesel in aboveground storage tanks. A layout of the facility is provided as **Figure 2**.

1.2 Background Information

A Corrective Action Plan (CAP) was approved by NC DENR in December 1993. Remediation of dissolved-phase hydrocarbons using air sparging and soil vapor extraction technologies began in July 1994. The remediation system was damaged by lightning and was shut down, with Guilford County Department of Health (GCDH) approval, in August 1996. At this time, monitoring wells at the site are gauged and sampled on an annual basis as stipulated in the letter included in **Appendix A**.

2.0 ASSESSMENT ACTIVITIES

No assessment activities were conducted during this reporting period.

3.0 ANNUAL SAMPLING EVENT

3.1 Water Level Data

Water levels were measured on April 18, 2001, using an interface probe capable of distinguishing between liquid-phase hydrocarbons and water. Groundwater elevations in the monitoring wells were calculated by subtracting the depth to water measurements from the elevation of the top of the well casing. A summary of the depth to water and calculated groundwater elevation data, along with historical data, is contained in **Table 1.**

Groundwater elevation data was plotted adjacent to the respective monitoring well location and the resulting data points were contoured. A piezometric surface contour diagram is contained in **Figure 5.**

3.2 Groundwater Analytical Data

Monitoring wells VE-1, VE-3, VE-8, VE-19, VE-20, VE-21, VE-24, MW-8, MW-11, MW-12 and MW-16 were sampled April 10, 2001. Additionally, AES collected groundwater quality samples from monitoring wells AW-7 and VE-10 for the first time during the April 10, 2001 annual sampling event per the letter from Sherri V. Knight to Edward Henke dated on September 6, 2000.

Each monitoring well was purged of three volumes of groundwater prior to sample collection. Groundwater samples were submitted, using chain-of-custody protocol, to Toxikon Corporation located in Bedford, MA (North Carolina certification number 286) for analysis. Groundwater samples were analyzed for purgeable aromatics extended to include methyl tertiary butyl ether (MTBE) and xylenes using EPA Method 602. A summary of the April 2001 analytical results and chain-of-custody record is included with historical analytical data in **Table 2.** Copies of the analytical reports are included in **Appendix B.**

The April 2001 groundwater analytical results were plotted on site maps and contoured. Isoconcentration contour maps of benzene, toluene, ethylbenzene, total xylenes, total BTEX and MTBE are included as **Figures 6 through 11,** respectively.

Trends of dissolved hydrocarbons in groundwater were observed using graphs of dissolved hydrocarbon concentrations versus time; the graphs are contained in **Appendix C**. Analytical results of groundwater samples collected from groundwater monitoring wells indicate concentrations are generally decreasing with time.

4.0 SUMMARY

- Piezometric surface contour diagrams indicate that the groundwater flow direction is toward the southwest.
- Trends of dissolved hydrocarbons in the groundwater samples collected from the majority of the monitoring wells indicate that the concentrations of hydrocarbons in groundwater have generally decreased over time.

5.0 RECOMMENDATIONS FOR THE NEXT STATUS PERIOD

Motiva Enterprises recommends that the groundwater monitoring events continue on an annual basis with the next event scheduled to occur in April 2002.

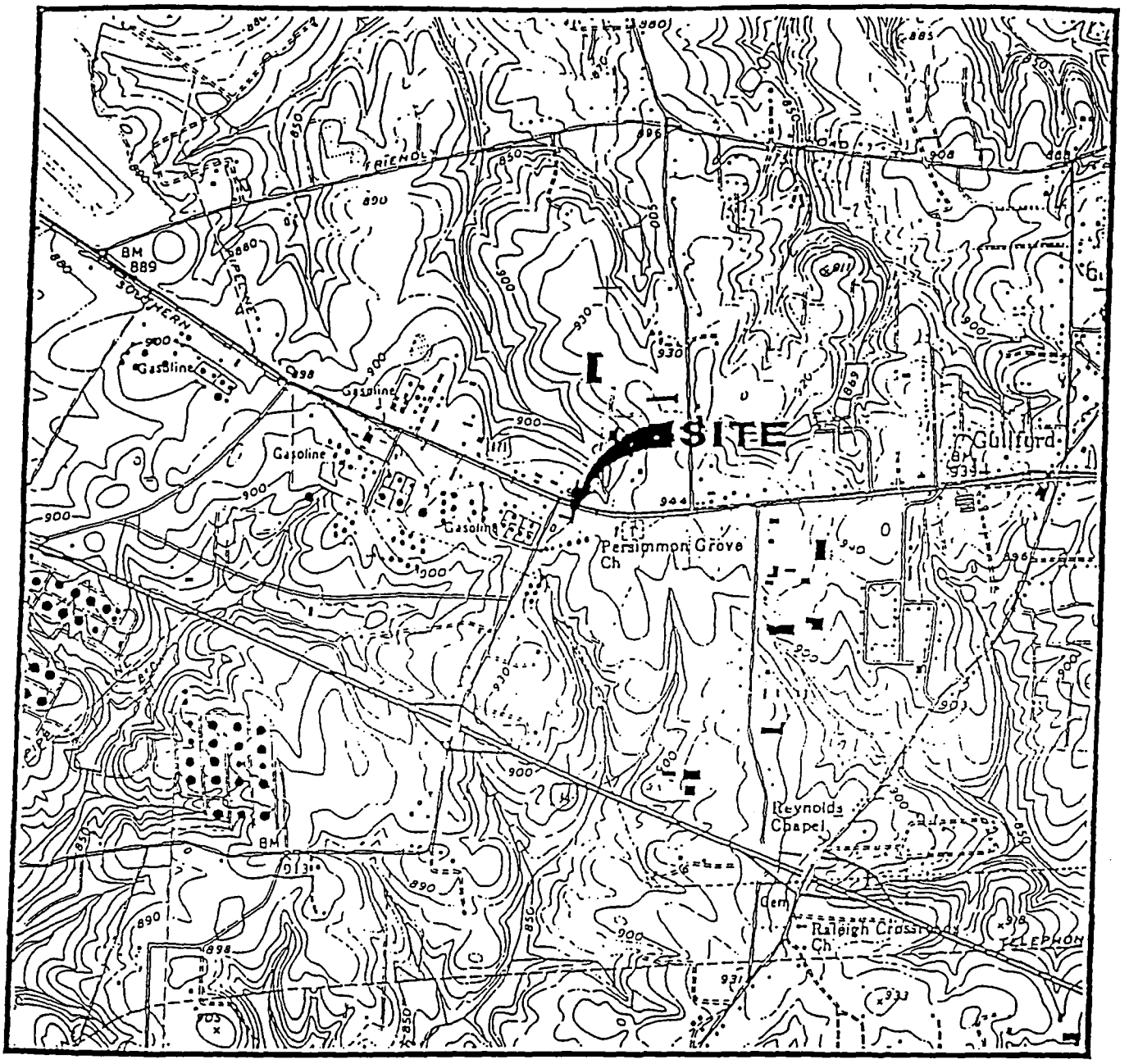
The remaining 11 wells exhibit either a decreasing trend (with concentrations currently below applicable levels) or have had analytical results below sample detection limits for a minimum of three years. **Table 1** and **Appendix C** detail the referenced trends. It is therefore proposed that groundwater sampling of monitoring wells MW-6, MW-9, MW-13, VE-4, VE-7, VE-14, VE-18, VE-19, VE-23, VE-25, and VE-26 be discontinued. Further, it is proposed that nine

(9) of the 11 wells, MW-6, MW-13, VE-4, VE-14, VE-18, VE-19, VE-23, VE-25, and VE-26, be properly abandoned in accordance with NCDENR requirements.

In addition, Motiva Enterprises proposes to abandon the following 28 groundwater monitoring wells: MW-1, MW-17, VD-22, VD-23, VD-34, VE-2, VE-6, VE-9 through VE-12, VE-15 through VE-17, VE-22, VE-27, and AW-1, AW-2, AW-4, AW-6 and AW-7 through AW-15.

Acceptance of the proposed changes would reduce the total number of wells located on the site from 60 to 23. The number of sampled wells would decrease from 21 to 10.

FIGURES



1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

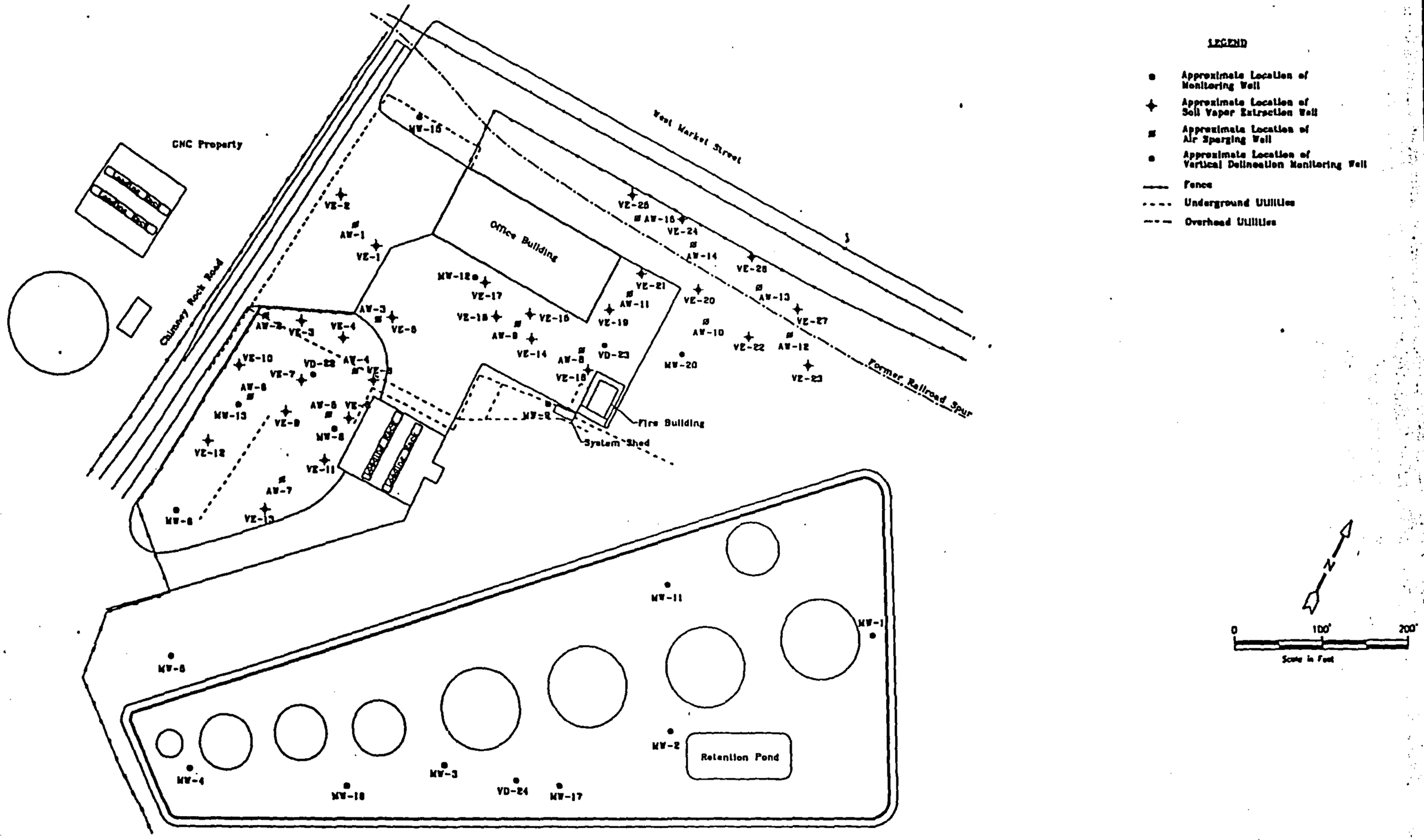
1 .5 0 1 KILOMETER

QUADRANGLE LOCATION

GUILFORD, NC.
7.5' QUADRANGLE
N3600 W7952.5/7.5
1:24K

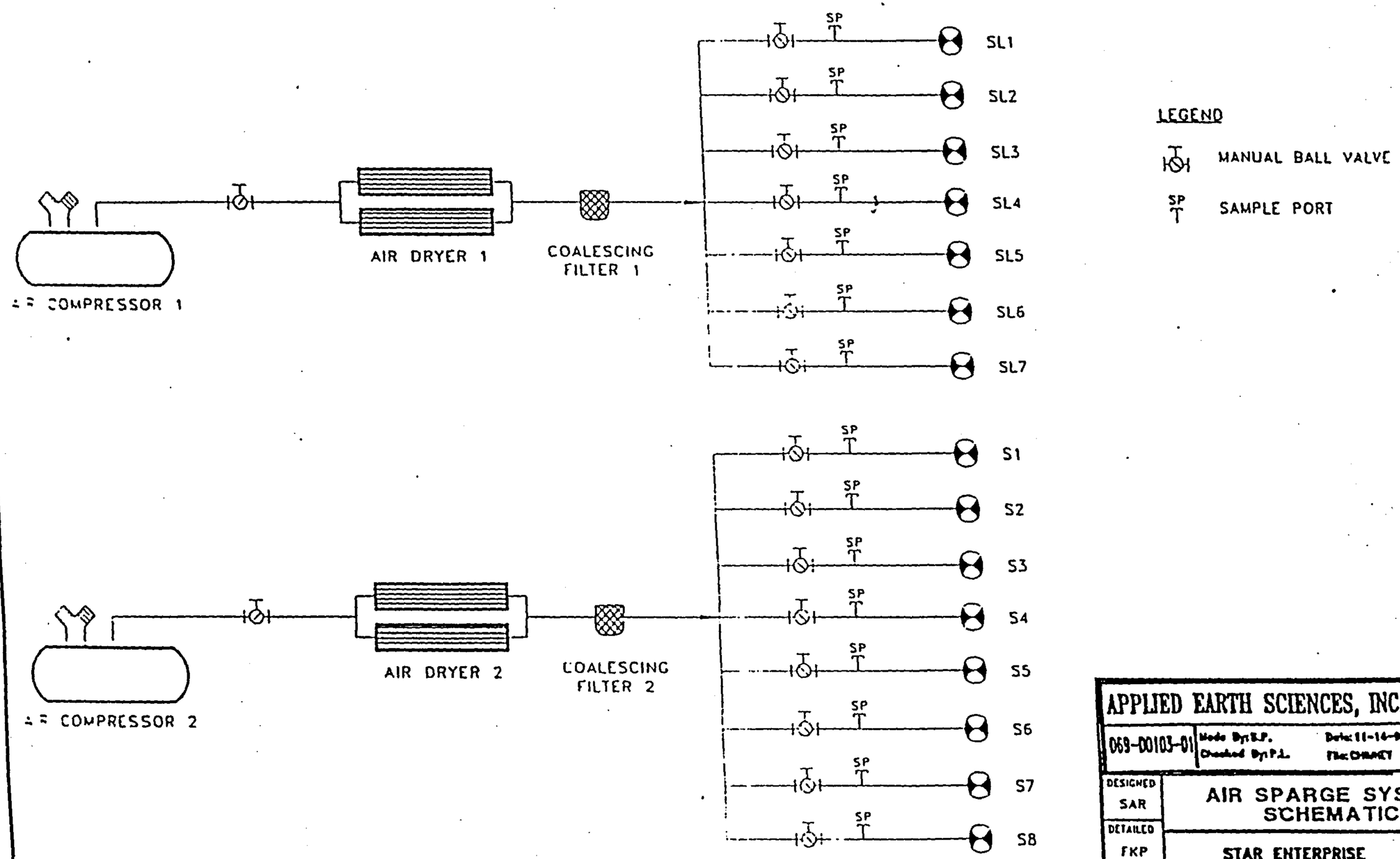
FIGURE 1
SITE LOCATION MAP
STAR ENTERPRISE
GREENSBORO TERMINAL
GREENSBORO, NC.
013245012

N



DRAWING SOURCE: CT DESIGN SERVICES INC.

APPLIED EARTH SCIENCES, INC. - CAROLINAS			MOTIVA ENTERPRISE 101 CHIMNEY ROCK ROAD GREENSBORO, NORTH CAROLINA	SITE MAP	FIGURE:
069-00103-01	Made By: B.P. Checked By: A.F.	Date: 5-1-01 File: CHIMNEY			2



APPLIED EARTH SCIENCES, INC.

069-00103-01 | Made By: E.P. | Checked By: P.L. | Date: 11-14-96 | File: CHMCT

DESIGNED: SAR

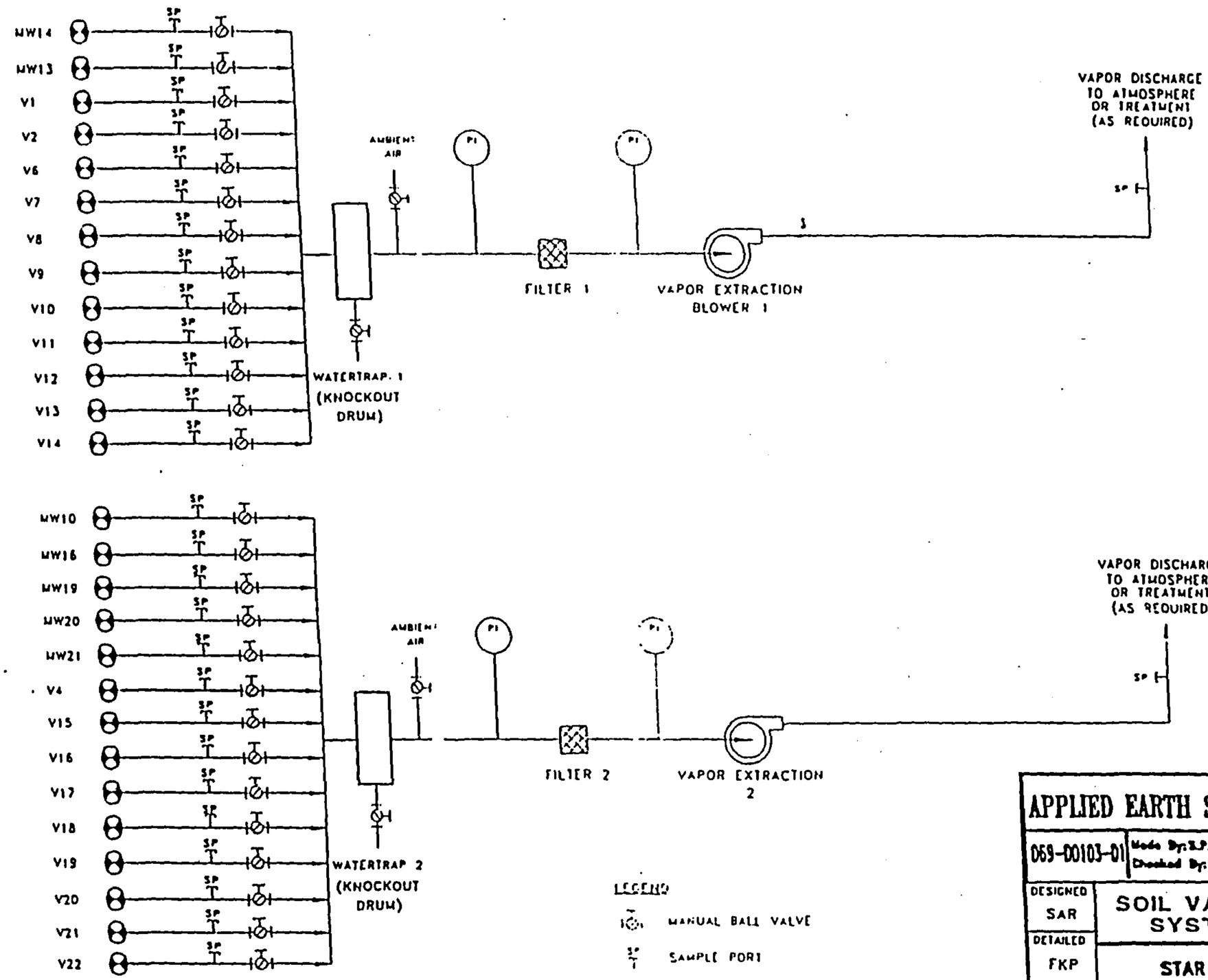
DETAILED: FKP

CHECKED:

AIR SPARGE SYSTEM SCHEMATIC

STAR ENTERPRISE
101 CHIMNEY ROCK ROAD
GREENSBORO, NORTH CAROLINA

DWG. 3



APPLIED EARTH SCIENCES, INC.

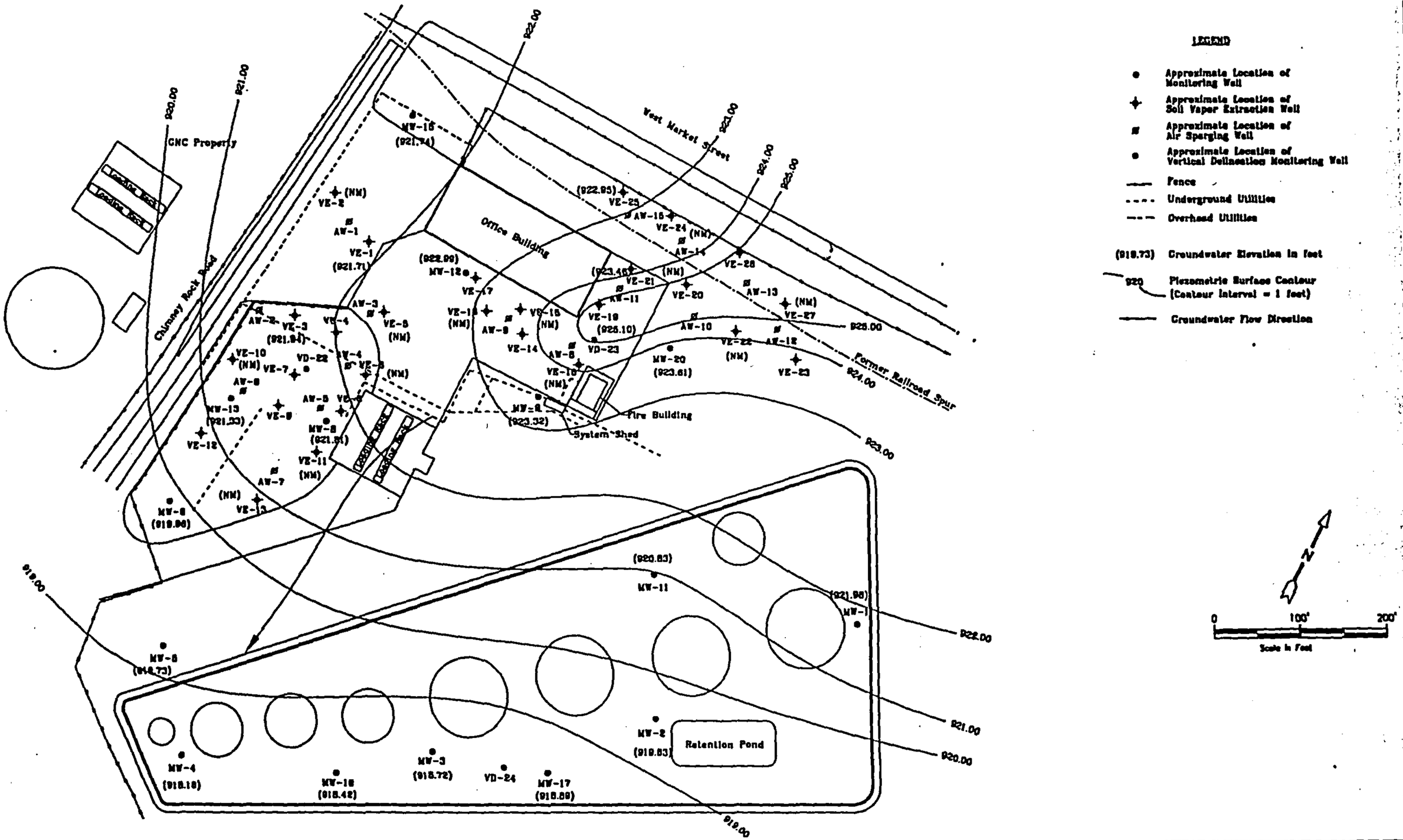
069-00103-01 | Made By: S.P. Checked By: P.L. | Date: 11-14-96 File: CHIMNEY

DESIGNED: SAR
DETAILED: FKP
CHECKED:

SOIL VAPOR EXTRACTION SYSTEM SCHEMATIC

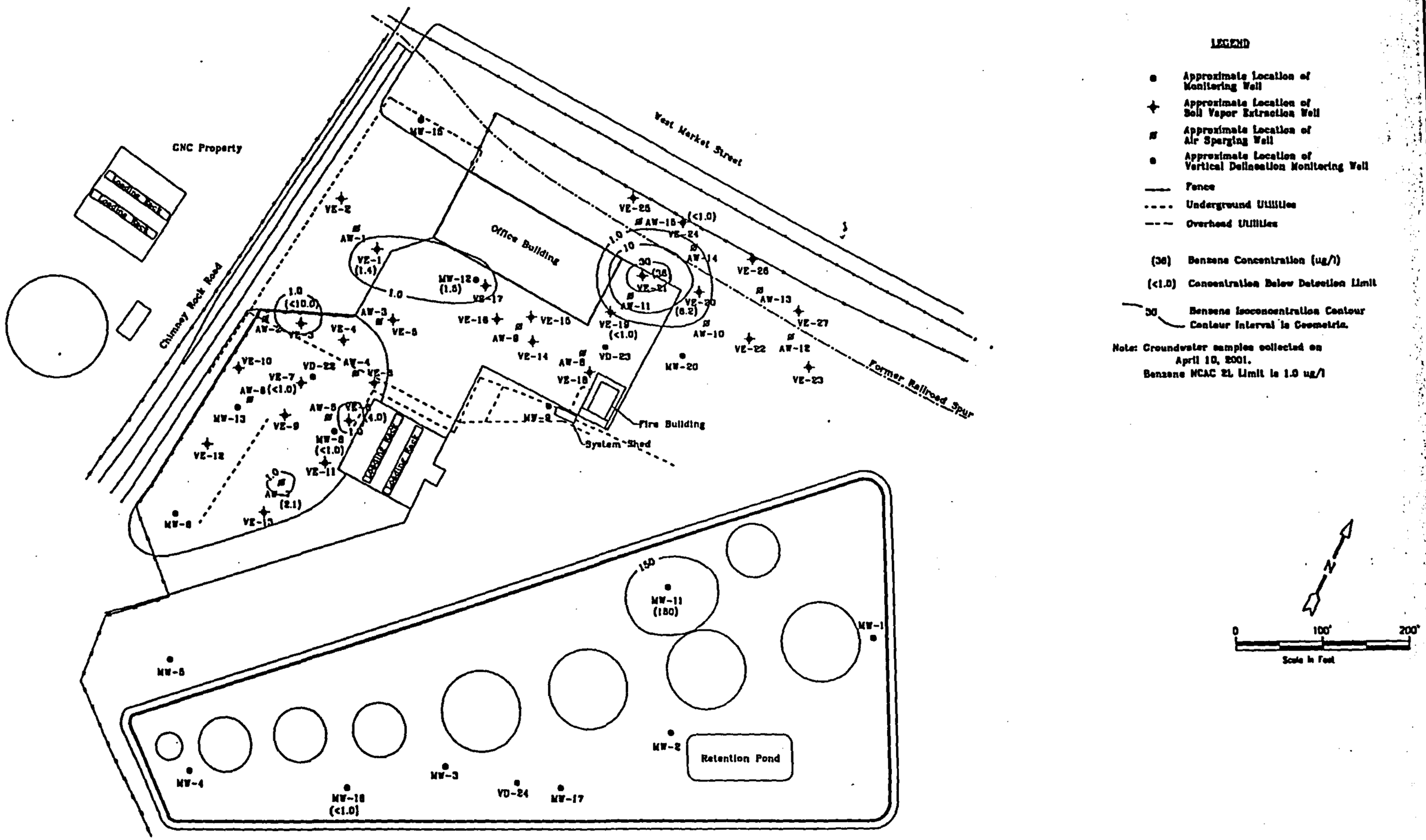
STAR ENTERPRISE
101 CHIMNEY ROCK ROAD
GREENSBORO, NORTH CAROLINA

4



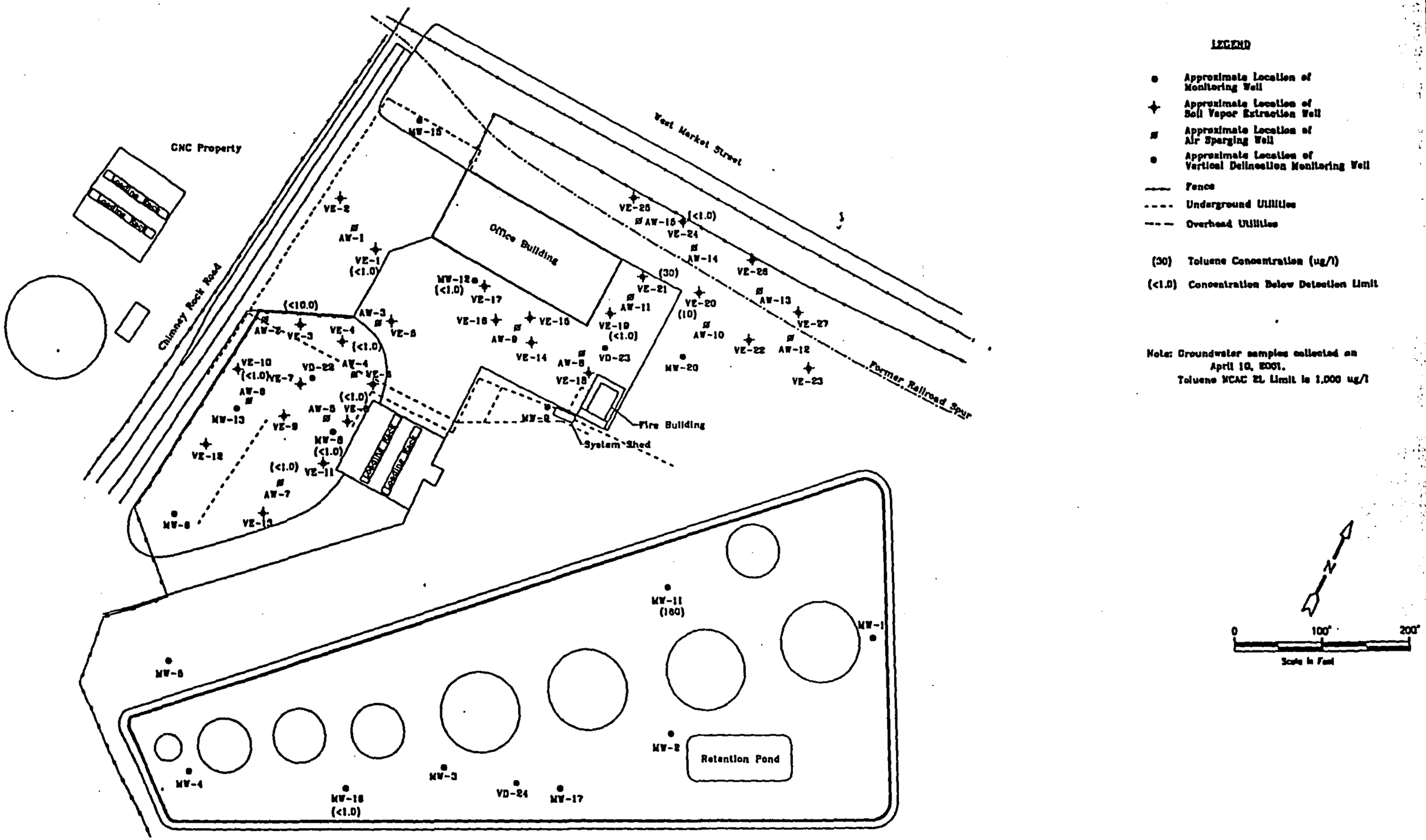
DRAWING SOURCE: CT DESIGN SERVICES INC.

APPLIED EARTH SCIENCES, INC. - CAROLINAS			MOTIVA ENTERPRISE 101 CHIMNEY ROCK ROAD GREENSBORO, NORTH CAROLINA	PIEZOMETRIC SURFACE CONTOUR MAP APRIL 18, 2001	FIGURE: 5
069-00103-01	Made By: B.P. Checked By: A.F.	Date: 5-1-01 File: CHIMNEY			



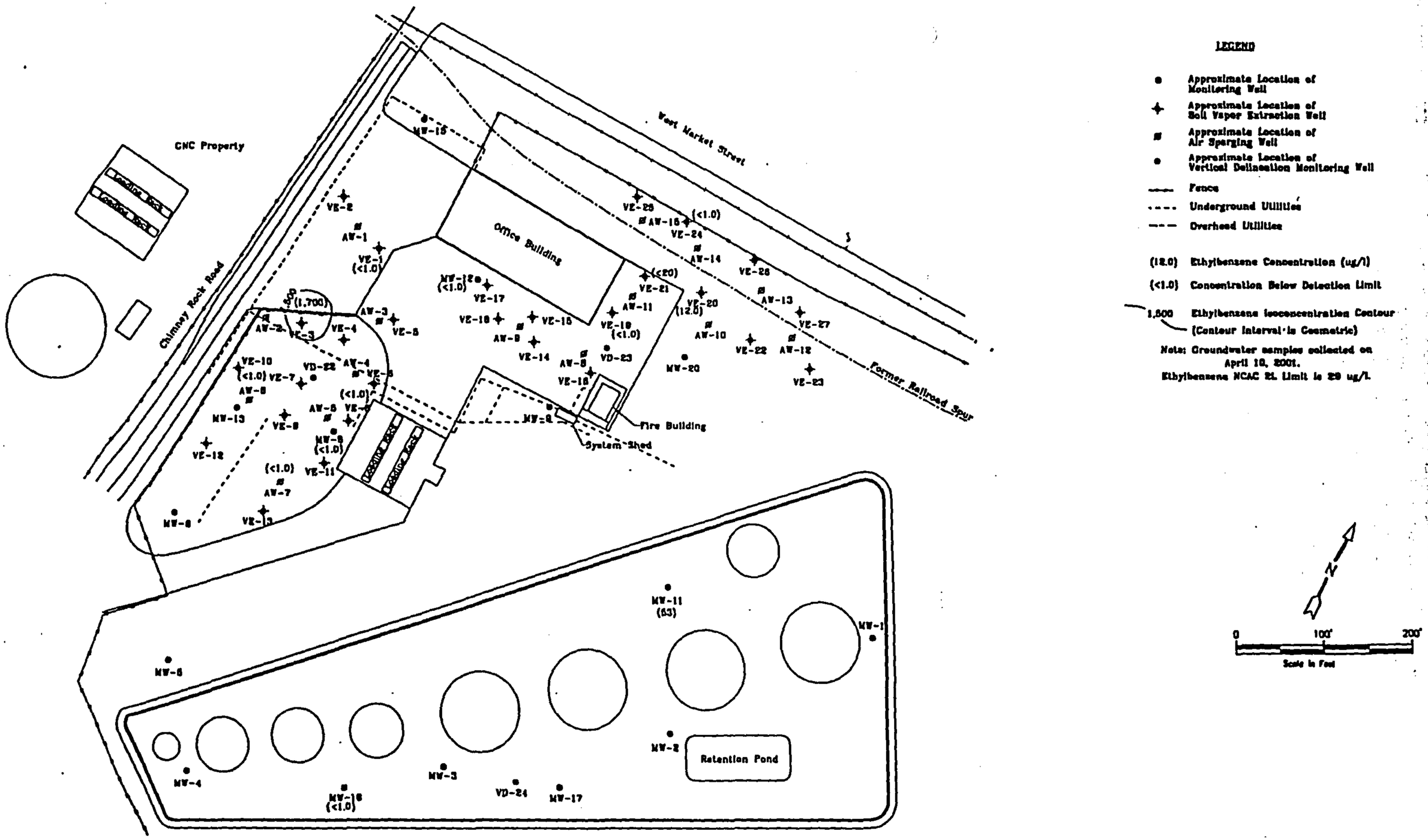
DRAWING SOURCE: CT DESIGN SERVICES INC.

APPLIED EARTH SCIENCES, INC. - CAROLINAS			MOTIVA ENTERPRISE 101 CHIMNEY ROCK ROAD GREENSBORO, NORTH CAROLINA	BENZENE IN GROUND WATER ISOCONCENTRATION MAP APRIL 10, 2001	FIGURE: 6
069-00103-01	Made By: B.P. Checked By: A.F.	Date: 5-1-01 File: CHIMNEY			



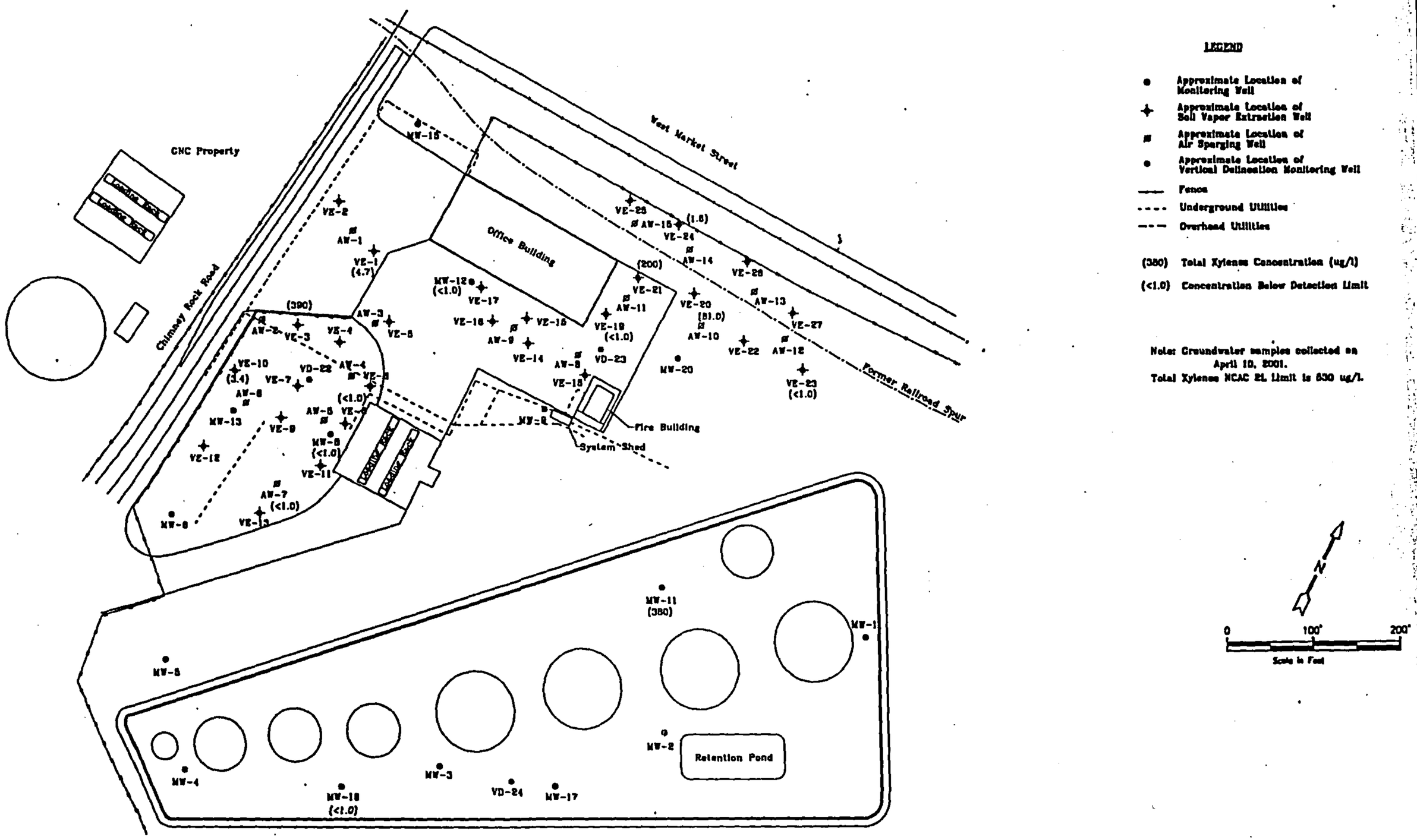
DRAWING SOURCE: CT DESIGN SERVICES INC.

APPLIED EARTH SCIENCES, INC. - CAROLINAS	MOTIVA ENTERPRISE 101 CHIMNEY ROCK ROAD GREENSBORO, NORTH CAROLINA	TOLUENE IN GROUND WATER ISOCONCENTRATION MAP APRIL 10, 2001	FIGURE: 7
069-00103-01 Made By: B.P. Checked By: A.F. Date: 5-1-01 File: CHIMNEY			



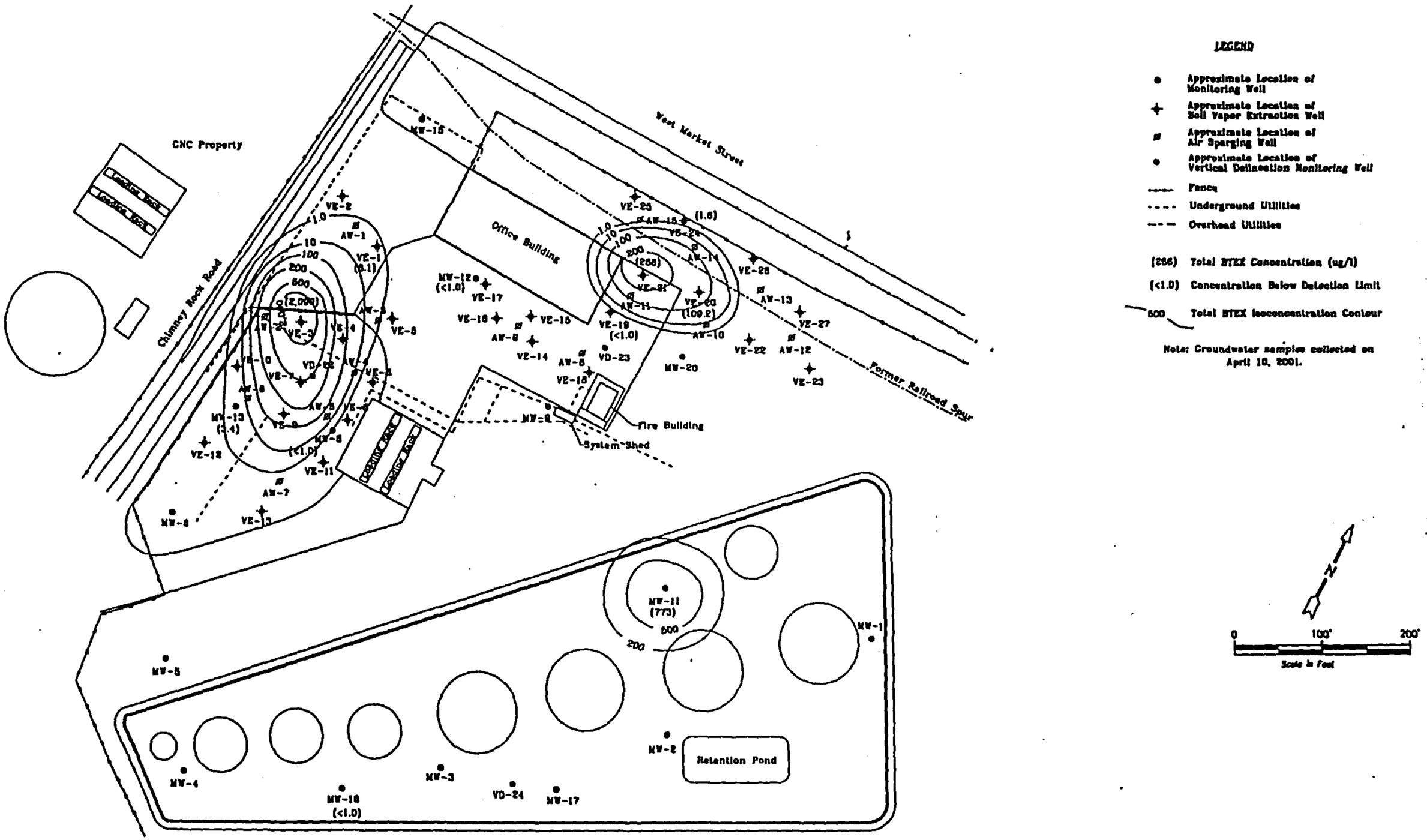
DRAWING SOURCE: CT DESIGN SERVICES INC.

APPLIED EARTH SCIENCES, INC. - CAROLINAS			MOTIVA ENTERPRISE 101 CHIMNEY ROCK ROAD GREENSBORO, NORTH CAROLINA	ETHYLBENZENE IN GROUND WATER ISOCONCENTRATION MAP APRIL 10, 2001	FIGURE:
069-00103-01	Made By: B.P. Checked By: A.F.	Date: 5-1-01 File: CHIMNEY			8



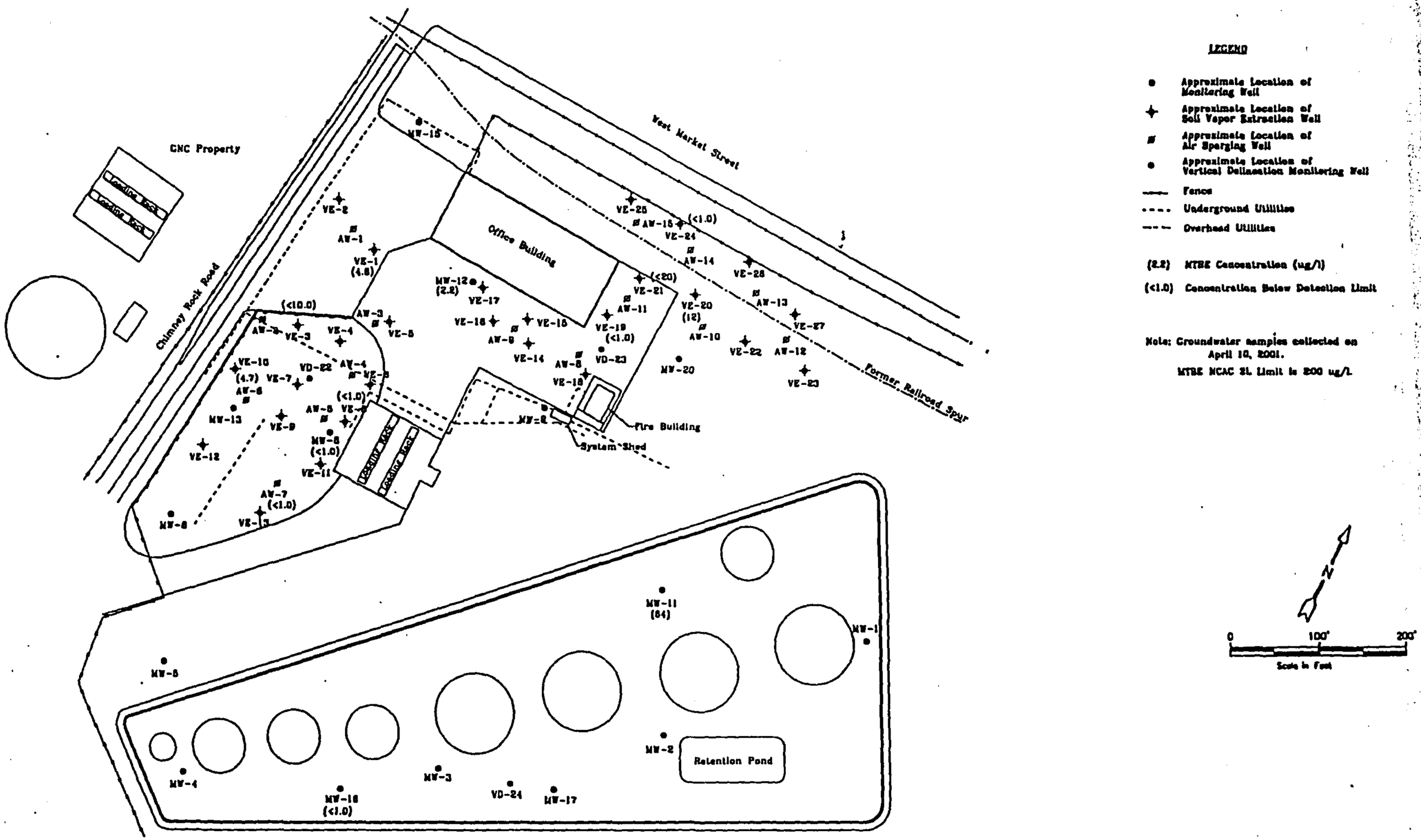
DRAWING SOURCE: CT DESIGN SERVICES INC.

APPLIED EARTH SCIENCES, INC. - CAROLINAS			MOTIVA ENTERPRISE 101 CHIMNEY ROCK ROAD GREENSBORO, NORTH CAROLINA	TOTAL XYLENES IN GROUND WATER ISOCONCENTRATION MAP APRIL 10, 2001	FIGURE:
069-00103-01	Made By: S.P. Checked By: A.F.	Date: 5-1-01 File: CHIMNEY			9



DRAWING SOURCE: CT DESIGN SERVICES INC.

APPLIED EARTH SCIENCES, INC. - CAROLINAS			MOTIVA ENTERPRISE 101 CHIMNEY ROCK ROAD GREENSBORO, NORTH CAROLINA	TOTAL BTEX IN GROUND WATER ISOCONCENTRATION MAP APRIL 10, 2001	FIGURE: 10
069-00103-01	Made By: B.P. Checked By: A.F.	Date: 5-1-01 File: CHIMNEY			



DRAWING SOURCE: CT DESIGN SERVICES INC.

APPLIED EARTH SCIENCES, INC. - CAROLINAS			MOTIVA ENTERPRISE 101 CHIMNEY ROCK ROAD GREENSBORO, NORTH CAROLINA	MTBE IN GROUND WATER ISOCONCENTRATION MAP APRIL 10, 2001	FIGURE 11
069-00103-01	Made By: B.P. Checked By: A.F.	Date: 5-1-01 File: CHIMNEY			

TABLES

TABLE I
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Motiva Enterprise
101 South Chimney Rock Road
Greensboro, North Carolina

WELL ID	SAMPLE DATE	BENZENE ug/L	TOLUENE ug/L	ETHYL-BENZENE ug/L	XYLENES ug/L	TOTAL BTEX ug/L	MTBE ug/L
MW-1	12/21/89	BDL	BDL	BDL	BDL	BDL	NA
	01/23/90	BDL	BDL	BDL	BDL	BDL	NA
	03/06/90	BDL	BDL	BDL	BDL	BDL	NA
	06/04/90	BDL	BDL	BDL	BDL	BDL	NA
	01/11/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	07/11/91	BDL	BDL	BDL	BDL	BDL	NA
	04/08/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/21/98	NS	NS	NS	NS	NS	NS
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	NS	NS	NS	NS	NS	NS
MW-2	12/21/89	BDL	BDL	BDL	BDL	BDL	NA
	01/23/90	BDL	BDL	BDL	BDL	BDL	NA
	03/06/90	BDL	BDL	BDL	BDL	BDL	NA
	06/04/90	BDL	BDL	BDL	BDL	BDL	NA
	01/15/91	35.0	BDL	110	120	265	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	07/11/91	BDL	BDL	BDL	BDL	BDL	NA
	04/08/98	<1.0	<1.0	<1.0	<1.0	<1.0	1,240
	10/21/98	NS	NS	NS	NS	NS	NS
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	NS	NS	NS	NS	NS	NS
MW-3	12/21/89	3.0	BDL	5.0	BDL	8.0	NA
	01/23/90	10.0	BDL	BDL	BDL	10.0	NA
	03/06/90	BDL	BDL	BDL	BDL	BDL	NA
	06/04/90	110	BDL	BDL	BDL	110	NA
	01/15/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	77.0	3.0	BDL	BDL	80.0	NA
	07/11/91	68.0	3.0	BDL	BDL	71.0	NA
	04/08/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/21/98	NS	NS	NS	NS	NS	NS
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	NS	NS	NS	NS	NS	NS
MW-4	12/21/89	BDL	BDL	BDL	BDL	BDL	NA
	01/23/90	BDL	BDL	BDL	BDL	BDL	NA
	03/06/90	BDL	BDL	BDL	BDL	BDL	NA
	06/04/90	BDL	BDL	BDL	BDL	BDL	NA
	01/15/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	07/11/91	BDL	BDL	BDL	BDL	BDL	NA
	04/08/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/21/98	NS	NS	NS	NS	NS	NS
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	NS	NS	NS	NS	NS	NS
N.C. - 2L G.W. Standard:		1.0	1000	29	530	NR	200

Notes:
BDL - Below Detection Limit
A < symbol denotes the sample detection limit
NA - Not Analyzed
NS - Not Sampled

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Motiva Enterprise
101 South Chimney Rock Road
Greensboro, North Carolina

WELL ID	SAMPLE DATE	BENZENE ug/l	TOLUENE ug/l	ETHYL-BENZENE ug/l	XYLENES ug/l	TOTAL BTEX ug/l	MTBE ug/l
MW-5	12/21/89	BDL	BDL	BDL	BDL	BDL	NA
	01/23/90	BDL	BDL	BDL	BDL	BDL	NA
	03/06/90	BDL	BDL	BDL	BDL	BDL	NA
	06/04/90	BDL	BDL	BDL	BDL	BDL	NA
	01/11/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	07/11/91	BDL	BDL	BDL	BDL	BDL	NA
	04/08/98	<1.0	<1.0	<1.0	<1.0	<1.0	15.0
	10/21/98	NS	NS	NS	NS	NS	NS
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	NS	NS	NS	NS	NS	NS
MW-6	12/21/89	BDL	BDL	BDL	BDL	BDL	NA
	01/23/90	BDL	BDL	BDL	BDL	BDL	NA
	03/06/90	BDL	BDL	BDL	BDL	BDL	NA
	06/04/90	BDL	BDL	BDL	BDL	BDL	NA
	01/15/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	07/11/91	BDL	BDL	BDL	BDL	BDL	NA
	03/23/92	BDL	BDL	BDL	BDL	BDL	BDL
	05/12/95	BDL	0.8	BDL	1.1	1.9	BDL
	08/29/95	BDL	BDL	BDL	BDL	BDL	BDL
	02/23/96	BDL	BDL	BDL	BDL	BDL	BDL
	06/11/96	BDL	BDL	BDL	BDL	BDL	BDL
	10/02/96	BDL	BDL	BDL	BDL	BDL	2.0
	05/01/97	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/15/97	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/08/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/22/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/10/01	NS	NS	NS	NS	NS	NS
N.C. - 2L G.W. Standard:		1.0	1000	29	530	NR	200

Notes:
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TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Motiva Enterprise
101 South Chimney Rock Road
Greensboro, North Carolina

WELL ID	SAMPLE DATE	BENZENE ug/l	TOLUENE ug/l	ETHYL-BENZENE ug/l	XYLENES ug/l	TOTAL BTEX ug/l	MTBE ug/l
MW-7 VE-3	12/21/89	330	BDL	1,500	2,000	3,830	NA
	01/23/90	250	8.0	1,100	1,600	2,958	NA
	03/06/90	170	BDL	740	960	1,870	NA
	06/04/90	250	BDL	1,100	1,200	2,550	NA
	01/15/91	470	970	940	2,000	4,380	NA
	06/13/91	520	9.0	1,400	1,700	3,629	NA
	07/11/91	220	BDL	810	730	1,760	NA
	03/23/92	550	30.0	2,000	2,200	4,780	BDL
	05/12/95	61.6	6.2	780	703	1,551	BDL
	08/29/95	55.1	33.5	1,690	1,490	3,269	BDL
	02/23/96	41.5	11.7	406	325	784	BDL
	06/11/96	34.9	9.09	1,170	767	1,981	BDL
	10/02/96	24.0	15.0	1,180	650	1,869	2.0
	05/01/97	18.0	<10.0	1,190	607	1,815	NA
	10/15/97	36.8	12.9	1,490	291	1,831	27.7
	04/07/98	<10.0	10.0	710	320	1,040	<10.0
	10/22/98	<20.0	<20.0	1,340	179	1,519	<20.0
	04/14/99	96.4	1.9	1,110	260	1,468	40.1
	10/20/99	7.0	6.0	1,100	5.0	1,118	10.0
	04/20/00	18.8	<1.0	1,360	390.0	1,768.8	<1.0
	04/10/01	<10.0	<10.0	1,700	390.0	2,090.0	<10.0
MW-8	12/21/89	210	BDL	6.0	120	336	NA
	01/23/90	100	BDL	BDL	51.0	151	NA
	03/06/90	BDL	BDL	BDL	BDL	BDL	NA
	06/04/90	66.0	BDL	BDL	27.0	93.0	NA
	01/15/91	110	BDL	BDL	59.0	169	NA
	06/13/91	290	BDL	BDL	BDL	290	NA
	07/11/91	100	BDL	BDL	70.0	170	NA
	03/23/92	310	BDL	BDL	42.0	352	BDL
	04/08/98	142	1.0	<1.0	7.0	150	<1.0
	06/19/98	184	1.0	<1.0	11.0	196	<1.0
	10/22/98	206	<5.0	<5.0	<5.0	206	<5.0
	04/14/99	192	< 1.0	< 1.0	8.1	200.1	2.0
	10/20/99	145	<1.0	<1.0	7.0	152	1.6
	04/20/00	220	<1.0	<1.0	15.3	235.3	<1.0
	04/10/01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
N.C. - 2L G.W. Standard:		1.0	1000	29	530	NR	200

Notes:
BDL - Below Detection Limit
A < symbol denotes the sample detection limit.
NA - Not Analyzed
NS - Not Sampled

4.4e-4

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Motiva Enterprise
101 South Chimney Rock Road
Greensboro, North Carolina

WELL ID	SAMPLE DATE	BENZENE ug/l	TOLUENE ug/l	ETHYL-BENZENE ug/l	XYLENES ug/l	TOTAL BTEX ug/l	MTBE ug/l
MW-9	12/21/89	12.0	BDL	BDL	BDL	12.0	NA
	01/23/90	BDL	BDL	BDL	BDL	BDL	NA
	03/06/90	BDL	BDL	BDL	BDL	BDL	NA
	06/04/90	BDL	BDL	BDL	BDL	BDL	NA
	01/11/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	07/11/91	BDL	BDL	BDL	BDL	BDL	NA
	03/23/92	BDL	BDL	BDL	BDL	BDL	BDL
	05/12/95	BDL	4.8	1.4	9.9	16.1	BDL
	08/29/95	BDL	BDL	BDL	BDL	BDL	BDL
	02/23/96	BDL	BDL	BDL	BDL	BDL	BDL
	06/11/96	BDL	BDL	BDL	BDL	BDL	BDL
	10/01/96	BDL	BDL	BDL	BDL	BDL	BDL
	05/01/97	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	10/16/97	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/09/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/21/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/10/01	NS	NS	NS	NS	NS	NS
MW-10 VE-23	12/21/89	BDL	BDL	BDL	BDL	BDL	NA
	01/23/90	BDL	BDL	BDL	BDL	BDL	NA
	03/06/90	BDL	BDL	BDL	BDL	BDL	NA
	06/04/90	BDL	BDL	BDL	BDL	BDL	NA
	01/11/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	07/11/91	BDL	BDL	BDL	BDL	BDL	NA
	03/23/92	BDL	BDL	BDL	BDL	BDL	BDL
	05/12/95	BDL	BDL	BDL	BDL	BDL	BDL
	08/29/95	BDL	BDL	BDL	BDL	BDL	BDL
	02/23/96	BDL	1.8	0.9	5.1	7.8	BDL
	06/11/96	BDL	BDL	BDL	BDL	BDL	BDL
	10/02/96	BDL	BDL	BDL	BDL	BDL	BDL
	05/01/97	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	10/16/97	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/09/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/21/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/10/01	NS	NS	NS	NS	NS	NS
N.C. - 2L G.W. Standard:		1.0	1000	29	530	NR	200

Notes:
BDL - Below Detection Limit
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NA - Not Analyzed
NS - Not Sampled

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Motiva Enterprise
101 South Chimney Rock Road
Greensboro, North Carolina

WELL ID	SAMPLE DATE	BENZENE ug/l	TOLUENE ug/l	ETHYL-BENZENE ug/l	XYLENES ug/l	TOTAL BTEX ug/l	MTBE ug/l
MW-11	12/21/89	BDL	BDL	BDL	BDL	BDL	NA
	01/23/90	BDL	BDL	BDL	BDL	BDL	NA
	03/06/90	BDL	BDL	BDL	BDL	BDL	NA
	06/04/90	BDL	BDL	BDL	BDL	BDL	NA
	01/11/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	07/11/91	BDL	BDL	BDL	BDL	BDL	NA
	04/08/98	675	1,400	180	1,400	3,655	405
	06/19/98	860	2,090	370	2,150	5,470	350
	10/22/98	126	127	61.8	380	695	47.6
	04/14/99	193	177	29	30	429	140
	10/21/99	160	170	35	80	445	60
	04/20/00	330	690	130	820	1970	120
	04/10/01	180	160	53	380	773	64
MW-12	01/23/90	81.0	4.0	7.0	41.0	133	NA
	03/06/90	20.0	BDL	BDL	BDL	20.0	NA
	06/04/90	14.0	BDL	BDL	BDL	14.0	NA
	01/11/91	23.0	BDL	BDL	BDL	23.0	NA
	06/13/91	19.0	BDL	BDL	BDL	19.0	NA
	07/11/91	48.0	BDL	BDL	BDL	48.0	NA
	03/23/92	18.0	BDL	BDL	BDL	18.0	BDL
	05/12/95	2.9	4.3	3.2	12.5	22.9	1.8
	08/29/95	1.9	BDL	BDL	BDL	1.9	BDL
	02/23/96	3.6	2.9	1.8	1.2	9.5	2.3
	06/11/96	1.8	BDL	BDL	BDL	1.81	BDL
	10/02/96	4.0	4.0	BDL	3.0	11.0	3.0
	05/01/97	3.9	<1.0	<1.0	5.5	9.4	NA
	10/15/97	5.7	<1.0	<1.0	2.8	8.5	4.6
	04/09/98	3.0	<1.0	<1.0	<1.0	3.0	<1.0
	10/21/98	2.4	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	1.6	< 1.0	< 1.0	1.9	3.5	7.8
	10/20/99	1.0	1.0	< 1.0	3.0	5.0	<1.0
	04/20/00	1.5	<1.0	<1.0	2.3	3.8	<1.0
	04/10/01	1.5	<1.0	<1.0	<1.0	<1.0	2.2
MW-13	05/01/97	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	10/15/97	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/09/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/22/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/10/01	NS	NS	NS	NS	NS	NS
MW-15	04/08/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	NS	NS	NS	NS	NS	NS
N.C. - 2L G.W. Standard:		1.0	1000	29	530	NR	200

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NS - Not Sampled

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Motiva Enterprise
101 South Chimney Rock Road
Greensboro, North Carolina

WELL ID	SAMPLE DATE	BENZENE ug/l	TOLUENE ug/l	ETHYL-BENZENE ug/l	XYLENES ug/l	TOTAL BTEX ug/l	MTBE ug/l
MW-16 (VE-19)	05/01/97	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/16/97	11.6	7.2	61.4	11.9	92.1	12.7
	04/07/98	2.0	2.0	5.0	6.0	15.0	2.0
	10/21/98	7.0	4.2	19.9	<1.0	31.1	<1.0
	04/14/99	< 1.0	< 1.0	< 1.0	2	2	< 1.0
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/10/01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17	06/04/90	BDL	BDL	BDL	BDL	BDL	NA
	01/15/91	BDL	BDL	BDL	26.0	26.0	NA
	06/13/91	BDL	BDL	BDL	47.0	47.0	NA
	07/11/91	2.0	BDL	70.0	BDL	72.0	NA
	04/08/98	<1.0	3.0	<1.0	42.0	45.0	1.0
	10/21/98	NS	NS	NS	NS	NS	NS
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	NS	NS	NS	NS	NS	NS
MW-18 (MW-16)	06/04/90	BDL	BDL	BDL	BDL	BDL	NA
	01/15/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	07/11/91	BDL	BDL	BDL	BDL	BDL	NA
	10/21/98	NS	NS	NS	NS	NS	NS
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-19 VE-25	01/11/91	22.0	9.0	31.0	50.0	112	NA
	06/13/91	28.0	10.0	51.0	79.0	168	NA
	07/11/91	39.0	170	240	540	989	NA
	03/23/92	43.0	52.0	81.0	180	356	140
	05/12/95	0.6	1.9	BDL	3.1	5.6	2.6
	08/29/95	BDL	BDL	BDL	BDL	BDL	BDL
	02/23/96	1.5	2.7	2.4	6.1	12.7	2.1
	06/11/96	BDL	2.68	6.81	20.8	30.3	BDL
	10/02/96	BDL	2.0	9.0	14.0	25.0	BDL
	05/01/97	BDL	1.3	8.4	14.0	23.7	NA
	10/16/97	11.7	3.9	45.3	36.6	97.5	8.2
	04/09/98	BDL	2.0	5.0	9.0	16.0	2.0
	10/21/98	<1.0	2.4	33.5	13.7	49.6	4.1
	04/14/99	1.3	5.4	11.1	40.5	57	12.7
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	<1.0	1.7	1.7	<1.0
	04/10/01	NS	NS	NS	NS	NS	NS
N.C. - 2L G.W. Standard:		1.0	1000	29	530	NR	200

Notes:
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TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Motiva Enterprise
101 South Chimney Rock Road
Greensboro, North Carolina

WELL ID	SAMPLE DATE	BENZENE ug/l	TOLUENE ug/l	ETHYL-BENZENE ug/l	XYLENES ug/l	TOTAL BTEX ug/l	MTBE ug/l
MW-20	01/11/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	07/11/91	BDL	8.0	BDL	BDL	8.0	NA
	03/23/92	BDL	BDL	BDL	BDL	BDL	9.0
	05/12/95	BDL	1.1	BDL	1.7	2.8	11.9
	08/29/95	BDL	BDL	BDL	BDL	BDL	10.9
	02/23/96	BDL	BDL	BDL	BDL	BDL	16.8
	06/11/96	BDL	BDL	BDL	BDL	BDL	21.0
	10/02/96	BDL	BDL	BDL	BDL	BDL	11.0
	05/01/97	BDL	BDL	BDL	BDL	BDL	NA
	10/15/97	BDL	BDL	BDL	BDL	BDL	34.6
	04/07/98	BDL	BDL	BDL	BDL	BDL	18.0
	10/21/98	<1.0	<1.0	<1.0	<1.0	<1.0	9.8
	04/14/99	<1.0	<1.0	<1.0	<1.0	<1.0	8.8
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	9.1
	04/20/00	<1.0	<1.0	<1.0	<1.0	<1.0	10.1
	04/10/01	NS	NS	NS	NS	NS	NS
MW-21 VE-14	01/11/91	77.0	BDL	BDL	BDL	77	NA
	06/13/91	290	BDL	BDL	BDL	290	NA
	07/11/91	140	BDL	BDL	BDL	140	NA
	03/23/92	290	BDL	BDL	BDL	290	19.0
	05/12/95	5.1	3.8	2.0	8.8	19.7	BDL
	08/29/95	3.9	2.0	BDL	BDL	5.9	BDL
	02/23/96	3.2	2.5	1.6	0.8	8.0	4.2
	06/11/96	BDL	BDL	BDL	BDL	BDL	BDL
	10/02/96	BDL	BDL	BDL	BDL	BDL	3.0
	05/01/97	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	10/15/97	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/07/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/21/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	1.2	1.5	2.7	1.6
	04/10/01	NS	NS	NS	NS	NS	NS
MW-22	01/30/91	19	BDL	BDL	BDL	19	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	NA
	03/23/92	BDL	BDL	BDL	BDL	BDL	BDL
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	NS	NS	NS	NS	NS	NS
MW-23	01/30/91	30.0	BDL	BDL	BDL	30.0	NA
	06/13/91	470	BDL	BDL	47.0	517	NA
	03/23/92	16.0	BDL	BDL	BDL	16.0	BDL
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	NS	NS	NS	NS	NS	NS
N.C. - 2L G.W. Standard:		1.0	1000	29	530	NR	200

Notes:
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TABLE I
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Motiva Enterprise
101 South Chimney Rock Road
Greensboro, North Carolina

WELL ID	SAMPLE DATE	BENZENE ug/l	TOLUENE ug/l	ETHYL-BENZENE ug/l	XYLENES ug/l	TOTAL BTEX ug/l	MTBE ug/l
MW-24	01/30/91	BDL	BDL	BDL	BDL	BDL	NA
	06/13/91	BDL	BDL	BDL	BDL	BDL	BDL
	04/14/99	NS	NS	NS	NS	NS	NS
	10/20/99	NS	NS	NS	NS	NS	NS
	04/19/00	NS	NS	NS	NS	NS	NS
	04/10/01	NS	NS	NS	NS	NS	NS
VE-1 (MW-14)	05/01/97	<1.0	<1.0	19.7	31.2	50.9	NA
	10/15/97	1.0	1.6	7.6	34.9	45.1	<1.0
	04/07/98	<1.0	1.0	7.0	12.0	20.0	3.0
	10/21/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	2.3	4.3	24.7	40.7	72.0	6.3
	10/20/99	<1.0	<1.0	7.0	10.0	17.0	<1.0
	04/19/00	1.7	3.5	10.0	23.3	38.5	<1.0
	04/10/01	1.4	<1.0	<1.0	4.7	6.1	4.6
VE-4	02/23/96	BDL	1.5	3.7	BDL	5.2	BDL
	06/11/96	BDL	BDL	BDL	BDL	BDL	BDL
	10/02/96	BDL	BDL	BDL	BDL	BDL	3.0
	05/01/97	<1.0	<1.0	<1.0	1.2	1.2	NA
	04/07/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/21/98	***	NS - DRY	***			
	04/14/99	***	NS - DRY	***			
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/10/01	NS	NS	NS	NS	NS	NS
VE-7	08/29/95	BDL	BDL	BDL	BDL	<1.0	<1.0
	02/23/96	1.4	BDL	BDL	BDL	1.4	BDL
	06/11/96	5.1	BDL	BDL	BDL	5.1	BDL
	10/02/96	2.0	BDL	BDL	BDL	2.0	1.0
	05/01/97	3.5	<1.0	<1.0	<1.0	3.5	NA
	04/07/98	2.0	<1.0	<1.0	<1.0	2.0	<1.0
	10/21/98	***	NS - DRY	***			
	04/14/99	***	NS - DRY	***			
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/10/01	NS	NS	NS	NS	NS	NS
VE-8	05/12/95	114	0.5	0.8	3.6	118.9	BDL
	08/29/95	79.4	BDL	BDL	2.0	81.4	BDL
	02/23/96	20.3	BDL	BDL	BDL	20.3	BDL
	06/11/96	17.2	BDL	BDL	BDL	17.2	BDL
	10/02/96	24.0	BDL	BDL	BDL	24.0	3.0
	05/01/97	3.1	<1.0	<1.0	<1.0	3.1	NA
	10/15/97	21.5	<1.0	<1.0	<1.0	21.5	<1.0
	04/07/98	6.0	<1.0	<1.0	<1.0	6.0	<1.0
	10/22/98	11.4	<1.0	<1.0	<1.0	11.4	<1.0
	04/14/99	6.0	<1.0	<1.0	<1.0	6.0	< 1.0
	10/20/99	1.0	<1.0	<1.0	<1.0	1.0	<1.0
	04/20/00	5.6	<1.0	<1.0	<1.0	5.6	<1.0
	04/10/01	4.0	<1.0	<1.0	<1.0	4.0	<1.0
N.C. - 2L G.W. Standard:		1.0	1000	29	530	NR	200

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TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Motiva Enterprise
101 South Chimney Rock Road
Greensboro, North Carolina
Page 9 of 10

WELL ID	SAMPLE DATE	BENZENE ug/l	TOLUENE ug/l	ETHYL-BENZENE ug/l	XYLENES ug/l	TOTAL BTEX ug/l	MTBE ug/l
VE-10	04/10/01	<1.0	<1.0	<1.0	3.4	3.4	4.7
VE-18	05/12/95	BDL	1.4	BDL	2.5	3.9	BDL
	08/29/95	BDL	BDL	BDL	BDL	BDL	BDL
	02/23/96	BDL	BDL	BDL	BDL	BDL	BDL
	06/11/96	BDL	BDL	1.2	1.4	2.6	BDL
	10/02/96	BDL	BDL	BDL	BDL	BDL	BDL
	05/01/97	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	10/15/97	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/07/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/21/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/10/01	NS	NS	NS	NS	NS	NS
VE-20	05/12/95	69.5	775	315	1,340	2,500	BDL
	08/29/95	50.9	534	220	1,330	2,140	BDL
	02/23/96	64.8	703	77.8	988	1,834	13.2
	06/11/96	23.5	249	64.7	358	695	21.4
	10/02/96	59.0	12.0	5.0	111	187	4.0
	05/01/97	68.0	519	202	1,116	1,905	NA
	10/16/97	1.3	<1.0	<1.0	14.6	15.9	3.0
	04/09/98	15.0	13.0	5.0	54.0	87.0	3.0
	10/21/98	1.7	2.5	<1.0	19.3	23.5	<1.0
	04/14/99	8.1	53.1	20.5	136	217.7	3.4
	10/20/99	8.0	29.0	12.0	84 0	133.0	<1.0
	04/20/00	26.0	203.0	91.0	583.0	903.0	<1.0
	04/10/01	6.2	10.0	12.0	81.0	109.2	12.0
VE-21	05/12/95	810	13,400	1,060	7,390	22,660	BDL
	08/29/95	639	9,750	1,190	6,240	17,819	BDL
	02/23/96	111	1,410	60.2	1,680	3,261	27.7
	06/11/96	227	1,740	13.9	2,550	4,531	26.3
	10/02/96	90	2,160	180	3,240	5,670	BDL
	05/01/97	260	1,500	580	4,210	6,550	NA
	10/16/97	238	2,620	623	5,220	8,701	55.0
	04/07/98	270	2,790	540	5,490	9,090	<45.0
	06/19/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/22/98	230	1,600	607	5,620	8,057	<100
	04/14/99	72	138	108	708	1,026	126
	10/20/99	280	230	330	1350	2,190	<1.0
	04/20/00	154	147	95	633	1,029	<1.0
	04/10/01	36	30	<20	200	266	<20
N.C. - 2L G.W. Standard:		1.0	1000	29	530	NR	200

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TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Motiva Enterprise
101 South Chimney Rock Road
Greensboro, North Carolina

WELL ID	SAMPLE DATE	BENZENE ug/l	TOLUENE ug/l	ETHYL-BENZENE ug/l	XYLENES ug/l	TOTAL BTEX ug/l	MTBE ug/l
VE-24	05/12/95	3.4	247	160	819	1,229	3.9
	08/29/95	BDL	67.9	18.4	236	322.3	BDL
	02/23/96	BDL	0.8	2.2	0.5	3.5	BDL
	06/11/96	BDL	5.2	BDL	21.9	27.1	BDL
	10/02/96	BDL	3.0	7.0	36.0	46.0	BDL
	05/01/97	1.3	6.1	11.9	43.4	62.7	NA
	10/16/97	1.8	3.5	23.8	27.1	56.2	4.5
	04/09/98	<1.0	4.0	15.0	28.0	47.0	4.0
	10/21/98	<1.0	4.3	24.0	11.1	39.4	<1.0
	04/14/99	< 1.0	2.2	21.5	15.3	39	7.5
	10/20/99	<1.0	1.0	2.0	10.0	13.0	<1.0
	04/20/00	<1.0	2.4	5.3	20.8	28.5	<1.0
	04/10/01	<1.0	<1.0	<1.0	1.6	1.6	<1.0
VE-26	05/12/95	BDL	0.6	BDL	0.7	1.3	3.6
	08/29/95	BDL	BDL	BDL	BDL	BDL	BDL
	02/23/96	BDL	BDL	BDL	BDL	BDL	BDL
	06/11/96	BDL	BDL	BDL	BDL	BDL	BDL
	10/02/96	BDL	BDL	BDL	BDL	BDL	BDL
	05/01/97	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	10/16/97	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/09/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/21/98	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/14/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	10/20/99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/20/00	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	04/10/01	NS	NS	NS	NS	NS	NS
AW-7	04/10/01	2.1	<1.0	<1.0	<1.0	2.1	<1.0
N.C. - 2L G.W. Standard:		1.0	1000	29	530	NR	200

Notes:
BDL - Below Detection Limit
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NA - Not Analyzed
NS - Not Sampled

Texaco, Inc. 4/30/02

NCD 096 165 124

Site Re-Assessment Sampling

Personnel: Kyle Hagen &
Mike Deaton

- Arrived at lift station gate for City of High Point on Sunnyvale Dr. at 08:50.
- This will be staging area to collect TEX-04-SD the fishing sample.
- Weather: Clear and sunny w/ temp at 61°F according to Suburban gauges

Pg. 1 of 15

Attachment 13

Texaco Inc.
NCD 096165121

4/30/02

Photograph Log (Roll #1)

#	Description
1)	TEX-04-SD looking north northeast
2)	Looking southeast from sample point TEX-04,
3)	TEX-05-SD looking south, downstream,
4)	TEX-06-SD, looking north, upstream toward Albert Pick Rd and I-40
5)	TEX-01-SS
6)	TEX-01-SS looking north to the Texaco facility and fenceline.
7)	~~TEX-09~~ Fenceline showing north stormwater discharge pipes,
8)	TEX-02-SS, background
9)	TEX-02-SS looking northwest
10)	Tanks from east fenceline looking west
11)	Looking south along east fence
12)	Tanks on south side looking west from fenceline.

Texaco Inc.
NCD 096165121

4/30/02

- Arrived at sampling point TEX-04-SD, fishery sample at 09:31.
- This sampling point is approx. 120 ft ~~de~~ upstream of City of High Point Lift Station #
- M. Deaton collected sediment sample, TEX-04-SD at 09:33.
- Sediment sample is dark gray to brown fine clayey sand
- Water body is slow moving to stationary water
- Note: approx. 100 yds upstream of sampling point 04 the East Fork Deep River started to dry up and became too shallow to support a fishery.

Photograph Log (Roll #1) (cont'd)

#	Description
13	From Chimney Rock road looking east at the tanks.

Photograph Log (Roll #2)

#	Description
1	TEX-03-SD looking upstream at Beaver Dam.
2	Looking north from TEX-03-SD at diversion ditch embankment.
3	Looking south at wetland area from sample point, TEX-03-SD.
4	Looking northeast at beaver dam area.

- Arrived at TEX-05-SD sample point at 10:17.
- This point is located approx. 250 ft. downstream of Wendover, SR1541, bridge on the East Fork Deep River.
- M. Denton collected TEX-05-SD at ~~[illegible]~~ 10:24.
- Sediment sample is medium brown coarse to fine grain sand.
- The river at this point has about 1 to 1½ feet of water.

Texico, Inc. 4/30/02
NCD 096165121

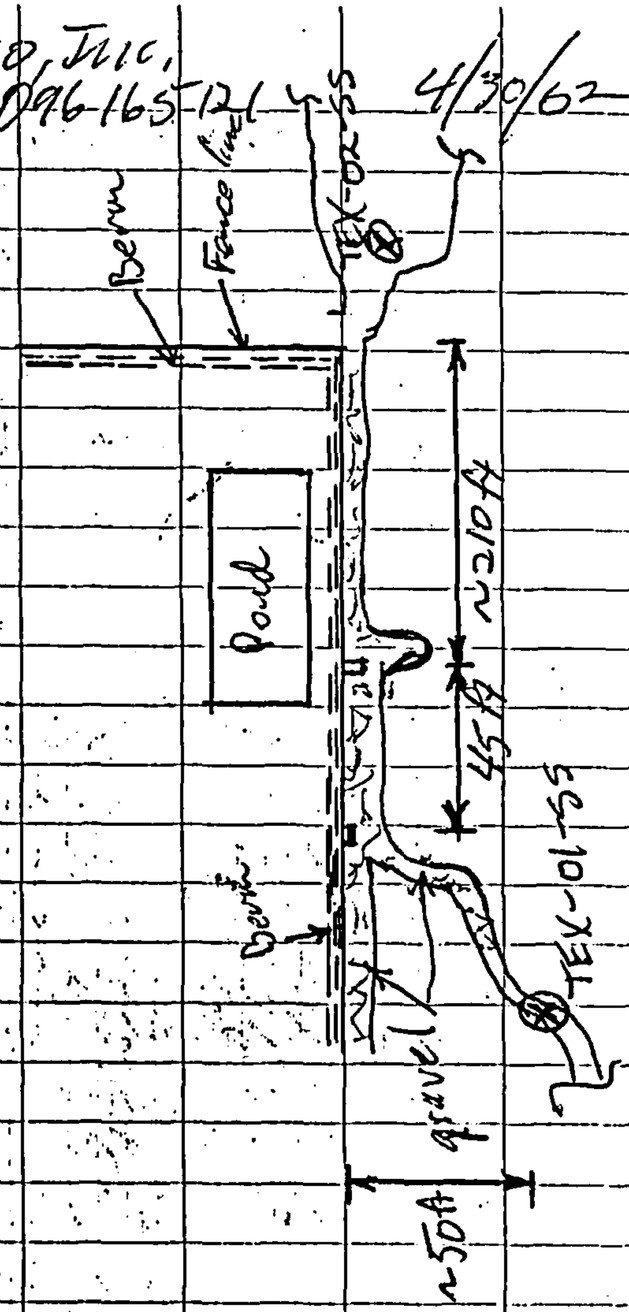
Pg. 6 of 15

Texico, Inc.
NCD096165121 4/30/02

- Arrived at sampling point TEX-06-SD, at 10:55.
- Begin collected TEX-06-SD at 11:00.
- Sediment sample consisted of coarse to fine grain sand although after mixing the sample exhibited a mostly coarse sand appearance. Color was medium to light brown.
- The sample point was approx. 100 ft south of the bridge/culvert for Albert Price Rd.
- The water in the ~~Dee~~ East Fork Red River was approx. 1 ft deep.

Pg. 7 of 15

Texaco, Inc.
NCD 096165121 4/30/02



Texaco, Inc.
NCD 096165121 4/30/02

- Arrived at the Texaco Inc. site at 11:20, met Larry Couch & Noel Sheffield.
- Mr. Sheffield escorted us across the site to the fence leading offsite and left us to take our samples.
- Arrived at sample point, TEX-01-SS, at 11:30.
- M. Dalton collected sample, TEX-01-SS, at 11:33.
- Surface soil/sediment sample ~~is~~ consisted of ½ of fine sand on top with and light brown with medium brown clayey sand underneath.

Texaco Inc.
NCD 096 165 121

4/30/02

Thyle R. Hay

Texaco Inc.
NCD 096 165 121

4/30/02

- Sample point TEX-01-SS is approx. 80 ft downstream of north side SW discharge point. This is approx. 500 ft due south of the property fenceline for Texaco site.
- The paved distance from North side discharge pipe to sediment pond discharge is 45 ft. (M. Deaton)

TEX-02-SS

- Arrived at sample point TEX-02-SS, at 11:55.
- M. Deaton collected sample TEX-02-SS at 11:54.
- Sample point is in the drainage area ~~[illegible]~~ south-east of the site approx. 25 ft from the fenceline

Thyle R. Hay

Texaco Inc. 4/30/02
NCD 096 165121

Pg. 12 of 15

Texaco Inc. 4/30/02
NCD 096 165121

(cont'd) corner of the site.
- The sediment pond discharge pipe is approx 210 ft west of the southwest corner of the property/fenceline.
- Sediment is medium brown clayey sand.
- Off the Texaco site at 12:20.

- Arrived at Martin Marietta Pomona Quarry at Quarry 13:15.
- Met with Joe Opel at 13:20.
- At sample point, TEX-03-SD at 13:40.
- M. Benton collected sample TEX-03-SD at 13:47.
- Sediment sample is a medium brown sandy silt material.
- Sample taken from center stream bed in wetland area.

Pg. 13 of 15

Texaco Inc
NCD 096165121

4/30/02

Kyle R. Hayes

TEX-03-SD (cont'd)

- The sample point was taken approx 150 ft upstream of the new diversion ditch for the Long Branch Creek which will not be opened up till 2003.

- This sample point was approx 40 ft downstream from an existing beaver dam.

- This wetland area downstream of the beaver dam had one sheet flow area and 2 shallow stream beds that merged to form Long Branch creek at the diversion ditch outlet.

Kyle R. Hayes

Attachment 14

N.C. Department of Environment
& Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O Box 28047, 306 N. Wilmington Street
Raleigh, North Carolina 27611

Site Number NCD 096 165 121

Sample ID Number/Name 50797

Name of Site Texaco, Inc.

Collected By Kyle Hagen ID#

Site Location Greensboro, Guilford County, NC

Collected 04-30-02 Time 11:33

RECEIVED MAY 30 2002

Agency: ____ Hazardous Waste ____ Solid Waste X Superfund

Sample Type

Environmental		Concentrate		Comments
	Ground Water (1)		Solid (5)	TEX-01-SS
	Surface water (2)		Liquid (6)	Observed release
X	Soil (3)		Sludge (7)	Sample
	Other (4)		Other (8)	

Organic Chemistry

Parameter	Results(mg/l)
P&T:GC/MS	
Acid:B/N Ext.	
2,4-D	
2,4,5-TP	
chlordane	
heptachlor	
hexachlorbenzene	
hexachlorbutadiene	
endrin	
lindane	
methoxychlor	
toxaphene	

Inorganic Chemistry

Parameter	Results (~~mg/l~~)(mg/kg)
antimony	
X arsenic	10.5
X barium	37.5
X beryllium	<1
X cadmium	<1
chloride	
X chromium	35
X cobalt	17
X copper	18
fluoride	
X iron	24535
X lead	28
X manganese	663
X mercury	<0.05
X nickel	5.5
nitrate	
X selenium	<1.5
X silver	<1
sulfates	
X thallium	<0.5
X vanadium	94
X zinc	105
X calcium	390
X magnesium	664
X potassium	150
X sodium	50

TCLP Compounds

Inorganic Compounds	Results (mg/l)
Arsenic	
Barium	
Cadmium	
Chromium	
Lead	
Mercury	
Selenium	
Silver	

Organic Compounds	Results (mg/l)
benzene	
carbon tetrachloride	
chlordane	
chlorobenzene	
chloroform	
o-cresol	
m-cresol	
p-cresol	
cresol	
1,4-dichlorobenzene	
1,2-dichloroethane	
1,1- dichloroethylene	
2,4-dinitrotoluene	
heptachlor	
hexachlorobenzene	
methyl ethyl ketone	
nitrobenzene	
pentachlorophenol	
pyridine	
tetrachloroethylene	
trichloroethylene	
2,4,5-trichlorophenol	
2,4,6-trichlorophenol	
vinyl chloride	
endrin	
lindane	
methoxychlor	
toxaphene	
2,4,-D	
2,4,5-TP (Silvex)	

Date Received 05-01-02

Date Extracted

Date Analyzed

Reported by DJM

Date Reported 05-28-02

Lab Number 006041

DHS 3191(revised 12/93)

NC Department of Environment, Health, & Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O. Box 28047, 306 N. Wilmington St.
Raleigh, North Carolina 27611-8047

Site Number NCD 096 165 121 Sample ID Number/Name 50797

Name of Site Texaco, Inc. Collected By KYLE HAGEN ID#

Site Location Greensboro, Guilford Co., NC Date Collected 4/30/02 Time 11:33

Agency: ___ Hazardous Waste ___ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
___ Ground Water (1)	___ Solid (5)	TEX-01-SS
___ Surface Water (2)	___ Liquid (6)	observed release
X Soil (3)	___ Sludge (7)	sample
___ Other (4)	___ Other (8)	

TCLP Compounds

Inorganic Compounds	Results(mg/l)
___ arsenic	
___ barium	
___ cadmium	
___ chromium	
___ lead	
___ mercury	
___ selenium	
___ silver	

Organic Chemistry

Parameter	Results (mg/l)
___ P&T:GC/MS	
___ Acid:B/N Ext.	
___ 2,4-D	
___ 2,4,5-TP(Silvex)	
___ chlordane	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	

Inorganic Chemistry

Parameter	Results(mg/l)(mg/kg)
___ antimony	
X arsenic	
X barium	
X beryllium	
X cadmium	
___ chloride	
X chromium	
X cobalt	
X copper	
___ fluoride	
X iron	
X lead	
X manganese	
X mercury	
X nickel	
___ nitrate	
X selenium	
X silver	
___ sulfates	
X thallium	
X vanadium	
X zinc	
___ pH	
___ conductivity	
___ TDS	
___ flash point	
X Calcium	
X magnesium	
X potassium	
X sodium	

Organic Compounds	Results(mg/l)
___ benzene	
___ carbon tetrachloride	
___ chlordane	
___ chlorobenzene	
___ chloroform	
___ o-cresol	
___ m-cresol	
___ p-cresol	
___ cresol	
___ 1,4-dichlorobenzene	
___ 1,2-dichloroethane	
___ 1,1-dichloroethylene	
___ 2,4-dichloroethylene	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ hexachloroethane	
___ methyl ethyl ketone	
___ nitrobenzene	
___ pentachlorophenol	
___ pyridine	
___ tetrachloroethylene	
___ trichloroethylene	
___ 2,4,5-trichlorophenol	
___ 2,4,6-trichlorophenol	
___ vinyl chloride	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	
___ 2,4-D	
___ 2,4,5-TP (Silvex)	

FOR LAB USE ONLY

Date Received 05-01-2002 006041

Date Extracted

Date Analyzed

Reported By

Date Reported

Lab Number

TS 3191 (Revised 12/93)

N.C. Department of Environment
& Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O Box 28047, 306 N. Wilmington Street
Raleigh, North Carolina 27611

Site Number NCD 096 165 121

Sample ID Number /Name 50798

Name of Site Texaco, Inc.

Collected By Kyle Hagen ID#

Site Location Greensboro, Guilford County, NC

Collected 04-30-02 Time 11:54

Agency: ____ Hazardous Waste ____ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
____ Ground Water (1)	____ Solid (5)	TEX-02-SS
____ Surface water (2)	____ Liquid (6)	Background
X Soil (3)	____ Sludge (7)	
____ Other (4)	____ Other (8)	

Organic Chemistry

Parameter	Results(mg/l)
____ P&T:GC/MS	
____ Acid:B/N Ext.	
____ 2,4-D	
____ 2,4,5-TP	
____ chlordane	
____ heptachlor	
____ hexachlorbenzene	
____ hexachlorbutadiene	
____ endrin	
____ lindane	
____ methoxychlor	
____ toxaphene	
____	
____	
____	

Inorganic Chemistry

Parameter	Results (~~mg/l~~)(mg/kg)
____ antimony	
X arsenic	1.0
X barium	59
X beryllium	< 1
X cadmium	< 1
____ chloride	
X chromium	27
X cobalt	12
X copper	18
____ fluoride	
X iron	19925
X lead	18
X manganese	571
X mercury	< 0.05
X nickel	8.5
____ nitrate	
X selenium	< 1.5
X silver	< 1
____ sulfates	
X thallium	< 0.5
X vanadium	59
X zinc	26
X calcium	409
X magnesium	1211
X potassium	150
X sodium	50

TCLP Compounds

Inorganic Compounds	Results (mg/l)
____ Arsenic	
____ Barium	
____ Cadmium	
____ Chromium	
____ Lead	
____ Mercury	
____ Selenium	
____ Silver	
____	
____	

Organic Compounds	Results (mg/l)
____ benzene	
____ carbon tetrachloride	
____ chlordane	
____ chlorobenzene	
____ chloroform	
____ o-cresol	
____ m-cresol	
____ p-cresol	
____ cresol	
____ 1,4-dichlorobenzene	
____ 1,2-dichloroethane	
____ 1,1- dichloroethylene	
____ 2,4-dinitrotoluene	
____ heptachlor	
____ hexachlorobenzene	
____ methyl ethyl ketone	
____ nitrobenzene	
____ pentachlorophenol	
____ pyridine	
____ tetrachloroethylene	
____ trichloroethylene	
____ 2,4,5-trichlorophenol	
____ 2,4,6-trichlorophenol	
____ vinyl chloride	
____ endrin	
____ lindane	
____ methoxychlor	
____ toxaphene	
____ 2,4,-D	
____ 2,4,5-TP (Silvex)	

Date Received 05-01-02

Date Extracted

Date Analyzed

Reported by DJM

Date Reported 05-28-02

Lab Number 006042

DHS 3191(revised 12/93)

NC Department of Environment, Health, & Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O. Box 28047, 306 N. Wilmington St.
Raleigh, North Carolina 27611-8047

Site Number NCD 096 165 121 Sample ID Number/Name 50798

Name of Site Texaco, Inc. Collected By KYLE HAGEN ID #

Site Location Greensboro, Guilford Co., NC Date Collected 4/30/02 Time 11:54

Agency: ___ Hazardous Waste ___ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
___ Ground Water (1)	___ Solid (5)	TEX-02-SS
___ Surface Water (2)	___ Liquid (6)	Background
X Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

TCLP Compounds

Inorganic Compounds	Results(mg/l)
___ arsenic	
___ barium	
___ cadmium	
___ chromium	
___ lead	
___ mercury	
___ selenium	
___ silver	

Organic Chemistry

Parameter	Results (mg/l)
___ P&T:GC/MS	
___ Acid:B/N Ext.	
___ 2,4-D	
___ 2,4,5-TP(Silvex)	
___ chlordane	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	

Inorganic Chemistry

Parameter	Results(mg/l)(mg/kg)
___ antimony	
X arsenic	
X barium	
X beryllium	
X cadmium	
___ chloride	
X chromium	
X cobalt	
X copper	
___ fluoride	
X iron	
X lead	
X manganese	
X mercury	
X nickel	
___ nitrate	
X selenium	
X silver	
___ sulfates	
X thallium	
X vanadium	
X zinc	
___ pH	
___ conductivity	
___ TDS	
___ flash point	
X Calcium	
X magnesium	
X potassium	
X sodium	

Organic Compounds

Organic Compounds	Results(mg/l)
___ benzene	
___ carbon tetrachloride	
___ chlordane	
___ chlorobenzene	
___ chloroform	
___ o-cresol	
___ m-cresol	
___ p-cresol	
___ cresol	
___ 1,4-dichlorobenzene	
___ 1,2-dichloroethane	
___ 1,1-dichloroethylene	
___ 2,4-dichloroethylene	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ hexachloroethane	
___ methyl ethyl ketone	
___ nitrobenzene	
___ pentachlorophenol	
___ pyridine	
___ tetrachloroethylene	
___ trichloroethylene	
___ 2,4,5-trichlorophenol	
___ 2,4,6-trichlorophenol	
___ vinyl chloride	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	
___ 2,4-D	
___ 2,4,5-TP (Silvex)	

FOR LAB USE ONLY

Date Received 05-01-2002 006042

Date Extracted

Date Analyzed

Reported By

Date Reported

Lab Number

HS 3191 (Revised 12/93)

N.C. Department of Environment
& Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O Box 28047, 306 N. Wilmington Street
Raleigh, North Carolina 27611

Site Number NCD 096 165 121

Sample ID Number /Name 50799

Name of Site Texaco, Inc.

Collected By Kyle Hagen ID#

Site Location Greensboro, Guilford County, NC

Collected 04-30-02 Time 13:47

Agency: ____ Hazardous Waste ____ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
____ Ground Water (1)	____ Solid (5)	TEX-03-SD
____ Surface water (2)	____ Liquid (6)	Release to Wetland
X Soil (3)	____ Sludge (7)	
____ Other (4)	____ Other (8)	

Organic Chemistry

Parameter	Results(mg/l)
P&T:GC/MS	
Acid:B/N Ext.	
2,4-D	
2,4,5-TP	
chlordane	
heptachlor	
hexachlorbenzene	
hexachlorbutadiene	
endrin	
lindane	
methoxychlor	
toxaphene	

Inorganic Chemistry

Parameter	Results (~~mg/l~~)(mg/kg)
antimony	
X arsenic	< 1
X barium	26
X beryllium	< 1
X cadmium	< 1
chloride	
X chromium	33
X cobalt	6
X copper	13
fluoride	
X iron	12781
X lead	4
X manganese	128
X mercury	< 0.05
X nickel	9
nitrate	
X selenium	< 1.5
X silver	< 1
sulfates	
X thallium	< 0.5
X vanadium	32
X zinc	42
X calcium	418
X magnesium	2925
X potassium	498
X sodium	50

TCLP Compounds

Inorganic Compounds	Results (mg/l)
Arsenic	
Barium	
Cadmium	
Chromium	
Lead	
Mercury	
Selenium	
Silver	

Organic Compounds	Results (mg/l)
benzene	
carbon tetrachloride	
chlordane	
chlorobenzene	
chloroform	
o-cresol	
m-cresol	
p-cresol	
cresol	
1,4-dichlorobenzene	
1,2-dichloroethane	
1,1- dichloroethylene	
2,4-dinitrotoluene	
heptachlor	
hexachlorobenzene	
methyl ethyl ketone	
nitrobenzene	
pentachlorophenol	
pyridine	
tetrachloroethylene	
trichloroethylene	
2,4,5-trichlorophenol	
2,4,6-trichlorophenol	
vinyl chloride	
endrin	
lindane	
methoxychlor	
toxaphene	
2,4,-D	
2,4,5-TP (Silvex)	

Date Received 05-01-02

Date Extracted

Date Analyzed

Reported by DJM

Date Reported 05-28-02

Lab Number 006043

HS 3191(revised 12/93)

NC Department of Environment, Health, & Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O. Box 28047, 306 N. Wilmington St.
Raleigh, North Carolina 27611-8047

Site Number NCD 096 165 121 Sample ID Number/Name 50799

Name of Site Texaco, Inc. Collected By KYLE HAGEN ID #

Site Location Greensboro, Guilford Co., NC Date Collected 4/30/02 Time 13:47

Agency: ___ Hazardous Waste ___ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
___ Ground Water (1)	___ Solid (5)	TEX-03-SD
___ Surface Water (2)	___ Liquid (6)	Release to Wetland
X Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

TCLP Compounds

Inorganic Compounds	Results(mg/l)
___ arsenic	
___ barium	
___ cadmium	
___ chromium	
___ lead	
___ mercury	
___ selenium	
___ silver	

Organic Chemistry

Parameter	Results (mg/l)
___ P&T:GC/MS	
___ Acid:B/N Ext.	
___ 2,4-D	
___ 2,4,5-TP(Silvex)	
___ chlordane	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	

Inorganic Chemistry

Parameter	Results(mg/l)(mg/kg)
___ antimony	
X arsenic	
X barium	
X beryllium	
X cadmium	
___ chloride	
X chromium	
X cobalt	
X copper	
___ fluoride	
X iron	
X lead	
X manganese	
X mercury	
X nickel	
___ nitrate	
X selenium	
X silver	
___ sulfates	
X thallium	
X vanadium	
X zinc	
___ pH	
___ conductivity	
___ TDS	
___ flash point	
X Calcium	
X magnesium	
X potassium	
X sodium	

Organic Compounds

Organic Compounds	Results(mg/l)
___ benzene	
___ carbon tetrachloride	
___ chlordane	
___ chlorobenzene	
___ chloroform	
___ o-cresol	
___ m-cresol	
___ p-cresol	
___ cresol	
___ 1,4-dichlorobenzene	
___ 1,2-dichloroethane	
___ 1,1-dichloroethylene	
___ 2,4-dichloroethylene	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ hexachloroethane	
___ methyl ethyl ketone	
___ nitrobenzene	
___ pentachlorophenol	
___ pyridine	
___ tetrachloroethylene	
___ trichloroethylene	
___ 2,4,5-trichlorophenol	
___ 2,4,6-trichlorophenol	
___ vinyl chloride	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	
___ 2,4-D	
___ 2,4,5-TP (Silvex)	

FOR LAB USE ONLY

Date Received 05-08-2002 006043

Date Extracted

Date Analyzed

Reported By

Date Reported

Lab Number

DHS 3191 (Revised 12/93)

N.C. Department of Environment
& Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O Box 28047, 306 N. Wilmington Street
Raleigh, North Carolina 27611

Site Number NCD 096 165 121

Sample ID Number /Name 50800

Name of Site Texaco, Inc.

Collected By Kyle Hagen ID#

Site Location Greensboro, Guilford County, NC

Collected 04-30-02 Time 09:33

Agency: ____ Hazardous Waste ____ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
____ Ground Water (1)	____ Solid (5)	TEX-04-SS
____ Surface water (2)	____ Liquid (6)	Release to fishery
X Soil (3)	____ Sludge (7)	
____ Other (4)	____ Other (8)	

Organic Chemistry

Parameter	Results(mg/l)
P&T:GC/MS	
Acid:B/N Ext.	
2,4-D	
2,4,5-TP	
chlordane	
heptachlor	
hexachlorbenzene	
hexachlorbutadiene	
endrin	
lindane	
methoxychlor	
toxaphene	

Inorganic Chemistry

Parameter	Results (~~mg/l~~)(mg/kg)
antimony	
X arsenic	< 1
X barium	61
X beryllium	< 1
X cadmium	< 1
chloride	
X chromium	17
X cobalt	10
X copper	19
fluoride	
X iron	12423
X lead	8
X manganese	209
X mercury	< 0.05
X nickel	9
nitrate	
X selenium	< 1.5
X silver	< 1
sulfates	
X thallium	< 0.5
X vanadium	40
X zinc	44
X calcium	363
X magnesium	2030
X potassium	746
X sodium	100

TCLP Compounds

Inorganic Compounds	Results (mg/l)
Arsenic	
Barium	
Cadmium	
Chromium	
Lead	
Mercury	
Selenium	
Silver	

Organic Compounds	Results (mg/l)
benzene	
carbon tetrachloride	
chlordane	
chlorobenzene	
chloroform	
o-cresol	
m-cresol	
p-cresol	
cresol	
1,4-dichlorobenzene	
1,2-dichloroethane	
1,1- dichloroethylene	
2,4-dinitrotoluene	
heptachlor	
hexachlorobenzene	
methyl ethyl ketone	
nitrobenzene	
pentachlorophenol	
pyridine	
tetrachloroethylene	
trichloroethylene	
2,4,5-trichlorophenol	
2,4,6-trichlorophenol	
vinyl chloride	
endrin	
lindane	
methoxychlor	
toxaphene	
2,4,-D	
2,4,5-TP (Silvex)	

Date Received 05-01-02

Date Extracted

Date Analyzed

Reported by DJM

Date Reported 05-28-02

Lab Number 006044

HS 3191 (revised 12/93)

NC Department of Environment, Health, & Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O. Box 28047, 306 N. Wilmington St.
Raleigh, North Carolina 27611-8047

Site Number NCD 096 165 121 Sample ID Number/Name 50800

Name of Site Texaco, Inc. Collected By KYLE HAGEN ID #

Site Location Greensboro, Guilford Co., NC Date Collected 4/30/02 Time 09:33

Agency: ___ Hazardous Waste ___ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
___ Ground Water (1)	___ Solid (5)	TEX-04-SD
___ Surface Water (2)	___ Liquid (6)	Release to fishery
X Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

TCLP Compounds

Inorganic Compounds	Results(mg/l)
___ arsenic	
___ barium	
___ cadmium	
___ chromium	
___ lead	
___ mercury	
___ selenium	
___ silver	

Organic Chemistry

Parameter	Results (mg/l)
___ P&T:GC/MS	
___ Acid:B/N Ext.	
___ 2,4-D	
___ 2,4,5-TP(Silvex)	
___ chlordane	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	

Inorganic Chemistry

Parameter	Results(mg/l)(mg/kg)
___ antimony	
X arsenic	
X barium	
X beryllium	
X cadmium	
___ chloride	
X chromium	
X cobalt	
X copper	
___ fluoride	
X iron	
X lead	
X manganese	
X mercury	
X nickel	
___ nitrate	
X selenium	
X silver	
___ sulfates	
X thallium	
X vanadium	
X zinc	
___ pH	
___ conductivity	
___ TDS	
___ flash point	
X Calcium	
X magnesium	
X potassium	
X sodium	

Organic Compounds

Organic Compounds	Results(mg/l)
___ benzene	
___ carbon tetrachloride	
___ chlordane	
___ chlorobenzene	
___ chloroform	
___ o-cresol	
___ m-cresol	
___ p-cresol	
___ cresol	
___ 1,4-dichlorobenzene	
___ 1,2-dichloroethane	
___ 1,1-dichloroethylene	
___ 2,4-dichloroethylene	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ hexachloroethane	
___ methyl ethyl ketone	
___ nitrobenzene	
___ pentachlorophenol	
___ pyridine	
___ tetrachloroethylene	
___ trichloroethylene	
___ 2,4,5-trichlorophenol	
___ 2,4,6-trichlorophenol	
___ vinyl chloride	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	
___ 2,4-D	
___ 2,4,5-TP (Silvex)	

FOR LAB USE ONLY

Date Received 05-01-2002 006044

Date Extracted

Date Analyzed

Reported By

Date Reported

Lab Number

3191 (Revised 12/93)

N.C. Department of Environment
& Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O Box 28047, 306 N. Wilmington Street
Raleigh, North Carolina 27611

Site Number NCD 096 165 121

Sample ID Number /Name 50801

Name of Site Texaco, Inc.

Collected By Kyle Hagen ID#

Site Location Greensboro, Guilford County, NC

Collected 04-30-02 Time 10:24

Agency: ____ Hazardous Waste ____ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
____ Ground Water (1)	____ Solid (5)	TEX-05-SD
____ Surface water (2)	____ Liquid (6)	Background
X Soil (3)	____ Sludge (7)	
____ Other (4)	____ Other (8)	

Organic Chemistry

Parameter	Results(mg/l)
____ P&T:GC/MS	
____ Acid:B/N Ext.	
____ 2,4-D	
____ 2,4,5-TP	
____ chlordane	
____ heptachlor	
____ hexachlorbenzene	
____ hexachlorbutadiene	
____ endrin	
____ lindane	
____ methoxychlor	
____ toxaphene	
____	
____	
____	

Inorganic Chemistry

Parameter	Results (~~mg/l~~)(mg/kg)
____ antimony	
X arsenic	< 1
X barium	33
X beryllium	< 1
X cadmium	< 1
____ chloride	
X chromium	17
X cobalt	6
X copper	9
____ fluoride	
X iron	9960
X lead	6.5
X manganese	320
X mercury	< 0.05
X nickel	4.5
____ nitrate	
X selenium	< 1.5
X silver	< 1
____ sulfates	
X thallium	< 0.5
X vanadium	33
X zinc	25
X calcium	299
X magnesium	965
X potassium	348
X sodium	50

TCLP Compounds

Inorganic Compounds	Results (mg/l)
____ Arsenic	
____ Barium	
____ Cadmium	
____ Chromium	
____ Lead	
____ Mercury	
____ Selenium	
____ Silver	
____	
____	

Organic Compounds	Results (mg/l)
____ benzene	
____ carbon tetrachloride	
____ chlordane	
____ chlorobenzene	
____ chloroform	
____ o-cresol	
____ m-cresol	
____ p-cresol	
____ cresol	
____ 1,4-dichlorobenzene	
____ 1,2-dichloroethane	
____ 1,1- dichloroethylene	
____ 2,4-dinitrotoluene	
____ heptachlor	
____ hexachlorobenzene	
____ methyl ethyl ketone	
____ nitrobenzene	
____ pentachlorophenol	
____ pyridine	
____ tetrachloroethylene	
____ trichloroethylene	
____ 2,4,5-trichlorophenol	
____ 2,4,6-trichlorophenol	
____ vinyl chloride	
____ endrin	
____ lindane	
____ methoxychlor	
____ toxaphene	
____ 2,4,-D	
____ 2,4,5-TP (Silvex)	

Date Received 05-01-02

Date Extracted

Date Analyzed

Reported by JM

Date Reported 05-28-02

Lab Number 006045

LS 3191(revised 12/93)

NC Department of Environment, Health, & Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O. Box 28047, 306 N. Wilmington St.
Raleigh, North Carolina 27611-8047

Site Number NCD 096 165 121 Sample ID Number/Name 50801

Name of Site Texaco, Inc. Collected By KYLE HAGEN ID #

Site Location Greensboro, Guilford Co, NC Date Collected 4/30/02 Time 10:24

Agency: ___ Hazardous Waste ___ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
___ Ground Water (1)	___ Solid (5)	TEX-05-SD
___ Surface Water (2)	___ Liquid (6)	Background
X Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

TCLP Compounds

Inorganic Compounds	Results(mg/l)
___ arsenic	
___ barium	
___ cadmium	
___ chromium	
___ lead	
___ mercury	
___ selenium	
___ silver	

Organic Chemistry

Parameter	Results (mg/l)
___ P&T:GC/MS	
___ Acid:B/N Ext.	
___ 2,4-D	
___ 2,4,5-TP(Silvex)	
___ chlordane	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	

Inorganic Chemistry

Parameter	Results(mg/l)(mg/kg)
___ antimony	
X arsenic	
X barium	
X beryllium	
X cadmium	
___ chloride	
X chromium	
X cobalt	
X copper	
___ fluoride	
X iron	
X lead	
X manganese	
X mercury	
X nickel	
___ nitrate	
X selenium	
X silver	
___ sulfates	
X thallium	
X vanadium	
X zinc	
___ pH	
___ conductivity	
___ TDS	
___ flash point	
X Calcium	
X magnesium	
X potassium	
X sodium	

Organic Compounds

Organic Compounds	Results(mg/l)
___ benzene	
___ carbon tetrachloride	
___ chlordane	
___ chlorobenzene	
___ chloroform	
___ o-cresol	
___ m-cresol	
___ p-cresol	
___ cresol	
___ 1,4-dichlorobenzene	
___ 1,2-dichloroethane	
___ 1,1-dichloroethylene	
___ 2,4-dichloroethylene	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ hexachloroethane	
___ methyl ethyl ketone	
___ nitrobenzene	
___ pentachlorophenol	
___ pyridine	
___ tetrachloroethylene	
___ trichloroethylene	
___ 2,4,5-trichlorophenol	
___ 2,4,6-trichlorophenol	
___ vinyl chloride	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	
___ 2,4-D	
___ 2,4,5-TP (Silvex)	

FOR LAB USE ONLY

Received 05 07 2002 006945

Date Extracted

Analyzed

Reported By

Reported

Number

S 3191 (Revised 12/93)

N.C. Department of Environment
& Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O Box 28047, 306 N. Wilmington Street
Raleigh, North Carolina 27611

Site Number NCD 096 165 121

Sample ID Number /Name 50802

Name of Site Texaco, Inc.

Collected By Kyle Hagen ID#

Site Location Greensboro, Guilford County, NC

Collected 04-30-02 Time 11:00

Agency: ____ Hazardous Waste ____ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
____ Ground Water (1)	____ Solid (5)	TEX-06-SD
____ Surface water (2)	____ Liquid (6)	Background
X Soil (3)	____ Sludge (7)	
____ Other (4)	____ Other (8)	

Organic Chemistry

Parameter	Results(mg/l)
____ P&T:GC/MS	
____ Acid:B/N Ext.	
____ 2,4-D	
____ 2,4,5-TP	
____ chlordane	
____ heptachlor	
____ hexachlorbenzene	
____ hexachlorbutadiene	
____ endrin	
____ lindane	
____ methoxychlor	
____ toxaphene	
____	
____	
____	

Inorganic Chemistry

Parameter	Results (~~mg/l~~)(mg/kg)
____ antimony	
X arsenic	< 1
X barium	24
X beryllium	< 1
X cadmium	< 1
____ chloride	
X chromium	7
X cobalt	4
X copper	14.5
____ fluoride	
X iron	5495
X lead	4
X manganese	206
X mercury	< 0.05
X nickel	5
____ nitrate	
X selenium	< 1.5
X silver	< 1
____ sulfates	
X thallium	< 0.5
X vanadium	15
X zinc	24.5
X calcium	105
X magnesium	885
X potassium	650
X sodium	50

TCLP Compounds

Inorganic Compounds	Results (mg/l)
____ Arsenic	
____ Barium	
____ Cadmium	
____ Chromium	
____ Lead	
____ Mercury	
____ Selenium	
____ Silver	
____	
____	

Organic Compounds	Results (mg/l)
____ benzene	
____ carbon tetrachloride	
____ chlordane	
____ chlorobenzene	
____ chloroform	
____ o-cresol	
____ m-cresol	
____ p-cresol	
____ cresol	
____ 1,4-dichlorobenzene	
____ 1,2-dichloroethane	
____ 1,1- dichloroethylene	
____ 2,4-dinitrotoluene	
____ heptachlor	
____ hexachlorobenzene	
____ methyl ethyl ketone	
____ nitrobenzene	
____ pentachlorophenol	
____ pyridine	
____ tetrachloroethylene	
____ trichloroethylene	
____ 2,4,5-trichlorophenol	
____ 2,4,6-trichlorophenol	
____ vinyl chloride	
____ endrin	
____ lindane	
____ methoxychlor	
____ toxaphene	
____ 2,4,-D	
____ 2,4,5-TP (Silvex)	

Date Received 05-01-02

Date Extracted

Date Analyzed

Reported by

Date Reported 05-28-02

Lab Number 006046

LS 3191(revised 12/93)

NC Department of Environment, Health, & Natural Resources
Solid Waste Management Division

SAMPLE ANALYSIS REQUEST

State Laboratory of Public Health
P.O. Box 28047, 306 N. Wilmington St.
Raleigh, North Carolina 27611-8047

Site Number NCD 096 165 121 Sample ID Number/Name 50802

Name of Site Texaco, Inc. Collected By KYLE HAGEN ID #

Site Location Greensboro, Guilford Co. NC Date Collected 4/30/02 Time 11:00

Agency: ___ Hazardous Waste ___ Solid Waste X Superfund

Sample Type

Environmental	Concentrate	Comments
___ Ground Water (1)	___ Solid (5)	TEX-06-SD
___ Surface Water (2)	___ Liquid (6)	Background
X Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

TCLP Compounds

Inorganic Compounds	Results(mg/l)
___ arsenic	
___ barium	
___ cadmium	
___ chromium	
___ lead	
___ mercury	
___ selenium	
___ silver	

Organic Chemistry

Parameter	Results (mg/l)
___ P&T:GC/MS	
___ Acid:B/N Ext.	
___ 2,4-D	
___ 2,4,5-TP(Silvex)	
___ chlordane	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	

Inorganic Chemistry

Parameter	Results(mg/l)(mg/kg)
___ antimony	
X arsenic	
X barium	
X beryllium	
X cadmium	
___ chloride	
X chromium	
X cobalt	
X copper	
___ fluoride	
X iron	
X lead	
X manganese	
X mercury	
X nickel	
___ nitrate	
X selenium	
X silver	
___ sulfates	
X thallium	
X vanadium	
X zinc	
___ pH	
___ conductivity	
___ TDS	
___ flash point	
X calcium	
X magnesium	
X potassium	
X sodium	

Organic Compounds	Results(mg/l)
___ benzene	
___ carbon tetrachloride	
___ chlordane	
___ chlorobenzene	
___ chloroform	
___ o-cresol	
___ m-cresol	
___ p-cresol	
___ cresol	
___ 1,4-dichlorobenzene	
___ 1,2-dichloroethane	
___ 1,1-dichloroethylene	
___ 2,4-dichloroethylene	
___ heptachlor	
___ hexachlorobenzene	
___ hexachlorobutadiene	
___ hexachloroethane	
___ methyl ethyl ketone	
___ nitrobenzene	
___ pentachlorophenol	
___ pyridine	
___ tetrachloroethylene	
___ trichloroethylene	
___ 2,4,5-trichlorophenol	
___ 2,4,6-trichlorophenol	
___ vinyl chloride	
___ endrin	
___ lindane	
___ methoxychlor	
___ toxaphene	
___ 2,4-D	
___ 2,4,5-TP (Silvex)	

FOR LAB USE ONLY

Date Received 05-01-2002 006046

Extracted

Analyzed

Entered By

Reported

Number

91 (Revised 12/93)

NCDEHNR
Division of Waste Management
☐ Superfund Section
☐ Hazardous Waste Section
☐ Solid Waste Section

Organics Lab: _____
Inorganics Lab: X

CHAIN OF CUSTODY RECORD

Project Name: Texaco, Inc.
Site ID # (NCD#) NCD 096165121
Location: Greensboro
Address: Guilford Co.

Sampled By: KYLE HAGEN
Sampler ID _____
Telephone: (919) 733-2801 X299
Date Sampled: 4/30/02
Time Sampled: _____

Sample Types: Soil X Water _____ Waste _____ Other _____

Remarks: _____

Field Sample Numbers: 50797 50798 50799 50800 50801 50802

Relinquished By: [signature] (Signature) Date: 5/1/02 Time: 9:45
Received By: Nellie J. Moncel (Signature) Date: 5/1/02 Time: 9:45

Relinquished By: _____ (Signature) Date: _____ Time: _____
Received By: _____ (Signature) Date: _____ Time: _____

Relinquished By: _____ (Signature) Date: _____ Time: _____
Received By: _____ (Signature) Date: _____ Time: _____

Results Reported: Nellie J. Moncel (Signature) Date: 5-28-02 Time: 2:20PM

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