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SAM SIGNATURE Janice P Thomas

Geophysical Survey Report
YOUNG REFINING CORPORATION
Douglasville, Douglas County, Georgia

EPA ID № GAD051011344

WasteLAN № 01474

Prepared Under

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for the

Waste Management Division
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Geophysical Survey Report
YOUNG REFINING CORPORATION
Douglasville, Douglas County, Georgia
EPA ID № GAD051011344
WasteLAN № 01474

1.0 Introduction

B&V Waste Science and Technology Corp has been tasked by the U. S. Environmental Protection Agency (EPA), Waste Management Division, to conduct a Surface Geophysical Survey at Young Refining Corporation in Douglasville, Douglas County, Georgia. The survey was performed under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as ammended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

1.1 Objective

The objective of this geophysical survey is to measure ground conductivity surrounding an existing drainage trench that may have been used as a burial trench in the past. Anomalies in ground conductivity in the trench area would aid in determining the potential absence or presence of buried metal material at the Young Refining Corporation site.

According to information obtained by US EPA from a former employee of Young Refining Corp., numerous drums containing refinery wastes were allegedly buried on the refinery site. The location of concern was determined to be a trench located thirty feet south of a block building in the central portion of the site. A surface geophysical survey was used to aid in the process of locating areas that were allegedly utilized for burial of waste drums.

Basic tasks are:

- Utilizing surface geophysics, delineate the location and estimate the dimensions of the trench that was allegedly used for drum burial, and determine the potential absence or presence of buried drums.

- Provide EPA with additional information necessary to accurately evaluate the site during future sampling investigations.

Field work for the Young Refining Corporation site was conducted on February 16, 1993.

1.2 Scope of Work

The scope of this geophysical investigation includes the following activities:

- Obtain and review background materials relevant to waste disposal at the site.
- Obtain aerial photographs of site, if possible.
- Obtain information on local utilities.
- Conduct an Electromagnetic Induction (EM) survey near and within the suspected trench area.
- Generate the following maps:

  - Site Location Map
  - Site Layout Map
  - Geophysical Grid Layout Map
  - EM Contour Map
  - EM Relief Map

- Prepare the final geophysical survey report for use as an appendix in any future site investigative report.

1.3 Site Description and History

The Young Refining Corporation facility occupies approximately 40 acres at 7982 Huey Road in Douglasville, Douglas County, Georgia (Ref. 1, pp. 1, 2). The partially-fenced facility includes the following structures:

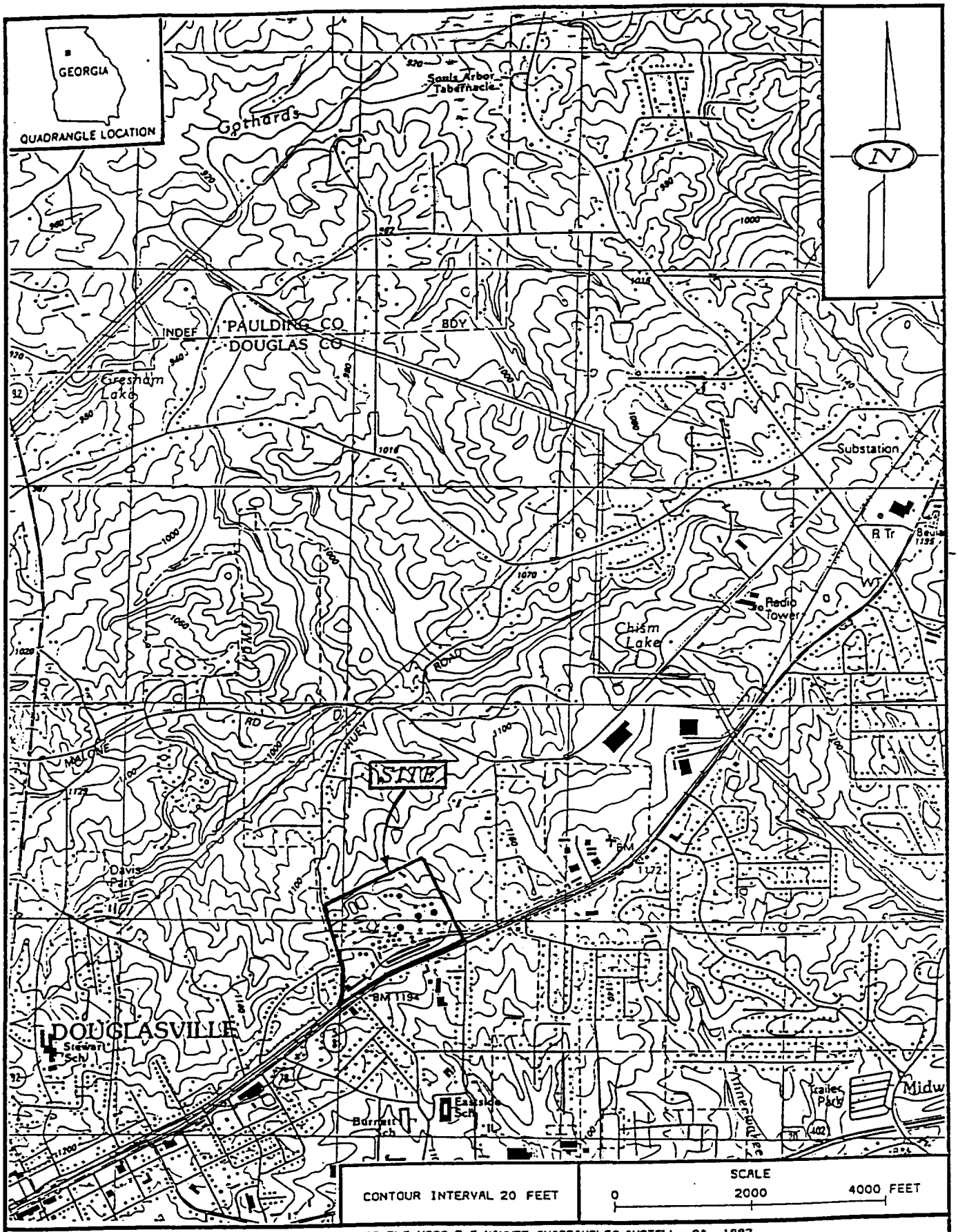
- approximately 50 above-ground storage tanks.
- a railroad spur and loading docks.
- distillation structures.
- an office/shop/laboratory building.
- a warehouse.
- an API (American Petroleum Institute) separator.
- a cooling pond and four treatment ponds.
- a control room and power house.
- five industrial wells (300 feet deep) (Refs. 2, p. 1; 3, p. 4; 4).

Site location and site layout maps are provided as Figures 1 and 2.

Operations at the Young Refining Corporation facility began in 1955, and the facility remains active (Ref. 5). The facility heats, distills, fractionates, and oxidizes asphaltic crude oil. Through these processes, asphalt cement, number two fuel oil, heavy oil, and natural gasoline are produced and then distributed (Refs. 2, p. 1; 6, p. 1).

An oil spill reportedly occurred at the site in June 1973, but little information is known concerning the spill (Ref. 7, Appendix F, p. 1). In 1985, the Georgia Environmental Protection Division (GA EPD) found the facility to be in violation of RCRA small quantity generator regulations. The facility's violations included onsite disposal of listed RCRA wastes (Ref. 6, p. 3). Approximately 100 pounds of waste sludge was taken from the API separator annually and placed on the ground near the separator. A heat exchanger bundle produced approximately 150 pounds of sludge per year. This waste was probably placed on the ground at the facility as well (Ref. 6, p. 2).

Process wastewater and storm water runoff are treated in a series of four unlined, NPDES permitted ponds that are located in the northwestern portion of the property. Water from Pond Number 1 passes through the API separator and empties into Pond

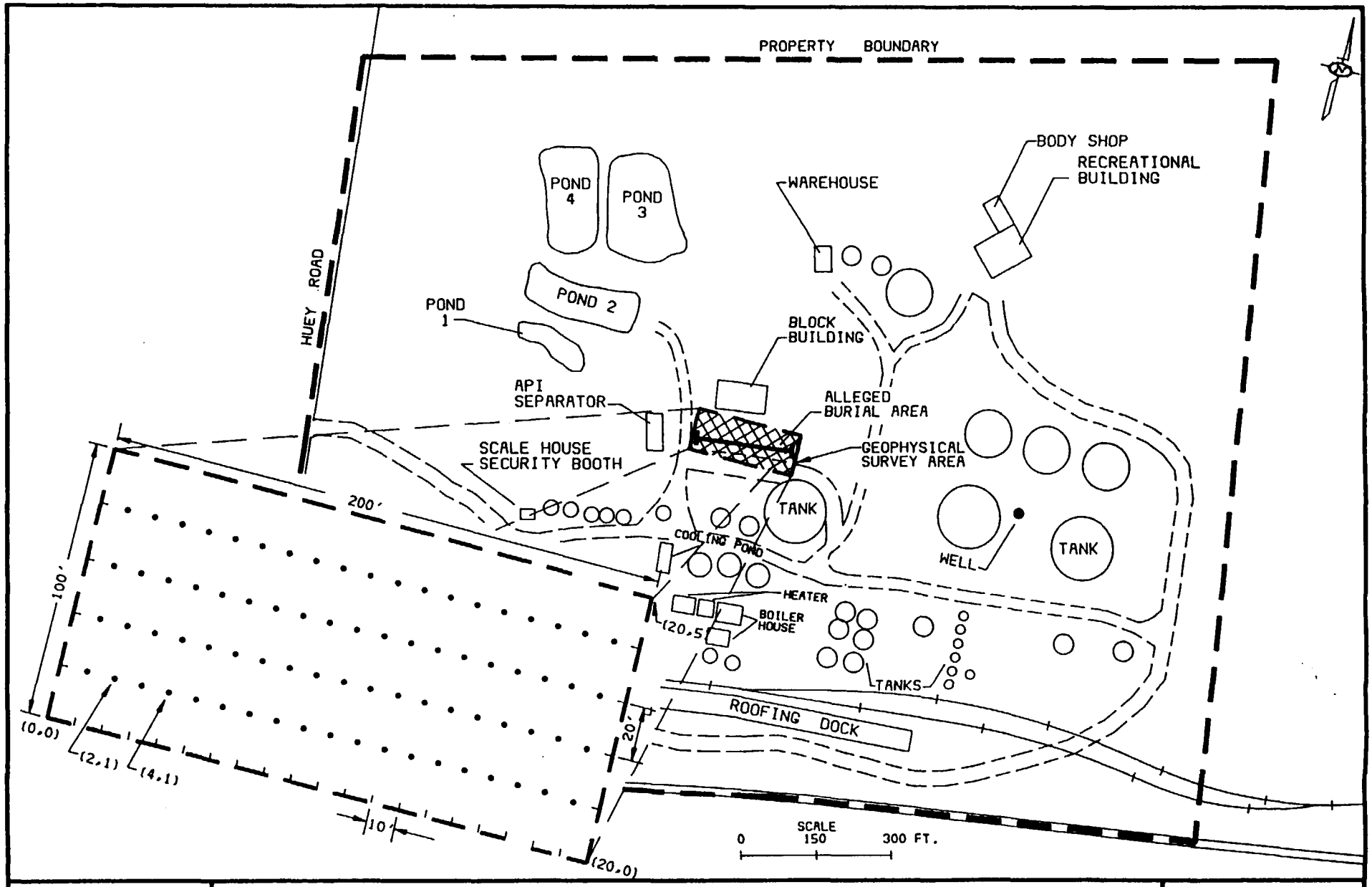


BASE MAP IS A PORTION OF THE USGS 7.5 MINUTE QUADRANGLES AUSTELL, GA. 1992

SITE SCIENCE AND TECHNOLOGY CORP.

SITE LOCATION MAP
YOUNG REFINING CORPORATION
DOUGLASVILLE, DOUGLAS COUNTY, GEORGIA

FIGURE 1



GEOPHYSICAL GRID MAP
YOUNG REFINING CORPORATION
DOUGLASVILLE, DOUGLAS COUNTY, GEORGIA

FIGURE 2

Number 2. Prior to 1977, approximately 100 pounds per year of waste was removed between the first two ponds by a flocculation process. This waste is believed to have been deposited on the ground at the facility. The flocculation process was discontinued in 1977 because it was not needed to meet NPDES permit requirements (Ref. 6, p. 2). The area of Pond Number 1 is estimated to be slightly less than 0.2 acre. Pond Number 2 has a surface area of approximately four acres; and Ponds 3 and 4 both have an area of approximately 0.72 acre (Ref. 4). Water from Pond Number 4 flows into a small creek (Ref. 1, p. 2). The facility is currently listed as a RCRA small quantity generator (Ref. 8).

A sediment sample was collected from Pond Number 1 in 1987 by the Georgia Environmental Protection Division (GA EPD). Analytical results indicated that concentrations of barium, chromium, lead, benzene, ethylbenzene, and xylenes were elevated in the sample. A composite soil sample was collected near the API separator. It revealed that lead, naphthalene, and xylenes were elevated in that area (Ref. 7, Appendix B, pp. B2, B3, B6, B7). Two onsite industrial wells and one offsite private well were sampled in 1987. No contamination was detected in the groundwater samples (Ref. 7, Appendix B, pp. B13 - B19).

Dynamac Corporation performed a Site Inspection Prioritization (SIP) on the Young Refining Corporation site in February 1992. The Dynamac SIP recommended that no further remedial action be planned at the site (Ref. 2, p. 5). But in December 1992, the US Environmental Protection Agency obtained new information concerning past activities at the site. A former employee indicated that in the 1970s he buried drums in a trench, which is now a drainage ditch, behind a block building in the central part of the site. Therefore, the US EPA determined that the investigation should be reopened (Ref. 9).

1.4 Regional Geology and Hydrogeology

The Young Refining Corporation lies within the Central Uplands district of the Southern Piedmont Physiographic Province in the northwest section of Douglas County, Georgia (Ref. 10). The Central Uplands district is characterized by a series of low linear ridges which range from 1300 to 1500 feet above mean sea level (amsl). The ridges are separated by broad, open valleys that are occupied by streams that lie 150 to 200 feet below the ridge crests (Ref. 10).

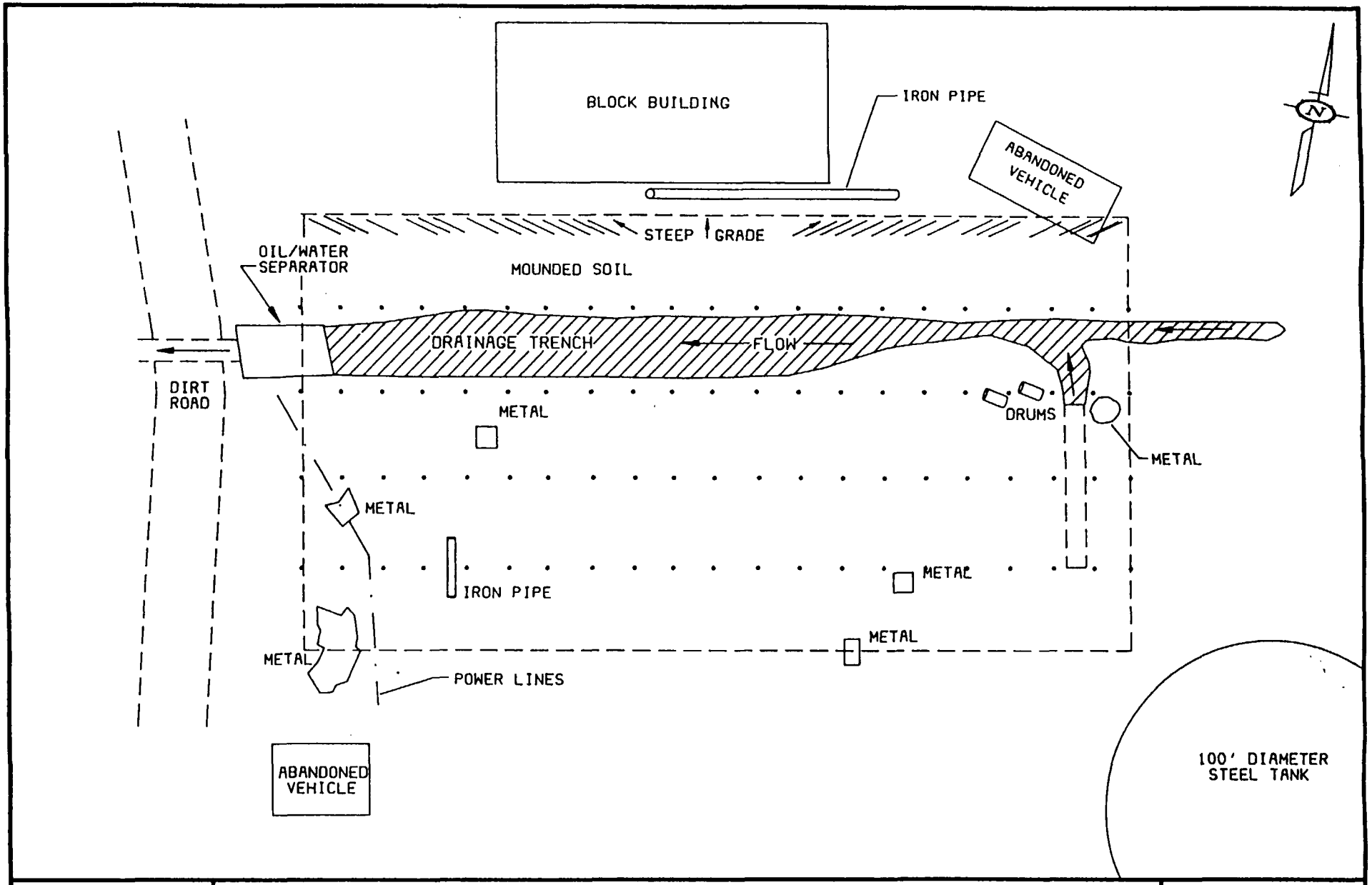
The soil in the vicinity of the site is of the Appling series, a residual soil which consists of a yellowish-brown or grayish-brown sandy loam over red and yellowish-brown, mottled sandy clay (Ref. 11, sheet 3, pp. 15, 79). This soil is the result of severe weathering of gneiss and granitic schist (Ref. 11, pp. 15, 74, 79, sheet 3). The area surrounding the Young Refining Corporation site is underlain by crystalline metamorphic granite gneiss. Other crystalline metamorphic rocks occurring at or near the surface in the region include the following: a mica schist crops out to the northeast of the site; a biotite gneiss-mica schist amphibolite crops out to the northwest of the site; mica schist and gneiss crop out to the southwest of the site, and a quartzite crops out to the southeast of the site (Ref. 12).

Groundwater in the Piedmont Province generally occurs within fractures in crystalline bedrock and within the pore spaces of overlying residual material. Groundwater availability is dependent upon topographic setting, drainage patterns, rock type, and thickness of the soil or depth of weathering. Water enters the fractures by seeping through the overlying regolith of the parent rock (Ref. 13, p. 8).

2.0 Geophysical Investigation

2.1 The Geophysical Grid

A cartesian coordinate grid was laid out parallel to the existing drainage ditch using a right angle prism in conjunction with range poles. Six grid lines oriented in a parallel direction to the trench (and the x-axis) were laid out over the study area using twenty foot intervals. Twenty-one grid lines perpendicular to the trench, but parallel to the y-axis, were also laid out in ten foot intervals. The total area of the geophysical grid is 20,000 square feet, 100 feet in the north-south direction and 200 feet in the east-west direction. The four corner points of the grid, (x,y) = (0,0), (20,0), (0,5), and (20,5), were marked by labeled wooden stakes; the other stations were labelled with flagging. The northeastern and northwestern corners of the grid were referenced to the block building, allowing the grid to be accurately reconstructed in the future if necessary (Ref. 14). Maps of the grid area are presented as Figures 2 and 3.



YOUNG REFINING CORPORATION
GEOPHYSICAL GRID LAYOUT
DOUGLASVILLE, DOUGLAS COUNTY, GEORGIA

FIGURE 3

To avoid complications arising from having gridlines crossing the long drainage trench, the grid was rotated 12 degrees counter-clockwise from due north, to ensure trench parallels. This orientation allowed two of the east-west gridlines to be located north of the trench; and four of the east-west gridlines to be located south of the trench.

2.2 The Electrical Conductance Survey

An electromagnetic non-contacting ground conductivity meter (EM-31) was utilized in its "comp" mode capacity, also known as the in-phase component. The in-phase component is used for buried metal detection. Electrical conductivity is a function of soil type, rock type, porosity, and permeability. Metal objects and landfilled materials such as drums will cause variations in subsurface conductivity and create "anomalies", or differences in subsurface electrical conductivity. A more comprehensive description of electromagnetic geophysics is given on page two of Appendix A.

2.3 Instrument Calibration and Background Locations

Before initiating the geophysical study, new batteries were installed in the EM-31 electrical conductivity meter. The EM-31 was then calibrated and underwent preoperational checks according to the manufacturer's calibration and operational procedures (Ref. 14).

Two areas were established on the Young Refining Corporation site which appeared to yield representative background conductivity readings. Background readings were taken at both locations before the survey was conducted. Background area number one is in the northern part of the site, between the treatment ponds and the northernmost storage tanks. A background reading of approximately zero mmhos/m was recorded at this station. Background area number two is approximately 110 feet south of the trench area. Visual inspection indicated that this location was more representative of the conditions in the study area. A background reading of four mmhos/m was recorded at the second location. Background measurements were recorded again at the second location after the survey was complete to insure that the instrument had retained its calibration. This second reading was five mmhos/m, essentially unchanged. So it was concluded that the instrument had retained its calibration throughout the investigation (Ref. 14).

Weather during the one-day investigation was overcast and cool in the morning hours, but became clear and much warmer and dryer in the afternoon, when the readings were recorded. Field conditions, calibrations, and background readings were recorded in the BVWST logbook for the Young Refining Corporation site. All other station location measurements were recorded on separate data sheets that are considered an extension of the BVWST logbook for the Young Refining Corporation site (Ref. 14).

2.4 Electrical Conductance Survey Results

Many metal objects were present on or near the surface in the geophysical study area. More than ten significant anomalies were detected in the conductivity data from the EM-31 conductivity meter. All of these major anomalies can be attributed to surficial metal or other objects. Objects causing interference included:

- An overhead power line and surficial scrap metal near the southwestern corner of the study area (near (0,0)).

- A very large (100-foot diameter) above-ground storage tank located 20 feet southeast of the study area, near node (20,0).

- An oil/water separator was present in the trench at its western end, near node (0,5).

- A metal, 14-inch drainage culvert is located along the eastern portion of the study area, near nodes (18,0), (18,1), and (18,3).

- Discarded axles and other metal was on the ground near nodes (9,3) and (10,3).

- The block building (with a tin roof) ran parallel to the study area approximately ten feet north of line y=5.

- An abandoned crane truck was parked in the northeastern part of the site, near node (18,5).

- A metal 55-gallon drum was located near nodes (17,2) and (18,2) (Ref. 14).

All of these objects were indicated by anomalies in readings taken with the EM-31. No significant anomalies were detected that were not attributable to surface metal objects. A detailed description of the geophysical study area and the surficial metal described above is presented as Figure 3. Relief and contour maps of the geophysical results are presented as Figures 4 and 5. Data from the EM-31 survey is presented in Table 1.

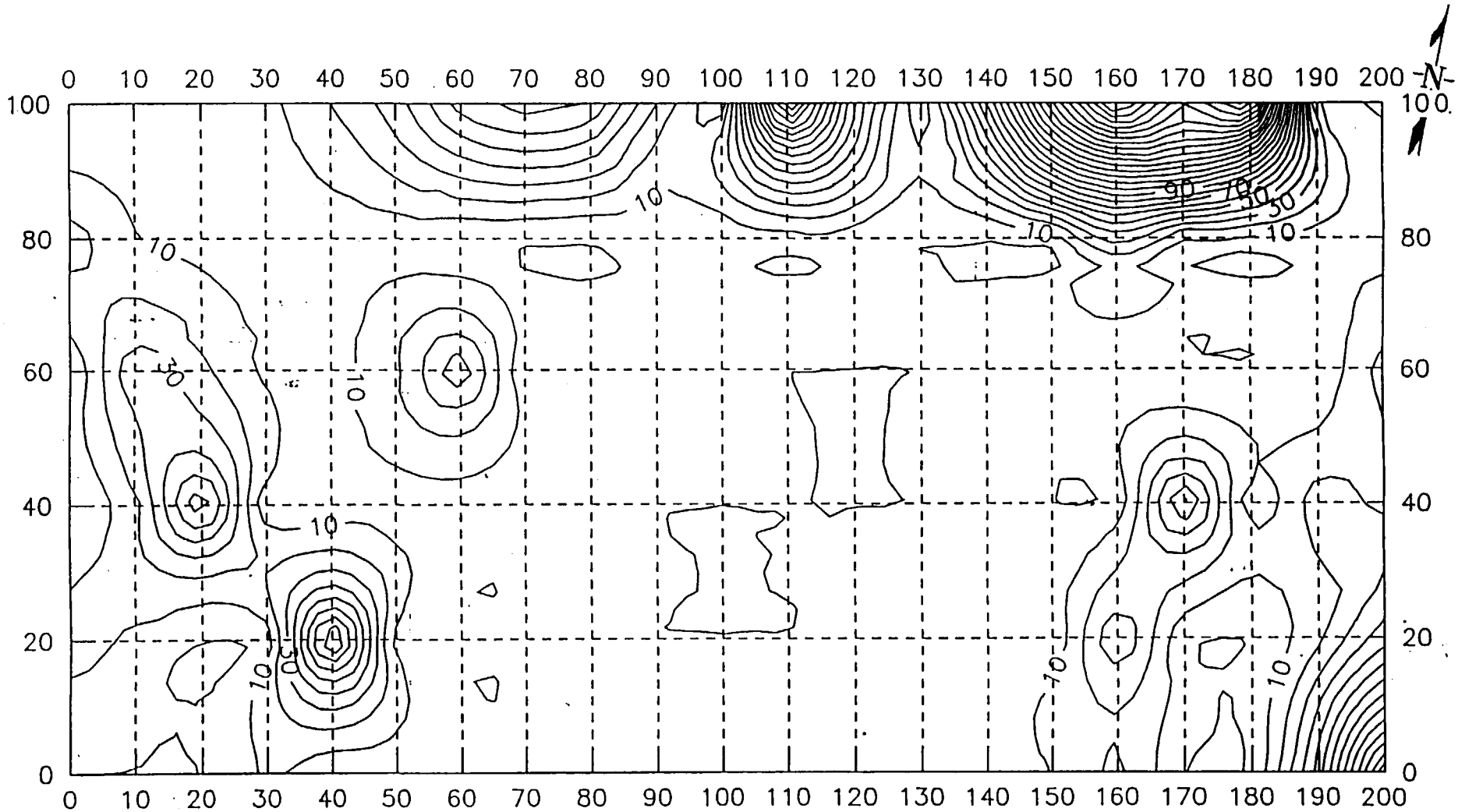
The highest recorded conductivity reading was 260 mmhos/m, taken at node (16,5). This reading was caused by a large abandoned vehicle near that location. Most of the other significantly elevated conductivity readings ranged between 10 and 100 mmhos/m. The lowest readings on the grid were indicated by a less than zero reading on the meter.

3.0 Conclusions

Although there was a large amount of interference on the site caused by surficial metal and other objects, it is possible to form broad conclusions concerning the burial of metal objects in the area of the drainage ditch. The EM-31, in "comp" mode, detects the vertical component of an object's magnetic field. If a cylindrically shaped metal object is detected, its signature will consist of a peak near each end of the object, and a low reading directly over the object. A larger metal object, or cluster of smaller metal objects (such as a cluster of buried drums in a trench), would present a similar signature, although it may not be as clearly defined.

If the alleged trench that is located beneath the ditch 30 feet south of the block building contained numerous buried drums, a series of high conductivity readings (a row of peaks) would be expected along the y=3 and y=4 gridlines. Figures 4 and 5, contour and relief maps indicating readings obtained by the EM-31, demonstrate that no such readings were detected at the gridpoints along these lines.

The absence of high readings along these gridlines may indicate that there is not a large amount of metal present beneath the drainage ditch. Therefore, the allegation that there are hundreds of drums present in the trench appears to be false. However, the EM-31's ability to detect buried metal at great depth is limited



CONTOUR INTERVAL = 10 mmhos/m

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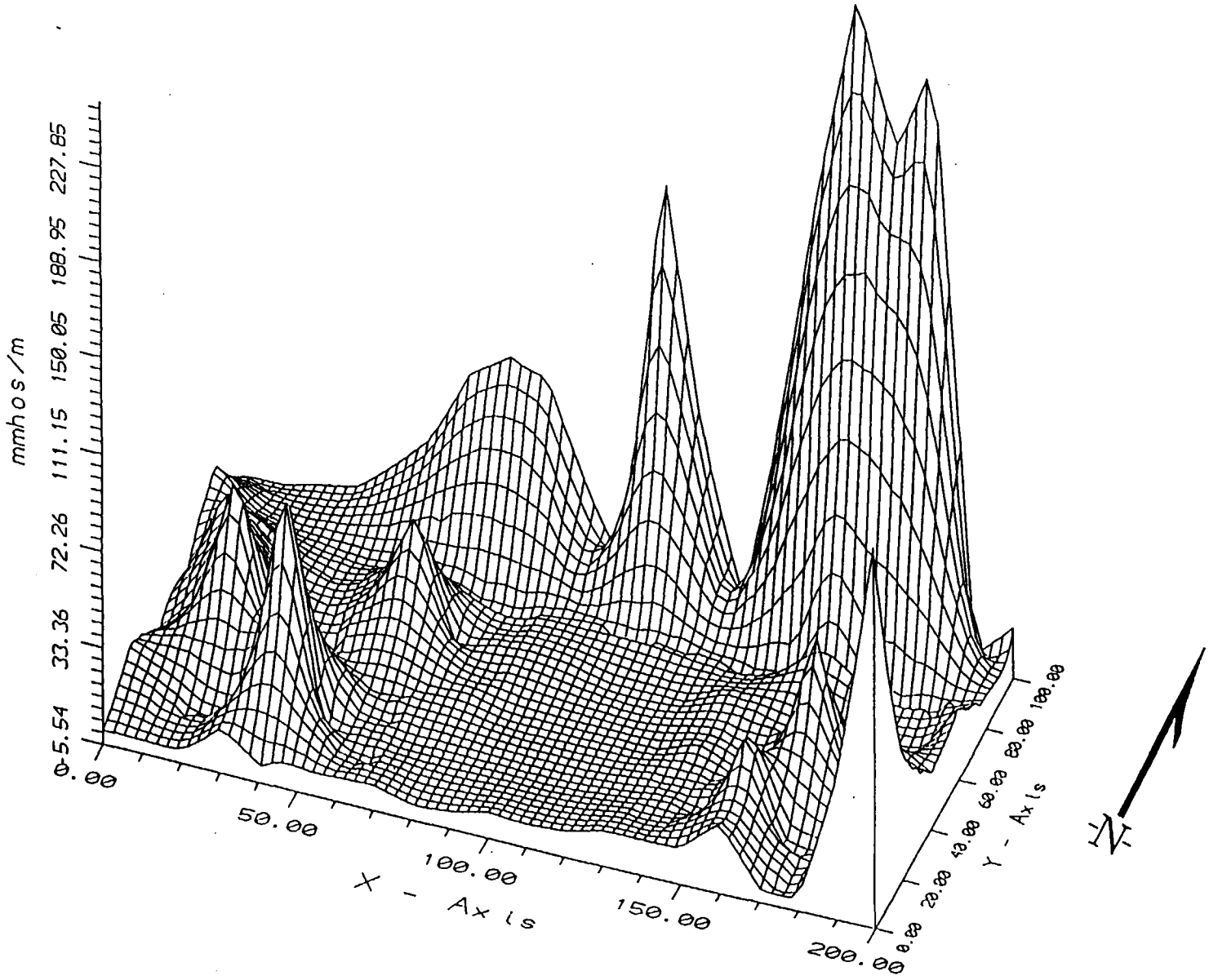
ELECTRICAL CONDUCTANCE CONTOUR MAP
YOUNG REFINING CORPORATION
DOUGLASVILLE, DOUGLAS COUNTY, GEORGIA

FIGURE
4



ELECTRICAL CONDUCTANCE SURFACE MAP
YOUNG REFINING CORPORATION
DOUGLASVILLE, DOUGLAS COUNTY, GEORGIA

FIGURE 5

TABLE 1
Geophysical Measurements
Young Refining Corporation
Douglasville, Douglas County, Georgia

Grid Coordinates		Measurement
X	Y	mmhos/m
0	0	0
1	0	0
2	0	0
3	0	12
4	0	0.7
5	0	4.5
6	0	4
7	0	4.7
8	0	0.7
9	0	1.5
10	0	5
11	0	4
12	0	5
13	0	8.8
14	0	9
15	0	9.5
16	0	23
17	0	0
18	0	0
19	0	54
20	0	150
0	1	15
1	1	8
2	1	0
3	1	0
4	1	10
5	1	0.2
6	1	2
7	1	0
8	1	0
9	1	0
10	1	0
11	1	0
12	1	1
13	1	2.5
14	1	5
15	1	1
16	1	42
17	1	0
18	1	0
19	1	17
20	1	45

Grid Coordinates		Measurement
X	Y	mmhos/m
0	2	0
1	2	15
2	2	11
3	2	0
4	2	6
5	2	4
6	2	6
7	2	3
8	2	4
9	2	0
10	2	0
11	2	0
12	2	0
13	2	0
14	2	6
15	2	0
16	2	0
17	2	65
18	2	0
19	2	27
20	2	17
0	3	0
1	3	40
2	3	22
3	3	8
4	3	7
5	3	17
6	3	50
7	3	0
8	3	4
9	3	5
10	3	4
11	3	0
12	3	0
13	3	0
14	3	7
15	3	6
16	3	3
17	3	0
18	3	0
19	3	0
20	3	24

TABLE 1 (Continued)
Geophysical Measurements
Young Refining Corporation
Douglasville, Douglas County, Georgia

Grid Coordinates		Measurement
X	Y	mmhos/m
0	4	25
1	4	10
2	4	6
3	4	5
4	4	4
5	4	5
6	4	4
7	4	0
8	4	0
9	4	4
10	4	3
11	4	5
12	4	5
13	4	0
14	4	0
15	4	0
16	4	35
17	4	7
18	4	6
19	4	6
20	4	8

Grid Coordinates		Measurement
X	Y	mmhos/m
0	5	0
1	5	0
2	5	4
3	5	7
4	5	20
5	5	35
6	5	65
7	5	75
8	5	70
9	5	30
10	5	0
11	5	170
12	5	60
13	5	0
14	5	80
15	5	180
16	5	260
17	5	200
18	5	240
19	5	0
20	5	15

(Appendix A, pp. 2, 5). Based upon the absence of unaccounted-for anomalous readings near the trench, it is recommended that no further investigations be planned to determine the absence or presence of drums in the trench at the Young Refining Corporation site.

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APPENDIX A

A Summary of Geophysical Methods

7.10 GEOPHYSICAL STUDIES

7.10.1 General

When screening a hazardous waste site for sampling, the use of geophysical equipment is a good method of determining sampling locations in areas where drilling would be too time consuming and costly, or would create a dangerous situation. Geophysical equipment can be used to screen a site in a short period of time with fairly accurate results. Normally, a two-man team is adequate for a routine geophysical study. All geophysical equipment used during a study shall be calibrated according to the manufacturer's calibration procedures included with each instrument. Information shall be recorded in a field book as to the date and times calibrated, team members, and a complete chronological description of what transpired during the study.

7.10.2 Introduction

When selecting the geophysical method(s) best suited for a field study, certain site factors should be considered. They include the type of soils, the depth to ground water, general ground surface conditions (wet, dry, frozen), large surface or subsurface ore bodies, depth to bedrock, type of topography, large surface metallic objects (building, tanks, pipes, etc.), power lines and underground cables, buried drums, and/or contaminant plumes. Once the site conditions are known and evaluated, then the instrument(s) has to be selected that will be most applicable to the specific site. The methods available for hazardous waste site investigations by the Hazardous Waste Section are metal detection, magnetometry, and electromagnetic induction (EM). Other geophysical methods such as ground penetrating radar, seismic methods, and resistivity, are available from EPA contractors. Depending on site conditions and study objectives, one or more of these methods might be used in a hazardous waste site investigation.

As a general rule, the locations of geophysical abnormalities detected during a geophysical study should be documented using standard surveying techniques.

7.10.3 Specific Geophysical Study Methods

The following is brief description of the methods available and their applications.

7.10.3.1 Metal Detection -- Metal detectors are used to detect changes in electrical conductivity caused by the presence of metallic materials, both ferrous and non-ferrous. Metal detectors: (1) are limited to shallow depths (0 to 8 feet), (2) can detect large metallic objectives such as buried drums and metallic laden wastes, (3) are light weight and economical, and (4) are insensitive to soil moisture and small metallic objects.

7.10.3.2 Magnetometry -- Magnetometers are designed to detect and accurately measure changes in the earth's magnetic field. The major feature of the magnetometer is ease of operation and reliability.

The magnetometer's primary design function is detection of magnetic objects such as buried drums or large bodies of ore which alter the earth's magnetic field. Magnetometers should not be calibrated or used in or around buildings, near powerlines, or directly on the ground.

7.10.3.3 Electromagnetic Induction (EM) -- A transmitter induced coil directs induced current loops into the ground, which produce secondary fields. These secondary fields are then sensed or detected by the receiver coil, and then amplified and stored on a strip chart recorder or magtape, if desired.

EM instruments measure true soil conductivity in uniform, homogeneous subsurface conditions. EM units also measure apparent soil conductivity in layered soils.

Measurements can be obtained from depths to 60 meters with these instruments. EM units are very effective for rapid site reconnaissance and detection of buried drums, pipes, and metallic type conductors. EM's are not limited by frozen ground, or wet or dry soils.

7.10.3.4 Ground Penetrating Radar (GPR)

Ground penetrating radar (GPR) units radiate short duration electromagnetic pulses directly into the ground from an antenna near the surface. The pulses are reflected back to the receiver from subsurface structures and are plotted on a strip chart recorder.

The depth of GPR penetration is site specific ranging from as little as 3 feet in clay to as much as 100 feet in dry quartz sand. Depths are further reduced if ground water electrical conductivity is high. GPR may be useful in defining boundaries of buried trenches and other subsurface disturbances, but is difficult to use in silty or clay soils.

7.10.3.5 Seismic Refraction Devices (SRD)

Field operation is accomplished by transmitting sound waves into the ground by means of a sound source (hammer, drop weight, explosives, etc.). Reflected sound waves are then detected by receivers or geophones which automatically translate them into electrical signals, which are recorded and displayed in graph form on a seismograph. Stratigraphic profiles can then be determined based on travel time of the sound waves through the different earth strata.

7.10.3.6 Resistivity

Resistivity is used to measure the electrical resistance of the soil, rock, and ground water. The resistivity method requires that a electrical current be injected into the ground through a pair of surface electrodes. The resulting potential field (voltage) is measured at the surface by a second pair of electrodes. The electrical current flows from the electrodes into the ground through the moisture-filled pore spaces in the soils and rocks. Resistivity is controlled by the amount of pore water present in the soil and rock strata. The resistivity method can be used to locate and map contaminant plumes, locate and

define trenches, and determine natural geohydrologic conditions such as depth to ground water, and depth to bedrock. The resistivity method is limited in areas where soils contain little or no moisture, since dry soils will not permit current to flow. Very hard or compacted soils or frozen ground impede the use of resistivity because the electrodes cannot be driven into the ground. Resistivity surveys are costly and time consuming which make the resistivity method unfavorable for a short reconnaissance trip or a quick screening investigation.

7.10.3.7 Very Low Frequency (VLF) Ground Conductivity

The VLF instrument uses the magnetic components of the electromagnetic field generated by already-existing radio transmitters that use the VLF band (Very Low Frequency, 15-30 kHz). Such transmitters are now operating in a number of countries, and are used primarily for long-distance submarine communication.

Electrically conductive structures on the surface or underground, even when covered with thick overburden, locally affect the direction and strength of the field generated by the transmitted radio signal. A weak secondary field is generated around the geological structure, which is most commonly a water-filled fracture or ore body. This field is measured by the instrument. Different VLF instruments available vary in the degree of useful output produced by each instrument. Some merely quantify the secondary field measurement, while others provide real-time current density profiles and structure interpretation of identified anomalies.

7.10.3 Equipment Available

The following Branch equipment is available for geophysical studies:

- EM-31D Non-Contacting Terrain Conductivity Meter,
- Unimag II Portable Proton Magnetometer Model G-846,
- Pipe Seeker 5 metal detector, and
- ABEM Wadi VLF Instrument

7.10.4 Specific Equipment Quality Control Procedures

All geophysical instruments used by Hazardous Waste Section personnel or EPA contractors shall be calibrated in accordance with the manufacturers' specified calibration procedures, and shall only be calibrated by personnel that have been trained to do so. The calibration shall be checked periodically to insure accurate readings, especially on re-entering the study area after having left for a period of time. All calibration procedures and pertinent information shall be documented in the field logbook as outlined in Section 3.5.

Personnel using the geophysical equipment shall be trained in the use and maintenance of such equipment, and shall be able to interpret and present the gathered data in an easily understood manner in charts, graphs, maps, and formal reports. It is the responsibility of each Hazardous Waste Section project leader to insure that the personnel designated to use the geophysical equipment are

qualified in the calibration and use of the equipment, and able to gather and interpret the data.

Training on the calibration and use of geophysical equipment that is currently available will be conducted by qualified Hazardous Waste Section personnel and will be given to all Hazardous Waste Section personnel during in-house training sessions scheduled throughout the year.

7.10.4.1 EM-31 Non-Contacting Terrain Conductivity Meter

7.10.4.1.1 Assembly and Calibration Procedure

- Align and connect transmitter tube to control box.
- Check batteries by setting mode switch to operate position and range switch to +B position and then to -B position. The needle should read in the battery mark. If not, replace batteries.
- Align and connect receiver tube to control box.
- Set range switch to 30 millimhos/meter position.
- Set mode switch to comp. position.
- Adjust meter to zero using coarse and fine comp. controls.
- Check phasing, set mode switch to phase position.
- Note meter reading.
- Rotate coarse control to original position. No further adjustments are needed.
- If there is a difference in meter readings, an adjustment is needed.
- Put coarse control in original position.
- Rotate phase potentiometer 1/4 turn clockwise and note meter reading.
- Rotate coarse control one step clockwise and note meter reading.
- If meter reading does not change, no further adjustment is needed. Return coarse control to original position.
- If meter reading changes - repeat above adjustments until meter reading remains the same when coarse control

is rotated one step clockwise.

- Meter should read between 75 - 85 percent of full scale (in Black Mark).
- Return coarse control to original position.
- EM-31 is ready for operation!

Note: When calibrating the EM-31 over ground with higher conductivity than 30 millimhos/meter, the range switch should be set at the appropriate range level.

7.10.4.1.2 EM-31 Operating Procedure - Measuring Soil Conductivity

- Adjust the shoulder strap so that the instrument rests comfortably on the hip.
- Switch the mode switch to OPER position and rotate range switch so that meter reads in upper 2/3 of the scale.
- EM-31 can be operated continuously while moving from one measuring station to the other or the EM-31 can be turned off while walking from station to station and then turned on when taking a reading. The latter saves battery life.
- Dismantle EM-31 and clean before storage.

7.10.4.1.3 EM-31 Operating Procedure - Buried Metal Detection

- Set the mode switch to the COMP position.
- Set the range switch to 30 millimhos/meter.
- Adjust the COARSE and FINE compensation controls so that a meter deflection of about 20 percent of full scale is obtained.
- Operate the EM-31 while continuously moving to determine the exact location of the buried objects.
- Dismantle EM-31 and clean before storage.

7.10.4.2 Unimag II Portable Proton Magnetometer Model G-846

7.10.4.2.1 Calibration and Operating Procedure

The Unimag II is completely self-contained and ready for field operation. A few simple procedures should be observed to obtain optimum results.

- Check the sensor for sensor fluid: Shake the instrument gently and listen for a "sloshing" sound. If the fluid is not present or cannot be heard, it will be necessary to fill the sensor with strained kerosene or unleaded gasoline. This procedure is outlined in the operator's manual furnished with the instrument.

- Check the battery: Simply depress the black push bottom and observe the readout. If the readout flashes on/off during the display period, the battery is not fully charged. Refer to the operators manual for battery recharging instructions.

- Lift the Unimag II out of the carrying case and adjust the shoulder strap for a comfortable fit.

- Adjust the "tuning-kilograms" knob to a position that correlates with the earth's magnetic field. The earth's field can be estimated by referring to the world intensity map located in front of the operators manual.

- Depress the black button on top of the instrument and release. The center digit on the readout will, briefly flash. This indicates that the cycle has started. It will take two seconds for the display to illuminate and give the earth's magnetic field in gammas.

- When operating, hold the Unimag II waist high. When depressing black button for reading, hold instrument as still as possible.

- The instrument should exhibit one count stability. If one count stability is not possible, a ferromagnetic object is present or a steep magnetic gradient is being encountered. Verify the one count stability by repeating the measurement with the instrument held in the same position.

  Note: If the earth's magnetic field is 40,000 gammas or less (low magnetic latitudes-equator area), the sensor should be rotated 90°. See operator's manual for the correct procedure. The sensor rotation is not necessary in Region IV. If problems arise with the instrument, refer to the operator's manual.

- Do not operate the Unimag II in buildings, near high energy sources (powerlines, etc.), or directly on the ground. Hold instrument waist high. Do not wear magnetic objects such as jewelry, keys, watches, zippers, pocket knives, belt buckles, etc.

- Become familiar with the instrument and it's operation before attempting a field survey.

7.10.4.3 Metal Detector - The Tracer Metallic Pipe & Liner Locator

This instrument is a very sensitive piece of equipment and has to be fine tuned (nulled) in order to detect buried objects. The operators's manual should be read and understood before any field operation is attempted.

7.10.4.3.1 Operating Procedure

- Test the battery voltage on the transmitter and receiver (refer to the instructions in the operators manual). Make sure that batteries are fully charged.
- Assembly of the transmitter to the receiver should be accomplished according to the instructions in the operator's manual.
- Null the instrument prior to use. "Nulling" should take place in an area similar to the area of concern but where there are no buried metal objects. Refer to the instructions.
- Practical with the instrument over objects of known size and depth.
- For highest sensitivity, adjust the sensitivity control for an approximately half scale meter reading with the instruments nulled.
- Store instrument in a secure, dry place when not in use.

7.10.4.4 ABEM Wadi VLF Instrument

See owners manual for detailed instructions. The following is a summary of the basic steps for routine operation of the Wadi for site reconnaissance for location of water-filled fractured geologic terrain.

7.10.4.4.1 Operating Procedure

- Turn instrument on.
- Select suitable transmitter. Face the direction of anticipated profile and press STATION key. Wadi will display current radio frequency and signal strength indicator. Turn 360 degrees and observe the indicator. The length of the bar should be longest (or more nearly so) when facing the direction of the profile. If not, and if the numerical value displayed with the bar is less than 10 or greater than 50, a new transmitter must be selected. If a new transmitter is required, enter 0, 0, 0, and press the STATION key again. After about three minutes a frequency scan will appear. After the scan is completed, select strongest signal with large

arrows on key pad and check for orientation of transmitter, as before.

- Select profile start point and specify grid. Press COORDINATE key and select starting coordinate, profile separation, and measurement separation distance.

- Conduct measurements along profile. Press MEASURE key. Wait for prompt to press MEASURE key again. Observe inclinometer in lower right portion of screen. A straight line is best, although measurements can be obtained with the open-carrot symbol. If inclination of antenna is too great, instrument will not measure and will indicate this condition. Re-orient antenna and try again. Remain steady while Wadi conducts measurement. Move to next measurement point and conduct next measurement.

- For any additions profiles in the same grid, using large arrows, make turn as required at end of each profile to continue measurements along successive profiles. Wadi automatically stores data for proper interpretation.

- To interpret any anomaly identified on profile, press MEASUREMENT key once and, using small arrows, move cursor to top of selected anomaly. Press INTERPRETATION key. After several seconds, interpretation will appear above anomaly. Identical vertical and horizontal scales allow for estimates to be made of depth of anomaly.

APPENDIX B

Photodocumentation Log

BVWST-ATLANTA

B&V Waste Science and Technology Corp.

PHOTOGRAPHIC DOCUMENTATION FORM

SHEET 1 OF 5

FILM № 1

(Roll №)

INITIALS: RJS

SITE: Young Refining Corporation
Douglasville, Douglas County, Georgia

Date: February 16, 1993

Time: 10:00 p.m.

Direction: From the west

Down line Y = 4

Object: Block Building

Storage Tanks

Trench

Frame №: One

Date: February 16, 1993

Time: 10:30

Direction: From the east

Along line Y = 4

Object: Drainage trench

Mounded Soil

Frame №: Two

BVWST-ATLANTA

B&V Waste Science and Technology Corp.

PHOTOGRAPHIC DOCUMENTATION FORM

SHEET 2 OF 5

FILM № 1

(Roll №)

INITIALS: ROJ

SITE: Young Refining Corporation
Douglasville, Douglas County, Georgia

Date: February 16, 1993

Time: 10:00 p.m.

Direction: From the west

Down line Y = 3

Object: East end of trench

Frame №: Three

Date: February 16, 1993

Time: 10:20

Direction: From the north

From line y = 4

Object: Tree branch in trench

Frame №: Four

BVWST-ATLANTA

B&V Waste Science and Technology Corp.

PHOTOGRAPHIC DOCUMENTATION FORM

SHEET 3 OF 5

FILM Nº 1
(Roll Nº)

INITIALS: RDJ

SITE: Young Refining Corporation
Douglasville, Douglas County, Georgia

Date: February 16, 1993

Time: 11:00 p.m.

Direction: From the west
Down line Y = 5

Object: Block building
Mound of soil (on Rt

Frame Nº: Five

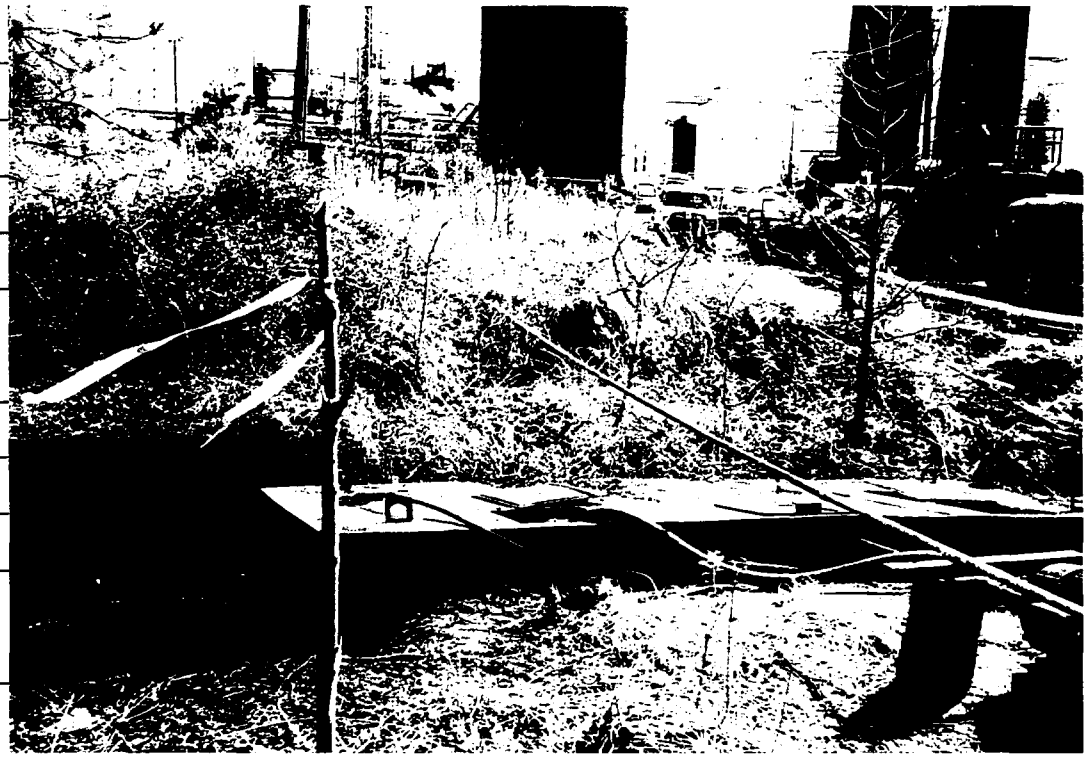
Date: February 16, 1993

Time: 11:15

Direction: From the north
From node (0,4)

Object: Oil/water separator

Frame Nº: Six



BVWST-ATLANTA

B&V Waste Science and Technology Corp.

PHOTOGRAPHIC DOCUMENTATION FORM

SHEET 4 OF 5

FILM № 1 (Roll №)

INITIALS: RDS

SITE: Young Refining Corporation
Douglasville, Douglas County, Georgia

Date: February 16, 1993

Time: 10:00 a.m.

Direction: From the southeast
From node 0,0

Object: Pond served as destination of drainag trench
(Power line on Rt.)

Frame №: Seven

Date: February 16, 1993

Time: 11:10

Direction: From the north
From node (18,3)

Object: North end of culvert

Frame №: Eight

BVWST-ATLANTA

B&V Waste Science and Technology Corp.

PHOTOGRAPHIC DOCUMENTATION FORM

SHEET 5 OF 5

FILM № 1

(Roll №)

INITIALS: RoJ

SITE: Young Refining Corporation
Douglasville, Douglas County, Georgia

Date: February 16, 1993

Time: 10:25 a.m.

Direction: From the east

From node (20,2)

Object: Southern part of survey area (drums on Rt.)

Frame №: Nine

Date: February 16, 1993

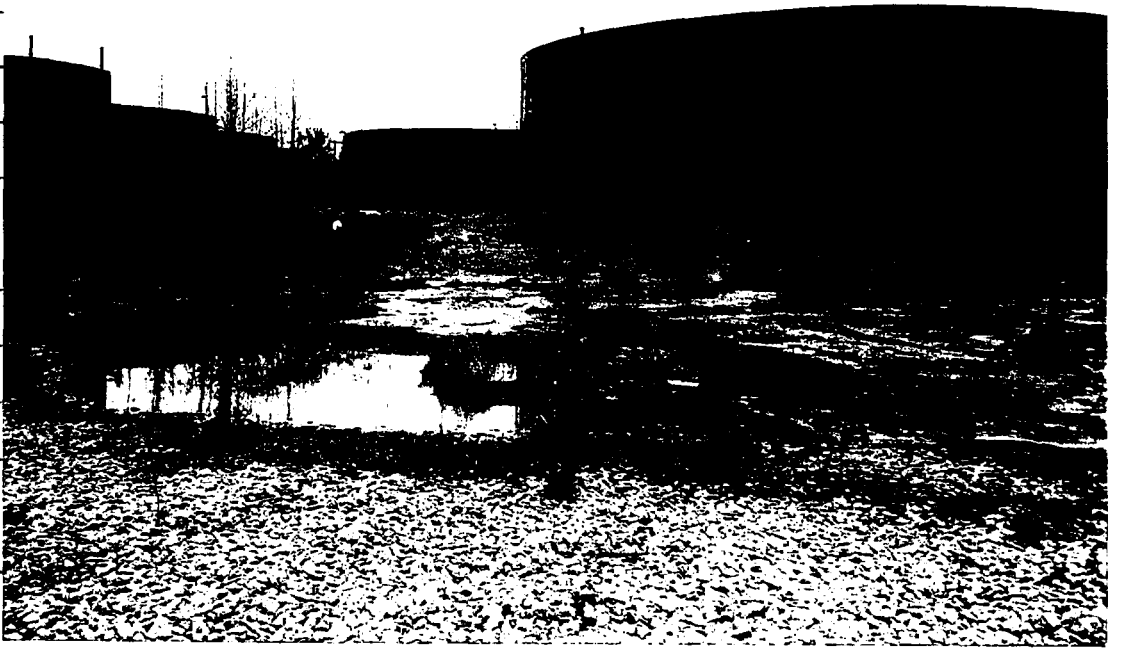
Time: 11:15

Direction: From the west

From node (1,2)

Object: North survey area and Large tanks

Frame №: Ten



-ia Department of Natural Resources
Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

Re

Reference 1

IP REPORT

ɔber 20, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD05101134
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles GAK Environmental Specialist Site Assessment Unit
ACCOMPANIED BY:	N/A
DATE AND TIME OF INVESTIGATION:	October 20, 1987 8:10 a.m.
OFFICIALS CONTACTED:	Mr. Charles Ellis Plant Manager Young Refining Corporation (404)942-2343 Mr. Fang Kou Plant Engineer Young Refining Corporation (404)942-2343
REFERENCE:	Preliminary Assessment Georgia-EPD State Files Trip Report by Jack Dempsey November 21, 1985

COMMENTS:

The facility refines asphaltic crude that is shipped by railroad car from Mississippi. The corporation's crude terminal is located in Lumberton, Mississippi and crude is purchased from Texaco and Chevron Oil Companies off the pipeline. The facility manufactures jet fuel for the government, heavy #5 oil (atmospheric gas oil), #2 fuel (diesel oil), certified state asphalt, oxidized asphalt (shingle, saturate, coat covering) and four (4) types of roofing asphalt. All products are transported by truck in bulk or packaged products. The various processes that the crude is taken through are heating, distillation, fractionating, oxidation and shipping. The wastes that are generated are solid wastes (collected on-site in dumpsters serviced by the City of Douglasville); wastewater (passes through API separator and is discharged to a series of 4

ponds-NPDES permitted) and sludges (API Separator, Desalter, Heat Exchanger). Mr. Ellis stated that he was not sure of the sludge disposal company that Young Refining Corporation utilizes.

Treatment ponds (4) have never been lined, but on occasion ponds #2, 3 and 4 are cleaned. Mr. Ellis stated that pond #3 is continuously aerated; however, during my tour of the facility aerating equipment at pond #3 was not in operation.

Questions were asked of Mr. Ellis and he stated the following:

1. wastes are not treated or disposed of on-site; only water is treated,
2. the property is 30-40 acres in size,
3. the flocculator is no longer used between ponds # 1 and 2,
4. the facility is supplied city water for drinking and boiler feed water that is used for steam generation,
5. there are 5 operable wells on-site, that are 300 ft. in depth and their water is used for the cooling pond and utility purposes,
6. these wells are sampled daily for treatment purposes and Deerborne Chemical Company of Atlanta treats the well water,
7. there is no dilution of wastes,
8. water was treated for phenols, but none were found and,
9. the facility does not handle lead petroleum, only virgin crude is refined.

During my tour of the facility with Mr. Fang Kou, Plant Engineer, I observed the following:

1. process areas were messy,
2. soil type seemed to be of a sandy, clay consistency,
3. facility is fenced and entrance gate is kept locked when not in operation,
4. two other companies are located within the facility's complex and they are Central Oil & Asphalt Corporation and Elk Roofing Company,
5. Arivec Chemicals Inc. is also located in the area, but is totally surrounded by a fence,
6. sampling areas,
7. slopes varied from 8-40% in various areas of the site and
8. pond #4 discharges water to a small creek (tributary on-site).

Mr. Kou reviewed the facility's processes with me on a flow chart in his laboratory and supplied a sketch of the facility. I left the site at 10:30 a.m.

I visited the Water Department and spoke with Mr. Winfred Pirkle, Water Superintendent, who supplied me with information on boundaries of water lines and possible areas to check for wells. Ownership and property maps were obtained from the county tax assessors office. A well survey was conducted within one mile of the facility and 2 shallow wells were observed, but residents are believed to be on city water. Deep wells were observed in 2 and 3 mile radius of the site, but were not counted. Roads that need to be checked for an extended well survey on the next site visit are Dallas, Malone, Brown Street and Simon. The water line boundaries are Brownville Road to the North, Bankhead Hwy. and South & North Flat Rock Roads to the West, Gurley Road to the Southwest, Chapel Hill Road to the South and Mount Vernon Road to the East.

CONCLUSIONS:

None can be drawn until samples are collected and analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

On-site sampling should be conducted, off-site sampling and an extended well survey should be completed.

PHOTOGRAPHS: 15 polaroids

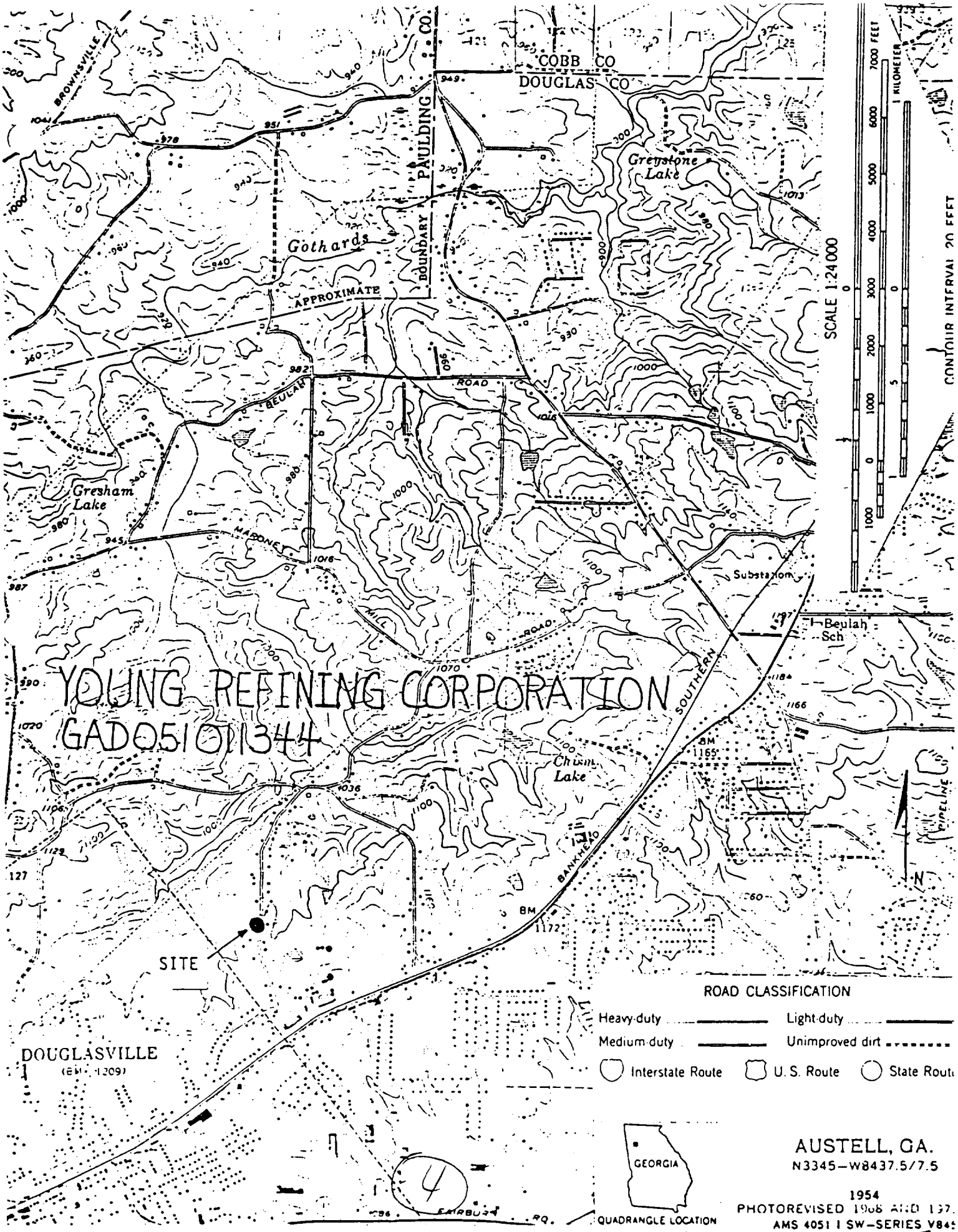
NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: None (reconnaissance visit)

REVIEWED BY: DATE:

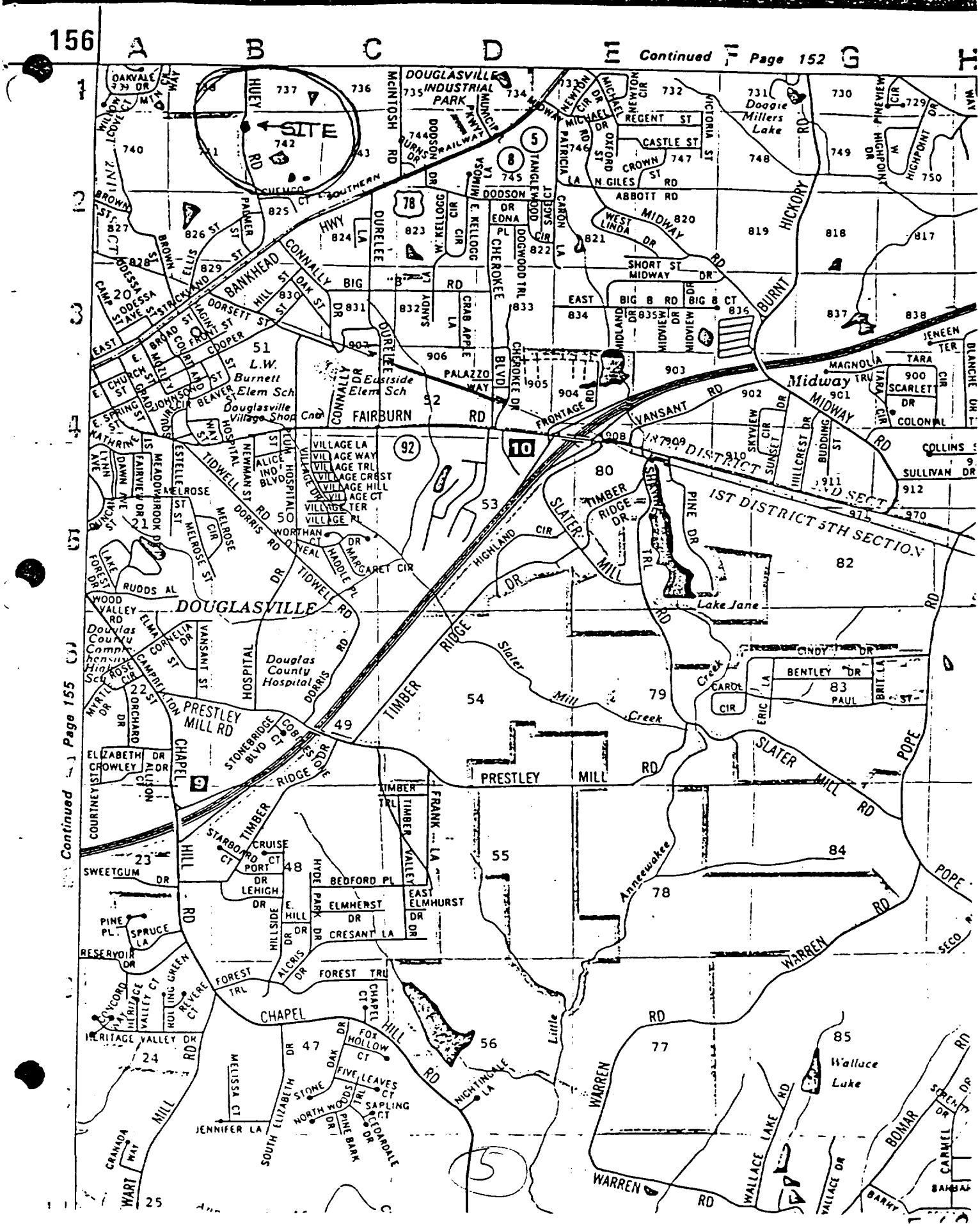
ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

GAK:zcr001

File: Young Refining Corporation



YOUNG REFINING CORPORATION
GAD051011344
COBB CO
DOUGLAS CO
PAULDING CO
BOUNDARY
APPROXIMATE
Gothards
Greystone Lake
Gresham Lake
Chism Lake
BROWNSVILLE
BEULAH ROAD
MARONEY MILL ROAD
SOUTHERN
BANKHEAD
Substation
Beulah Sch
PIPELINE
SITE
DOUGLASVILLE
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
1 KILOMETER
7000 FEET
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
Interstate Route
U.S. Route
State Route
GEORGIA
QUADRANGLE LOCATION
AUSTELL, GA.
N3345—W8437.5/7.5
1954
PHOTOREVISED 1968 AND 197
AMS 4051 I SW—SERIES V84


156
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SITE
DOUGLASVILLE INDUSTRIAL PARK
Doggie Millers Lake
REGENT ST
CASTLE ST
CROWN ST
N GILES RD
ABBOTT RD
MIDWAY
WEST LINDA DR
SHORT ST
MIDWAY DR
EAST BIG B RD
BIG B CT
BIG B RD
BANKHEAD
CONNALLY
DURELEE
CHEROKEE
BURNT HICKORY RD
L.W. Burnett Elem Sch
Douglasville Village Shop Cntr
Eastside Elem Sch
FAIRBURN RD
PALAZZO WAY
FRONTAGE RD
VANSANT RD
Midway
MAGNOLIA
TARA
SCARLET DR
COLONIAL
JENEEN TER
COLLINS
SULLIVAN DR
1ST DISTRICT 5TH SECTION
VILLAGE LA
VILLAGE WAY
VILLAGE TRL
VILLAGE CREST
VILLAGE HILL
VILLAGE CT
VILLAGE TER
VILLAGE PL
WORTHAN CT
O'NEAL
HADDLE PL
MARGARET CIR
TIDWELL RD
DORRIS RD
HOSPITAL
ALICE IND BLVD
NEWMAN ST
ESTELLE
MELROSE
MEADOWBROOK DR
DOUGLASVILLE
Douglas County Comprehensive High Sch
Douglas County Hospital
PRESTLEY MILL RD
CHAPEL HILL RD
TIMBER RIDGE
Slater Mill Creek
Lake Jane
SLATER MILL RD
POPE RD
Anneewakee
WARREN RD
Little
Wallace Lake
WALLACE LAKE RD
BOMAR
CARMEL
FRANK LA
STARBOARD CT
CRUISE CT
PORT DR
LEHIGH DR
BEDFORD PL
ELMHURST DR
EAST ELMHURST DR
CRESANT LA
HYDE PARK DR
HILLSIDE DR
ALCRIS DR
FOREST TRL
CHAPEL HILL RD
FOX HOLLOW CT
FIVE LEAVES CT
SAPLING CT
NORTH WOODS TRL
PINE BARK DR
CEDARDALE DR
NIGHTINGALE LA
SOUTH ELIZABETH
JENNIFER LA
MELISSA CT
HERITAGE VALLEY DR
CONCORD
REVERE CT
HOLLING GREEN
RESERVOIR DR
SPRUCE LA
PINE PL
SWEETGUM DR
ELIZABETH CROWLEY
ORCHARD
MYRTLE DR
CORNELIA DR
VANSANT ST
ELMA
CAMPBELLTON
STONEBRIDGE BLVD
COBBLESTONE DR
RIDGE DR
TIMBER TRL
TIMBER VALLEY
CINDY DR
BENTLEY DR
PAUL
CAROL CIR
ERIC LA
BRIT LA
PINEVIEW DR
HIGHPOINT DR
HICKORY RD
VICTORIA ST
MICHAEL DR
NEWTON CIR
OXFORD ST
PATRICIA LA
CARON LA
DODSON DR
EDNA PL
DOGWOOD TRL
CRAB APPLE
SANDY LA
W. KELLOGG CIR
E. KELLOGG CIR
MIDLAND DR
MIDVIEW DR
WILDVIEW
SKYVIEW CIR
SUNSET DR
HILLCREST DR
BUDDING ST
SHAWNEE TRL
PINE DR
HIGHLAND CIR
OAKVALE DR
WILLOW LOVE CT
BROWN ST
ODESSA AVE
STRICKLAND ST
ELLIS ST
PALMER ST
DORSETT ST
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COURTLAND ST
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KATHRINE ST
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FAIRVIEW DR
LYNN AVE
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LAKE FOREST DR
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ROSE CIR
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MCINTOSH RD
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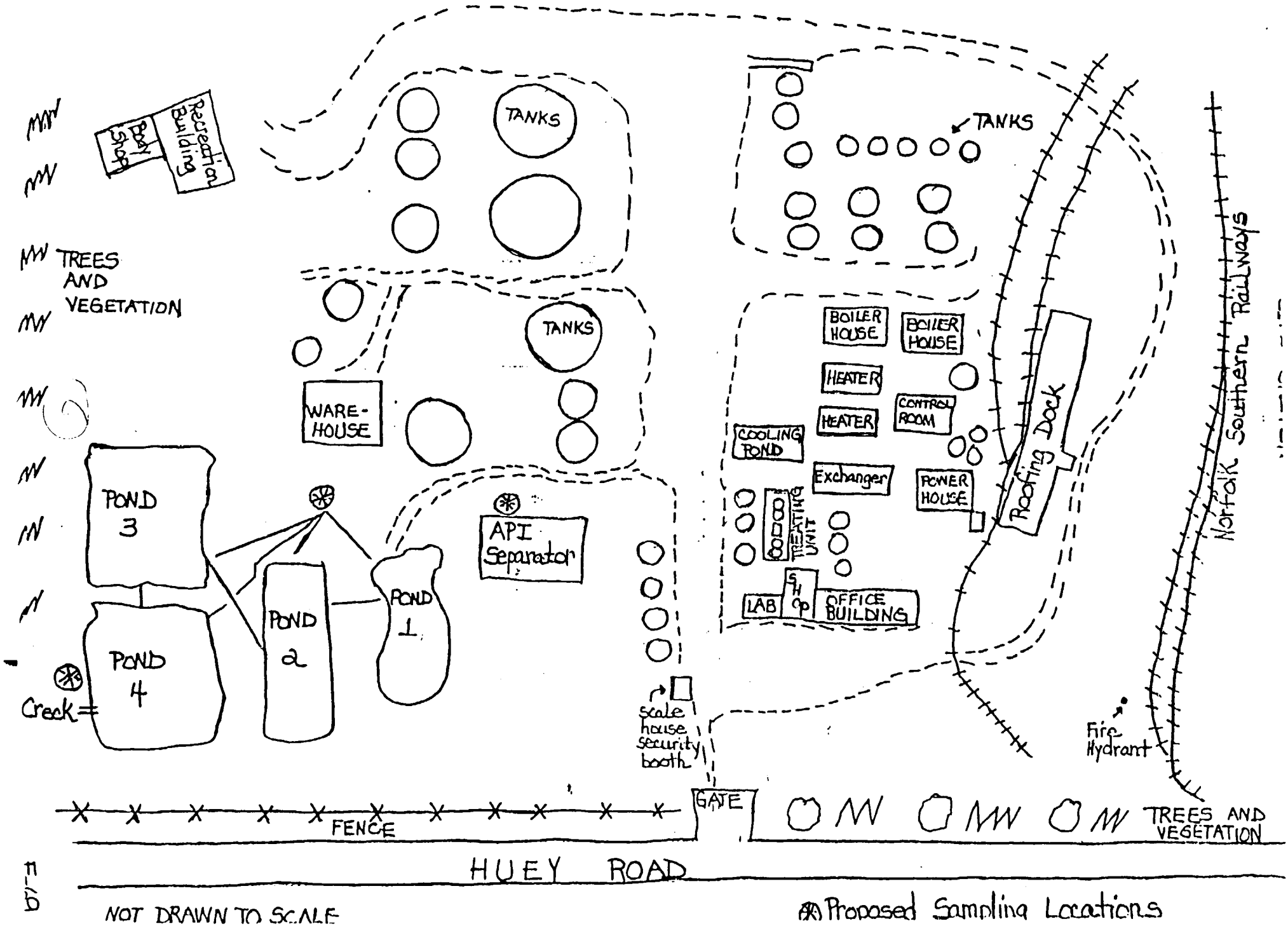
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HEATING UNIT
LAB
SHOP
OFFICE BUILDING
Loading Dock
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NOT DRAWN TO SCALE
Proposed Sampling Locations

N. - 8:10 AM

10-20-87

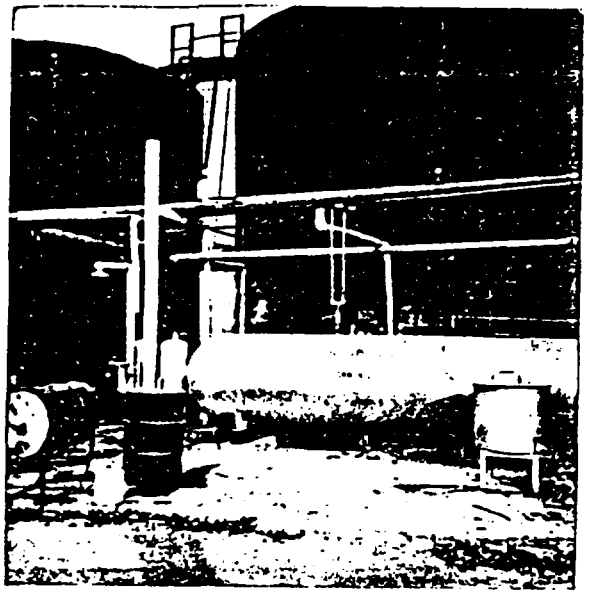
SITE NAME Young Refining Corporation
Picture No. 1 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance of facility off Huey Road. Front entrance; trees and heavy vegetation.
Other

N. 8:30 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 2 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance gate of facility. Security personnel present in security booth.
Other

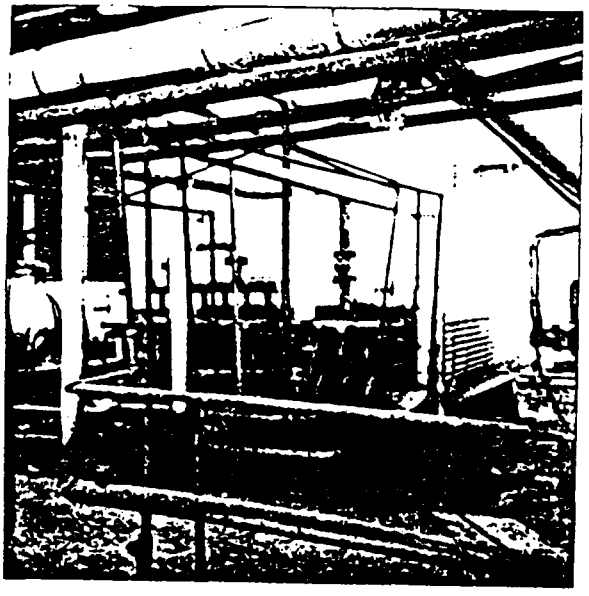
7



N. - 8:35 AM

10-20-87

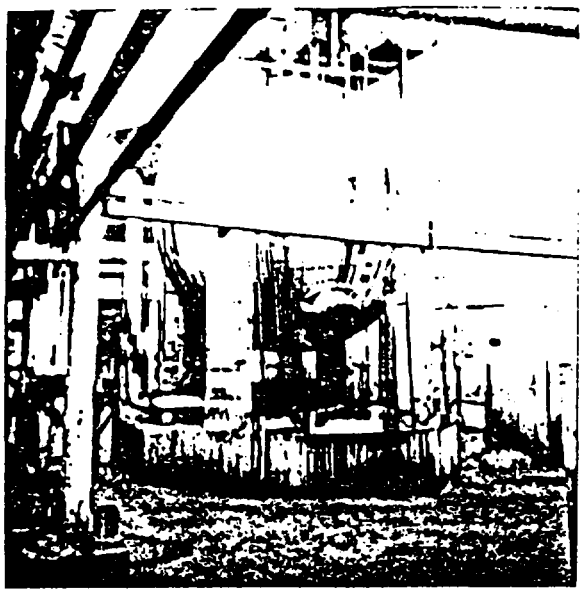
SITE NAME Young Refining Corporatic
Picture No. 3 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Holding tanks for crude transported in by railroad car. One (1) tank is able to accomodate 4 railroad cars of crude.
Other



N. 8:40 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 4 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Crude is heated through several steps with heat exchanger.
Other



W. - 8:45 AM

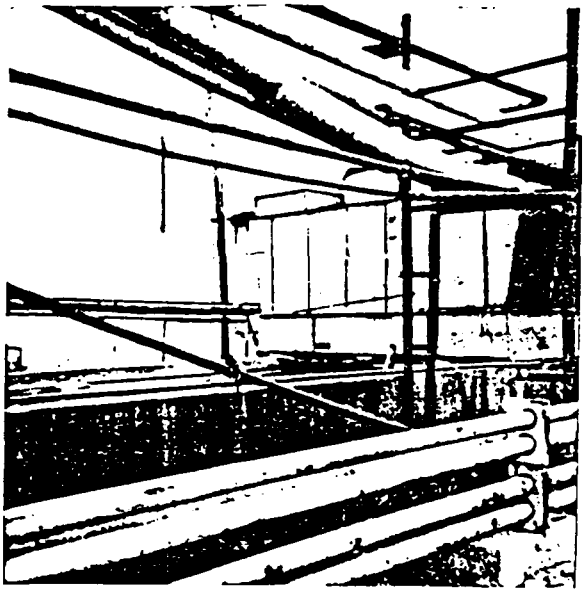
10-20-87

SITE NAME Young Refining Corporation
Picture No. 5 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 68°F
Direction Facing West
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Crude is eliminated of various salts by the desalter equipment
Other

N.
8:47
A.M.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 6 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 68°F
Direction Facing North
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Bubble Tower - Crude enters tower where light oils are vaporized out of crude and.
Other asphalt goes out the bottom.



W.- 8:48 AM

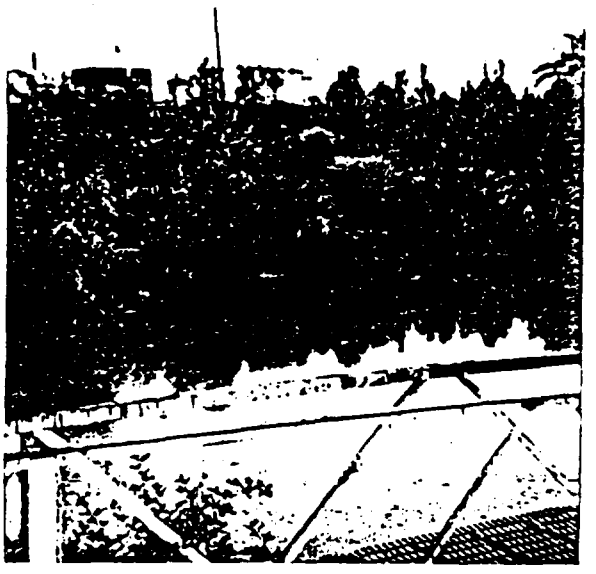
10-20-87

SITE NAME Young Refining Corporation
Picture No. 7 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation All wastewater is recycled and cooled down in this cooling pond.
Other

N.E.- 8:50 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 8 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing Northeast
Photographer G. A. Knowles
Program Site Investigation Program
Explanation API Separator - This piece of equipment further separates oil from water. The
Other water from this process flows into the primary catching pond #1.



S.-8:55 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 9 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy 6°

Direction Facing South

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Pond #1

Other

N.E.-9:05 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 10 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy-6°

Direction Facing Northeast

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Pond #1 - Oil is skimmed off the top of the water into a thorgh that leads

Other back through the crude tanks for reprocessing.

F-7

W.- 9:15 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 11 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #2 with separator for skimming
Other

E.- 9:25 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 12 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #3 with aerating equipment. Aerator was inoperative at the time of inspection.
Other

N.E. 9:35 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 13 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #4, drainage conduit for this pond is discharge to a small creek on-site.
Other

N.E. - 9:45 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 14 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Discharge of water from conduit, to small creek (conduit extends from Pond #4)
Other

E.-10:15 AM 10-20-87

SITE NAME Young Refining Corporation

Picture No. 15 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy-69°F.

Direction Facing East

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Asphalt Roofing Area; Cardboard cartons with tin bottoms are filled with hot asphalt and allowed to cool.

Other

SITE NAME

Picture No. of

County Name

Date Weather

Direction Facing

Photographer

Program

Explanation

Other

(13)

DYNAMAC CORPORATION
Environmental Services

Peachtree Center Tower
230 Peachtree Street, N.W.
Suite 500
Atlanta, GA 30303

Telephone: 404-681-0933
Fax: 404-681-0894

DATE REPORT ACCEPTED 03-05-92
DISPOSITION NFRAP
SAM SIGNATURE Janice P Thomas

February 27, 1992

Reference 2

Mr. A.R. Hanke, Chief
Site Assessment Section
U.S. Environmental Protection Agency, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: Work Assignment No. C04119 - Young Refining Corporation, Douglasville, Douglas County, Georgia - Task 5 - Site Inspection Prioritization System (SIPS), Preliminary Letter Report
Document Control No. C04119-SIPS-LC-029

Dear Al:

Please find below the SIPS Preliminary Letter Report for Young Refining Corporation in Douglasville, Georgia. This strategy has been developed to fulfill the requirements for Task 5 of TES VIII Work Assignment C04119. This submittal includes a site map, supporting reference materials and a CERCLA Eligibility Form.

Young Refining Corporation is located at 7982 Huey Road in Douglasville, Douglas County, Georgia (Ref. 1, p. 1). Operations began at the facility in 1955 (Ref. 2, p. 1). The facility was active in October 1987 at the time of a Screening Site Inspection by the Georgia Environmental Protection Division (GA-EPD) and is apparently still active (Refs. 3, p. 1; 4). Operations conducted at the facility include refining of asphaltic crude (received by railroad tankcar from Mississippi) and distribution of the resulting products (asphalt cement, number two fuel oil, heavy oil and natural gasoline) (Refs. 2, p. 1; 4). Operations include the following stages: heating, distillation, fractionation, oxidation, and shipping (Ref. 2, p. 1).

The facility covers approximately 30 to 40 acres (Ref. 5, p. 2). Numerous storage tanks, a loading dock and railroad spur line, distillation structures, a control room, a power house, an office/shop/laboratory building, a scale house/security booth, a warehouse, an API separator, a cooling pond and four treatment ponds are present on the property (Refs. 3, p. 4; 5, p. 6). The facility is surrounded by a fence, the entrance gate of which is locked when the facility is not in operation (Ref. 5, pp. 2, 7).

In July 1985, Young Refining Corporation was found to be in violation of small quantity generator standards by the GA-EPD. Sludge from the API separator was placed on the ground near the separator. Process wastewater and run-off from the property flowed into the first treatment pond and subsequently into the other three ponds in series (Ref. 2). An oil spill occurred at the facility in 1973 (Ref. 1, Appendix F). Details of the oil spill are not included in available file materials. Solid waste is collected in dumpsters serviced by the city of Douglasville (Ref. 2, p. 1).

Treatment Pond Number One received process wastewater, water from storm drains and surface water runoff from the facility. Process wastewater and storm water pass through the API separator and into Pond Number Two. A flocculator was used between Treatment Ponds Number One and Number Two until around 1977. Approximately 100 pounds of waste was collected per year by this device. The waste was allowed to harden in a drum, then disposed on the ground at various locations around the plant during construction of tanks and roads. Use of the flocculator was discontinued because the process was not necessary to meet effluent limits specified in the NPDES permit (Ref. 2). Further details of treatment operations are not included in available file materials. The area of Pond Number One is not given in available file materials, but it is estimated to be 2.9 acres or less (Refs. 3, p. 4; 5, p. 6; 11).

A sediment sample was collected from Pond Number One in October 1987 by the GA-EPD. The sample contained detectable concentrations of barium (680 mg/kg), cadmium (1.8 mg/kg), chromium (400 mg/kg), lead (880 mg/kg), benzene (2.7 mg/kg), ethyl benzene (1.1 mg/kg) and total xylenes (1.7 mg/kg). EP toxicity analysis of the sample detected barium (1,370 ug/l), chromium (100 ug/l), and lead (640 ug/l) (Ref. 1, Appendix B).

About every six months, approximately 50 pounds of sludge was removed from the API separator and placed on the surface of the ground surrounding the separator. Also, approximately 150 pounds of sludge was generated yearly during cleaning of the heat exchanger bundle. The methods of disposal for the API separator sludge and the heat exchanger sludge are not known, but both waste types were probably deposited on the soil at some location within the facility boundary (Ref. 2, p. 2). The area of soil used for sludge disposal is not given in available file materials, but is likely to be one acre or less (Refs. 3, p. 4; 5, p. 6; 11).

A composite soil sample was collected near the API separator in October 1987 by the GA-EPD. The sample contained a lead concentration of 69 mg/kg, or 4.1 times the background concentration. The sample also contained extremely elevated concentrations of naphthalene (17 mg/kg, or 17,000 times the background concentration) and total xylenes (6 mg/kg, or

6,000 times the background concentration). No samples were collected from the surface soil near the heat exchanger (Ref. 1, Appendix B).

There are no records of remediation at this facility, and there are no records of companies or individuals who may at one time have transported wastes offsite for disposal. The facility is currently classified as a small quantity generator under RCRA (Ref. 1, p. 2, Appendix F).

The Young Refining Corporation lies within the Central Uplands District of the Piedmont physiographic province in the northwest section of Douglas County, Georgia. The northeastern and central portions of the Central Uplands District are typically characterized by a series of low, linear ridges, 1,300 to 1,500 feet above mean sea level, separated by broad, open valleys. Streams flowing through this section are generally transverse to the structure and occupy valleys 150 to 200 feet below the ridge crests. In the southwestern part of the Central Uplands District, which includes the site, the elevation decreases to 1,100 feet above mean sea level, and the linearity of the topography is not so apparent. Stream valleys exhibit a rectangular drainage pattern and lie only 100 to 150 feet below the ridge crest. The southern boundary of the Central Uplands District is the beginning of the Gainesville Ridges District (Ref. 6).

The soils in the site vicinity are composed of a combination of residuum, alluvium, and colluvium that are collectively termed regolith. The residual soil is of the Appling sandy clay loam series. The Appling series is a yellowish-brown to gray-brown sandy clay loam over a red and yellowish-brown mottled sandy clay. The Appling sandy loam is the result of weathering of the parent granitic rock unit. Near the local streams, the soils are composed predominantly of young and old alluvial soils (Refs. 7, pp. 15, 74, 79, sheet 3). The depth of the soil varies throughout the area; however, from well casing records in the area, soil thickness is estimated to range from 11 to 187 feet and average approximately 57 feet based on the fact that well casing is normally installed from the land surface to the top of bedrock (Ref. 8, Plate I).

The Young Refining Corporation is underlain by crystalline metamorphic granite gneiss. Other crystalline metamorphic rock units that occur at the surface within a four-mile radius from the site include the following: a mica schist unit crops out to the northeast; a biotite gneiss -mica schist - amphibolite unit crops out to the northwest; a mica schist and gneiss unit crops out to the southwest; and a quartzite unit crops out to the southeast (Ref. 9).

Groundwater occurs within the pore spaces of the regolith and within structural and stratigraphic bedrock features, including the following: the contact zones between rock units of contrasting composition; contact zones within multi-layered rock units; fault zones; stress relief fractures; zones of fracture concentration; small-scale structures including joints,

foliation planes and fold axes; folds that produce concentrated jointing; and shear zones. The availability of groundwater depends on the topographic setting, drainage patterns, metamorphic rock type, thickness of the soil or depth of weathering, and pervasiveness and orientation of foliation (Ref. 8, p. 10). The groundwater is held in the open spaces of the rock materials which creates an underground reservoir. Groundwater in the top of the reservoir represents water table conditions in the weathered regolith. Groundwater occurring in connected structural and stratigraphic bedrock features in the parent rock comprises the lower part of the reservoir. The fractures diminish in number and size with increasing depth of the parent rock. Water enters the fractures by seeping through the overlying regolith (Ref. 10, p. 8). Wells drilled in the area produce water from these fractures and range in depth from 43 to 422 feet; the average well depth is approximately 192 feet (Ref. 8, Plate I).

A total of three groundwater samples were collected by the GA-EPD in October 1987 during the Screening Site Inspection at the facility (Ref. 3, pp. 1, 2). Two samples were collected from onsite industrial wells, and one sample was collected from a private well located approximately 0.9 mile northwest of the facility (Refs. 1, Appendix C, attachment 5; 3, pp. 1, 2, 4, 5; 11). No observed release was documented (Ref. 1, appendix B).

Within a four-mile radius of the Young Refining Corporation facility, most residences obtain drinking water from municipal utilities that utilize surface water intakes (Refs. 11; 14; 15; 16). However, some households in the area use private wells. Information collected by the GA-EPD and house counts on topographic maps of the area were used to estimate the number of private drinking water wells located within four miles of the facility (Refs. 1, p. 1, Appendix C, attachment 5; 11). The populations per household in Douglas, Paulding and Cobb counties were obtained from 1990 U.S. Bureau of the Census information (Ref. 12). The population served by private wells in the area is distributed as follows: 0-0.25 mile (0); 0.25-0.5 mile (0); 0.5-1.0 mile (3); 1.0-2.0 miles (12); 2.0-3.0 miles (32); and 3.0-4.0 miles (100). An estimated total of 147 persons within four miles are served by private wells.

Wells at the Young Refining Corporation supply water for the cooling pond and for other industrial processes (Refs. 1, p. 4; 3, p. 1). There are no known irrigation wells in the area (Ref. 13).

Surface water runoff from the facility is directed to the four treatment ponds, which are regulated by a NPDES permit (GA0001902) (Ref. 2, p. 2). In the Site Inspection report completed by the GA-EPD, it is indicated that water discharged from Pond Number Four enters a small creek onsite (Ref. 5, pp. 6, 12). This creek is not shown on the topographic map of the area, so it is probably an intermittent stream (Ref. 11). Water discharged from Pond Number Four enters the intermittent stream and flows overland approximately 0.7 mile north to an unnamed, perennial creek (Refs. 3, p. 4; 5, p. 12; 11). Flow continues via the

creek for 1.7 miles to Gothard's Creek, where flow continues for 5.5 miles to Sweetwater Creek. The surface water pathway continues via Sweetwater Creek to beyond 15 miles downstream of Young Refining Corporation (Ref. 11).

There are no surface water intakes located within 15 miles downstream of the Young Refining Corporation facility (Refs. 1, p. 4, Appendix C, attachment 3; 14; 15; 16). Fishing has been documented for Gothard's Creek and probably occurs along Sweetwater Creek (Ref. 17). No endangered or threatened species have been identified along the surface water migration pathway; and no sensitive environments are present along the pathway (Refs. 11; 18).

The estimated population within four miles of the facility is distributed as follows: 0-0.25 mile (32); 0.25-0.5 mile (583); 0.5-1.0 mile (899); 1.0-2.0 miles (6,789); 2.0-3.0 miles (8,733); and 3.0-4.0 miles (9,234). The estimates are based on house counts on topographic maps of the area and the Graphical Exposure Modeling System (GEMS) database (Refs. 11; 12; 19).

Although the ranges of several endangered and threatened species include Douglas County, there are no designated areas of critical habitat located within four miles of the Young Refining Corporation facility (Refs. 11; 18).

Based upon available file material it is recommended that no further remedial action be planned.

If you have any questions, please contact us at (404) 681-0933.

Sincerely,

DYNAMAC CORPORATION

William E. Vasser

William E. Vasser
Site Manager

David L. Rusher
Regional Manager

Enclosures
cc: Ken Meyer, EPA Region IV Project Officer (w/o enclosures)
Steve Kale, Dynamac TES Program Manager (w/o references)
Deborah Vaughn-Wright, EPA Region IV Work Assignment Manager
Katherine Siders, Dynamac Work Assignment Manager (w/o references)
TES WA File

References

1. Georgia Environmental Protection Division Screening Site Inspection Report, Young Refining Corporation, Douglasville, Douglas County, Georgia. Prepared by Gilda A. Knowles, December 1987.

2. Georgia Environmental Protection Division Trip Report for Young Refining Corporation, Douglasville, Douglas County, Georgia. Filed by Jack Dempsey, July 24, 1985.

3. Georgia Environmental Protection Division Trip Report for Young Refining Corporation, Douglasville, Douglas County, Georgia. Filed by Gilda A. Knowles, October 28, 1987.

4. Neda Glore, Douglas County Chamber of Commerce, telephone conversation with William E. Vasser, Dynamac Corporation, February 19, 1992. Subject: Operational status of Young Refining Corporation.

5. Georgia Environmental Protection Division Trip Report for Young Refining Corporation, Douglasville, Douglas County, Georgia. Filed by Gilda A. Knowles, October 20, 1987.

6. William Z. Clark, Jr. and Arnold C. Zisa, Physiographic Map of Georgia (Atlanta Georgia: Georgia Department of Natural Resources, 1976).

7. U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Douglas County, Georgia (November 1961).

8. C.W. Cressler, C.J. Thurmond, and W.G. Hester, Ground Water in the Greater Atlanta Region, Information Circular 63, (Atlanta, Georgia: Georgia Department of Natural Resources, 1983).

9. Georgia Geologic and Water Resources Division, Georgia Geological Survey, Geologic Map of Georgia (Atlanta, Georgia: 1976).

10. H.E. LeGrand, Ground Water of the Piedmont and Blue Ridge Provinces of the United States, Geological Survey Circular 538 (Washington, D.C.: United States Department of the Interior, 1973).

11. U.S. Geological Survey, 7.5 minute series Topographic Quadrangle Maps for Georgia: Austell 1954 (Photorevised 1982), Nebo 1973 (PR 1982), Winston 1973 (PR 1982), Campbellton 1954 (PR 1968), scale 1:24,000.

12. U.S. Bureau of the Census, Proof copy of table generated for 1990 CPH-1: Summary Population and Housing Characteristics (U.S. Department of Commerce, April 1991).

13. Glen Johnson, Agriculturalist, U.S. Agriculture Stabilization and Conservation Service, telephone conversation with Gilda A. Knowles, Georgia Environmental Protection Division, December 14, 1987. Subject: Irrigation wells in Douglas County.

14. Lori Camp, Executive Director Secretary, Douglasville-Douglas County Water Department, telephone conversation with William E. Vasser, Dynamac Corporation, November 19, 1991. Subject: Source of water for system and service area.

15. Roy Fowler, Assistant General Manager, Cobb-Marietta Water Authority, telephone conversation with William E. Vasser, Dynamac Corporation, November 18, 1991. Subject: Source of water for system and service area.

16. Filtration Plant Operator (name not given), East Point Water Department, telephone conversation with William E. Vasser, Dynamac Corporation, November 18, 1991. Subject: Location of surface water intake for the system.

17. Kim Primmer, Fisheries Supervisor, Georgia Department of Natural Resources, telephone conversation with Gilda A. Knowles, Georgia Environmental Protection Division, December 16, 1987. Subject: Fishing in Gothards Creek and Gray Stone Lake.

18. U.S. Fish and Wildlife Service, Endangered and Threatened Species of the Southeastern United States (Atlanta, Georgia, 1988).

19. U.S. Environmental Protection Agency, Graphical Exposure Modeling System (GEMS) Data Base, compiled from U.S. Bureau of the Census data (1980).

Georgia Department of Natural Resources
Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

Reference 3

TRIP REPORT

October 28, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD051011344
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles GAK Environmental Specialist Site Assessment Unit
ACCOMPANIED:	Charles Evans Environmental Specialist Site Assessment Unit
DATE AND TIME OF INVESTIGATION:	October 28, 1987
OFFICIALS CONTACTED:	Mr. Fang Kuo Plant Engineer Young Refining Corporation 7982 Huey Road Douglasville, GA 30134
REFERENCE:	Trip Report, October 20, 1987 Georgia-EPD State Files

COMMENTS:

A Screening Site Inspection was conducted at Young Refining Corporation, a facility that refines crude into asphaltic cement and other by-products.

Charles Evans and I arrived on-site at 9:00 a.m. and met with Mr. Fang Kou, Plant Engineer, who accompanied us in our sampling endeavors. Our first sample was collected from a well located at the rear of the plant process area. The well was purged for five minutes and water conductivity readings were taken prior to sampling (70 umhos-1x scale). The second well sampled was located in the vicinity of the pond area and the same procedures were carried out prior to sampling (40 umhos - 1x scale). All ground water samples collected will be analyzed for total metals and organics. The pH range for both wells was 6.4 and 6.3 respectively. Since wells on-site are continuously pumped, bubbles were allowed to clear before filling containers. A sludge sample was collected from three different areas of Pond #1 from the bottom layer. Soil surrounding the API Separator was composited. Soil samples were collected from depths of 3-6 inches. All equipment was clean and disposable tyveks, gloves and boots were left in the dumpster on-site with the permission of Mr. Kou. We left the site at 11:45 a.m.

A forested area Northwest of the site was chosen to collect a soil background sample. Soil was collected from four different areas (3-6" in depth) and composited. A private dug well located on Malone Road, 2.0 miles Northwest of the site was sampled for background. The spigot was purged and conductivity readings (40 umhos - 1x sclae, pH 6.1) were taken prior to sampling. There was no one present at the residence and a GA-EPD business card with message was left in the door. All samples were labeled, bagged, placed on ice and transported to GA-EPD laboratory via state vehicle.

CONCLUSIONS:

None can be drawn until samples have been analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

1. Complete well survey.

2. Obtain name, address, and phone number of resident, whose well was sampled.

PHOTOGRAPHS: 10 Polaroids

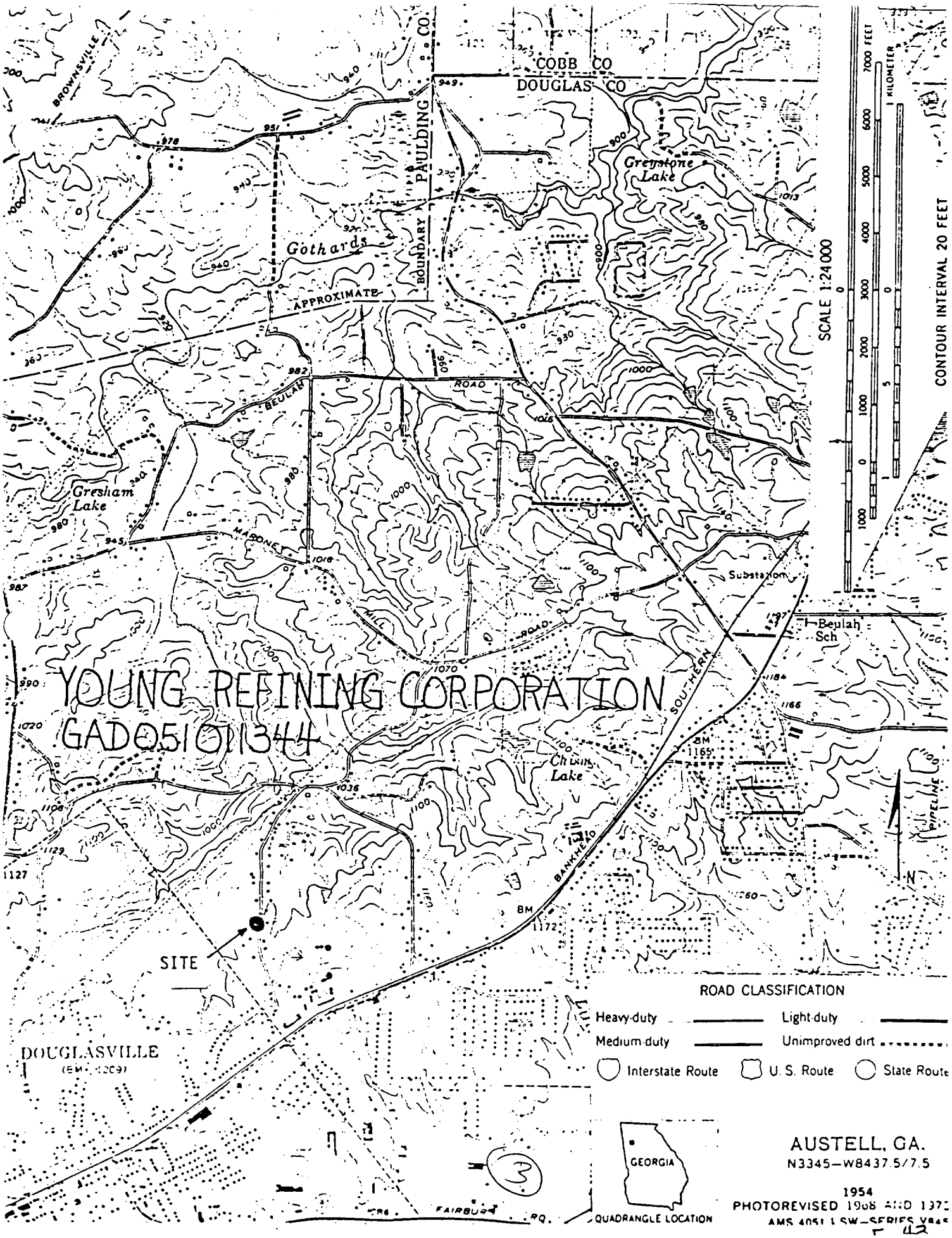
NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: 6 samples (attached).

REVIEWED BY: DATE:

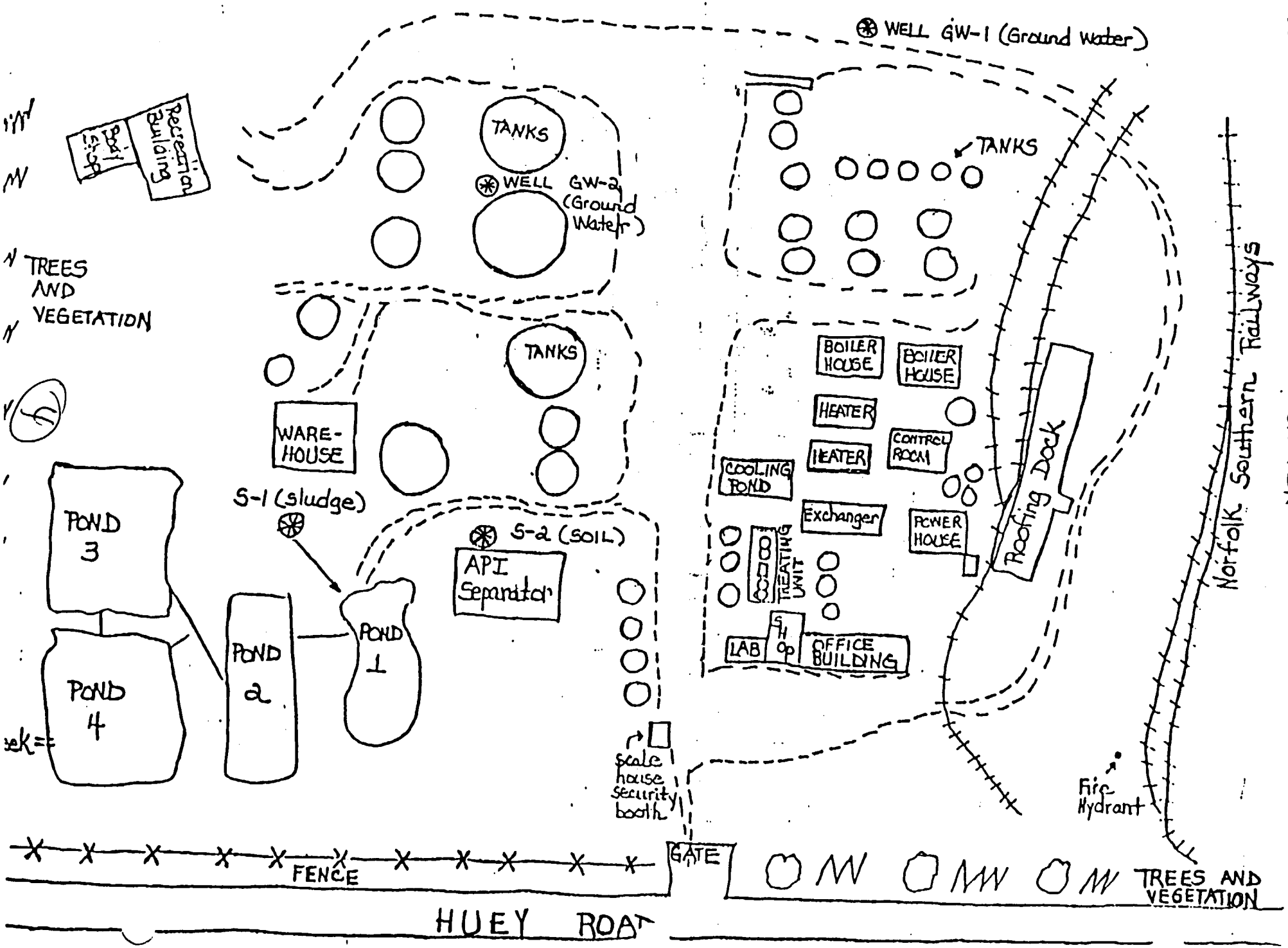
ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

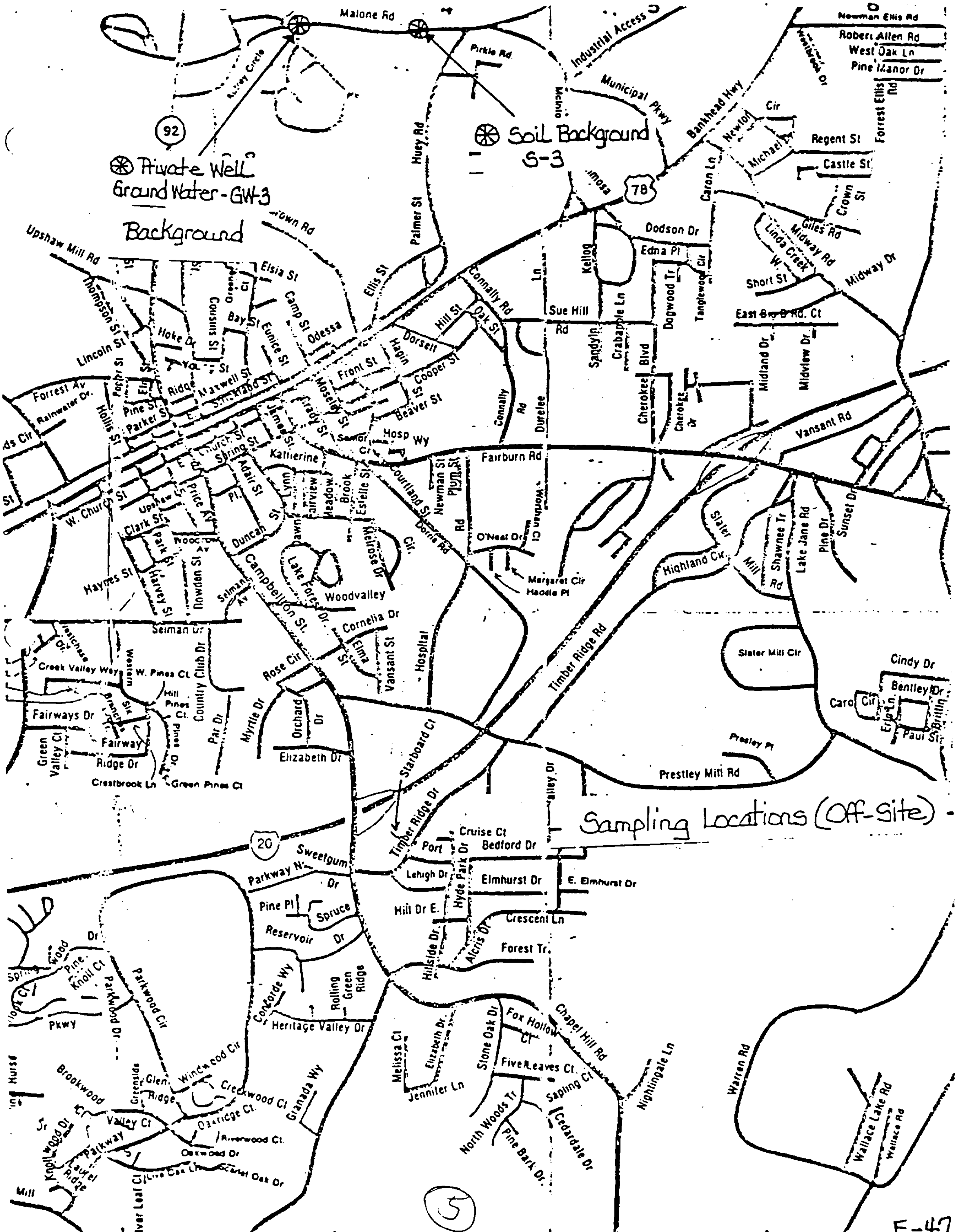
File: Young Refining Corporation (GAD051011344)

GAK:zr005


COBB CO
DOUGLAS CO
PAULDING CO
BOUNDARY
APPROXIMATE
Gothards
Greystone Lake
Gresham Lake
Chalin Lake
BROWNSVILLE
BEULAH ROAD
MABONE MILL ROAD
SOUTHERN
BANKHEAD
PIPELINE
Substation
Beulah Sch
BM 1165
BM 1172
YOUNG REFINING CORPORATION
GAD051011344
SITE
DOUGLASVILLE
(EM 1209)
FAIRBURN RD.
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
1 KILOMETER
7000 FEET
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
Interstate Route
U. S. Route
State Route
GEORGIA
QUADRANGLE LOCATION
AUSTELL, GA.
N3345—W8437.5/7.5
1954
PHOTOREVISED 1968 AND 1973
AMS 4051 I SW—SERIES V845

SITE SKETCH


WELL GW-1 (Ground Water)
Recreation Building
Pool
TANKS
WELL GW-2 (Ground Water)
TANKS
TREES AND VEGETATION
TANKS
WARE-HOUSE
S-1 (sludge)
S-2 (SOIL)
API Separator
POND 3
POND 4
POND 2
POND 1
BOILER HOUSE
BOILER HOUSE
HEATER
HEATER
CONTROL ROOM
COOLING POND
Exchanger
POWER HOUSE
TREATING UNIT
LAB
SHOP
OFFICE BUILDING
Roofing Dock
Norfolk Southern Railways
Fire Hydrant
scale house security booth
GATE
FENCE
TREES AND VEGETATION
HUEY ROAD



Private Well
Ground Water - GW-3
Background
Soil Background
S-3
Sampling Locations (Off-Site)
5
Malone Rd
Industrial Access
Municipal Pkwy
Bankhead Hwy
Upshaw Mill Rd
Fairburn Rd
Vansant Rd
Timber Ridge Rd
Prestley Mill Rd
Campbellton St
Connally Rd
Chapel Hill Rd
Nightingale Ln
Warren Rd
Wallace Lake Rd
Wallace Rd
Hospital
Sweetgum
Parkway N.
Cherokee Blvd
Huey Rd
Palmer St
Ellis St

E. - 9:28 AM

10-28-87

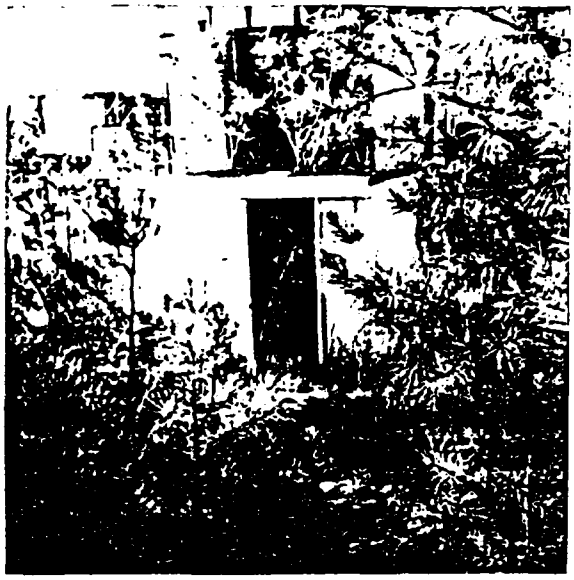
County Name Douglas
Picture No. 1 of 10
Site Name Young Refining Corporation.
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Well located in rear of plant process area is being purged prior to conductivity readings and sampling.
Other

E. - 9:34 AM

10-28-87

County Name Douglas
Picture No. 2 of 10
Site Name Young Refining Corporation.
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Well being sampled. (VOA, total metals). [Sample # GW-1).
Other

6



N.W.- 10:00AM

10-28-87

County Name Douglas
Picture No. 3 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well is situated in the area of the ponds, near tank # 303.
Other

N.W. - 10:05AM

10-28-87

County Name Douglas
Picture No. 4 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Samples being collected for Total Metals, VOA. [Sample # GW-2]
Other

N. -10:19 AM 10-28-87

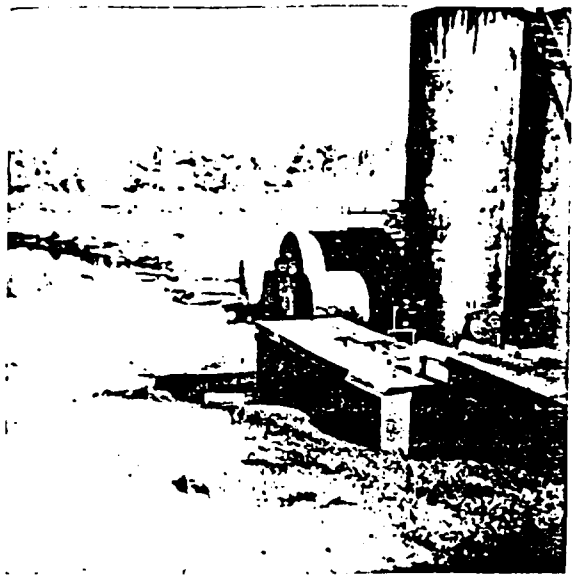
County Name Douglas
Picture No. 5 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing North
Photographer Charles Evans
Program Site Investigation Program
Explanation Oil-filled drainage ditch observed.

Other

W. -10:40 AM 10-28-87

County Name Douglas
Picture No. 6 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A sludge composite was collected from the bottom layer of Pond #1. Three different areas of Pond #1 were sampled and combined. Mixing of composite sludge sample is shown. (Sample # S-1).
Other

(8)



N.E. - 11:25 AM

10-28-87

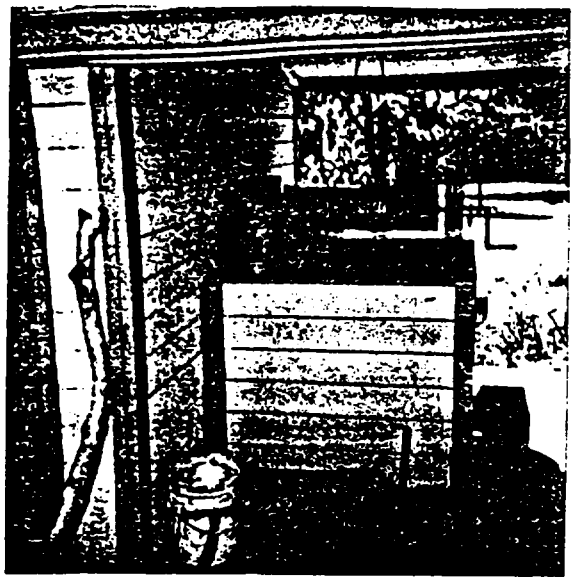
County Name Douglas
Picture No. 7 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # S-2 is a soil composite collected around APT Separator. Sample
Other was collected at a depth of 3-6 inches.

NW. - 11:55 AM.

10-28-87

County Name Douglas
Picture No. 8 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A soil composite background sample was collected 2 miles away from site in a
Other forested area (Malone Street) [Sample # S-3]. Sample was collected from 3-6" in depth.

9



S. - 12:35 PM. 10-28-87

County Name Douglas
Picture No. 9 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Background ground water sample was collected from a dug well 2.0 miles away from facility. Depth unknown at this time.
Other

W. - 12:40 PM 10-28-87

County Name Douglas
Picture No. 10 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # GW-3 (dug well - background) being collected from spicket.
Other

10

Reference 4

ROUTING AND TRANSMITTAL

TO: *(Name, office symbol, room number, building, Agency/Post)*

1. Hubert Weiland
2. B&V
3.
4.
5.

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

This color photo goes with Work Assignment #15, Revision #18. Young Refining GAD051011344.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: *(Name, org. symbol, Agency/Post)*

Dorothy Rayfield

Room No.—Bldg.

Phone No.

5041-102 *U.S. GPO: 1990-254-313

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

RE 6 LAGOON LOCATIONS 1966-1990
G REFINING CORP. SEPTEMBER 25, 1990 APPROX. SCALE 1:3,8(

trench
BB -- Block Building

30 Feet behind
A Block building
(Area for Geophysical)

IE CONVERSATION DOCUMENTATION

Reference 5

]

orporation
uglas County, Georgia

(404) 942-5022

Chamber of Commerce

WEV

And: William E. Vasser
Dynamac Corporation

William E. Vasser
2/19/93

(404) 681-0933

Discussion: Ms. Glore informed me that the Young Refining Corporation was still active. The primary product currently produced is asphaltic cement.

Confirmed on 2-2-93
Robert O. Jordan

~~Reference 4~~

270 Washington Street, S.W., Room 825, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

November 21, 1985

TRIP REPORT

Reference 6

SITE NAME AND LOCATION: Young Refining Cor
7982 Huey Road, Do

TRIP BY: Jack Dempsey

Accompanied by: None

DATE OF TRIP: 7/24/85

OFFICIALS CONTACTED: Charles E. Young, Executive V.P.
Fang Kuo, Plant Engineer
Douglas McLendon, Operations Manager

REFERENCE: Complaint from Arivec Chemicals concerning appearance and regulatory status of Young's surface impoundments.

COMMENTS:

This facility, constructed in 1955, refines asphaltic crude, received by railroad tanks from southeast Mississippi, into asphalt cements, #2 fuel oil, heavy oil, and natural gasoline (60 octane). The facility is currently processing about 126,000 gals./day of crude (60% capacity). Mr. Young said they no longer purchase used oil from jobbers due to problems. Paving and roofing asphalt cements constitute about 55% of product produced.

I. Process:

1) Heating - the crude is heated through several steps with heat exchangers and finally a furnace to achieve 670°F;

2) Distillation - the crude enters a flash tower where light oils are vaporized out of the crude and asphalt goes out the bottom;

3) Fractionating - the light oils are further processed in a fractionating column to obtain the gasoline and various oils;

4) Oxidation - about 40% of the asphalt is oxidized with heat and air to produce roofing and coating asphalt;

5) Shipping - roofing asphalt is packaged in cardboard containers for shipment to users; gasoline, asphalt, and oils are shipped by tanker trucks.

II. Wastes Generated:

1) Solid Waste - collected in on-site dumpsters serviced by the City of Douglasville;

F-51

2) Wastewater - all process wastewater and storm drains from the complex converge to pass through an API Separator that discharges to an NPDES permitted wastewater treatment system consisting of 4 ponds in series;

3) API Separator Sludge (K051) - sludge is shoveled from the bottom of the separator about every 6 months and placed on the ground adjacent to the separator; the material hardens and any water from it gravity flows into the first pond; each clean-out reportedly results in about 50 pounds of dewatered material;

4) Dissolved Air Flotation Float (K048) - a flocculator was used between ponds 1 & 2 up until about 1977 and reportedly generated about 100 pounds/year of this waste, that was allowed to harden in a drum and then disposed of on the ground at various locations around plant during construction of tanks and roads; the flocculator was discontinued because it was not needed to meet effluent limits of the NPDES permit;

5) Slop Oil Emulsion Solids (K049) - based on the information obtained, all of the skimmings from the API Separator are pumped back to crude tanks for reprocessing, therefore, none of this waste (emulsion between water and oil) is generated;

6) Heat Exchanger Bundle Cleaning Sludge (K050) - the heat exchangers are reportedly cleaned once each year and about 150 pounds of waste is generated; the officials were unsure of the disposal method, but admitted that it is probably disposed of by placing on the ground on-site;

7) Leaded Tank Bottoms (K052) - no lead is used in the process, therefore, none of this waste is generated; Mr. Young said the crude may have a trace of lead.

III. Plant Inspection:

A tour of the facility confirmed the processes and waste streams described above. Much spillage of asphalt was observed around the tanks and treatment of the wastewater is unsightly. API Separtor sludge has accumulated beside the separator and the first pond has a heavy layer of oil on the surface that is periodically skimmed and pumped back for processing. The second pond has a baffle that traps oil escaping the first pond, but after that no oil was visible on the surface of the ponds. I collected a sludge sample from the influent area of pond #1 and a soil sample from the area the officials said the K050 waste was dumped.

IV. Records Examination:

No records were examined at the facility. The facility filed a Hazardous Waste Facility Permit Application in 1980, but was advised in 1982 to withdraw (based on disposal of small quantities in an NPDES permitted system). Withdrawal was requested and granted in 1982. The facility status was changed to small quantity generator according to the letter. The 1983 Annual Report indicated no waste generated. The Facility Information Report, completed for an inspection on 5/7/82, indicated small quantities of the listed wastes are disposed of in the surface impoundments.

Mr. Young contends that none of these wastes are dumped directly in the ponds, but the whole complex drains to the ponds so any wastes disposed on-site may eventually get in them.

CONCLUSIONS:

The facility is a small quantity generator that has failed to comply with the disposal requirements for same. Small quantities of listed wastes are being disposed of on-site. The soil sample collected at the suspected disposal site of K050 waste was below the detection limits for total and extractable metals and hydrocarbons. The sludge sample collected from the influent area of pond #1 contained 7.4 ppm total lead and small amounts of hydrocarbons typical of oil, but was below the detection limits for EP metals, except for barium (3.0 ppm, limit of 100.0). The background document states that lead and chromium are the constituents of conern in the waste streams, that lead comes predominantly from tetraethyl lead in the blending of leaded products, and chromium comes predominantly from cooling tower blowdown that uses a chromium base corrosion inhibitor. At this point, the document footnotes that refineries not implementing these systems will have lower levels of these metals and delisting is available. Mr. Young stated that they do not use any tetraethyl lead and that the chromium base corrosion inhibitor was replaced about 10 years ago with a complex amine that does not contain any metals. Based on the above information, I recommend that we send an N.O.V. for violation of the small quantity generator requirements, but not pursue regulating the ponds as hazardous waste surface impoundments.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED: Send N.O.V.

REVIEWED BY: JD 12/16

ATTACHMENTS: Sample results *

JD:cen(060)

File: Young Refining Corp., Douglasville (R)

* The lab was not able to do oily waste extraction on samples as originally requested. Otis Woods said method was not EPA approved (?) and lab was not set up to perform. Therefore, lab request was changed to normal extraction procedure.

F-53

... PROTECTION DIVISION

LABORATORY REPORT

SAMPLE DATE: 7-24-85 PROJECT: Young Refining Corporation COLLECTOR: Jack Dempsey

DATE REC'D 7/24/85
TIME REC'D 4:30 p.m.
REC'D BY: M. Basmajian
DEL BY: Dempsey
Harold Lanford
LABORATORY MANAGER

DATE: 10-4-85

HW LOG NO.	1444	1445	1445		
LABEL I.D.	Soil from behind tank #305	Sludge from inlet of 1st Pond Top Layer	Sludge from inlet of 1st Pond Bottom Layer		
PARAMETERS / LAB NO.	HW 1444	HW 1445	HW 1445		
Naphthalene mg/kg	<1	6.3	8.9		
Dimethyl Naphthalene (total) "	<1	10 *	13 *		
EP Ag µg/L (PPB)	<10	<10			
" As "	<40	<40			
" Ba "	<3000	3000			
" Cd "	<10	<10			
" Cr "	<10	<10			
" Pb "	<25	<25			
" Se "	<50	<50			
Total Cr mg/kg	—	<0.5	—		
" Pb "	—	7.4			

REMARKS: * estimated values.
High Molecular Weight Hydrocarbons typical of an oil present at high ...
Bottom Layer appears to be Granular Solids - EP Metals + Total Metal were run on a well Mixed Sample.

(4) ---

F-57

HAZARDOUS WASTE ANALYSIS REQUEST

DATE: 7-24-85 PROJECT: Young Refining Corp. COLLECTOR: Jack Dempsey

NO. SAMPLES: 2 LOG NOS. 1444 & 1445 LIQUID ____ SOLID ____ SOIL 1

CAUSTIC ____ ACID ____ SOLVENT ____ UNKNOWN ____ SLUDGE 1

INFORMATION FOUND: asphalt production from low-grade crude oil

HAZARDOUS WASTE NOS. K048, K049, K050, K051 (Petroleum Refining)

HAZARDOUS HANDLING: none known

WORK PRIORITY (CRITICAL NEED) normal

RECEIVED

OCT 07 1985

ENVIRONMENTAL PROTECTION DIVISION
PROTECTION BRANCH

METALS ANALYSES

	TOT	DIS			
METALS (DW NO Hg)	☐	☐	EP METALS (DW NO Hg)	☒	100X ☐ 30X ☐
METALS (DW WITH Hg)	☐	☐	EP METALS (DW WITH Hg)	☐	

	TOT	DIS		TOT	DIS				
NICKEL	☐	☐	CADMIUM	☐	☐	EP NICKEL	☐	EP CADMIUM	☐
ARSENIC	☐	☐	LEAD	☒	☐	EP ARSENIC	☐	EP LEAD	☐
CHROMIUM	☒	☐	MERCURY	☐	☐	EP CHROMIUM	☐	EP MERCURY	☐
CHROM-HEX	☒	☐	SELENIUM	☐	☐	EP CHROM-HEX	☐	EP SELENIUM	☐
____	☐	☐	____	☐	☐	____	☐	____	☐

on the waste

SPECIFIC ANALYSES

pH	☐	SULFIDE	☐	% SOLIDS	☐	____	☐
FLASH PT	☐	SP.COND.	☐	TOT. PHENOLS	☐	____	☐
CYANIDE TOT.	☐	TOC	☐	CHLORIDE	☐	____	☐
CYANIDE AM.	☐	TOH	☐	FLUORIDE	☐	____	☐

ORGANIC ANALYSES

PESTICIDE SCREEN (EC)	☐	GC-MS ACID EXTRACTABLES	☒
PCB	☐	GC-MS BASE/NEUTRALS	☒
VOLATILE ORGANICS (VOA)	☐		

SPECIFIC ORGANICS: ____

APPROVED: HB AUTHORIZED: ____

BW/0089F

5

F-5(

Reference 7

SCREENING SITE INSPECTION REPORT

YOUNG REFINING CORPORATION
GAD051011344

Gilda A. Knowles G.A.K.
Georgia Environmental Protection Division
December, 1987

Reviewed by: Randolph D. Williams Date: 12/30/87

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1.0 EXECUTIVE SUMMARY

The Young Refining Corporation is located at 7982 Huey Road (P.O. Box 796) in Douglasville, Douglas County, Georgia 10314. The coordinates are latitude 33° 44' 0.0" and longitude 084° 45' 0.0".

The facility is classified as a small quantity generator and possesses an NPDES permit (GA0001902) that was issued by Georgia-EPD for 4 ponds. Young Refining Corporation was found to be in violation of small quantity generator standards by Georgia-EPD in July of 1985. Hazardous wastes (sludges) had been disposed of in the past by spreading wastes on the ground at various locations throughout the facility. Samples collected in July of 1985 were found to contain barium and lead. On October 28, 1987, a total of four samples were collected on-site. These samples contained barium, chromium and lead.

Potential targets in the area are 23 households that may be using a shallow aquifer as a source of drinking water, within a 3-mile radius of the site. There is only one shallow well just outside the one-mile radius from the site and this well is 20 feet in depth. Most local farms get water for domestic use from shallow dug wells that are usually less than 60 feet in depth. Drilled wells provide water for many of the rural homes and usually range in depths from 200 to 250 feet. The surface waters in the area are used for fishing and recreation. Surface run-off from the site flows in a northeasterly direction and empties into an unnamed creek, which in turn empties into Gothards Creek. The City of Douglasville's drinking water is supplied by Anneewakee, Little Anneewakee, and Bear Creeks, which are located southeast of the site. There are no known intakes used for irrigation purposes.

There are no records of remediation at the site, nor are there records of companies or individuals who may at one time have transported wastes off-site for disposal. Wastes have been disposed of on-site by land application and in ponds. The current RCRA status for the facility is a small quantity generator.

Heavy metals were found in waste samples collected at the site by Georgia-EPD.

2.0 ENVIRONMENTAL SETTING

The site is located in the Central Uplands District of the Piedmont Physiographic Province of Georgia (Appendix A, Figure 1). The northeastern and central portions of this district are a series of low, linear ridges, 1300-1500 feet above sea level, and separated by broad, open valleys (1). Slopes in the vicinity of the site range from 6-10% (2).

Surface run-off from the site flows generally to the northeast (Appendix C, Attachment 1). Even though ponds on-site are adequate and the facility possesses an NPDES permit, there is a small tributary which receives discharge waters from pond #4 and flows to the northeast. Mill Creek and Crystal Lake are located 1.0 mile west of the site, Chism Lake is 1.25 miles northeast of the site and Little Anneewakee Creek and Slater Mill Creeks are located 1.0 - 1.25 miles southeast and south of the site respectively (Appendix C, Attachment 2). The City of Douglasville's drinking water is supplied by large impoundments from which water is drawn from Anneewakee, Little Anneewakee and Bear Creeks. Supplemental water is purchased from Cobb and Marietta Water Systems (Appendix C, Attachment 3).

Douglas County lies entirely within the Piedmont Plateau, which consists of several northeast and southwest trending belts of crystalline rock ranging in age from Precambrian to Triassic (3). About 70 to 75 percent of the county is underlain by schist, biotite gneiss, and other metamorphic rocks. The remaining 25 to 30 percent is underlain by Augen gneiss, hornblende gneiss, granite gneiss, granite intrusions, or other igneous rocks (1). The soil in the area of the site is an Appling sandy clay loam, ranges 6 to 10 percent slopes and is a severely eroded soils (Appendix C, Attachment 4).

The City of Douglasville's drinking water is supplied from large impoundments from which water is drawn from Anneewakee, Little Anneewakee and Bear Creek. Supplemental water is purchased from Cobb and Marietta Water Systems (Appendix C - Attachment 3). Most farms, however, get water from domestic use from shallow dug wells that commonly yield 2 to 5 gallons of water per minute and are less than 60 feet deep (1). A shallow well is observed 2.0 miles away from the facility and was measured at a depth of 20 feet (Appendix C, Attachment 5). Drilled wells are also used to provide water for rural homes. These wells range in depths from 200-300 feet. Generally, there are no water-bearing fractures of an importance at a depth below 250 feet (1). There are five operable wells at Young Refining Corporation that are 300 feet in depth, however, water from these wells is only used to replenish cooling pond water and utility/maintenance purposes (Appendix C, Attachment 6). A well survey was conducted within a 3-mile radius of the facility and 23 wells were observed (Appendix C, Attachment 2).

The mean annual precipitation for the area is 50.0 inches (1). The mean annual lake evaporation is 40.0 inches and the net precipitation is 10.0 inches (4). The 1-year 24-hour rainfall for the area is 3.5 inches (4).

The site is located in a moderately populated area. Areas to the south and southwest of the site are densely populated; north of the site is sparsely populated and east and southeast of the site is moderately populated, (Appendix A, Figure 2). Land use in the immediate vicinity of the site is a mixture of industrial, residential and commercial.

Drinking water within a 3-mile radius of the site is supplied for the most part by surface water (Appendix C, Attachment 3). However, there are both dug and drilled wells in the area (Appendix C, Attachments 2 and 5) (3). There are no critical habitats of an endangered species in Douglas County (Appendix C, Attachment 7).

3.0 TARGET POPULATIONS

As the result of a well survey conducted in the area of the site, 23 households were observed with wells within a three mile radius of the site (Appendix C, Attachment 2). Both drilled and dug wells were observed during the well survey, which indicates that both deep and shallow wells are present in the area. There is a shallow well (depth 20 feet) located just outside the one mile radius (Appendix C, Attachment 5). This shallow well was sampled and residents use it as a drinking water source. There may be potential for contamination of the surficial aquifer, however there is actually only one household target (3.8 people). There is an alternate source of drinking water; the City of Douglasville's drinking water is supplied by surface water and ponds on-site at the facility are regulated (Appendix C, Attachments 2, 3 and 6). The population distribution within one, two and three mile radii of the site is 1,074; 7,064 and 13,954 respectively (4; Appendix C, Attachment 2).

4.0 WASTE TYPES AND QUANTITIES

The types of wastes found at the site were sludge and soil composites which contained heavy metals (barium, chromium and lead). Waste quantities at the facility are unknown.

5.0 LABORATORY DATA

On October 28, 1987, four samples were collected at the facility by Georgia-EPD and two samples (background soil and groundwater) were collected off-site. Laboratory analyses indicated the presence of barium (680 mg/kg), chromium (400 mg/kg) and lead (880 mg/kg) (Appendix B). Benzene (2.7 mg/kg) and xylene (1.7 mg/kg), were found in sludge composite samples. Total zylenes (6,000 ug/kg) and naphthalene (17,000 ug/kg) were found in the soil composite sample that was collected around the API Separator (Appendix B).

6.0 TOXICOLOGY/CHEMICAL CHARACTERISTICS

The following substances have been identified in samples collected at the site (5,6):

Barium - TLV (Threshold Limit Value): Air 500 ug/m^3. There is no data on threshold. Hazard: Toxic, flammable at room temperature in powder form.

HRS Waste Characteristics:

Ground Water and Surface Water	Air Pathway Value
18	9

Lead - Oral-rat TDLo (Lowest Toxic Dose) 790 mg/kg. Tolerance 0.15 mg/per cubic meter of air. Hazard: Toxic by ingestion and inhalation of dust or fume.

HRS Waste Characteristics:

Ground Water and Surface Water	Air Pathway Value
18	9

Chromium - Ivn-rat (Intravenous) TDLo 2160 ug/kg. Hazard: Hexavalent chromium compounds are carcinogenic (OSHA) and corrosive on tissue resulting in ulcers and dermatitis on prolonged contact. TLV: for chromium dust and fume is 0.5 mg/m^3 of air.

HRS Waste Characteristics:

Ground Water and Surface Water	Air Pathway Value
18	9

Napthalene Oral-rat LD50: 1780 mg/kg; Oral-mammal 1,000 mg/kg. Hazard: Toxic by inhalation. TLV: 10 ppm in air. May be used as an insecticide. Systemic reactions include nausea, headache, diaphoresis, hematuria, fever, anemia, liver damage, vomiting, convulsions and coma. Poisoning may occur by inhaling of large doses or by skin absorption.

HRS Waste Characteristics:

Ground Water and Surface Water Pathway Value	Air Pathway Value
9	6

Xylene - Oral-rat LD50: 4300 mg/kg. Hazard: Flammable, moderate fire risk. Toxic by ingestion and inhalation. TLV: 100 ppm in air.

HRS Waste Characteristics:

Ground Water and Surface Water Pathway Value	Air Pathway Value
9	9

Benzene - Oral-human TDLo: 130 mg/kg. Hazard: A carcinogen. Highly toxic. Flammable; dangerous fire risk. Explosive limits in air 1.5 to 8% by volume. TLV: 10 ppm in air.

APPENDIX A

Figure 1 : Physiographic provinces of Georgia

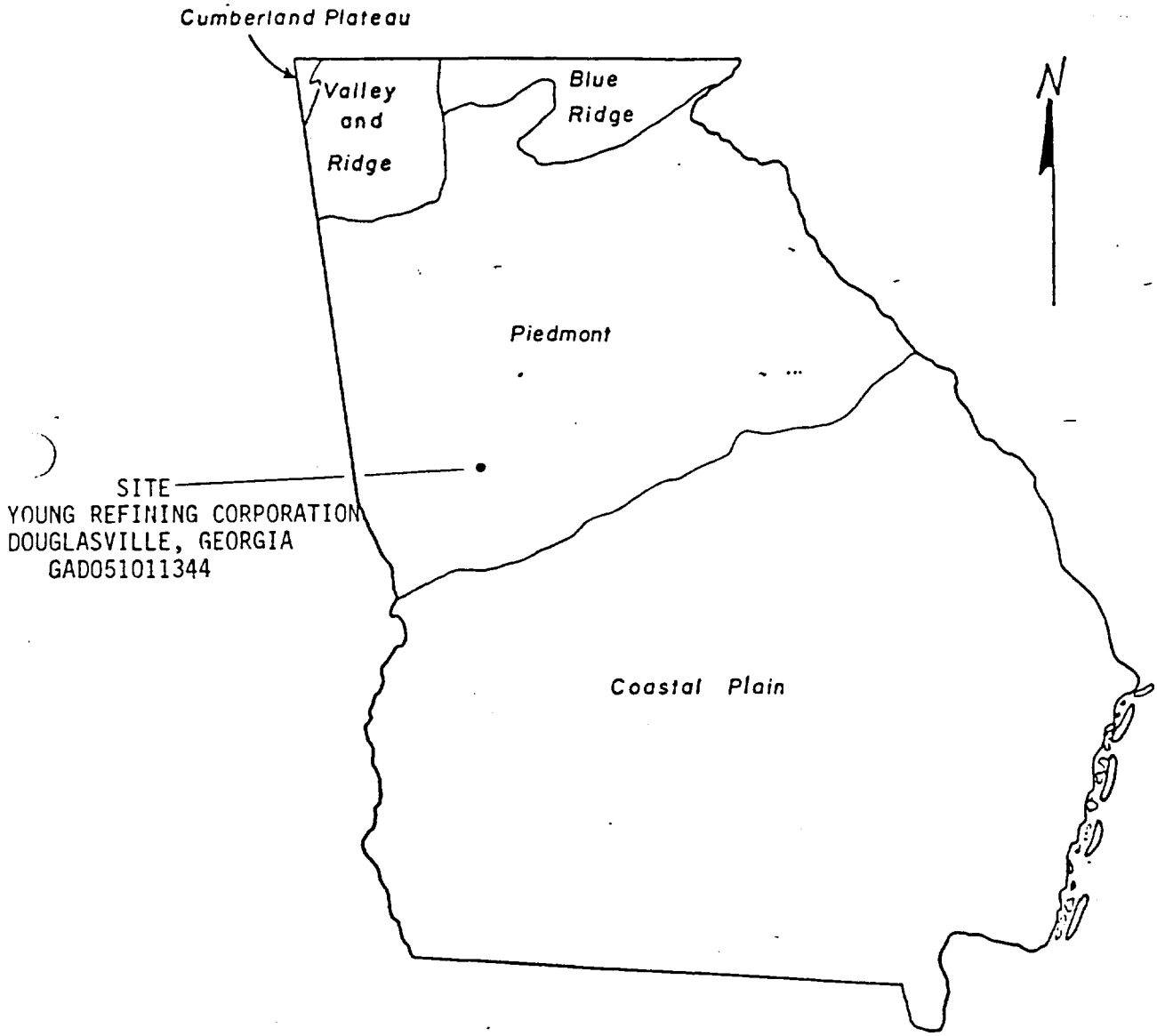
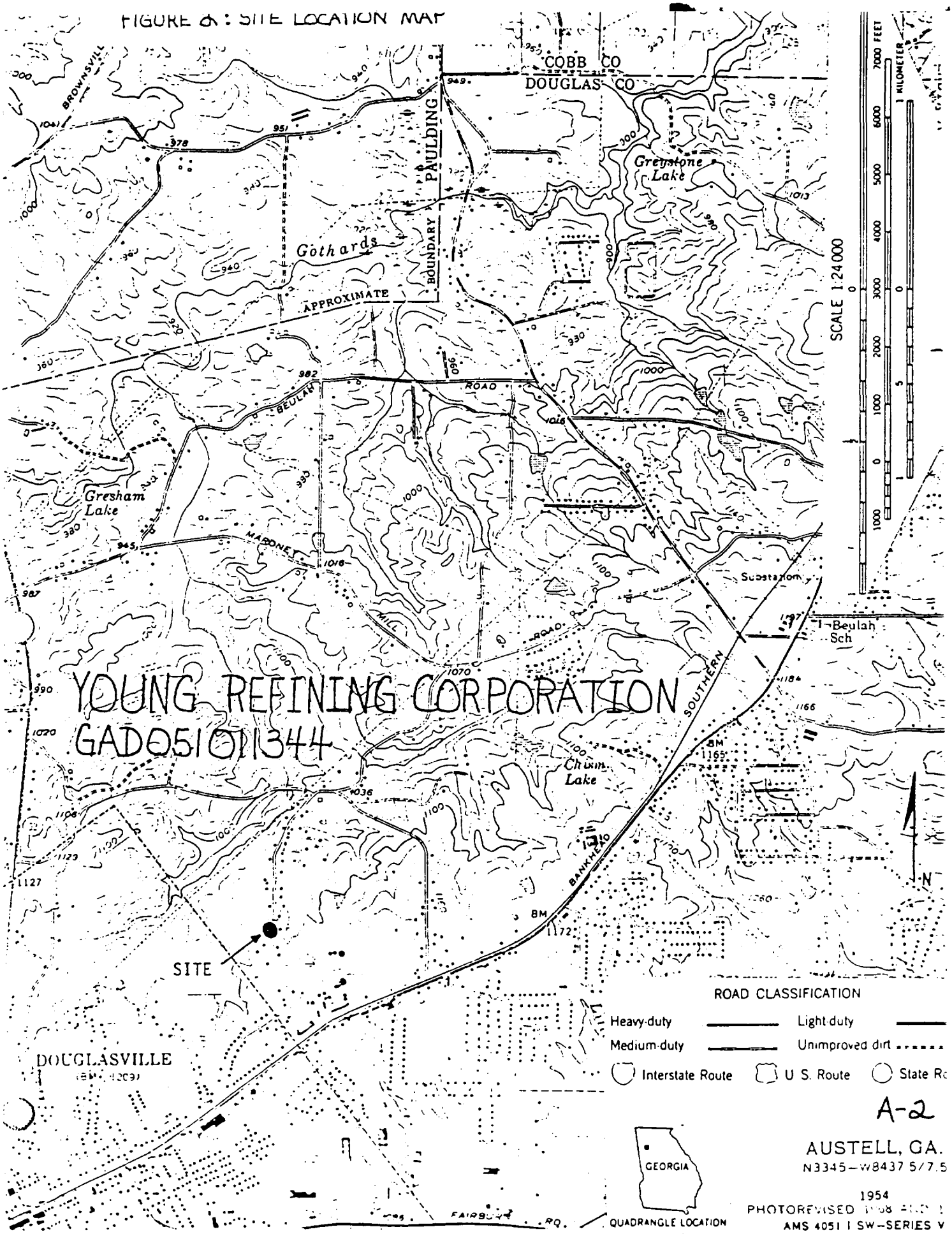


FIGURE 6: SITE LOCATION MAP

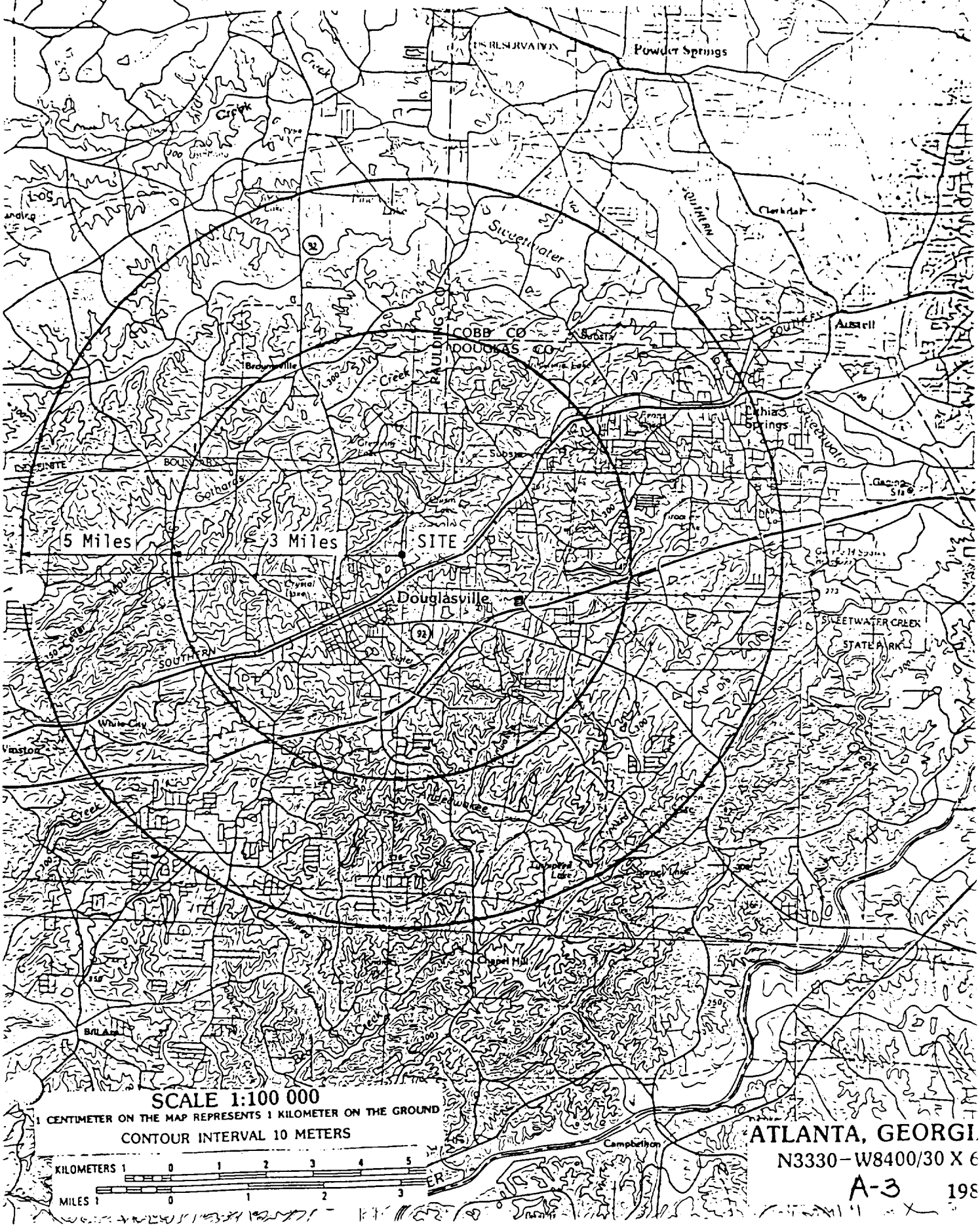


A-2

AUSTELL, GA.
N3345—W8437 5/7.5

1954
PHOTOREVISED 1968 AND
AMS 4051 I SW—SERIES V

FIGURE 3: 3Mi.,5Mi.,RADIUS OF SITE



E. - 9:28 AM

10-28-87

County Name Douglas
Picture No. 1 of 10
Site Name Young Refining Corporation.
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well located in rear of plant process area is being purged prior to conductivity
Other readings and sampling.

E. - 9:34 AM

10-28-87

County Name Douglas
Picture No. 2 of 10
Site Name Young Refining Corporation.
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well being sampled. (VOA, total metals). [Sample # GW-1).
Other

N.W.- 10:00AM

10-28-87

County Name Douglas
Picture No. 3 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well is situated in the area of the ponds, near tank # 303.
Other

N.W. - 10:05AM

10-28-87

County Name Douglas
Picture No. 4 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Samples being collected for Total Metals, VOA. [Sample # GW-2]
Other

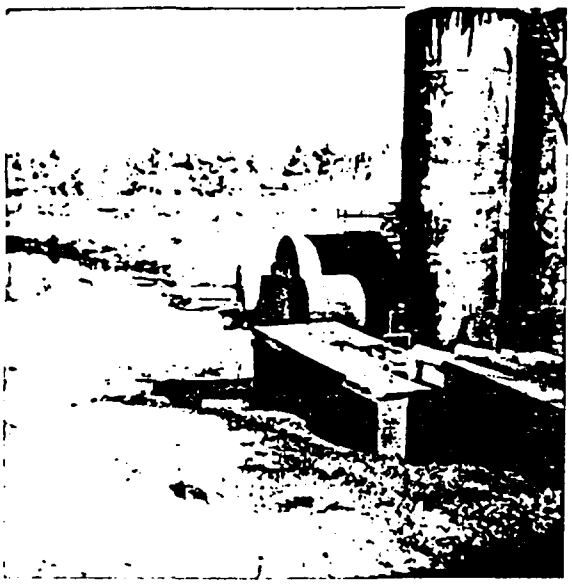
N. -10:19 AM 10-28-87

County Name Douglas
Picture No. 5 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing North
Photographer Charles Evans
Program Site Investigation Program
Explanation Oil-filled drainage ditch observed.

Other

W. -10:40 AM 10-28-87

County Name Douglas
Picture No. 6 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A sludge composite was collected from the bottom layer of Pond #1. Three different
Other areas of Pond #1 were sampled and combined. Mixing of composite sludge sample is shown. (Sample # S-1).



N.E. - 11:25 AM

10-28-87

County Name Douglas
Picture No. 7 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # S-2 is a soil composite collected around APT Separator. Sample
Other was collected at a depth of 3-6 inches.

NW. - 11:55 AM.

10-28-87

County Name Douglas
Picture No. 8 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A soil composite background sample was collected 2 miles away from site in a
Other forested area (Malone Street) [Sample # S-3]. Sample was collected from 3-6" in depth.

S. - 12:35 PM. 10-28-87

County Name Douglas
Picture No. 9 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Background ground water sample was collected from a dug well 2.0 miles away from facility. Depth unknown at this time.
Other

W. - 12:40 PM 10-28-87

County Name Douglas
Picture No. 10 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # GW-3 (dug well - background) being collected from spicket.
Other

APPENDIX B

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
LAND PROTECTION BRANCH

CHAIN OF CUSTODY

FACILITY: Young Refining Corporation

LOCATION: 7982 Huey Road Douglasville, Ga.

SAMPLE #	LOG #	LAB I.D.	DESCRIPTION	COLLECTED BY (Name)	DATE	TIME
GW-1	2883		Well (Ground water) - Rear of Plant Area	G.A. Knowles	10-28-87	9:30 AM
GW-2	2884		Well (Ground water) - Near Pond #1 and Tank #303	G.A. Knowles	10-28-87	10:00 AM
GW-3	2885		Well (Ground water) - Background - Malone Street	G.A. Knowles	10-28-87	12:35 PM
S-1	2886		Sludge Composite - Bottom Layer Pond #1	G.A. Knowles	10-28-87	10:40 AM
S-2	2887		Soil Composite - API Separator	G.A. Knowles	10-28-87	11:25 AM
S-3	2888		Soil Composite - Background	G.A. Knowles	10-28-87	11:55 AM

TRANSFER RECORD

TRANSFERRED BY (Name)	TO (Name) (IF FINAL: Lab Name)	DATE	TIME	METHOD OF TRANSFER	RECEIVED BY (Name)	DATE
Gilda A. Knowles	Instrumentation Lab	10/28/87	1510	Hand	Danny Reel	10/28/87

ANALYSES REQUESTED:

Propa

DATE: 10-28-87 PROJECT: Young Refining Corp. COLLECTOR: G.A. Knowles

NO. SAMPLES: 3 LOG NOS. 2886-2888 LIQUID ____ SOLID ____ SOIL (2)

CAUSTIC ____ ACID ____ SOLVENT ____ UNKNOWN ____ SLUDGE ✓

INFORMATION FOUND: Facility refines crude (asphaltic) into asphaltic cements, #2 fuel oil, heavy oil and gasoline. All process wastewater and storm drains fr complex passes through an API Separator that discharges to 4 ponds (NPDES).

HAZARDOUS WASTE NOS. ____

HAZARDOUS HANDLING: ____

WORK PRIORITY (CRITICAL NEED) Medium

RECEIVED DEC 21 1987 SITE INVESTIGATION PROGRAM

METALS ANALYSES

	TOT	DIS			
METALS (DW NO Hg)	☑	☐	EP METALS (DW NO Hg)	☐	100X ☐ 30X ☐
METALS (DW WITH Hg)	☐	☐	EP METALS (DW WITH Hg)		

	TOT	DIS		TOT	DIS				
NICKEL	☐	☐	CADMIUM	☐	☐	EP NICKEL	☐	EP CADMIUM	☐
ARSENIC	☐	☐	LEAD	☑	☐	EP ARSENIC	☐	EP LEAD	☐
CHROMIUM	☑	☐	MERCURY	☐	☐	EP CHROMIUM	☐	EP MERCURY	☐
CHROM-HEX	☑	☐	SELENIUM	☐	☐	EP CHROM-HEX	☐	EP SELENIUM	☐
____	☐	☐	____	☐	☐	____	☐	____	☐

SPECIFIC ANALYSES

pH	☐	SULFIDE	☐	% SOLIDS	☐	____	☐
FLASH PT	☐	SP.COND.	☐	TOT. PHENOLS	☐	____	☐
CYANIDE TOT.	☐	TOC	☐	CHLORIDE	☐	____	☐
CYANIDE AM.	☐	TOH	☐	FLUORIDE	☐	____	☐

ORGANIC ANALYSES

PESTICIDE SCREEN (EC)	☐	GC-MS ACID EXTRACTABLES	☑
PCB	☑	GC-MS BASE/NEUTRALS	☑
VOLATILE ORGANICS (VOA)	☑		

SPECIFIC ORGANICS: ____

APPROVED: [signature] AUTHORIZED: [signature]

B-1

(404) 656-7404

SAMPLE DATE: 10-28-87 PROJECT: Young Refining Corp. COLLECTOR: G.A. Knowles

	HW LOG NO.	2886	2887	2888		
DATE REC'D	10-28-87					
LABEL		S-1 Sludge Composite Bottom Layer Pond #1	S-2 Soil Composite API Separator	S-3 Soil Background (composite)		
TIME REC'D	1510					
REC'D BY:	Ideal					
DEL BY:	Knowle					
	g Harold Lanford LABORATORY MANAGER					
DATE:	12-17-87					
PARAMETERS	LAB NO.	HW2886	HW2887	HW2888		
Total Ag	mg/kg	<1	<1	<1		
" As	"	<3	<3	<3		
" Ba	"	680	32	98		
" Cd	"	1.8	<1	<1		
" Cr	"	405	13	2.5		
" Pb	"	880	69	17		
" Se	"	<7	<7	<7		
EP Ag	µg/L	<20	—	—		
" As	"	<60	—	—		
" Ba	"	1370	—	—		
" Cd	"	<20	—	—		
" Cr	"	100	—	—		
" Pb	"	640	—	—		
" Se	"	<100	—	—		
PCB's		See Attached Sheets				
UOA		" "		"		
BN and A GC/MS		" "		"		

REMARKS:

B-2

DATE: 12-15-87
PROJECT: Young Refining Corp
SOURCE: S-1 Sludge Composite

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PURGEABLE ORGANIC ANALYSIS-WASTE
DATA REPORTING SHEET

SAMPLE TYPE: Sludge
SAMPLE NO.: HW 2886

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: MB COMPLETE: DA

Compound		Units	Compound		Units
Methylene Chloride	<5	mg/Kg	Acetone	<10	mg/Kg
Trichlorofluoromethane	<1	mg/Kg	Methyl Ethyl Ketone	<10	mg/Kg
1,1-Dichloroethylene		mg/Kg	Carbon Disulfide	<1	mg/Kg
1,1-Dichloroethane		mg/Kg			mg/Kg
1,2-Trans-Dichloroethylene		mg/Kg	Isopropyl Acetate		mg/Kg
Chloroform		mg/Kg	2-Hexanone		mg/Kg
1,2-Dichloroethane		mg/Kg	Methyl Isobutyl Ketone		mg/Kg
1,1,1-Trichloroethane		mg/Kg	Styrene		mg/Kg
Carbon Tetrachloride		mg/Kg	O-Xylene		mg/Kg
Dichlorobromomethane		mg/Kg	P-Xylene total	1.7	mg/Kg
1,2-Dichloropropane		mg/Kg	M-Xylene		mg/Kg
Trans-1,3-Dichloropropene		mg/Kg	Ethyl Acetate	<1	mg/Kg
Trichloroethylene		mg/Kg	n-Propyl Acetate		mg/Kg
Benzene	2.7	mg/Kg	Butyl Acetate		mg/Kg
Chlorodibromomethane	<1	mg/Kg	Acrolein	<50	mg/Kg
1,1,2-Trichloroethane		mg/Kg	Acrylonitrile	<50	mg/Kg
Cis-1,3-Dichloropropene		mg/Kg	Chloromethane	<10	mg/Kg
2-Chloroethyl Vinyl Ether		mg/Kg	Bromomethane		mg/Kg
Bromoform		mg/Kg	Vinyl Chloride		mg/Kg
1,1,2,2-Tetrachloroethane		mg/Kg	Chloroethane		mg/Kg
Tetrachloroethylene		mg/Kg			mg/Kg
Toluene		mg/Kg			mg/Kg
Chlorobenzene		mg/Kg			mg/Kg
Ethylbenzene	1.1	mg/Kg			mg/Kg

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

M - NOT ANALYZED

No other purgeable organic compound detected with an estimated minimum detection limit of _____

DATE: 12-14-87
PROJECT: Young Refining Org
SOURCE: Sludge Composite Bottom Layer Pond #1

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-WASTE
DATA REPORTING SHEET

SAMPLE TYPE: Sludge
SAMPLE NO.: AW 2886

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: SB COMPLETED: DR

Compound		Units	Compound		Units
1,2-Dichlorobenzene	<100	mg/Kg	Di-N-Butyl Phthalate	<100	mg/Kg
1,3-Dichlorobenzene		mg/Kg	Fluoranthene		mg/Kg
1,4-Dichlorobenzene		mg/Kg	Pyrene		mg/Kg
Bis(2-Chloroethyl)Ether		mg/Kg	N-Butyl Benzyl Phthalate		mg/Kg
Hexachloroethane		mg/Kg	Bis(2-Ethylhexyl)Phthalate		mg/Kg
Bis(2-Chloroisopropyl) Ether		mg/Kg	Chrysene		mg/Kg
N-Nitrosodi-N-Propylamine		mg/Kg	Benzo(A)Anthracene		mg/Kg
Nitrobenzene		mg/Kg	Di-N-Octyl Phthalate		mg/Kg
Hexachlorobutadiene		mg/Kg	Benzo-(B)Fluoranthene		mg/Kg
1,2,4-Trichlorobenzene		mg/Kg	Benzo-(K)Fluoranthene		mg/Kg
Naphthalene		mg/Kg	Benzo-A-Pyrene		mg/Kg
Bis(2-Chloroethoxy)-Methane		mg/Kg	Indeno(1,2,3-CD)Pyrene		mg/Kg
Isophorone		mg/Kg	1,2,5,6-Dibenzanthracene	<200	mg/Kg
Hexachlorocyclopentadiene	<200	mg/Kg	Benzo(GHI)Perylene	<100	mg/Kg
2-Chloronaphthalene	<100	mg/Kg	2-Chlorophenol		mg/Kg
Acenaphthylene		mg/Kg	2-Nitrophenol		mg/Kg
Acenaphthene		mg/Kg	Phenol (GC/MS)		mg/Kg
Dimethyl Phthalate		mg/Kg	2,4-Dimethylphenol		mg/Kg
2,4-Dinitrotoluene	<200	mg/Kg	2,4-Dichlorophenol		mg/Kg
2,6-Dinitrotoluene	<100	mg/Kg	2,4,6-Trichlorophenol		mg/Kg
4-Chlorophenyl Phenyl Ether		mg/Kg	Parachlorometa Cresol		mg/Kg
Fluorene		mg/Kg	2,4-Dinitrophenol	<500	mg/Kg
Diethyl Phthalate		mg/Kg	4,6-Dinitro-O-Cresol	<500	mg/Kg
1,2-Diphenylhydrazine		mg/Kg	Pentachlorophenol	<200	mg/Kg
N-Nitrosodiphenylamine		mg/Kg	4-Nitrophenol	<500	mg/Kg
Hexachlorobenzene		mg/Kg	Benzidine	<500	mg/Kg
4-Bromophenyl Phenyl Ether		mg/Kg	3,3'-Dichlorobenzidine	<200	mg/Kg
Phenanthrene		mg/Kg	N-Nitrosodimethylamine	<100	mg/Kg
Anthracene		mg/Kg			mg/Kg

Sample contained a large amount of hydrocarbons characteristic of an oil

No other extractable organic compound detected with an estimated minimum detection limit of _____

B-4

DATE: 11/17/87
PROJECT: Young Refinery
SOURCE: Sludge Composite Bottom Layer - Pond 1

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PESTICIDES/PCB's ANALYSIS-WASTE
DATA REPORTING SHEET

SAMPLE TYPE: Sludge
SAMPLE NO.: HW 2886

SAMPLE REC'D (date & time:)
SAMPLE START (date & time
SAMPLE STOP (date & time:)
CHEMIST: AG COMPLETED: [illegible]

Compound		Units	Compound		Units
Aldrin		mg/Kg			
a-BHC		mg/Kg			
b-BHC		mg/Kg			
d-BHC		mg/Kg			
g-BHC		mg/Kg			
Chlordane		mg/Kg			
4,4'-DDD		mg/Kg			
4,4'-DDE		mg/Kg			
4,4'-DDT		mg/Kg			
Dieldrin		mg/Kg			
Endosulfan I		mg/Kg			
Endosulfan II		mg/Kg			
Endosulfan sulfate		mg/Kg			
Endrin		mg/Kg			
Endrin aldehyde		mg/Kg			
Heptachlor		mg/Kg			
Heptachlor epoxide		mg/Kg			
Toxaphene		mg/Kg			
PCB-1016	<200	mg/Kg			
PCB-1221		mg/Kg			
PCB-1232		mg/Kg			
PCB-1242		mg/Kg			
PCB-1248		mg/Kg			
PCB-1254		mg/Kg			
PCB-1260		mg/Kg			

DATE: 12-15-87
PROJECT: Young Refining
SOURCE: S-2 Soil
Composite API Separator

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PURGEABLE ORGANIC ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: HW 2887

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: MB COMPLETED: DL

Compound	Storet#	Units	Compound	Storet#	Units
Methylene Chloride	34426 <5000	µg/Kg	Acetone	<10,000	µg/Kg
Trichlorofluoromethane	34491 <1000	µg/Kg	Methy Ehtyl Ketone	<10,000	µg/Kg
1,1-Dichloroethylene	34504	µg/Kg	Carbon Disulfide	<1000	µg/Kg
1,1-Dichloroethane	34499	µg/Kg	Chloride		µg/Kg
1,2-Trans-Dichloro-ethylene	34549	µg/Kg	Isopropyl Acetate		µg/Kg
Chloroform	34318	µg/Kg	2-Hexanone		µg/Kg
1,2-Dichloroethane	34534	µg/Kg	Methyl Isobutyl Ketone		µg/Kg
1,1,1-Trichloroethane	34509	µg/Kg	Styrene		µg/Kg
Carbon Tetrachloride	34299	µg/Kg	O-Xylene		µg/Kg
Dichlorobromomethane	34330	µg/Kg	P-Xylene (Total)	6,000	µg/Kg
1,2-Dichloropropane	34544	µg/Kg	M-Xylene		µg/Kg
Trans-1,3-Dichloro-propene	34697	µg/Kg	Ethyl Acetate	<1000	µg/Kg
Trichloroethylene	34487	µg/Kg	N-Propyl Acetate	<1000	µg/Kg
Benzene	34237	µg/Kg	Butyl Acetate	<1000	µg/Kg
Chlorodibromomethane	34309	µg/Kg	Acrolein	34213 <50,000	µg/Kg
1,1,2-Trichloroethane	34514	µg/Kg	Acrylonitrile	34218 <50,000	µg/Kg
Cis-1,3-Dichloropropene	34702	µg/Kg	Chloromethane	34421 <10,000	µg/Kg
2-Chloroethyl Vinyl Ether	34579	µg/Kg	Bromomethane	34416	µg/Kg
Bromoform	34290	µg/Kg	Vinyl Chloride	34495	µg/Kg
1,1,2,2-Tetrachloro-ethane	44519	µg/Kg	Chloroethane	34314	µg/Kg
Tetrachloroethylene	34478	µg/Kg			µg/Kg
Toluene	34483	µg/Kg			µg/Kg
Chlorobenzene	34304	µg/Kg			µg/Kg
Ethylbenzene	34374	µg/Kg			µg/Kg

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

No other purgeable organic compound detected with an estimated minimum detection limit of _____

M - NOT ANALYZED

DATE: 12-14-87
PROJECT: Vanns Refining
SOURCE: S-2 Soil
Composite API Separator

GRORGIA ENVIRONMENTAL PROTECTION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: MW 2887

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: SB COMPLETED:

Compound	Storet#		Units
1,2-Dichlorobenzene	34539	<10,000	µg/Kg
1,3-Dichlorobenzene	34569		µg/Kg
1,4-Dichlorobenzene	34574		µg/Kg
Bis(2-Chloroethyl)Ether	34276		µg/Kg
Hexachloroethane	34399		µg/Kg
Bis(2-Chloroisopropyl) Ether	34286		µg/Kg
N-Nitrosodi-N-Propylamine	34431		µg/Kg
Nitrobenzene	34450		µg/Kg
Hexachlorobutadiene	39705		µg/Kg
1,2,4-Trichlorobenzene	34554		µg/Kg
Naphthalene	34445	17,000	µg/Kg
Bis(2-Chloroethoxy) Methane	34281	<10,000	µg/Kg
Isophorone	34411	<10,000	µg/Kg
Hexachlorocyclopentadiene	34389	<20,000	µg/Kg
2-Chloronaphthalene	34584	<10,000	µg/Kg
Acenaphthylene	34203		µg/Kg
Acenaphthene	34208		µg/Kg
Dimethyl Phthalate	34344		µg/Kg
2,4-Dinitrotoluene	34614	<20,000	µg/Kg
2,6-Dinitrotoluene	34629	<10,000	µg/Kg
4-Chlorophenyl Phenyl Ether	34644		µg/Kg
Fluorene	34384		µg/Kg
Diethyl Phthalate	34339		µg/Kg
4,6-Dinitro-O-Cresol	34660	<50,000	µg/Kg
4-Nitrophenol	34649	<50,000	µg/Kg
3,3'-Dichlorobenzidine	34634	<20,000	µg/Kg
1,2-Diphenylhydrazine	34349	<10,000	µg/Kg
N-Nitrosodiphenylamine	34436		µg/Kg
Hexachlorobenzene	39701		µg/Kg
4-Bromophenyl Phenyl Ether	34639		µg/Kg
Phenanthrene	34464		µg/Kg
Anthracene	34223		µg/Kg

Compound	Storet#		Units
Di-N-Butyl Phthalate	39112	<10,000	µg/Kg
Fluoranthene	34379		µg/Kg
Pyrene	34472		µg/Kg
N-Butyl Benzyl Phthalate	34295		µg/Kg
Bis(2-Ethylhexyl)Phthalate	39102		µg/Kg
Crysene	34323		µg/Kg
Benzo(A)Anthracene	34529		µg/Kg
Di-N-Octyl Phthalate	34599		µg/Kg
Benzo-(B)Fluoranthene	34233		µg/Kg
Benzo-(K)Fluoranthene	34245		µg/Kg
Benzo-A-Pyrene	34250		µg/Kg
Indeno(1,2,3-CD)Pyrene	34406		µg/Kg
1,2,5,6-Dibenzanthracene	34559	<20,000	µg/Kg
Benzo(GHI)Perylene	34524	<10,000	µg/Kg
2-Chlorophenol	34589		µg/Kg
2-Nitrophenol	34594		µg/Kg
Phenol (GC/MS)	34695		µg/Kg
2,4-Dimethylphenol	34609		µg/Kg
2,4-Dichlorophenol	34604		µg/Kg
2,4,6-Trichlorophenol	34624		µg/Kg
Parachlorometa Cresol	34455		µg/Kg
2,4-Dinitrophenol	34619	<50,000	µg/Kg
Pentachlorophenol	39061	<20,000	µg/Kg
Benzidine	39121	<80,000	µg/Kg
N-Nitrosodimethylamine	34441	<10,000	µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg

No other extractable organic compound detected with an estimated minimum detection limit of _____

DATE: 7/17-87
PROJECT: Young Refinery
SOURCE: S-2 Soil
Composite API Separator

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PESTICIDES/PCB's ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: HW 2887

SAMPLE REC'D(date & time): _____
SAMPLE START(date & time): _____
SAMPLE STOP (date & time): _____
CHEMIST: AG COMPLETED: DR

Compound	Storet #		Units	Compound	Storet #		Units
Aldrin	39333		µg/Kg				
a-BHC	39076		µg/Kg				
b-BHC	34257		µg/Kg				
d-BHC	34262		µg/Kg				
γ-BHC	39343		µg/Kg				
Chlordane	39351		µg/Kg				
4,4'-DDD	39311		µg/Kg				
4,4'-DDE	39321		µg/Kg				
4,4'-DDT	39301		µg/Kg				
Dieldrin	39383		µg/Kg				
Endosulfan I	34364		µg/Kg				
Endosulfan II	34359		µg/Kg				
Endosulfan sulfate	34354		µg/Kg				
Endrin	39393		µg/Kg				
Endrin aldehyde	34369		µg/Kg				
Heptachlor	39413		µg/Kg				
Heptachlor epoxide	39423		µg/Kg				
Toxaphene	39403		µg/Kg				
PCB-1016	39514	<20	µg/Kg				
PCB-1221	39491		µg/Kg				
PCB-1232	39495		µg/Kg				
PCB-1242	39499		µg/Kg				
PCB-1248	39503		µg/Kg				
PCB-1254	39507		µg/Kg				
PCB-1260	39511		µg/Kg				

DATE: 12-15-87
PROJECT: Murray Refining
SOURCE: S-3 Soil
Background

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PURGEABLE ORGANIC ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: HW 2888

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: MB COMPLETED: DR

Compound	Storet#		Units	Compound	Storet#		Units
Methylene Chloride	34426	<5	µg/Kg	Acetone		<10	µg/Kg
Trichlorofluoromethane	34491	<1	µg/Kg	Methy Ehtyl Ketone		<10	µg/Kg
1,1-Dichloroethylene	34504		µg/Kg	Carbon Disulfide		<1	µg/Kg
1,1-Dichloroethane	34499		µg/Kg	Vinyl Chloride			µg/Kg
1,2-Trans-Dichloro-ethylene	34549		µg/Kg	Isopropyl Acetate			µg/Kg
Chloroform	34318		µg/Kg	2-Hexanone			µg/Kg
1,2-Dichloroethane	34534		µg/Kg	Methyl Isobutyl Ketone			µg/Kg
1,1,1-Trichloroethane	34509		µg/Kg	Styrene			µg/Kg
Carbon Tetrachloride	34299		µg/Kg	O-Xylene			µg/Kg
Dichlorobromomethane	34330		µg/Kg	P-Xylene			µg/Kg
1,2-Dichloropropane	34544		µg/Kg	M-Xylene			µg/Kg
Trans-1,3-Dichloro-propene	34697		µg/Kg	Ethyl Acetate			µg/Kg
Trichloroethylene	34487		µg/Kg	N-Propyl Acetate			µg/Kg
Benzene	34237		µg/Kg	Butyl Acetate			µg/Kg
Chlorodibromomethane	34309		µg/Kg	Acrolein	34213	<50	µg/Kg
1,1,2-Trichloroethane	34514		µg/Kg	Acrylonitrile	34218	<50	µg/Kg
Cis-1,3-Dichloropropene	34702		µg/Kg	Chloromethane	34421	<10	µg/Kg
2-Chloroethyl Vinyl Ether	34579		µg/Kg	Bromomethane	34416		µg/Kg
Bromoform	34290		µg/Kg	Vinyl Chloride	34495		µg/Kg
1,1,2,2-Tetrachloro-ethane	44519		µg/Kg	Chloroethane	34314		µg/Kg
Tetrachloroethylene	34478		µg/Kg				µg/Kg
Toluene	34483		µg/Kg				µg/Kg
Chlorobenzene	34304		µg/Kg				µg/Kg
Ethylbenzene	34374		µg/Kg				µg/Kg

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

No other purgeable organic compound detected with an estimated minimum detection limit of _____

M - NOT ANALYZED

DATE: 12-14-87
PROJECT: Yuma Refining
SOURCE: S-3
Soil background

GRORGIA ENVIRONMENTAL PROTECTION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: HW 2888

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: SB COMPLETED: DR

Compound	Storet#		Units
1,2-Dichlorobenzene	34539	<200	µg/Kg
1,3-Dichlorobenzene	34569		µg/Kg
1,4-Dichlorobenzene	34574		µg/Kg
Bis(2-Chloroethyl)Ether	34276		µg/Kg
Hexachloroethane	34399		µg/Kg
Bis(2-Chloroisopropyl) Ether	34286		µg/Kg
N-Nitrosodi-N-Propylamine	34431		µg/Kg
Nitrobenzene	34450		µg/Kg
Hexachlorobutadiene	39705		µg/Kg
1,2,4-Trichlorobenzene	34554		µg/Kg
Naphthalene	34445		µg/Kg
Bis(2-Chloroethoxy) Methane	34281		µg/Kg
Isophorone	34411		µg/Kg
Hexachlorocyclopentadiene	34389	<400	µg/Kg
2-Chloronaphthalene	34584	<200	µg/Kg
Acenaphthylene	34203		µg/Kg
Acenaphthene	34208		µg/Kg
Dimethyl Phthalate	34344		µg/Kg
2,4-Dinitrotoluene	34614	<400	µg/Kg
2,6-Dinitrotoluene	34629	<200	µg/Kg
4-Chlorophenyl Phenyl Ether	34644		µg/Kg
Fluorene	34384		µg/Kg
Diethyl Phthalate	34339		µg/Kg
4,6-Dinitro-O-Cresol	34660	<1000	µg/Kg
4-Nitrophenol	34649	<1000	µg/Kg
3,3'-Dichlorobenzidine	34634	<400	µg/Kg
1,2-Diphenylhydrazine	34349	<200	µg/Kg
N-Nitrosodiphenylamine	34436		µg/Kg
Hexachlorobenzene	39701		µg/Kg
4-Bromophenyl Phenyl Ether	34639		µg/Kg
Phenanthrene	34464		µg/Kg
Anthracene	34223		µg/Kg

Compound	Storet#		Units
Di-N-Butyl Phthalate	39112	<200	µg/Kg
Fluoranthene	34379		µg/Kg
Pyrene	34472		µg/Kg
N-Butyl Benzyl Phthalate	34295		µg/Kg
Bis(2-Ethylhexyl)Phthalate	39102		µg/Kg
Crysene	34323		µg/Kg
Benzo(A)Anthracene	34529		µg/Kg
Di-N-Octyl Phthalate	34599		µg/Kg
Benzo-(B)Fluoranthene	34233		µg/Kg
Benzo-(K)Fluoranthene	34245		µg/Kg
Benzo-A-Pyrene	34250		µg/Kg
Indeno(1,2,3-CD)Pyrene	34406		µg/Kg
1,2,5,6-Dibenzanthracene	34559	<400	µg/Kg
Benzo(GHI)Perylene	34524	<200	µg/Kg
2-Chlorophenol	34589		µg/Kg
2-Nitrophenol	34594		µg/Kg
Phenol (GC/MS)	34695		µg/Kg
2,4-Dimethylphenol	34609		µg/Kg
2,4-Dichlorophenol	34604		µg/Kg
2,4,6-Trichlorophenol	34624		µg/Kg
Parachlorometa Cresol	34455		µg/Kg
2;4-Dinitrophenol	34619	<1000	µg/Kg
Pentachlorophenol	39061	<400	µg/Kg
Benzidine	39121	<1600	µg/Kg
N-Nitrosodimethylamine	34441	<200	µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg

No other extractable organic compound detected with an estimated minimum detection limit of _____

B-10

DATE: 17-87
PROJECT: Venus Refinery
SOURCE: S-3 Soil
Background

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PESTICIDES/PCB's ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: HW 2888

SAMPLE REC'D(date & time):
SAMPLE START(date & time):
SAMPLE STOP (date & time):
CHEMIST: AG COMPLETED: DR

Compound	Storet #		Units	Compound	Storet #		Units
Aldrin	39333		µg/Kg				
a-BHC	39076		µg/Kg				
b-BHC	34257		µg/Kg				
d-BHC	34262		µg/Kg				
γ-BHC	39343		µg/Kg				
Chlordane	39351		µg/Kg				
4,4'-DDD	39311		µg/Kg				
4,4'-DDE	39321		µg/Kg				
4,4'-DDT	39301		µg/Kg				
Dieldrin	39383		µg/Kg				
Endosulfan I	34364		µg/Kg				
Endosulfan II	34359		µg/Kg				
Endosulfan sulfate	34354		µg/Kg				
Endrin	39393		µg/Kg				
Endrin aldehyde	34369		µg/Kg				
Heptachlor	39413		µg/Kg				
Heptachlor epoxide	39423		µg/Kg				
Toxaphene	39403		µg/Kg				
PCB-1016	39514	< 10	µg/Kg				
PCB-1221	39491		µg/Kg				
PCB-1232	39495		µg/Kg				
PCB-1242	39499		µg/Kg				
PCB-1248	39503		µg/Kg				
PCB-1254	39507		µg/Kg				
PCB-1260	39511		µg/Kg				

DATE: 10-28-87 PROJECT: Young Refining Corp. COLLECTOR: G.A. Knowles

NO. SAMPLES: 3 LOG NOS. 2883-2885 LIQUID ✓(3) SOLID ____ SOIL ____

CAUSTIC ____ ACID ____ SOLVENT ____ UNKNOWN ____ SLUDGE ____

SITE INVESTIGATION PROGRAM

INFORMATION FOUND: Facility refines crude (asphaltic) into asphaltic cements, #2 fuel oil, heavy oil and gasoline. All process wastewater and storm drains fr complex passes through an API Separator that discharges to 4 ponds (NPDES)

HAZARDOUS WASTE NOS. ____

HAZARDOUS HANDLING: ____

WORK PRIORITY (CRITICAL NEED) Medium

RECEIVED DEC 21 1987

METALS ANALYSES

	TOT	DIS			
METALS (DW NO Hg)	✓	☐	EP METALS (DW NO Hg)	☐	100X ☐ 30X
METALS (DW WITH Hg)	☐	☐	EP METALS (DW WITH Hg)		

	TOT	DIS		TOT	DIS				
NICKEL	☐	☐	CADMIUM	☐	☐	EP NICKEL	☐	EP CADMIUM	☐
ARSENIC	☐	☐	LEAD	✓	☐	EP ARSENIC	☐	EP LEAD	☐
CHROMIUM	✓	☐	MERCURY	☐	☐	EP CHROMIUM	☐	EP MERCURY	☐
CHROM-HEX	✓	☐	SELENIUM	☐	☐	EP CHROM-HEX	☐	EP SELENIUM	☐
____	☐	☐	____	☐	☐	____	☐	____	☐

SPECIFIC ANALYSES

pH	✓	SULFIDE	☐	% SOLIDS	☐	____	☐
FLASH PT	☐	SP.COND.	☐	TOT. PHENOLS	☐	____	☐
CYANIDE TOT.	☐	TOC	☐	CHLORIDE	☐	____	☐
CYANIDE AM.	☐	TOH	☐	FLUORIDE	☐	____	☐

ORGANIC ANALYSES

PESTICIDE SCREEN (EC)	☐	GC-MS ACID EXTRACTABLES	✓
PCB	☐	GC-MS BASE/NEUTRALS	✓
VOLATILE ORGANICS (VOA)	✓		

SPECIFIC ORGANICS: ____

APPROVED: [signature] AUTHORIZED: [signature]

B-12

LABORATORY REPORT

(404) 656-7404

SAMPLE DATE: 10-28-87 PROJECT: Young Refining Corp. COLLECTOR: G.A. Knowles

DATE REC'D 10-28-87 LABEL
TIME REC'D 1510
REC'D BY: D Neal
DEL BY: Knowles

J Harold Langford
LABORATORY MANAGER

DATE: 12-17-87

HW LOG NO.	2883	2884	2885		
LABEL	GW-1 Well ON-SITE (Rear of Plant Area)	GW-2 Well ON-SITE (Near Pond #1 - and Tank #303)	GW-3 Private Dug Well off-site (Malone Street)		
PARAMETERS / LAB NO.	HW 2883	HW 2884	HW 2885		
pH	6.5	6.5	6.3		
Spec. Cond umho/cm	118	51	42		
Total Ag ug/L	<10	<10	<10		
" As "	<30	<30	<30		
" Ba "	<10	<10	10		
" Cd "	<10	<10	<10		
" Cr "	<20	<20	<20		
" Pb "	<30	<30	<30		
" Se "	<5	<5	<5		
VOA	See Attached Sheets				
BN and A GC/MS	"	"	"		

REMARKS:

DATE: [illegible]-24-87

PROJECT: Young Refining Corp

SOURCE: Private Dry Well Off-site - Malone St.

GEORGIA ENVIRONMENTAL PROTEC[illegible]ON DIVISION
PURGEABLE ORGANIC ANALYSIS-WATER
DATA REPORTING SHEET

SAMPLE TYPE: Water

SAMPLE NO.: HW 2885

SAMPLE REC'D (date & time) [illegible]

SAMPLE START (date & time):

SAMPLE STOP (date & time):

CHEMIST: AS COMPLETE: OK

Compound	Storet#		Units	Compound	Storet#		Units
Methylene Chloride	34423	<5	µg/l	Acetone		<10	µg/l
Trichlorofluoromethane	34488	<1	µg/l	Methyl Ethyl Ketone		<10	µg/l
1,1-Dichloroethylene	34501		µg/l	Carbon Disulfide		<1	µg/l
1,1-Dichloroethane	34496		µg/l				µg/l
1,2-Trans-Dichloro-ethylene	34546		µg/l	Isopropyl Acetate			µg/l
Chloroform	32106		µg/l	2-Hexanone			µg/l
1,2-Dichloroethane	32103		µg/l	Methyl Isobutyl Ketone			µg/l
1,1,1-Trichloroethane	34506		µg/l	Styrene			µg/l
Carbon Tetrachloride	32102		µg/l	O-Xylene			µg/l
Dichlorobromomethane	32101		µg/l	P-Xylene			µg/l
1,2-Dichloropropane	34541		µg/l	M-Xylene			µg/l
Trans-1,3-Dichloro-propene	34699		µg/l	Ethyl Acetate			µg/l
Trichloroethylene	39180		µg/l	n-Propyl Acetate			µg/l
Benzene	34030		µg/l	Butyl Acetate			µg/l
Chlorodibromomethane	34306		µg/l	Acrolein	34210	<50	µg/l
1,1,2-Trichloroethane	34511		µg/l	Acrylonitrile	34215	<50	µg/l
Cis-1,3-Dichloropropene	34704		µg/l	Chloromethane	34418	<10	µg/l
2-Chloroethyl Vinyl Ether	34576			Bromomethane	34413		µg/l
Bromoform	32104		µg/l	Vinyl Chloride	39175		µg/l
1,1,2,2-Tetrachloro-ethane	34516		µg/l	Chloroethane	34311		µg/l
Tetrachloroethylene	34475		µg/l				µg/l
Toluene	34010		µg/l				µg/l
Chlorobenzene	34301		µg/l				µg/l
Ethylbenzene	34371		µg/l				µg/l

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

M - NOT ANALYZED

No other purgeable organic compound detected with an estimated minimum detection limit of _____

B-14

DATE 11-24-87 GEORGIA ENVIRONMENTAL PROTECTION DIVISION

PROJECT: Young Refining Corp PURGEABLE ORGANIC ANALYSIS-WATER

SOURCE: GW-2 Well on-site DATA REPORTING SHEET

Near Load #1 and Tank #303

SAMPLE TYPE: Water

SAMPLE NO.: HW 2884

SAMPLE REC'D (date & time):

SAMPLE START (date & time):

SAMPLE STOP (date & time):

CHEMIST: MB COMPLETE: DR

Compound	Storet#		Units	Compound	Storet#		Units
Methylene Chloride	34423	<5	µg/l	Acetone		<10	µg/l
Trichlorofluoromethane	34488	<1	µg/l	Methyl Ethyl Ketone		<10	µg/l
1,1-Dichloroethylene	34501		µg/l	Carbon Disulfide		<1	µg/l
1,1-Dichloroethane	34496		µg/l				µg/l
1,2-Trans-Dichloro-ethylene	34546		µg/l	Isopropyl Acetate			
Chloroform	32106		µg/l	2-Hexanone			µg/l
1,2-Dichloroethane	32103		µg/l	Methyl Isobutyl Ketone			µg/l
1,1,1-Trichloroethane	34506		µg/l	Styrene			µg/l
Carbon Tetrachloride	32102		µg/l	O-Xylene			µg/l
Dichlorobromomethane	32101		µg/l	P-Xylene			µg/l
1,2-Dichloropropane	34541		µg/l	M-Xylene			µg/l
Trans-1,3-Dichloro-propene	34699		µg/l	Ethyl Acetate			µg/l
Trichloroethylene	39180		µg/l	n-Propyl Acetate			µg/l
Benzene	34030		µg/l	Butyl Acetate			µg/l
Chlorodibromomethane	34306		µg/l	Acrolein	34210	<50	µg/l
1,1,2-Trichloroethane	34511		µg/l	Acrylonitrile	34215	<50	µg/l
Cis-1,3-Dichloropropene	34704		µg/l	Chloromethane	34418	<10	µg/l
2-Chloroethyl Vinyl Ether	34576			Bromomethane	34413		µg/l
Bromoform	32104		µg/l	Vinyl Chloride	39175		µg/l
1,1,2,2-Tetrachloro-ethane	34516		µg/l	Chloroethane	34311		µg/l
Tetrachloroethylene	34475		µg/l				µg/l
Toluene	34010		µg/l				µg/l
Chlorobenzene	34301		µg/l				µg/l
Ethylbenzene	34371		µg/l				µg/l

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

M - NOT ANALYZED

No other purgeable organic compound detected with an estimated minimum detection limit of _____

DATE 11-24-89

PROJECT: Young Refining Corp

SOURCE: GW-1 Well-on-lot Rear of Plant Area

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PURGEABLE ORGANIC ANALYSIS-WATER
DATA REPORTING SHEET

SAMPLE TYPE: Water

SAMPLE NO.: HW 2883

SAMPLE REC'D (date & time):

SAMPLE START (date & time):

SAMPLE STOP (date & time):

CHEMIST: MB COMPLETE: OK

Compound	Storet#		Units	Compound	Storet#		Units
Methylene Chloride	34423	<5	µg/l	Acetone		<10	µg/l
Trichlorofluoromethane	34488	<1	µg/l	Methyl Ethyl Ketone		<10	µg/l
1,1-Dichloroethylene	34501		µg/l	Carbon Disulfide		<1	µg/l
1,1-Dichloroethane	34496		µg/l				µg/l
1,2-Trans-Dichloro-ethylene	34546		µg/l	Isopropyl Acetate			
Chloroform	32106		µg/l	2-Hexanone			µg/l
1,2-Dichloroethane	32103		µg/l	Methyl Isobutyl Ketone			µg/l
1,1,1-Trichloroethane	34506		µg/l	Styrene			µg/l
Carbon Tetrachloride	32102		µg/l	O-Xylene			µg/l
Dichlorobromomethane	32101		µg/l	P-Xylene			µg/l
1,2-Dichloropropane	34541		µg/l	M-Xylene			µg/l
Trans-1,3-Dichloro-propene	34699		µg/l	Ethyl Acetate			µg/l
Trichloroethylene	39180		µg/l	n-Propyl Acetate			µg/l
Benzene	34030		µg/l	Butyl Acetate			µg/l
Chlorodibromomethane	34306		µg/l	Acrolein	34210	<50	µg/l
1,1,2-Trichloroethane	34511		µg/l	Acrylonitrile	34215	<50	µg/l
Cis-1,3-Dichloropropene	34704		µg/l	Chloromethane	34418	<10	µg/l
2-Chloroethyl Vinyl Ether	34576			Bromomethane	34413		µg/l
Bromoform	32104		µg/l	Vinyl Chloride	39175		µg/l
1,1,2,2-Tetrachloro-ethane	34516		µg/l	Chloroethane	34311		µg/l
Tetrachloroethylene	34475		µg/l				µg/l
Toluene	34010		µg/l				µg/l
Chlorobenzene	34301		µg/l				µg/l
Ethylbenzene	34371		µg/l				µg/l

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

M - NOT ANALYZED

No other purgeable organic compound detected with an estimated minimum detection limit of _____

DAT 12-14-87
PROJECT: Young Refining Corp
SOURCE: GW-3 Private Dug Well off-site Malone St.

GEORGIA ENVIRONMENTAL PRO[illegible]TION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-WATER
DATA REPORTING SHEET

SAMPLE TYPE: Water
SAMPLE NO.: AW 2885

SAMPLE REC'D(date & tim[illegible]: _____
SAMPLE START(date & time): _____
SAMPLE STOP (date & time): _____
CHEMIST: SB COMPLETED: [illegible]

Compound	Storet#		Units
1,2-Dichlorobenzene	34536	<10	µg/l
1,3-Dichlorobenzene	34566		µg/l
1,4-Dichlorobenzene	34571		µg/l
Bis(2-Chloroethyl)Ether	34273		µg/l
Hexachloroethane	34396		µg/l
Bis(2-Chloroisopropyl) Ether	34283		µg/l
N-Nitrosodi-N-Propylamine	34428		µg/l
Nitrobenzene	34447		µg/l
Hexachlorobutadiene	38702		µg/l
1,2,4-Trichlorobenzene	34551		µg/l
Naphthalene	34696		µg/l
Bis(2-Chloroethoxy) Methane	34278		µg/l
Isophorone	34408		µg/l
Hexachlorocyclopentadiene	34386	<20	µg/l
2-Chloronaphthalene	34581	<10	µg/l
Acenaphthylene	34200		µg/l
Acenaphthene	34205		µg/l
Dimethyl Phthalate	34341		µg/l
2,4-Dinitrotoluene	34611	<20	µg/l
2,6-Dinitrotoluene	34626	<10	µg/l
4-Chlorophenyl Phenyl Ether	34641		µg/l
Fluorene	34381		µg/l
Diethyl Phthalate	34336		µg/l
1,2-Diphenylhydrazine	34346		µg/l
N-Nitrosodiphenylamine	34433		µg/l
Hexachlorobenzene	39700		µg/l
4-Bromophenyl Phenyl Ether	34636		µg/l
Phenanthrene	34461		µg/l
Anthracene	34220		µg/l
Di-N-Butyl Phthalate	39110		µg/l

Compound	Storet#		Units
Fluoranthene	34376	<10	µg/l
Pyrene	34469		µg/l
N-Butyl Benzyl Phthalate	34292		µg/l
Bis(2-Ethylhexyl) Phthalate	39100		µg/l
Chrysene	34320		µg/l
Benzo(A)Anthracene	34526		µg/l
Di-N-Octyl Phthalate	34596		µg/l
Benzo-(B)Fluoranthene	34230		µg/l
Benzo-(K)Fluoranthene	34242		µg/l
Benzo-A-Pyrene	34247		µg/l
Indeno(1,2,3-CD)Pyrene	34403		µg/l
1,2,5,6-Dibenzanthracene	34556	<20	µg/l
Benzo(GHI)Perylene	34521	<10	µg/l
2-Chlorophenol	34586		µg/l
2-Nitrophenol	34591		µg/l
Phenol (GC/MS)	34694		µg/l
2,4-Dimethylphenol	34606		µg/l
2,4-Dichlorophenol	34601		µg/l
2,4,6-Trichlorophenol	34621		µg/l
Parachlorometa Cresol	34452		µg/l
2,4-Dinitrophenol	34616	<50	µg/l
4,6-Dinitro-O-Cresol	34657	<50	µg/l
Pentachlorophenol	39032	<20	µg/l
4-Nitrophenol	34646	<50	µg/l
Benzidine	39120	<80	µg/l
3,3'-Dichlorobenzidine	34631	<20	µg/l
N-Nitrosodimethylamine	34438	<10	µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l

No other extractable organic compound detected with an estimated minimum detection limit of _____

DAT 12-14-87
PROJECT: Young Refining Corp
SOURCE: GW-2 Well On-Site
Near Pond #1 and Tank # 303

GEORGIA ENVIRONMENTAL PRO. .CTION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-WATER
DATA REPORTING SHEET

SAMPLE TYPE: Water
SAMPLE NO.: HW 2884

SAMPLE REC'D(date & tim. : _____
SAMPLE START(date & time): _____
SAMPLE STOP (date & time): _____
CHEMIST: SB COMPLETED: DX

Compound	Storet#		Units
1,2-Dichlorobenzene	34536	<10	µg/l
1,3-Dichlorobenzene	34566		µg/l
1,4-Dichlorobenzene	34571		µg/l
Bis(2-Chloroethyl)Ether	34273		µg/l
Hexachloroethane	34396		µg/l
Bis(2-Chloroisopropyl) Ether	34283		µg/l
N-Nitrosodi-N-Propy-lamine	34428		µg/l
Nitrobenzene	34447		µg/l
Hexachlorobutadiene	38702		µg/l
1,2,4-Trichlorobenzene	34551		µg/l
Naphthalene	34696		µg/l
Bis(2-Chloroethoxy) Methane	34278		µg/l
Isophorone	34408		µg/l
Hexachlorocyclopenta-diene	34386	<20	µg/l
2-Chloronaphthalene	34581	<10	µg/l
Acenaphthylene	34200		µg/l
Acenaphthene	34205		µg/l
Dimethyl Phthalate	34341		µg/l
2,4-Dinitrotoluene	34611	<20	µg/l
2,6-Dinitrotoluene	34626	<10	µg/l
4-Chlorophenyl Phenyl Ether	34641		µg/l
Fluorene	34381		µg/l
Diethyl Phthalate	34336		µg/l
1,2-Diphenylhydrazine	34346		µg/l
N-Nitrosodiphenylamine	34433		µg/l
Hexachlorobenzene	39700		µg/l
4-Bromophenyl Phenyl Ether	34636		µg/l
Phenanthrene	34461		µg/l
Anthracene	34220		µg/l
Di-N-Butyl Phthalate	39110		µg/l

Compound	Storet#		Units
Fluoranthene	34376	<10	µg/l
Pyrene	34469		µg/l
N-Butyl Benzyl Phthalate	34292		µg/l
Bis(2-Ethylhexyl) Phthalate	39100		µg/l
Chrysene	34320		µg/l
Benzo(A)Anthracene	34526		µg/l
Di-N-Octyl Phthalate	34596		µg/l
Benzo-(B)Fluoranthene	34230		µg/l
Benzo-(K)Fluoranthene	34242		µg/l
Benzo-A-Pyrene	34247		µg/l
Indeno(1,2,3-CD)Pyrene	34403		µg/l
1,2,5,6-Dibenzanthracene	34556	<20	µg/l
Benzo(GHI)Perylene	34521	<10	µg/l
2-Chlorophenol	34586		µg/l
2-Nitrophenol	34591		µg/l
Phenol (GC/MS)	34694		µg/l
2,4-Dimethylphenol	34606		µg/l
2,4-Dichlorophenol	34601		µg/l
2,4,6-Trichlorophenol	34621		µg/l
Parachlorometa Cresol	34452		µg/l
2,4-Dinitrophenol	34616	<50	µg/l
4,6-Dinitro-O-Cresol	34657	<50	µg/l
Pentachlorophenol	39032	<20	µg/l
4-Nitrophenol	34646	<50	µg/l
Benzidine	39120	<80	µg/l
3,3'-Dichlorobenzidine	34631	<20	µg/l
N-Nitrosodimethylamine	34438	<10	µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l

No other extractable organic compound detected with an estimated minimum detection limit of _____

DATE: 12-14-87
PROJECT: Young Refining
SOURCE: GW-1 Well On-Site
Rear of Plant Area

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-WATER
DATA REPORTING SHEET

SAMPLE TYPE: Water
SAMPLE NO.: HW 2883

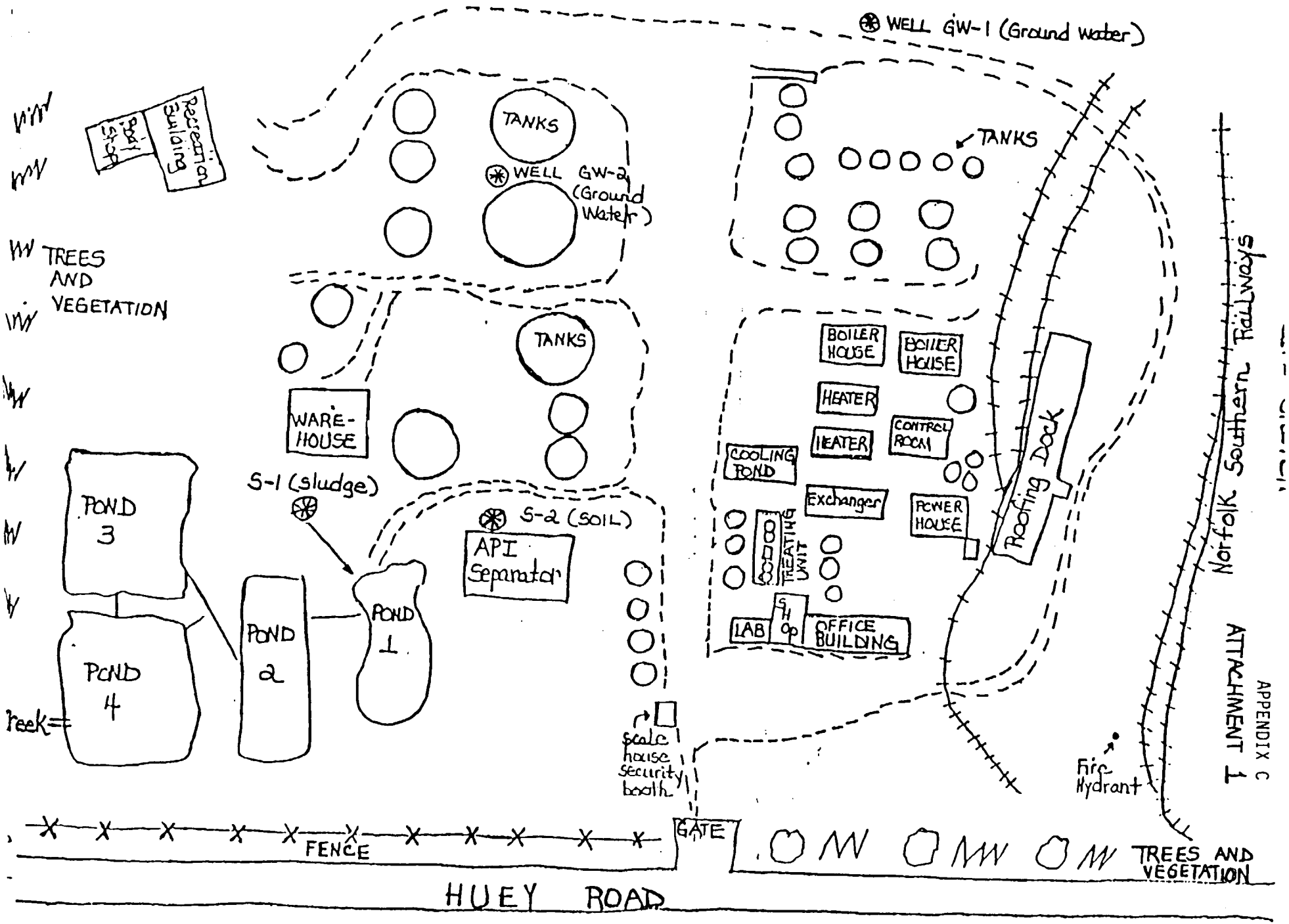
SAMPLE REC'D(date & time): _____
SAMPLE START(date & time): _____
SAMPLE STOP (date & time): _____
CHEMIST: SB COMPLETED: DA

Compound	Storet#		Units
1,2-Dichlorobenzene	34536	<10	µg/l
1,3-Dichlorobenzene	34566		µg/l
1,4-Dichlorobenzene	34571		µg/l
Bis(2-Chloroethyl)Ether	34273		µg/l
Hexachloroethane	34396		µg/l
Bis(2-Chloroisopropyl) Ether	34283		µg/l
N-Nitrosodi-N-Propylamine	34428		µg/l
Nitrobenzene	34447		µg/l
Hexachlorobutadiene	38702		µg/l
1,2,4-Trichlorobenzene	34551		µg/l
Naphthalene	34696		µg/l
Bis(2-Chloroethoxy) Methane	34278		µg/l
Isophorone	34408		µg/l
Hexachlorocyclopentadiene	34386	<20	µg/l
2-Chloronaphthalene	34581	<10	µg/l
Acenaphthylene	34200		µg/l
Acenaphthene	34205		µg/l
Dimethyl Phthalate	34341		µg/l
2,4-Dinitrotoluene	34611	<20	µg/l
2,6-Dinitrotoluene	34626	<10	µg/l
4-Chlorophenyl Phenyl Ether	34641		µg/l
Fluorene	34381		µg/l
Diethyl Phthalate	34336		µg/l
1,2-Diphenylhydrazine	34346		µg/l
N-Nitrosodiphenylamine	34433		µg/l
Hexachlorobenzene	39700		µg/l
4-Bromophenyl Phenyl Ether	34636		µg/l
Phenanthrene	34461		µg/l
Anthracene	34220		µg/l
Di-N-Butyl Phthalate	39110		µg/l

Compound	Storet#		Units
Fluoranthene	34376	<10	µg/l
Pyrene	34469		µg/l
N-Butyl Benzyl Phthalate	34292		µg/l
Bis(2-Ethylhexyl) Phthalate	39100		µg/l
Chrysene	34320		µg/l
Benzo(A)Anthracene	34526		µg/l
Di-N-Octyl Phthalate	34596		µg/l
Benzo-(B)Fluoranthene	34230		µg/l
Benzo-(K)Fluoranthene	34242		µg/l
Benzo-A-Pyrene	34247		µg/l
Indeno(1,2,3-CD)Pyrene	34403		µg/l
1,2,5,6-Dibenzanthracene	34556	<20	µg/l
Benzo(GHI)Perylene	34521	<10	µg/l
2-Chlorophenol	34586		µg/l
2-Nitrophenol	34591		µg/l
Phenol (GC/MS)	34694		µg/l
2,4-Dimethylphenol	34606		µg/l
2,4-Dichlorophenol	34601		µg/l
2,4,6-Trichlorophenol	34621		µg/l
Parachlorometa Cresol	34452		µg/l
2,4-Dinitrophenol	34616	<50	µg/l
4,6-Dinitro-O-Cresol	34657	<50	µg/l
Pentachlorophenol	39032	<20	µg/l
4-Nitrophenol	34646	<50	µg/l
Benzidine	39120	<80	µg/l
3,3'-Dichlorobenzidine	34631	<20	µg/l
N-Nitrosodimethylamine	34438	<10	µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l

No other extractable organic compound detected with an estimated minimum detection limit of _____

APPENDIX C



APPENDIX C
ATTACHMENT 1

APPENDIX C
ATTACHMENT 3

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams

Date: October 9, 1987

Time: 11:05 (a.m.)/p.m.

File: Young Refining Corporation - GAD051011344

Party Spoken To: Mr. Ken Lawler

Title: Water Superintendant

Agency/Company: Water Department - Douglasville

Address: P.O. Box 1157

City: Douglasville

Telephone Number: (404) 949 - 7617

State/Zip: Georgia 30133

Subject: Young Refining Corporation - GAD051011344

Summary of Call: I called Mr. Lawler to obtain information concerning drinking water in the area and he stated the following: (1.) he did not have any information on shallow wells in the area and that I should call the Health Dept (404) 949-2000 and speak to Mr. Doug Daniels; (2.) that the city of Douglasville's drinking water is supplied from large impoundments from which water is drawn from (surface water) Anawakee, Little Anawakee, Bear Creek Reservoir (Bear Creek + Little Bear Creek) and that supplemental water is purchased from Cobb + Marietta Water Systems and (3.) Sweet Water Creek supplies water (drinking) to East Point, Douglas County residents from the East Point Reservoir.

Actions Required:

Call Mr. Doug Daniels for possible well information. Health Dept. (404) 949-2000.

Signature: Hilda A. Knowles October 9, 1987.

Follow-up Responses/Additional Comments: I spoke to the Health Dept. Sanitarian, Mr. Daniels and he stated that he knew of only one shallow well in the area (Huey Road), but that 10 yrs. ago the home converted to city water. The water lines extend down Huey Rd. all the way to Maroney Road.

Signature: Hilda A. Knowles

Date: October 13, 1987

SIP-2

9/86

The previous renter of the home was Mr. J. Calvin Whitley.

C-3

DOUGLAS APPENDIX C
ATTACHMENT 4

Series 1959, No. 1

Issued November 1961

SOIL SURVEY

Douglas County Georgia

OUR SOIL ★ OUR STRENGTH

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
UNIVERSITY OF GEORGIA, COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATIONS

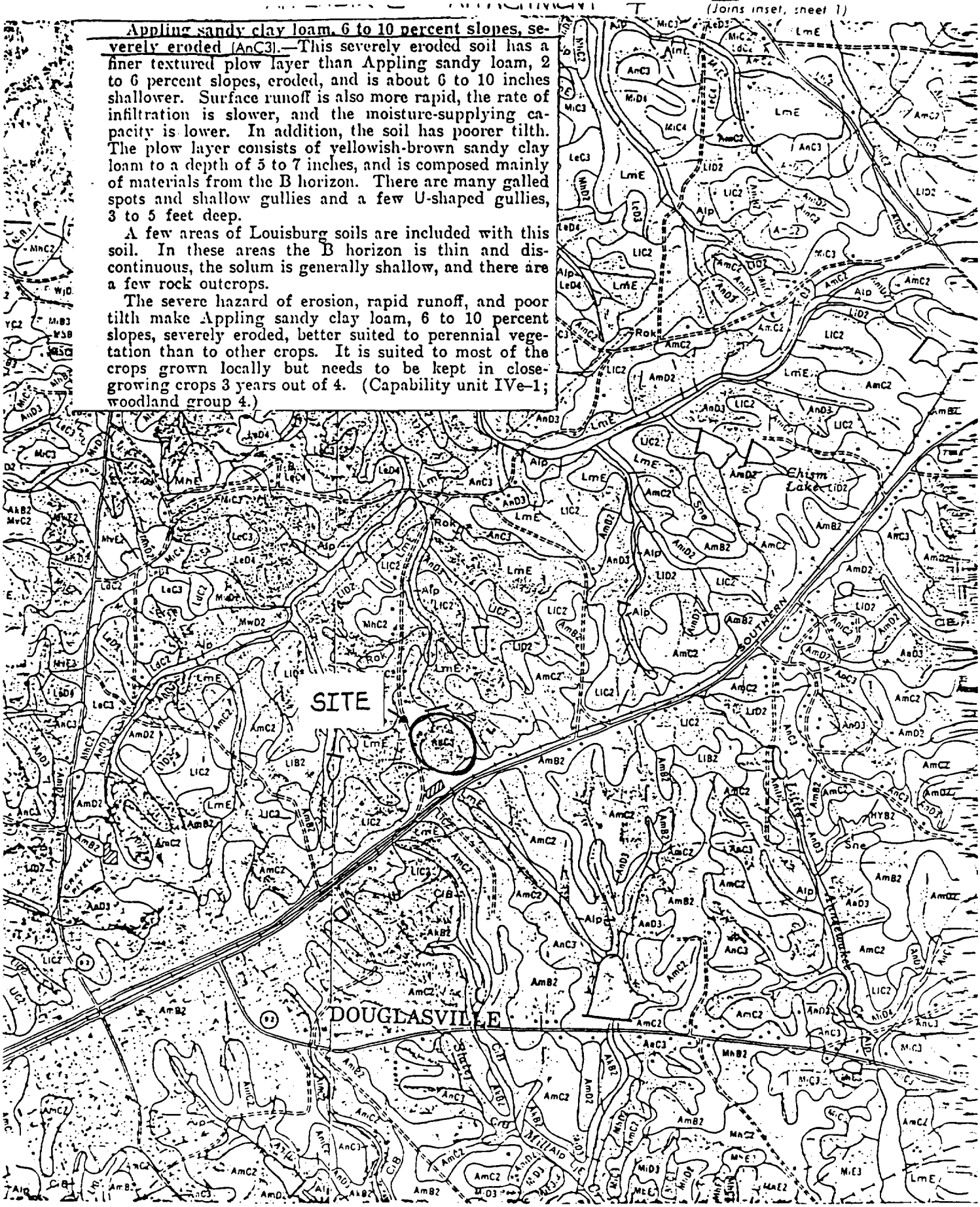
C-4

(Joins inset, sheet 1)

Appling sandy clay loam, 6 to 10 percent slopes, severely eroded (AnC3).—This severely eroded soil has a finer textured plow layer than Appling sandy loam, 2 to 6 percent slopes, eroded, and is about 6 to 10 inches shallower. Surface runoff is also more rapid, the rate of infiltration is slower, and the moisture-supplying capacity is lower. In addition, the soil has poorer tilth. The plow layer consists of yellowish-brown sandy clay loam to a depth of 5 to 7 inches, and is composed mainly of materials from the B horizon. There are many galled spots and shallow gullies and a few U-shaped gullies, 3 to 5 feet deep.

A few areas of Louisburg soils are included with this soil. In these areas the B horizon is thin and discontinuous, the solum is generally shallow, and there are a few rock outcrops.

The severe hazard of erosion, rapid runoff, and poor tilth make Appling sandy clay loam, 6 to 10 percent slopes, severely eroded, better suited to perennial vegetation than to other crops. It is suited to most of the crops grown locally but needs to be kept in close-growing crops 3 years out of 4. (Capability unit IVe-1; woodland group 4.)



(Joins sheet 6)

APPENDIX C
ATTACHMENT 5

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams

Date: October 29, 1987

Time: 1:05 a.m./p.m.

File: Young Refining Corporation

Party Spoken To: (b) (6) [redacted]

Title: Home Owner

Agency/Company: Non-applicable

Address: [redacted]

City: Douglasville

Telephone Number: [redacted]

State/Zip: Ga. 30134

Subject: Young Refining Corporation - GAD051011344

Summary of Call: This call resulted from the sampling of [redacted] well, which was done on 10-28-87. Following a site inspection of the above facility, a background groundwater sample was needed for comparison with Young Refining Corp's well water. [redacted] dug well was sampled but there was no one at home, so I left my business card in her door to call me with additional information [redacted] called and stated the following: 1.) that her well is used for drinking water and for lawn irrigation, 2.) that the city water lines ended/stopped at the house before hers and 3.) that she does not know the depth of her well, she knows it's not that deep because they tried to dig the well deeper, but ran into rock. I told her that I would send her a copy of lab results when they became available. *Depth of well is needed.

Actions Required:

Signature: Gilda A. Knowles October 29, 1987.

Follow-up Responses/Additional Comments: On November 12, 1987, while completing a well survey, [redacted] well depth was measured with a water level indicator. Well depth was found to be 20 feet.

Signature: Gilda A. Knowles

Date: November 12, 1987.

SIP-2

9/86

APPENDIX C - ATTACHMENT 6

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

TRIP REPORT

October 20, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD05101134
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles GAK Environmental Specialist Site Assessment Unit
ACCOMPANIED BY:	N/A
DATE AND TIME OF INVESTIGATION:	October 20, 1987 8:10 a.m.
OFFICIALS CONTACTED:	Mr. Charles Ellis Plant Manager Young Refining Corporation (404)942-2343 Mr. Fang Kou Plant Engineer Young Refining Corporation (404)942-2343
REFERENCE:	Preliminary Assessment Georgia-EPD State Files Trip Report by Jack Dempsey November 21, 1985

COMMENTS:

The facility refines asphaltic crude that is shipped by railroad car from Mississippi. The corporation's crude terminal is located in Lumberton, Mississippi and crude is purchased from Texaco and Chevron Oil Companies off the pipeline. The facility manufactures jet fuel for the government, heavy #5 oil (atmospheric gas oil), #2 fuel (diesel oil), certified state asphalt, oxidized asphalt (shingle, saturate, coat covering) and four (4) types of roofing asphalt. All products are transported by truck in bulk or packaged products.
The various processes that the crude is taken through are heating, distillation, fractionating, oxidation and shipping. The wastes that are generated are solid wastes (collected on-site in dumpsters serviced by the City of Douglasville); wastewater (passes through API separator and is discharged to a series of 4

APPENDIX C
ATTACHMENT 6

ponds-NPDES permitted) and sludges (API Separator, Desalter, Heat Exchanger). Mr. Ellis stated that he was not sure of the sludge disposal company that Young Refining Corporation utilizes.

Treatment ponds (4) have never been lined, but on occasion ponds #2, 3 and 4 are cleaned. Mr. Ellis stated that pond #3 is continuously aerated; however, during my tour of the facility aerating equipment at pond #3 was not in operation.

Questions were asked of Mr. Ellis and he stated the following:

1. wastes are not treated or disposed of on-site; only water is treated,
2. the property is 30-40 acres in size,
3. the flocculator is no longer used between ponds # 1 and 2,
4. the facility is supplied city water for drinking and boiler feed water that is used for steam generation,
5. there are 5 operable wells on-site, that are 300 ft. in depth and their water is used for the cooling pond and utility purposes,
6. these wells are sampled daily for treatment purposes and Deerborne Chemical Company of Atlanta treats the well water,
7. there is no dilution of wastes,
8. water was treated for phenols, but none were found and,
9. the facility does not handle lead petroleum, only virgin crude is refined.

During my tour of the facility with Mr. Fang Kou, Plant Engineer, I observed the following:

1. process areas were messy,
2. soil type seemed to be of a sandy, clay consistency,
3. facility is fenced and entrance gate is kept locked when not in operation,
4. two other companies are located within the facility's complex and they are Central Oil & Asphalt Corporation and Elk Roofing Company,
5. Arivec Chemicals Inc. is also located in the area, but is totally surrounded by a fence,
6. sampling areas,
7. slopes varied from 8-40% in various areas of the site and
8. pond #4 discharges water to a small creek (tributary on-site).

APPENDIX C
ATTACHMENT 6

Mr. Kou reviewed the facility's processes with me on a flow chart in his laboratory and supplied a sketch of the facility. I left the site at 10:30 a.m.

I visited the Water Department and spoke with Mr. Winfred Pirkle, Water Superintendent, who supplied me with information on boundaries of water lines and possible areas to check for wells. Ownership and property maps were obtained from the county tax assessors office. A well survey was conducted within one mile of the facility and 2 shallow wells were observed, but residents are believed to be on city water. Deep wells were observed in 2 and 3 mile radius of the site, but were not counted. Roads that need to be checked for an extended well survey on the next site visit are Dallas, Malone, Brown Street and Simon. The water line boundaries are Brownville Road to the North, Bankhead Hwy. and South & North Flat Rock Roads to the West, Gurley Road to the Southwest, Chapel Hill Road to the South and Mount Vernon Road to the East.

CONCLUSIONS:

None can be drawn until samples are collected and analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

On-site sampling should be conducted, off-site sampling and an extended well survey should be completed.

PHOTOGRAPHS: 15 polaroids

NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: None (reconnaissance visit)

REVIEWED BY: DATE:

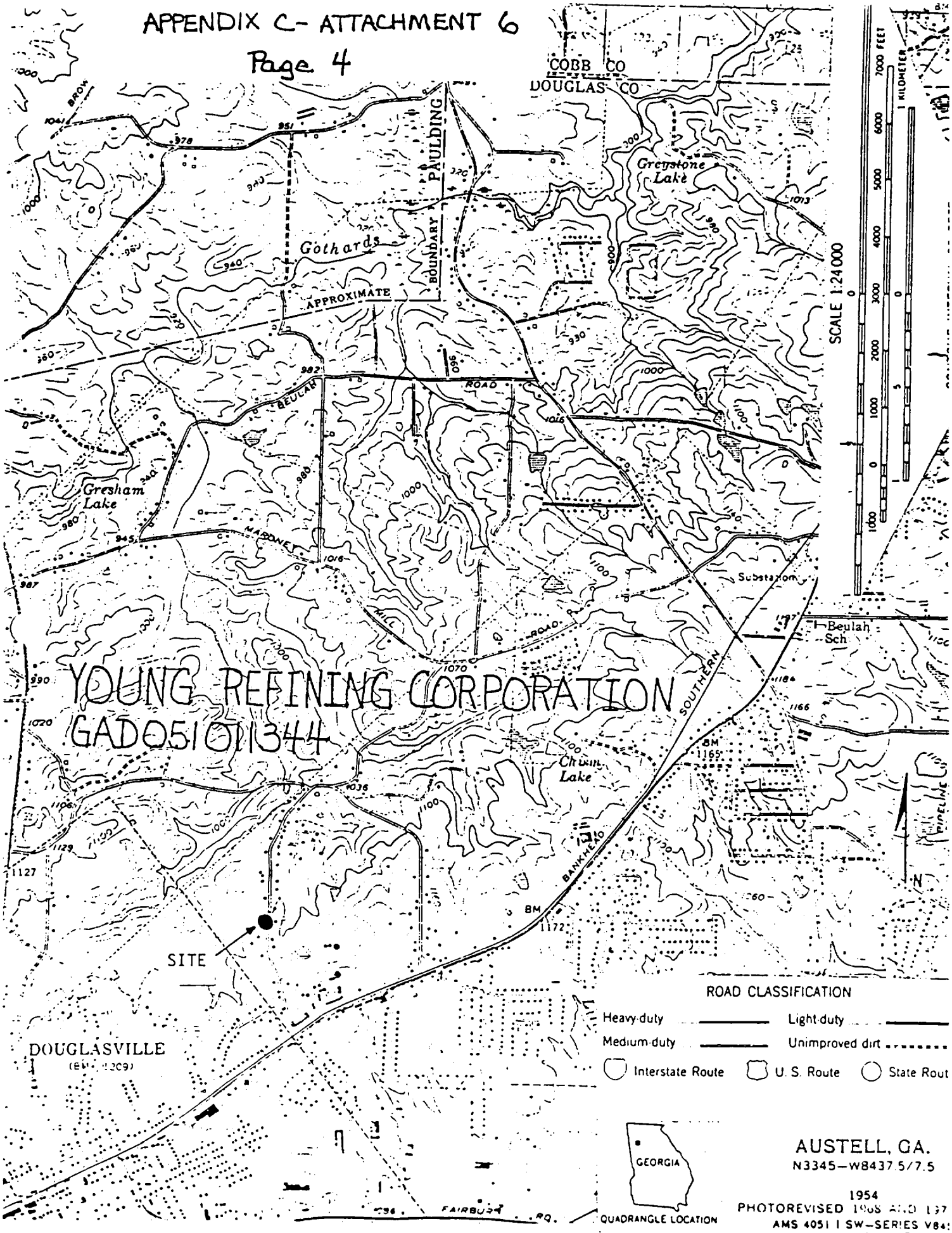
ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

GAK:zcr001

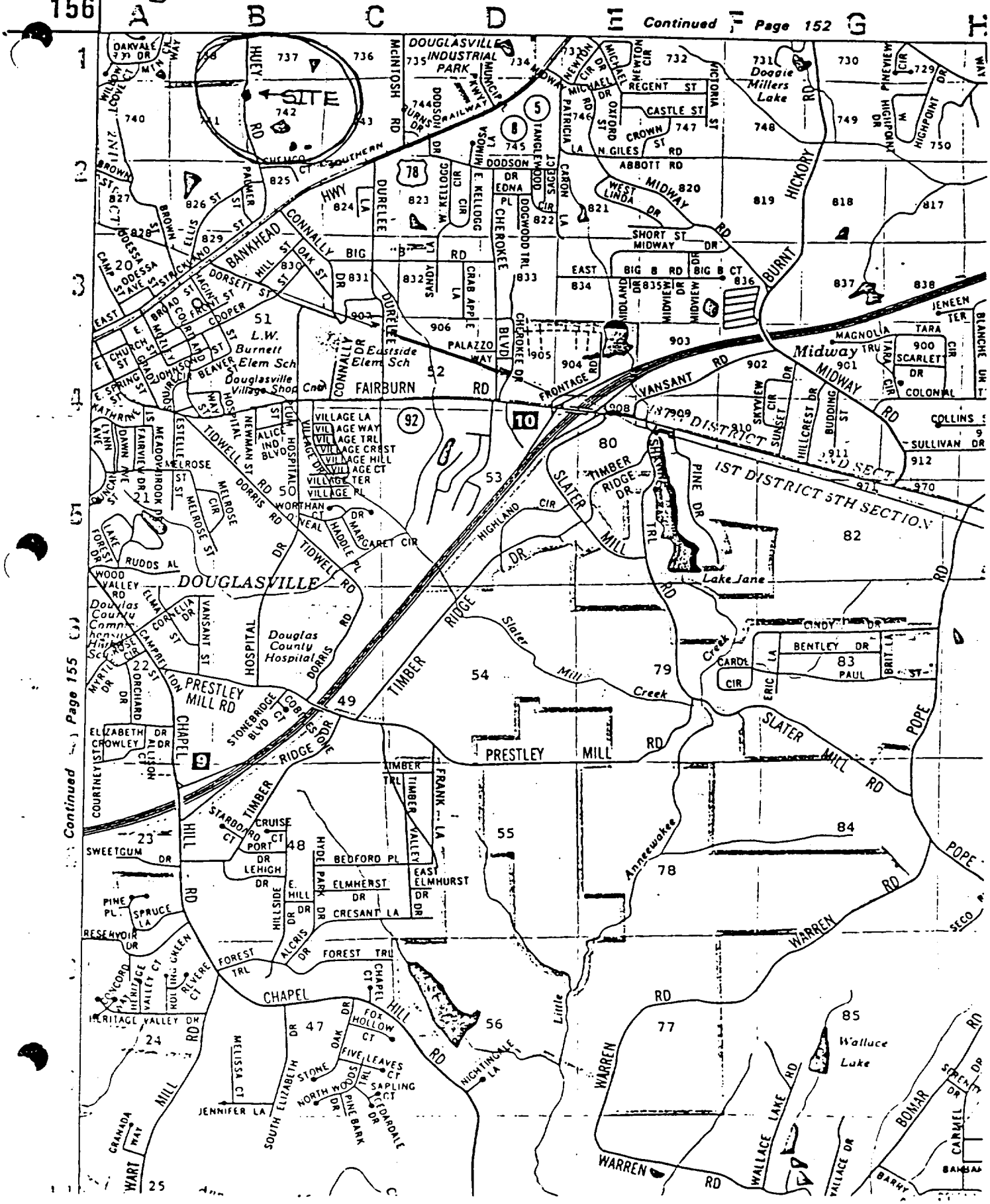
File: Young Refining Corporation

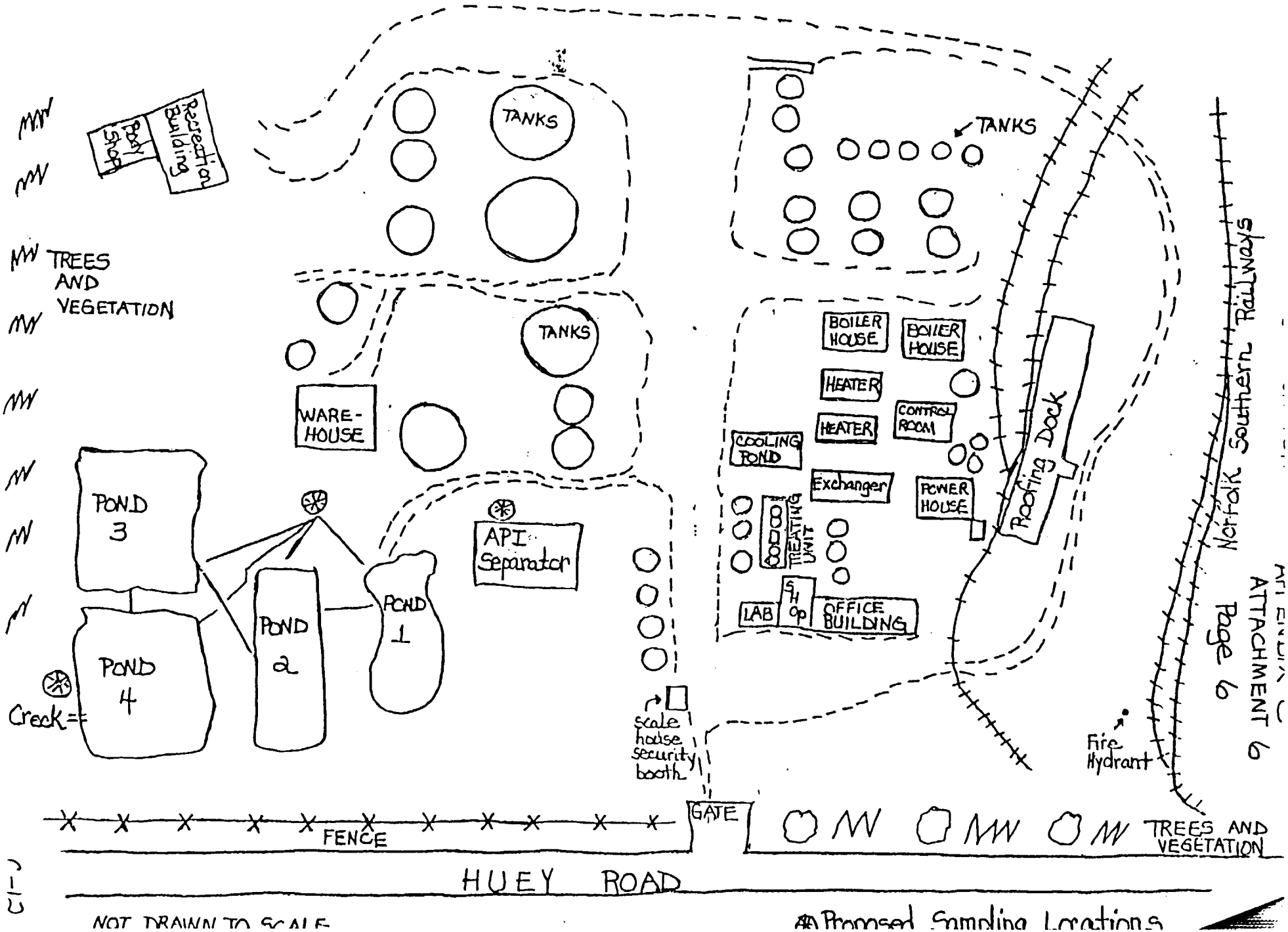
APPENDIX C- ATTACHMENT 6

Page 4



YOUNG REFINING CORPORATION
GAD051011344


A B C D E F G H
Continued Page 152
Continued Page 155
SITE
DOUGLASVILLE INDUSTRIAL PARK
Doggie Millers Lake
Midway
L.W. Burnett Elem Sch
Eastside Elem Sch
Douglasville Village Shop Cntr
FAIRBURN RD
VANSANT RD
MIDWAY RD
BURNT HICKORY RD
1ST DISTRICT 5TH SECTION
Lake Jane
DOUGLASVILLE
Douglas County Hospital
PRESTLEY MILL RD
TIMBER RIDGE DR
SLATER MILL RD
POPE RD
WARREN RD
CHAPEL HILL RD
Walluce Lake
Slater Mill Creek
Little Anneewakee Creek
BANKHEAD HWY
CONNALLY DR
DURELEE
CHEROKEE
BIG B RD
MIDWAY RD
HUEY RD
MCINTOSH RD
VILLAGE LA
VILLAGE WAY
VILLAGE TRL
VILLAGE CREST
VILLAGE HILL
VILLAGE CT
VILLAGE TER
VILLAGE PL
WORTHAN CT
HIGHLAND CIR
TIMBER RIDGE DR
PINE DR
SHAWNEE TRL
CINDY DR
BENTLEY DR
PAUL ST
CAROL CIR
ERIC LA
BRIT LA
STONEBRIDGE BLVD
COBBLESTONE
STARBOARD CT
CRUISE CT
PORT DR
LEHIGH DR
BEDFORD PL
ELMHERST DR
EAST ELMHURST DR
CRESANT LA
HYDE PARK DR
HILLSIDE DR
ALCRIS DR
FOREST TRL
CHAPEL HILL RD
FOX HOLLOW CT
FIVE LEAVES CT
SAPLING CT
NORTH WOODS TRL
PINE BARK DR
CEDARDALE DR
SOUTH ELIZABETH DR
MELISSA CT
JENNIFER LA
NIGHTINGALE LA
HERITAGE VALLEY DR
RESERVOIR DR
SPRUCE LA
PINE PL
SWEETGUM DR
ELIZABETH CROWLEY DR
ALLISON DR
COURTNEY ST
MYRTLE DR
ORCHARD DR
CAMPBELLTON ST
CORNELIA DR
VANSANT ST
HOSPITAL DR
DORRIS RD
TIDWELL RD
MELROSE ST
MELROSE CIR
ESTELLE ST
NEWMAN ST
ALICE IND BLVD
HOSPITAL ST
PEUM ST
VILLAGE DR
MARGARET CIR
HADDLE PL
WOOD VALLEY RD
RUDDS AL
LAKE FOREST DR
MEADOWBROOK DR
FAIRVIEW DR
DAWN AVE
LYNN AVE
KATHRINE ST
E. SPRING ST
E. CHURCH ST
E. BROAD ST
COOPER ST
DORSETT ST
HAGINT ST
FRONT ST
COURT AND ST
MOZLEY ST
JOHNSON ST
BEAVER ST
CHAD ST
ODESSA AVE
STRICKLAND ST
ELLIS ST
BROWN ST
PALMER ST
OAK ST
HILL ST
BROWN ST
CAMP ST
ODESSA ST
BROWN ST
CHEMCO CT
SOUTHERN RAILWAY
DODSON DR
EDNA PL
DOGWOOD TRL
TANGLEWOOD CIR
SAGE CT
CARON LA
PATRICIA LA
MICHAEL DR
NEWTON CIR
REGENT ST
CASTLE ST
CROWN ST
N. GILES RD
ABBOTT RD
WEST LINDA DR
SHORT ST
MIDWAY DR
EAST BIG B RD
BIG B CT
MIDLAND DR
MIDVIEW DR
PALAZZO WAY
FRONTAGE RD
MAGNOLIA TRL
TARA CIR
SCARLET DR
COLONIAL
COLLINS
SULLIVAN DR
SKYVIEW CIR
SUNSET DR
HILLCREST DR
BUDDING ST
JENEEN TER
BLANCHE DR
HIGHPOINT DR
PINEVIEW CIR
HIGHPOINT DR
VICTORIA ST
HUEY RD
OAKVALE DR
WILLOW COVE CT
MTN CK WAY
737 736 735 734 733 732 731 730 729
740 741 742 743 744 745 746 747 748 749 750
825 826 827 828 829 830 831 832 833 834 835 836 837 838
820 821 822 823 824 823 820 819 818 817
20 51 52 53 50 21 22 23 24 25 47 48 49 54 55 56 77 78 79 80 82 83 84 85
902 903 904 905 906 907 908 909 910 911 912 970 971
900 901 902 903 904 905 906 907 908 909 910 911 912 970 971
9 10 78 92 5 8



ATTACHMENT 6
Page 6

N. - 8:10 AM

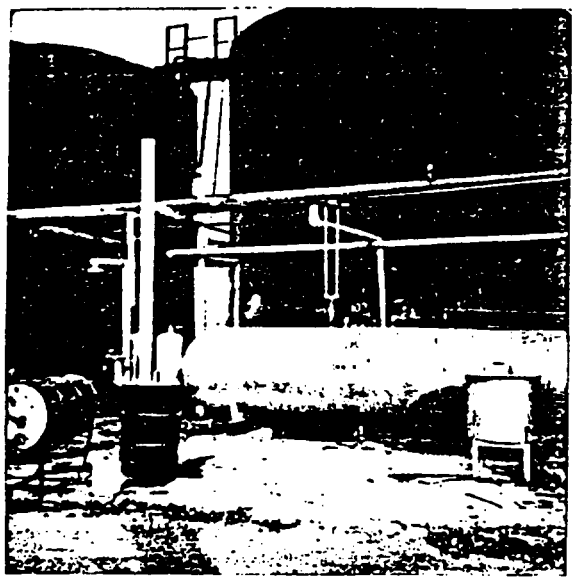
10-20-87

SITE NAME Young Refining Corporation
Picture No. 1 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance of facility off Huey Road. Front entrance; trees and heavy vegetation.
Other

N. 8:30 AM

10-20-87

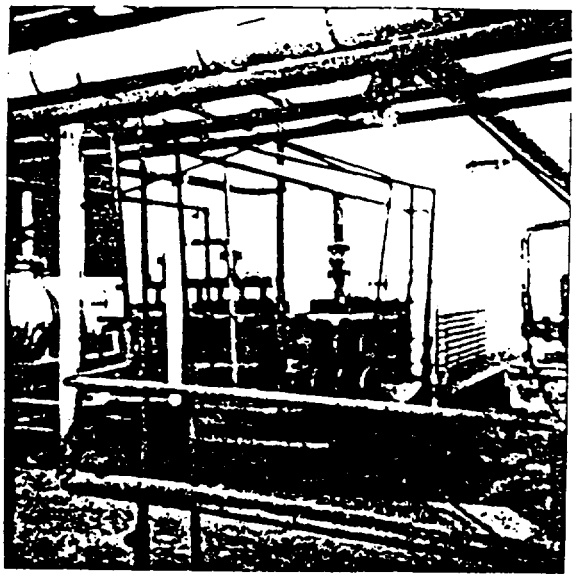
SITE NAME Young Refining Corporation
Picture No. 2 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance gate of facility. Security personnel present in security booth.
Other



N. - 8:35 AM

10-20-87

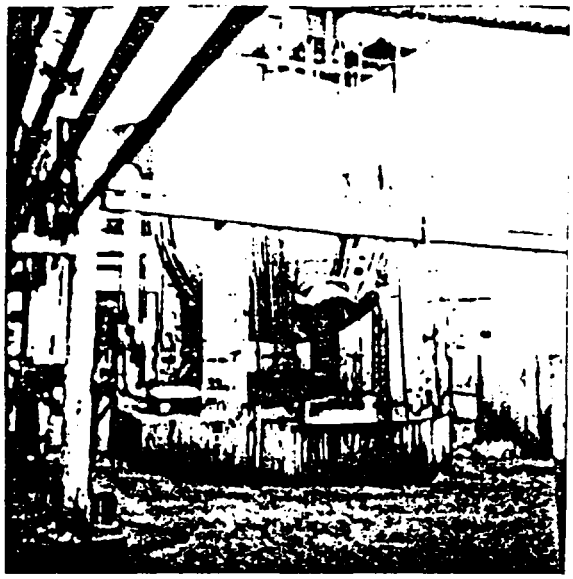
SITE NAME Young Refining Corporatio
Picture No. 3 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Holding tanks for crude transported in by railroad car. One (1) tank is able
Other to accomodate 4 railroad cars of crude.



N. 8:40 AM.

10-20-87

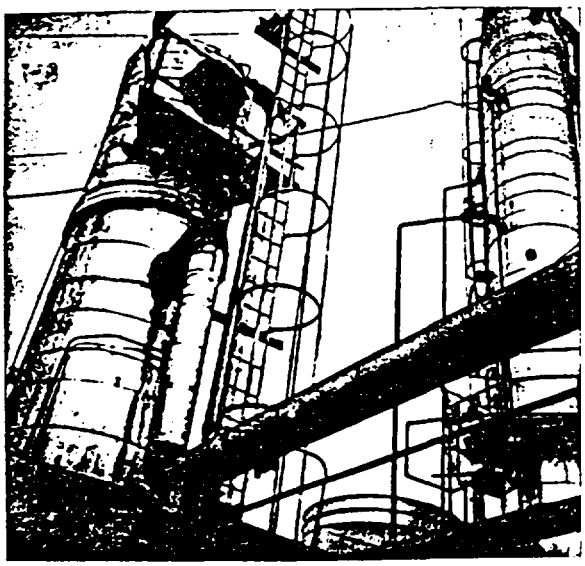
SITE NAME Young Refining Corporation
Picture No. 4 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Crude is heated through several steps with heat exchanger.
Other



W. - 8:45 AM

10-20-87

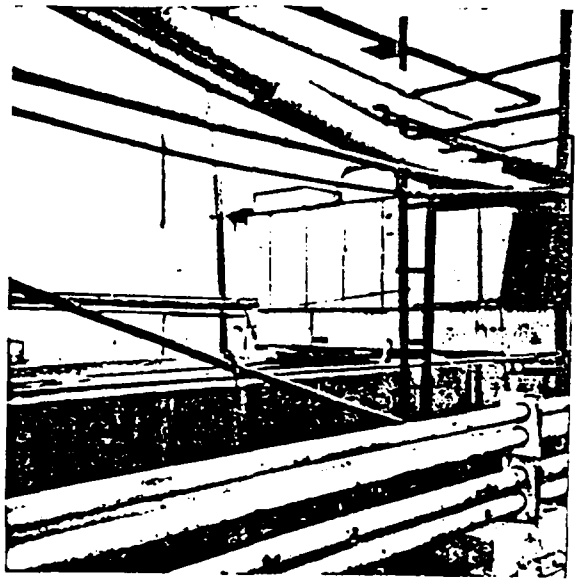
SITE NAME Young Refining Corporation
Picture No. 5 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 68°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Crude is eliminated of various salts by the desalter equipment
Other



N.
8:47
A.M.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 6 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 68°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Bubble Tower - Crude enters tower where light oils are vaporized out of crude and asphalt goes out the bottom.
Other



W.- 8:48 AM

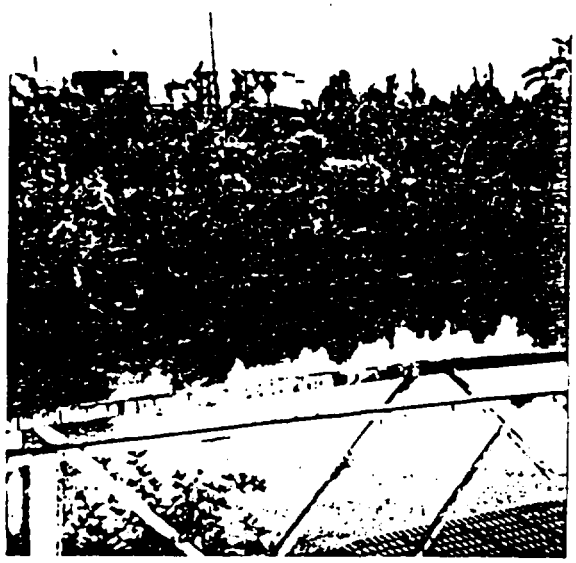
10-20-87

SITE NAME Young Refining Corporation
Picture No. 7 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation All wastewater is recycled and cooled down in this cooling pond.
Other

N.E.- 8:50 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 8 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing Northeast
Photographer G. A. Knowles
Program Site Investigation Program
Explanation API Separator - This piece of equipment further separates oil from water. The
Other water from this process flows into the primary catching pond #1.



S.-8:55 AM

10-20-87

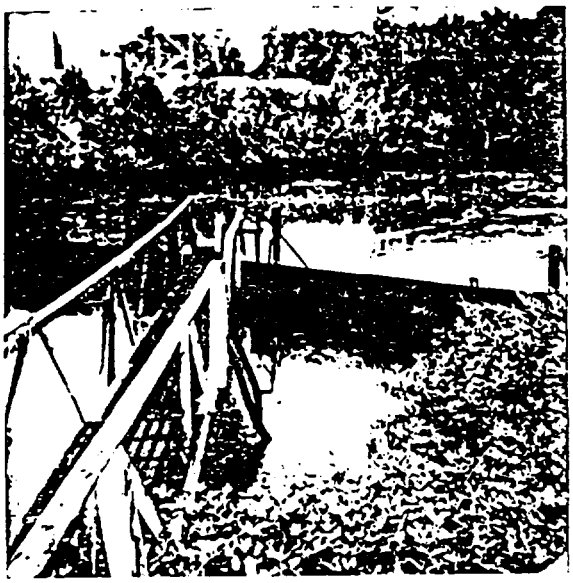
SITE NAME Young Refining Corporation
Picture No. 9 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing South
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Pond #1

Other

N.E.-9:05 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 10 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing Northeast
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Pond #1 - Oil is skimmed off the top of the water into a thorgh that leads back through the crude tanks for reprocessing.
Other



W.- 9:15 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 11 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #2 with separator for skimming
Other

E.- 9:25 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 12 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 68°F.
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #3 with aerating equipment. Aerator was inoperative at the time of inspection.
Other

N.E. 9:35 AM
10-20-87

SITE NAME Young Refining Corporation
Picture No. 13 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #4, drainage conduit for this pond is discharge to a small creek on-site.
Other

N.E. - 9:45 AM
10-20-87

SITE NAME Young Refining Corporation
Picture No. 14 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Discharge of water from conduit, to small creek (conduit extends from Pond #4).
Other

E.-10:15 AM 10-20-87

SITE NAME Young Refining Corporation
Picture No. 15 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F.
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Asphalt Roofing Area; Cardboard cartons with tin bottoms are filled with hot asphalt and allowed to cool.
Other

SITE NAME
Picture No. of
County Name
Date Weather
Direction Facing
Photographer
Program
Explanation
Other

APPENDIX C - ATTACHMENT 7

Reference

ENDANGERED AND THREATENED SPECIES OF THE SOUTHEASTERN UNITED STATES

APPENDIX C
ATTACHMENT 7

Reference 19

United States Department of the Interior

FISH AND WILDLIFE SERVICE
75 SPRING STREET, S.W.
ATLANTA, GEORGIA 30303

August 23, 1985

NOTICE

TO: All Project Leaders and Cooperators

FROM: Endangered Species Office, Federal Assistance, FWS, Atlanta, Georgia

SUBJECT: Changes to the Region 4 Endangered Species Notebook

This update covers the following actions: listing of the Carolina northern flying squirrel in North Carolina and Tennessee as endangered, listing of the Tar River spiny mussel in North Carolina as endangered, listing of five Florida pine rockland plants as endangered, listing of the Miccosukee gooseberry in Florida and South Carolina as endangered, listing of Ruth's golden aster in Tennessee and Vahl's boxwood in Puerto Rico as endangered, listing of the amber darter and Conasauga logperch in Georgia and Tennessee as endangered with critical habitat designated, reclassification of the alligator in Florida to threatened by similarity of appearance, and the proposed listing of two plants (pondberry and Florida golden aster).

REGIONAL LIST: Replace.

STATE LISTS: Replace FL, GA, NC, PR, SC, TN.

CRITICAL HABITAT: Replace index; add amber darter and Conasauga logperch designations for GA and TN.

PROPOSED RULEMAKING: Replace previous sheet.

Species Accounts: FISHES - Replace index; add accounts for two fishes.

PLANTS - Replace index; add accounts for eight plants.

Attachments

85-3

RECEIVED
AUG 26 1985
REGION IV
SENT TO:

Federally Listed Species by State

GEORGIA

(E=Endangered; T=Threatened; CH=Critical Habitat determined)

Mammals	General Distribution
Bat, gray (Myotis grisescens) - E	Northwest, West
Bat, Indiana (Myotis sodalis) - E	Extreme Northwest
Manatee, Florida (Trichechus manatus) - E	Coastal waters
Panther, Florida (Felis concolor coryi) - E	Entire state
Whale, right (Eubalaena glacialis) - E	Coastal waters
Whale, finback (Balaenoptera physalus) - E	Coastal waters
Whale, humpback (Megaptera novaeangliae) - E	Coastal waters
Whale, sei (Balaenoptera borealis) - E	Coastal waters
Whale, sperm (Physeter catodon) - E	Coastal waters

Birds	
Eagle, bald (Haliaeetus leucocephalus) - E	Entire state
Falcon, American peregrine (Falco peregrinus anatum) - E	North
Falcon, Arctic peregrine (Falco peregrinus tundrius) - T	Coast, Northwest
Stork, wood (Mycteria americana) - E	Southeastern swamps
Warbler, Bachman's (Vermivora bachmanii) - E	Entire state
Warbler, Kirtland's (Dendroica kirtlandii) - E	Coast
Woodpecker, ivory-billed (Campephilus principalis) - E	South, Southwest
Woodpecker, red-cockaded (Picoides (=Dendrocopos) borealis) - E	Entire state

Reptiles	
Alligator, American (Alligator mississippiensis) - E	Inland coastal plain
Alligator, American (Alligator mississippiensis) - T	Coastal areas

GEORGIA (cont'd)

	General Distribution
Snake, eastern indigo (*Drymarchon corais couperi*) - T	Southeast
Turtle, Kemp's (Atlantic) ridley (*Lepidochelys kempii*) - E	Coastal waters
Turtle, green (*Chelonia mydas*) - T	Coastal waters
Turtle, hawksbill (*Eretmochelys imbricata*) - E	Coastal waters
Turtle, leatherback (*Dermochelys coriacea*) - E	Coastal waters
Turtle, loggerhead (*Caretta caretta*) - T	Coastal waters

Fishes

Darter, amber (*Percina antesella*) - E,CH	Conasauga R., Murray County
Darter, snail (*Percina tanasi*) - T	S. Chickamauga Cr., Catoosa County
Logperch, Conasauga (*Percina jenkinsi*) - E,CH	Conasauga R., Murray County
Sturgeon, shortnose (*Acipenser brevirostrum*) - E	Coastal rivers -

Plants

Florida torreya (*Torreya taxifolia*) - E	Decatur County
Green pitcher plant (*Sarracenia oreophila*) - E	Towns County
Hairy rattleweed (*Baptisia arachnifera*) - E	Wayne, Brantley Counties
Persistent trillium (*Trillium persistens*) - E	Tallulah-Tugaloo River system, Rabun and Habersham Counties

APPENDIX D

REFERENCES

1. United States Department of Agriculture, Soil and Conservation Service, 1959. *Soil Survey, Douglas County, Georgia.*

2. Clark, William Z., Jr. and Zisa, Arnold C., 1976. Physiographic Map of Georgia. Department of Natural Resources. The Geologic and Water Resources Division.

3. Arora, Ram, Ph.D., 1984. Hydrogeologic Evaluation for Underground Ingestion Control in North Georgia.

4. National Oil and Hazardous Substances Contingency Plan, Appendix, 40 CFR Part 300, 47 Federal Register 31219.

5. Sax, Irving N., 1984. Dangerous Properties of Industrial Materials: Van Nostrand Reinhold Company, New York 6th Edition.

6. Sax, Irving N. and Lewis, Richard J., eds., 1987. Hawley's Condensed Chemical Dictionary: Van Nostrand Reinhold Company, New York 11th Edition.

APPENDIX E

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051 011344

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Young Refining Corporation	7982 Huey Road (P.O. Box 796)

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Douglasville	Ga.	30134	Douglas	097	06

09 COORDINATES LATITUDE	LONGITUDE
33° 44' 00.0"	084° 45' 00.0"

10 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION (Month Day Year)	02 SITE STATUS	03 YEARS OF OPERATION
10/28/87	☒ ACTIVE ☐ INACTIVE	1955 / Present (Beginning Year / Ending Year) ☐ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☒ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO
Gilda A. Knowles	Environmental Specialist	DNR-EPD	(404) 656-7404

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Charles Evans	Environmental Specialist	DNR EPD	(404) 656-7404
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Mr. Fang Kou	Plant Engineer	7982 Huey Road	(404) 942-2343
Mr. Charlie Ellis	Plant Manager	Douglasville, Ga. 30134	( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	9:05 AM	Sunny, Cold 58-60°

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO
Mr. Fang Kou	Plant Engineer - Young Refining Corp.	404 942-2343

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE (Month Day Year)
Gilda A. Knowles	DNR-EPD	SAU	(404) 656-7404	11/30/87

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION
01 STATE: GA
02 SITE NUMBER: D051011344

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☑ A. SOLID
- ☐ B. POWDER, FINES
- ☑ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS _____
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☑ A. TOXIC
- ☑ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☑ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OOC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	UnKnown	UnKnown	SLUDGE SAMPLE

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Barium		POND #1 / SLUDGE	680	mg/Kg
	Chromium		POND #1 / SAMPLE	400	mg/Kg
	Lead		POND #1	880	mg/Kg
	TOTAL METALS				
MES	Barium		POND #1 / SLUDGE	1370	ug/L
	Chromium		POND #1 / SAMPLE	100	ug/L
	Lead		POND #1	140	ug/L
	EP METALS				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (If no specific references, e.g. site file, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp.
Douglasville, Ga

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ B. SURFACE WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ C. CONTAMINATION OF AIR 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ D. FIRE/EXPLOSIVE CONDITIONS 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ E. DIRECT CONTACT 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ F. CONTAMINATION OF SOIL 03 AREA POTENTIALLY AFFECTED: _____ (Acres)	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ G. DRINKING WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ H. WORKER EXPOSURE/INJURY 03 WORKERS POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ I. POPULATION EXPOSURE/INJURY 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names(s) of species)

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills, Runoff, Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 1 mile = 1,074 ; 2 miles = 7,064 ; 3 miles = 13,954

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files : Young Refining Corp. Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☑ A. NPDES	GA0001902	—	—	—
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☑ A. SURFACE IMPOUNDMENT	Unknown	Unknown
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER _____ (Specify)		

04 TREATMENT (Check all that apply)
- ☑ A. INCENERATION (1970's)
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER _____ (Specify) N/A.

05 OTHER
- ☑ A. BUILDINGS ON SITE: 3

06 AREA OF SITE: 30-40 (Acres)

07 COMMENTS

The facility refines crude oil. Wastewaters from various processes are discharged to a series of 4 NPDES permitted ponds. These ponds have never been lined, but are occasionally cleaned. Wastewater passes through an API Separator before it is discharged to ponds.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☑ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Ponds have adequate freeboard. Skimming operations take place at Pond #1.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES ☑ NO

02 COMMENTS

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Georgia- EPD State Files: Young Refining Corporation Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check all applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☒

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. 3.0 (mi)
B. 2.0 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☒ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER Unknown

03 DISTANCE TO NEAREST DRINKING WATER WELL 2.0 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
14-22 (ft)	Unknown	14.0 (ft)	Unknown (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (including usage, depth, and location relative to population and buildings)

There are 5 operable wells on-site, that are 300 ft. in depth and are only used for the cooling pond and utility purposes. There is a shallow dug well (22 ft in depth) located 2.0 miles from the site used for drinking water.

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES	COMMENTS	☐ YES	COMMENTS
☐ NO	Unknown	☐ NO	...

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Unnamed Tributary that empties into Gothards Creek	☐	0.5 (mi)
Gothards Creek (down slope from facility)	☐	2.5 (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 6,074 NO OF PERSONS	B. 7,064 NO OF PERSONS	C. 13,954 NO OF PERSONS

02 DISTANCE TO NEAREST POPULATION Less than 0.5 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE Excess of 1800

04 DISTANCE TO NEAREST OFF-SITE BUILDING Less than 0.5 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural village, densely populated urban area)

The site is located in somewhat of an industrial park section near railroad tracks. However site/park is situated in a residential area.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: GA
02 SITE NUMBER: D051011344

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☑ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☑ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
5-25.0 (ft)	____ (ft)	Unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
10.0 (in)	3.0 (in)	5.0 %	Northeast	5-8.0 %

09 FLOOD POTENTIAL: SITE IS IN Unknown YEAR FLOODPLAIN

10: N/A ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. — (mi)
OTHER: B. — (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species): ____ (mi)

ENDANGERED SPECIES: None

13 LAND USE IN VICINITY

DISTANCE TO

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. .10 (mi)	B. .10 (mi)	C. — (mi)	D. — (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The facility itself is situated in an industrial park section along with 3 other companies. The site in some areas is nearly flat with no slope and in other areas gently sloping (3-6%). There is a heavy residential population south, southwest and east of the site and sparsely populated areas to the north and west. The facility is not completely surrounded by areas of higher elevation.

VII. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp.
Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	3	Georgia - EPD Laboratory	12/1987
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	2	Georgia - EPD Laboratory	12/1987
VEGETATION			
OTHER SLUDGE	1	Georgia - EPD Laboratory	12/1987

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
N/A	

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Georgia - EPD State Files (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Georgia - EPD State Files

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

A well survey was conducted within a 3-mile radius of the site and 23 wells were observed.

VI SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files : Young Refining Corp.
Douglasville, Georgia

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	04 SIC CODE
Young Refining Corp.		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE
7982 Huey Road (P.O. Box 196)	Douglasville	Ga.	30134

PARENT COMPANY (if applicable)

08 NAME	09 D+B NUMBER	11 SIC CODE

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

08 NAME	09 D+B NUMBER	11 SIC CODE

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

08 NAME	09 D+B NUMBER	11 SIC CODE

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

08 NAME	09 D+B NUMBER	11 SIC CODE

10 STREET ADDRESS (P.O. Box, RFD #, etc.)	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	04 SIC CODE
Young Refining Corp.		

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE
7982 Huey Road (P.O. Box 196)	Douglasville	Ga.	30134

IV. REALTY OWNER(S) (if applicable; list most recent first)

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	04 SIC CODE

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files : Young Refining Corp.
Douglasville, Georgia

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. CURRENT OPERATOR (Provide if different from owner)			OPERATOR'S PARENT COMPANY (If applicable)		
01 NAME: Young Refining Corp.	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 7982 Huey Road (P.O. Box 796)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY: Douglasville	06 STATE: Ga.	07 ZIP CODE: 30134	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)			PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)		
01 NAME	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				
01 NAME	02 D+B NUMBER		10 NAME	11 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD				

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp., Douglasville, Georgia

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D061011344

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
N/A	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE: GA
02 SITE NUMBER: D051011344

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files - Young Refining Corp.
Douglasville, Georgia

EPA FORM 2070-1 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION ☐ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files : Young Refining Corp.
Douglasville, Georgia

EPA FORM 2070-13 (7-81)

APPENDIX F

F.O.I.A.
EXEMPTION 5

5/29/91

Approving Official — Date

FACILITY DESCRIPTION PAGE

The Young Refining Corporation refines crude (asphaltic) into asphaltic cements, #2 fuel oil, jet fuel, heavy #5 oil and various roofing asphalts. All process washwater and stormwater from the complex passes through an API separator, which discharges to four NPDES permitted ponds. The facility was found to be in violation of small quantity generator standards by Georgia-EPD in July of 1985. Hazardous wastes (sludges) had been disposed of in the past by spreading on the ground at various locations throughout the facility. The Georgia-EPD also cited the facility in the past for illegal incineration and dilution of waste and for illegal disposal of hazardous wastes at non-permitted dump sites off of Basket Creek Road in Douglas County. In addition to disposing of wastes on-site, the facility also had an oil spill in June of 1973.

On October 28, 1987, a total of 4 samples were collected on-site. There were 2 ground water samples, 1 sludge composite and 1 soil composite collected around the API separator. Samples collected off-site were a soil background sample and a background ground water sample collected from a shallow private well. Ground water samples were void of contaminants; however, heavy metals were found in sludge and soil composite samples collected on-site.

The site is located in a residential, industrial area. The City of Douglasville's drinking water is supplied by surface waters (Annawakee, Little Annawakee and Bear Creeks).

RCRA STATUS PAGE

The Young Refining Corporation has an NPDES permit (GA0001902) from the Georgia-EPD. The site is classified as a small quantity generator.

t	Zip Cde	Lati-tude	Longi-tude	GEN	TRN	TSD	UIC	Contact Name Last	First
A	30135			2					HURTIS
A	30057			3					GARY
A	30056			2					JIM
A	30134	3345040	08440010	N					GEORGE
A	30057			2					RONALD
A	30135			2					GREGORY.L.
A	30057			2					CHUCK
A	30133			3					KEITH
A	30135			2				CHASIN	CAROL
A	30057			2				BOYD	HUGH
A	30057			2				BLACKMON	JOHN
A	30057			2				PERRY	DAN
A	30134			3				COLEMAN	JERRY
A	30135			N				TIPTON	RON
A	30057			1				REINHARDT	MICHAEL
A	30057			2				BLANTON	GREGG
A	30134			2				WREN	RAY
A	30134	3344000	08445000	2				YOUNG	CHARLES.E.

Reference 8

{F1 = Help} {↑ ↓ <- -> = Scroll} {ESC = Exit} {F10 = Search} V2.1

Location City	St	Zip Cde	Lati-tude	Longi-tude	GEN	TRN	TSD	UIC
DOUGLASVILLE	GA	30135			2			
LITHIA SPRINGS	GA	30057			3			
LITHIA SPRINGS	GA	30056			2			
DOUGLASVILLE	GA	30134	3345040	08440010	N			
LITHIA SPRINGS	GA	30057			2			
DOUGLASVILLE	GA	30135			2			
LITHIA SPRINGS	GA	30057			2			
DOUGLASVILLE	GA	30133			3			
DOUGLASVILLE	GA	30135			2			
LITHIA SPRINGS	GA	30057			2			
LITHIA SPRINGS	GA	30057			2			
LITHIA SPRINGS	GA	30057			2			
DOUGLASVILLE	GA	30134			3			
DOUGLASVILLE	GA	30135			N			
LITHIA SPRINGS	GA	30057			1			
LITHIA SPRINGS	GA	30057			2			
DOUGLASVILLE	GA	30134			2			
DOUGLASVILLE	GA	30134	3344000	08445000	2			

{F1 = Help} {↑ ↓ <- -> = Scroll} {ESC = Exit} {F10 = Search} V2.1

	Location City	St	Zip Cde	Lati-tude	Longi-tude	GEN
	DOUGLASVILLE	GA	30135			2
SUITE 102	LITHIA SPRINGS	GA	30057			3
	LITHIA SPRINGS	GA	30056			2
CH RD	DOUGLASVILLE	GA	30134	3345040	08440010	N
Y	LITHIA SPRINGS	GA	30057			2

R C R I S Data System

County Name | Facility Name | Facility Id

138 - 139 Facility State

142 - 150 Facility Zip

153 - 159 Latitude

162 - 169 Longitude

172 - 173 G E N : Generator
(N) = Not a Generator verified
(1) = Greater than 1,000 kg during any month
(2) = Between 100 - 1,000 kg during any month
(3) = Less than 100 kg/month
(4-9) = State Codes
( ) = Unverified

176 - 176 T R N : Transporter
(C) = Commercial

{F1 = Help} {↑ ↓ <- -> = Scroll} {ESC = Exit} {F10 = Search} V2.1

R C R I S Data System

County Name | Facility Name | Facility Id

(4-9) = State Codes
( ) = Unverified

176 - 176 T R N : Transporter
(C) = Commercial
(S) = Self
(X) = Commercial Status Unknown
(N) = Not a Transporter (verified)
( ) = Unverifed

179 - 179 T S D : Treatment, Storage, or Disposal
(X) = TSD
(N) = Not a TSD (verified)
( ) = Not a TSD (Unverified)

182 - 182 U I C : Underground Injection Control
(X) = Indication of Activity
( ) = No Activity

{F1 = Help} {↑ ↓ <- -> = Scroll} {ESC = Exit} {F10 = Search} V2.1

R C R I S Data System

County Name | Facility Name | Facility Id

(S) = Self
(X) = Commercial Status Unknown
(N) = Not a Transporter (verified)
( ) = Unverifed

179 - 179 T S D : Treatment, Storage, or Disposal
(X) = TSD

D	DOUGLASVILLE	GA	30133			3
	DOUGLASVILLE	GA	30135			2
	LITHIA SPRINGS	GA	30057			2
	LITHIA SPRINGS	GA	30057			2
D SUITE 12	LITHIA SPRINGS	GA	30057			2
AD	DOUGLASVILLE	GA	30134			3
	DOUGLASVILLE	GA	30135			N
SUITE 101	LITHIA SPRINGS	GA	30057			1
	LITHIA SPRINGS	GA	30057			2
	DOUGLASVILLE	GA	30134			2
	DOUGLASVILLE	GA	30134	3344000	08445000	2

{F1 = Help} {↑ ↓ <- -> = Scroll} {ESC = Exit} {F10 = Search} V2.1

R I S Data System

Name	Facility Id	Location Street
E #1245	GAD981278450	3242 HWY 5
ESBURY INC	GAD981282379	320 THORNTON RD SUITE 102
D JONES GROUP	GAD981262363	500 THORNTON RD
N PIPE LINE CO AU FACILITY	GAD991276288	COUNTY LINE CHURCH RD
SHOP	GAD981271679	3846 BANKHEAD HWY
LEANERS	GAD981216070	5383 FAIRBURN RD
NISSAN	GAD981261332	1968 THORTON RD
DEPOT #107	GAD981241201	7400 DOUGLAS BLVD
OYS	GAD984291435	3150 HIGHWAY #5
CHEVROLET INC	GAD033693250	1971 THORNTON RD
RD AMOCO	GAD984301747	983 THORNTON RD
ROAD COLLISION CENTER	GAD984307454	500 THORNTON ROAD SUITE 12
AFETY LIGHTS OF GA INC.	GAD984291716	1441 MCINTOSH ROAD
NTA ONE HOUR MARTINIZING	GAD981225675	9503 HWY 5
BUSINESS PK/TANDEM	GAD984302091	322 THORNTON RD SUITE 101
TOYOTA	GAD984300152	1211 THORNTON RD
Y SHOP INC	GAD981019425	6402 FAIRBURN RD
INING CORP	GAD051011344	7982 HUEY RD

{F1 = Help} {↑ ↓ <- -> = Scroll} {ESC = Exit} {F10 = Search} V2.1

R C R I S Data System

County Name	Facility Name	Facility Id
DOUGLAS	MINIT-LUBE #1245	GAD981278450
DOUGLAS	NELES-JAMESBURY INC	GAD981282379
DOUGLAS	PALMER AND JONES GROUP	GAD981262363
DOUGLAS	PLANTATION PIPE LINE CO AU FACILITY	GAD991276288
DOUGLAS	PRO BODY SHOP	GAD981271679
DOUGLAS	QUALITY CLEANERS	GAD981216070
DOUGLAS	SUTHERLIN NISSAN	GAD981261332
DOUGLAS	THE HOME DEPOT #107	GAD981241201
DOUGLAS	THE PEP BOYS	GAD984291435
DOUGLAS	THORNTON CHEVROLET INC	GAD033693250
DOUGLAS	THORNTON RD AMOCO	GAD984301747
DOUGLAS	THORNTON ROAD COLLISION CENTER	GAD984307454
DOUGLAS	WARNING SAFETY LIGHTS OF GA INC.	GAD984291716
DOUGLAS	WEST ATLANTA ONE HOUR MARTINIZING	GAD981225675
DOUGLAS	WESTFORK BUSINESS PK/TANDEM	GAD984302091
DOUGLAS	WESTSIDE TOYOTA	GAD984300152
DOUGLAS	WRENS BODY SHOP INC	GAD981019425
DOUGLAS	YOUNG REFINING CORP	GAD051011344

Reference 9

DATE: December 16, 1992

SUBJECT: Young Refining, Douglas County, Ga.

FROM: Janice Thomas
Site Assessment manager

TO: File

The purpose of this memo is to reopen the Young Refining site GAD051011344. After reviewing the menorandun date September 8,1992 From Herb Miller a Civils invesgator at EPA. We have sufficient information indicate that Young Refining Corporation located at 7982 Huey road in Douglasville, should be reopen for further invesgation basic on a interview with a former employee of Young Refining where he indicate he bury hundredth of drums on Young Refining property in the 1970s.

PHYSIOGRAPHIC MAP OF GEORGIA

by

William Z. Clark, Jr. and Arnold C. Zisa

DEPARTMENT OF NATURAL RESOURCES
Joe D. Tanner, Commissioner

THE GEOLOGIC AND WATER RESOURCES DIVISION
Sam M. Pickering, State Geologist and Division Director

Atlanta
1976

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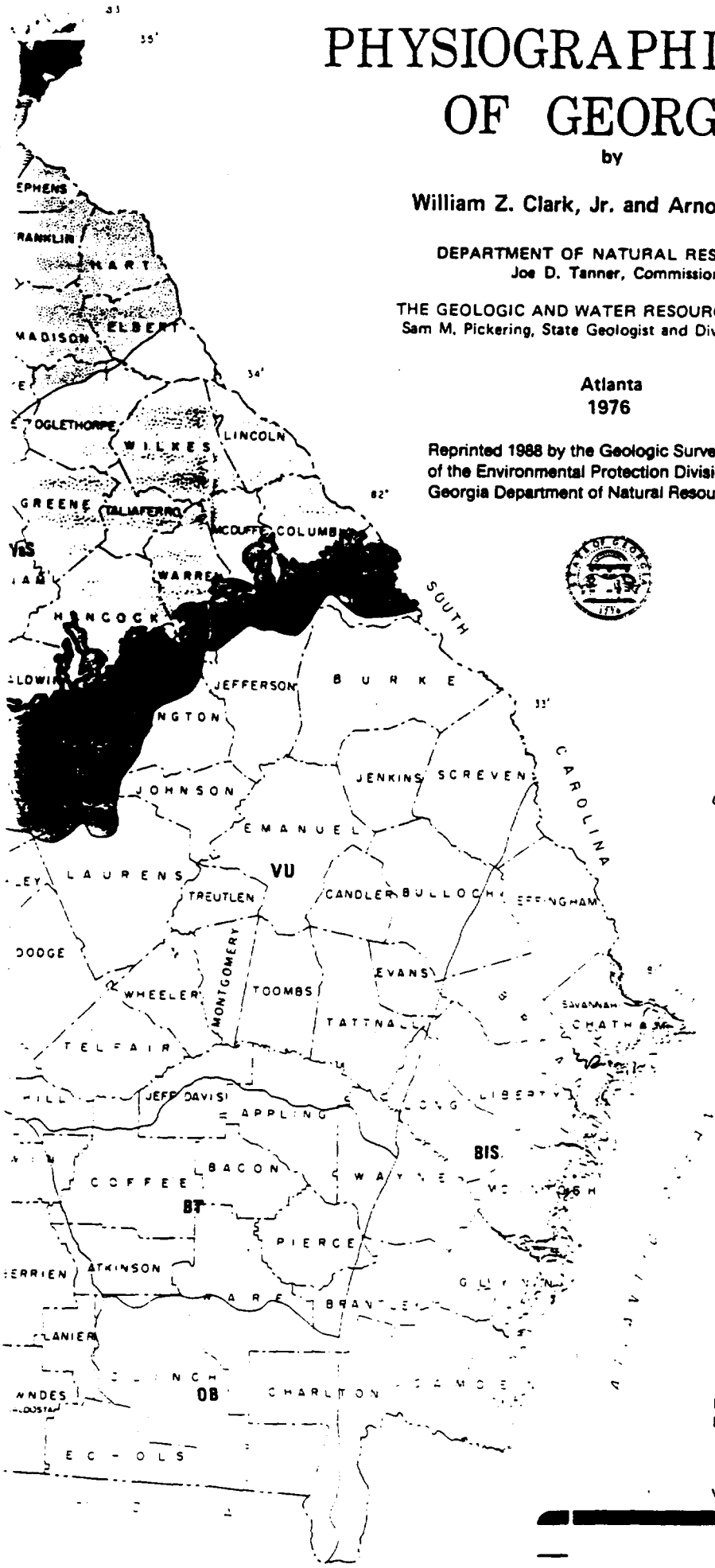
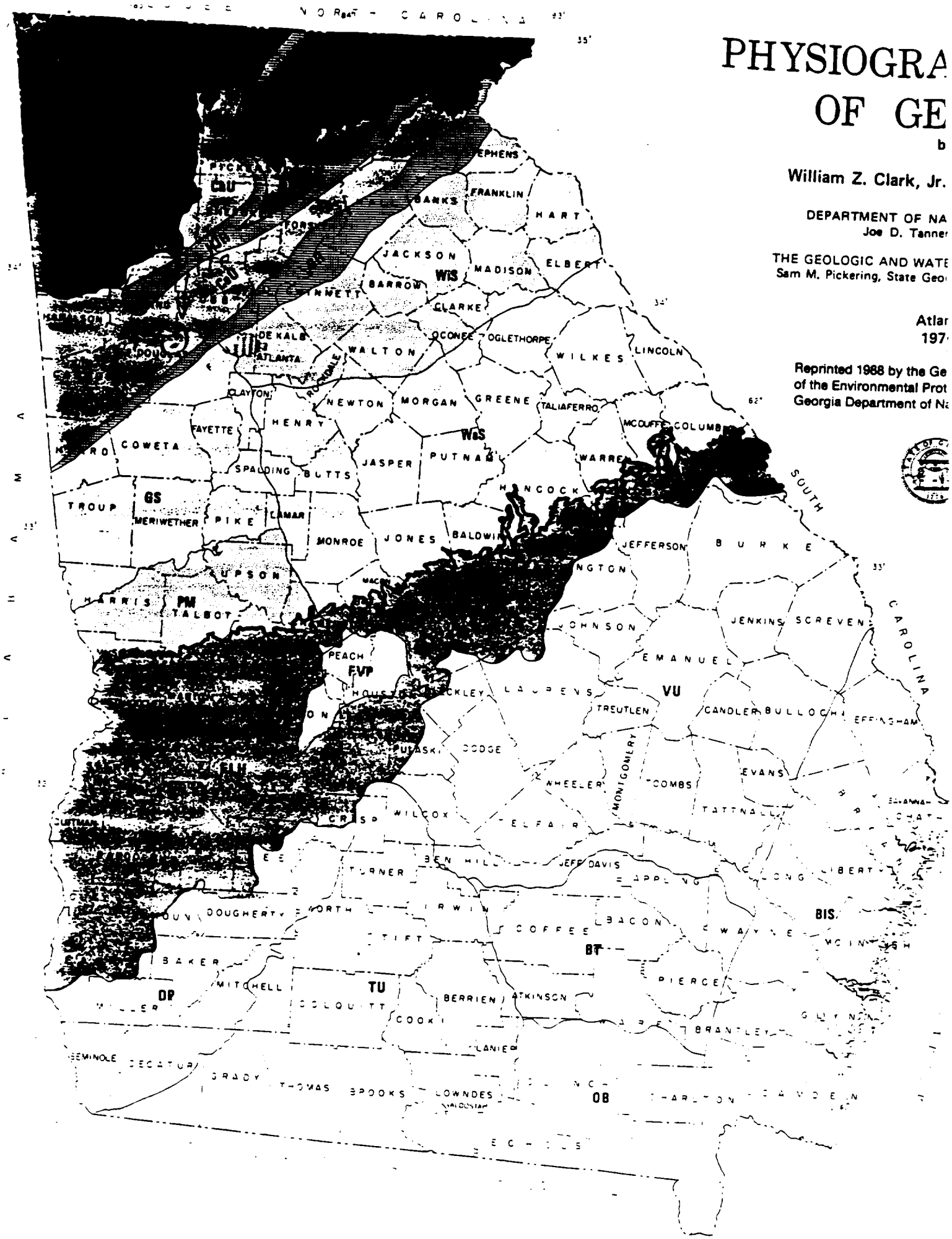
of the Environmental Protection Division of the
Georgia Department of Natural Resources

Reference 10



I. Cumberland-Plateau Section
II. Southern Valley and Ridge Section
III. Southern Blue Ridge Section
IV. Southern Piedmont Section
IVa. Upland Georgia Subsection
IVb. Midland Georgia Subsection
V. East Gulf Coastal Plain Section
VI. Sea Island Section

Reference 1



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APPALACHIAN HIGHLANDS MAJOR DIVISION

APPALACHIAN PLATEAU PROVINCE

Cumberland Plateau Section

Lookout Mountain District - The Lookout Mountain District is composed of two nearly flat-topped mountains, Lookout-Pigeon and Sand Mountains, separated by Lookout Valley which is a breached anticline. The mountains are capped by Rockcastle Sandstone of Pennsylvanian age, and the valley is underlain by Chickamauga Limestone of Ordovician age. The upland slopes gently to the southwest from a maximum elevation of 2200 feet near Durham to an elevation of 2000 feet near the Alabama-Georgia border. The northwestern margin of Lookout Mountain and the southeastern margin of Sand Mountain are marked by a continuous escarpment that drops abruptly 1000-1200 feet to Lookout Valley. Elevations in Lookout Valley vary from 800-1000 feet. The escarpment on the southeastern side of Lookout-Piegon Mountain, the district and province boundary, drops abruptly 800-1000 feet to the Chickamauga Valley District. These escarpments are breached by numerous small streams which have their source on top of the upland and reach the valleys through deep notches in the cliffs.

RIDGE AND VALLEY PROVINCE

Southern Valley and Ridge Section

Chickamauga Valley District - The Chickamauga Valley District is characterized by a series of gently rolling, discontinuous, northeast-trending valleys interrupted by low, linear, parallel ridges. The valley floors are predominantly limestone and dolomite of Cambro-Ordovician age while the ridges are capped by the more resistant cherty units of the Knox Group, also of Cambro-Ordovician age. The ridge tops are approximately 1000 feet in elevation and stand 200-300 feet above the intervening valleys. Rectangular drainage patterns in this district are indicative of structural control.

Armuchee Ridges District -A series of prominent, narrow, chevron-shaped ridges dominate the Armuchee Ridges District. These ridges rise abruptly 600-700 feet above the Chickamauga Valley District to the northwest and the Great Valley District to the south and east. The southern and eastern boundary closely parallels the Rome Fault. These ridges, capped predominantly by the Red Mountain sandstone of Silurian age, stand at elevations of 1400-1600 feet. Intervening valley floors are generally underlain by shales and limestones of Mississippian and Cambro-Ordovician age, respectively.

The Great Valley District - The Great Valley District is typically broad and open with a few scattered ridges and hills. Elevations throughout the area range from 700-800 feet above sea level with relief of 50 to 100 feet. The floor of the valley is underlain by shales, dolomites and limestones of Cambrian and Ordovician age. The eastern boundary of the Great Valley follows the escarpment of the Great Smoky-Cartersville Fault.

BLUE RIDGE PROVINCE

Southern Blue Ridge Section

Cohutta Mountains District - An irregular mass of rugged mountains ranging in elevation from 3000-4000 feet is characteristic of the Cohutta Mountains District. Erosion of metamorphosed sediments of the Ocoee series by the headwater tributaries of southwestward and northward flowing streams has produced valleys 1000-1500 feet below the mountain crests. The southern boundary of this district slopes steeply to the lower elevations of the Cherokee Uplands District. In Georgia the Cohutta Mountains are separated from the main body of the Blue Ridge by the McCaysville Basin and the Jasper Ridges.

McCaysville Basin District - Mountains almost completely enclose the McCaysville Basin District and rise from the 2000 foot elevation at the edge of the basin to heights of 4000-4500 feet above sea level. This topographic basin is bisected by the northeast-trending Jasper Ridges; however, the topography on both sides of these ridges is remarkably similar. The gently rolling topography, produced by erosion of the Great Smoky Group, varies in elevation from 1600 to 1800 feet. Relief througnout the Basin varies from 200-300 feet except along the northwest-flowing stream valleys and near the Jasper Ridges where it ranges from 300-500 feet.

Blue Ridge Mountains District - A mass of rugged mountains and ridges ranging in elevation from 3500-4700 feet in the north and east to 3000-3500 feet in the southwest is the dominant topographic feature of the Blue Ridge Mountains District. Differing rates of erosion upon the Great Smoky Group by the headwater tributary streams, that eventually drain to either the Atlantic Ocean or the Gulf of Mexico, have produced valleys that are 1500-2000 feet below the adjacent summits. The southern boundary of the Blue Ridge abuts the Piedmont Province at approximately the 1700 foot elevation where a sharp change in regional slope occurs.

PIEDMONT PROVINCE

Southern Piedmont Section

Upland Georgia Subsection

Cherokee Upland District - The northern portion of the Cherokee Upland District is a rough, hilly surface with elevations ranging from 1300-1500 feet. Except for a few isolated mountains, elevations gradually decrease to 1000 feet in the southern part. The westward-flowing streams in the northern area occupy deep, narrow valleys 300-600 feet below the surrounding surface, while the southwestward flowing streams in the southern portion have wider, more open valleys 200-300 feet below the adjacent ridges. The eastern and southern boundaries are formed by the low, linear, parallel ridges of the Hightower-Jasper Ridges District.

Dahlonega Upland District - The rough and hilly northeastern part of the Dahlonega Upland District stands 1500-1700 feet above sea level. Streams in this area flow south out of the Blue Ridge Mountains District, and have cut deep, narrow valleys 500-600 feet below the surrounding surface. In the southern and southwestern portions, surface elevations decrease to 1200 feet. Stream valleys are wider, more open, and only 200-300 feet below the adjacent surface. The southern and western boundaries are formed by the low linear, parallel ridges of the Hightower-Jasper Ridges District.

Hightower-Jasper Ridges District - Although the Hightower Ridges and Jasper Ridges have different structural and lithologic histories, they are topographically so similar that they may be discussed together. The Hightower-Jasper Ridges District consists of a series of low, linear, parallel ridges separated by narrow valleys. The Hightower Ridges range in elevation from 1500 feet in the northeast to 1000 feet in the southwest. Relief in this area varies from 500 feet in the northeast to 200 feet in the southwest. The Jasper Ridges bisect the McCaysville Basin District and continue southward as a low area between the Cohutta and Blue Ridge Mountains. These ridges range in elevation from 2400 feet in the north to 1200 feet near Canton where they join the Hightower Ridges. Relief varies from 800 feet in the north to 200 feet near Lake Allatoona. Some structural control of streams in the district is exhibited by the modified rectangular drainage patterns. The southern and western boundaries are located where there is a decrease in the density of the linear ridges.

Central Uplands District - The northeastern and central portions of the Central Upland District are a series of low, linear ridges, 1300-1500 feet above sea level, and separated by broad, open valleys. Streams flowing through this section are generally transverse to the structure and occupy valleys 150-200 feet below the ridge crests. In the southwestern part, elevations decrease to 1100 feet, and the linearity of the topography is not so apparent. Stream valleys in the southwestern portion are not as open as those to the northeast. They exhibit a rectangular drainage pattern and lie only 100-150 feet below the surrounding area. The southern boundary of this district is the ridge crest that marks the beginning of the Gainesville Ridges District.

Gainesville Ridges District - A series of northeast-trending, low, linear, parallel ridges separated by narrow valleys characterizes the Gainesville Ridges District. The ridges are composed of quartzite and gneiss, while the valleys are underlain by phyllonite and schist. These ridges vary in elevation from 1500-1600 feet in the northeast and decrease gradually to 700 feet in the southwest. Relief varies from 100-200 feet in the northeast to 70-100 feet in the southwest. The courses of the Chattahoochee River and its tributaries are strongly controlled by the ridges in this district and exhibit a good example of rectangular drainage. The southern boundary follows a ridge that is continuous throughout most of its extent, decreasing in elevation from 1100 feet in the northeast to 700 feet in the southwest. This ridge crest is the drainage divide between southwest flowing streams and those streams draining to the south.

Midland Georgia Subsection

Winder Slope District - The gently rolling topography of the Winder Slope District slopes gradually from an elevation of 1000 feet in the north to 700 feet at the southern edge. This district is dissected by the headwater tributaries of the major streams draining to the Atlantic Ocean. Numerous dome-shaped, granitic mountains are located on the interfluves in the southern and western portion of this district. The stream valleys which are fairly deep and narrow, lie 100-200 feet below the narrow, rounded stream divides. The western boundary follows the drainage divide that separates streams draining to the Atlantic Ocean from those draining to the Gulf of Mexico. The southern boundary approximates the 700 foot elevation where a sharp break in regional slope occurs.

WsS

Washington Slope District - The Washington Slope District is characterized by a gently undulating surface which descends gradually from about the 700 foot elevation at its northern margin to about the 500 foot elevation at its southern edge. Streams occupy broad, shallow valleys with long, gentle side slopes separated by broad, rounded divides. Relief throughout this district is 50-100 feet except in the vicinity of the Ocmulgee River, which flows in a steep-walled valley 150-200 feet below the adjacent area. The western boundary corresponds to the drainage divide between the Atlantic Ocean and the Gulf of Mexico. The southern boundary, known as the Fall Line, follows the contact between the metamorphic rocks of the Piedmont and the sediments of the Coastal Plain.

GS

Greenville Slope District - The Greenville Slope District is characterized by rolling topography that decreases gradually in elevation from 1000 feet in the northeast to 600 feet in the southwest. All streams in this district eventually drain to the Gulf of Mexico. However, those flowing to the southwest occupy shallow, open valleys with broad, rounded divides while those flowing to the southeast occupy narrower, deeper valleys with narrow, rounded divides. Relief varies from 150-200 feet in the east to 100-150 feet in the west. The southern boundary follows the base of the northern side of Pine Mountain, which rises abruptly 250-400 feet above the adjacent surface.

PM

Pine Mountain District - The portion of this district known as Pine-Oak Mountain has a lenticular form extending from the Alabama border to near Barnesville. Quartzite caps Pine-Oak Mountain and the adjacent ridges. These ridges rise abruptly from the Greenville Slope District to elevations of 1200-1300 feet. In the eastern part of Pine Mountain, the Flint River has cut a deep, narrow gorge some 300-400 feet below the summit. South of the Pine-Oak Mountain portion of this district, the surface slopes gently from 800 feet elevation to approximately 500 feet at its southern edge. Relief in this portion generally varies from 50-150 feet. The southern boundary, known as the Fall Line, follows the contact between the metamorphic rocks of the Piedmont and the sediments of the Coastal Plain.

ATLANTIC PLAIN MAJOR DIVISION

COASTAL PLAIN PROVINCE

Sea Island and East Gulf Coastal Plain Section

Fall Line Hills District - The Fall Line is the northern boundary of this district as well as the boundary between the Atlantic Plain and the Appalachian Highlands Major Divisions. Geologically, it is the contact between the Cretaceous and younger sediments of the Coastal Plain and the older, crystalline rocks of the Piedmont. Several stream characteristics change as they flow south through this area: rapids and shoals are common near the geologic contact, floodplains are considerably wider on the younger sediments, and the frequency of stream meanders increases.

The southern boundary of the Fall Line Hills District approximates the 250 foot elevation and separates this district from the Dougherty Plain. Eastward, the southern boundary follows the northern extremity of the Pelham Escarpment separating the Fall Line Hills from the Tifton Upland. The southern boundary then closely follows the northernmost occurrence of the undifferentiated Neogene geologic unit which underlies the Vidalia Upland.

The Fall Line Hills District is highly dissected with little level land except the marshy floodplains and their better drained, narrow stream terraces. Stream valleys lie 50 to 250 feet below the adjacent ridge tops. Stream dissection seems to be greatest in the East Gulf portion of this district. Relief gradually diminishes to the south and east. Maximum elevations are approximately 760 feet between Columbus and Macon and gradually diminish to a minimum elevation of 150 feet south of Augusta.

FVP

Fort Valley Plateau District - An anomalous area within the Fall Line Hills is known as the Fort Valley Plateau. It is characterized by flat-topped interfluves with narrow, 50-150 feet deep, steep-walled valleys. This area is distinct from the Fall Line Hills in that the broad, flat-topped interfluves are the dominant feature, there are fewer streams, and there is less local relief. The area is less dissected than the Fall Line Hills because it is underlain by the more clayey units of undifferentiated Eocene, Paleocene and possibly Cretaceous age sediments. Elevations range from 550 feet in the north to 250 feet in the southeast, indicating a southeast regional dip. The east and west boundaries are the Ocmulgee and Flint River Valleys, respectively. The southern boundary is formed by Hogcrawl and Big Indian Creeks. The northern boundary occurs at approximately the 500 foot elevation where the narrow, steep interfluves of the Fall Line Hills abruptly change to the lower, flat-topped interfluves of the Fort Valley Plateau.

East Gulf Coastal Plain Section

DP

Dougherty Plain District - The Dougherty Plain is a northeast-trending, wedge-shaped, level to gently rolling lowland that pinches out where the Fall Line Hills and the Tifton Upland meet. The northwestern boundary is gradational from the Fall Line Hills and occurs where the slopes become more gentle and the relief is low; the 250 foot elevation approximates this boundary. The southeastern boundary is the base of the Pelham Escarpment which separates this district from the Tifton Upland. The region slopes southwestward with maximum elevations of 300 feet in the northeast to a minimum elevation of 77 feet at Lake Seminole. The flat to very gently rolling topography is interrupted by numerous sinkholes. Karst topography prevails in this district, and many sinkholes, still actively forming, are the sites of numerous ponds and marshes. The karst topography is formed on the underlying Ocala and Suwannee Limestones of Eocene and Oligocene age, respectively.

TU

Tifton Upland District - A well developed, extended, dendritic drainage pattern is formed on the undifferentiated Neogene sediments in the Tifton Upland District. Characteristically, the interfluves are narrow and rounded, rising 50 to 200 feet above the narrow valley floors. Elevations range from 480 feet in the north to 150 feet in the southeast indicating the regional slope. The northwestern and northern boundary is the base of the Pelham Escarpment which rises as much as 200 feet above the Dougherty Plain. The eastern boundary follows the eastern drainage divide of the Alapaha River.

Sea Island Section

VU

Vidalia Upland District - The Vidalia Upland District is a moderately dissected area with a well developed dendritic stream pattern on gravelly, clayey sands. Floodplains are narrow except along the principal rivers which have a wide expanse of swamp bordering both sides of the channel. Relief varies from 100 to 150 feet. Elevations in the district range from 500 feet in the northwest to 100 feet in the southeast indicating the regional dip. The northern and northwestern boundary approximates the northernmost occurrence of the undifferentiated Neogene geologic unit. The southwestern and southern boundary is the base of the Pelham Escarpment and the southern drainage divide of the Altamaha River. The southeastern boundary follows the Orangeburg Escarpment at approximately the 150 foot elevation. The escarpment rises 50-70 feet above the Barrier Island Sequence District.

BT

Bacon Terraces District - Several moderately dissected terraces, generally parallel to the present coastline, are detectable on topographic maps of the Bacon Terraces District. However, they are very difficult to observe on the ground because the east facing scarps are very subtle. The terrace levels occur at elevations of 330-310 feet, 295-275 feet, 265-255 feet, 240 feet, 230 feet, 215-190 feet, and 180-160 feet. This district, on the north, west, and south, corresponds to the Satilla River drainage basin with its boundaries on the basin divide. The eastern boundary is the western base of Trail Ridge at approximately the 150 foot elevation. The southeast-trending, very extended, dendritic drainage pattern has formed on Upper Tertiary sediments. This drainage network has produced long, narrow interfluves with gently rounded to flat summits that rise gradually 50 to 100 feet above the narrow, marshy floodplains.

OB

Okefenokee Basin District - Low relief, decreasing to the southeast, and numerous swamps are characteristic of the Okefenokee Basin District. Relief varies from approximately 50 feet to less than 5 feet. Elevations in the district range from 240 feet in the northwest on Pliocene-Pleistocene deposits to 75 feet in the southeast on Pleistocene deposits. The swamps range in size from a few hundred square feet to the 660 square miles of the Okefenokee Swamp. The northwestern portion of the Okefenokee Swamp, like the northern and western portions of the district, is drained by the southeast-flowing tributaries of the southwest-flowing Suwannee River. The southeastern portion of the swamp is drained by the south-flowing St. Marys River. At the extreme southern end of the district the St. Marys River turns east and flows through a gap in Trail Ridge. The northern and western boundaries of the district coincide with the northern and western drainage divides of the Suwannee River. The eastern boundary is the western base of Trail Ridge.

BIS

Barrier Island Sequence District - Pleistocene sea levels advanced and retreated several times over the Barrier Island Sequence District to form a step-like progression of decreasing altitudes toward the sea. These former, higher sea levels existed as barrier island-salt marsh environments similar to the present coast. The former sea levels left shoreline deposit complexes parallel to the present coastline at characteristic elevations: Wicomico, 160-95 feet; Penholoway, 70-76 feet; Talbot, 40-46 feet; Pamlico, 25 feet; Princess Anne, 13 feet; Silver Bluff, 5 feet; Holocene, the present mean sea level.

There has been slight to moderate dissection of these former levels allowing marshes to exist in poorly drained low areas. Generally, dissection is further advanced toward the western portion of the district. Relief varies from 50 to 75 feet on the east side of Trail Ridge to just a few feet near marshes and along the coast. Maximum elevations are approximately 160 feet on Trail Ridge.

The western boundary is at the western base of Trail Ridge as far north as the Altamaha River, where the ridge becomes obscure. North of the Altamaha River the western boundary is the base of the Orangeburg Escarpment which approximates the 150 foot elevation.

[redacted]

Reference 11

SOI[redacted]VEY

Douglas County Georgia

[illegible]

[illegible]

[illegible]

[illegible]

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UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
UNIVERSITY OF GEORGIA COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATIONS

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however, to protect it from erosion and to maintain good tilth. (Capability unit IIIe–2; woodland group 1.)

Appling sandy loam, 10 to 15 percent slopes, eroded (AmD2).—This soil is about 6 inches shallower than Appling sandy loam, 2 to 6 percent slopes, eroded. Runoff is more rapid, and the rate of infiltration is slower. The soil has a few galled spots and shallow gullies and a few U-shaped gullies, 2 to 4 feet deep.

Included with this soil are a few severely eroded areas where the texture of the surface layer is sandy clay loam. In about 20 acres the soil is uneroded or only slightly eroded; here, the surface layer is sandy loam and is about 11 inches thick. A few areas of Louisburg soils are also included. The Louisburg soils have a thin and discontinuous B horizon, their solum is generally shallow, and there are a few rock outcrops.

Because of the strong slopes, rapid runoff, and serious hazard of erosion, Appling sandy loam, 10 to 15 percent slopes, eroded, needs to be kept in perennial vegetation a large part of the time. It is suited to most of the crops grown locally, but it needs to be kept in close-growing crops 3 years out of 4. (Capability unit IVe–1; woodland group 1.)

Appling sandy clay loam, 6 to 10 percent slopes, severely eroded (AnC3).—This severely eroded soil has a finer textured plow layer than Appling sandy loam, 2 to 6 percent slopes, eroded, and is about 6 to 10 inches shallower. Surface runoff is also more rapid, the rate of infiltration is slower, and the moisture-supplying capacity is lower. In addition, the soil has poorer tilth. The plow layer consists of yellowish-brown sandy clay loam to a depth of 5 to 7 inches, and is composed mainly of materials from the B horizon. There are many galled spots and shallow gullies and a few U-shaped gullies, 3 to 5 feet deep.

A few areas of Louisburg soils are included with this soil. In these areas the B horizon is thin and discontinuous, the solum is generally shallow, and there are a few rock outcrops.

The severe hazard of erosion, rapid runoff, and poor tilth make Appling sandy clay loam, 6 to 10 percent slopes, severely eroded, better suited to perennial vegetation than to other crops. It is suited to most of the crops grown locally but needs to be kept in close-growing crops 3 years out of 4. (Capability unit IVe–1; woodland group 4.)

Appling sandy clay loam, 10 to 15 percent slopes, severely eroded (AnD3).—This soil has a finer textured plow layer than Appling sandy loam, 2 to 6 percent slopes, eroded, and is about 8 to 10 inches shallower. Surface runoff is also more rapid, the rate of infiltration is much slower, and the moisture-supplying capacity is lower. In addition, the soil has much poorer tilth. The plow layer is yellowish-brown sandy clay loam to a depth of 5 to 7 inches, and is composed mainly of materials from the B horizon. There are many galled spots and shallow gullies and a few U-shaped gullies, 3 to 6 feet deep.

The strong slopes, rapid runoff, severe hazard of erosion, and poor tilth limit the suitability of this soil for crops. It is suited only to perennial vegetation or to trees. (Capability unit VIe–2; woodland group 4.)

Augusta Series

The Augusta series consists of deep, somewhat poorly drained, strongly acid soils that have a grayish-brown surface layer and a subsoil of mottled fine sandy clay loam. The soils have formed in old alluvium. The original vegetation was oak, hickory, maple, elm, ash, poplar, and pine.

These soils occur with Altavista, State, and Chewacla soils. They are more poorly drained, grayer, and more highly mottled than the Altavista and State soils. They have more distinct horizons than the Chewacla soils, which are on flood plains.

The supply of organic matter in the Augusta soils is low to medium. The supply of available plant nutrients is low; crops respond well if fertilizer is added. Yields are usually moderate to high. These soils commonly have good tilth, but ditching generally is needed to remove excess surface water and to improve internal soil drainage.

Only one soil of this series—Augusta silt loam—is mapped in this county. It occurs on low terraces along the larger streams. Most areas have been cultivated, but more than half is now pastured. The rest is used for corn or woodland.

Augusta silt loam (0 to 2 percent slopes) (Asl).—This deep, somewhat poorly drained soil occurs along the larger streams in the county. A description of a profile, taken in a moist area, follows:

A_p 0 to 7 inches, grayish-brown (10YR 5/2) silt loam; weak, fine, granular structure; very friable; many fine roots; strongly acid; gradual, wavy boundary; 5 to 8 inches thick.

A_3 7 to 13 inches, light brownish-gray (10YR 6/2), heavy fine sandy loam; weak, fine, granular and subangular blocky structure; friable; many fine roots; strongly acid; gradual, wavy boundary; 4 to 8 inches thick.

B_2 13 to 25 inches, pale-brown (10YR 6/3) fine sandy clay loam with common, fine, distinct mottles of light gray (2.5Y 7/2) and reddish yellow (7.5YR 7/8); moderate, medium, subangular blocky structure; friable to firm; strongly acid; gradual, wavy boundary; 10 to 16 inches thick.

B_3 25 to 33 inches, light-gray (10YR 7/2) fine sandy clay loam with common, medium mottles of pale brown and white; moderate, fine, subangular blocky and granular structure; friable; many fine mica flakes; strongly acid; diffuse, wavy boundary; 6 to 15 inches thick.

C 33 to 47 inches +, light-gray to white fine sandy loam; weak, fine, granular structure; very friable; many fine mica flakes and a few rounded pebbles; strongly acid.

The color of the surface soil ranges from brown to light grayish brown. The texture of the A_3 horizon ranges from silt loam to fine sandy clay loam. In some places the texture of the B horizon is silty clay loam, and in others it is fine sandy clay.

Runoff is very slow to slow in this soil. The rate of infiltration and permeability are moderate to moderately slow, and the moisture-supplying capacity is high.

A few areas of poorly drained Roanoke soils, which are not mapped separately in this county, are included with this soil. In these areas the B horizon is gray. A few areas of Augusta fine sandy loams are also included.

Ant 2

TABLE 16.—*Classification of soils by*

General classification	Granular materials (35 percent or less passing No. 200 sieve)				
Group classification	A-1		A-3	A-2	
	A-1-a	A-1-b		A-2-4	A-2-5
Sieve analysis:					
Percent passing—					
No. 10	50 maximum.				
No. 40	30 maximum	50 maximum	51 minimum.		
No. 200	15 maximum	25 maximum	10 maximum	35 maximum	35 maximum
Characteristics of fraction passing No. 40 sieve:					
Liquid limit			NP.[2]	40 maximum	41 minimum
Plasticity index	6 maximum	6 maximum	NP.[2]	10 maximum	10 maximum
Group index	0	0	0	0	0
Usual types of significant constituent materials.	Stone, fragments, gravel, and sand.	Stone fragments, gravel, and sand.	Fine sand	Silty gravel and sand.	Silty gravel and sand.
General rating as subgrade	Excellent to good				

[1] Based on Standard Specifications for Highway Materials and Methods of Sampling and Testing (pt. 1; ed. 7): The Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes, AASHO Designation: M 145-49.

According to the Geologic Map of Georgia (*5*), biotite gneiss and schist underlie about 60 percent of the county. Soils of the Madison and Louisa series are the principal ones formed in materials derived from these two kinds of rocks. In about 15 percent of the county, Augen gneiss underlies the soils. Soils formed in materials derived from Augen gneiss are mostly of the Appling or Louisburg series. Hornblende gneiss underlies the soils in another 10 to 12 percent of the county. The Musella, Lloyd, and Davidson soils are the principal ones formed in materials derived from this kind of parent rock. A few soils have formed in materials weathered from granite-gneiss and from Ashland, Brevard, or muscovite schists. In about 500 acres there are outcrops of granite that is only slightly weathered.

About 12 percent of the county is occupied by soils formed in alluvium. These soils are mainly along the larger streams. Approximately 3 percent of this acreage consists of soils formed in old alluvium, and about 9 percent, of soils formed in young alluvium. Much of this alluvium originated from rocks in the nearby uplands, but some of it came from the granitic and metamorphic rocks of the mountains to the northeast. The soils on first bottoms show little profile development and are still receiving deposits. In contrast, the soils on the old, high terraces have been in place long enough for distinct horizons to have developed.

Topography.—Topography is largely determined by the kind of bedrock formations underlying the soils, by the geologic history of the area, and by the effects of dissection by streams. It influences soil formation through its effects on moisture relations, erosion, temperature, and plant cover.

The soils of Douglas County have slopes that range from 0 to about 40 percent. In upland areas soils that have slopes of less than 15 percent are generally deeper and have more distinct horizons than soils that have stronger slopes. In soils that have slopes of 15 to 40 percent, geologic erosion removes the soil material almost as fast as it forms. As a result, most of the soils that have stronger slopes—for example, soils of the Louisa and Musella series—have a thin solum.

The highest elevation in the county is at a point on a ridge west of Douglasville. At that point the elevation is more than 1,200 feet above sea level. The lowest elevation is on the Chattahoochee River at a point near the line between Douglas and Carroll Counties. At that point the elevation is about 700 feet above sea level, or more than 500 feet below the highest point.

The differences in elevation and the many branching drainageways contribute to the good drainage of most of Douglas County. Excess water moves into the channels rapidly and is removed with little delay.

Time.—The length of time required for a mature soil to develop depends largely on the other factors of soil formation. A normal, or mature, soil profile in Douglas County is one that has easily recognized zones of eluviation (A horizon) and illuviation (B horizon). Less time is generally required for a soil to develop in humid, warm areas that have rank vegetation than in dry or cold areas where the vegetation is scant. Also, less time is required if the parent material is coarse textured than if it is fine textured, other factors being equal.

The age of soils varies considerably. Generally speaking, the older soils show a greater degree of horizon differentiation than younger ones. For example, on the

TABLE 18.—*Characteristics and genetic relationships of soil series*

ZONAL

Great soil group and soil series	Brief profile description [1]	Position	Soil drainage	Slope range	Parent material	Degree of profile development [2]
Red-Yellow Podzolic soils—						
Central concept:						
Madison	Brown gravelly sandy loam over friable red clay; highly weathered mica schist at a depth of 36 to 60 inches.	Upland slopes and ridges.	Good	*Percent* 2 to 25	Material weathered from mica schist.	Strong.
Wickham	Brown sandy loam over friable to firm, red clay; a layer of weakly cemented, water-rounded pebbles at a depth of 36 to 72 inches.	High terraces	Good	2 to 10	Old alluvium	Strong.
Appling	Yellowish-brown or grayish-brown sandy loam over red and yellowish-brown, mottled sandy clay; highly weathered granitic rock at a depth of 36 to 50 inches.	Upland slopes and ridges.	Good	2 to 15	Material weathered from gneiss and granite schist.	Strong.
Altavista	Pale-olive fine sandy loam over firm, mottled silty clay loam or sandy clay loam; sandy clay loam and layers of sand and gravel at a depth of 36 to 48 inches.	Low terraces	Moderately good.	2 to 6	Old alluvium	Strong.
Grading toward Reddish-Brown Lateritic:						
Lloyd	Dark-brown sandy loam over dark-red clay that is friable when moist and very hard when dry; highly weathered gneiss, diorite, and hornblende schist at a depth of 48 to 65 inches.	Upland slopes and ridges.	Good	2 to 25	Material weathered from diorite, hornblende schist, and gneiss.	Strong.
Grading toward Low-Humic Gley:						
Helena	Dark grayish-brown sandy loam over very firm to extremely firm, mottled yellowish-brown and gray sandy clay; aplitic granite weathered to sandy clay loam at a depth of 20 to 30 inches.	Upland slopes	Moderately good to somewhat poor.	2 to 10	Material weathered from aplitic granite.	Medium to strong.
Augusta	Grayish-brown silt loam over mottled pale-brown, light-gray, and reddish-yellow, friable to firm sandy clay loam; light-gray fine sandy loam at a depth of 32 to 42 inches.	Low terraces	Somewhat poor.	0 to 2	Old alluvium	Medium.
Colfax	Very dark grayish-brown sandy loam over mottled light olive-gray, friable or sticky sandy clay; mottled sandy loam from disintegrated granite or gneiss at a depth of 30 to 40 inches.	Around the heads of drainageways and on low saddles.	Somewhat poor.	2 to 6	Material weathered from granite and gneiss.	Medium.
Grading toward Lithosols:						
Louisa	Brown fine sandy loam over a thin, discontinuous layer of yellowish-red to red, friable, micaceous sandy clay loam to silty clay; highly weathered mica schist at a depth of 12 to 20 inches.	Upland slopes	Somewhat excessive.	10 to 40	Material weathered from mica schist.	Medium to weak.
Louisburg	Pale-olive loamy sand over yellowish-brown, friable sandy clay loam; hard or highly weathered granitic rock at a depth of 10 to 22 inches.	Upland slopes and ridges.	Somewhat excessive.	2 to 40	Material weathered from granite.	Medium to weak.
Wilkes	Pale-brown sandy loam over very firm clay to friable sandy clay loam; partly weathered fragments of mixed acidic and basic rocks at a depth of 10 to 20 inches.	Upland slopes	Somewhat excessive.	6 to 15	Material weathered from mixed acidic and basic rocks.	Weak.

569565—61——6

Appling

SOIL LEGEND

The first letter in each soil symbol is the initial of the soil series name. If the third letter is a capital, it denotes the range of slope from A, less than 2 percent, to F, 25 to 40 percent. A number after the slope letter denotes the degree of erosion as given in the soil name. All but two of the symbols that do not contain a slope letter or a number are symbols for nearly level soils, not more than slightly eroded. Gul, Gullied land; and Rok, Rock outcrop, are land types that have a wide range of slope.

SYMBOL	NAME
AkB2	Altavista fine sandy loam, 2 to 6 percent slopes, eroded
Alm	Alluvial land, moderately well drained
Alp	Alluvial land, somewhat poorly drained
AmB2	Appling sandy loam, 2 to 6 percent slopes, eroded
AmC2	Appling sandy loam, 6 to 10 percent slopes, eroded
AmD2	Appling sandy loam, 10 to 15 percent slopes, eroded
AnC3	Appling sandy clay loam, 6 to 10 percent slopes, severely eroded
AnD3	Appling sandy clay loam, 10 to 15 percent slopes, severely eroded
Asl	Augusta silt loam
Bfs	Buncombe loamy sands, 0 to 6 percent slopes
Cfs	Chewacla soils
CiB	Colfax sandy loam, 2 to 6 percent slopes
Cng	Congaree soils
DgB2	Davidson loam, 2 to 6 percent slopes, eroded
DgC2	Davidson loam, 6 to 10 percent slopes, eroded
DhB3	Davidson clay loam, 2 to 6 percent slopes, severely eroded
DhC3	Davidson clay loam, 6 to 10 percent slopes, severely eroded
DhD4	Davidson clay loam, 10 to 15 percent slopes, very severely eroded
Gul	Gullied land
HYB2	Helena sandy loam, 2 to 6 percent slopes, eroded
HYC2	Helena sandy loam, 6 to 10 percent slopes, eroded
HYC3	Helena soils, 6 to 10 percent slopes, severely eroded
LdB2	Lloyd sandy loam, 2 to 6 percent slopes, eroded
LdC2	Lloyd sandy loam, 6 to 10 percent slopes, eroded
LdE2	Lloyd sandy loam, 15 to 25 percent slopes, eroded
LeB3	Lloyd clay loam, 2 to 6 percent slopes, severely eroded
LeC3	Lloyd clay loam, 6 to 10 percent slopes, severely eroded
LeC4	Lloyd clay loam, 6 to 10 percent slopes, very severely eroded
LeD3	Lloyd clay loam, 10 to 15 percent slopes, severely eroded
LeD4	Lloyd clay loam, 10 to 15 percent slopes, very severely eroded
LjD	Louisa fine sandy loam, 10 to 15 percent slopes
LjD2	Louisa fine sandy loam, 10 to 15 percent slopes, eroded
LjE	Louisa fine sandy loam, 15 to 25 percent slopes
LjE2	Louisa fine sandy loam, 15 to 25 percent slopes, eroded
LjF	Louisa fine sandy loam, 25 to 40 percent slopes
LlB2	Louisburg complex, 2 to 6 percent slopes, eroded
LlC2	Louisburg complex, 6 to 10 percent slopes, eroded
LlD2	Louisburg complex, 10 to 15 percent slopes, eroded
LmE	Louisburg stony complex, 10 to 40 percent slopes
MhB2	Madison gravelly fine sandy loam, 2 to 6 percent slopes, eroded
MhC	Madison gravelly fine sandy loam, 6 to 10 percent slopes
MhC2	Madison gravelly fine sandy loam, 6 to 10 percent slopes, eroded
MhD	Madison gravelly fine sandy loam, 10 to 15 percent slopes
MhD2	Madison gravelly fine sandy loam, 10 to 15 percent slopes, eroded
MhE	Madison gravelly fine sandy loam, 15 to 25 percent slopes
MhE2	Madison gravelly fine sandy loam, 15 to 25 percent slopes, eroded
MiB3	Madison gravelly sandy clay loam, 2 to 6 percent slopes, severely erc
MiC3	Madison gravelly sandy clay loam, 6 to 10 percent slopes, severely e
MiC4	Madison gravelly sandy clay loam, 6 to 10 percent slopes, very sever
MiD3	Madison gravelly sandy clay loam, 10 to 15 percent slopes, severely
MiD4	Madison gravelly sandy clay loam, 10 to 15 percent slopes, very seve
MiE3	Madison gravelly sandy clay loam, 15 to 25 percent slopes, severely
MiE4	Madison gravelly sandy clay loam, 15 to 25 percent slopes, very seve
McC2	Mecklenburg sandy loam, 6 to 10 percent slopes, eroded
MtB	Molena loamy sand, 2 to 6 percent slopes
MtC	Molena loamy sand, 6 to 10 percent slopes
MvC2	Musella clay loam, 6 to 10 percent slopes, eroded
MvD2	Musella clay loam, 10 to 15 percent slopes, eroded
MvE2	Musella clay loam, 15 to 25 percent slopes, eroded
MwC2	Musella stony clay loam, 6 to 10 percent slopes, eroded
MwD2	Musella stony clay loam, 10 to 15 percent slopes, eroded
MwE2	Musella stony clay loam, 15 to 25 percent slopes, eroded
MFE	Musella stony fine sandy loam, 15 to 25 percent slopes
Rok	Rock outcrop
Sne	Local alluvial land
Sta	State fine sandy loam, 0 to 6 percent slopes
Weh	Wehadkee silty clay loam
WgB2	Wickham fine sandy loam, 2 to 6 percent slopes, eroded
WgC2	Wickham fine sandy loam, 6 to 10 percent slopes, eroded
WhB3	Wickham clay loam, 2 to 6 percent slopes, severely eroded
WhC3	Wickham clay loam, 6 to 10 percent slopes, severely eroded
WiC2	Wilkes sandy loam, 6 to 10 percent slopes, eroded
WjD2	Wilkes stony sandy loam, 10 to 15 percent slopes, eroded

Soil map constructed 1960 by Cartographic Division, Soil Conservation Service, USDA, from 1955 aerial photographs. Controlled mosaic based on Georgia plane coordinate system, west zone, transverse Mercator projection, 1927 North American datum.

SOIL LEGEND

e first letter in each soil symbol is the initial of the soil
ies name. If the third letter is a capital, it denotes the
ge of slope from A, less than 2 percent, to F, 25 to 40 percent.
number after the slope letter denotes the degree of erosion as
en in the soil name. All but two of the symbols that do not contain
slope letter or a number are symbols for nearly level soils, not more
n slightly eroded. Gul, Gullied land; and Rok, Rock outcrop, are land
es that have a wide range of slope.

	SYMBOL	NAME
pes, eroded	LIC2	Louisburg complex, 6 to 10 percent slopes, eroded
	LID2	Louisburg complex, 10 to 15 percent slopes, eroded
	LmE	Louisburg stony complex, 10 to 40 percent slopes
eroded	MhB2	Madison gravelly fine sandy loam, 2 to 6 percent slopes, eroded
eroded	MhC	Madison gravelly fine sandy loam, 6 to 10 percent slopes
s, eroded	MhC2	Madison gravelly fine sandy loam, 6 to 10 percent slopes, eroded
pes, severely eroded	MhD	Madison gravelly fine sandy loam, 10 to 15 percent slopes
lopes, severely eroded	MhD2	Madison gravelly fine sandy loam, 10 to 15 percent slopes, eroded
	MhE	Madison gravelly fine sandy loam, 15 to 25 percent slopes
es	MhE2	Madison gravelly fine sandy loam, 15 to 25 percent slopes, eroded
	MiB3	Madison gravelly sandy clay loam, 2 to 6 percent slopes, severely eroded
	MiC3	Madison gravelly sandy clay loam, 6 to 10 percent slopes, severely eroded
	MiC4	Madison gravelly sandy clay loam, 6 to 10 percent slopes, very severely eroded
	MiD3	Madison gravelly sandy clay loam, 10 to 15 percent slopes, severely eroded
d	MiD4	Madison gravelly sandy clay loam, 10 to 15 percent slopes, very severely eroded
ded	MiE3	Madison gravelly sandy clay loam, 15 to 25 percent slopes, severely eroded
severely eroded	MiE4	Madison gravelly sandy clay loam, 15 to 25 percent slopes, very severely eroded
severely eroded	MqC2	Mecklenburg sandy loam, 6 to 10 percent slopes, eroded
, very severely eroded	MtB	Molena loamy sand, 2 to 6 percent slopes
	MtC	Molena loamy sand, 6 to 10 percent slopes
roded	MvC2	Musella clay loam, 6 to 10 percent slopes, eroded
eroded	MvD2	Musella clay loam, 10 to 15 percent slopes, eroded
y eroded	MvE2	Musella clay loam, 15 to 25 percent slopes, eroded
	MwC2	Musella stony clay loam, 6 to 10 percent slopes, eroded
ded	MwD2	Musella stony clay loam, 10 to 15 percent slopes, eroded
roded	MwE2	Musella stony clay loam, 15 to 25 percent slopes, eroded
eroded	MFE	Musella stony fine sandy loam, 15 to 25 percent slopes
rely eroded	Rok	Rock outcrop
erely eroded	Sne	Local alluvial land
y severely eroded	Sta	State fine sandy loam, 0 to 6 percent slopes
verely eroded		
ry severely eroded	Weh	Wehadkee silty clay loam
pes	WgB2	Wickham fine sandy loam, 2 to 6 percent slopes, eroded
pes, eroded	WgC2	Wickham fine sandy loam, 6 to 10 percent slopes, eroded
pes	WhB3	Wickham clay loam, 2 to 6 percent slopes, severely eroded
pes, eroded	WhC3	Wickham clay loam, 6 to 10 percent slopes, severely eroded
pes	WiC2	Wilkes sandy loam, 6 to 10 percent slopes, eroded
oded	WjD2	Wilkes stony sandy loam, 10 to 15 percent slopes, eroded

WORKS AN

Highways and roads

Dual

Good motor

Poor motor

Trail

Highway markers

National Interstate

U. S.

State

Railroads

Single track

Multiple track

Abandoned

Bridges and crossings

Road

Trail, foot

Railroad

Ferries

Ford

Grade

R. R. over

R. R. under

Tunnel

Buildings

School

Church

Station

Mines and Quarries

Mine dump

Pits, gravel or other

Power lines

Pipe lines

Cemeteries

Dams

Levees

Tanks

Forest fire or lookout statior

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CONVENTIONAL SIGNS

WORKS AND STRUCTURES

Highways and roads

- Dual
- Good motor
- Poor motor
- Trail

Highway markers

- National Interstate
- U. S.
- State

Railroads

- Single track
- Multiple track
- Abandoned

Bridges and crossings

- Road
- Trail, foot
- Railroad
- Ferries
- Ford
- Grade
- R. R. over
- R. R. under
- Tunnel

Buildings

- School
- Church
- Station

Mines and Quarries

Mine dump

Pits, gravel or other

Power lines

Pipe lines

Cemeteries

Dams

Levees

Tanks

Forest fire or lookout station

BOUNDARIES

- National or state
- County
- Township, U. S.
- Section line, corner
- Reservation
- Land grant

DRAINAGE

Streams

- Perennial
- Intermittent, unclass.

Canals and ditches — CANAL, DITCH

Lakes and ponds

- Perennial
- Intermittent

Wells — flowin

Springs

Marsh

Wet spot

RELIEF

Escarpments

- Bedrock
- Other

Prominent peaks

Depressions — Large, Sm

- Crossable with tillage implements
- Not crossable with tillage implements
- Contains water most of the time

CONVENTIONAL SIGNS

ND STRUCTURES

BOUNDARIES

National or state

County

Township, U. S.

Section line, corner

Reservation

Land grant

SOIL SURVEY DATA

Soil boundary and symbol — Dx

Gravel

Stones

Rock outcrops

Chert fragments

Clay spot

Sand spot

Gumbo or scabby spot

Made land

Severely eroded spot

Blowout, wind erosion

Gullies

DRAINAGE

Streams

Perennial

Intermittent, unclass.

Canals and ditches — CANAL, DITCH

Lakes and ponds

Perennial

Intermittent

Wells — flowing

Springs

Marsh

Wet spot

RELIEF

Escarpments

Bedrock

Other

Prominent peaks

Depressions — Large, Small

Crossable with tillage implements

Not crossable with tillage implements

Contains water most of the time

(Joins inset, sheet 1)

(Joins sheet 4)

(Joins sheet 6)

Reference 7 4

82°

GEOLOGIC MAP OF GEOI

Atlanta
1976

Reference 12

GEORGIA DEPARTMENT OF NATURAL RESO

J. D. Tanner, Commissioner

GEOLOGIC AND WATER RESOURCES DIVISION
GEORGIA GEOLOGICAL SURVEY

S. M. Pickering, Jr., Director and State Geologist
J. B. Murray, Chief Geologist

GEOLOGIC MAPPING, COMPILATION, EDITING AND CARTOGRAPHY BY:

D. E. Lawton (Head, North Ga. Unit)
F. J. Moye
J. B. Murray

W. E. Marsalis (Head, South Ga. Unit)
M. S. Friddell

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GIC MAP OF GEORGIA

Atlanta
1976

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BLUE RIDGE AND PIEDMONT CRYSTALLINE ROCKS

GRANITES

- GRANITE UNDIFFERENTIATED
- NON-PORPHYRITIC GRANITE
- PORPHYRITIC GRANITE
- GRANITE/GRANITE GNEISS
- GRANITE/GNEISSIC BIOTITE GRANITE
- GRANITE/BIOTITIC GNEISS/ AMPHIBOLITE
- CHARNOCKITE
- SYENITE

GRANITE GNEISS

- GRANITIC GNEISS UNDIFFERENTIATED
- GRANITE GNEISS/GNEISSIC GRANITE (AUGEN OR PORPHYRITIC)
- MUSCOVITE GRANITE GNEISS
- GRANITE GNEISS/ AMPHIBOLITE
- CALC-SILICATE GRANITE GNEISS
- GRANITE GNEISS/GRANITE

INTERMEDIATE GNEISS

- BIOTITE GNEISS/ FELDSPATHIC BIOTITE GNEISS
- BIOTITE GRANITE GNEISS/ FELDSPATHIC BIOTITE GNEISS/AMPHIBOLITE-HORNBLENDE GNEISS
- BIOTITIC GNEISS UNDIFFERENTIATED
- BIOTITIC GNEISS/MICA SCHIST/AMPHIBOLITE
- BIOTITIC GNEISS/ AMPHIBOLITE

BIOTITE GNEISS

MICA SCHIST

- MICA SCHIST
- MICA SCHIST/ AMPHIBOLITE
- pms3 MICA SCHIST/GNEISS
- MICA SCHIST/GNEISS/ AMPHIBOLITE
- MICA SCHIST/QUARTZITE/ GNEISS/AMPHIBOLITE
- GRAPHITE SCHIST
- SERICITE SCHIST
- SERICITE SCHIST/ AMPHIBOLITE
- SERICITE SCHIST/ AMPHIBOLITE/GRANITE GNEISS
- SERICITE SCHIST/MICACEOUS QUARTZITE/SERICITE PHYLLITE
- QUARTZ SERICITE SCHIST/ BIOTITIC GNEISS
- QUARTZ MICA SCHIST/ HORNBLENDE SCHIST/ BIOTITIC GNEISS
- BUTTON MICA SCHIST
- CROSS-BIOTITE SCHIST

PELITIC AND CALCAREOUS ROCKS

- UNDIFFERENTIATED PELITIC ROCKS, includes mica schists, metasiltstones, metaconglomerates and metagraywackes
- MARBLE
- m2 CALCAREOUS MICA SCHIST/ MICACEOUS MARBLE/ MICA SCHIST

PHYLLITIC ROCKS

- PHYLLITE UNDIFFERENTIATED
- META-ARGILLITE/PHYLLITE

AMPHIBOLITE

BIOTITE GNEISS

BIOTITE GNEISS

BIOTITE GNEISS/ AMPHIBOLITE

BIOTITE GNEISS/ HORNBLENDE GNEISS/ GRANITE GNEISS

BIOTITE GNEISS/MICA SCHIST

METAMORPHOSED MAFIC ROCKS (MAY INCLUDE METASEDIMENTARY VARIETIES)

AMPHIBOLITE

HORNBLENDE GNEISS

HORNBLENDE GNEISS/ AMPHIBOLITE

HORNBLENDE GNEISS/ AMPHIBOLITE/ GRANITE GNEISS

HORNBLENDE-BIOTITE GNEISS/AMPHIBOLITE

HORNBLENDE GNEISS/ GRANITE GNEISS/BIOTITE GNEISS

AMPHIBOLITE/EPIDOTE QUARTZITE/GRANITE GNEISS

AMPHIBOLITE/BIOTITIC GNEISS/QUARTZ SERICITE SCHIST

AMPHIBOLITE/MICA SCHIST/ BIOTITIC GNEISS

AMPHIBOLITE/ METAGRAYWACKE/MICA SCHIST

MAFIC HORNFELS

MAFIC SCHISTS

AMPHIBOLITIC SCHIST

ms2 AMPHIBOLITIC SCHIST/ AMPHIBOLITE

AMPHIBOLITIC SCHIST/ AMPHIBOLITE- METAGRAYWACKE/MICA SCHIST

METAGRAYWACKE

pm1 METAGRAYWACKE UNDIFFERENTIATED

pm2 METAGRAYWACKE/MICA

META-ARGILLITE/PHYLLITE

GRAPHITIC PHYLLITE

PHYLLITE AND QUARTZITE

PHYLLITE/QUARTZITE/ CALC-SILICATE GNEISS

ALUMINOUS SCHIST

pg1 GARNET MICA SCHIST

pg2 GARNET MICA SCHIST/GNEISS

GARNET MICA SCHIST/ AMPHIBOLITE

ALUMINOUS SCHIST

SILLIMANITE SCHIST

SILLIMANITE SCHIST/GNEISS

pa2b SILLIMANITE SCHIST/GNEISS/ AMPHIBOLITE

SILLIMANITE SCHIST/ AMPHIBOLITE

QUARTZITE

q1 QUARTZITE

q1a QUARTZITE/MICA SCHIST

q1b QUARTZITE/MICA SCHIST/ AMPHIBOLITE

q1c QUARTZITE/METAGRAYWACKE

q1d QUARTZITE/PHYLLITE

q2 QUARTZITE/BIOTITE GRANITE GNEISS

q3 EPIDOTE QUARTZITE/ AMPHIBOLITE/SERICITE SCHIST /BIOTITE GRANITE GNEISS

CATACLASTIC ROCKS

MYLONITE & ULTRAMYLONITE

FLINTY CRUSH ROCK

METAVOLCANIC ROCKS

AMPHIBOLITE/GRANITE GNEISS

HORNBLENDE-BIOTITE GNEISS/AMPHIBOLITE

HORNBLENDE GNEISS/ GRANITE GNEISS/BIOTITE GNEISS

AMPHIBOLITE/EPIDOTE QUARTZITE/GRANITE GNEISS

AMPHIBOLITE/BIOTITIC GNEISS/QUARTZ SERICITE SCHIST

AMPHIBOLITE/MICA SCHIST/ BIOTITIC GNEISS

AMPHIBOLITE/ METAGRAYWACKE/MICA SCHIST

MAFIC HORNFELS

MAFIC SCHISTS

AMPHIBOLITIC SCHIST

AMPHIBOLITIC SCHIST/ AMPHIBOLITE

AMPHIBOLITIC SCHIST/ AMPHIBOLITE-METAGRAYWACKE/MICA SCHIST

METAGRAYWACKE

pm1 METAGRAYWACKE UNDIFFERENTIATED

pm2 METAGRAYWACKE/MICA SCHIST

METAGRAYWACKE/MICA SCHIST/ CALC-SILICATE GNEISS

METAGRAYWACKE/ MICA SCHIST-QUARTZITE/ AMPHIBOLITE

MICA SCHIST/METASILTSTONE

SLATE/QUARTZITE/ CONGLOMERATE

CONGLOMERATE

SILLIMANITE SCHIST/GNEISS/ AMPHIBOLITE

SILLIMANITE SCHIST/ AMPHIBOLITE

QUARTZITE

QUARTZITE

QUARTZITE/MICA SCHIST

QUARTZITE/MICA SCHIST/ AMPHIBOLITE

QUARTZITE/METAGRAYWACKE

QUARTZITE/PHYLLITE

q2 QUARTZITE/BIOTITE GRANITE GNEISS

q3 EPIDOTE QUARTZITE/ AMPHIBOLITE/SERICITE SCHIST /BIOTITE GRANITE GNEISS

CATACLASTIC ROCKS

MYLONITE & ULTRAMYLONITE

FLINTY CRUSH ROCK

METAVOLCANIC ROCKS

MAFIC TO INTERMEDIATE METAVOLCANIC ROCKS

METADACITE

FELSIC METAVOLCANICS

UNDIFFERENTIATED METAVOLCANICS/SERICITE PHYLLITE/META-ARGILLITE/ QUARTZ MICA SCHIST

META-ARGILLITE/SERICITE PHYLLITE/METAVOLCANICS

MAFIC AND ULTRAMAFIC ROCKS

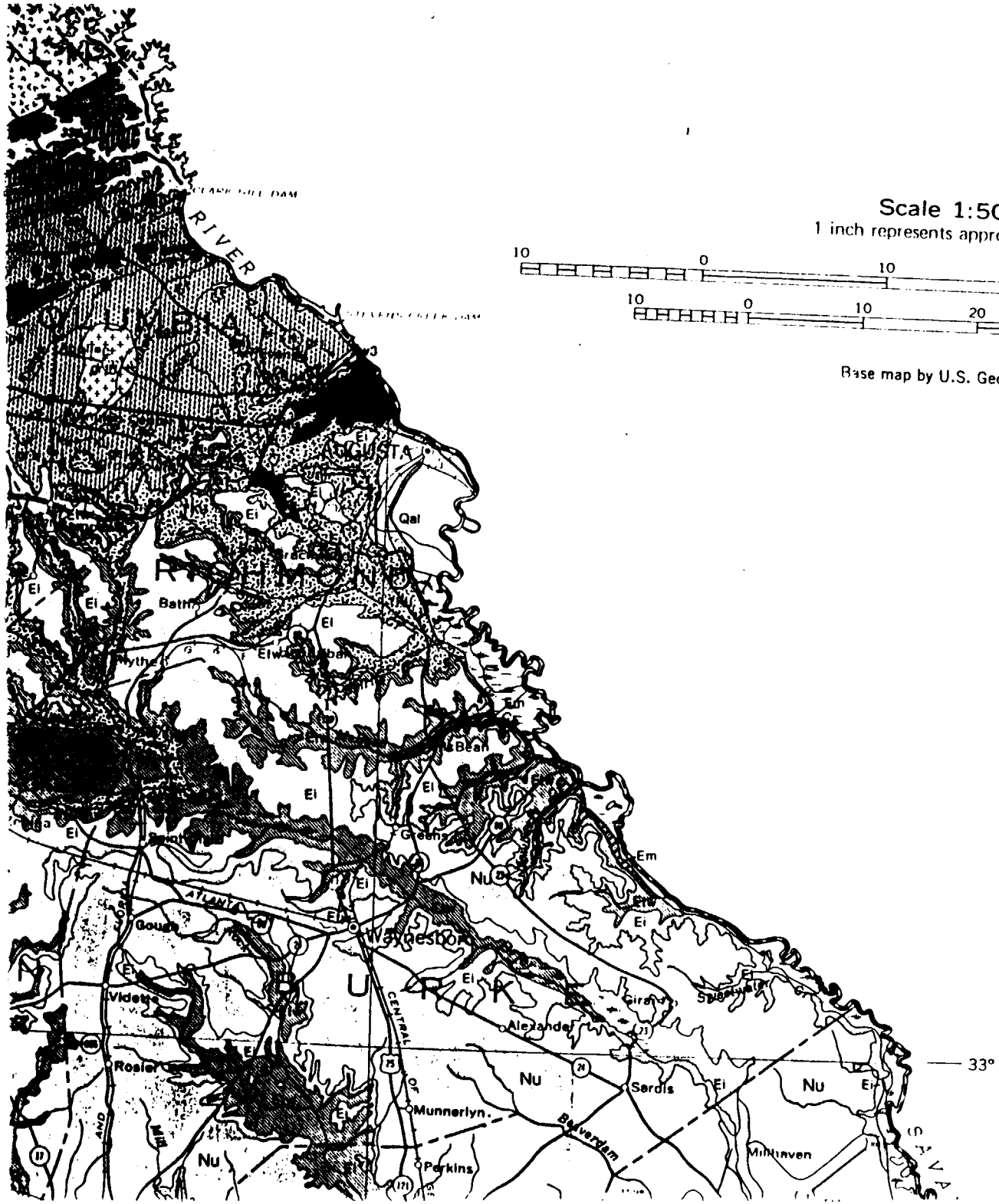
ULTRAMAFIC ROCKS UNDIFFERENTIATED

AMPHIBOLITE/GABBRO

GABBRO

AMPHIBOLITE/ULTRAMAFIC

DIABASE



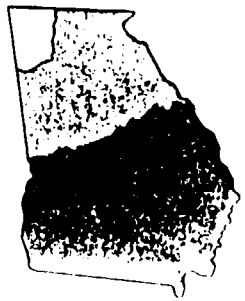
Scale 1:500,000

1 inch represents approximately 8 miles

10 0 10 20 30 40 Miles

10 0 10 20 30 40 50 Kilometers

Base map by U.S. Geological Survey



Ridge and Valley

Blue Ridge and Piedmont

BREVARD ZONE OF CATACLASIS
MOORE
ROME
FAULT
Carters Lake
Mountain Park
North Atlanta
Bremen
Cartersville
Rockmart
Cedartown
Rockwell
Sandy Springs
Chamblee
Doraville
Lithonia
Stone Mountain
Conyers
Covington
Social Circle
Monticello
Madison
Eatonton
Milledgeville
Sparta
Sandersville
Tennille
Wrightsville
Dublin
Hillsboro
Sparks
Ocilla
Fitzgerald
Ashburn
Sylvester
Tifton
Moultrie
Thomasville
Cairo
Bainbridge
Donalsonville
Blakely
Colquitt
Cuthbert
Lumpkin
Richland
Pelham
Camilla
Leesburg
Albany
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Dougherty County
Mitchell County
Baker County
Calhoun County
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Stewart County
Webster County
Sumter County
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Baldwin County
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Floyd County
Polk County
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Gordon County
Murray County
Whitfield County
Catoosa County
Dade County
Walker County
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Cherokee County
Pickens County
Gilmer County
Fannin County
Union County
Towns County
Rabun County
Habersham County
Stephens County
Franklin County
Hart County
Elbert County
Madison County
Oconee County
Jackson County
Banks County
Lumpkin County
Dawson County
Forsyth County
Hall County
Gainesville
Dahlonega
Cleveland
Blairsville
Hiawassee
Young Harris
Clayton
Tallulah Falls
Toccoa
Lavonia
Hartwell
Elberton
Washington
Lexington
Crawford
Thomaston
Zebulon
Barnesville
Griffin
Jonesboro
Fayetteville
Newnan
Carrollton
Villa Rica
Douglasville
Austell
Marietta
Smyrna
Decatur
Atlanta
Hapeville
Forest Park
Jonesboro
Stockbridge
Conyers
Lithonia
Covington
Monticello
Madison
Eatonton
Milledgeville
Sparta
Sandersville
Tennille
Wrightsville
Dublin
Hillsboro
Sparks
Ocilla
Fitzgerald
Ashburn
Sylvester
Tifton
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Barnesville
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Jonesboro
Fayetteville
Newnan
Carrollton
Villa Rica
Douglasville
Austell
Marietta
Smyrna
Decatur
Atlanta
Hapeville
Forest Park
Jonesboro
Stockbridge

Reference 13

Ground Water of the Piedmont and Blue Ridge Provinces in the Southeastern States

By H. E. LeGrand

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Geological Survey
V. E. McKelvey, *Director*

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Ground Water of the Piedmont and Blue Ridge Provinces in the Southeastern States

By H. E. LeGrand

INTRODUCTION

This circular summarizes the underground water conditions in the Piedmont and Blue Ridge provinces of the Southeastern States—the region shown on the geologic map (fig. 1).

There are several ways of developing water from the ground in this region. In earlier days springs were used because they are common in coves or on lowland slopes. Almost all springs in the region yield between ½ to 3 gallons per minute and rarely show a significant decline in yield during dry weather. Dug wells were common in the past, but they are being replaced by bored and drilled wells. Bored wells, like dug wells, are as much as 2 feet in diameter and are commonly lined with concrete or terra cotta pipe; these wells do not extend into hard rock and go dry if the water table falls below the bottom of the well. Drilled wells, which are now the most common source of ground-water supply and which are the chief concern of this report, are cased to the hard rock and extend as open holes into the rock. Although some drilled wells are as small as 2 inches in diameter and others are as large as 10 inches, the most common size is about 5 or 6 inches. Almost every well in recent years has been properly constructed to prevent water on the ground from running down the outside of the casing into the well.

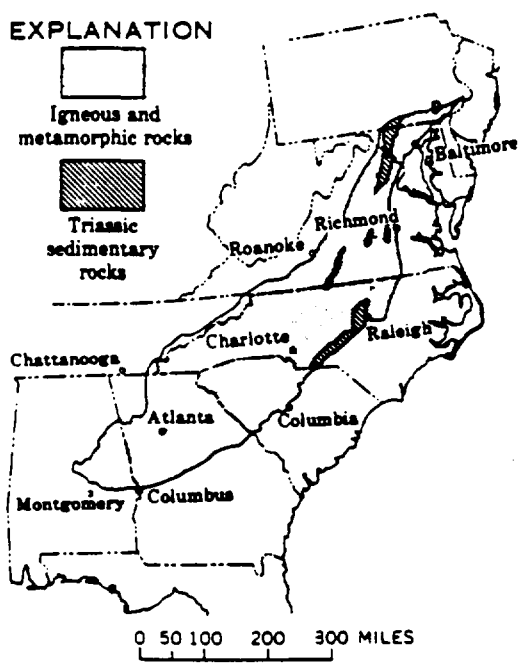


Figure 1.—Generalized geologic map. Areas underlain by igneous and metamorphic rocks are better suited to numerical rating of well sites than areas underlain by Triassic sedimentary rocks.

EVALUATING SITES

A special attempt is made to help those who are interested in the yields of wells. Because yields of individual wells in the region vary greatly within distances as short as 100 feet, estimates of potential yields of prospective wells are difficult to make. This fact has led frequently to water shortages, excessive costs, inconveniences, or undue anxiety in many cases. As the yield of a well is unpredictable, the next best approach is to attempt to show, on a percentage basis, the chance for a certain yield from a well for different conditions.

Although many factors determine the yield of a well, two ground conditions, when used together, serve as a good index for rating a well site. These conditions are topography and soil thickness. The ratings are based on the following statement: High-yielding wells are common where thick residual soils and relatively low topographic areas are combined, and low-yielding wells are common where thin soils and hilltops are combined. By comparing conditions of a site according to the topographic and soil conditions one gets a relative

at the end of the year is at about the same level as at the beginning of the year. Wells drilled into rock may, when pumped at full capacity, yield slightly less during the driest part of the year when the water table is low. Yet there appears to be no evidence to support the general belief that the water table has been declining during recent years.

CHEMICAL QUALITY OF THE WATER

In comparison with ground water in widely scattered regions of the world, the water in the Piedmont and Blue Ridge provinces ranks among the best in chemical quality. (See table 2.) Most of the water is low in total dissolved solids and is generally soft, but some is moderately hard.

Iron in water is the most common complaint. As little as 0.4 ppm (parts per million) will cause a red stain on plumbing fixtures. About 5 of every 10 wells yield water with less than 0.3 ppm of iron. About 4 of 10 wells yield water with just enough iron to cause a slight stain, and about 1 of 10 wells yields water that has considerable iron. Some iron problems result when iron is dissolved from rocks, and other problems result when water, moving through iron pipes, consequently picks up a brown iron stain by corrosion. It is important to determine the source of the iron, whether dissolved from the rocks or from the pipes, before methods for its removal are employed. Most of the water is satisfactory for use without any type of treatment (table 2). Yet an analysis of the water should be made as soon as a well is drilled to determine if treatment is necessary. It is not possible to determine the quality of water before a well is drilled.

CONTAMINATION OF GROUND WATER

In view of the many hundreds of thousands of wells that are interspersed with about an equal number of septic tanks and other waste sites, it is proper to give serious attention to the possibility of contaminating an individual water supply. The tendency for ground water—and contaminants that might be in it—to move naturally from upland areas toward stream valleys offers help in planning wells and waste sites to avoid contamination. A well that is pumped may modify the natural movement of water and draw contaminated water toward it; this condition is more likely where the soil is thin or absent than where it is thick. Care should be taken to see that no water from the land surface can seep easily into the well around the casing. Not only is the well site important but so is the waste site. In most cases the chances of contaminated water from a waste site moving into a well are not easy to predict, but a few general statements can be made. For example, at a waste site (1) a deep water table is safer than a shallow water table, (2) thick soil is safer than thin soil or rock outcrops, (3) sandy soil with some clay may be better than a clean sandy soil or a sticky clay soil, and (4) a slope of both the land surface and the water table away from a well is better than one toward it.

The soil and weathered rock are generally effective in preventing waste materials from passing through to underlying rock fractures, but the combination of (1) certain types of wastes, (2) excessive quantities of disposed wastes, and (3) thin soils may result in contaminated water reaching bedrock fractures. Once in the bedrock fractures the contaminated water may move easily to water supplies. Only a small percentage of wells have been contaminated, but proper care in locating and constructing wells and waste sites must be taken to minimize the risk of contamination. Minimum standards specified by health officials, such as those relating to permeability of the soil, distance between a well and a waste site, and depth of the water table, must be followed.

GENERAL STATEMENTS ABOUT GROUND WATER IN THE REGION

1. Ground water may be considered as occurring in an underground reservoir, the water being held in the open spaces of the rock materials. The water table, representing the top of the reservoir, generally lies in the clay, or disintegrated rock materials. In the lower part of the reservoir, water occurs in interconnecting fractures in bedrock; the fractures diminish in number and size with increasing depth. Water enters the fractures by seeping through the overlying clay, and drilled wells draw water from these fractures. The source of this water is precipitation in the general area of a well and not in some remote place.

2. A layer of residual soil and weathered rock lies on the fresh rock in most places; the thickness of the soil and weathered rock ranges from zero to slightly more than 150 feet.

Reference 14

Young Refining Geophysics

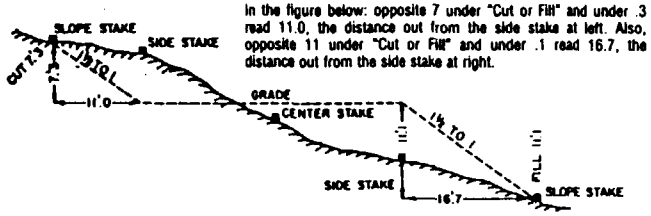
FIELD BOOK

FB 103

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

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Atlanta, GA 30338
(404) 392-9227

The paper in this book is made of 50% high grade rag stock with a WATER RESISTING surface sizing.

CONTENTS

PAGE NO.	REFERENCE	DATE

2-16-93

William Norton - Env. Safety Engr.
for Young Refr. Corp.

10:00 Met Mr. Norton & headed back to locate study area.

Old Tank farm site - now removed (Has been gone for many years)

Walked study area

10:20 Began Unloading for study

Mr. Norton said: No underground Utilities in Area

10:50 Walk over site with radiation meter

Cloudy 50° 2-16-93

Photo #1 Study Area from the west

Photo #2 Study Area from the SW

10:30 #3 Study Area from the SE

#4 " " " " East

#5 Old Block Building from SE

#6 Trench + Block Bldg from the South

#7 Trench + Block Bldg from SW

#8 No Side of Study Area from the NW corner

#9 West end of Study Area from the NW cor

#10 Block Bldg. from the SW

#11 Trench in NW cor of study area from the North

#12 Trench from the East

14:15

#13 Sludge Pond to west of area from SE

SSC entry 10:55 :- HNu
had a problem w/ connector
from probe to instrument
body, both ETM & RS try
to fix. Problem is rectified
by using a
~~Gas Tech~~ Tor ETM → Ser. # ET 247 TRACE Tector
Photoionization

Call Hubert about HNu
Mr. Norton has

Monitor 4 indicated no radiation
hazard

warming up trace tector
for an initial survey
calibrated w/ 2.5% natural
gas in air (50% lel)
@ 25,000 ppm evt No. 5915
filled May 6, 1991
Gas Tech, Inc.
Newark California

11:30 Walk over site with
HNU (Eric and I)
No background Reading

Zero along N. side of grid
Zero reading along S. side of grid
No HNU readings on any part of site

12:10 Finished installing
western side of grid
Put stakes at 20' intervals

12:30 Finished cutting line
y=5

To establish grid base,
line y=4 was set up //
to trench, approx. 2' North
of trench. All other lines
established from line y=4

1:00 Begin Cutting line y=3

65°

2-16 Sunny

14:20

Mr. Norton showed us a possible background area

14:25

Photo #14 Looking to east down line $y=5$ from $(0,5)$

Photo #15 Looking to east down line $y=4$ from $(0,4)$

#16 to south down line $x=0$ from $(0,4)$ (oil/water separator in foreground)

#17 looking east from $(0,3)$

#18 looking west from $(20,3)$

#19 North end of culvert from $y=3$

#20 View to west down ditch

#21 " " east " " "

15:00 Finished Grid layout 15 minutes ago

Now we will walk to Northern part of site to attempt background Reading of EM31

15:10 EM31 was zeroed according to specs

15:15 EM31 was Calibrated according to manufacturer's specs.

Background Reading may be questionable
Reading was 0 (zero)

Second Background Area just south of study area: reading = 4.0

3:31 Called EPA - left message w/ Jan McKeown that we are starting to take readings at 4 pm

15:35 Begin Taking Readings

16:30 finish taking readings

To tie to bldg. corners of block
16:30

2-16

16:35 Recheck @ 2nd
Background loc.
Reading = 5.0

2nd Background Believed to
be representative of
normal conditions
facing in +y dir from 0,0, Read N 13°E
on compass

16:40 pack up & leave

BLACK & VEATCH ENGINEERS-ARCHITECTS

Owner

Plant Young Refining Corporation Unit

Project No. 52015.013 File No.

Title Electrical Conductivity Data

Computed By ROJ/EA

Date 2-16 19 93

Checked By

Date 19

Page of

DO NOT WRITE IN THIS SPACE

Reading #	X	Y	Reading (mmho/m)
85	0	4	25
86	1	4	10
87	2	4	6
88	3	4	5
89	4	4	4
90	5	4	5
91	6	4	4
92	7	4	0-
93	8	4	0-
94	9	4	4
95	10	4	3
96	11	4	5
97	12	4	5
98	13	4	0.0
99	14	4	0-
100	15	4	0-
101	16	4	35
102	17	4	7
103	18	4	6
104	19	4	6
105	20	4	8

Reading #	X	Y	Reading (mmho/m)	
106	0	5	0-	
107	1	5	0-	Iron Pipe
108	2	5	4	
109	3	5	7	
110	4	5	20	CRN of Build
111	5	5	35	
112	6	5	65	
113	7	5	75	
114	8	5	70	
115	9	5	30	
parrel 116	10	5	0-	Iron Pipe
117	11	5	170	
118	12	5	600	CNR Bld.
119	13	5	0-	metal on surf
120	14	5	80	
121	15	5	180	TRU Not Line
122	16	5	240	
123	17	5	200	
124	18	5	240	met
125	19	5	0-	on surf
126	20	5	15	

PGN-175A

BLACK & VEATCH ENGINEERS-ARCHITECTS

Owner _____ Computed By ROJ/EA

Plant Young Refining Corporation Unit _____ Date 2-16 19 93

Project No. 52015.013 File No. _____ Checked By _____

Title Electrical Conductivity Data Date _____ 19 ___

Page _____ of _____

DO NOT WRITE IN THIS SPACE

Reading #	X	Y	Reading (mmho/m)	
1	0	0	0-	debris below
2	1	0	0-	power line above
3	2	0	0-	
4	3	0	12	
5	4	0	.7	
6	5	0	4.5	
7	6	0	4.0	
8	7	0	4.7	
9	8	0	0.7	
10	9	0	1.5	
11	10	0	5	
12	11	0	4	
13	12	0	5	
14	13	0	8.8	
15	14	0	9	Chunk of metal 8' left
16	15	0	9.5	
17	16	0	23.0	large chunk of metal beneath
18	17	0	0-	east of culvert
19	18	0	0-	west of culvert
20	19	0	54	near huge oil tank
21	20	0	150	

Reading #	X	Y	Reading (mmho/m)	
22	0	1	75	
23	1	1	8	
24	2	1	0-	"
25	3	1	0-	Power,
26	4	1	100	
27	5	1	0.2	
28	6	1	2.0	
29	7	1	0-	
30	8	1	0-	
31	9	1	0-	
32	10	1	0-	
33	11	1	0-	
34	12	1	1.0	
35	13	1	2.5	
36	14	1	5+	metal on surface
37	15	1	1.0	
38	16	1	42	
39	17	1	0-	
40	18	1	0-	culvert
41	19	1	17	chrome + Al
42	20	1	45	

PGN-175A

BLACK & VEATCH ENGINEERS-ARCHITECTS

Owner _____
Plant Young Refining Corporation Unit _____
Project No. 52015.013 File No. _____
Title Electrical Conductivity Data

Computed By ROJ/EA
Date 2-16 19 93
Checked By _____
Date _____ 19 ____
Page _____ of _____

DO NOT WRITE IN THIS SPACE

Reading #	X	Y	Reading (mmho/m)	
43	0	2	0-	power line
44	1	2	15	
45	2	2	11	
46	3	2	0-	
47	4	2	6	
48	5	2	4	
49	6	2	6	
50	7	2	3	
51	8	2	4	
52	9	2	0-	metal at surf.
53	10	2	0-	
54	11	2	0-	"
55	12	2	0-	
56	13	2	0-	"
57	14	2	6	
58	15	2	0-	metal at surf
59	16	2	0-	
60	17	2	15	ditch w/ drums @ surface
61	18	2	0-	
62	19	2	27	
63	20	2	17	

Reading #	X	Y	Reading (mmho/m)	
64	0	3	0-	oil sep
65	1	3	40	
66	2	3	22	
67	3	3	8	
68	4	3	7	
69	5	3	17	drum 5.
70	6	3	50	drum 5.
71	7	3	0-	
72	8	3	4	
73	9	3	5	
74	10	3	4	
75	11	3	0-	
76	12	3	0-	
77	13	3	0-	
78	14	3	7	
79	15	3	6	
80	16	3	3	
81	17	3	0	—
82	18	3	0-	
83	19	3	0-	Pile moved to 5
84	20	3	24	

PGN-175A

DATE: December 16, 1992

SUBJECT: Young Refining, Douglas County, Ga.

FROM: Janice Thomas
Site Assessment manager

TO: File

The purpose of this memo is to reopen the Young Refining site GAD051011344. After reviewing the menorandun date September 8,1992 From Herb Miller a Civils invesgator at EPA. We have sufficient information indicate that Young Refining Corporation located at 7982 Huey road in Douglasville, should be reopen for further invesgation basic on a interview with a former employee of Young Refining where he indicate he bury hundredth of drums on Young Refining property in the 1970s.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

CONFIDENTIAL ATTORNEY WORK PRODUCT
REQUESTED BY EPA ATTORNEY, PAUL SCHWARTZ
DO NOT RELEASE UNDER FOIA OR IN DISCOVERY

MEMORANDUM

DATE: September 10, 1992

SUBJECT: Bart Hulsey Interview
Potential New Douglas County Site

TO: Mario Villamarzo, Chief
South Site Assessment Section

FROM: Herb Miller
Civil Investigator
Waste Programs Branch
South Cost Recovery Unit

The subject property is a 400 acre tract fronting on the Chattahoochie River in Douglas County. It is on the west side of Fairburn Road north of the river.

On September 2, 1992, Mr. Bart Hulsey (404 942 2144), one of the PRPs for the Basket Creek Drum Site, gave EPA personnel a tour of the 400 acre parcel of land adjacent to his home in Douglas County. In addition to myself, Paul Schwartz, ORC, John McKeown, South Site Assessment Section, and Janice Thomas, South Site Assessment Section, were present.

The property is owned by a group of investors, KGE Associates Limited Partnership; but Mr. Hulsey has had access to it for the past 30 years. He has constructed a grassy air strip on it; and, according to him, he is caretaker for the land.

What Mr. Hulsey wanted to show EPA was a black stain on the ground (on the 400 acre property) adjacent to a neighbor's property. He said the stain was drainage from the neighbor's pig farm. At this time there are no pigs; he said they had gotten rid of them a few months ago. We notice an extremely strong odor in the area. I believe it was from farm animals. It was a kind of a cess pool smell.

Attachments

cc: Paul Schwartz, Bill Steiner, Charles Swan, Connie Jones
Don Rigger, John McKeown, Janice Thomas, TexAnn Reid

Printed on Recycled Paper

This property has a stream flowing through it and into the river. Part of the stream is a swamp or a wetlands. At one point on the stream, a dirt road runs across the stream, which flows under through a culvert. At the road crossing the water is somewhat backed up; and we noticed an oily sheen collecting on the soil against the road way. Mr. Hulsey wanted us to see this stain, because he believed it was coming from his neighbor (the former pig farmer).

Mr. Hulsey told us that in 1980s, he had some trouble with people dumping on this land. (He denied that he had anything to do with it; but he said the State accused him of it.) He said the primary dumper was a Mr. Daniels, who runs a moving and storage business. According to Mr. Hulsey, the material dumped was mostly construction debris, carpeting and material like that. He said it was the owners of the land that did a "clean-up" of the dumping area and that covered it over.

Incidentally, the former pig farm is only one acre in size. The owner, Ms. Elizabeth Teal (404 636 9523), had contacted me last spring (MAY 15, 1991). At that time, I do not recall if she had pigs; but she did have horses. She said that the owner of the property had given her rights to use it, for riding her horses. She showed me a letter granting her that right. The letter also mentioned that Mr. Hulsey was caretaker and was signed by:

John McDonald
1800 Peachtree Street, Suite 625
Atlanta GA 30309

Ms. Teal gave me a tour of the property. She had told me about the dumping incident where EPD had required the dumping to stop and the land to be cleaned up. She believed that Mr. Hulsey was responsible and that "bad stuff" was buried out there. Ms. Teal showed me a crushed 55 gallon drum in the swampy area. We turned it over, but found no markings on it.

On our recent (September 2, 1992) trip we also saw one crushed drum in a different location. It was at the bottom of a deep (about 10 feet) ditch which runs between the road mentioned above and the river.

One other note of interest is that Mr. Hulsey wants to fill in that deep ditch to stop the erosion between the road and the river. This was requested of him by the owner. He wanted to know who to ask for permission. I told him that perhaps the "wetlands people" would be interested in the ditch because it might be considered wetlands.

I have attached a Douglas County tax map which contains the parcel of land we toured. It is actually 442.6 acres and comprises land lots 146, 158, and 159 on this map. Its boundaries go off the map to include part of land lot 157 as well. Ms. Teal's property is the one acre parcel labeled parcel #2 in land lot 159. Mr. Hulsey's property does not show on this map. It is in land lot 157. For future reference, Ms. Teal's property reference number is 159-1-5-2; and the 442.6 acre parcel is 159-1-5-1.

The current owner of the large parcel is:

KGE Associates Limited Partnership
4250 Perimeter Park South, Suite 105
Atlanta, GA 30327

In 1990, the mailing address for KGE was:
1800 Peachtree Street
Atlanta, GA 30327

Note that this is the same address as for Mr. John McDonald who gave Elizabeth Teal permission to use the land.

The 1990 evaluation was $1,283,540. KGE bought the property from Farm & Home Life Insurance Company in 1989 for $1,606,355.

The other attachment is a set of EPD documents given to me by Ms. Pamela O'Brien. The subject of the documents is the 1988 dumping event at the KGE property.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

CONFIDENTIAL ATTORNEY WORK PRODUCT
REQUESTED BY EPA ATTORNEY, PAUL SCHWARTZ
DO NOT RELEASE UNDER FOIA OR IN DISCOVERY

MEMORANDUM

DATE: September 8, 1991

SUBJECT: Basket Creek Drum Site
Young Refinery
Douglasville, GA

TO: Mario Villamarzo, Chief
South Site Assessment Section

FROM: Herb Miller Herb Miller
Civil Investigator
Waste Programs Branch
South Cost Recovery Unit

On September 2, 1992, ORC Attorney, Paul Schwartz, and I interviewed a former Young Refinery employee who said that he buried a large number of drums on the Young Refinery Plant Property in the 1970s.

The witness worked at Young from 1971 until December 1989. His job was general maintenance. He worked on the pumps.

He was working there during the time period when all those drums started coming in. He recalled there were at least 500 drums stored on the property at one time. Some of the drums deteriorated and leaked and broke open. One type of drum that broke open contained glass jars filled with a black oil and small metal pellets. The drums in turn were filled with a black oil. He did not know what was in the other drums. He did not know anything about drums taken off site or taken to Basket Creek.

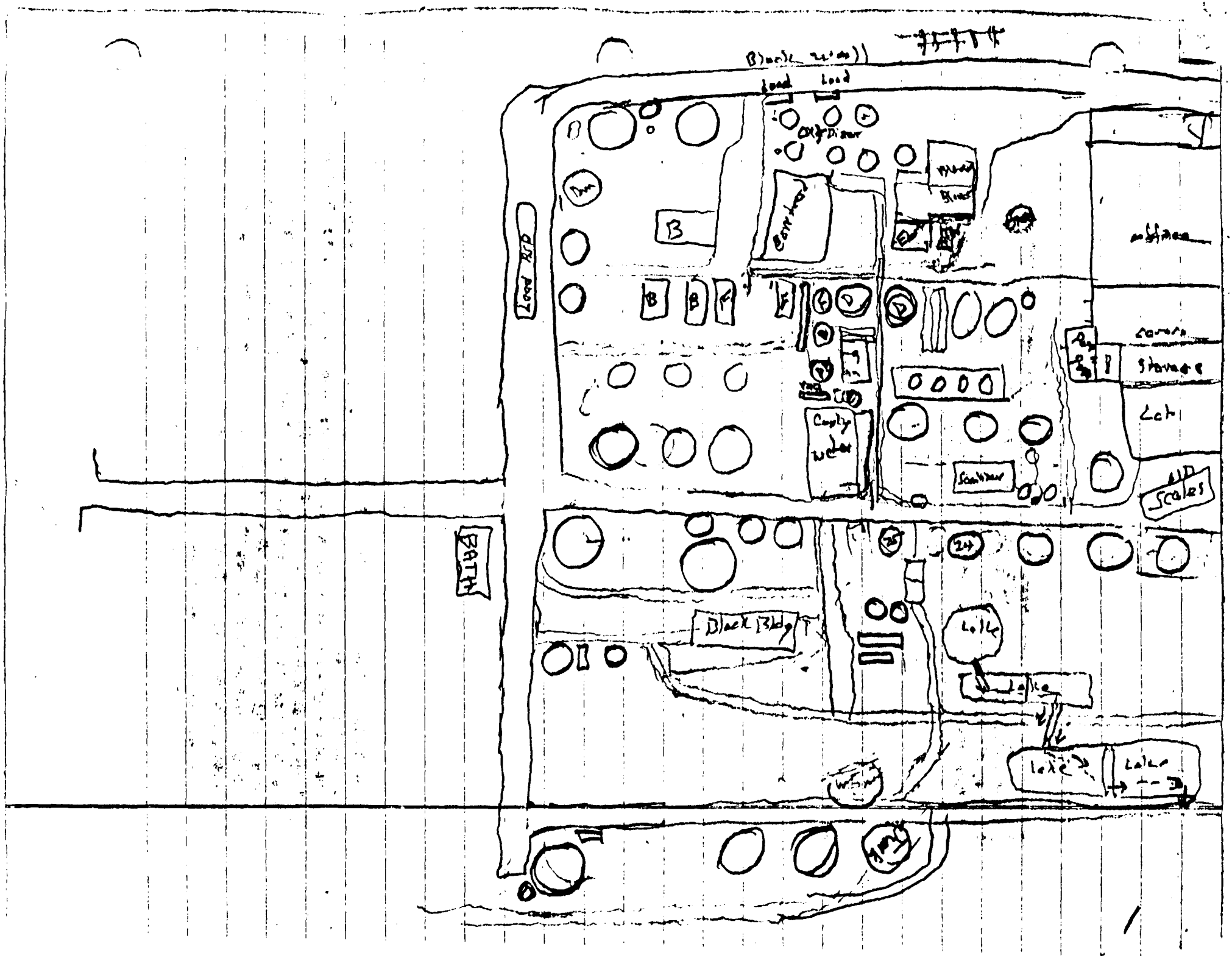
The witness said, however, that he was directed to bury a large number of the drums, including the "black oil/metal pellet" drums in a trench on the Young plant property. The trench was located about 30 feet behind a "block building." The witness provided sketches of the plant site with the "block building" and the burial site labeled. He provided some other sketches of the site which he did not discuss. Copies of these are attached.

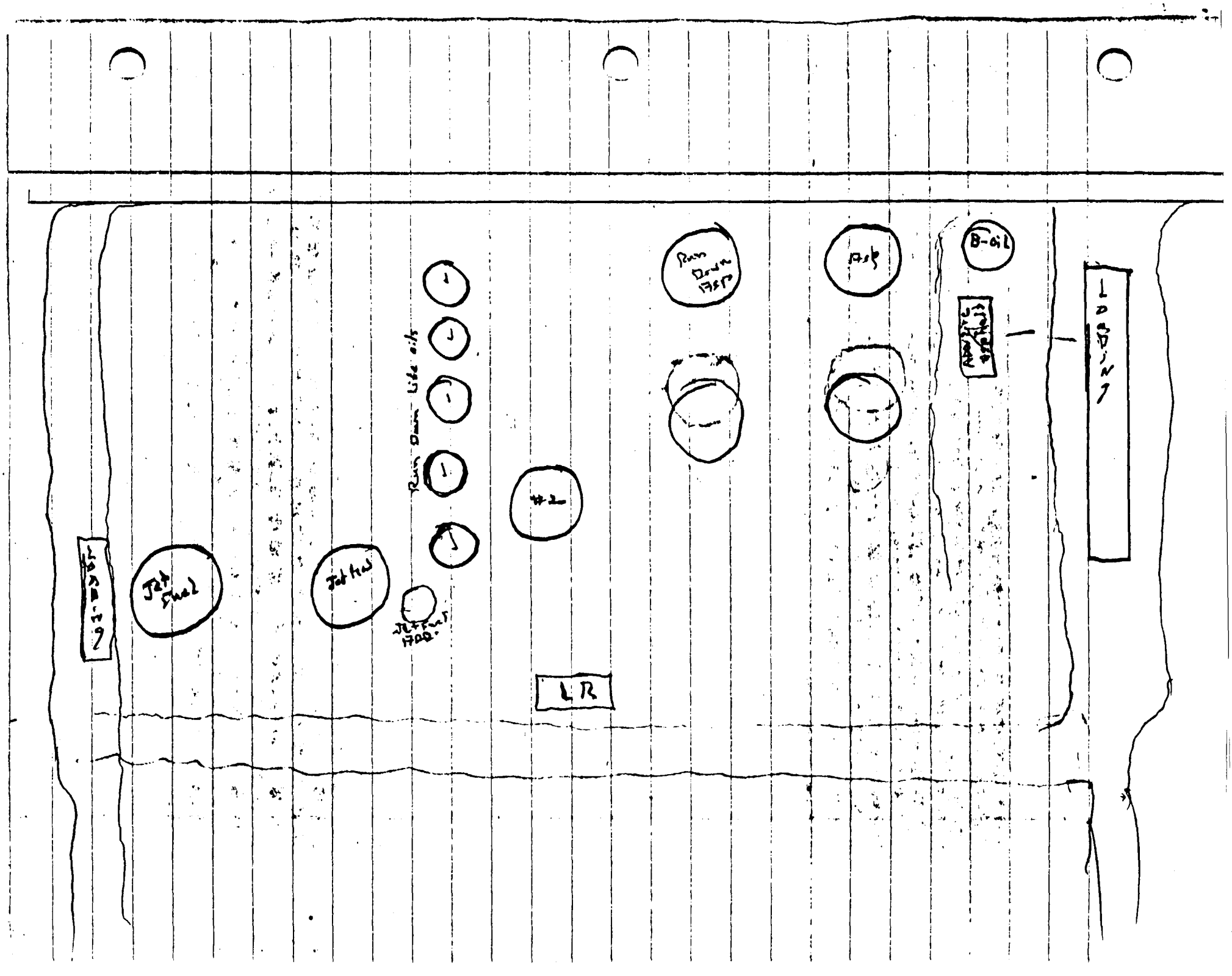
Attachments

cc: Chuck Eger, Charles Swan, Connie Jones

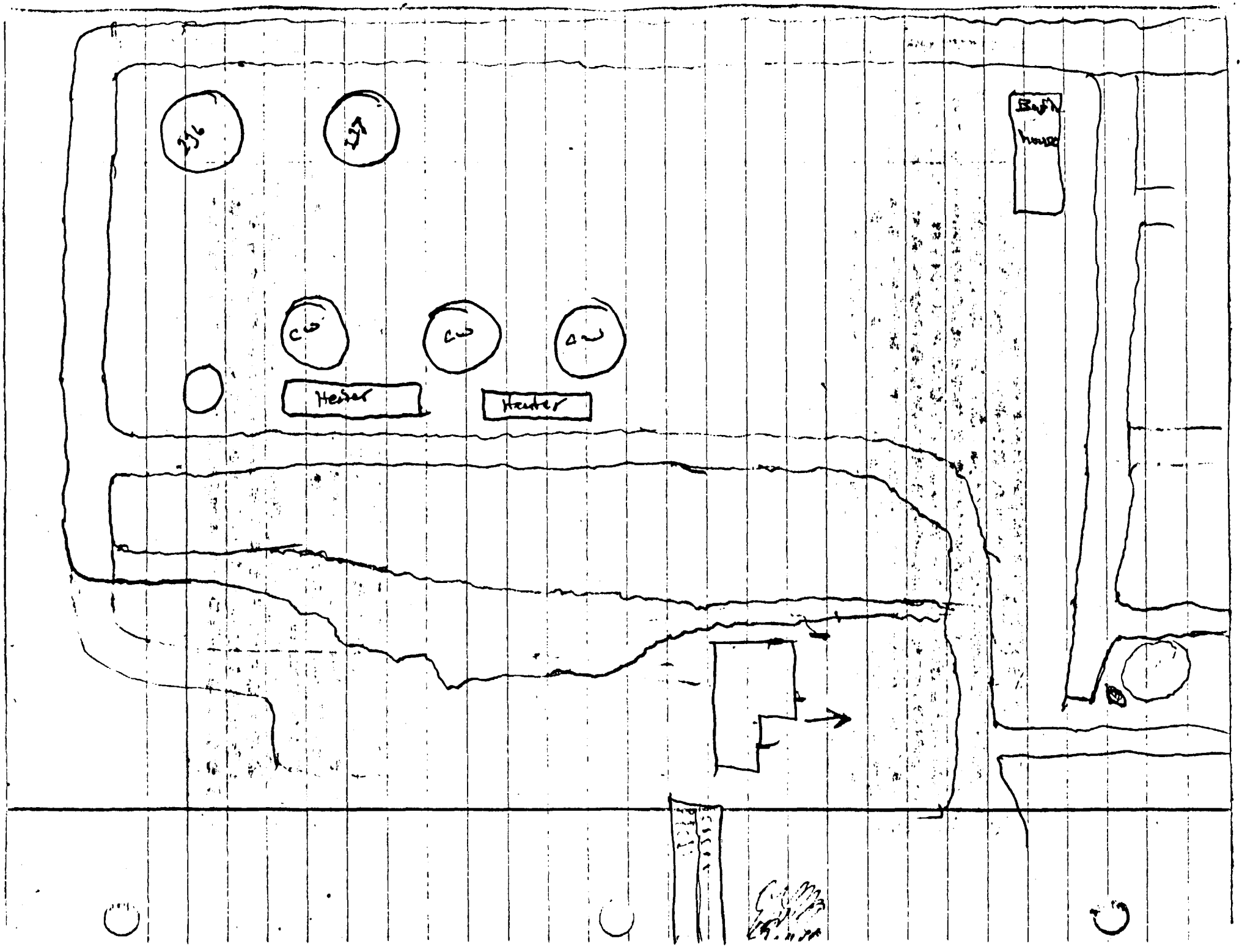
do not release

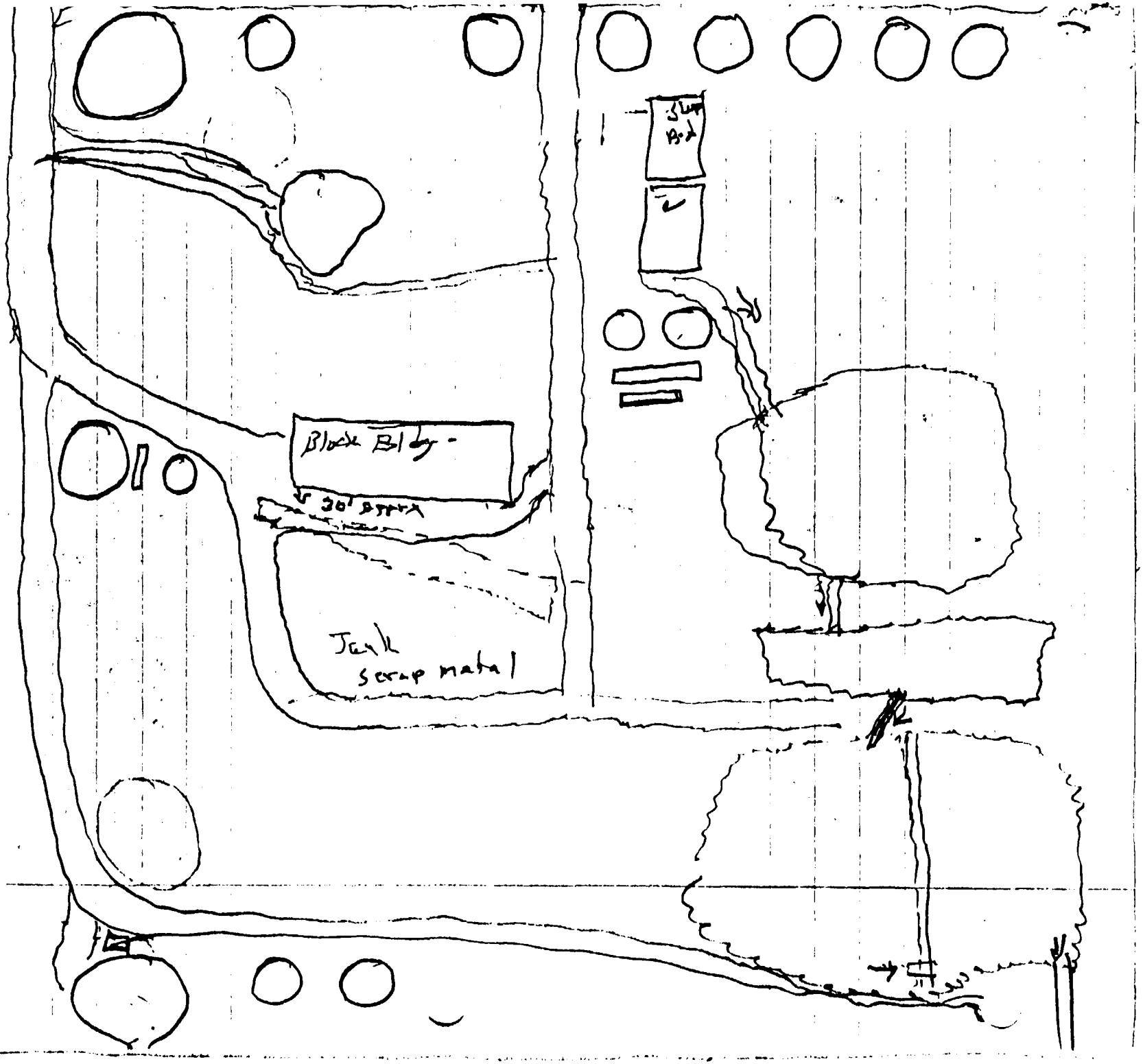
Printed on Recycled Paper


Load
Load
Load RSD
B
B
B
F
F
D
D
Copy
Scanner
Scales
BATH
Black Bldg
Lake
Lake
Lake
Lake
24
25



Run Down Life oils
#2
LR
B-oil


Bath House
Heater
Heater


Block Bldg
Junk
scrap metal

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL PHOTOGRAPHIC INTERPRETATION CENTER
VINT HILL FARMS STATION
BUILDING 166, BICHER ROAD
WARRENTON, VIRGINIA 22186-5129

July 22, 1991

MEMORANDUM

SUBJECT: Transmittal of Final Report, TS-PIC-90944, Young Refining Corporation, Douglasville, Georgia

FROM: Gordon E. Howard, Jr.
Environmental Scientist
Environmental Photographic Interpretation Center
Advanced Monitoring Systems Division

TO: Rebecca B. Kemp
Remote Sensing Coordinator
Information Services Staff
Region 4

Attached are two copies of the final report for the subject site. The analysis covered the time period 1950 through 1990. The following dates of photography are included for this effort:

February 20, 1966
February 22, 1970
March 29, 1978
September 25, 1990

A critique sheet is attached, which we request you fill out and return in the self-addressed envelope. If we can be of any additional help, please contact me at FTS 557-3110 or 703-349-8970. The Regional Project Manager for this site is Mario Villamarzo.

Attachments (3)

cc: (w/o attachment)
J. Montanari, ORD, Reg. 4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET
ATLANTA, GEORGIA 30365

DATE: April 23, 1991

SUBJECT: Young Refining, Douglas County, GA

FROM: Mario E. Villamarzo, Chief
S. Unit. SAS

TO: Young Refining file

thru: John McKeown, GA Proj Off } FYI
Janie Thomas, SAM.

As a result of the public meeting on 4/16/91 in Douglas County when a citizen complained about the Air Quality at subject site, I contacted (in person) 4/23 Dick Green, Deputy Director APTMD (Air Division) to inform him of the citizen's complaint. Under CERCLA it doesn't appear to be our responsibility (Air Quality). I expect air div to refer the complaint to the proper office

Mario

ROUTING AND TRANSMITTAL SLIP

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
[redacted]		
[redacted]		
3. (1) JOHN McKEOWN	JM	4/23
[redacted]		
5. (2) JANICE THOMAS Janice please file		

Action	File MEB	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

[redacted]

8. Young Refining file

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
MARIO V. 4/23/91	Phone No.

5041-102 ☆ U.S. GPO: 1990-254-313

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

May 26, 1988

Mr. Harry Carneal
Executive Vice President
Lifeshares Group, Inc.
300 West Osborn Road
Phoenix, Arizona 85013

SUBJECT: Bart Hulsey - Britt Road Solid Waste Disposal Site;
Douglas County, Georgia

Dear Mr. Carneal:

On May 20, 1988, Mr. Morgan V. Cantrell and I met with Mr. Leon Watkins of Southern States Landfill, Inc., to inspect the work completed to close the subject solid waste disposal site. Based on our observations, the site has been closed in a manner which complies with the minimum requirements of the Solid Waste Management Act and Rules.

According to Mr. Watkins, your organization has erected three gates in an effort to limit all vehicular access points to the site. Although grass seed has been sown, please provide a permanent vegetative cover over the disturbed portions of the site during the next 12 months.

I appreciate your cooperation to close the site in an expeditious manner. If you have any questions or I can be of assistance to you in the future, please contact me at 404/656-2836.

Sincerely,

Donald H. McCarty, Jr.

Donald H. McCarty, Jr.
Environmental Specialist
Solid Waste Control Unit

DHMc:sf
c: James W. Dunbar
William Lundberg
Del L. Land, Jr.
Bart Hulsey
Raymond Cash
File

We appreciate your prompt response to inspect the activity on this site. Since you have not decided on a course of action to either clean up the property or close the site, we will await your time estimate to bring the site into compliance after you evaluate the alternatives.

If you have any questions or desire technical assistance in this matter, please contact me at 404/656-2836.

Sincerely,

Donald H. McCarty, Jr.

Donald H. McCarty, Jr.
Environmental Specialist
Solid Waste Control Unit

DHMc:sf
c: James W. Dunbar
William Lundberg
Del L. Land, Jr.
File

Site: _____
Break: 17.4
Other: OFF-SITE

Document Description:

Site Analysis - EPIC

Is an Oversized Document and Is Filed Separately.

VERSATILE ENTRY

SITE NAME: Young Refining Corp.
EPA SITE ID #: CAD 0510 11344
DATE ENTERED: 1/18/00

(CONTACT REGIONAL RECORDS FOR RETRIEVAL)

5/7/98

OVERSIZED

DOCUMENT

DYNAMAC
CORPORATION
Environmental Services

Peachtree Center Tower
230 Peachtree Street, N.W.
Suite 500
Atlanta, GA 30303

Telephone: 404-681-0933
Fax: 404-681-0894

DATE REPORT ACCEPTED 03-05-92
DISPOSITION NFRAP
SAM SIGNATURE Janice P. Thomas

B/S A S
FEB 20 1992
ATLANTA, GA

February 27, 1992

Mr. A.R. Hanke, Chief
Site Assessment Section
U.S. Environmental Protection Agency, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: Work Assignment No. C04119 - Young Refining Corporation, Douglasville, Douglas County, Georgia - Task 5 - Site Inspection Prioritization System (SIPS), Preliminary Letter Report
Document Control No. C04119-SIPS-LC-029

Dear Al:

Please find below the SIPS Preliminary Letter Report for Young Refining Corporation in Douglasville, Georgia. This strategy has been developed to fulfill the requirements for Task 5 of TES VIII Work Assignment C04119. This submittal includes a site map, supporting reference materials and a CERCLA Eligibility Form.

Young Refining Corporation is located at 7982 Huey Road in Douglasville, Douglas County, Georgia (Ref. 1, p. 1). Operations began at the facility in 1955 (Ref. 2, p. 1). The facility was active in October 1987 at the time of a Screening Site Inspection by the Georgia Environmental Protection Division (GA-EPD) and is apparently still active (Refs. 3, p. 1; 4). Operations conducted at the facility include refining of asphaltic crude (received by railroad tankcar from Mississippi) and distribution of the resulting products (asphalt cement, number two fuel oil, heavy oil and natural gasoline) (Refs. 2, p. 1; 4). Operations include the following stages: heating, distillation, fractionation, oxidation, and shipping (Ref. 2, p. 1).

The facility covers approximately 30 to 40 acres (Ref. 5, p. 2). Numerous storage tanks, a loading dock and railroad spur line, distillation structures, a control room, a power house, an office/shop/laboratory building, a scale house/security booth, a warehouse, an API separator, a cooling pond and four treatment ponds are present on the property (Refs. 3, p. 4; 5, p. 6). The facility is surrounded by a fence, the entrance gate of which is locked when the facility is not in operation (Ref. 5, pp. 2, 7).

In July 1985, Young Refining Corporation was found to be in violation of small quantity generator standards by the GA-EPD. Sludge from the API separator was placed on the ground near the separator. Process wastewater and run-off from the property flowed into the first treatment pond and subsequently into the other three ponds in series (Ref. 2). An oil spill occurred at the facility in 1973 (Ref. 1, Appendix F). Details of the oil spill are not included in available file materials. Solid waste is collected in dumpsters serviced by the city of Douglasville (Ref. 2, p. 1).

Treatment Pond Number One received process wastewater, water from storm drains and surface water runoff from the facility. Process wastewater and storm water pass through the API separator and into Pond Number Two. A flocculator was used between Treatment Ponds Number One and Number Two until around 1977. Approximately 100 pounds of waste was collected per year by this device. The waste was allowed to harden in a drum, then disposed on the ground at various locations around the plant during construction of tanks and roads. Use of the flocculator was discontinued because the process was not necessary to meet effluent limits specified in the NPDES permit (Ref. 2). Further details of treatment operations are not included in available file materials. The area of Pond Number One is not given in available file materials, but it is estimated to be 2.9 acres or less (Refs. 3, p. 4; 5, p. 6; 11).

A sediment sample was collected from Pond Number One in October 1987 by the GA-EPD. The sample contained detectable concentrations of barium (680 mg/kg), cadmium (1.8 mg/kg), chromium (400 mg/kg), lead (880 mg/kg), benzene (2.7 mg/kg), ethyl benzene (1.1 mg/kg) and total xylenes (1.7 mg/kg). EP toxicity analysis of the sample detected barium (1,370 ug/l), chromium (100 ug/l), and lead (640 ug/l) (Ref. 1, Appendix B).

About every six months, approximately 50 pounds of sludge was removed from the API separator and placed on the surface of the ground surrounding the separator. Also, approximately 150 pounds of sludge was generated yearly during cleaning of the heat exchanger bundle. The methods of disposal for the API separator sludge and the heat exchanger sludge are not known, but both waste types were probably deposited on the soil at some location within the facility boundary (Ref. 2, p. 2). The area of soil used for sludge disposal is not given in available file materials, but is likely to be one acre or less (Refs. 3, p. 4; 5, p. 6; 11).

A composite soil sample was collected near the API separator in October 1987 by the GA-EPD. The sample contained a lead concentration of 69 mg/kg, or 4.1 times the background concentration. The sample also contained extremely elevated concentrations of naphthalene (17 mg/kg, or 17,000 times the background concentration) and total xylenes (6 mg/kg, or

6,000 times the background concentration). No samples were collected from the surface soil near the heat exchanger (Ref. 1, Appendix B).

There are no records of remediation at this facility, and there are no records of companies or individuals who may at one time have transported wastes offsite for disposal. The facility is currently classified as a small quantity generator under RCRA (Ref. 1, p. 2, Appendix F).

The Young Refining Corporation lies within the Central Uplands District of the Piedmont physiographic province in the northwest section of Douglas County, Georgia. The northeastern and central portions of the Central Uplands District are typically characterized by a series of low, linear ridges, 1,300 to 1,500 feet above mean sea level, separated by broad, open valleys. Streams flowing through this section are generally transverse to the structure and occupy valleys 150 to 200 feet below the ridge crests. In the southwestern part of the Central Uplands District, which includes the site, the elevation decreases to 1,100 feet above mean sea level, and the linearity of the topography is not so apparent. Stream valleys exhibit a rectangular drainage pattern and lie only 100 to 150 feet below the ridge crest. The southern boundary of the Central Uplands District is the beginning of the Gainesville Ridges District (Ref. 6).

The soils in the site vicinity are composed of a combination of residuum, alluvium, and colluvium that are collectively termed regolith. The residual soil is of the Appling sandy clay loam series. The Appling series is a yellowish-brown to gray-brown sandy clay loam over a red and yellowish-brown mottled sandy clay. The Appling sandy loam is the result of weathering of the parent granitic rock unit. Near the local streams, the soils are composed predominantly of young and old alluvial soils (Refs. 7, pp. 15, 74, 79, sheet 3). The depth of the soil varies throughout the area; however, from well casing records in the area, soil thickness is estimated to range from 11 to 187 feet and average approximately 57 feet based on the fact that well casing is normally installed from the land surface to the top of bedrock (Ref. 8, Plate I).

The Young Refining Corporation is underlain by crystalline metamorphic granite gneiss. Other crystalline metamorphic rock units that occur at the surface within a four-mile radius from the site include the following: a mica schist unit crops out to the northeast; a biotite gneiss -mica schist - amphibolite unit crops out to the northwest; a mica schist and gneiss unit crops out to the southwest; and a quartzite unit crops out to the southeast (Ref. 9).

Groundwater occurs within the pore spaces of the regolith and within structural and stratigraphic bedrock features, including the following: the contact zones between rock units of contrasting composition; contact zones within multi-layered rock units; fault zones; stress relief fractures; zones of fracture concentration; small-scale structures including joints,

foliation planes and fold axes; folds that produce concentrated jointing; and shear zones. The availability of groundwater depends on the topographic setting, drainage patterns, metamorphic rock type, thickness of the soil or depth of weathering, and pervasiveness and orientation of foliation (Ref. 8, p. 10). The groundwater is held in the open spaces of the rock materials which creates an underground reservoir. Groundwater in the top of the reservoir represents water table conditions in the weathered regolith. Groundwater occurring in connected structural and stratigraphic bedrock features in the parent rock comprises the lower part of the reservoir. The fractures diminish in number and size with increasing depth of the parent rock. Water enters the fractures by seeping through the overlying regolith (Ref. 10, p. 8). Wells drilled in the area produce water from these fractures and range in depth from 43 to 422 feet; the average well depth is approximately 192 feet (Ref. 8, Plate I).

A total of three groundwater samples were collected by the GA-EPD in October 1987 during the Screening Site Inspection at the facility (Ref. 3, pp. 1, 2). Two samples were collected from onsite industrial wells, and one sample was collected from a private well located approximately 0.9 mile northwest of the facility (Refs. 1, Appendix C, attachment 5; 3, pp. 1, 2, 4, 5; 11). No observed release was documented (Ref. 1, appendix B).

Within a four-mile radius of the Young Refining Corporation facility, most residences obtain drinking water from municipal utilities that utilize surface water intakes (Refs. 11; 14; 15; 16). However, some households in the area use private wells. Information collected by the GA-EPD and house counts on topographic maps of the area were used to estimate the number of private drinking water wells located within four miles of the facility (Refs. 1, p. 1, Appendix C, attachment 5; 11). The populations per household in Douglas, Paulding and Cobb counties were obtained from 1990 U.S. Bureau of the Census information (Ref. 12). The population served by private wells in the area is distributed as follows: 0-0.25 mile (0); 0.25-0.5 mile (0); 0.5-1.0 mile (3); 1.0-2.0 miles (12); 2.0-3.0 miles (32); and 3.0-4.0 miles (100). An estimated total of 147 persons within four miles are served by private wells.

Wells at the Young Refining Corporation supply water for the cooling pond and for other industrial processes (Refs. 1, p. 4; 3, p. 1). There are no known irrigation wells in the area (Ref. 13).

Surface water runoff from the facility is directed to the four treatment ponds, which are regulated by a NPDES permit (GA0001902) (Ref. 2, p. 2). In the Site Inspection report completed by the GA-EPD, it is indicated that water discharged from Pond Number Four enters a small creek onsite (Ref. 5, pp. 6, 12). This creek is not shown on the topographic map of the area, so it is probably an intermittent stream (Ref. 11). Water discharged from Pond Number Four enters the intermittent stream and flows overland approximately 0.7 mile north to an unnamed, perennial creek (Refs. 3, p. 4; 5, p. 12; 11). Flow continues via the

creek for 1.7 miles to Gothard's Creek, where flow continues for 5.5 miles to Sweetwater Creek. The surface water pathway continues via Sweetwater Creek to beyond 15 miles downstream of Young Refining Corporation (Ref. 11).

There are no surface water intakes located within 15 miles downstream of the Young Refining Corporation facility (Refs. 1, p. 4, Appendix C, attachment 3; 14; 15; 16). Fishing has been documented for Gothard's Creek and probably occurs along Sweetwater Creek (Ref. 17). No endangered or threatened species have been identified along the surface water migration pathway; and no sensitive environments are present along the pathway (Refs. 11; 18).

The estimated population within four miles of the facility is distributed as follows: 0-0.25 mile (32); 0.25-0.5 mile (583); 0.5-1.0 mile (899); 1.0-2.0 miles (6,789); 2.0-3.0 miles (8,733); and 3.0-4.0 miles (9,234). The estimates are based on house counts on topographic maps of the area and the Graphical Exposure Modeling System (GEMS) database (Refs. 11; 12; 19).

Although the ranges of several endangered and threatened species include Douglas County, there are no designated areas of critical habitat located within four miles of the Young Refining Corporation facility (Refs. 11; 18).

Based upon available file material it is recommended that no further remedial action be planned.

If you have any questions, please contact us at (404) 681-0933.

Sincerely,

DYNAMAC CORPORATION

William E. Vasser
Site Manager

David L. Rusher
Regional Manager

Enclosures
cc: Ken Meyer, EPA Region IV Project Officer (w/o enclosures)
Steve Kale, Dynamac TES Program Manager (w/o references)
Deborah Vaughn-Wright, EPA Region IV Work Assignment Manager
Katherine Siders, Dynamac Work Assignment Manager (w/o references)
TES WA File

References

1. Georgia Environmental Protection Division Screening Site Inspection Report, Young Refining Corporation, Douglasville, Douglas County, Georgia. Prepared by Gilda A. Knowles, December 1987.

2. Georgia Environmental Protection Division Trip Report for Young Refining Corporation, Douglasville, Douglas County, Georgia. Filed by Jack Dempsey, July 24, 1985.

3. Georgia Environmental Protection Division Trip Report for Young Refining Corporation, Douglasville, Douglas County, Georgia. Filed by Gilda A. Knowles, October 28, 1987.

4. Neda Glore, Douglas County Chamber of Commerce, telephone conversation with William E. Vasser, Dynamac Corporation, February 19, 1992. Subject: Operational status of Young Refining Corporation.

5. Georgia Environmental Protection Division Trip Report for Young Refining Corporation, Douglasville, Douglas County, Georgia. Filed by Gilda A. Knowles, October 20, 1987.

6. William Z. Clark, Jr. and Arnold C. Zisa, Physiographic Map of Georgia (Atlanta Georgia: Georgia Department of Natural Resources, 1976).

7. U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Douglas County, Georgia (November 1961).

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9. Georgia Geologic and Water Resources Division, Georgia Geological Survey, Geologic Map of Georgia (Atlanta, Georgia: 1976).

10. H.E. LeGrand, Ground Water of the Piedmont and Blue Ridge Provinces of the United States, Geological Survey Circular 538 (Washington, D.C.: United States Department of the Interior, 1973).

11. U.S. Geological Survey, 7.5 minute series Topographic Quadrangle Maps for Georgia: Austell 1954 (Photorevised 1982), Nebo 1973 (PR 1982), Winston 1973 (PR 1982), Campbellton 1954 (PR 1968), scale 1:24,000.

12. U.S. Bureau of the Census, Proof copy of table generated for 1990 CPH-1: Summary Population and Housing Characteristics (U.S. Department of Commerce, April 1991).

13. Glen Johnson, Agriculturalist, U.S. Agriculture Stabilization and Conservation Service, telephone conversation with Gilda A. Knowles, Georgia Environmental Protection Division, December 14, 1987. Subject: Irrigation wells in Douglas County.

14. Lori Camp, Executive Director Secretary, Douglasville-Douglas County Water Department, telephone conversation with William E. Vasser, Dynamac Corporation, November 19, 1991. Subject: Source of water for system and service area.

15. Roy Fowler, Assistant General Manager, Cobb-Marietta Water Authority, telephone conversation with William E. Vasser, Dynamac Corporation, November 18, 1991. Subject: Source of water for system and service area.

16. Filtration Plant Operator (name not given), East Point Water Department, telephone conversation with William E. Vasser, Dynamac Corporation, November 18, 1991. Subject: Location of surface water intake for the system.

17. Kim Primmer, Fisheries Supervisor, Georgia Department of Natural Resources, telephone conversation with Gilda A. Knowles, Georgia Environmental Protection Division, December 16, 1987. Subject: Fishing in Gothards Creek and Gray Stone Lake.

18. U.S. Fish and Wildlife Service, Endangered and Threatened Species of the Southeastern United States (Atlanta, Georgia, 1988).

19. U.S. Environmental Protection Agency, Graphical Exposure Modeling System (GEMS) Data Base, compiled from U.S. Bureau of the Census data (1980).

DRAFT

CONFIDENTIAL

HAZARD RANKING SYSTEM PRELIMINARY SCORE FOR YOUNG REFINING CORPORATION DOUGLASVILLE, DOUGLAS COUNTY, GEORGIA

Pathways evaluated included groundwater, surface water, soil exposure and air. Low target population is the primary reason for the low score.

$S_{gw} = 1.71$
$S_{sw} = 0.65$
$S_{se} = 2.12$
$S_{air} = 3.07$

0VERALL SCORE = 2.08

Young Refining Corporation
Douglasville, Douglas County, Georgia

DRAFT

GROUND WATER MIGRATION PATHWAY SCORESHEET

Factor Categories and Factors

	Likelihood of Release to an Aquifer	Maximum Value	Value Assigned	
1.	Observed Release	550	–	
2.	Potential to Release			
	2a. Containment	10		
	2b. Net Precipitation	10		
	2c. Depth to Aquifer	5		
	2d. Travel Time	35		
	2e. Potential to Release [lines 2a x (2b + 2c + 2d)]	500	340	
3.	Likelihood of Release (higher of lines 1 or 2e)	550		340
	Waste Characteristics			
4.	Toxicity/Mobility	*	10,000	
5.	Hazardous Waste Quantity	*	769.23	
6.	Waste Characteristics	100		100
	Targets			
7.	Nearest Well	50	9	
8.	Population			
	8a. Level I Concentrations	**	–	
	8b. Level II Concentrations	**	–	
	8c. Potential Contamination	**	4	
	8d. Population (lines 8a + 8b + 8c)	**	4	
9.	Resources	5	0	
10.	Wellhead Protection Area	20	–	
11.	Targets (lines 7 + 8d + 9 + 10)	**		13
	Ground Water Migration Score for an Aquifer			
12.	Aquifer Score [(lines 3 x 6 x 11)/82,500]***	100		1.71
	Ground Water Migration Pathway Score			
13.	Pathway Score (S_{GW}), (highest value from line 12 for all aquifers evaluated) ***	100		1.71

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.
*** Do not round to the nearest integer.

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SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

	Factor Categories and Factors	Maximum Value	Value Assigned	
	DRINKING WATER THREAT			
	Likelihood of Release			
1.	Observed Release	550	–	
2.	Potential to Release by Overland Flow			
	2a. Containment	10		
	2b. Runoff	25		
	2c. Distance to Surface Water	25		
	2d. Potential to Release by Overland Flow [lines 2a x (2b + 2c)]	500	–	
3.	Potential to Release by Flood			
	3a. Containment (Flood)	10		
	3b. Flood Frequency	50		
	3c. Potential to Release by Flood (lines 3a x 3b)	500	100	
4.	Potential to Release (lines 2d + 3c, subject to a maximum of 500)	500	100	
5.	Likelihood to Release (higher of lines 1 or 4)	550		100
	Waste Characteristics			
6.	Toxicity/Persistence	*	10,000	
7.	Hazardous Waste Quantity	*	100 ~~xxxxxx~~	
8.	Waste Characteristics	100		~~100~~ 32
	Targets			
9.	Nearest Intake	50		
10.	Population			
	10a. Level I Concentrations	**		
	10b. Level II Concentrations	**		
	10c. Potential Contamination	**		
	10d. Population (lines 10a + 10b + 10c)	**		
11.	Resources	5		
12.	Targets (lines 9 + 10d + 11)	**		0
	Drinking Water Threat Score			
13.	Drinking Water Threat Score ([lines 5 x 8 x 12]/82,500 subject to a maximum of 100)	100		0.00

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SURFACE WATER, continued

	Factor Categories and Factors	Maximum Value	Value Assigned	
HUMAN FOOD CHAIN THREAT				
	Likelihood of Release			
14.	Likelihood of Release (same value as line 5)	550		100
	Waste Characteristics			
15.	Toxicity/Persistence/Bioaccumulation	*	5 x 10E7	
16.	Hazardous Waste Quantity	*	100	
17.	Waste Characteristics	1,000		180
	Targets			
18.	Food Chain Individual	50	____	
19.	Population			
	19a. Potential Human Food Chain Contamination	**	____	
	19b. Level I Concentrations	**	____	
	19c. Level II Concentrations	**	____	
	19d. Population (lines 19a + 19b + 19c)	**	____	
20.	Targets (lines 18 + 19d)	**		3
	Human Food Chain Threat Score			
21.	Human Food Chain Threat Score ([lines 14 x 17 x 20]/82,500, subject to a maximum of 100)	100		0.65
ENVIRONMENTAL THREAT				
	Likelihood of Release			
22.	Likelihood of Release (same value as line 5)	550		100
	Waste Characteristics			
23.	Ecosystem Toxicity/Persistence/Bioaccumulation	*	5 x 10E6	
24.	Hazardous Waste Quantity	*	100	
25.	Waste Characteristics	1,000		100

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SURFACE WATER, concluded

	Factor Categories and Factors	Maximum Value	Value Assigned
	Targets		
26.	Sensitive Environments		
	26a. Level I Concentrations	**	____
	26b. Level II Concentrations	**	____
	26c. Potential Contamination	**	____
	26d. Sensitive Environments (lines 26a + 26b + 26c)	**	____
27.	Targets (value from line 26d)		0
	Environmental Threat Score		
28.	Environmental Threat Score ([lines 22 x 25 x 27]/82,500, subject to a maximum of 60)	60	0.00

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORE FOR A WATERSHED

29.	Watershed Score *** (lines 13 + 21 + 28, subject to a maximum of 100)	100	0.65

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORE

30.	Component Score (S_{OF})*** (Highest score from line 29 for all watersheds evaluated, subject to a maximum of 100)	100	0.65

* Maximum value applies to waste characteristics category.
** Maximum value not applicable.
*** Do not round to the nearest integer.

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SOIL EXPOSURE PATHWAY SCORESHEET

Factor Categories and Factors		Maximum Value	Value Assigned	
RESIDENT POPULATION THREAT				
	Likelihood of Exposure			
1.	Likelihood of Exposure	550		550
	Waste Characteristics			
2.	Toxicity	*	10,000	
3.	Hazardous Waste Quantity	*	100	
4.	Waste Characteristics	100		32
	Targets			
5.	Resident Individual	50	0	
6.	Resident Population			
	6a. Level I Concentrations	**		
	6b. Level II Concentrations	**		
	6c. Resident Population (lines 6a + 6b)	**		
7.	Workers	15	5	
8.	Resources	5	0	
9.	Terrestrial Sensitive Environments	***	0	
10.	Targets (lines 5 + 6c + 7 + 8 + 9)	**		5
	Resident Population Threat Score			
11.	Resident Population Threat (Lines 1 x 4 x 10)	**		1,07
NEARBY POPULATION THREAT				
	Likelihood of Exposure			
12.	Attractiveness/Accessibility	100		
13.	Area of Contamination	100		
14.	Likelihood of Exposure	500		
	Waste Characteristics			
15.	Toxicity	*		
16.	Hazardous Waste Quantity	*		
17.	Waste Characteristics	100		
	Targets			
18.	Nearby Individual	1		
19.	Population Within 1 Mile	**		
20.	Targets (lines 18 + 19)	**		

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SOIL EXPOSURE, Concluded

Factor Categories and Factors	Maximum Value	Value Assigned
Nearby Population Threat Score		
21. Nearby Population Threat (lines 14 x 17 x 20)	**	2
SOIL EXPOSURE PATHWAY SCORE		
22. Soil Exposure Pathway Score **** (S_s), (lines [11 + 21] ÷ 82,500, subject to a maximum of 100)	100	3.07

* Maximum value applies to waste characteristics category.

** Maximum value not applicable.

*** No specific maximum value applies to the factor. However, the pathway score based solely on terrestrial sensitive environments is limited to a maximum of 60.

**** Do not round to the nearest integer.

DRAFT

AIR MIGRATION PATHWAY SCORESHEET

Factor Categories and Factors

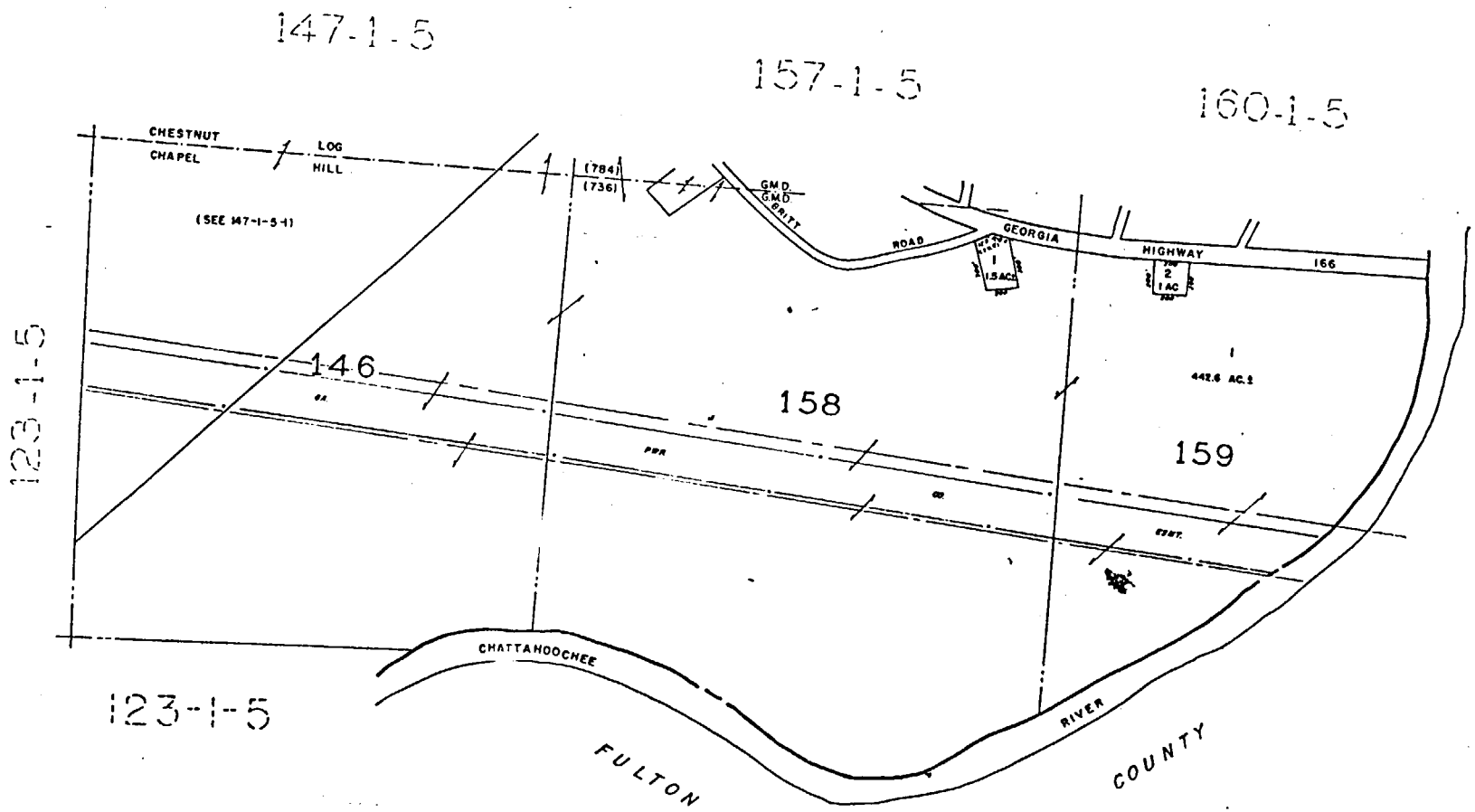
	Likelihood of Release	Maximum Value	Value Assigned	
1.	Observed Release	550	–	
2.	Potential to Release			
	2a. Gas Potential to Release	500		
	2b. Particulate Potential to Release	500		
	2c. Potential to Release (highest value assigned in line 2a or 2b)	500	500	
3.	Likelihood of Release (higher of lines 1 or 2c)	550		500
	Waste Characteristics			
4.	Toxicity/Mobility	*	200	
5.	Hazardous Waste Quantity	*	100	
6.	Waste Characteristics	100		10
	Targets			
7.	Nearest Individual	50	20	
8.	Population			
	8a. Level I Concentrations	**	0	
	8b. Level II Concentrations	**	0	
	8c. Potential Contamination	**	15	
	8d. Population (lines 8a + 8b + 8c)	**	15	
9.	Resources	5	0	
10.	Sensitive Environments			
	10a. Actual Contamination	***	0	
	10b. Potential Contamination	***	0	
	10c. Sensitive Environments (lines 10a + 10b)	***	0	
11.	Targets (lines 7 + 8d + 9 + 10c)	**		35
	Air Migration Pathway Score			
12.	Pathway Score (S_A) [(Lines 3 x 6 x 11)/82,500]****	100		2.12

* Maximum value applies to waste characteristics category.

** Maximum value not applicable.

*** No specific maximum value applies to the factor. However, the pathway score based solely on terrestrial sensitive environments is limited to a maximum of 60.

**** Do not round to the nearest integer.



LEGEND:

NOTE:

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DOUGLAS COUNTY, GA.

146-1-5

Photo AU-2 — 27 B 275

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J Leonard Ledbetter, Commissioner
Harold F Reheis, Assistant Director
Environmental Protection Division

March 29, 1988

Mr. Harry Carneal
Executive Vice President
Life Shares Group, Inc.
300 West Osbourne Road
Phoenix, Arizona 85013

SUBJECT: Bart Hulsey - Britt Road Solid Waste Disposal Site; Douglas County, Georgia

Dear Mr. Carneal:

As I discussed with you by phone on March 29, 1988, our office has received and investigated a complaint of operations of an unpermitted solid waste disposal site on your property in Douglas County, Georgia. Enclosed is a portion of the highway map identifying the location on the south side of Britt Road, under the power transmission lines, adjacent to the Chattahoochee River.

Solid waste in the form of construction waste, land clearing debris, and some household garbage was being disposed in an open dump manner in the waters of an old pond. The effluent of this pond discharges directly into the Chattahoochee River. This form of solid waste disposal is in violation of the Georgia Solid Waste Management Act and Rules. Copies of each are enclosed for your review.

We have found Mr. Bart Hulsey of 1970 Britt Road, Douglasville, Georgia 30135 to be operating the subject site. A drug prescription container and a calling card were found among the waste which bear Mr. Hulsey's name. See enclosed copies. Mr. Hulsey's equipment has been observed on the site by our office. Also, a cancelled check signed by Phillip E. Daniel of Daniel Moving and Storage, Inc., was found among the solid waste of the site (see enclosed copy).

On March 28, 1988, our office held a conference with Mr. Bart Hulsey to discuss the violations of his site's operation. During our discussions, he advised us that he had recently leased the property from Mr. Phillip E. Daniel. Mr. Hulsey produced a cancelled check representing this transaction in the amount of $5,000. We advised Mr. Hulsey that the property owner is Farm and Home Life Insurance Company and not Mr. Daniel. He stated that he did not know the current owner, but was acting as the "property caretaker". Our meeting resulted with Mr. Hulsey desiring not to settle on performing the required corrective action because of others who are responsible for disposing of solid waste in the site.

N.B FARM + Home - Same address as above Life Shares Group - Lincoln, Neb - 1991 - in Reciprocity in A2 + under Supervision in NEB

I look forward to meeting with you at the site on Thursday, April 7, 1988 at 2 PM. We will discuss the proper techniques in order to provide the corrective action to close this solid waste disposal site.

If you have any questions regarding this situation, please contact me at 404/656-2836.

Sincerely,

Donald H. McCarty, Jr.

Donald H. McCarty, Jr.
Environmental Specialist
Solid Waste Control Unit

DHMc:sf
Enclosures
c: James W. Dunbar
William Lundberg
Bart Hulsey
File

DANIEL MOVING & STORAGE, INC.
AGENT FOR GLOBAL VAN LINES
1286 MILLEDGE STREET
TELEPHONE 768-8709
EAST POINT, GEORGIA 30344

GLOBAL

№ 8094

64-5
610

C&S The Citizens and Southern National Bank
Atlanta, Georgia

5/31 19 77

PAY Two hundred Eighty Five Dollars DOLLARS $ 285 00/100

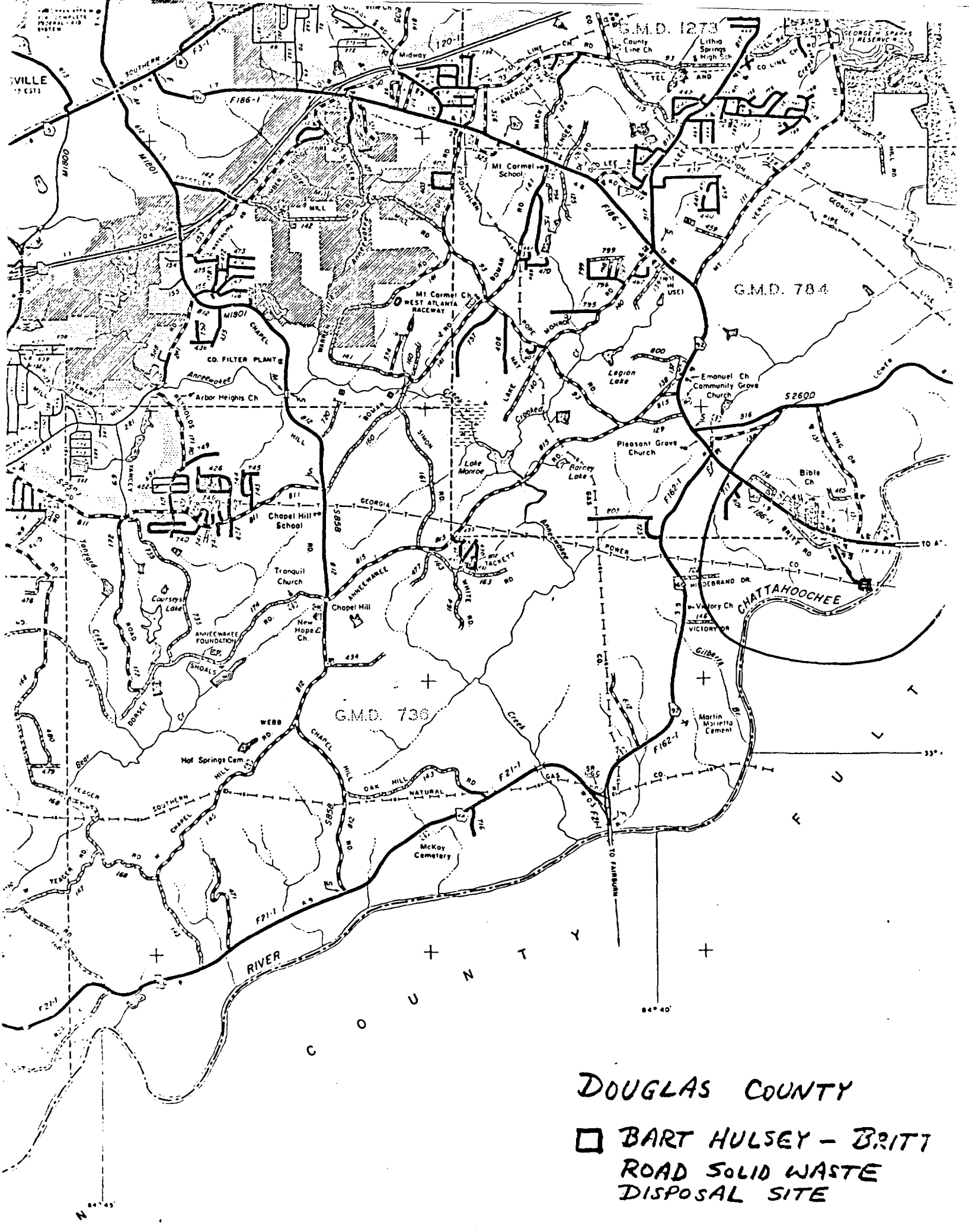
TO THE ORDER OF Burnette Truck Wash.

DANIEL MOVING & STORAGE, INC.

Willis E. Daniel

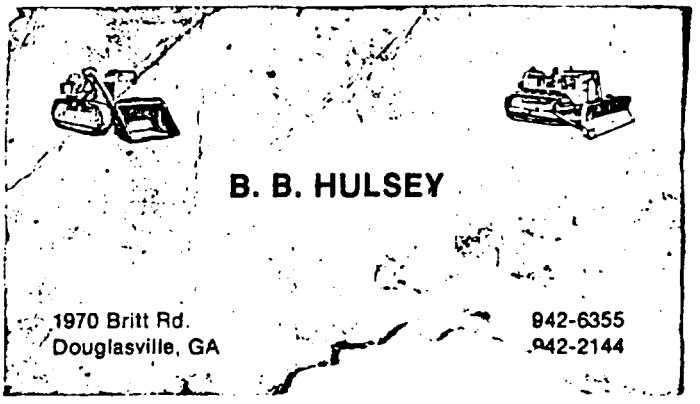
(b) (6) [redacted]

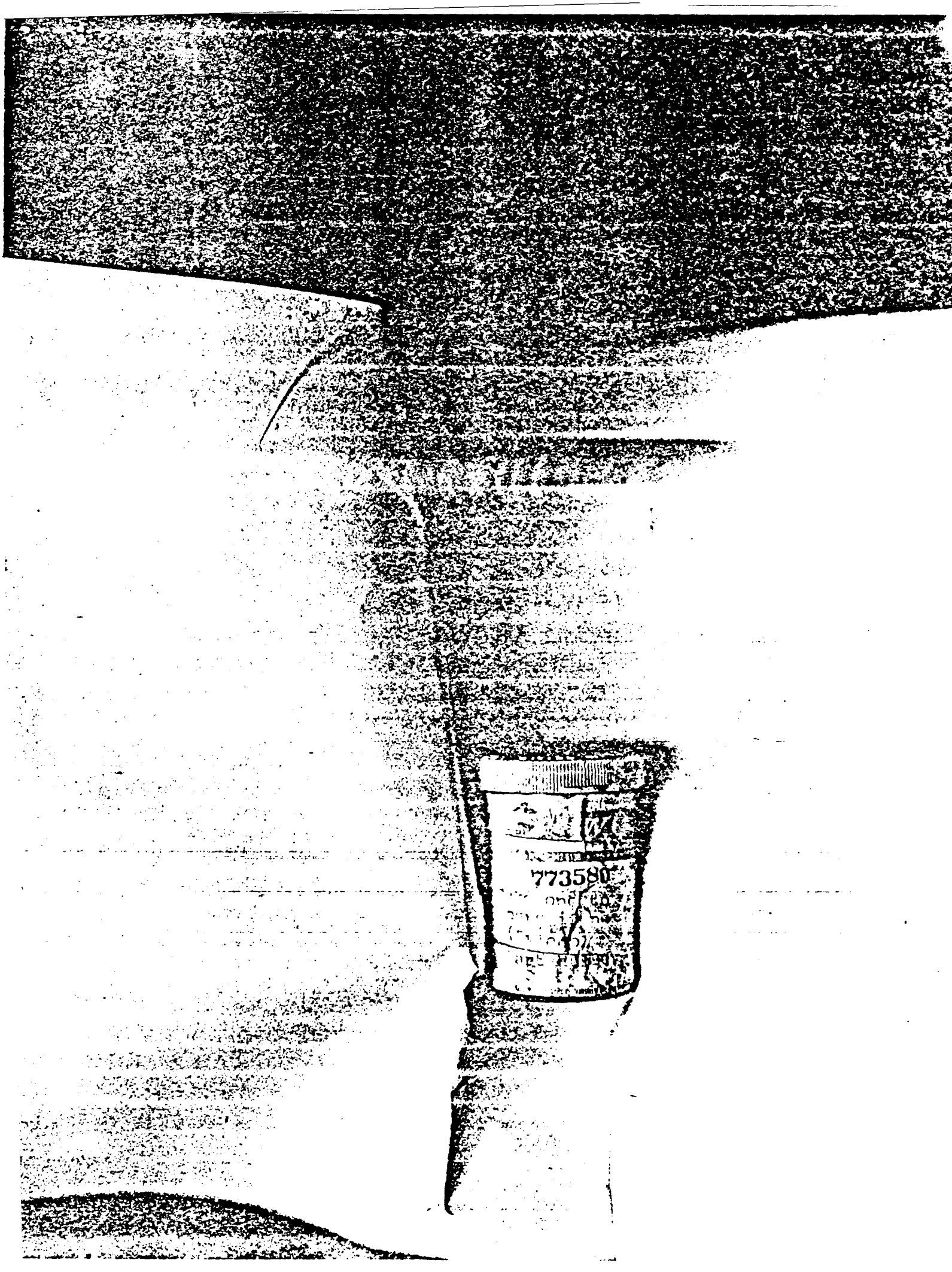
(b) (6) [redacted]



DOUGLAS COUNTY

☐ BART HULSEY – BRITT ROAD SOLID WASTE DISPOSAL SITE


B. B. HULSEY
1970 Britt Rd.
Douglasville, GA
942-6355
942-2144


773580

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

April 18, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Harry Carneal
Executive Vice President
Lifeshares Group, Inc.
300 West Osborn Road
Phoenix, Arizona 85013

SUBJECT: Bart Hulsey - Britt Road Solid Waste Disposal Site;
Douglas County, Georgia

Dear Mr. Carneal:

On April 7, 1988, Mr. Morgan V. Cantrell and I met with you and Mr. Del L. Land, Jr. of your organization to inspect the unauthorized and unpermitted solid waste disposal site located on your property. As we discussed, the solid waste disposal site must be brought into compliance in the following manner:

1. Immediately, stop all solid waste disposal in the site. This will be accomplished by limiting vehicular access to the disposal area after property boundaries have been defined by a surveyor.

2. Remove all solid waste placed in the stream below the pond.

3. Remove the stream's road crossing made of 55 gallon drums.

4. Remove all physical structures in order to drain the pond.

5. Remove all solid waste from the property and transport to a permitted solid waste disposal site; or

6. Spread and compact all solid waste on the property, while grading the edges at a 3 to 1 slope; and

7. Cover all exposed solid waste on the property with two feet of clean earth, including the edges.

8. Provide a permanent vegetative cover over all disturbed areas and earth cover in order to prevent erosion.

CERCLA Eligibility Form

Site Name: Young Refining Corporation

City/County/State: Douglasville, Douglas County, Georgia

EPA ID Number: GAD051011344

Type of Facility: Generator X Transporter ____ Disposal ____
Treatment ____ Storage(more than 90 days) ____

	Yes	No
Has this facility treated, stored or disposed of a RCRA hazardous waste since Nov. 19, 1980?	X	
Has a RCRA Facility Assessment (RFA) been performed on this site?		X
Does the facility have a RCRA operating or post-closure permit? If so, date issued _____		X
Did the facility file a RCRA Part A application?		X
If so:		
1) Does the facility currently have interim status?		
2) Did the facility withdraw its interim status?		
3) Is the facility a known or possible protective filer?		
Is the facility a late (after Nov. 19, 1980) or non-filer that has been identified by EPA or the State?		X
Is the site a Federal Facility?		X
Is there at least one source onsite which is <u>not</u> covered by CERCLA Petroleum Exclusion Legislation?	X	
Is the facility owned by an entity that has filed for bankruptcy under federal or State laws?		X
Has the facility lost authorization to operate or had its interim status revoked?		X
Has the facility been involved in any other RCRA enforcement action?		X

1.0 EXECUTIVE SUMMARY

The Young Refining Corporation is located at 7982 Huey Road (P.O. Box 796) in Douglasville, Douglas County, Georgia 10314. The coordinates are latitude 33° 44' 0.0" and longitude 084° 45' 0.0".

The facility is classified as a small quantity generator and possesses an NPDES permit (GA0001902) that was issued by Georgia-EPD for 4 ponds. Young Refining Corporation was found to be in violation of small quantity generator standards by Georgia-EPD in July of 1985. Hazardous wastes (sludges) had been disposed of in the past by spreading wastes on the ground at various locations throughout the facility. Samples collected in July of 1985 were found to contain barium and lead. On October 28, 1987, a total of four samples were collected on-site. These samples contained barium, chromium and lead.

Potential targets in the area are 23 households that may be using a shallow aquifer as a source of drinking water, within a 3-mile radius of the site. There is only one shallow well just outside the one-mile radius from the site and this well is 20 feet in depth. Most local farms get water for domestic use from shallow dug wells that are usually less than 60 feet in depth. Drilled wells provide water for many of the rural homes and usually range in depths from 200 to 250 feet. The surface waters in the area are used for fishing and recreation. Surface run-off from the site flows in a northeasterly direction and empties into an unnamed creek, which in turn empties into Gothards Creek. The City of Douglasville's drinking water is supplied by Anneewakee, Little Anneewakee, and Bear Creeks, which are located southeast of the site. There are no known intakes used for irrigation purposes.

There are no records of remediation at the site, nor are there records of companies or individuals who may at one time have transported wastes off-site for disposal. Wastes have been disposed of on-site by land application and in ponds. The current RCRA status for the facility is a small quantity generator.

Heavy metals were found in waste samples collected at the site by Georgia-EPD.

2.0 ENVIRONMENTAL SETTING

The site is located in the Central Uplands District of the Piedmont Physiographic Province of Georgia (Appendix A, Figure 1). The northeastern and central portions of this district are a series of low, linear ridges, 1300-1500 feet above sea level, and separated by broad, open valleys (1). Slopes in the vicinity of the site range from 6-10% (2).

Surface run-off from the site flows generally to the northeast (Appendix C, Attachment 1). Even though ponds on-site are adequate and the facility possesses an NPDES permit, there is a small tributary which receives discharge waters from pond #4 and flows to the northeast. Mill Creek and Crystal Lake are located 1.0 mile west of the site, Chism Lake is 1.25 miles northeast of the site and Little Anneewakee Creek and Slater Mill Creeks are located 1.0 - 1.25 miles southeast and south of the site respectively (Appendix C, Attachment 2). The City of Douglasville's drinking water is supplied by large impoundments from which water is drawn from Anneewakee, Little Anneewakee and Bear Creeks. Supplemental water is purchased from Cobb and Marietta Water Systems (Appendix C, Attachment 3).

Douglas County lies entirely within the Piedmont Plateau, which consists of several northeast and southwest trending belts of crystalline rock ranging in age from Precambrian to Triassic (3). About 70 to 75 percent of the county is underlain by schist, biotite gneiss, and other metamorphic rocks. The remaining 25 to 30 percent is underlain by Augen gneiss, hornblende gneiss, granite gneiss, granite intrusions, or other igneous rocks (1). The soil in the area of the site is an Appling sandy clay loam, ranges 6 to 10 percent slopes and is a severely eroded soils (Appendix C, Attachment 4).

The City of Douglasville's drinking water is supplied from large impoundments from which water is drawn from Anneewakee, Little Anneewakee and Bear Creek. Supplemental water is purchased from Cobb and Marietta Water Systems (Appendix C - Attachment 3). Most farms, however, get water from domestic use from shallow dug wells that commonly yield 2 to 5 gallons of water per minute and are less than 60 feet deep (1). A shallow well is observed 2.0 miles away from the facility and was measured at a depth of 20 feet (Appendix C, Attachment 5). Drilled wells are also used to provide water for rural homes. These wells range in depths from 200-300 feet. Generally, there are no water-bearing fractures of an importance at a depth below 250 feet (1). There are five operable wells at Young Refining Corporation that are 300 feet in depth, however, water from these wells is only used to replenish cooling pond water and utility/maintenance purposes (Appendix C, Attachment 6). A well survey was conducted within a 3-mile radius of the facility and 23 wells were observed (Appendix C, Attachment 2).

The mean annual precipitation for the area is 50.0 inches (1). The mean annual lake evaporation is 40.0 inches and the net precipitation is 10.0 inches (4). The 1-year 24-hour rainfall for the area is 3.5 inches (4).

The site is located in a moderately populated area. Areas to the south and southwest of the site are densely populated; north of the site is sparsely populated and east and southeast of the site is moderately populated, (Appendix A, Figure 2). Land use in the immediate vicinity of the site is a mixture of industrial, residential and commercial.

Drinking water within a 3-mile radius of the site is supplied for the most part by surface water (Appendix C, Attachment 3). However, there are both dug and drilled wells in the area (Appendix C, Attachments 2 and 5) (3). There are no critical habitats of an endangered species in Douglas County (Appendix C, Attachment 7).

3.0 TARGET POPULATIONS

As the result of a well survey conducted in the area of the site, 23 households were observed with wells within a three mile radius of the site (Appendix C, Attachment 2). Both drilled and dug wells were observed during the well survey, which indicates that both deep and shallow wells are present in the area. There is a shallow well (depth 20 feet) located just outside the one mile radius (Appendix C, Attachment 5). This shallow well was sampled and residents use it as a drinking water source. There may be potential for contamination of the surficial aquifer, however there is actually only one household target (3.8 people). There is an alternate source of drinking water; the City of Douglasville's drinking water is supplied by surface water and ponds on-site at the facility are regulated (Appendix C, Attachments 2, 3 and 6). The population distribution within one, two and three mile radii of the site is 1,074; 7,064 and 13,954 respectively (4; Appendix C, Attachment 2).

4.0 WASTE TYPES AND QUANTITIES

The types of wastes found at the site were sludge and soil composites which contained heavy metals (barium, chromium and lead). Waste quantities at the facility are unknown.

5.0 LABORATORY DATA

On October 28, 1987, four samples were collected at the facility by Georgia-EPD and two samples (background soil and groundwater) were collected off-site. Laboratory analyses indicated the presence of barium (680 mg/kg), chromium (400 mg/kg) and lead (880 mg/kg) (Appendix B). Benzene (2.7 mg/kg) and xylene (1.7 mg/kg), were found in sludge composite samples. Total zylenes (6,000 ug/kg) and naphthalene (17,000 ug/kg) were found in the soil composite sample that was collected around the API Separator (Appendix B).

6.0 TOXICOLOGY/CHEMICAL CHARACTERISTICS

The following substances have been identified in samples collected at the site (5,6):

Barium - TLV (Threshold Limit Value): Air 500 ug/m^3. There is no data on threshold. Hazard: Toxic, flammable at room temperature in powder form.

HRS Waste Characteristics:

Ground Water and Surface Water	Air Pathway Value
18	9

Lead - Oral-rat TDLo (Lowest Toxic Dose) 790 mg/kg. Tolerance 0.15 mg/per cubic meter of air. Hazard: Toxic by ingestion and inhalation of dust or fume.

HRS Waste Characteristics:

Ground Water and Surface Water	Air Pathway Value
18	9

Chromium - Ivn-rat (Intravenous) TDLo 2160 ug/kg. Hazard: Hexavalent chromium compounds are carcinogenic (OSHA) and corrosive on tissue resulting in ulcers and dermatitis on prolonged contact. TLV: for chromium dust and fume is 0.5 mg/m^3 of air.

HRS Waste Characteristics:

Ground Water and Surface Water	Air Pathway Value
18	9

Napthalene Oral-rat LD50: 1780 mg/kg; Oral-mammal 1,000 mg/kg. Hazard: Toxic by inhalation. TLV: 10 ppm in air. May be used as an insecticide. Systemic reactions include nausea, headache, diaphoresis, hematuria, fever, anemia, liver damage, vomiting, convulsions and coma. Poisoning may occur by inhaling of large doses or by skin absorption.

HRS Waste Characteristics:

Ground Water and Surface Water Pathway Value	Air Pathway Value
9	6

Xylene - Oral-rat LD50: 4300 mg/kg. Hazard: Flammable, moderate fire risk. Toxic by ingestion and inhalation. TLV: 100 ppm in air.

HRS Waste Characteristics:

Ground Water and Surface Water Pathway Value	Air Pathway Value
9	9

Benzene - Oral-human TDLo: 130 mg/kg. Hazard: A carcinogen. Highly toxic. Flammable; dangerous fire risk. Explosive limits in air 1.5 to 8% by volume. TLV: 10 ppm in air.

Reference 1

SCREENING SITE INSPECTION REPORT

YOUNG REFINING CORPORATION
GAD051011344

Gilda A. Knowles G.A.K.
Georgia Environmental Protection Division
December, 1987

Reviewed by: Randolph D. Williams Date: 12/30/87

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YOUNG REFINING CORPORATION

SCREENING SITE INSPECTION REPORT

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2.0 Environmental Setting 2

3.0 Target Populations 6

4.0 Waste Types and Quantities 6

5.0 Laboratory Data 7

6.0 Toxicology and Chemical Characteristics 8

Appendix A - Maps and Photographs A-1

Appendix B - Laboratory Data B-1

Appendix C - Supporting Documents C-1

Appendix D - References D-1

Appendix E - S.I. Form 2070-13, Site Inspection Report E-1

Appendix F - Preliminary HRS Package (Draft) F-1

APPENDIX C
ATTACHMENT 5

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams

Date: October 29, 1987

Time: 1:05 a.m./p.m.

File: Young Refining Corporation

Party Spoken To: (b) (6) [redacted]

Title: Home Owner

Agency/Company: Non-applicable

Address: [redacted] Road

City: Douglasville

Telephone Number: [redacted]

State/Zip: Ga. 31034

Subject: Young Refining Corporation - GAD051011344

Summary of Call: This call resulted from the sampling of Mrs. Latham's well, which was done on 10-28-87. Following a site inspection of the above facility, a background groundwater sample was needed for comparison with Young Refining Corp's well water. [redacted] dug well was sampled but there was no one at home, so I left my business card in her door to call me with additional information [redacted] called and stated the following: 1.) that her well is used for drinking water and for lawn irrigation, 2.) that the city water lines ended/stopped at the house before hers and 3.) that she does not know the depth of her well, she knows it's not that deep because they tried to dig the well deeper, but ran into rock. I told her that I would send her a copy of lab results when they became available. *Depth of well is needed.

Actions Required:

Signature: Hilda A. Knowles October, 29, 1987.

Follow-up Responses/Additional Comments: On November 12, 1987, while completing a well survey, [redacted] well depth was measured with a water level indicator. Well depth was found to be 20 feet.

Signature: Hilda A. Knowles

Date: November 12, 1987.

SIP-2

9/86

APPENDIX C - ATTACHMENT 6

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

TRIP REPORT

October 20, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD05101134
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles GAK Environmental Specialist Site Assessment Unit
ACCOMPANIED BY:	N/A
DATE AND TIME OF INVESTIGATION:	October 20, 1987 8:10 a.m.
OFFICIALS CONTACTED:	Mr. Charles Ellis Plant Manager Young Refining Corporation (404)942-2343 Mr. Fang Kou Plant Engineer Young Refining Corporation (404)942-2343
REFERENCE:	Preliminary Assessment Georgia-EPD State Files Trip Report by Jack Dempsey November 21, 1985

COMMENTS:

The facility refines asphaltic crude that is shipped by railroad car from Mississippi. The corporation's crude terminal is located in Lumberton, Mississippi and crude is purchased from Texaco and Chevron Oil Companies off the pipeline. The facility manufactures jet fuel for the government, heavy #5 oil (atmospheric gas oil), #2 fuel (diesel oil), certified state asphalt, oxidized asphalt (shingle, saturate, coat covering) and four (4) types of roofing asphalt. All products are transported by truck in bulk or packaged products. The various processes that the crude is taken through are heating, distillation, fractionating, oxidation and shipping. The wastes that are generated are solid wastes (collected on-site in dumpsters serviced by the City of Douglasville); wastewater (passes through API separator and is discharged to a series of 4

ponds-NPDES permitted) and sludges (API Separator, Desalter, Heat Exchanger). Mr. Ellis stated that he was not sure of the sludge disposal company that Young Refining Corporation utilizes.

Treatment ponds (4) have never been lined, but on occasion ponds #2, 3 and 4 are cleaned. Mr. Ellis stated that pond #3 is continuously aerated; however, during my tour of the facility aerating equipment at pond #3 was not in operation.

Questions were asked of Mr. Ellis and he stated the following:

1. wastes are not treated or disposed of on-site; only water is treated,

2. the property is 30-40 acres in size,

3. the flocculator is no longer used between ponds # 1 and 2,

4. the facility is supplied city water for drinking and boiler feed water that is used for steam generation,

5. there are 5 operable wells on-site, that are 300 ft. in depth and their water is used for the cooling pond and utility purposes,

6. these wells are sampled daily for treatment purposes and Deerborne Chemical Company of Atlanta treats the well water,

7. there is no dilution of wastes,

8. water was treated for phenols, but none were found and,

9. the facility does not handle lead petroleum, only virgin crude is refined.

During my tour of the facility with Mr. Fang Kou, Plant Engineer, I observed the following:

1. process areas were messy,

2. soil type seemed to be of a sandy, clay consistency,

3. facility is fenced and entrance gate is kept locked when not in operation,

4. two other companies are located within the facility's complex and they are Central Oil & Asphalt Corporation and Elk Roofing Company,

5. Arivec Chemicals Inc. is also located in the area, but is totally surrounded by a fence,

6. sampling areas,

7. slopes varied from 8-40% in various areas of the site and

8. pond #4 discharges water to a small creek (tributary on-site).

APPENDIX C
ATTACHMENT 6

Mr. Kou reviewed the facility's processes with me on a flow chart in his laboratory and supplied a sketch of the facility. I left the site at 10:30 a.m.

I visited the Water Department and spoke with Mr. Winfred Pirkle, Water Superintendent, who supplied me with information on boundaries of water lines and possible areas to check for wells. Ownership and property maps were obtained from the county tax assessors office. A well survey was conducted within one mile of the facility and 2 shallow wells were observed, but residents are believed to be on city water. Deep wells were observed in 2 and 3 mile radius of the site, but were not counted. Roads that need to be checked for an extended well survey on the next site visit are Dallas, Malone, Brown Street and Simon. The water line boundaries are Brownville Road to the North, Bankhead Hwy. and South & North Flat Rock Roads to the West, Gurley Road to the Southwest, Chapel Hill Road to the South and Mount Vernon Road to the East.

CONCLUSIONS:

None can be drawn until samples are collected and analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

On-site sampling should be conducted, off-site sampling and an extended well survey should be completed.

PHOTOGRAPHS: 15 polaroids

NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: None (reconnaissance visit)

REVIEWED BY: **DATE:**

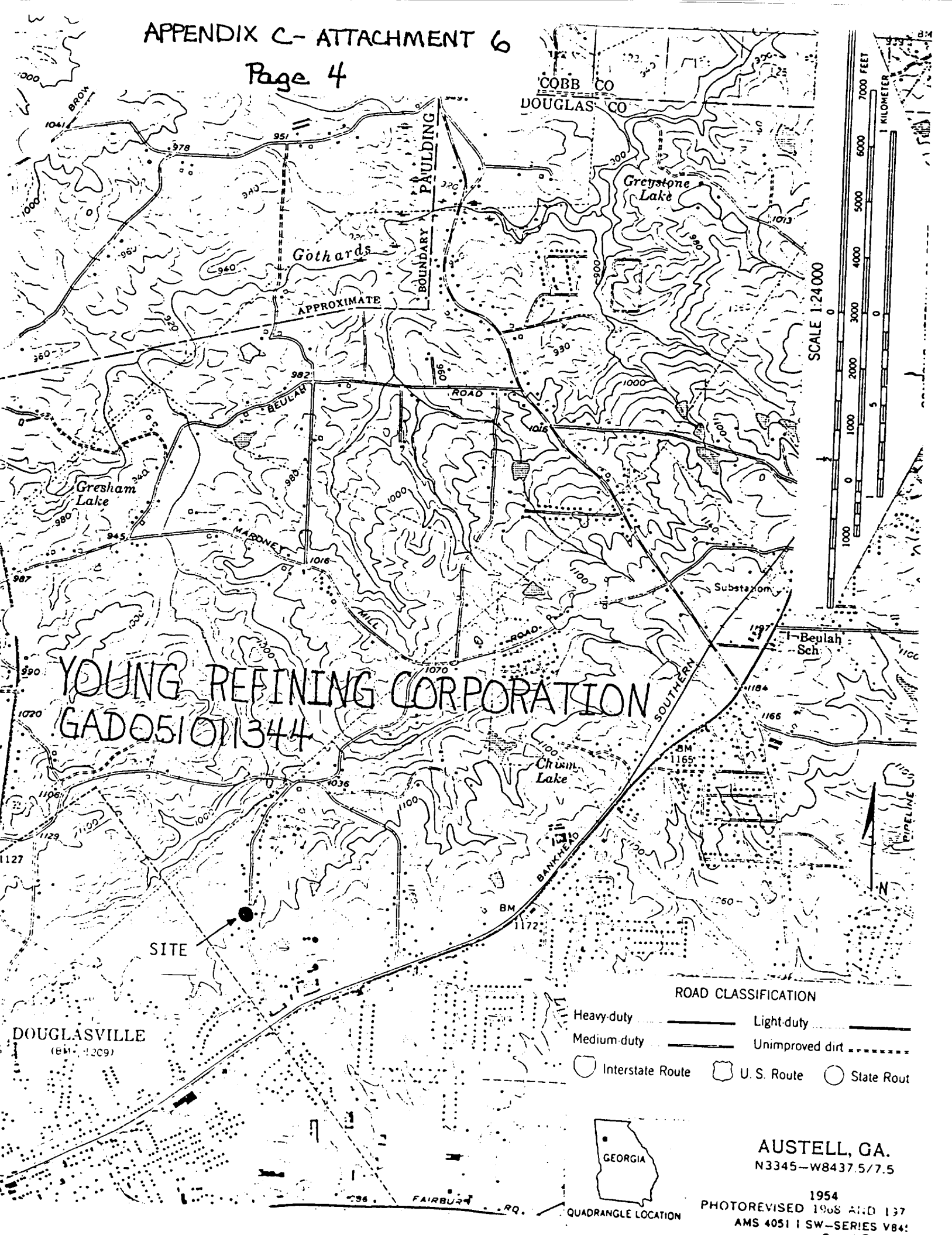
ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

GAK:zcr001

File: Young Refining Corporation

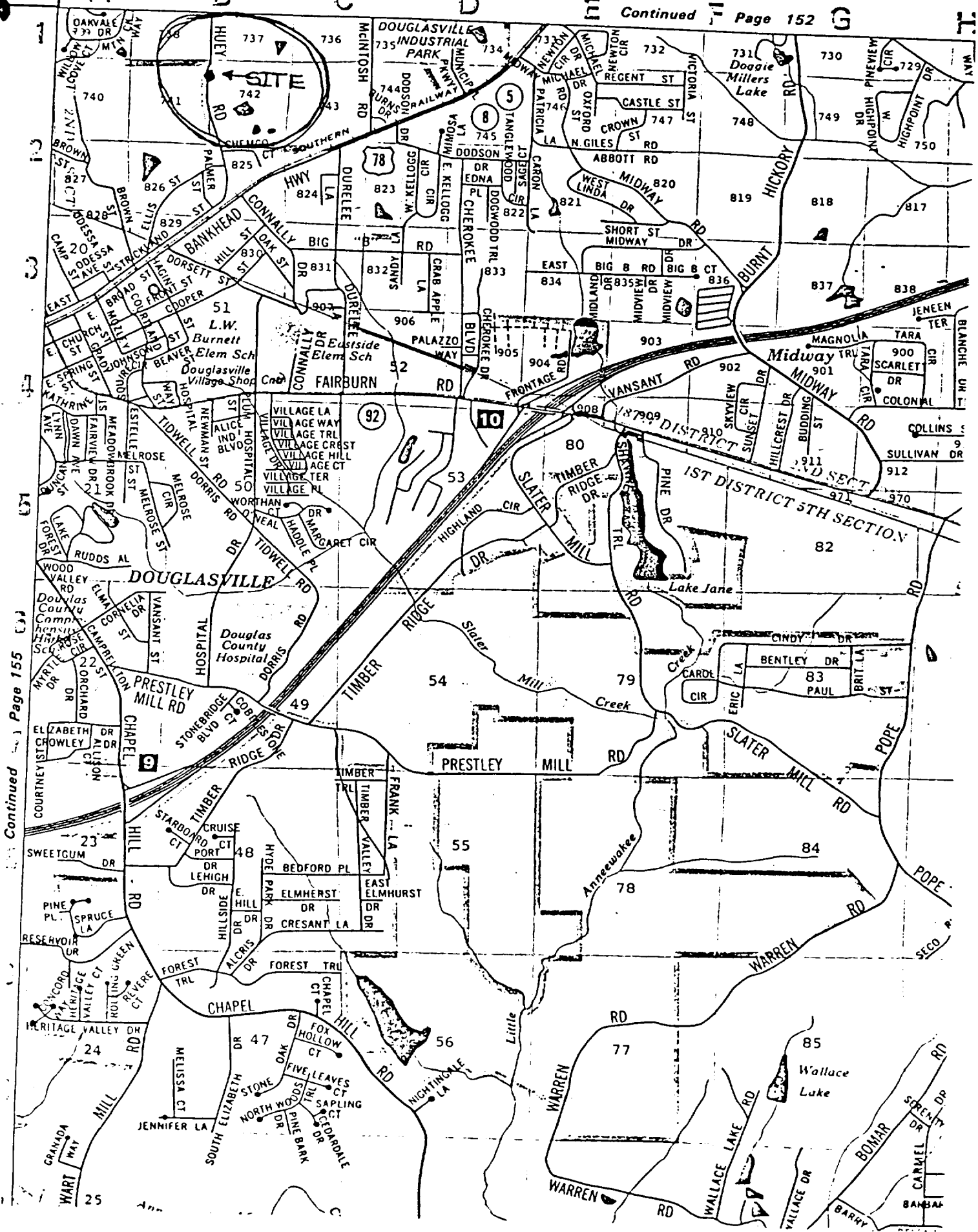
APPENDIX C- ATTACHMENT 6

Page 4



APPENDIX C - ATTACHMENT 6

Continued Page 152



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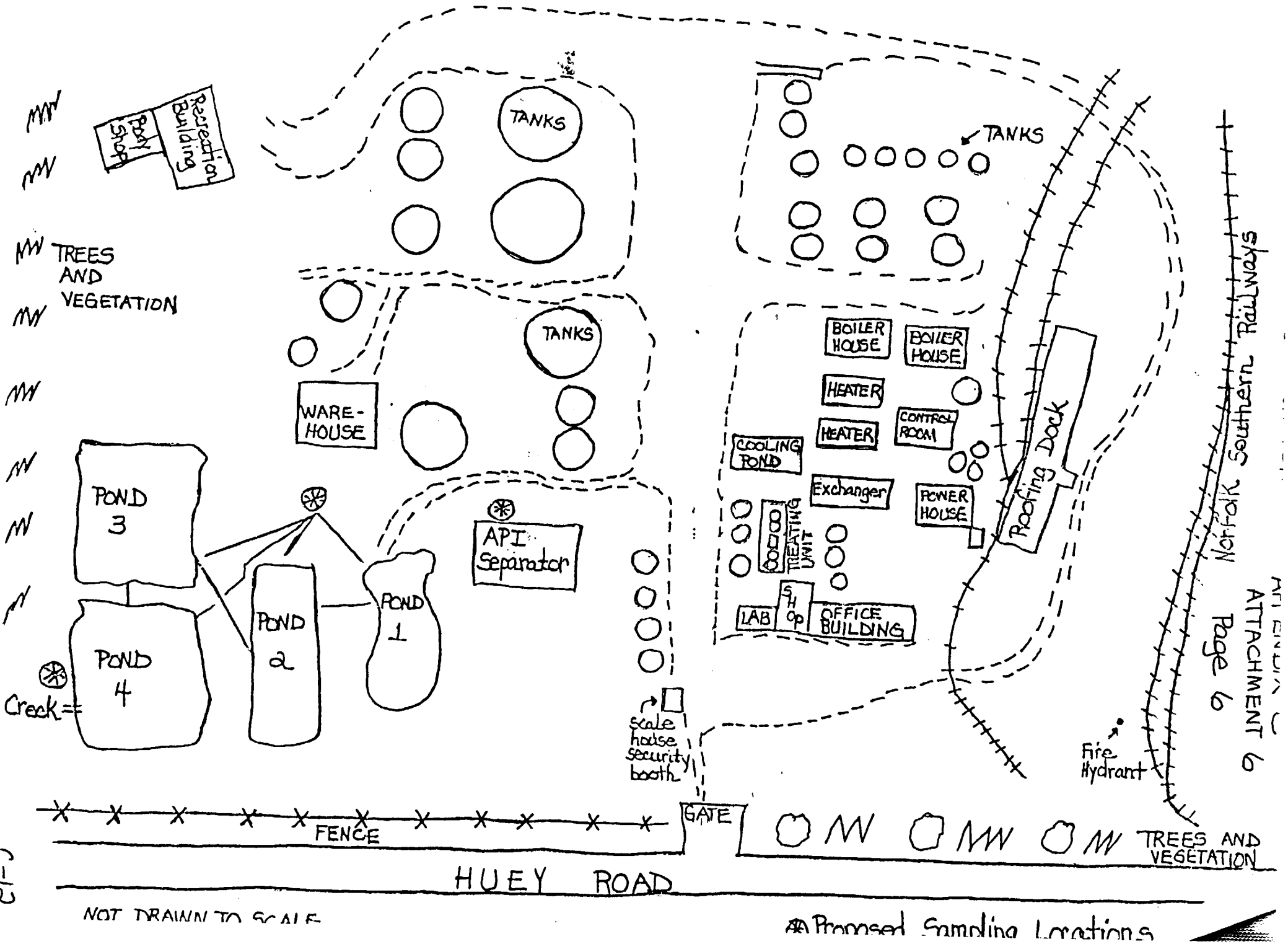
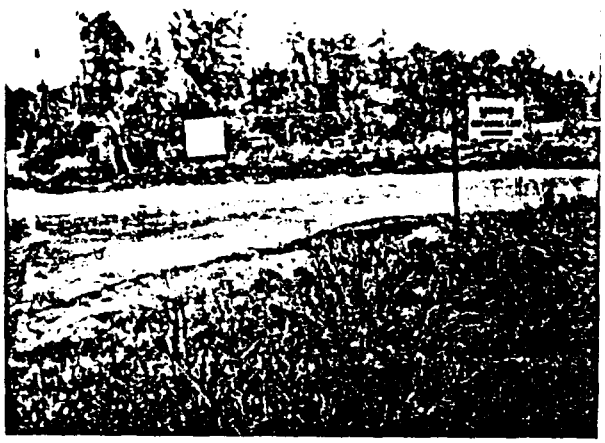


ATTACHMENT 6
Page 6



N. - 8:10 AM

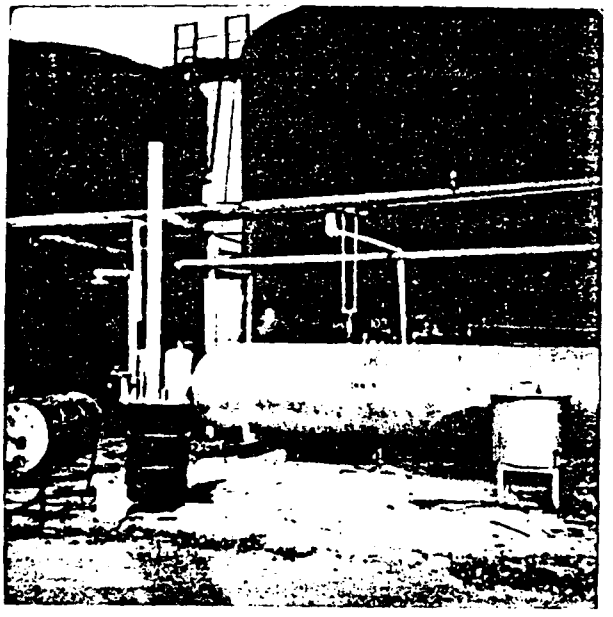
10-20-87

SITE NAME Young Refining Corporation
Picture No. 1 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance of facility off Huey Road. Front entrance; trees and heavy vegetation.
Other

N. 8:30 AM

10-20-87

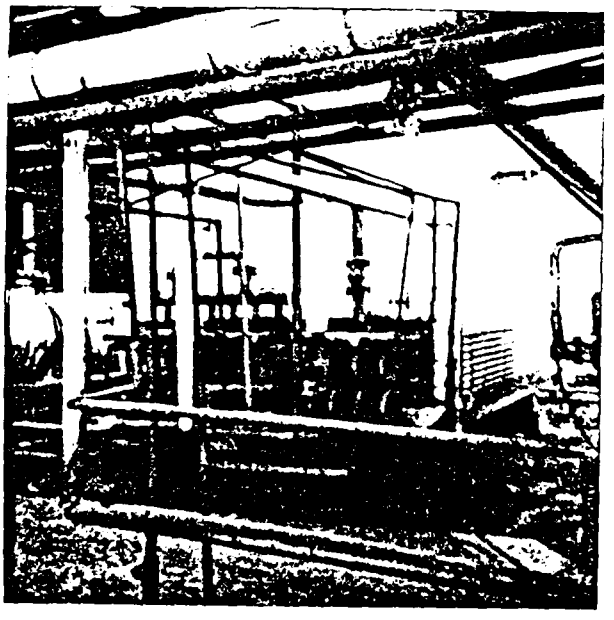
SITE NAME Young Refining Corporation
Picture No. 2 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance gate of facility. Security personnel present in security booth.
Other



N. - 8:35 AM

10-20-87

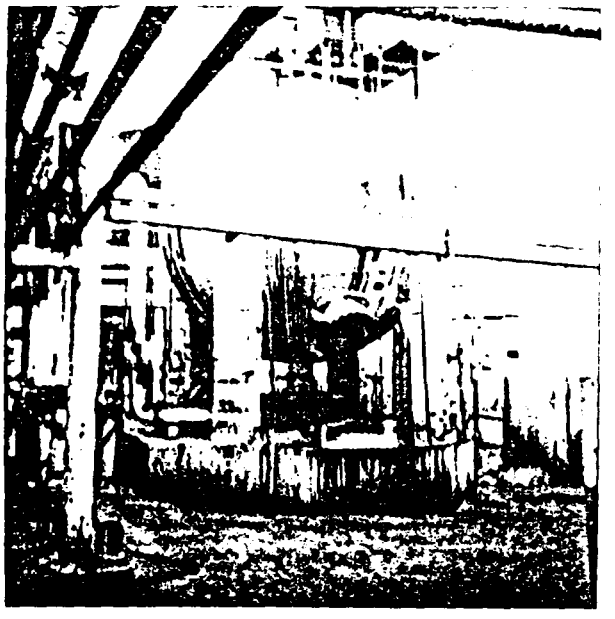
SITE NAME Young Refining Corporatio
Picture No. 3 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Holding tanks for crude transported in by railroad car. One (1) tank is able
Other to accomodate 4 railroad cars of crude.



N. 8:40 AM.

10-20-87

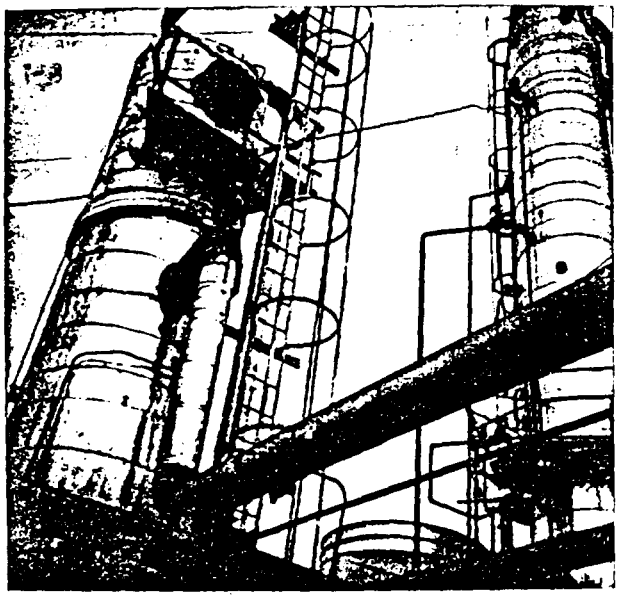
SITE NAME Young Refining Corporation
Picture No. 4 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Crude is heated through several steps with heat exchanger.
Other



W.- 8:45 AM

10-20-87

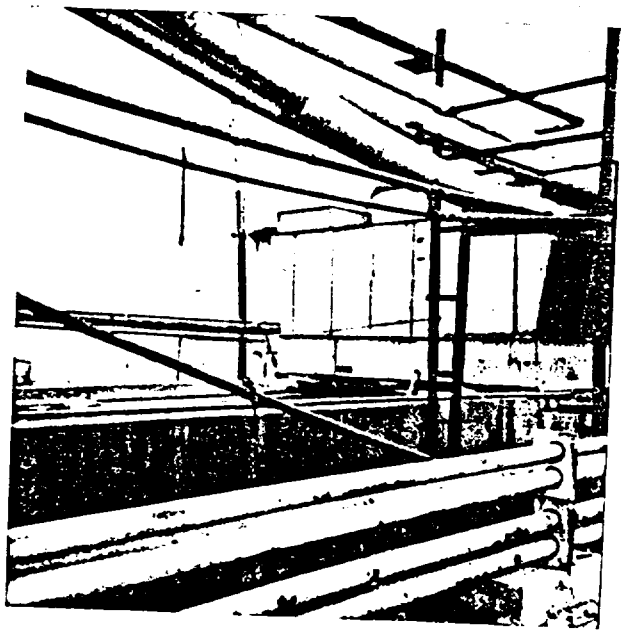
SITE NAME Young Refining Corporation
Picture No. 5 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Crude is eliminated of various salts by the desalter equipment
Other



N.
8:47
A.M.

10-20-87

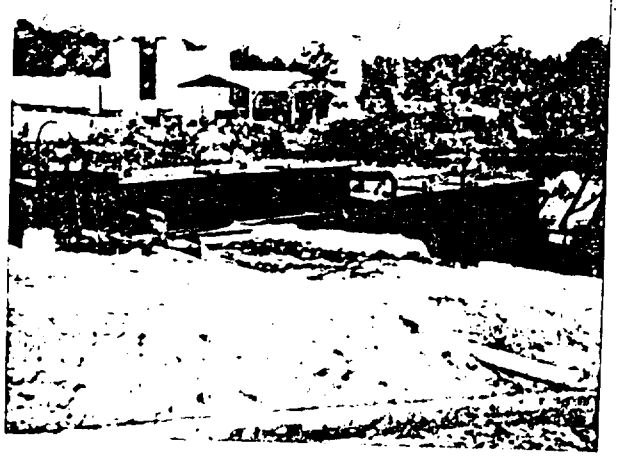
SITE NAME Young Refining Corporation
Picture No. 6 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Bubble Tower - Crude enters tower where light oils are vaporized out of crude and asphalt goes out the bottom.
Other



W.- 8:48 AM

10-20-87

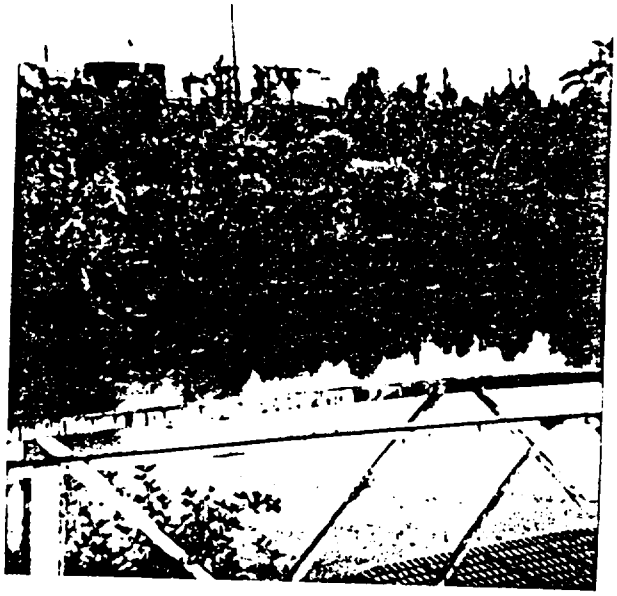
SITE NAME Young Refining Corporation
Picture No. 7 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation All wastewater is recycled and cooled down in this cooling pond.
Other



N.E.- 8:50 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 8 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing Northeast
Photographer G. A. Knowles
Program Site Investigation Program
Explanation API Separator - This piece of equipment further separates oil from water. The water from this process flows into the primary catching pond #1.
Other



S.-8:55 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 9 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing South
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #1

Other

N.E.-9:05 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 10 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #1 - Oil is skimmed off the top of the water into a thorgh that leads back through the crude tanks for reprocessing.

Other

W.-9:15 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 11 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #2 with separator for skimming
Other

E.-9:25 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 12 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #3 with aerating equipment. Aerator was inoperative at the time of inspection.
Other

N.E. 9:35 AM
10-20-87

SITE NAME Young Refining Corporation
Picture No. 13 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #4, drainage conduit for this pond is discharge to a small creek on-site.
Other

N.E. - 9:45 AM
10-20-87

SITE NAME Young Refining Corporation
Picture No. 14 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Discharge of water from conduit, to small creek (conduit extends from Pond #4).
Other

E.-10:15 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 15 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy-69°F.

Direction Facing East

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Asphalt Roofing Area; Cardboard cartons with tin bottoms are filled with hot asphalt and allowed to cool.

Other

SITE NAME

Picture No. of

County Name

Date Weather

Direction Facing

Photographer

Program

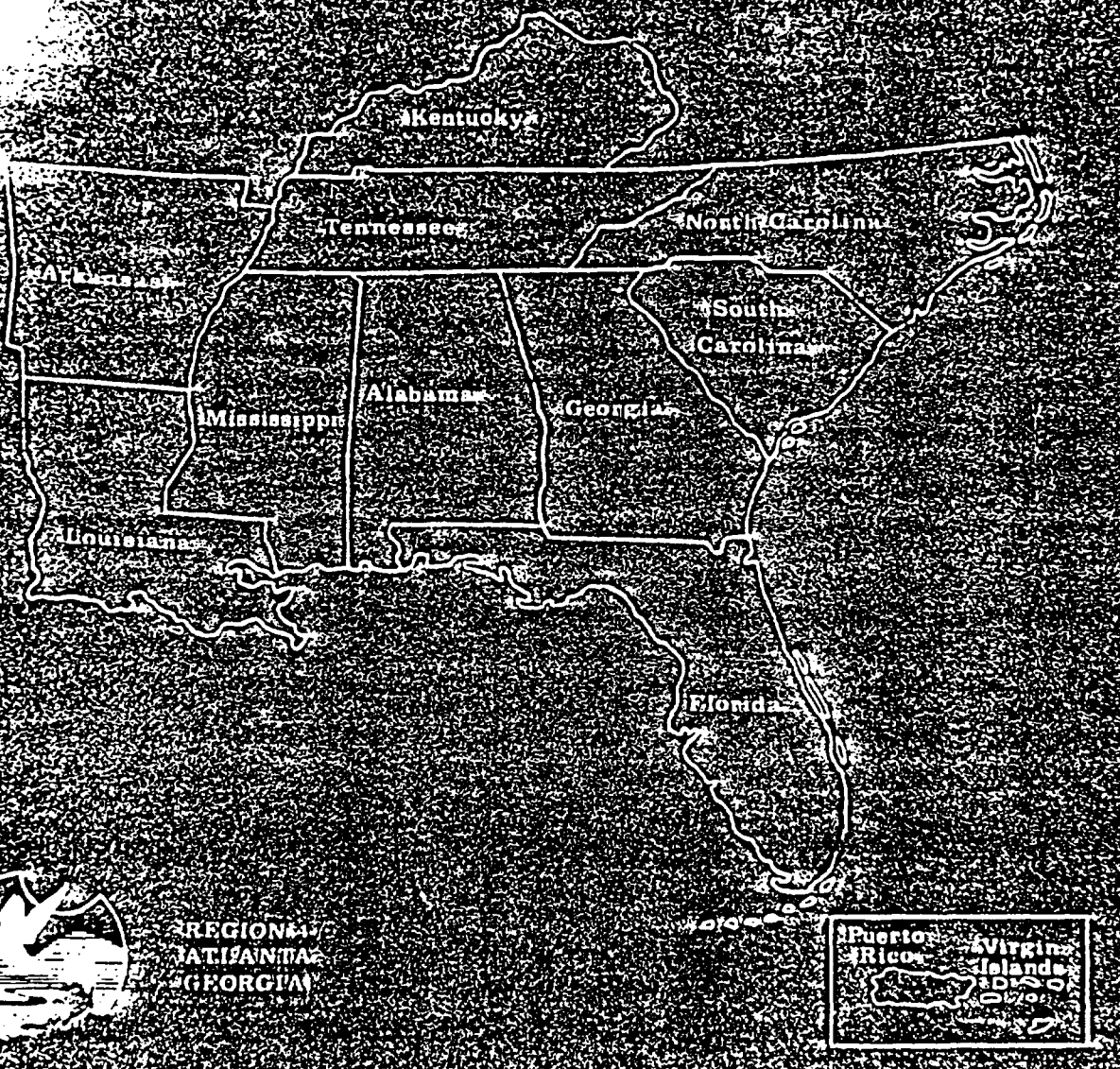
Explanation

Other

APPENDIX C - ATTACHMENT 7

Reference

ENDANGERED AND THREATENED SPECIES OF THE SOUTHEASTERN UNITED STATES



REGIONAL
ATLANTA
GEORGIA

APPENDIX C
ATTACHMENT 7

Reference 19

United States Department of the Interior

FISH AND WILDLIFE SERVICE
75 SPRING STREET, S.W.
ATLANTA, GEORGIA 30303

August 23, 1985

NOTICE

TO: All Project Leaders and Cooperators

FROM: Endangered Species Office, Federal Assistance, FWS, Atlanta, Georgia

SUBJECT: Changes to the Region 4 Endangered Species Notebook

This update covers the following actions: listing of the Carolina northern flying squirrel in North Carolina and Tennessee as endangered, listing of the Tar River spiny mussel in North Carolina as endangered, listing of five Florida pine rockland plants as endangered, listing of the Miccosukee gooseberry in Florida and South Carolina as endangered, listing of Ruth's golden aster in Tennessee and Vahl's boxwood in Puerto Rico as endangered, listing of the amber darter and Conasauga logperch in Georgia and Tennessee as endangered with critical habitat designated, reclassification of the alligator in Florida to threatened by similarity of appearance, and the proposed listing of two plants (pondberry and Florida golden aster).

REGIONAL LIST: Replace.

STATE LISTS: Replace FL, GA, NC, PR, SC, TN.

CRITICAL HABITAT: Replace index; add amber darter and Conasauga logperch designations for GA and TN.

PROPOSED RULEMAKING: Replace previous sheet.

Species Accounts: FISHES - Replace index; add accounts for two fishes.

PLANTS - Replace index; add accounts for eight plants.

Attachments

85-3

RECEIVED
AUG 26 1985
REGION IV
SENT TO

Federally Listed Species by State

GEORGIA

(E=Endangered; T=Threatened; CH=Critical Habitat determined)

Mammals	General Distribution
Bat, gray (*Myotis grisescens*) - E	Northwest, West
Bat, Indiana (*Myotis sodalis*) - E	Extreme Northwest
Manatee, Florida (*Trichechus manatus*) - E	Coastal waters
Panther, Florida (*Felis concolor coryi*) - E	Entire state
Whale, right (*Eubalaena glacialis*) - E	Coastal waters
Whale, finback (*Balaenoptera physalus*) - E	Coastal waters
Whale, humpback (*Megaptera novaeangliae*) - E	Coastal waters
Whale, sei (*Balaenoptera borealis*) - E	Coastal waters
Whale, sperm (*Physeter catodon*) - E	Coastal waters

Birds	
Eagle, bald (*Haliaeetus leucocephalus*) - E	Entire state
Falcon, American peregrine (*Falco peregrinus anatum*) - E	North
Falcon, Arctic peregrine (*Falco peregrinus tundrius*) - T	Coast, Northwest
Stork, wood (*Mycteria americana*) - E	Southeastern swamps
Warbler, Bachman's (*Vermivora bachmanii*) - E	Entire state
Warbler, Kirtland's (*Dendroica kirtlandii*) - E	Coast
Woodpecker, ivory-billed (*Campephilus principalis*) - E	South, Southwest
Woodpecker, red-cockaded (*Picoides* (=*Dendrocopos*) *borealis*) - E	Entire state

Reptiles	
Alligator, American (*Alligator mississippiensis*) - E	Inland coastal plain
Alligator, American (*Alligator mississippiensis*) - T	Coastal areas

GEORGIA (cont'd)

	General Distribution
Snake, eastern indigo (*Drymarchon corais couperi*) - T	Southeast
Turtle, Kemp's (Atlantic) ridley (*Lepidochelys kempii*) - E	Coastal waters
Turtle, green (*Chelonia mydas*) - T	Coastal waters
Turtle, hawksbill (*Eretmochelys imbricata*) - E	Coastal waters
Turtle, leatherback (*Dermochelys coriacea*) - E	Coastal waters
Turtle, loggerhead (*Caretta caretta*) - T	Coastal waters

Fishes

Darter, amber (*Percina antesella*) - E,CH	Conasauga R., Murray County
Darter, snail (*Percina tanasi*) - T	S. Chickamauga Cr., Catoosa County
Logperch, Conasauga (*Percina jenkinsi*) - E,CH	Conasauga R., Murray County
Sturgeon, shortnose (*Acipenser brevirostrum*) - E	Coastal rivers

Plants

Florida torreya (*Torreya taxifolia*) - E	Decatur County
Green pitcher plant (*Sarracenia oreophila*) - E	Towns County
Hairy rattleweed (*Baptisia arachnifera*) - E	Wayne, Brantley Counties
Persistent trillium (*Trillium persistens*) - E	Tallulah-Tugaloo River system, Rabun and Habersham Counties

APPENDIX D

REFERENCES

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2. Clark, William Z., Jr. and Zisa, Arnold C., 1976. Physiographic Map of Georgia. Department of Natural Resources. The Geologic and Water Resources Division.

3. Arora, Ram, Ph.D., 1984. Hydrogeologic Evaluation for Underground Ingestion Control in North Georgia.

4. National Oil and Hazardous Substances Contingency Plan, Appendix, 40 CFR Part 300, 47 Federal Register 31219.

5. Sax, Irving N., 1984. Dangerous Properties of Industrial Materials: Van Nostrand Reinhold Company, New York 6th Edition.

6. Sax, Irving N. and Lewis, Richard J., eds., 1987. Hawley's Condensed Chemical Dictionary: Van Nostrand Reinhold Company, New York 11th Edition.

APPENDIX E

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051 011344

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Young Refining Corporation	7982 Huey Road (P.O. Box 796)

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Douglasville	Ga.	30134	Douglas	097	06

09 COORDINATES: LATITUDE 33° 44' 00.0" LONGITUDE 084° 45' 00.0"

10 TYPE OF OWNERSHIP (Check one): ☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 10.28.87 (MONTH DAY YEAR)

02 SITE STATUS: ☒ ACTIVE ☐ INACTIVE

03 YEARS OF OPERATION: 1955 (BEGINNING YEAR) Present (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply): ☐ A. EPA ☐ B. EPA CONTRACTOR ___ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ___ (Name of firm) ☒ E. STATE ☐ F. STATE CONTRACTOR ___ (Name of firm) ☐ G. OTHER ___ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Gilda A. Knowles	Environmental Specialist	DNR-EPD	404 656-7404

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Charles Evans	Environmental Specialist	DNR EPD	404 656-7404
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Mr. Fang Kou	Plant Engineer	7982 Huey Road	404 942-2343
Mr. Charlie Ellis	Plant Manager	Douglasville, Ga. 30134	( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one): ☒ PERMISSION ☐ WARRANT

18 TIME OF INSPECTION: 9:05 AM

19 WEATHER CONDITIONS: Sunny, Cold 58-60°

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO
Mr. Fang Kou	Plant Engineer - Young Refining Corp.	404 942-2343

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Gilda A. Knowles	DNR-EPD	SAU	(404) 656-7404	11.30.87 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)
- ☑ A. SOLID
- ☐ B. POWDER, FINES
- ☑ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)
- TONS _____
- CUBIC YARDS _____
- NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)
- ☑ A. TOXIC
- ☑ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☑ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	UnKnown	UnKnown	SLUDGE SAMPLE

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Barium		POND #1 / SLUDGE	680	mg/Kg
	Chromium		POND #1 / SAMPLE	400	mg/Kg
	Lead		POND #1	880	mg/Kg
	TOTAL METALS				
MES	Barium		POND #1 / SLUDGE	1370	ug/L
	Chromium		POND #1 / SAMPLE	100	ug/L
	Lead		POND #1	140	ug/L
	EP METALS				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp. Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ B. SURFACE WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ C. CONTAMINATION OF AIR 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ D. FIRE/EXPLOSIVE CONDITIONS 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ E. DIRECT CONTACT 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ F. CONTAMINATION OF SOIL 03 AREA POTENTIALLY AFFECTED: _____ (Acres)	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ G. DRINKING WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ H. WORKER EXPOSURE/INJURY 03 WORKERS POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ I. POPULATION EXPOSURE/INJURY 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: GA
02 SITE NUMBER: D051011344

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills, Runoff, Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 1 mile = 1,074 ; 2 miles = 7,064 ; 3 miles = 13,954

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files : Young Refining Corp.
Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☒ A. NPDES	GA0001902	—	—	—
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☒ A. SURFACE IMPOUNDMENT	Unknown	Unknown
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER _____ (Specify)		

04 TREATMENT (Check all that apply)
- ☒ A. INCENERATION (1970's)
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER _____ (Specify) N/A.

05 OTHER
- ☒ A. BUILDINGS ON SITE: 3

06 AREA OF SITE: 30-40 (Acres)

07 COMMENTS

The facility refines crude oil. Wastewaters from various processes are discharged to a series of 4 NPDES permitted ponds. These ponds have never been lined, but are occasionally cleaned. Wastewater passes through an API Separator before it is discharged to ponds.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☒ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Ponds have adequate freeboard. Skimming operations take place at Pond #1.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES ☒ NO

02 COMMENTS

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files: Young Refining Corporation Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: GA
02 SITE NUMBER: D051011344

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☒

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. 3.0 (mi)
B. 2.0 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☒ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER: Unknown

03 DISTANCE TO NEAREST DRINKING WATER WELL: 2.0 (mi)

04 DEPTH TO GROUNDWATER: 14-22 (ft)

05 DIRECTION OF GROUNDWATER FLOW: Unknown

06 DEPTH TO AQUIFER OF CONCERN: 14.0 (ft)

07 POTENTIAL YIELD OF AQUIFER: Unknown (gpd)

08 SOLE SOURCE AQUIFER: ☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

There are 5 operable wells on-site, that are 300 ft. in depth and are only used for the cooling pond and utility purposes. There is a shallow dug well (22 ft in depth) located 2.0 miles from the site used for drinking water.

10 RECHARGE AREA
☐ YES
☐ NO
COMMENTS: Unknown

11 DISCHARGE AREA
☐ YES
☐ NO
COMMENTS: ...

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Unnamed Tributary that empties into Gothards Creek	☐	0.5 (mi)
Gothards Creek (down slope from facility)	☐	2.5 (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE: A. 4,074 NO OF PERSONS
TWO (2) MILES OF SITE: B. 7,064 NO OF PERSONS
THREE (3) MILES OF SITE: C. 13,954 NO OF PERSONS

02 DISTANCE TO NEAREST POPULATION: Less than 0.5 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE: Excess of 1800

04 DISTANCE TO NEAREST OFF-SITE BUILDING: Less than 0.5 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural village, densely populated urban area)

The site is located in somewhat of an industrial park section near railroad tracks. However site/park is situated in a residential area.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: GA
02 SITE NUMBER: D051011344

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. 10^{-6} – 10^{-8} cm/sec ☑ B. 10^{-4} – 10^{-6} cm/sec ☐ C. 10^{-4} – 10^{-3} cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE (10^{-4} – 10^{-6} cm/sec) ☑ C. RELATIVELY PERMEABLE (10^{-2} – 10^{-4} cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
5-25.0 (ft)	____ (ft)	Unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
10.0 (in)	3.0 (in)	5.0 %	Northeast	5-8.0 %

09 FLOOD POTENTIAL: SITE IS IN Unknown YEAR FLOODPLAIN

10: N/A ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. — (mi)
OTHER: B. — (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species): ____ (mi)

ENDANGERED SPECIES: None

13 LAND USE IN VICINITY

DISTANCE TO COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. .10 (mi)	B. .10 (mi)	C. — (mi)	D. — (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The facility itself is situated in an industrial park section along with 3 other companies. The site in some areas is nearly flat with no slope and in other areas gently sloping (3-6%). There is a heavy residential population south, southwest and east of the site and sparsely populated areas to the north and west. The facility is not completely surrounded by areas of higher elevation.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp. Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION
01 STATE: GA
02 SITE NUMBER: D051011344

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	3	Georgia - EPD Laboratory	12/1987
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	2	Georgia - EPD Laboratory	12/1987
VEGETATION			
OTHER SLUDGE	1	Georgia - EPD Laboratory	12/1987

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
N/A	

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Georgia - EPD State Files (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Georgia - EPD State Files

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

A well survey was conducted within a 3-mile radius of the site and 23 wells were observed.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files : Young Refining Corp.
Douglasville, Georgia

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Young Refining Corp.		7982 Huey Road (P.O. Box 796)		Douglasville	Ga.	30134

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Young Refining Corp.		7982 Huey Road (P.O. Box 796)		Douglasville	Ga.	30134

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Georgia - EPD State Files : Young Refining Corp.
Douglasville, Georgia

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME: Young Refining Corp.	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 7982 Huey Road (P.O. Box 796)	04 SIC CODE:
05 CITY: Douglasville	06 STATE: Ga.
07 ZIP CODE: 30134	
08 YEARS OF OPERATION:	09 NAME OF OWNER:

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME:	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE:
16 ZIP CODE:	

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME:	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):	04 SIC CODE:
05 CITY:	06 STATE:
07 ZIP CODE:	
08 YEARS OF OPERATION:	09 NAME OF OWNER DURING THIS PERIOD:

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME:	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE:
16 ZIP CODE:	

01 NAME:	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):	04 SIC CODE:
05 CITY:	06 STATE:
07 ZIP CODE:	
08 YEARS OF OPERATION:	09 NAME OF OWNER DURING THIS PERIOD:

10 NAME:	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE:
16 ZIP CODE:	

01 NAME:	02 D+B NUMBER:
03 STREET ADDRESS (P.O. Box, RFD #, etc.):	04 SIC CODE:
05 CITY:	06 STATE:
07 ZIP CODE:	
08 YEARS OF OPERATION:	09 NAME OF OWNER DURING THIS PERIOD:

10 NAME:	11 D+B NUMBER:
12 STREET ADDRESS (P.O. Box, RFD #, etc.):	13 SIC CODE:
14 CITY:	15 STATE:
16 ZIP CODE:	

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp., Douglasville, Georgia

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER	
N/A		
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	
05 CITY	06 STATE / 07 ZIP CODE	

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D 051 011 344

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. PAST RESPONSE ACTIVITIES *(Continued)*

01 ☐ R. BARRIER WALLS CONSTRUCTED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ S. CAPPING/COVERING 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ T. BULK TANKAGE REPAIRED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ U. GROUT CURTAIN CONSTRUCTED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ V. BOTTOM SEALED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ W. GAS CONTROL 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ X. FIRE CONTROL 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ Y. LEACHATE TREATMENT 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ Z. AREA EVACUATED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ 1. ACCESS TO SITE RESTRICTED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ 2. POPULATION RELOCATED 04 DESCRIPTION	02 DATE _____	03 AGENCY _____
01 ☐ 3. OTHER REMEDIAL ACTIVITIES 04 DESCRIPTION	02 DATE _____	03 AGENCY _____

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Georgia - EPD State Files - Young Refining Corp.
Douglasville, Georgia

EPA FORM 2070-1 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION ☐ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files: Young Refining Corp, Douglasville, Georgia

EPA FORM 2070-13 (7-81)

FACILITY DESCRIPTION PAGE

The Young Refining Corporation refines crude (asphaltic) into asphaltic cements, #2 fuel oil, jet fuel, heavy #5 oil and various roofing asphalts. All process washwater and stormwater from the complex passes through an API separator, which discharges to four NPDES permitted ponds. The facility was found to be in violation of small quantity generator standards by Georgia-EPD in July of 1985. Hazardous wastes (sludges) had been disposed of in the past by spreading on the ground at various locations throughout the facility. The Georgia-EPD also cited the facility in the past for illegal incineration and dilution of waste and for illegal disposal of hazardous wastes at non-permitted dump sites off of Basket Creek Road in Douglas County. In addition to disposing of wastes on-site, the facility also had an oil spill in June of 1973.

On October 28, 1987, a total of 4 samples were collected on-site. There were 2 ground water samples, 1 sludge composite and 1 soil composite collected around the API separator. Samples collected off-site were a soil background sample and a background ground water sample collected from a shallow private well. Ground water samples were void of contaminants; however, heavy metals were found in sludge and soil composite samples collected on-site.

The site is located in a residential, industrial area. The City of Douglasville's drinking water is supplied by surface waters (Annawakee, Little Annawakee and Bear Creeks).

RCRA STATUS PAGE

The Young Refining Corporation has an NPDES permit (GA0001902) from the Georgia-EPD. The site is classified as a small quantity generator.

270 Washington Street, S.W., Room 825, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

November 21, 1985

TRIP REPORT

Reference 2

SITE NAME AND LOCATION: Young Refining Corporation, 7982 Huey Road, Douglasville

TRIP BY: Jack Dempsey

Accompanied by: None

DATE OF TRIP: 7/24/85

OFFICIALS CONTACTED: Charles E. Young, Executive V.P.
Fang Kuo, Plant Engineer
Douglas McLendon, Operations Manager

REFERENCE: Complaint from Arivec Chemicals concerning appearance and regulatory status of Young's surface impoundments.

COMMENTS:

This facility, constructed in 1955, refines asphaltic crude, received by railroad tanks from southeast Mississippi, into asphalt cements, #2 fuel oil, heavy oil, and natural gasoline (60 octane). The facility is currently processing about 126,000 gals./day of crude (60% capacity). Mr. Young said they no longer purchase used oil from jobbers due to problems. Paving and roofing asphalt cements constitute about 55% of product produced.

I. Process:

1) Heating - the crude is heated through several steps with heat exchangers and finally a furnace to achieve 670°F;

2) Distillation - the crude enters a flash tower where light oils are vaporized out of the crude and asphalt goes out the bottom;

3) Fractionating - the light oils are further processed in a fractionating column to obtain the gasoline and various oils;

4) Oxidation - about 40% of the asphalt is oxidized with heat and air to produce roofing and coating asphalt;

5) Shipping - roofing asphalt is packaged in cardboard containers for shipment to users; gasoline, asphalt, and oils are shipped by tanker trucks.

II. Wastes Generated:

1) Solid Waste - collected in on-site dumpsters serviced by the City of Douglasville;

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2) Wastewater - all process wastewater and storm drains from the complex converge to pass through an API Separator that discharges to an NPDES permitted wastewater treatment system consisting of 4 ponds in series;

3) API Separator Sludge (K051) - sludge is shoveled from the bottom of the separator about every 6 months and placed on the ground adjacent to the separator; the material hardens and any water from it gravity flows into the first pond; each clean-out reportedly results in about 50 pounds of dewatered material;

4) Dissolved Air Flotation Float (K048) - a flocculator was used between ponds 1 & 2 up until about 1977 and reportedly generated about 100 pounds/year of this waste, that was allowed to harden in a drum and then disposed of on the ground at various locations around plant during construction of tanks and roads; the flocculator was discontinued because it was not needed to meet effluent limits of the NPDES permit;

5) Slop Oil Emulsion Solids (K049) - based on the information obtained, all of the skimmings from the API Separator are pumped back to crude tanks for reprocessing, therefore, none of this waste (emulsion between water and oil) is generated;

6) Heat Exchanger Bundle Cleaning Sludge (K050) - the heat exchangers are reportedly cleaned once each year and about 150 pounds of waste is generated; the officials were unsure of the disposal method, but admitted that it is probably disposed of by placing on the ground on-site;

7) Leaded Tank Bottoms (K052) - no lead is used in the process, therefore, none of this waste is generated; Mr. Young said the crude may have a trace of lead.

III. Plant Inspection:

A tour of the facility confirmed the processes and waste streams described above. Much spillage of asphalt was observed around the tanks and treatment of the wastewater is unsightly. API Separtor sludge has accumulated beside the separator and the first pond has a heavy layer of oil on the surface that is periodically skimmed and pumped back for processing. The second pond has a baffle that traps oil escaping the first pond, but after that no oil was visible on the surface of the ponds. I collected a sludge sample from the influent area of pond #1 and a soil sample from the area the officials said the K050 waste was dumped.

IV. Records Examination:

No records were examined at the facility. The facility filed a Hazardous Waste Facility Permit Application in 1980, but was advised in 1982 to withdraw (based on disposal of small quantities in an NPDES permitted system). Withdrawal was requested and granted in 1982. The facility status was changed to small quantity generator according to the letter. The 1983 Annual Report indicated no waste generated. The Facility Information Report, completed for an inspection on 5/7/82, indicated small quantities of the listed wastes are disposed of in the surface impoundments.

Mr. Young contends that none of these wastes are dumped directly in the ponds, but the whole complex drains to the ponds so any wastes disposed on-site may eventually get in them.

CONCLUSIONS:

The facility is a small quantity generator that has failed to comply with the disposal requirements for same. Small quantities of listed wastes are being disposed of on-site. The soil sample collected at the suspected disposal site of K050 waste was below the detection limits for total and extractable metals and hydrocarbons. The sludge sample collected from the influent area of pond #1 contained 7.4 ppm total lead and small amounts of hydrocarbons typical of oil, but was below the detection limits for EP metals, except for barium (3.0 ppm, limit of 100.0). The background document states that lead and chromium are the constituents of conern in the waste streams, that lead comes predominantly from tetraethyl lead in the blending of leaded products, and chromium comes predominantly from cooling tower blowdown that uses a chromium base corrosion inhibitor. At this point, the document footnotes that refineries not implementing these systems will have lower levels of these metals and delisting is available. Mr. Young stated that they do not use any tetraethyl lead and that the chromium base corrosion inhibitor was replaced about 10 years ago with a complex amine that does not contain any metals. Based on the above information, I recommend that we send an N.O.V. for violation of the small quantity generator requirements, but not pursue regulating the ponds as hazardous waste surface impoundments.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED: Send N.O.V.

REVIEWED BY: JB 12/16

ATTACHMENTS: Sample results *

JD:cen(060)

File: Young Refining Corp., Douglasville (R)

* The lab was not able to do oily waste extraction on samples as originally requested. Otis Woods said method was not EPA approved (?) and lab was not set up to perform. Therefore, lab request was changed to normal extraction procedure.

ENVIRONMENTAL PROTECTION DIVISION

LABORATORY REPORT

SAMPLE DATE: 7-24-85 PROJECT: Young Refining Corporation COLLECTOR: Jack Dempsey

	HW LOG NO.	1444	1445	1445		
DATE REC'D	7/24/85					
LABEL I.D.		Soil from behind tank #305	Sludge from inlet of 1st Pond Top Layer	Sludge from inlet of 1st Pond Bottom Layer		
TIME REC'D	4:30 pm					
REC'D BY:	M. Basmajian					
DEL BY:	Dempsey					
	Harold Lanford, LABORATORY MANAGER					
DATE:	10-4-85					
PARAMETERS	LAB NO.	HW 1444	HW1445	HW1445		
Naphthalene	mg/Kg	<1	6.5	8.9		
Dimethyl Naphthalene (total)	"	<1	10 *	13 *		
EP Ag	ug/L (PCB)	<10	<10			
" As	"	<40	<40			
" Ba	"	<3000	3000			
" Cd	"	<10	<10			
" Cr	"	<10	<10			
" Pb	"	<25	<25			
" Se	"	<50	<50			
Total Cr	mg/Kg	—	<0.5	—		
" Pb	"	—	7.4			

REMARKS: * Estimated Values.
High Molecular Weight Hydrocarbons typical of an oil present at high
Bottom Layer appears to be Granular Solids - EP Metals + Total Metal
were run on a well Mixed Sample.

4

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HAZARDOUS WASTE ANALYSIS REQUEST

DATE: 7-24-85 PROJECT: Young Refining Corp. COLLECTOR: Jack Dempsey

NO. SAMPLES: 2 LOG NOS. 1444 & 1445 LIQUID ____ SOLID ____ SOIL 1

CAUSTIC ____ ACID ____ SOLVENT ____ UNKNOWN ____ SLUDGE 1

INFORMATION FOUND: asphalt production from low-grade crude oil

HAZARDOUS WASTE NOS. K048, K049, K050, K051 (Petroleum Refining)

HAZARDOUS HANDLING: none known

WORK PRIORITY (CRITICAL NEED) normal

RECEIVED

OCT 07 1985

ENVIRONMENTAL PROTECTION DIVISION
PROTECTION BRANCH

METALS ANALYSES

	TOT	DIS		
METALS (DW NO Hg)	☐	☐	EP METALS (DW NO Hg)	☒ 100X ☐ 30X ☐
METALS (DW WITH Hg)	☐	☐	EP METALS (DW WITH Hg)	☐

	TOT	DIS		TOT	DIS				
NICKEL	☐	☐	CADMIUM	☐	☐	EP NICKEL	☐	EP CADMIUM	☐
ARSENIC	☐	☐	LEAD	☒	☐	EP ARSENIC	☐	EP LEAD	☐
CHROMIUM	☒	☐	MERCURY	☐	☐	EP CHROMIUM	☐	EP MERCURY	☐
CHROM-HEX	☒	☐	SELENIUM	☐	☐	EP CHROM-HEX	☐	EP SELENIUM	☐
____	☐	☐	____	☐	☐	____	☐	____	☐

on the units

SPECIFIC ANALYSES

pH	☐	SULFIDE	☐	% SOLIDS	☐	____	☐
FLASH PT	☐	SP.COND.	☐	TOT. PHENOLS	☐	____	☐
CYANIDE TOT.	☐	TOC	☐	CHLORIDE	☐	____	☐
CYANIDE AM.	☐	TOH	☐	FLUORIDE	☐	____	☐

ORGANIC ANALYSES

PESTICIDE SCREEN (EC)	☐	GC-MS ACID EXTRACTABLES	☒
PCB	☐	GC-MS BASE/NEUTRALS	☒
VOLATILE ORGANICS (VOA)	☐		

SPECIFIC ORGANICS: ____

APPROVED: HB AUTHORIZED: ____

BW/0089F

(5)

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REF. #3

Georgia Department of Natural Resources

205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

Reference 3

TRIP REPORT

October 28, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD051011344
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles GAK Environmental Specialist Site Assessment Unit
ACCOMPANIED:	Charles Evans Environmental Specialist Site Assessment Unit
DATE AND TIME OF INVESTIGATION:	October 28, 1987
OFFICIALS CONTACTED:	Mr. Fang Kuo Plant Engineer Young Refining Corporation 7982 Huey Road Douglasville, GA 30134
REFERENCE:	Trip Report, October 20, 1987 Georgia-EPD State Files

COMMENTS:

A Screening Site Inspection was conducted at Young Refining Corporation, a facility that refines crude into asphaltic cement and other by-products.

Charles Evans and I arrived on-site at 9:00 a.m. and met with Mr. Fang Kou, Plant Engineer, who accompanied us in our sampling endeavors. Our first sample was collected from a well located at the rear of the plant process area. The well was purged for five minutes and water conductivity readings were taken prior to sampling (70 umhos-1x scale). The second well sampled was located in the vicinity of the pond area and the same procedures were carried out prior to sampling (40 umhos - 1x scale). All ground water samples collected will be analyzed for total metals and organics. The pH range for both wells was 6.4 and 6.3 respectively. Since wells on-site are continuously pumped, bubbles were allowed to clear before filling containers. A sludge sample was collected from three different areas of Pond #1 from the bottom layer. Soil surrounding the API Separator was composited. Soil samples were collected from depths of 3-6 inches. All equipment was clean and disposable tyveks, gloves and boots were left in the dumpster on-site with the permission of Mr. Kou. We left the site at 11:45 a.m.

A forested area Northwest of the site was chosen to collect a soil background sample. Soil was collected from four different areas (3-6" in depth) and composited. A private dug well located on Malone Road, 2.0 miles Northwest of the site was sampled for background. The spigot was purged and conductivity readings (40 umhos - 1x sclae, pH 6.1) were taken prior to sampling. There was no one present at the residence and a GA-EPD business card with message was left in the door. All samples were labeled, bagged, placed on ice and transported to GA-EPD laboratory via state vehicle.

CONCLUSIONS:

None can be drawn until samples have been analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

1. Complete well survey.

2. Obtain name, address, and phone number of resident, whose well was sampled.

PHOTOGRAPHS: 10 Polaroids

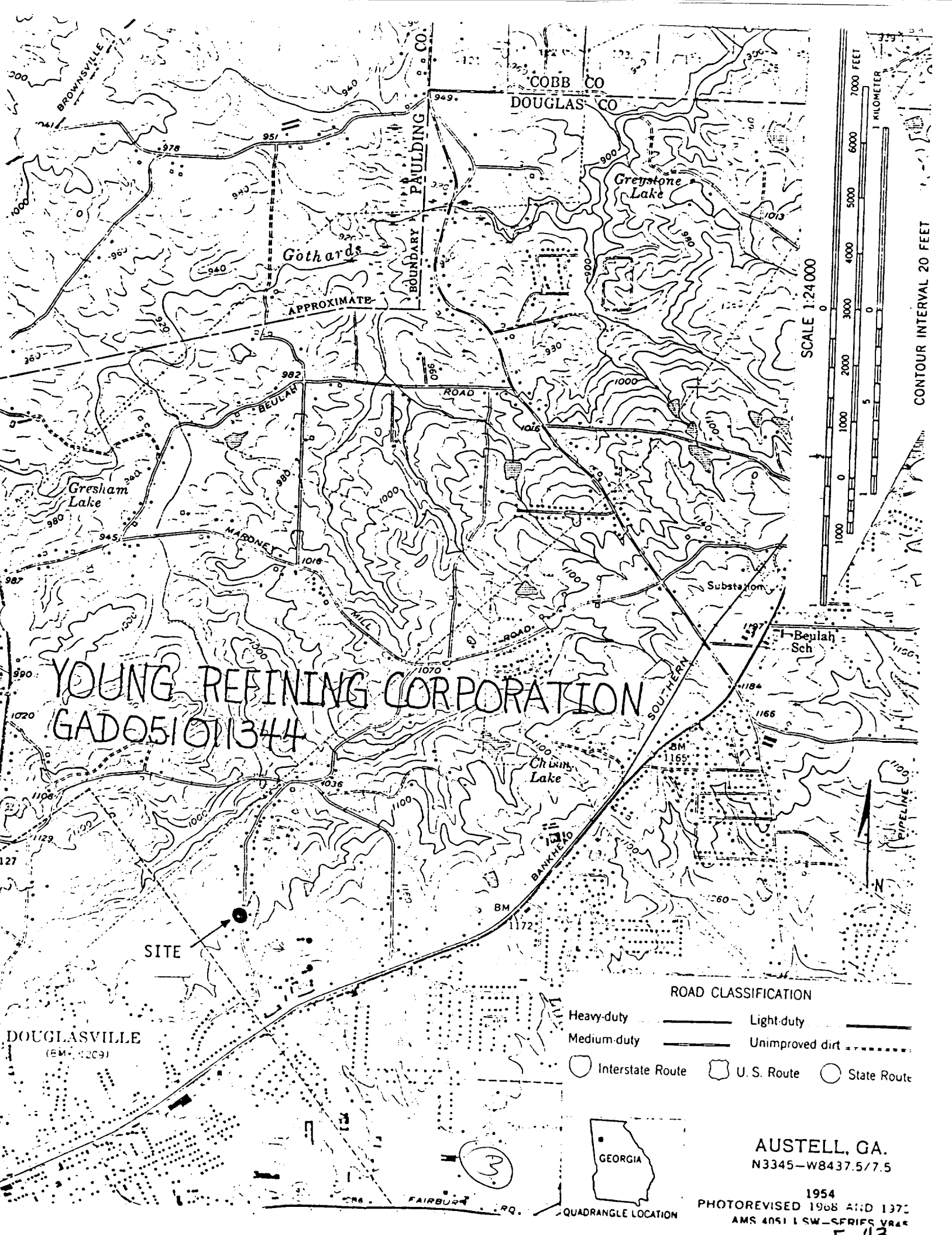
NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: 6 samples (attached).

REVIEWED BY: **DATE:**

ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

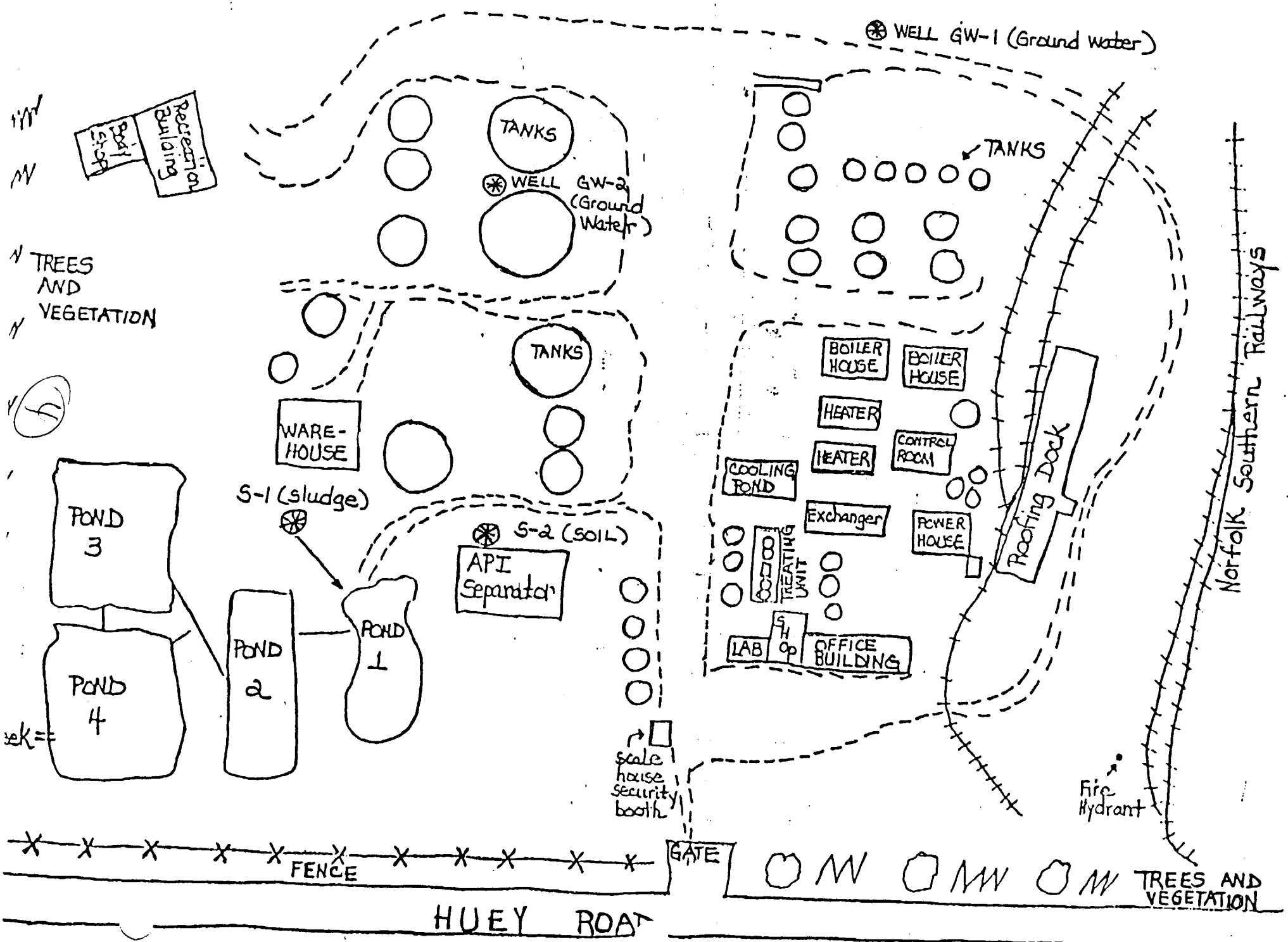
File: Young Refining Corporation (GAD051011344)

GAK:zr005

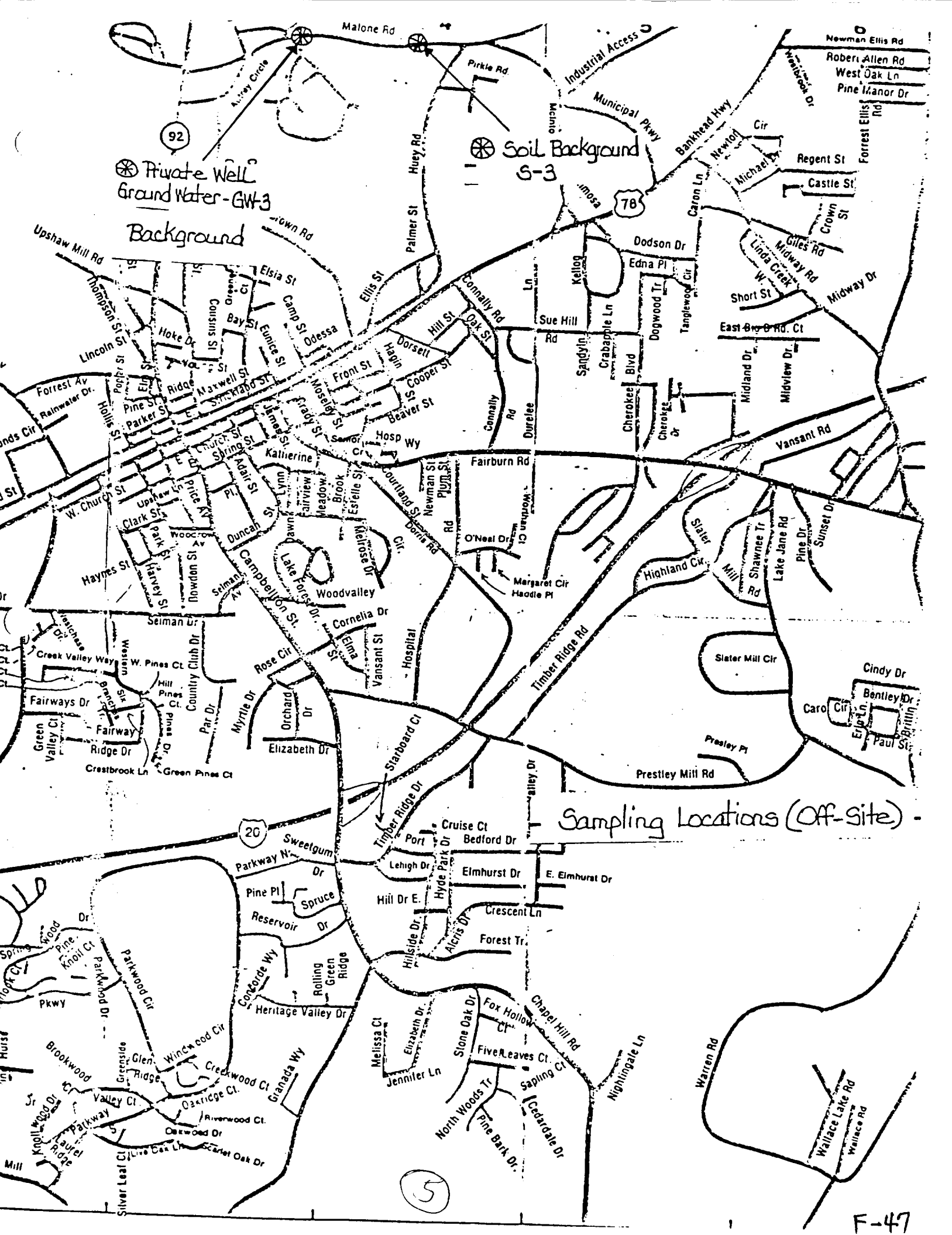


YOUNG REFINING CORPORATION
GAD051011344
COBB CO
DOUGLAS CO
PAULDING CO
BOUNDARY
APPROXIMATE
Gothards
Greystone Lake
Gresham Lake
Chism Lake
BROWNSVILLE
BEULAH ROAD
MARONEY MILL ROAD
BANKHEAD SOUTHERN
Substation
Beulah Sch
PIPELINE
SITE
DOUGLASVILLE
(BM 1209)
FAIRBURN RD
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
7000 FEET
1 KILOMETER
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
Interstate Route
U. S. Route
State Route
GEORGIA
QUADRANGLE LOCATION
AUSTELL, GA.
N3345—W8437.5/7.5
1954
PHOTOREVISED 1968 AND 1972
AMS 4051 I SW—SERIES V845

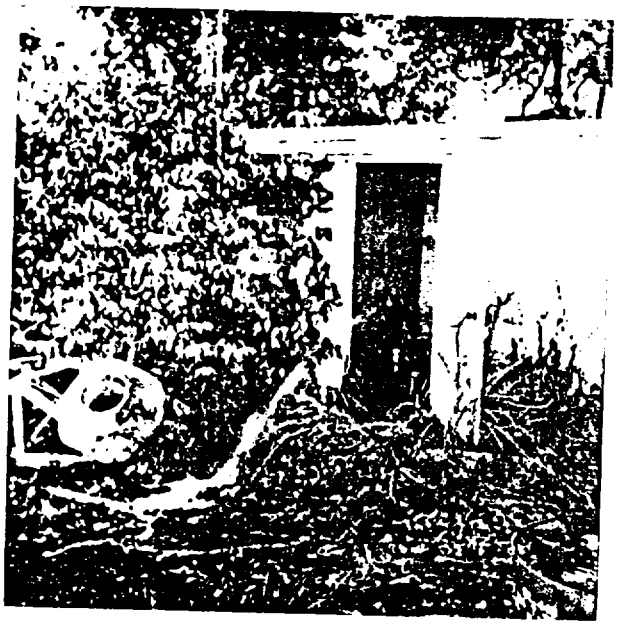
SITE SKETCH



NOT DRAWN TO SCALE



Private Well
Ground Water - GW-3
Background
Soil Background
S-3
Sampling Locations (Off-Site)
Malone Rd
Pirkle Rd
Industrial Access
Municipal Pkwy
Newman Ellis Rd
Robert Allen Rd
West Oak Ln
Pine Manor Dr
Bankhead Hwy
Regent St
Castle St
Forrest Ellis Rd
Huey Rd
Palmer St
Upshaw Mill Rd
Elsia St
Ellis St
Connally Rd
Dodson Dr
Edna Pl
Giles Rd
Midway Rd
Midway Dr
Short St
East Big B Rd. Ct
Sue Hill Rd
Sandyln
Crabapple Ln
Dogwood Tr
Tanglewood Cir
Cherokee Blvd
Cherokee Dr
Midland Dr
Midview Dr
Vansant Rd
Fairburn Rd
Durelee
Hill St
Oak St
Dorsett
Hagin
Front St
Cooper St
Beaver St
Moseley St
Grady St
Maxwell St
Strickland St
Ridge
Pine St
Parker St
Hollis St
Forrest Av
Rainwater Dr
Lincoln St
Hoke Dr
Thompson St
Cousins St
Bay St
Eunice St
Camp St
Odessa
Church St
Spring St
Katherine
Adair St
Price Av
Upshaw Ln
W. Church St
Clark St
Park St
Woodrow Av
Duncan St
Lynn
Fairview
Meadow
Brook
Estelle St
Courtland St
Newman St
Plum St
Dorris Rd
O'Neal Dr
Northan Ct
Margaret Cir
Haddle Pl
Melrose Dr
Campbellton St.
Lake Forest Dr.
Woodvalley
Haynes St
Harvey St
Dowdon St
Selman Av
Selman Dr
Cornelia Dr
Elma St
Vansant St
Hospital
Rose Cir
Myrtle Dr
Orchard Dr
Elizabeth Dr
Starboard Ct
Timber Ridge Dr
Timber Ridge Rd
Highland Cir
Slater Mill Rd
Shawnee Tr
Lake Jane Rd
Pine Dr
Sunset Dr
Slater Mill Cir
Cindy Dr
Bentley Dr
Caro Cir
Paul St
Prestley Pl
Prestley Mill Rd
Creek Valley Way
W. Pines Ct
Hill Pines Ct.
Fairways Dr
Fairway
Ridge Dr
Green Valley Ct
Crestbrook Ln
Green Pines Ct
Country Club Dr
Par Dr
Sweetgum Dr
Parkway N
Pine Pl
Spruce
Reservoir Dr
Cruise Ct
Port
Bedford Dr
Lehigh Dr
Hyde Park Dr
Elmhurst Dr
E. Elmhurst Dr
Hill Dr E.
Crescent Ln
Hillside Dr.
Alcris Dr
Forest Tr.
Concorde Wy
Rolling Green Ridge
Heritage Valley Dr
Parkwood Cir
Parkwood Dr
Pkwy
Brookwood
Glen Ridge
Windwood Cir
Creekwood Ct
Granada Wy
Valley Ct
Oakridge Ct.
Riverwood Ct.
Oakwood Dr
Live Oak Ln
Scarlet Oak Dr
Silver Leaf Ct
Melissa Ct
Elizabeth Dr.
Jennifer Ln
Stone Oak Dr
Fox Hollow Ct
Five Leaves Ct.
Sapling Ct
North Woods Tr
Pine Bark Dr.
Cedardale Dr
Chapel Hill Rd
Nightingale Ln
Warren Rd
Wallace Lake Rd
Wallace Rd
92
78
20
5



E. - 9:28 AM

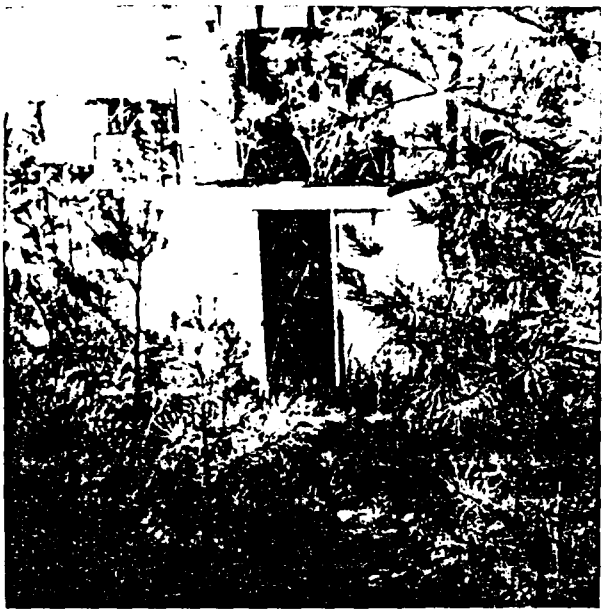
10-28-87

County Name Douglas
Picture No. 1 of 10
Site Name Young Refining Corporation.
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program.
Explanation Well located in rear of plant process area is being purged prior to conductivity readings and sampling.
Other

E. - 9:34 AM

10-28-87

County Name Douglas
Picture No. 2 of 10
Site Name Young Refining Corporation.
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well being sampled. (VOA, total metals). [Sample # GW-1).
Other



N.W.- 10:00AM

10-28-87

County Name Douglas
Picture No. 3 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well is situated in the area of the ponds, near tank # 303.
Other

N.W. - 10:05AM

10-28-87

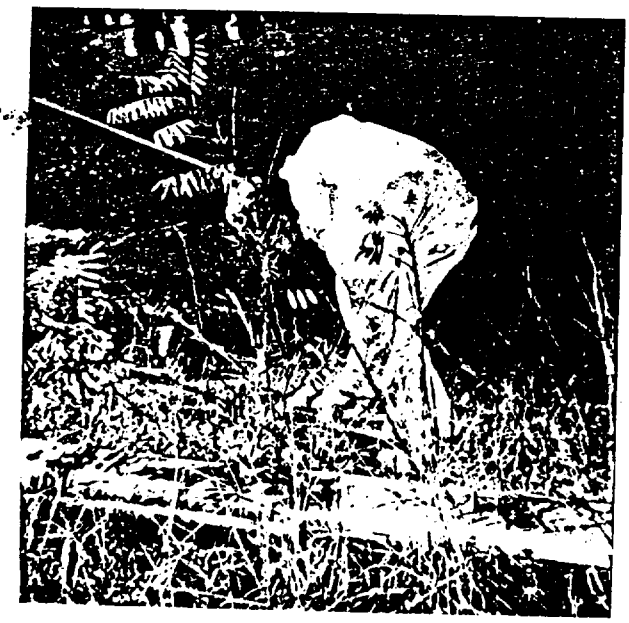
County Name Douglas
Picture No. 4 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Samples being collected for Total Metals, VOA. [Sample # GW-2]
Other

N. -10:19 AM

10-28-87

County Name Douglas
Picture No. 5 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing North
Photographer Charles Evans
Program Site Investigation Program
Explanation Oil-filled drainage ditch observed.

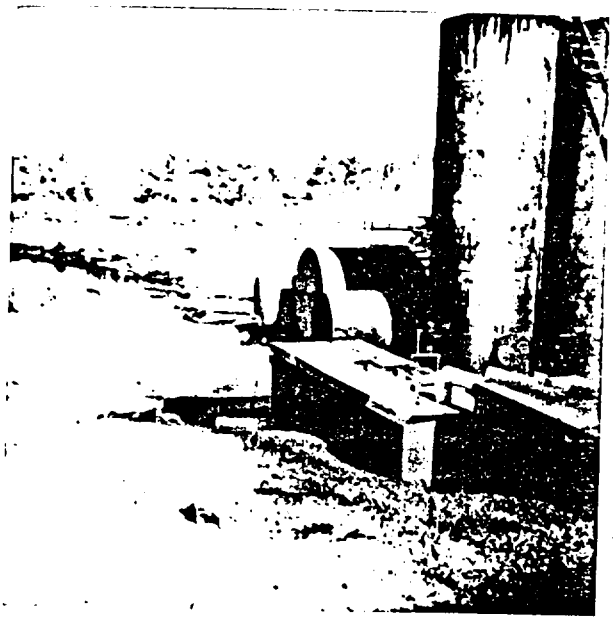
Other



W. -10:40 AM

10-28-87

County Name Douglas
Picture No. 6 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A sludge composite was collected from the bottom layer of Pond #1. Three different
Other areas of Pond #1 were sampled and combined. Mixing of composite sludge sample is shown. [Sample # S-1].



N.E. - 11:25 AM

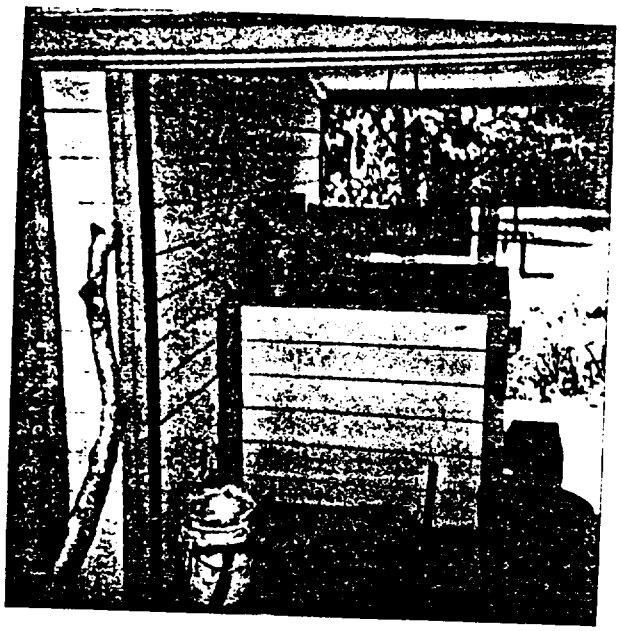
10-28-87

County Name Douglas
Picture No. 7 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # S-2 is a soil composite collected around API Separator. Sample
Other was collected at a depth of 3-6 inches.

NW. - 11:55 AM.

10-28-87

County Name Douglas
Picture No. 8 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A soil composite background sample was collected 2 miles away from site in a
Other forested area (Malone Street) [Sample # S-3]. Sample was collected from 3-6" in depth.



S. - 12:35 PM.
10-28-87

County Name Douglas
Picture No. 9 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Background ground water sample was collected from a dug well 2.0 miles away from facility. Depth unknown at this time.
Other

W. - 12:40 PM
10-28-87

County Name Douglas
Picture No. 10 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # GW-3 (dug well - background) being collected from spicket.
Other

TELEPHONE CONVERSATION DOCUMENTATION RECORD

Date: 19 February 92	Time: 1335

File: Young Refining Corporation
Douglasville, Douglas County, Georgia

Between: Neda Glore (404) 942-5022
Douglas County Chamber of Commerce
~~Customer Serv~~
WEV

And: William E. Vasser (404) 681-0933
Dynamac Corporation
William E. Vasser
2/19/92

Discussion: Ms. Glore informed me that the Young Refining Corporation was still active. The primary product currently produced is asphaltic cement.

Reference 4

REF. # 12

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

Reference 5

TRIP REPORT

October 20, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD05101134
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles GAK Environmental Specialist Site Assessment Unit
ACCOMPANIED BY:	N/A
DATE AND TIME OF INVESTIGATION:	October 20, 1987 8:10 a.m.
OFFICIALS CONTACTED:	Mr. Charles Ellis Plant Manager Young Refining Corporation (404)942-2343 Mr. Fang Kou Plant Engineer Young Refining Corporation (404)942-2343
REFERENCE:	Preliminary Assessment Georgia-EPD State Files Trip Report by Jack Dempsey November 21, 1985

COMMENTS:

The facility refines asphaltic crude that is shipped by railroad car from Mississippi. The corporation's crude terminal is located in Lumberton, Mississippi and crude is purchased from Texaco and Chevron Oil Companies off the pipeline. The facility manufactures jet fuel for the government, heavy #5 oil (atmospheric gas oil), #2 fuel (diesel oil), certified state asphalt, oxidized asphalt (shingle, saturate, coat covering) and four (4) types of roofing asphalt. All products are transported by truck in bulk or packaged products. The various processes that the crude is taken through are heating, distillation, fractionating, oxidation and shipping. The wastes that are generated are solid wastes (collected on-site in dumpsters serviced by the City of Douglasville); wastewater (passes through API separator and is discharged to a series of 4

F-14

ponds-NPDES permitted) and sludges (API Separator, Desalter, Heat Exchanger). Mr. Ellis stated that he was not sure of the sludge disposal company that Young Refining Corporation utilizes.

Treatment ponds (4) have never been lined, but on occasion ponds #2, 3 and 4 are cleaned. Mr. Ellis stated that pond #3 is continuously aerated; however, during my tour of the facility aerating equipment at pond #3 was not in operation.

Questions were asked of Mr. Ellis and he stated the following:

1. wastes are not treated or disposed of on-site; only water is treated,

2. the property is 30-40 acres in size,

3. the flocculator is no longer used between ponds # 1 and 2,

4. the facility is supplied city water for drinking and boiler feed water that is used for steam generation,

5. there are 5 operable wells on-site, that are 300 ft. in depth and their water is used for the cooling pond and utility purposes,

6. these wells are sampled daily for treatment purposes and Deerborne Chemical Company of Atlanta treats the well water,

7. there is no dilution of wastes,

8. water was treated for phenols, but none were found and,

9. the facility does not handle lead petroleum, only virgin crude is refined.

During my tour of the facility with Mr. Fang Kou, Plant Engineer, I observed the following:

1. process areas were messy,

2. soil type seemed to be of a sandy, clay consistency,

3. facility is fenced and entrance gate is kept locked when not in operation,

4. two other companies are located within the facility's complex and they are Central Oil & Asphalt Corporation and Elk Roofing Company,

5. Arivec Chemicals Inc. is also located in the area, but is totally surrounded by a fence,

6. sampling areas,

7. slopes varied from 8-40% in various areas of the site and

8. pond #4 discharges water to a small creek (tributary on-site).

Mr. Kou reviewed the facility's processes with me on a flow chart in his laboratory and supplied a sketch of the facility. I left the site at 10:30 a.m.

I visited the Water Department and spoke with Mr. Winfred Pirkle, Water Superintendent, who supplied me with information on boundaries of water lines and possible areas to check for wells. Ownership and property maps were obtained from the county tax assessors office. A well survey was conducted within one mile of the facility and 2 shallow wells were observed, but residents are believed to be on city water. Deep wells were observed in 2 and 3 mile radius of the site, but were not counted. Roads that need to be checked for an extended well survey on the next site visit are Dallas, Malone, Brown Street and Simon. The water line boundaries are Brownville Road to the North, Bankhead Hwy. and South & North Flat Rock Roads to the West, Gurley Road to the Southwest, Chapel Hill Road to the South and Mount Vernon Road to the East.

CONCLUSIONS:

None can be drawn until samples are collected and analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

On-site sampling should be conducted, off-site sampling and an extended well survey should be completed.

PHOTOGRAPHS: 15 polaroids

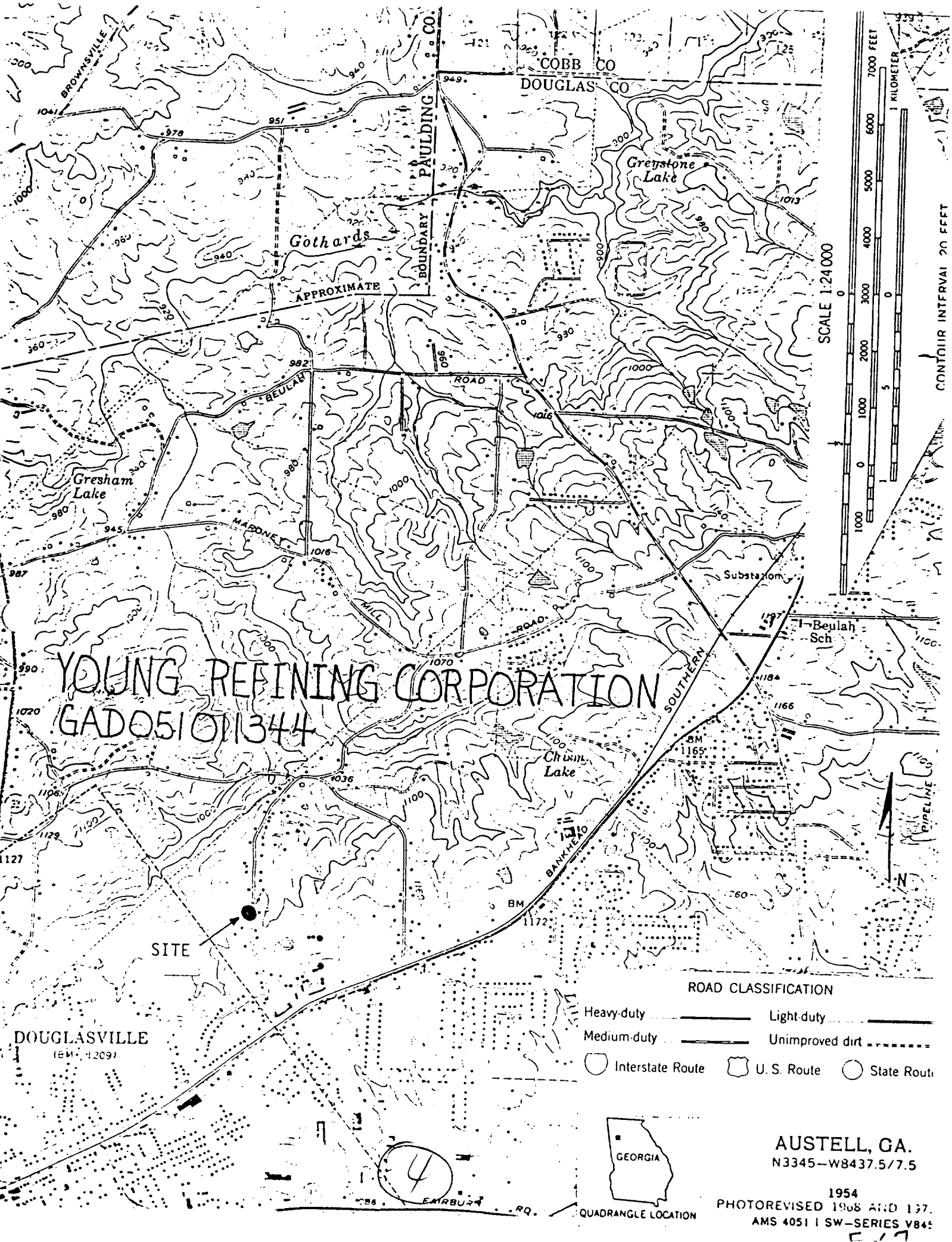
NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: None (reconnaissance visit)

REVIEWED BY: **DATE:**

ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

GAK:zcr001

File: Young Refining Corporation


YOUNG REFINING CORPORATION
GAD051011344
COBB CO
DOUGLAS CO
PAULDING CO
BOUNDARY
APPROXIMATE
Gothards
Greystone Lake
Gresham Lake
Chism Lake
BROWNSVILLE
BEULAH
ROAD
MADDNEY
MILL
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Substation
Beulah Sch
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BANKHEAD
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DOUGLASVILLE
(BM 1209)
FAIRBURN RD.
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
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State Route
GEORGIA
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AUSTELL, GA.
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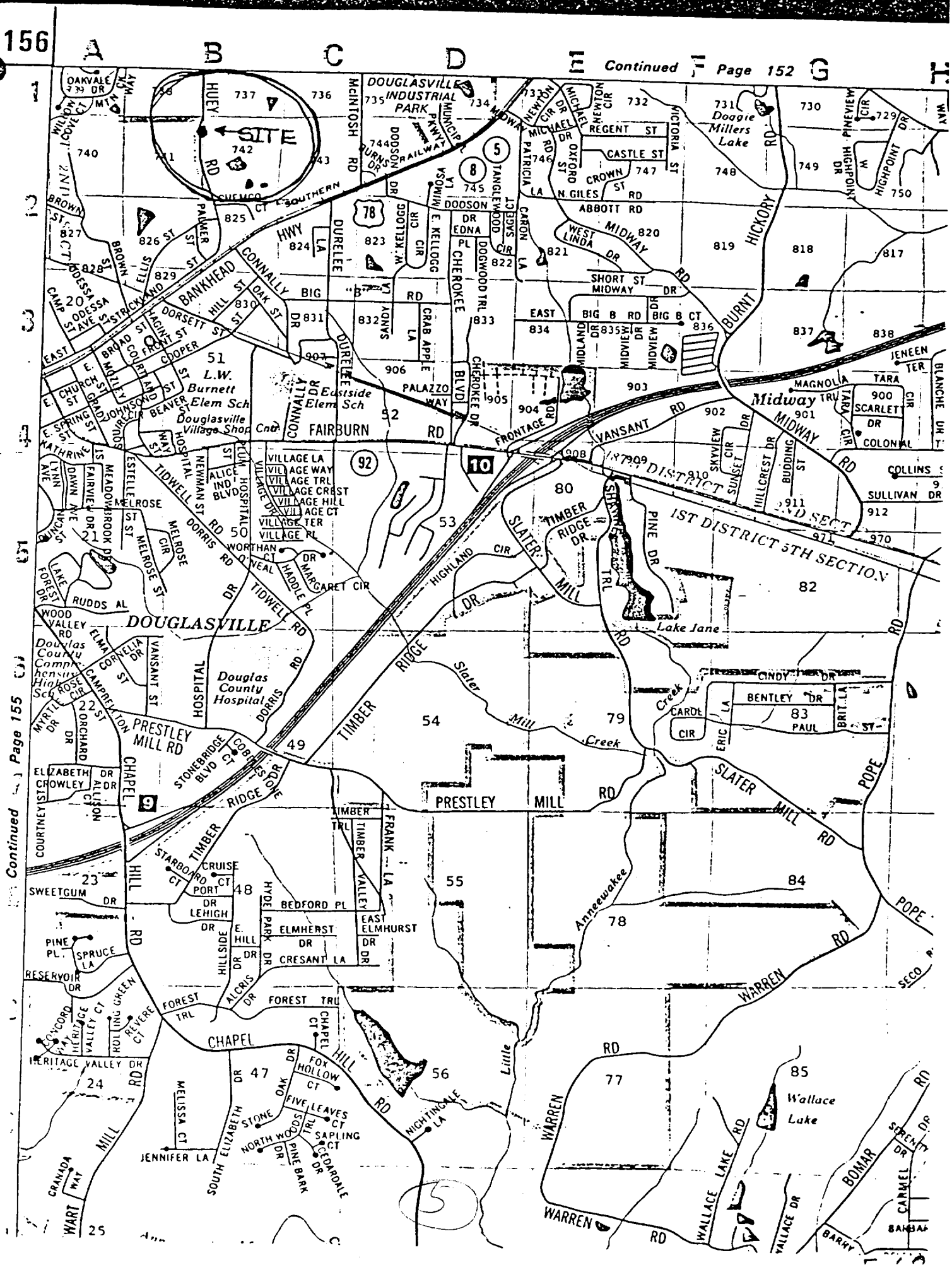
Continued Page 152
Continued Page 155
SITE
DOUGLASVILLE INDUSTRIAL PARK
Doggie Millers Lake
L.W. Burnett Elem Sch
Douglasville Village Shop Cntr
Eastside Elem Sch
Douglas County Hospital
Douglas County Comprehensive High Sch
DOUGLASVILLE
Midway
Lake Jane
Wallace Lake
1ST DISTRICT 5TH SECTION
1ST DISTRICT 2ND SECT
HUEY RD
McINTOSH RD
DURELEE
BANKHEAD HWY
CONNALLY DR
BIG B RD
FAIRBURN RD
TIDWELL RD
DORRIS RD
HOSPITAL
PRESTLEY MILL RD
CHAPEL HILL RD
TIMBER RIDGE DR
SLATER MILL RD
POPE RD
WARREN RD
BURNT HICKORY RD
MIDWAY RD
VANSANT RD
FRONTAGE RD
CHEROKEE BLVD
Slater Mill Creek
Little Anneewakee Creek
WALLACE LAKE RD
BOMAR RD
WART MILL RD
SOUTH ELIZABETH DR
HERITAGE VALLEY DR
FOREST TRL
HIGHLAND CIR
PINE DR
SHAWNEE TRL
MAGNOLIA TRL
SCARLET DR
COLONIAL
COLLINS
SULLIVAN DR
JENEEN TER
BLANCHE DR
CINDY DR
BENTLEY DR
PAUL ST
ERIC LA
CAROL CIR
BRIT LA
SWEETGUM DR
PINE PL
SPRUCE LA
RESERVOIR DR
CONCORD WAY
HERITAGE VALLEY CT
ROLLING GREEN
REVERE CT
MELISSA CT
JENNIFER LA
GRANADA WAY
NIGHTINGALE LA
FOX HOLLOW CT
FIVE LEAVES CT
SAPLING CT
CEDARDALE DR
PINE BARK DR
NORTH WOODS TRL
STONE
OAK DR
ALCRIS DR
HILLSIDE DR
HYDE PARK DR
BEDFORD PL
ELMHERST DR
CRESANT LA
EAST ELMHURST DR
TIMBER VALLEY
FRANK LA
STONEBRIDGE BLVD
COBBLESTONE DR
STARBOARD CT
CRUISE CT
PORT DR
LEHIGH DR
ELIZABETH DR
CROWLEY DR
ALLISON CT
COURTNEY ST
MYRTLE ROSE CIR
CAMPBELLTON ST
ORCHARD DR
ELMA ST
CORNELIA DR
VANSANT ST
WOOD VALLEY RD
RUDDS AL
LAKE FOREST DR
MELROSE CIR
MELROSE ST
ESTELLE ST
MEADOWBROOK DR
FAIRVIEW DR
DAWN AVE
LYNN AVE
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CRAB APPLE LA
W. KELLOGG CIR
E. KELLOGG CIR
DODSON DR
EDNA PL
DOGWOOD TRL
TANGLEWOOD CIR
SAGE CT
CARON LA
PATRICIA LA
MICHAEL DR
NEWTON CIR
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CASTLE ST
CROWN ST
N. GILES RD
ABBOTT RD
WEST LINDA DR
SHORT ST
MIDWAY DR
EAST BIG B RD
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VILLAGE LA
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O'NEAL DR
HADDLE PL
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NEWMAN ST
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HILLCREST DR
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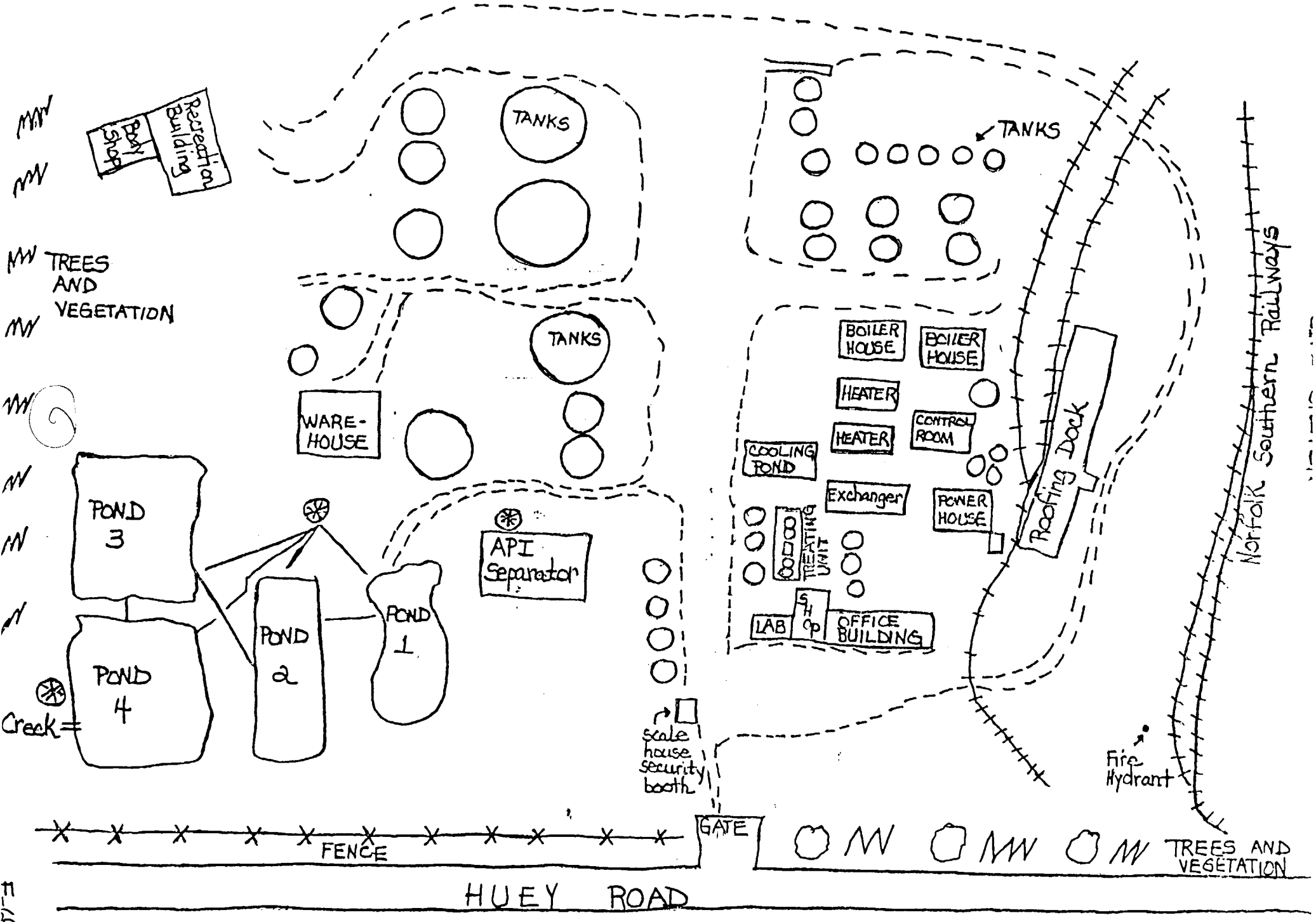

Recreation Building
Body Shop
TREES AND VEGETATION
TANKS
TANKS
TANKS
WARE-HOUSE
POND 3
POND 4
POND 2
POND 1
Creek
API Separator
BOILER HOUSE
BOILER HOUSE
HEATER
HEATER
CONTROL ROOM
COOLING POND
Exchanger
POWER HOUSE
TREATING UNIT
LAB
SH OP
OFFICE BUILDING
Roofing Dock
Norfolk Southern Railways
scale house security booth
GATE
FENCE
Fire Hydrant
TREES AND VEGETATION
HUEY ROAD
NOT DRAWN TO SCALE
Proposed Sampling Locations

N. - 8:10 AM

10-20-87

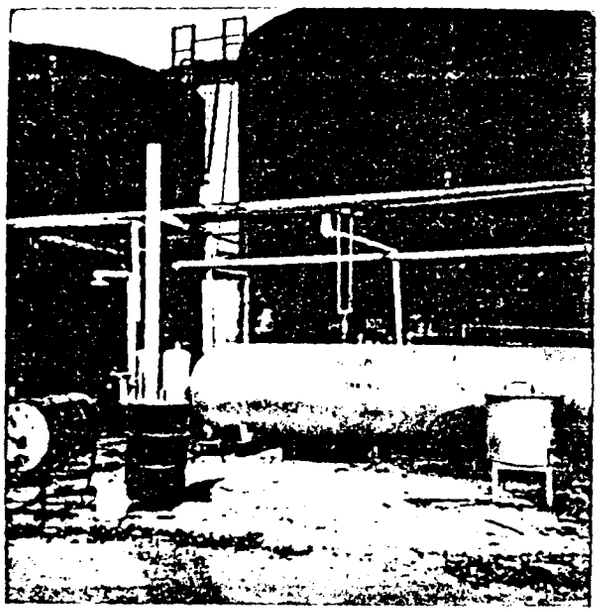
SITE NAME Young Refining Corporation
Picture No. 1 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance of facility off Huey Road. Front entrance; trees and heavy vegetation.
Other

N. 8:30 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 2 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance gate of facility. Security personnel present in security booth.
Other

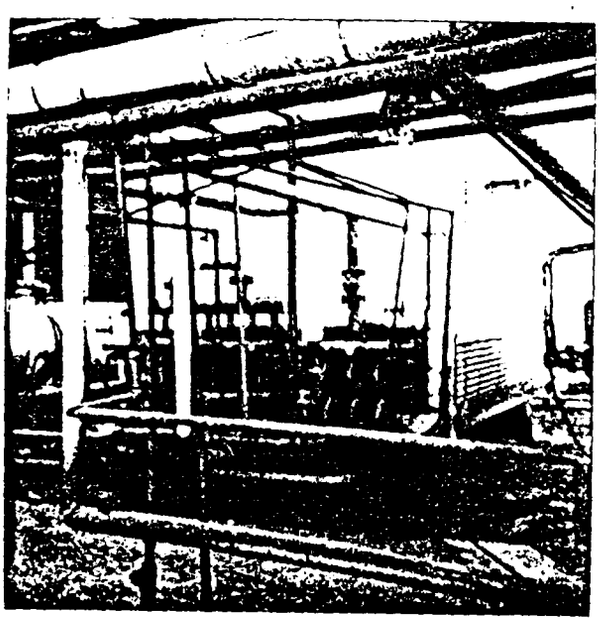
7



N. - 8:35 AM

10-20-87

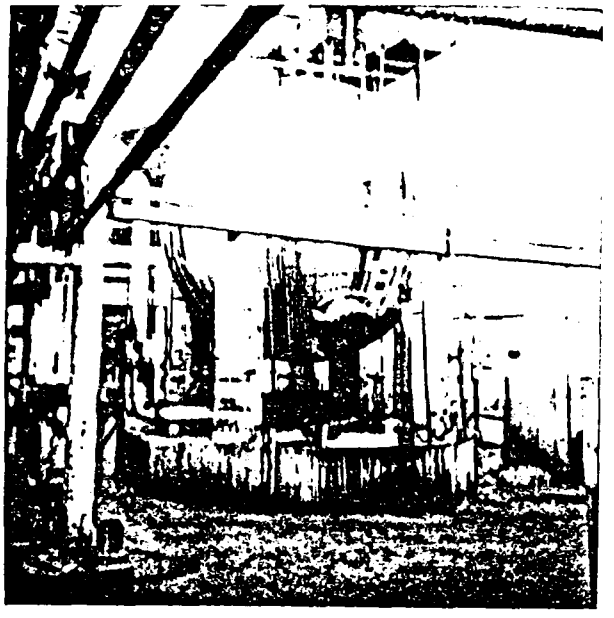
SITE NAME Young Refining Corporatic
Picture No. 3 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Holding tanks for crude transported in by railroad car. One (1) tank is able
Other to accomodate 4 railroad cars of crude.



N. 8:40 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 4 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Crude is heated through several steps with heat exchanger.
Other



W. - 8:45 AM

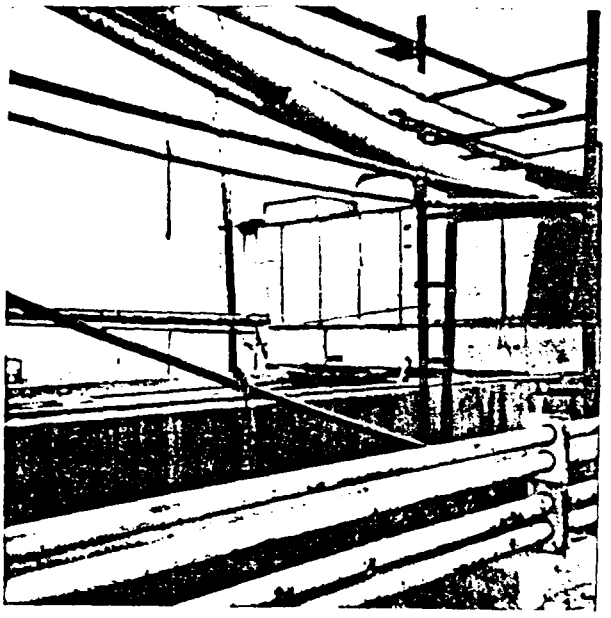
10-20-87

SITE NAME Young Refining Corporation
Picture No. 5 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Crude is eliminated of various salts by the desalter equipment
Other

N.
8:47
A.M.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 6 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Bubble Tower - Crude enters tower where light oils are vaporized out of crude and
Other asphalt goes out the bottom.



W.- 8:48 AM

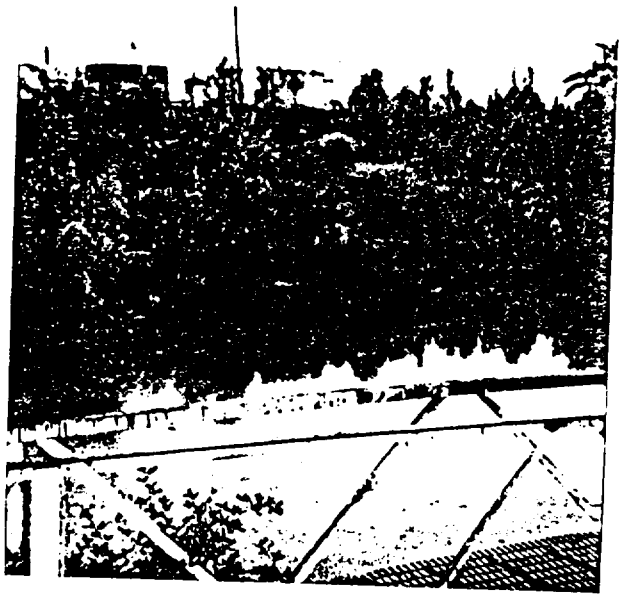
10-20-87

SITE NAME Young Refining Corporation
Picture No. 7 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation All wastewater is recycled and cooled down in this cooling pond.
Other

N.E.- 8:50 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 8 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing Northeast
Photographer G. A. Knowles
Program Site Investigation Program
Explanation API Separator - This piece of equipment further separates oil from water. The water from this process flows into the primary catching pond #1.
Other

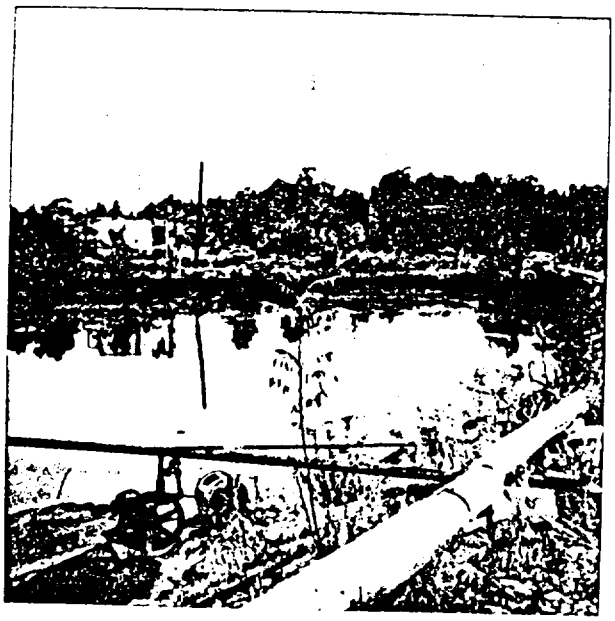


S.-8:55 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 9 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 6°C
Direction Facing South
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #1

Other



N.E.-9:05 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 10 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-6°C
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #1 - Oil is skimmed off the top of the water into a thorgh that leads
Other back through the crude tanks for reprocessing.

F-7

W.- 9:15 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 11 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #2 with separator for skimming
Other

E.- 9:25 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 12 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #3 with aerating equipment. Aerator was inoperative at the time of inspection.
Other

N.E. 9:35 AM

10-20-87

SITE NAME Young Refining Corporation.
Picture No. 13 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #4, drainage conduit for this pond is discharge to a small creek on-site.
Other

N.E. - 9:45 AM

10-20-87

SITE NAME Young Refining Corporation.
Picture No. 14 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Discharge of water from conduit, to small creek (conduit extends from Pond #4)
Other

E.-10:15 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 15 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy-69° F.

Direction Facing East

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Asphalt Roofing Area: Cardboard cartons with tin bottoms are filled with hot asphalt and allowed to cool.

Other

SITE NAME

Picture No. of

County Name

Date Weather

Direction Facing

Photographer

Program

Explanation

Other

(13)

PHYSIOGRAPHIC MAP OF GEORGIA

by

William Z. Clark, Jr. and Arnold C. Zisa

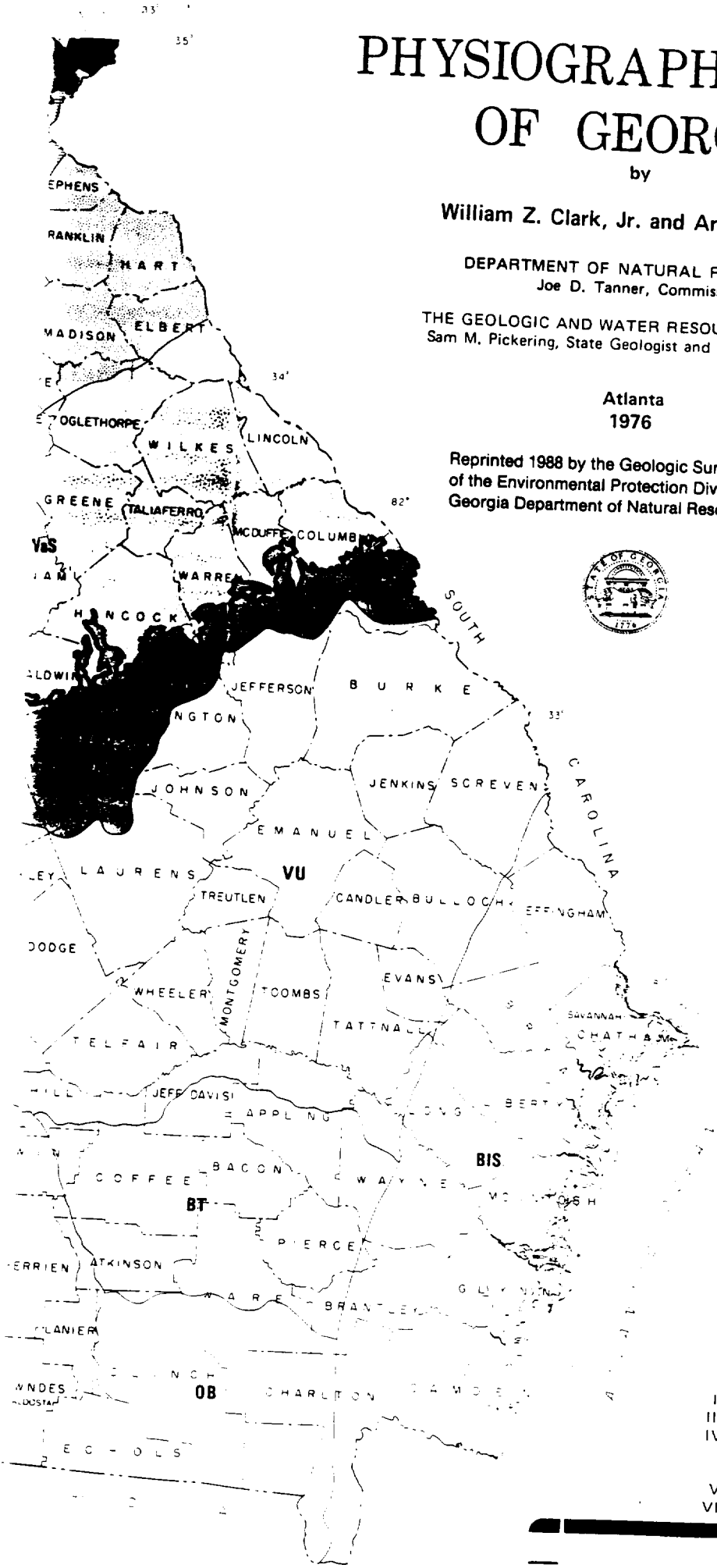
DEPARTMENT OF NATURAL RESOURCES
Joe D. Tanner, Commissioner

THE GEOLOGIC AND WATER RESOURCES DIVISION
Sam M. Pickering, State Geologist and Division Director

Atlanta
1976

Reprinted 1988 by the Geologic Survey Branch
of the Environmental Protection Division of the
Georgia Department of Natural Resources

Reference 6



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William Z. Clark, Jr.

DEPARTMENT OF NA
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Sam M. Pickering, State Geol

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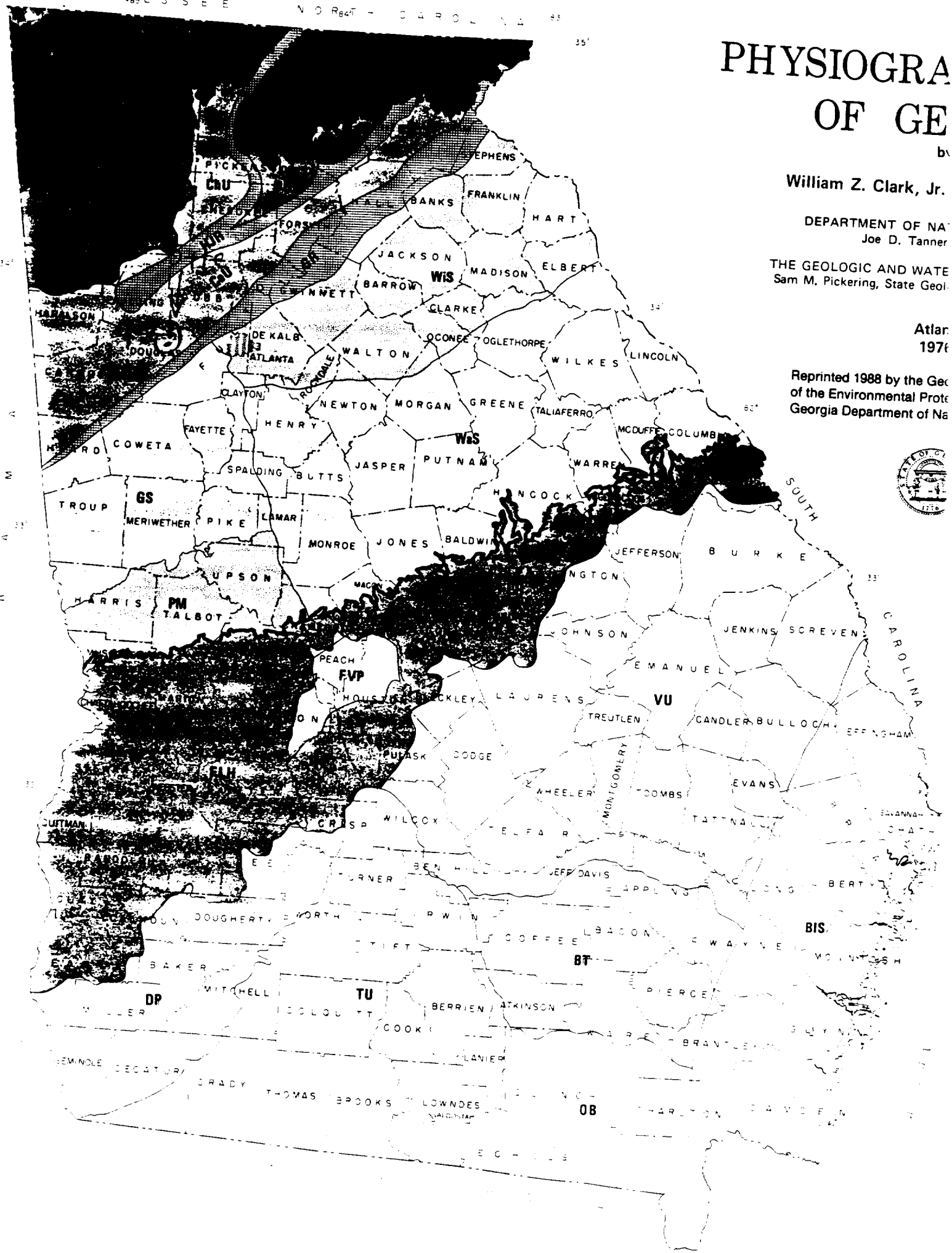

APPALACHIAN HIGHLANDS MAJOR DIVISION

APPALACHIAN PLATEAU PROVINCE

Cumberland Plateau Section

Lookout Mountain District - The Lookout Mountain District is composed of two nearly flat-topped mountains, Lookout-Pigeon and Sand Mountains, separated by Lookout Valley which is a breached anticline. The mountains are capped by Rockcastle Sandstone of Pennsylvanian age, and the valley is underlain by Chickamauga Limestone of Ordovician age. The upland slopes gently to the southwest from a maximum elevation of 2200 feet near Durham to an elevation of 2000 feet near the Alabama-Georgia border. The northwestern margin of Lookout Mountain and the southeastern margin of Sand Mountain are marked by a continuous escarpment that drops abruptly 1000-1200 feet to Lookout Valley. Elevations in Lookout Valley vary from 800-1000 feet. The escarpment on the southeastern side of Lookout-Piegon Mountain, the district and province boundary, drops abruptly 800-1000 feet to the Chickamauga Valley District. These escarpments are breached by numerous small streams which have their source on top of the upland and reach the valleys through deep notches in the cliffs.

RIDGE AND VALLEY PROVINCE

Southern Valley and Ridge Section

Chickamauga Valley District - The Chickamauga Valley District is characterized by a series of gently rolling, discontinuous, northeast-trending valleys interrupted by low, linear, parallel ridges. The valley floors are predominantly limestone and dolomite of Cambro-Ordovician age while the ridges are capped by the more resistant cherty units of the Knox Group, also of Cambro-Ordovician age. The ridge tops are approximately 1000 feet in elevation and stand 200-300 feet above the intervening valleys. Rectangular drainage patterns in this district are indicative of structural control.

Armuchee Ridges District -A series of prominent, narrow, chevron-shaped ridges dominate the Armuchee Ridges District. These ridges rise abruptly 600-700 feet above the Chickamauga Valley District to the northwest and the Great Valley District to the south and east. The southern and eastern boundary closely parallels the Rome Fault. These ridges, capped predominantly by the Red Mountain sandstone of Silurian age, stand at elevations of 1400-1600 feet. Intervening valley floors are generally underlain by shales and limestones of Mississippian and Cambro-Ordovician age, respectively.

The Great Valley District - The Great Valley District is typically broad and open with a few scattered ridges and hills. Elevations throughout the area range from 700-800 feet above sea level with relief of 50 to 100 feet. The floor of the valley is underlain by shales, dolomites and limestones of Cambrian and Ordovician age. The eastern boundary of the Great Valley follows the escarpment of the Great Smoky-Cartersville Fault.

BLUE RIDGE PROVINCE

Southern Blue Ridge Section

Cohutta Mountains District - An irregular mass of rugged mountains ranging in elevation from 3000-4000 feet is characteristic of the Cohutta Mountains District. Erosion of metamorphosed sediments of the Ocoee series by the headwater tributaries of southwestward and northward flowing streams has produced valleys 1000-1500 feet below the mountain crests. The southern boundary of this district slopes steeply to the lower elevations of the Cherokee Uplands District. In Georgia the Cohutta Mountains are separated from the main body of the Blue Ridge by the McCaysville Basin and the Jasper Ridges.

McCaysville Basin District - Mountains almost completely enclose the McCaysville Basin District and rise from the 2000 foot elevation at the edge of the basin to heights of 4000-4500 feet above sea level. This topographic basin is bisected by the northeast-trending Jasper Ridges; however, the topography on both sides of these ridges is remarkably similar. The gently rolling topography, produced by erosion of the Great Smoky Group, varies in elevation from 1600 to 1800 feet. Relief throughout the Basin varies from 200-300 feet except along the northwest-flowing stream valleys and near the Jasper Ridges where it ranges from 300-500 feet.

Blue Ridge Mountains District - A mass of rugged mountains and ridges ranging in elevation from 3500-4700 feet in the north and east to 3000-3500 feet in the southwest is the dominant topographic feature of the Blue Ridge Mountains District. Differing rates of erosion upon the Great Smoky Group by the headwater tributary streams, that eventually drain to either the Atlantic Ocean or the Gulf of Mexico, have produced valleys that are 1500-2000 feet below the adjacent summits. The southern boundary of the Blue Ridge abuts the Piedmont Province at approximately the 1700 foot elevation where a sharp change in regional slope occurs.

PIEDMONT PROVINCE

Southern Piedmont Section

Upland Georgia Subsection

Cherokee Upland District - The northern portion of the Cherokee Upland District is a rough, hilly surface with elevations ranging from 1300-1500 feet. Except for a few isolated mountains, elevations gradually decrease to 1000 feet in the southern part. The westward-flowing streams in the northern area occupy deep, narrow valleys 300-600 feet below the surrounding surface, while the southwestward flowing streams in the southern portion have wider, more open valleys 200-300 feet below the adjacent ridges. The eastern and southern boundaries are formed by the low, linear, parallel ridges of the Hightower-Jasper Ridges District.

Dahlonega Upland District - The rough and hilly northeastern part of the Dahlonega Upland District stands 1500-1700 feet above sea level. Streams in this area flow south out of the Blue Ridge Mountains District, and have cut deep, narrow valleys 500-600 feet below the surrounding surface. In the southern and southwestern portions, surface elevations decrease to 1200 feet. Stream valleys are wider, more open, and only 200-300 feet below the adjacent surface. The southern and western boundaries are formed by the low linear, parallel ridges of the Hightower-Jasper Ridges District.

Hightower-Jasper Ridges District - Although the Hightower Ridges and Jasper Ridges have different structural and lithologic histories, they are topographically so similar that they may be discussed together. The Hightower-Jasper Ridges District consists of a series of low, linear, parallel ridges separated by narrow valleys. The Hightower Ridges range in elevation from 1500 feet in the northeast to 1000 feet in the southwest. Relief in this area varies from 500 feet in the northeast to 200 feet in the southwest. The Jasper Ridges bisect the McCaysville Basin District and continue southward as a low area between the Cohutta and Blue Ridge Mountains. These ridges range in elevation from 2400 feet in the north to 1200 feet near Canton where they join the Hightower Ridges. Relief varies from 800 feet in the north to 200 feet near Lake Allatoona. Some structural control of streams in the district is exhibited by the modified rectangular drainage patterns. The southern and western boundaries are located where there is a decrease in the density of the linear ridges.

Central Uplands District - The northeastern and central portions of the Central Upland District are a series of low, linear ridges, 1300-1500 feet above sea level, and separated by broad, open valleys. Streams flowing through this section are generally transverse to the structure and occupy valleys 150-200 feet below the ridge crests. In the southwestern part, elevations decrease to 1100 feet, and the linearity of the topography is not so apparent. Stream valleys in the southwestern portion are not as open as those to the northeast. They exhibit a rectangular drainage pattern and lie only 100-150 feet below the surrounding area. The southern boundary of this district is the ridge crest that marks the beginning of the Gainesville Ridges District.

Gainesville Ridges District - A series of northeast-trending, low, linear, parallel ridges separated by narrow valleys characterizes the Gainesville Ridges District. The ridges are composed of quartzite and gneiss, while the valleys are underlain by phyllonite and schist. These ridges vary in elevation from 1500-1600 feet in the northeast and decrease gradually to 700 feet in the southwest. Relief varies from 100-200 feet in the northeast to 70-100 feet in the southwest. The courses of the Chattahoochee River and its tributaries are strongly controlled by the ridges in this district and exhibit a good example of rectangular drainage. The southern boundary follows a ridge that is continuous throughout most of its extent, decreasing in elevation from 1100 feet in the northeast to 700 feet in the southwest. This ridge crest is the drainage divide between southwest flowing streams and those streams draining to the south.

Midland Georgia Subsection

Winder Slope District - The gently rolling topography of the Winder Slope District slopes gradually from an elevation of 1000 feet in the north to 700 feet at the southern edge. This district is dissected by the headwater tributaries of the major streams draining to the Atlantic Ocean. Numerous dome-shaped, granitic mountains are located on the interfluves in the southern and western portion of this district. The stream valleys which are fairly deep and narrow, lie 100-200 feet below the narrow, rounded stream divides. The western boundary follows the drainage divide that separates streams draining to the Atlantic Ocean from those draining to the Gulf of Mexico. The southern boundary approximates the 700 foot elevation where a sharp break in regional slope occurs.

WaS

Washington Slope District - The Washington Slope District is characterized by a gently undulating surface which descends gradually from about the 700 foot elevation at its northern margin to about the 500 foot elevation at its southern edge. Streams occupy broad, shallow valleys with long, gentle side slopes separated by broad, rounded divides. Relief throughout this district is 50-100 feet except in the vicinity of the Ocmulgee River, which flows in a steep-walled valley 150-200 feet below the adjacent area. The western boundary corresponds to the drainage divide between the Atlantic Ocean and the Gulf of Mexico. The southern boundary, known as the Fall Line, follows the contact between the metamorphic rocks of the Piedmont and the sediments of the Coastal Plain.

GS

Greenville Slope District - The Greenville Slope District is characterized by rolling topography that decreases gradually in elevation from 1000 feet in the northeast to 600 feet in the southwest. All streams in this district eventually drain to the Gulf of Mexico. However, those flowing to the southwest occupy shallow, open valleys with broad, rounded divides while those flowing to the southeast occupy narrower, deeper valleys with narrow, rounded divides. Relief varies from 150-200 feet in the east to 100-150 feet in the west. The southern boundary follows the base of the northern side of Pine Mountain, which rises abruptly 250-400 feet above the adjacent surface.

PM

Pine Mountain District - The portion of this district known as Pine-Oak Mountain has a lenticular form extending from the Alabama border to near Barnesville. Quartzite caps Pine-Oak Mountain and the adjacent ridges. These ridges rise abruptly from the Greenville Slope District to elevations of 1200-1300 feet. In the eastern part of Pine Mountain, the Flint River has cut a deep, narrow gorge some 300-400 feet below the summit. South of the Pine-Oak Mountain portion of this district, the surface slopes gently from 800 feet elevation to approximately 500 feet at its southern edge. Relief in this portion generally varies from 50-150 feet. The southern boundary, known as the Fall Line, follows the contact between the metamorphic rocks of the Piedmont and the sediments of the Coastal Plain.

ATLANTIC PLAIN MAJOR DIVISION

COASTAL PLAIN PROVINCE

Sea Island and East Gulf Coastal Plain Section

Fall Line Hills District - The Fall Line is the northern boundary of this district as well as the boundary between the Atlantic Plain and the Appalachian Highlands Major Divisions. Geologically, it is the contact between the Cretaceous and younger sediments of the Coastal Plain and the older, crystalline rocks of the Piedmont. Several stream characteristics change as they flow south through this area: rapids and shoals are common near the geologic contact, floodplains are considerably wider on the younger sediments, and the frequency of stream meanders increases.

The southern boundary of the Fall Line Hills District approximates the 250 foot elevation and separates this district from the Dougherty Plain. Eastward, the southern boundary follows the northern extremity of the Pelham Escarpment separating the Fall Line Hills from the Tifton Upland. The southern boundary then closely follows the northernmost occurrence of the undifferentiated Neogene geologic unit which underlies the Vidalia Upland.

The Fall Line Hills District is highly dissected with little level land except the marshy floodplains and their better drained, narrow stream terraces. Stream valleys lie 50 to 250 feet below the adjacent ridge tops. Stream dissection seems to be greatest in the East Gulf portion of this district. Relief gradually diminishes to the south and east. Maximum elevations are approximately 760 feet between Columbus and Macon and gradually diminish to a minimum elevation of 150 feet south of Augusta.

FVP

Fort Valley Plateau District - An anomalous area within the Fall Line Hills is known as the Fort Valley Plateau. It is characterized by flat-topped interfluves with narrow, 50-150 feet deep, steep-walled valleys. This area is distinct from the Fall Line Hills in that the broad, flat-topped interfluves are the dominant feature, there are fewer streams, and there is less local relief. The area is less dissected than the Fall Line Hills because it is underlain by the more clayey units of undifferentiated Eocene, Paleocene and possibly Cretaceous age sediments. Elevations range from 550 feet in the north to 250 feet in the southeast, indicating a southeast regional dip. The east and west boundaries are the Ocmulgee and Flint River Valleys, respectively. The southern boundary is formed by Hogcrawl and Big Indian Creeks. The northern boundary occurs at approximately the 500 foot elevation where the narrow, steep interfluves of the Fall Line Hills abruptly change to the lower, flat-topped interfluves of the Fort Valley Plateau.

East Gulf Coastal Plain Section

DP

Dougherty Plain District - The Dougherty Plain is a northeast-trending, wedge-shaped, level to gently rolling lowland that pinches out where the Fall Line Hills and the Tifton Upland meet. The northwestern boundary is gradational from the Fall Line Hills and occurs where the slopes become more gentle and the relief is low; the 250 foot elevation approximates this boundary. The southeastern boundary is the base of the Pelham Escarpment which separates this district from the Tifton Upland. The region slopes southwestward with maximum elevations of 300 feet in the northeast to a minimum elevation of 77 feet at Lake Seminole. The flat to very gently rolling topography is interrupted by numerous sinkholes. Karst topography prevails in this district, and many sinkholes, still actively forming, are the sites of numerous ponds and marshes. The karst topography is formed on the underlying Ocala and Suwannee Limestones of Eocene and Oligocene age, respectively.

TU

Tifton Upland District - A well developed, extended, dendritic drainage pattern is formed on the undifferentiated Neogene sediments in the Tifton Upland District. Characteristically, the interfluves are narrow and rounded, rising 50 to 200 feet above the narrow valley floors. Elevations range from 480 feet in the north to 150 feet in the southeast indicating the regional slope. The northwestern and northern boundary is the base of the Pelham Escarpment which rises as much as 200 feet above the Dougherty Plain. The eastern boundary follows the eastern drainage divide of the Alapaha River.

Sea Island Section

VU

Vidalia Upland District - The Vidalia Upland District is a moderately dissected area with a well developed dendritic stream pattern on gravelly, clayey sands. Floodplains are narrow except along the principal rivers which have a wide expanse of swamp bordering both sides of the channel. Relief varies from 100 to 150 feet. Elevations in the district range from 500 feet in the northwest to 100 feet in the southeast indicating the regional dip. The northern and northwestern boundary approximates the northernmost occurrence of the undifferentiated Neogene geologic unit. The southwestern and southern boundary is the base of the Pelham Escarpment and the southern drainage divide of the Altamaha River. The southeastern boundary follows the Orangeburg Escarpment at approximately the 150 foot elevation. The escarpment rises 50-70 feet above the Barrier Island Sequence District.

BT

Bacon Terraces District - Several moderately dissected terraces, generally parallel to the present coastline, are detectable on topographic maps of the Bacon Terraces District. However, they are very difficult to observe on the ground because the east facing scarps are very subtle. The terrace levels occur at elevations of 330-310 feet, 295-275 feet, 265-255 feet, 240 feet, 230 feet, 215-190 feet, and 180-160 feet. This district, on the north, west, and south, corresponds to the Satilla River drainage basin with its boundaries on the basin divide. The eastern boundary is the western base of Trail Ridge at approximately the 150 foot elevation. The southeast-trending, very extended, dendritic drainage pattern has formed on Upper Tertiary sediments. This drainage network has produced long, narrow interfluves with gently rounded to flat summits that rise gradually 50 to 100 feet above the narrow, marshy floodplains.

OB

Okefenokee Basin District - Low relief, decreasing to the southeast, and numerous swamps are characteristic of the Okefenokee Basin District. Relief varies from approximately 50 feet to less than 5 feet. Elevations in the district range from 240 feet in the northwest on Pliocene-Pleistocene deposits to 75 feet in the southeast on Pleistocene deposits. The swamps range in size from a few hundred square feet to the 660 square miles of the Okefenokee Swamp. The northwestern portion of the Okefenokee Swamp, like the northern and western portions of the district, is drained by the southeast-flowing tributaries of the southwest-flowing Suwannee River. The southeastern portion of the swamp is drained by the south-flowing St. Marys River. At the extreme southern end of the district the St. Marys River turns east and flows through a gap in Trail Ridge. The northern and western boundaries of the district coincide with the northern and western drainage divides of the Suwannee River. The eastern boundary is the western base of Trail Ridge.

BIS

Barrier Island Sequence District - Pleistocene sea levels advanced and retreated several times over the Barrier Island Sequence District to form a step-like progression of decreasing altitudes toward the sea. These former, higher sea levels existed as barrier island-salt marsh environments similar to the present coast. The former sea levels left shoreline deposit complexes parallel to the present coastline at characteristic elevations: Wicomico, 160-95 feet; Penholoway, 70-76 feet; Talbot, 40-46 feet; Pamlico, 25 feet; Princess Anne, 13 feet; Silver Bluff, 5 feet; Holocene, the present mean sea level.

There has been slight to moderate dissection of these former levels allowing marshes to exist in poorly drained low areas. Generally, dissection is further advanced toward the western portion of the district. Relief varies from 50 to 75 feet on the east side of Trail Ridge to just a few feet near marshes and along the coast. Maximum elevations are approximately 160 feet on Trail Ridge.

The western boundary is at the western base of Trail Ridge as far north as the Altamaha River, where the ridge becomes obscure. North of the Altamaha River the western boundary is the base of the Orangeburg Escarpment which approximates the 150 foot elevation.

Reference 7

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OUR SOIL IS OUR STRENGTH

COMPLIMENTS OF
YOUR CONGRESSMAN
JOHN W. DAVIS
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UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
UNIVERSITY OF GEORGIA, COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATIONS

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however, to protect it from erosion and to maintain good tilth. (Capability unit IIIe–2; woodland group 1.)

Appling sandy loam, 10 to 15 percent slopes, eroded (AmD2).—This soil is about 6 inches shallower than Appling sandy loam, 2 to 6 percent slopes, eroded. Runoff is more rapid, and the rate of infiltration is slower. The soil has a few galled spots and shallow gullies and a few U-shaped gullies, 2 to 4 feet deep.

Included with this soil are a few severely eroded areas where the texture of the surface layer is sandy clay loam. In about 20 acres the soil is uneroded or only slightly eroded; here, the surface layer is sandy loam and is about 11 inches thick. A few areas of Louisburg soils are also included. The Louisburg soils have a thin and discontinuous B horizon, their solum is generally shallow, and there are a few rock outcrops.

Because of the strong slopes, rapid runoff, and serious hazard of erosion, Appling sandy loam, 10 to 15 percent slopes, eroded, needs to be kept in perennial vegetation a large part of the time. It is suited to most of the crops grown locally, but it needs to be kept in close-growing crops 3 years out of 4. (Capability unit IVe–1; woodland group 1.)

Appling sandy clay loam, 6 to 10 percent slopes, severely eroded (AnC3).—This severely eroded soil has a finer textured plow layer than Appling sandy loam, 2 to 6 percent slopes, eroded, and is about 6 to 10 inches shallower. Surface runoff is also more rapid, the rate of infiltration is slower, and the moisture-supplying capacity is lower. In addition, the soil has poorer tilth. The plow layer consists of yellowish-brown sandy clay loam to a depth of 5 to 7 inches, and is composed mainly of materials from the B horizon. There are many galled spots and shallow gullies and a few U-shaped gullies, 3 to 5 feet deep.

A few areas of Louisburg soils are included with this soil. In these areas the B horizon is thin and discontinuous, the solum is generally shallow, and there are a few rock outcrops.

The severe hazard of erosion, rapid runoff, and poor tilth make Appling sandy clay loam, 6 to 10 percent slopes, severely eroded, better suited to perennial vegetation than to other crops. It is suited to most of the crops grown locally but needs to be kept in close-growing crops 3 years out of 4. (Capability unit IVe–1; woodland group 4.)

Appling sandy clay loam, 10 to 15 percent slopes, severely eroded (AnD3).—This soil has a finer textured plow layer than Appling sandy loam, 2 to 6 percent slopes, eroded, and is about 8 to 10 inches shallower. Surface runoff is also more rapid, the rate of infiltration is much slower, and the moisture-supplying capacity is lower. In addition, the soil has much poorer tilth. The plow layer is yellowish-brown sandy clay loam to a depth of 5 to 7 inches, and is composed mainly of materials from the B horizon. There are many galled spots and shallow gullies and a few U-shaped gullies, 3 to 6 feet deep.

The strong slopes, rapid runoff, severe hazard of erosion, and poor tilth limit the suitability of this soil for crops. It is suited only to perennial vegetation or to trees. (Capability unit VIe–2; woodland group 4.)

Augusta Series

The Augusta series consists of deep, somewhat poorly drained, strongly acid soils that have a grayish-brown surface layer and a subsoil of mottled fine sandy clay loam. The soils have formed in old alluvium. The original vegetation was oak, hickory, maple, elm, ash, poplar, and pine.

These soils occur with Altavista, State, and Chewacla soils. They are more poorly drained, grayer, and more highly mottled than the Altavista and State soils. They have more distinct horizons than the Chewacla soils, which are on flood plains.

The supply of organic matter in the Augusta soils is low to medium. The supply of available plant nutrients is low; crops respond well if fertilizer is added. Yields are usually moderate to high. These soils commonly have good tilth, but ditching generally is needed to remove excess surface water and to improve internal soil drainage.

Only one soil of this series—Augusta silt loam—is mapped in this county. It occurs on low terraces along the larger streams. Most areas have been cultivated, but more than half is now pastured. The rest is used for corn or woodland.

Augusta silt loam (0 to 2 percent slopes) (Asl).—This deep, somewhat poorly drained soil occurs along the larger streams in the county. A description of a profile, taken in a moist area, follows:

A_p 0 to 7 inches, grayish-brown (10YR 5/2) silt loam; weak, fine, granular structure; very friable; many fine roots; strongly acid; gradual, wavy boundary; 5 to 8 inches thick.

A_3 7 to 13 inches, light brownish-gray (10YR 6/2), heavy fine sandy loam; weak, fine, granular and subangular blocky structure; friable; many fine roots; strongly acid; gradual, wavy boundary; 4 to 8 inches thick.

B_2 13 to 25 inches, pale-brown (10YR 6/3) fine sandy clay loam with common, fine, distinct mottles of light gray (2.5Y 7/2) and reddish yellow (7.5YR 7/8); moderate, medium, subangular blocky structure; friable to firm; strongly acid; gradual, wavy boundary; 10 to 16 inches thick.

B_3 25 to 33 inches, light-gray (10YR 7/2) fine sandy clay loam with common, medium mottles of pale brown and white; moderate, fine, subangular blocky and granular structure; friable; many fine mica flakes; strongly acid; diffuse, wavy boundary; 6 to 15 inches thick.

C 33 to 47 inches +, light-gray to white fine sandy loam; weak, fine, granular structure; very friable; many fine mica flakes and a few rounded pebbles; strongly acid.

The color of the surface soil ranges from brown to light grayish brown. The texture of the A_3 horizon ranges from silt loam to fine sandy clay loam. In some places the texture of the B horizon is silty clay loam, and in others it is fine sandy clay.

Runoff is very slow to slow in this soil. The rate of infiltration and permeability are moderate to moderately slow, and the moisture-supplying capacity is high.

A few areas of poorly drained Roanoke soils, which are not mapped separately in this county, are included with this soil. In these areas the B horizon is gray. A few areas of Augusta fine sandy loams are also included.

Anc 3

TABLE 16.—*Classification of soils by*

General classification	Granular materials (35 percent or less passing No. 200 sieve)				
Group classification	A-1		A-3	A-2	
	A-1-a	A-1-b		A-2-4	A-2-5
Sieve analysis:					
Percent passing—					
No. 10	50 maximum.				
No. 40	30 maximum	50 maximum	51 minimum.		
No. 200	15 maximum	25 maximum	10 maximum	35 maximum	35 maximum
Characteristics of fraction passing No. 40 sieve:					
Liquid limit			NP.[2]	40 maximum	41 minimum
Plasticity index	6 maximum	6 maximum	NP.[2]	10 maximum	10 maximum
Group index	0	0	0	0	0
Usual types of significant constituent materials.	Stone, fragments, gravel, and sand.	Stone fragments, gravel, and sand.	Fine sand	Silty gravel and sand.	Silty gravel and sand.
General rating as subgrade	Excellent to good				

[1] Based on Standard Specifications for Highway Materials and Methods of Sampling and Testing (pt. 1; ed. 7): The Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes, AASHO Designation: M 145-49.

According to the Geologic Map of Georgia (*5*), biotite gneiss and schist underlie about 60 percent of the county. Soils of the Madison and Louisa series are the principal ones formed in materials derived from these two kinds of rocks. In about 15 percent of the county, Augen gneiss underlies the soils. Soils formed in materials derived from Augen gneiss are mostly of the Appling or Louisburg series. Hornblende gneiss underlies the soils in another 10 to 12 percent of the county. The Musella, Lloyd, and Davidson soils are the principal ones formed in materials derived from this kind of parent rock. A few soils have formed in materials weathered from granite-gneiss and from Ashland, Brevard, or muscovite schists. In about 500 acres there are outcrops of granite that is only slightly weathered.

About 12 percent of the county is occupied by soils formed in alluvium. These soils are mainly along the larger streams. Approximately 3 percent of this acreage consists of soils formed in old alluvium, and about 9 percent, of soils formed in young alluvium. Much of this alluvium originated from rocks in the nearby uplands, but some of it came from the granitic and metamorphic rocks of the mountains to the northeast. The soils on first bottoms show little profile development and are still receiving deposits. In contrast, the soils on the old, high terraces have been in place long enough for distinct horizons to have developed.

Topography.—Topography is largely determined by the kind of bedrock formations underlying the soils, by the geologic history of the area, and by the effects of dissection by streams. It influences soil formation through its effects on moisture relations, erosion, temperature, and plant cover.

The soils of Douglas County have slopes that range from 0 to about 40 percent. In upland areas soils that have slopes of less than 15 percent are generally deeper and have more distinct horizons than soils that have stronger slopes. In soils that have slopes of 15 to 40 percent, geologic erosion removes the soil material almost as fast as it forms. As a result, most of the soils that have stronger slopes—for example, soils of the Louisa and Musella series—have a thin solum.

The highest elevation in the county is at a point on a ridge west of Douglasville. At that point the elevation is more than 1,200 feet above sea level. The lowest elevation is on the Chattahoochee River at a point near the line between Douglas and Carroll Counties. At that point the elevation is about 700 feet above sea level, or more than 500 feet below the highest point.

The differences in elevation and the many branching drainageways contribute to the good drainage of most of Douglas County. Excess water moves into the channels rapidly and is removed with little delay.

Time.—The length of time required for a mature soil to develop depends largely on the other factors of soil formation. A normal, or mature, soil profile in Douglas County is one that has easily recognized zones of eluviation (A horizon) and illuviation (B horizon). Less time is generally required for a soil to develop in humid, warm areas that have rank vegetation than in dry or cold areas where the vegetation is scant. Also, less time is required if the parent material is coarse textured than if it is fine textured, other factors being equal.

The age of soils varies considerably. Generally speaking, the older soils show a greater degree of horizon differentiation than younger ones. For example, on the

TABLE 18.—*Characteristics and genetic relationships of soil series*

ZONAL

Great soil group and soil series	Brief profile description [1]	Position	Soil drainage	Slope range	Parent material	Degree of profile development [2]
Red-Yellow Podzolic soils—						
Central concept:						
Madison	Brown gravelly sandy loam over friable red clay; highly weathered mica schist at a depth of 36 to 60 inches.	Upland slopes and ridges.	Good	*Percent* 2 to 25	Material weathered from mica schist.	Strong.
Wickham	Brown sandy loam over friable to firm, red clay; a layer of weakly cemented, water-rounded pebbles at a depth of 36 to 72 inches.	High terraces	Good	2 to 10	Old alluvium	Strong.
Appling	Yellowish-brown or grayish-brown sandy loam over red and yellowish-brown, mottled sandy clay; highly weathered granitic rock at a depth of 36 to 50 inches.	Upland slopes and ridges.	Good	2 to 15	Material weathered from gneiss and granite schist.	Strong.
Altavista	Pale-olive fine sandy loam over firm, mottled silty clay loam or sandy clay loam; sandy clay loam and layers of sand and gravel at a depth of 36 to 48 inches.	Low terraces	Moderately good.	2 to 6	Old alluvium	Strong.
Grading toward Reddish-Brown Lateritic:						
Lloyd	Dark-brown sandy loam over dark-red clay that is friable when moist and very hard when dry; highly weathered gneiss, diorite, and hornblende schist at a depth of 48 to 65 inches.	Upland slopes and ridges.	Good	2 to 25	Material weathered from diorite, hornblende schist, and gneiss.	Strong.
Grading toward Low-Humic Gley:						
Helena	Dark grayish-brown sandy loam over very firm to extremely firm, mottled yellowish-brown and gray sandy clay; aplitic granite weathered to sandy clay loam at a depth of 20 to 30 inches.	Upland slopes	Moderately good to somewhat poor.	2 to 10	Material weathered from aplitic granite.	Medium to strong.
Augusta	Grayish-brown silt loam over mottled pale-brown, light-gray, and reddish-yellow, friable to firm sandy clay loam; light-gray fine sandy loam at a depth of 32 to 42 inches.	Low terraces	Somewhat poor.	0 to 2	Old alluvium	Medium.
Colfax	Very dark grayish-brown sandy loam over mottled light olive-gray, friable or sticky sandy clay; mottled sandy loam from disintegrated granite or gneiss at a depth of 30 to 40 inches.	Around the heads of drainageways and on low saddles.	Somewhat poor.	2 to 6	Material weathered from granite and gneiss.	Medium.
Grading toward Lithosols:						
Louisa	Brown fine sandy loam over a thin, discontinuous layer of yellowish-red to red, friable, micaceous sandy clay loam to silty clay; highly weathered mica schist at a depth of 12 to 20 inches.	Upland slopes	Somewhat excessive.	10 to 40	Material weathered from mica schist.	Medium to weak.
Louisburg	Pale-olive loamy sand over yellowish-brown, friable sandy clay loam; hard or highly weathered granitic rock at a depth of 10 to 22 inches.	Upland slopes and ridges.	Somewhat excessive.	2 to 40	Material weathered from granite.	Medium to weak.
Wilkes	Pale-brown sandy loam over very firm clay to friable sandy clay loam; partly weathered fragments of mixed acidic and basic rocks at a depth of 10 to 20 inches.	Upland slopes	Somewhat excessive.	6 to 15	Material weathered from mixed acidic and basic rocks.	Weak.

569565—61——6

Appling

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

SOIL LEGEND

The first letter in each soil symbol is the initial of the soil series name. If the third letter is a capital, it denotes the range of slope from A, less than 2 percent, to F, 25 to 40 percent. A number after the slope letter denotes the degree of erosion as given in the soil name. All but two of the symbols that do not contain a slope letter or a number are symbols for nearly level soils, not more than slightly eroded. Gul, Gullied land; and Rok, Rock outcrop, are land types that have a wide range of slope.

SYMBOL	NAME
AkB2	Altavista fine sandy loam, 2 to 6 percent slopes, eroded
Alm	Alluvial land, moderately well drained
Alp	Alluvial land, somewhat poorly drained
AmB2	Appling sandy loam, 2 to 6 percent slopes, eroded
AmC2	Appling sandy loam, 6 to 10 percent slopes, eroded
AmD2	Appling sandy loam, 10 to 15 percent slopes, eroded
AnC3	Appling sandy clay loam, 6 to 10 percent slopes, severely eroded
AnD3	Appling sandy clay loam, 10 to 15 percent slopes, severely eroded
Asl	Augusta silt loam
Bfs	Buncombe loamy sands, 0 to 6 percent slopes
Cfs	Chewacla soils
CiB	Colfax sandy loam, 2 to 6 percent slopes
Cng	Congaree soils
DgB2	Davidson loam, 2 to 6 percent slopes, eroded
DgC2	Davidson loam, 6 to 10 percent slopes, eroded
DhB3	Davidson clay loam, 2 to 6 percent slopes, severely eroded
DhC3	Davidson clay loam, 6 to 10 percent slopes, severely eroded
DhD4	Davidson clay loam, 10 to 15 percent slopes, very severely eroded
Gul	Gullied land
HYB2	Helena sandy loam, 2 to 6 percent slopes, eroded
HYC2	Helena sandy loam, 6 to 10 percent slopes, eroded
HYC3	Helena soils, 6 to 10 percent slopes, severely eroded
LdB2	Lloyd sandy loam, 2 to 6 percent slopes, eroded
LdC2	Lloyd sandy loam, 6 to 10 percent slopes, eroded
LdE2	Lloyd sandy loam, 15 to 25 percent slopes, eroded
LeB3	Lloyd clay loam, 2 to 6 percent slopes, severely eroded
LeC3	Lloyd clay loam, 6 to 10 percent slopes, severely eroded
LeC4	Lloyd clay loam, 6 to 10 percent slopes, very severely eroded
LeD3	Lloyd clay loam, 10 to 15 percent slopes, severely eroded
LeD4	Lloyd clay loam, 10 to 15 percent slopes, very severely eroded
LjD	Louisa fine sandy loam, 10 to 15 percent slopes
LjD2	Louisa fine sandy loam, 10 to 15 percent slopes, eroded
LjE	Louisa fine sandy loam, 15 to 25 percent slopes
LjE2	Louisa fine sandy loam, 15 to 25 percent slopes, eroded
LjF	Louisa fine sandy loam, 25 to 40 percent slopes
LlB2	Louisburg complex, 2 to 6 percent slopes, eroded

SYMBOL	NAME
LlC2	Louisburg complex, 6 to 10 percent slopes, eroded
LlD2	Louisburg complex, 10 to 15 percent slopes, eroded
LmE	Louisburg stony complex, 10 to 40 percent slopes
MhB2	Madison gravelly fine sandy loam, 2 to 6 percent slopes, eroded
MhC	Madison gravelly fine sandy loam, 6 to 10 percent slopes
MhC2	Madison gravelly fine sandy loam, 6 to 10 percent slopes, eroded
MhD	Madison gravelly fine sandy loam, 10 to 15 percent slopes
MhD2	Madison gravelly fine sandy loam, 10 to 15 percent slopes, eroded
MhE	Madison gravelly fine sandy loam, 15 to 25 percent slopes
MhE2	Madison gravelly fine sandy loam, 15 to 25 percent slopes, eroded
MiB3	Madison gravelly sandy clay loam, 2 to 6 percent slopes, severely ero
MiC3	Madison gravelly sandy clay loam, 6 to 10 percent slopes, severely er
MiC4	Madison gravelly sandy clay loam, 6 to 10 percent slopes, very severe
MiD3	Madison gravelly sandy clay loam, 10 to 15 percent slopes, severely e
MiD4	Madison gravelly sandy clay loam, 10 to 15 percent slopes, very seve
MiE3	Madison gravelly sandy clay loam, 15 to 25 percent slopes, severely e
MiE4	Madison gravelly sandy clay loam, 15 to 25 percent slopes, very seve
MgC2	Mecklenburg sandy loam, 6 to 10 percent slopes, eroded
MtB	Molena loamy sand, 2 to 6 percent slopes
MtC	Molena loamy sand, 6 to 10 percent slopes
MvC2	Musella clay loam, 6 to 10 percent slopes, eroded
MvD2	Musella clay loam, 10 to 15 percent slopes, eroded
MvE2	Musella clay loam, 15 to 25 percent slopes, eroded
MwC2	Musella stony clay loam, 6 to 10 percent slopes, eroded
MwD2	Musella stony clay loam, 10 to 15 percent slopes, eroded
MwE2	Musella stony clay loam, 15 to 25 percent slopes, eroded
MFE	Musella stony fine sandy loam, 15 to 25 percent slopes
Rok	Rock outcrop
Sne	Local alluvial land
Sta	State fine sandy loam, 0 to 6 percent slopes
Weh	Wehadkee silty clay loam
WgB2	Wickham fine sandy loam, 2 to 6 percent slopes, eroded
WgC2	Wickham fine sandy loam, 6 to 10 percent slopes, eroded
WhB3	Wickham clay loam, 2 to 6 percent slopes, severely eroded
WhC3	Wickham clay loam, 6 to 10 percent slopes, severely eroded
WiC2	Wilkes sandy loam, 6 to 10 percent slopes, eroded
WjD2	Wilkes stony sandy loam, 10 to 15 percent slopes, eroded

Soil map constructed 1960 by Cartographic Division, Soil Conservation Service, USDA, from 1955 aerial photographs. Controlled mosaic based on Georgia plane coordinate system, west zone, transverse Mercator projection, 1927 North American datum.

SOIL LEGEND

e first letter in each soil symbol is the initial of the soil
ies name. If the third letter is a capital, it denotes the
ıge of slope from A, less than 2 percent, to F, 25 to 40 percent.
number after the slope letter denotes the degree of erosion as
en in the soil name. All but two of the symbols that do not contain
slope letter or a number are symbols for nearly level soils, not more
n slightly eroded. Gul, Gullied land; and Rok, Rock outcrop, are land
es that have a wide range of slope.

	SYMBOL	NAME
pes, eroded	LIC2	Louisburg complex, 6 to 10 percent slopes, eroded
	LiD2	Louisburg complex, 10 to 15 percent slopes, eroded
	LmE	Louisburg stony complex, 10 to 40 percent slopes
eroded	MhB2	Madison gravelly fine sandy loam, 2 to 6 percent slopes, eroded
eroded	MhC	Madison gravelly fine sandy loam, 6 to 10 percent slopes
s, eroded	MhC2	Madison gravelly fine sandy loam, 6 to 10 percent slopes, eroded
opes, severely eroded	MhD	Madison gravelly fine sandy loam, 10 to 15 percent slopes
lopes, severely eroded	MhD2	Madison gravelly fine sandy loam, 10 to 15 percent slopes, eroded
	MhE	Madison gravelly fine sandy loam, 15 to 25 percent slopes
es	MhE2	Madison gravelly fine sandy loam, 15 to 25 percent slopes, eroded
	MiB3	Madison gravelly sandy clay loam, 2 to 6 percent slopes, severely eroded
	MiC3	Madison gravelly sandy clay loam, 6 to 10 percent slopes, severely eroded
	MiC4	Madison gravelly sandy clay loam, 6 to 10 percent slopes, very severely eroded
	MiD3	Madison gravelly sandy clay loam, 10 to 15 percent slopes, severely eroded
d	MiD4	Madison gravelly sandy clay loam, 10 to 15 percent slopes, very severely eroded
ed	MiE3	Madison gravelly sandy clay loam, 15 to 25 percent slopes, severely eroded
everely eroded	MiE4	Madison gravelly sandy clay loam, 15 to 25 percent slopes, very severely eroded
severely eroded	MqC2	Mecklenburg sandy loam, 6 to 10 percent slopes, eroded
, very severely eroded	MtB	Molena loamy sand, 2 to 6 percent slopes
	MtC	Molena loamy sand, 6 to 10 percent slopes
	MvC2	Musella clay loam, 6 to 10 percent slopes, eroded
roded	MvD2	Musella clay loam, 10 to 15 percent slopes, eroded
eroded	MvE2	Musella clay loam, 15 to 25 percent slopes, eroded
y eroded	MwC2	Musella stony clay loam, 6 to 10 percent slopes, eroded
oded	MwD2	Musella stony clay loam, 10 to 15 percent slopes, eroded
roded	MwE2	Musella stony clay loam, 15 to 25 percent slopes, eroded
eroded	MFE	Musella stony fine sandy loam, 15 to 25 percent slopes
rely eroded	Rok	Rock outcrop
erely eroded	Sne	Local alluvial land
y severely eroded	Sta	State fine sandy loam, 0 to 6 percent slopes
verely eroded	Weh	Wehadkee silty clay loam
ry severely eroded	WgB2	Wickham fine sandy loam, 2 to 6 percent slopes, eroded
opes	WgC2	Wickham fine sandy loam, 6 to 10 percent slopes, eroded
opes, eroded	WhB3	Wickham clay loam, 2 to 6 percent slopes, severely eroded
opes	WhC3	Wickham clay loam, 6 to 10 percent slopes, severely eroded
opes, eroded	WiC2	Wilkes sandy loam, 6 to 10 percent slopes, eroded
opes	WjD2	Wilkes stony sandy loam, 10 to 15 percent slopes, eroded
roded		

WORKS AND

Highways and roads

Dual .....

Good motor .....

Poor motor .....

Trail .....

Highway markers

National Interstate .....

U. S. .....

State .....

Railroads

Single track .....

Multiple track .....

Abandoned .....

Bridges and crossings

Road .....

Trail, foot .....

Railroad .....

Ferries .....

Ford .....

Grade .....

R. R. over .....

R. R. under .....

Tunnel .....

Buildings .....

School .....

Church .....

Station .....

Mines and Quarries .....

Mine dump .....

Pits, gravel or other .....

Power lines .....

Pipe lines .....

Cemeteries .....

Dams .....

Levees .....

Tanks .....

Forest fire or lookout statior

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CONVENTIONAL SIGNS

WORKS AND STRUCTURES

Highways and roads
- Dual
- Good motor
- Poor motor
- Trail

Highway markers
- National Interstate
- U. S.
- State

Railroads
- Single track
- Multiple track
- Abandoned

Bridges and crossings
- Road
- Trail, foot
- Railroad
- Ferries
- Ford
- Grade
- R. R. over
- R. R. under
- Tunnel

Buildings
- School
- Church
- Station

Mines and Quarries

Mine dump

Pits, gravel or other

Power lines

Pipe lines

Cemeteries

Dams

Levees

Tanks

Forest fire or lookout station

BOUNDARIES

- National or state
- County
- Township, U. S.
- Section line, corner
- Reservation
- Land grant

DRAINAGE

Streams
- Perennial
- Intermittent, unclass.

Canals and ditches — CANAL, DITCH

Lakes and ponds
- Perennial
- Intermittent

Wells — flowing

Springs

Marsh

Wet spot

RELIEF

Escarpments
- Bedrock
- Other

Prominent peaks

Depressions — Large, Sma
- Crossable with tillage implements
- Not crossable with tillage implements
- Contains water most of the time

CONVENTIONAL SIGNS

ND STRUCTURES

BOUNDARIES

- National or state
- County
- Township, U. S.
- Section line, corner
- Reservation
- Land grant

DRAINAGE

- Streams
  - Perennial
  - Intermittent, unclass.
- Canals and ditches — CANAL / DITCH
- Lakes and ponds
  - Perennial
  - Intermittent
- Wells — flowing
- Springs
- Marsh
- Wet spot

RELIEF

- Escarpments
  - Bedrock
  - Other
- Prominent peaks
- Depressions — Large / Small
  - Crossable with tillage implements
  - Not crossable with tillage implements
  - Contains water most of the time

SOIL SURVEY DATA

- Soil boundary and symbol — Dx
- Gravel
- Stones
- Rock outcrops
- Chert fragments
- Clay spot
- Sand spot
- Gumbo or scabby spot
- Made land
- Severely eroded spot
- Blowout, wind erosion
- Gullies

(Joins inset, sheet 1)

(Joins sheet 4)

(Joins sheet 6)

Reference 8

GROUND WATER IN THE GREATER ATLANTA REGION, GEORGIA

By

C. W. Cressler, C. J. Thurmond, and W. G. Hester

Georgia Department of Natural Resources

Joe D. Tanner, Commissioner

Environmental Protection Division

J. Leonard Ledbetter, Director

Georgia Geologic Survey

William H. McLemore, State Geologist

Prepared in cooperation with the

U.S. Geological Survey

Atlanta

1983

INFORMATION
CIRCULAR 63

structures, it is suggested that an earlier Coastal Plain sedimentary cover buried the Piedmont and extended inland at least to the Chattahoochee River valley. Thus, according to Staheli, drainage to the north developed originally on Piedmont rocks and so reflects their structural orientations. Staheli believes that streams south of the Chattahoochee River valley developed as consequent streams on a flat Coastal Plain cover. These streams extended headward as sea levels lowered, developed dendritic drainage, and eventually became superimposed across regional Piedmont structures. Thus, the general area of the Chattahoochee River valley might well coincide with a fossil Fall Line in Georgia (Staheli, 1976, p. 451). As Staheli points out, in areas near the Chattahoochee River, the drainage pattern suggests that higher, more resistant rocks could have existed as islands that locally controlled stream development even though the lower areas were covered by Coastal Plain sediment. For example, drainage obviously has been diverted by such prominences as Stone Mountain.

Observations made during the present study indicate that in the south half of the GAR, many of the smaller elements of the drainages, such as draws, hollows, and intermittent streams in the uppermost headwaters areas seem to have developed under geologic control. The presence of geologic control is indicated by smaller drainages that parallel prominent joint sets or that are alined with bedrock foliation. Presumably these late-forming drainages were established after removal of a preexisting cover and, therefore, developed under geologic control. The fact that the smaller drainages may reflect bedrock weaknesses, whereas the larger streams generally may not, has a profound influence on the occurrence of ground water in the south half of the GAR and on the methods that can be used successfully to locate large ground-water supplies. The relations between drainage styles and the occurrence of ground water, and the effects that drainage styles have on the methods that can be used to locate sites for high-yielding wells, are discussed in later sections of this report.

AVAILABILITY OF LARGE GROUND-WATER SUPPLIES

The quantity of ground water available in the GAR varies greatly with the location, rock type, topographic setting, drainage style, and the geologic structure. In some areas, most wells yield less than 3 gal/min, which generally is considered a minimum requirement for domestic and stock supplies. In more favorable areas, yields commonly range between 3 and 10 gal/min. It should be pointed out, however, that obtaining this quantity may require drilling in more than one site.

High-yielding wells--ones that supply 20 gal/min or more--generally can be developed only where the rocks possess localized increases in permeability. This occurs mainly in association with certain structural and stratigraphic features, including: (1) contact zones between rock units of contrasting character, (2) contact zones within multilayered rock units, (3) fault zones, (4) stress relief fractures, (5) zones of fracture concentration, (6) small-scale structures, including joints, foliation planes, and fold axes, that localize drainage development, (7) folds that produce concentrated jointing, and (8) shear zones. Other factors, such as topographic setting, drainage style, rock type, depth of weathering, thickness of soil cover, and the pervasiveness and orientation of foliation can interact to increase or decrease the availability of ground water. The nature and occurrence of structural and stratigraphic features known to increase bedrock permeability, and the relation of these features to drainage style, topography, and other factors, are discussed in the following sections.

chloritized. Diabase, a dark intrusive rock that forms dikes, also is part of this unit. Interlayers of biotite and granitic gneiss and schist also occur.

F

YIELD—Well yields range from 20 to 150 gal/min, averaging 43 gal/min.

DEPTH—Wells range in depth from 43 to 422 ft, averaging 192 ft. Casing depths range from 11 to 187 ft, averaging 57 ft.

TOPOGRAPHIC SETTINGS—Thirty percent of the wells occupy slopes, 30 percent are in broad lowlands, 15 percent are on uplands-ridge crests, and 15 percent are in draws and hollows.

METHODS—Effective methods for selecting well sites are (1) contact zones with Units A, C, E, G, and possibly Unit D depending on the degree of foliation, and with inclusions of contrasting character, (2) small-scale structures that localize drainage development, (3) topography and soil thickness where low bedrock permeability requires the use of bored wells, (4) zones of fracture concentration, and (5) fault zones. The methods should be most useful in headwaters areas, except for (3) which can be applied in most areas having a suitable combination of topographic setting and saprolite thickness.

ROCK TYPE—The unit consists primarily of muscovite and biotite granite. Inclusions of schist, gneiss, amphibolite, and other rocks may occur locally.

G

YIELD—Well yields range from 20 to 225 gal/min, averaging 74 gal/min.

DEPTH—Wells range in depth from 110 to 800 ft, averaging 323 ft. Casing depths range from 8 to 207 ft, averaging 84 ft.

TOPOGRAPHIC SETTINGS—Four percent of the wells occupy slopes, 75 percent are in broad lowlands, 15 percent are on uplands-ridge crests, and 4 percent are in draws and hollows.

METHODS—Effective methods for selecting well sites are (1) small-scale structures that localize drainage development, including the dip and strike of foliation and layering, (2) contact zones between rock layers of contrasting character where exposures are adequate to reveal rock types in low-lying areas, and (3) topography and soil thickness.

ROCK TYPE—The unit includes a variety of cataclastic rocks formed by the crushing and fracturing of preexisting rocks as a result of mechanical forces, as well as unaltered rocks from other units. Some of the most common cataclastic rocks are mylonite, phyllonite, and button schist, all classified according to texture rather than mineralogy.

YIELD—Well yields range from 20 to 200 gal/min, averaging 72 gal/min.

DEPTH—Wells range in depth from 122 to 500 ft, averaging 297 ft. Casing depths range from 30 to 85 ft, averaging 58 ft.

TOPOGRAPHIC SETTINGS—Forty-five percent of the wells occupy slopes, 9 percent are in broad lowlands, 27 percent are on uplands-ridge crests, and 18 percent are in draws and hollows.

METHODS—Effective methods for selecting well sites are (1) small-scale structures that localize drainage development, especially the dip and strike of layering and jointing, (2) contact zones, mainly with Units A and C, and (3) zones of fracture concentration in favorable topographic settings. In the area of dendritic drainage, the methods are mainly effective in headwaters areas.

ROCK TYPE--The unit consists mainly of muscovite-bearing quartzite that in the south part of the area commonly contains garnet and sillimanite. In some areas the quartzite is interlayered with phyllite or schist.

J

YIELD--Well yields in Unit J range from 31-150 gal/min, averaging 76 gal/min.

DEPTH—Wells range in depth from 240 to 505 ft, averaging 376 ft. Casing depths range from 28 to 314 ft, averaging 138 ft.

TOPOGRAPHIC SETTINGS--One hundred percent of the wells are in broad lowlands.

METHODS--Effective methods for well site selection are (1) small-scale structures that localize drainage development, (2) topography and soil thickness, and (3) zones of fracture concentration, taking into account surface indications of bedrock permeability such as lines of sinkholes and depressions, and straight stream and valley segments. In the area of dendritic drainage, the methods may be effective mainly in headwaters areas.

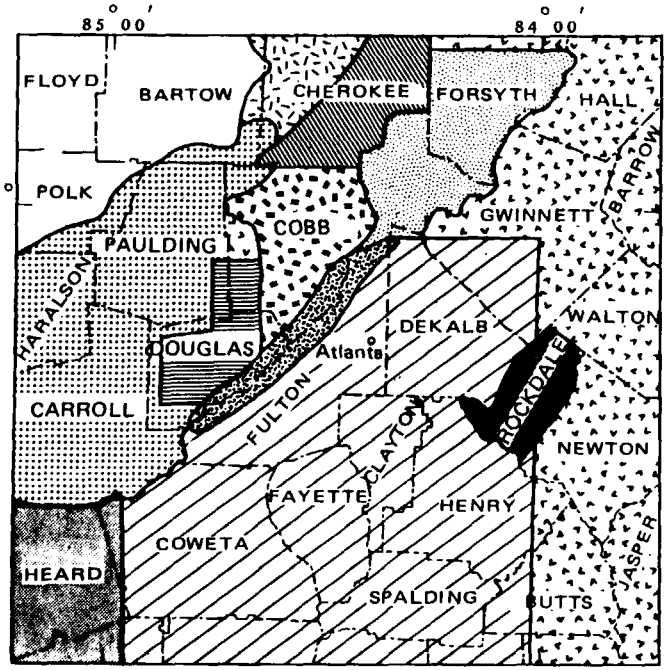
ROCK TYPE--In the north half of the area, Unit J consists of micaceous marble and calcareous mica schist. Being highly soluble, much of the unit accumulates a thick soil cover and is poorly exposed. Outcrop widths indicate that the unit probably is several hundred feet thick. In the south part of the area, the unit consists of 50 to 200 ft of thinly layered calcareous metatuff containing lenses and layers of cal-

Plate 1

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
GEORGIA GEOLOGIC SURVEY

85°15′ 34°22′30″ 85°00″

INDEX TO GEOLOGIC MAPPING



- J.B. Murray, 1973
- C.W. Cressler, 1976
- M.J. McCollum, 1964
- R.D. Bentley, 1969
- D.E. Lawton, 1976
- T.J. Crawford, 1970,1976
- M.W. Higgins and R.L. Atkins, 1980-83 (unpublished)
- V.J. Hurst, 1956

NUMBER AND LETTER DESIGNATION FOR 7 1/2-MINUTE QUADRANGLES COVERING THE GREATER ATLANTA REGION

	3	4	5	85°6	7	8	9	10	11	12	13	84°14	15
JJ						White East 1972	Waleska 1974	Ball Ground West 1973	Ball Ground East 1973	Matt 1964	Coal Mtn 1964	Chestnut 1964	Gainesville 1964
HH					Cartersville 1972	Allatoona Dam 1961	South Canton 1961	Canton 1961	Birmingham 1956	Cumming 1964	Sword Dam 1972	Flowery Branch 1964	Chestnut Mtn 1964
GG				Taylorsville 1972	Burnt Hickory Ridge 1972	Acworth 1956	Kennesaw 1956	Mountain Park 1956	Roswell 1956	Duluth 1956	Suwanee 1964	Hog Mtn 1964	Auburn 1964
FF	Benedict 1966	Felton 1973	Rockmart South 1973	Yorkville 1973	Dallas 1973	Lost Mtn 1964	Marietta 1964	Sandy Springs 1965	Chamblee 1954	Norcross 1956	Lutomni 1963	Lawrenceville 1964	Bold Springs 1964
EE	Tallapoosa North 1968	Buchanan 1973	Oraketown 1973	New Georgia 1973	Nebo 1973	Austell 1964	Mableton 1964	Northwest Atlanta 1964	Northeast Atlanta 1954	Stone Mtn 1956	Snellville 1956	Loganville 1964	Between 1964
DD	Tallapoosa South 1965	Bremen 1973	Temple 1973	Villa Rica 1973	Winston 1973	Campbellton 1954	Ben Hill 1964	Southwest Atlanta 1954	Southeast Atlanta 1954	Redan 1956	Conyers 1956	Milstead 1964	Jersey 1964
CC	Bowdon West 1966	Bowdon East 1973	Carrollton 1973	Hulett 1973	Rico 1958	Palmetto 1954	Fairburn 1954	Riverdale 1954	Jonesboro 1964	Stockbridge 1964	Kellytown 1964	Porterdale 1964	Covington 1964
BB	Graham 1969	Roopville 1964	Lowell 1964	Whitesburg 1966	Newnan North 1973	Madras 1965	Tyrone 1966	Fayetteville 1965	Hampton 1965	McDonough 1964	Ola 1964	Worthville 1964	Stewart 1964
AA	Napoleon 1969	Frolona 1964	Franklin 1964	Newnan SW 1965	Newnan South 1965	Sharpsburg 1965	Senoia 1965	Brooks 1966	Griffin North 1965	Luella 1964	Locust Grove 1964	Jackson 1964	Lloyd Shoals Dam 1964
Z	Roanoke East 1969	Glenn 1964	Hillcrest 1964	Hogansville 1964	Grantville 1964	Luthersville 1971	Haralson 1971	Hollonville 1971	Griffin South 1971	Orchard Hill 1973	High Falls 1973	Indian Springs 1973	Barnes 1973

Modified from index to topographic maps of Georgia
U.S. Geological Survey

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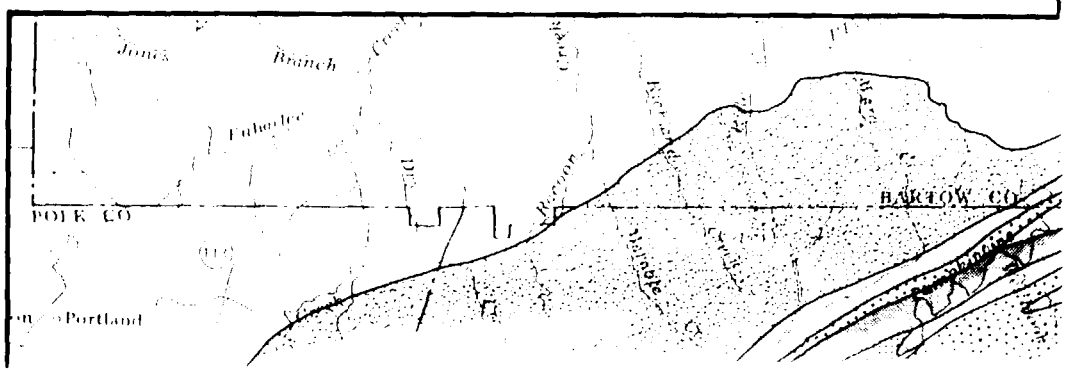

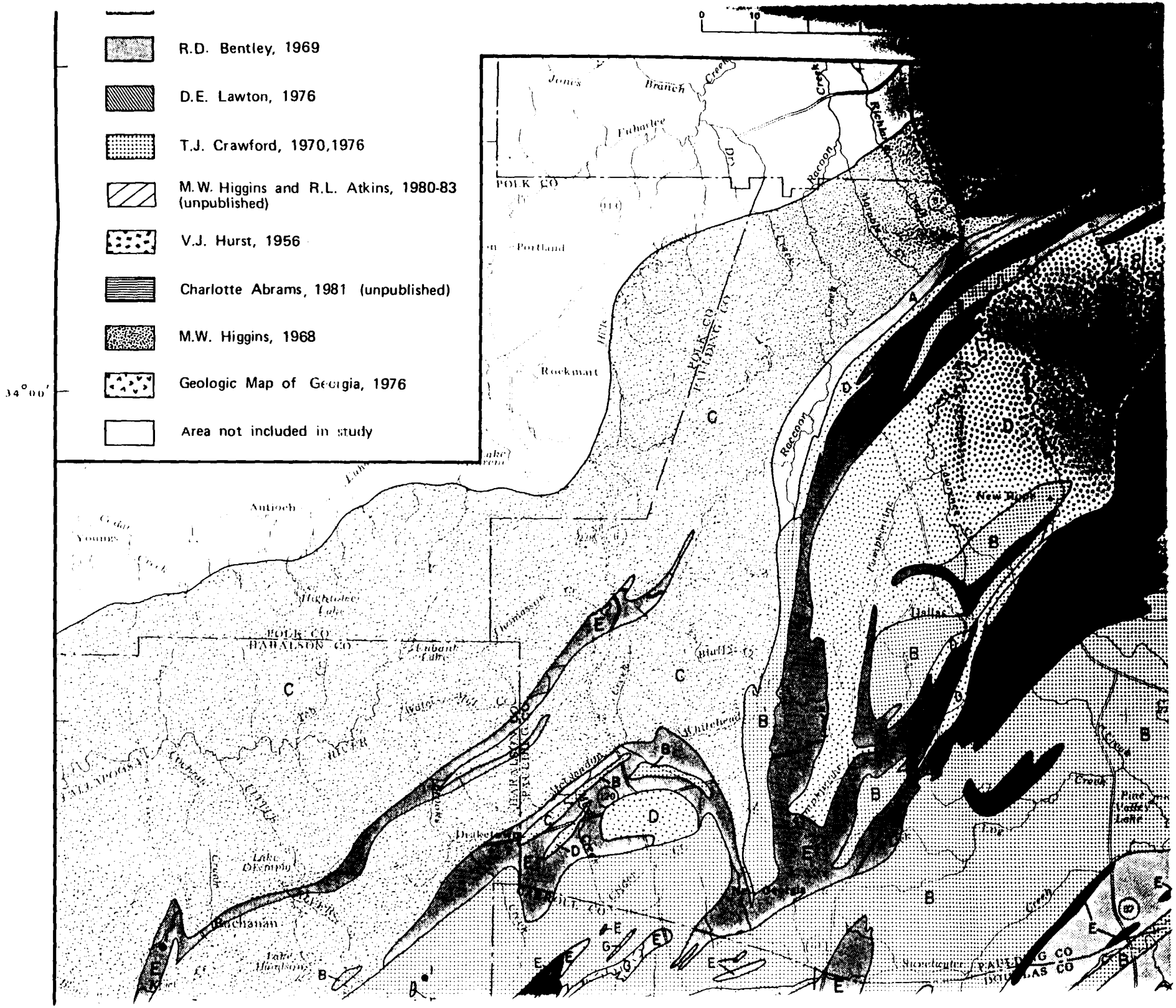
R.D. Bentley, 1969
D.E. Lawton, 1976
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M.W. Higgins and R.L. Atkins, 1980-83 (unpublished)
V.J. Hurst, 1956
Charlotte Abrams, 1981 (unpublished)
M.W. Higgins, 1968
Geologic Map of Georgia, 1976
Area not included in study
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POLK CO
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DOUGLAS CO
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Dallas
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Jones Branch
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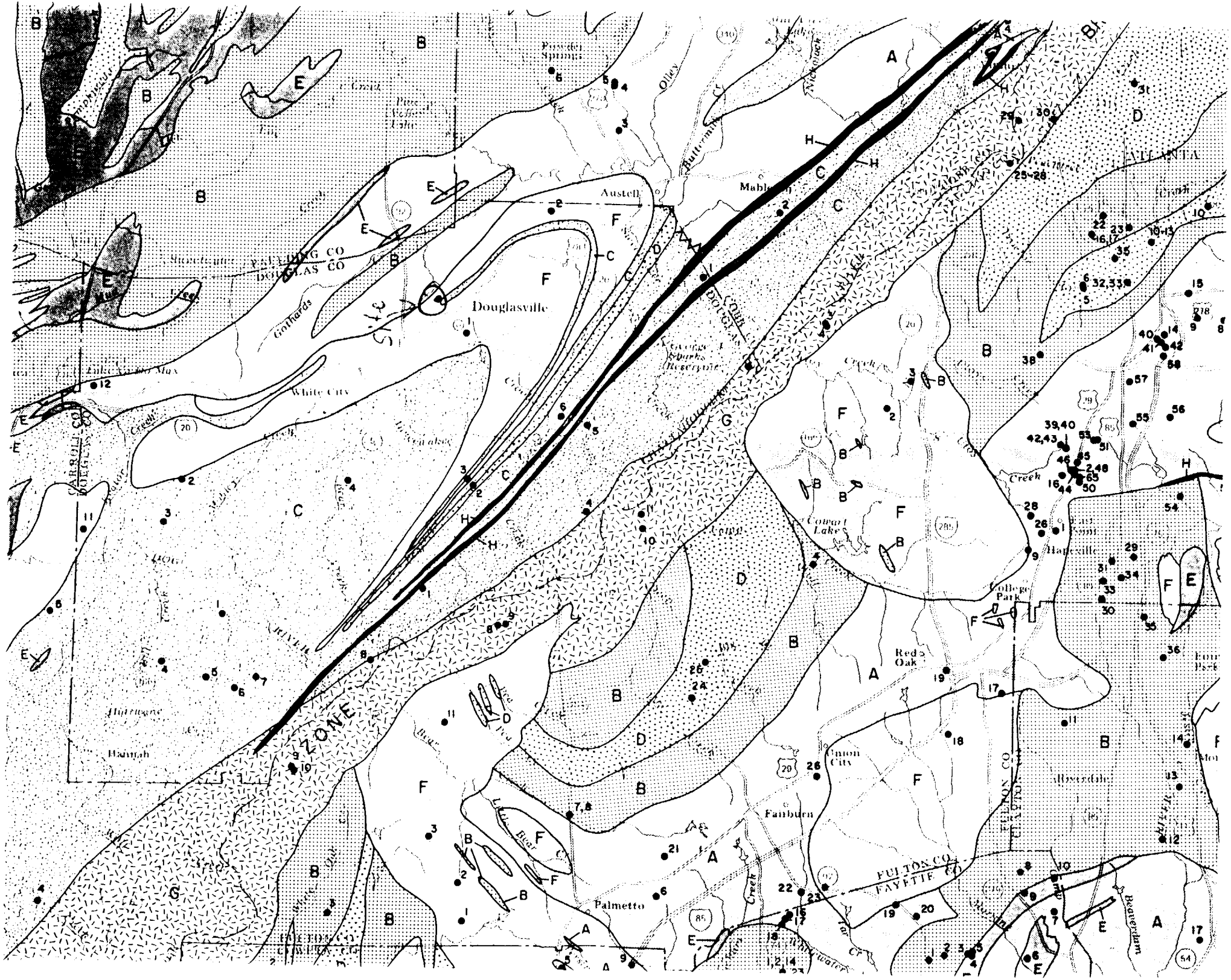

Douglasville
Austell
Mableton
White City
Hannah
Cowart Lake
College Park
Red Oak
Union City
Fairburn
Palmetto
Riverdale
Beaverdam
ZONE
FULTON CO
FAYETTE CO
DOUGLAS CO
CARROLL CO

Reference 8 4

82°

GEOLOGIC MAP OF GEOI

Reference 9

Atlanta
1976

GEORGIA DEPARTMENT OF NATURAL RESOURCE

J. D. Tanner, Commissioner

GEOLOGIC AND WATER RESOURCES DIVISION
GEORGIA GEOLOGICAL SURVEY

S. M. Pickering, Jr., Director and State Geologist
J. B. Murray, Chief Geologist

GEOLOGIC MAPPING, COMPILATION, EDITING AND CARTOGRAPHY BY:

D. E. Lawton (Head, North Ga. Unit)
F. J. Moye
J. B. Murray

W. E. Marsalis (Head, South Ga. Unit)
M. S. Friddell

82° 81°

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BLUE RIDGE AND PIEDMONT CRYSTALLINE ROCKS

GRANITES

- gr1 — GRANITE UNDIFFERENTIATED
- gr1a — NON-PORPHYRITIC GRANITE
- gr1b — PORPHYRITIC GRANITE
- gr2 — GRANITE/GRANITE GNEISS
- gr2a — GRANITE/GNEISSIC BIOTITE GRANITE
- gr3 — GRANITE/BIOTITIC GNEISS/AMPHIBOLITE
- CHARNOCKITE
- SYENITE

GRANITE GNEISS

- gg1 — GRANITIC GNEISS UNDIFFERENTIATED
- GRANITE GNEISS/GNEISSIC GRANITE (AUGEN OR PORPHYRITIC)
- MUSCOVITE GRANITE GNEISS
- gg2 — GRANITE GNEISS/AMPHIBOLITE
- CALC-SILICATE GRANITE GNEISS
- gg3 — GRANITE GNEISS/GRANITE

INTERMEDIATE GNEISS

- ig1 — BIOTITE GNEISS/FELDSPATHIC BIOTITE GNEISS
- ig1a — BIOTITE GRANITE GNEISS/FELDSPATHIC BIOTITE GNEISS/AMPHIBOLITE-HORNBLENDE GNEISS
- ig2 — BIOTITIC GNEISS UNDIFFERENTIATED
- ig3 — BIOTITIC GNEISS/MICA SCHIST/AMPHIBOLITE
- ig4 — BIOTITIC GNEISS/AMPHIBOLITE

BIOTITE GNEISS

MICA SCHIST

- pms1 — MICA SCHIST
- pms1a — MICA SCHIST/AMPHIBOLITE
- pms3 — MICA SCHIST/GNEISS
- pms3a — MICA SCHIST/GNEISS/AMPHIBOLITE
- pms3b — MICA SCHIST/QUARTZITE/GNEISS/AMPHIBOLITE
- GRAPHITE SCHIST
- pms6c — SERICITE SCHIST
- pms6a — SERICITE SCHIST/AMPHIBOLITE
- pms6b — SERICITE SCHIST/AMPHIBOLITE/GRANITE GNEISS
- SERICITE SCHIST/MICACEOUS QUARTZITE/SERICITE PHYLLITE
- pms6d — QUARTZ SERICITE SCHIST/BIOTITIC GNEISS
- pms6e — QUARTZ MICA SCHIST/HORNBLENDE SCHIST/BIOTITIC GNEISS
- pms7 — BUTTON MICA SCHIST
- pms8 — CROSS-BIOTITE SCHIST

PELITIC AND CALCAREOUS ROCKS

- UNDIFFERENTIATED PELITIC ROCKS, includes mica schists, metasiltstones, metaconglomerates and metagraywackes
- m1 — MARBLE
- m2 — CALCAREOUS MICA SCHIST/MICACEOUS MARBLE/MICA SCHIST

PHYLLITIC ROCKS

- PHYLLITE UNDIFFERENTIATED
- META-ARGILLITE/PHYLLITE

AMPHIBOLITE

BIOTITE GNEISS

BIOTITE GNEISS

BIOTITE GNEISS/ AMPHIBOLITE

BIOTITE GNEISS/ HORNBLENDE GNEISS/ GRANITE GNEISS

BIOTITE GNEISS/MICA SCHIST

METAMORPHOSED MAFIC ROCKS (MAY INCLUDE METASEDIMENTARY VARIETIES)

AMPHIBOLITE

HORNBLENDE GNEISS

HORNBLENDE GNEISS/ AMPHIBOLITE

HORNBLENDE GNEISS/ AMPHIBOLITE/ GRANITE GNEISS

HORNBLENDE-BIOTITE GNEISS/AMPHIBOLITE

HORNBLENDE GNEISS/ GRANITE GNEISS/BIOTITE GNEISS

AMPHIBOLITE/EPIDOTE QUARTZITE/GRANITE GNEISS

AMPHIBOLITE/BIOTITIC GNEISS/QUARTZ SERICITE SCHIST

AMPHIBOLITE/MICA SCHIST/ BIOTITIC GNEISS

AMPHIBOLITE/ METAGRAYWACKE/MICA SCHIST

MAFIC HORNFELS

MAFIC SCHISTS

AMPHIBOLITIC SCHIST

ms2 AMPHIBOLITIC SCHIST/ AMPHIBOLITE

ms3 AMPHIBOLITIC SCHIST/ AMPHIBOLITE- METAGRAYWACKE/MICA SCHIST

METAGRAYWACKE

pm1 METAGRAYWACKE UNDIFFERENTIATED

pm2 METAGRAYWACKE/MICA

META-ARGILLITE/PHYLLITE

GRAPHITIC PHYLLITE

PHYLLITE AND QUARTZITE

PHYLLITE/QUARTZITE/ CALC-SILICATE GNEISS

ALUMINOUS SCHIST

pg1 GARNET MICA SCHIST

pg2 GARNET MICA SCHIST/GNEISS

GARNET MICA SCHIST/ AMPHIBOLITE

ALUMINOUS SCHIST

pa2 SILLIMANITE SCHIST

SILLIMANITE SCHIST/GNEISS

pa2b SILLIMANITE SCHIST/GNEISS/ AMPHIBOLITE

SILLIMANITE SCHIST/ AMPHIBOLITE

QUARTZITE

q1 QUARTZITE

q1a QUARTZITE/MICA SCHIST

q1b QUARTZITE/MICA SCHIST/ AMPHIBOLITE

q1c QUARTZITE/METAGRAYWACKE

q1d QUARTZITE/PHYLLITE

q2 QUARTZITE/BIOTITE GRANITE GNEISS

q3 EPIDOTE QUARTZITE/ AMPHIBOLITE/SERICITE SCHIST /BIOTITE GRANITE GNEISS

CATACLASTIC ROCKS

MYLONITE & ULTRAMYLONITE

FLINTY CRUSH ROCK

METAVOLCANIC ROCKS

AMPHIBOLITE/GRANITE GNEISS

HORNBLENDE-BIOTITE GNEISS/AMPHIBOLITE

HORNBLENDE GNEISS/ GRANITE GNEISS/BIOTITE GNEISS

AMPHIBOLITE/EPIDOTE QUARTZITE/GRANITE GNEISS

AMPHIBOLITE/BIOTITIC GNEISS/QUARTZ SERICITE SCHIST

AMPHIBOLITE/MICA SCHIST/ BIOTITIC GNEISS

AMPHIBOLITE/ METAGRAYWACKE/MICA SCHIST

MAFIC HORNFELS

MAFIC SCHISTS

AMPHIBOLITIC SCHIST

AMPHIBOLITIC SCHIST/ AMPHIBOLITE

AMPHIBOLITIC SCHIST/ AMPHIBOLITE-METAGRAYWACKE/MICA SCHIST

METAGRAYWACKE

pm1 METAGRAYWACKE UNDIFFERENTIATED

pm2 METAGRAYWACKE/MICA SCHIST

METAGRAYWACKE MICA SCHIST/ CALC-SILICATE GNEISS

pm3a METAGRAYWACKE/ MICA SCHIST-QUARTZITE/ AMPHIBOLITE

MICA SCHIST/METASILTSTONE

SLATE/QUARTZITE/ CONGLOMERATE

pm4 CONGLOMERATE

SILLIMANITE SCHIST/GNEISS/ AMPHIBOLITE

SILLIMANITE SCHIST/ AMPHIBOLITE

QUARTZITE

QUARTZITE

QUARTZITE/MICA SCHIST

QUARTZITE/MICA SCHIST/ AMPHIBOLITE

q1c QUARTZITE/METAGRAYWACKE

q1d QUARTZITE/PHYLLITE

q2 QUARTZITE/BIOTITE GRANITE GNEISS

q3 EPIDOTE QUARTZITE/ AMPHIBOLITE/SERICITE SCHIST /BIOTITE GRANITE GNEISS

CATACLASTIC ROCKS

MYLONITE & ULTRAMYLONITE

FLINTY CRUSH ROCK

METAVOLCANIC ROCKS

MAFIC TO INTERMEDIATE METAVOLCANIC ROCKS

METADACITE

v3 FELSIC METAVOLCANICS

v4 UNDIFFERENTIATED METAVOLCANICS/SERICITE PHYLLITE/META-ARGILLITE/ QUARTZ MICA SCHIST

v5 META-ARGILLITE/SERICITE PHYLLITE/METAVOLCANICS

MAFIC AND ULTRAMAFIC ROCKS

ULTRAMAFIC ROCKS UNDIFFERENTIATED

mo1 AMPHIBOLITE/GABBRO

mo2 GABBRO

mo3 AMPHIBOLITE/ULTRAMAFIC

d DIABASE

under Data Sources.

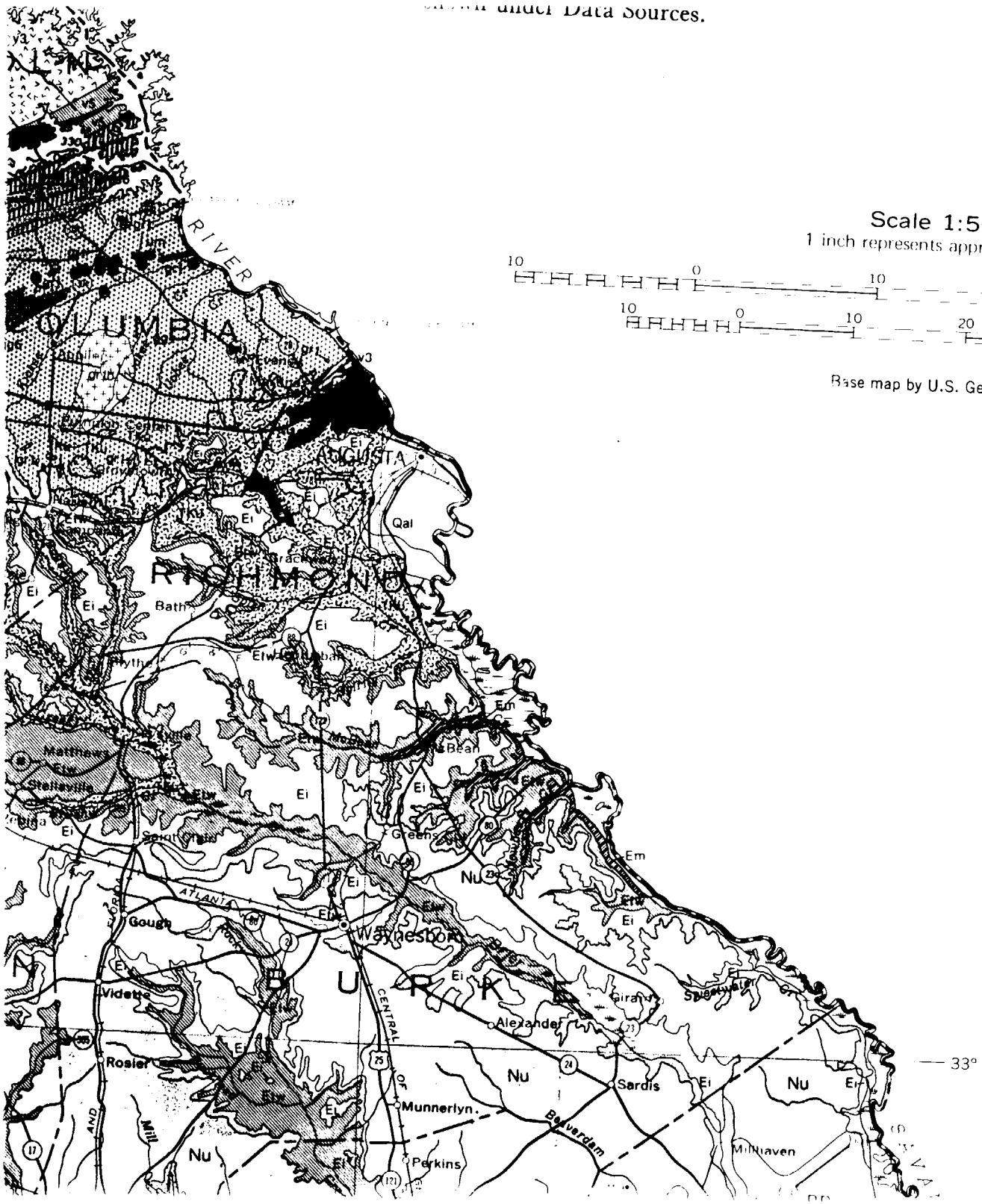
Scale 1:500,000

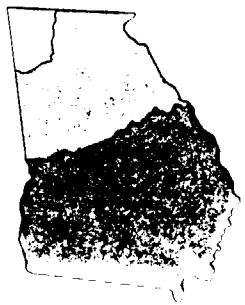
1 inch represents approximately 8 miles

10 0 10 20 30 40 Miles

10 0 10 20 30 40 50 Kilometers

Base map by U.S. Geological Survey





Ridge and Valley

Blue Ridge and Piedmont

ROME
FAULT
BREVARD ZONE OF CATACLASIS
Site
Mountain Park
Lost Mountain
Kennesaw
Roswell
North Atlanta
Chamblee
Doraville
Carters Lake
Mfs
Mls
Mlp
Pu
Ccs
Ccsl
Ccm
Ccls
O€k
pms3
pms2
pms5
pms3a
pms7
pms1
pms4
pms6a
pm3a
pm2
pp2
pp3
pp4
pg1
pg2
pg3
pg4
pa1
pa2
pa3
fg1
fg2
fg3
gr1
gr1a
gr1b
gr3
gg1
gg4
gg5
mm1
mm2
mm3
mm10
mu
q1
q1a
q1d

Reference 10

Ground Water of the Piedmont and Blue Ridge Provinces in the Southeastern States

By H. E. LeGrand

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Ground Water of the Piedmont and Blue Ridge Provinces in the Southeastern States

By H. E. LeGrand

INTRODUCTION

This circular summarizes the underground water conditions in the Piedmont and Blue Ridge provinces of the Southeastern States—the region shown on the geologic map (fig. 1).

There are several ways of developing water from the ground in this region. In earlier days springs were used because they are common in coves or on lowland slopes. Almost all springs in the region yield between ½ to 3 gallons per minute and rarely show a significant decline in yield during dry weather. Dug wells were common in the past, but they are being replaced by bored and drilled wells. Bored wells, like dug wells, are as much as 2 feet in diameter and are commonly lined with concrete or terra cotta pipe; these wells do not extend into hard rock and go dry if the water table falls below the bottom of the well. Drilled wells, which are now the most common source of ground-water supply and which are the chief concern of this report, are cased to the hard rock and extend as open holes into the rock. Although some drilled wells are as small as 2 inches in diameter and others are as large as 10 inches, the most common size is about 5 or 6 inches. Almost every well in recent years has been properly constructed to prevent water on the ground from running down the outside of the casing into the well.

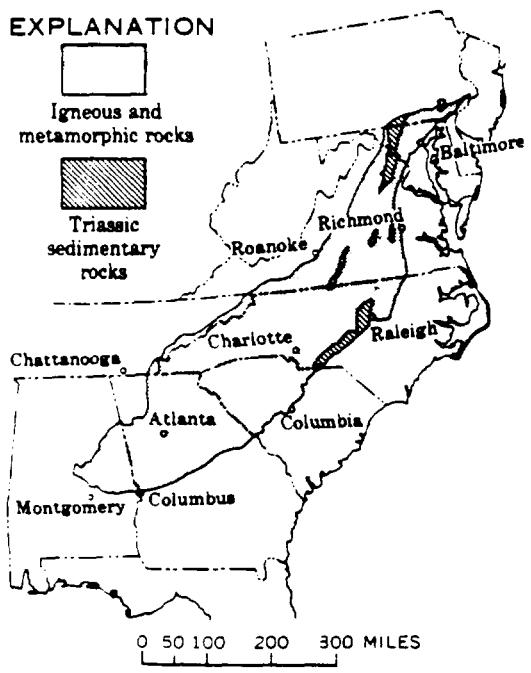

Figure 1.—Generalized geologic map. Areas underlain by igneous and metamorphic rocks are better suited to numerical rating of well sites than areas underlain by Triassic sedimentary rocks.

EVALUATING SITES

A special attempt is made to help those who are interested in the yields of wells. Because yields of individual wells in the region vary greatly within distances as short as 100 feet, estimates of potential yields of prospective wells are difficult to make. This fact has led frequently to water shortages, excessive costs, inconveniences, or undue anxiety in many cases. As the yield of a well is unpredictable, the next best approach is to attempt to show, on a percentage basis, the chance for a certain yield from a well for different conditions.

Although many factors determine the yield of a well, two ground conditions, when used together, serve as a good index for rating a well site. These conditions are topography and soil thickness. The ratings are based on the following statement: High-yielding wells are common where thick residual soils and relatively low topographic areas are combined, and low-yielding wells are common where thin soils and hilltops are combined. By comparing conditions of a site according to the topographic and soil conditions one gets a relative

at the end of the year is at about the same level as at the beginning of the year. Wells drilled into rock may, when pumped at full capacity, yield slightly less during the driest part of the year when the water table is low. Yet there appears to be no evidence to support the general belief that the water table has been declining during recent years.

CHEMICAL QUALITY OF THE WATER

In comparison with ground water in widely scattered regions of the world, the water in the Piedmont and Blue Ridge provinces ranks among the best in chemical quality. (See table 2.) Most of the water is low in total dissolved solids and is generally soft, but some is moderately hard.

Iron in water is the most common complaint. As little as 0.4 ppm (parts per million) will cause a red stain on plumbing fixtures. About 5 of every 10 wells yield water with less than 0.3 ppm of iron. About 4 of 10 wells yield water with just enough iron to cause a slight stain, and about 1 of 10 wells yields water that has considerable iron. Some iron problems result when iron is dissolved from rocks, and other problems result when water, moving through iron pipes, consequently picks up a brown iron stain by corrosion. It is important to determine the source of the iron, whether dissolved from the rocks or from the pipes, before methods for its removal are employed. Most of the water is satisfactory for use without any type of treatment (table 2). Yet an analysis of the water should be made as soon as a well is drilled to determine if treatment is necessary. It is not possible to determine the quality of water before a well is drilled.

CONTAMINATION OF GROUND WATER

In view of the many hundreds of thousands of wells that are interspersed with about an equal number of septic tanks and other waste sites, it is proper to give serious attention to the possibility of contaminating an individual water supply. The tendency for ground water—and contaminants that might be in it—to move naturally from upland areas toward stream valleys offers help in planning wells and waste sites to avoid contamination. A well that is pumped may modify the natural movement of water and draw contaminated water toward it; this condition is more likely where the soil is thin or absent than where it is thick. Care should be taken to see that no water from the land surface can seep easily into the well around the casing. Not only is the well site important but so is the waste site. In most cases the chances of contaminated water from a waste site moving into a well are not easy to predict, but a few general statements can be made. For example, at a waste site (1) a deep water table is safer than a shallow water table, (2) thick soil is safer than thin soil or rock outcrops, (3) sandy soil with some clay may be better than a clean sandy soil or a sticky clay soil, and (4) a slope of both the land surface and the water table away from a well is better than one toward it.

The soil and weathered rock are generally effective in preventing waste materials from passing through to underlying rock fractures, but the combination of (1) certain types of wastes, (2) excessive quantities of disposed wastes, and (3) thin soils may result in contaminated water reaching bedrock fractures. Once in the bedrock fractures the contaminated water may move easily to water supplies. Only a small percentage of wells have been contaminated, but proper care in locating and constructing wells and waste sites must be taken to minimize the risk of contamination. Minimum standards specified by health officials, such as those relating to permeability of the soil, distance between a well and a waste site, and depth of the water table, must be followed.

GENERAL STATEMENTS ABOUT GROUND WATER IN THE REGION

1. Ground water may be considered as occurring in an underground reservoir, the water being held in the open spaces of the rock materials. The water table, representing the top of the reservoir, generally lies in the clay, or disintegrated rock materials. In the lower part of the reservoir, water occurs in interconnecting fractures in bedrock; the fractures diminish in number and size with increasing depth. Water enters the fractures by seeping through the overlying clay, and drilled wells draw water from these fractures. The source of this water is precipitation in the general area of a well and not in some remote place.

2. A layer of residual soil and weathered rock lies on the fresh rock in most places; the thickness of the soil and weathered rock ranges from zero to slightly more than 150 feet.

Reference 12

U.S. Department of Commerce, Proof Copy of table generated for 1990 CPH-1: Summary Population and Housing Characteristics, issued by Bureau of the Census (April 1991).

Table 6. Household, Family, and Group Quarters Characteristics: 1990

[For definitions of terms and meanings of symbols, see text]

State / County / Place and [In Selected States] County Subdivision	Persons in households	All households	Family households: Total	Family households: Married-couple family	Family households: Female householder, no husband present	Nonfamily households: Total	Householder living alone: Total	Householder living alone, 65 years and over: Total	Householder living alone, 65 years and over: Female	Persons per— Household	Persons per— Family	Persons in group quarters: Total	Persons in group quarters: Institutionalized persons	Persons in group quarters: Other persons in group quarters
The State	6 304 383	2 366 615	1 713 072	1 386 730	329 641	653 543	537 702	186 887	140 417	2.66	3.16	173 833	87 286	86 347
COUNTY														
Appling County	15 580	5 834	4 275	3 423	687	1 559	1 433	669	535	2.67	3.21	164	164	-
Atkinson County	6 209	2 210	1 647	1 290	268	563	517	282	220	2.81	3.33	4	4	-
Bacon County	9 436	3 442	2 645	2 000	536	797	742	376	301	2.74	3.17	130	121	9
Baker County	3 610	1 300	949	686	220	351	326	174	148	2.78	3.33	5	5	-
Baldwin County	32 270	12 165	8 735	6 096	2 183	3 430	2 770	1 097	815	2.65	3.14	7 260	6 515	745
Banks County	10 292	3 775	2 973	2 563	283	802	724	353	281	2.73	3.13	16	16	-
Barrow County	29 409	10 676	8 361	6 828	1 140	2 315	2 016	841	765	2.76	3.15	232	209	23
Bartow County	56 465	20 081	15 655	12 820	2 140	4 426	3 881	1 605	1 326	2.75	3.17	426	336	90
Ben Hill County	15 823	5 872	4 343	3 153	1 007	1 529	1 305	764	620	2.67	3.22	322	252	70
Berrien County	13 850	5 148	3 950	3 209	560	1 198	1 105	530	427	2.69	3.13	294	108	186
Bibb County	145 108	56 307	39 301	26 742	10 753	17 006	14 882	5 816	4 812	2.58	3.14	4 859	2 804	1 855
Bleckley County	10 005	3 816	2 864	2 223	534	952	864	452	369	2.62	3.09	425	121	304
Brantley County	11 088	3 811	3 109	2 598	384	702	629	278	217	2.90	3.25	8	8	-
Brooks County	15 026	5 392	4 040	2 881	974	1 352	1 223	628	496	2.79	3.30	372	279	93
Bryan County	15 301	5 070	4 226	3 514	554	844	735	305	218	3.02	3.34	137	-	137
Bulloch County	39 454	14 884	9 685	7 440	1 782	5 299	3 489	1 293	1 042	2.63	3.15	3 687	607	3 080
Burke County	20 363	7 037	5 298	3 482	1 543	1 749	1 573	734	564	2.89	3.41	216	216	-
Butts County	13 557	4 806	3 987	2 822	986	909	872	406	306	2.89	3.31	1 769	1 653	116
Calhoun County	4 916	1 794	1 289	837	384	525	491	282	234	2.74	3.38	97	97	-
Camden County	27 329	9 459	7 472	6 152	1 003	1 987	1 609	415	311	2.89	3.28	2 838	130	2 708
Candler County	7 449	2 828	2 042	1 536	415	786	717	381	296	2.63	3.17	295	295	-
Carroll County	69 725	25 370	18 969	15 272	2 958	6 401	5 361	2 106	1 744	2.71	3.16	2 667	754	1 839
Catoosa County	42 109	15 745	12 366	10 301	1 621	3 379	3 033	1 308	1 096	2.67	3.06	355	305	90
Charlton County	8 384	2 911	2 257	1 746	407	654	573	249	190	2.88	3.32	112	112	-
Chatham County	208 677	81 111	56 560	40 929	12 987	24 551	21 036	8 128	6 444	2.59	3.14	7 258	3 936	3 322
Chattahoochee County	10 816	2 964	2 637	2 370	214	247	216	62	47	3.66	3.90	6 316	70	6 246
Chattooga County	22 059	8 467	6 393	5 041	1 070	2 074	1 815	1 036	843	2.61	3.08	163	163	-
Cherokee County	89 441	31 309	25 760	22 476	2 324	5 549	4 415	1 430	1 152	2.86	3.16	763	436	327
Clarke County	79 604	33 170	16 182	12 864	4 401	14 988	8 547	2 327	1 866	2.40	3.02	7 990	934	7 056
Clay County	3 287	1 210	874	566	258	336	318	182	134	2.72	3.30	77	74	3
Clayton County	180 469	65 523	48 734	37 003	9 216	16 789	13 035	2 392	1 935	2.73	3.19	1 563	1 246	317
Clinch County	6 034	2 173	1 655	1 257	313	518	478	206	170	2.78	3.25	128	98	30
Cobb County	444 881	171 288	120 113	99 986	15 510	51 175	39 537	6 826	5 634	2.60	3.10	3 064	1 976	1 076
Coffee County	28 015	10 541	7 981	6 025	1 614	2 560	2 319	1 036	841	2.75	3.22	577	237	340
Colquitt County	34 937	12 980	9 736	7 242	2 083	3 244	2 964	1 562	1 298	2.69	3.16	1 709	543	1 166
Columbia County	64 829	21 841	18 315	15 640	2 054	3 526	2 930	832	661	2.97	3.28	1 102	948	154
Cook County	13 172	4 825	3 607	2 788	640	1 218	1 116	589	469	2.73	3.22	284	128	156
Coweta County	53 381	18 930	15 020	11 907	2 482	3 910	3 394	1 449	1 186	2.82	3.20	472	456	16
Crawford County	8 808	3 069	2 412	1 806	396	657	577	234	178	2.87	3.29	182	108	74
Crisp County	19 598	7 287	5 300	3 586	1 401	1 987	1 808	878	717	2.69	3.23	412	408	4
Dade County	12 583	4 661	3 735	3 170	429	926	854	399	298	2.70	3.08	584	209	375
Dawson County	9 377	3 360	2 734	2 357	268	626	536	186	151	2.79	3.12	52	29	23
Decatur County	24 744	8 962	6 675	4 743	1 634	2 287	2 082	1 028	818	2.76	3.27	763	446	317
DeKalb County	535 454	208 660	137 609	98 941	31 277	71 067	52 645	11 728	9 788	2.57	3.12	10 383	6 283	4 100
Dodge County	16 627	6 387	4 687	3 560	963	1 709	1 609	844	684	2.60	3.12	980	980	-
Dooly County	9 730	3 557	2 582	1 770	683	975	913	509	413	2.74	3.31	171	143	28
Dougherty County	93 017	34 163	25 101	16 535	7 300	9 062	7 966	2 787	2 224	2.72	3.24	3 294	1 156	2 138
Douglas County	70 334	24 277	19 739	16 547	2 415	4 538	3 643	1 107	887	2.90	3.22	786	664	122
Early County	11 649	4 263	3 113	2 207	740	1 150	1 064	604	475	2.73	3.29	205	205	-
Echols County	2 319	816	654	546	78	162	153	63	48	2.84	3.28	15	-	15
Effingham County	25 636	8 750	7 140	5 921	928	1 610	1 422	560	436	2.93	3.28	51	51	-
Elbert County	18 634	7 115	5 314	4 070	1 006	1 801	1 660	863	710	2.62	3.10	315	263	52
Emanuel County	20 210	7 420	5 501	4 099	1 205	1 919	1 790	837	740	2.72	3.25	336	326	10
Evans County	8 374	3 144	2 284	1 671	514	860	781	381	300	2.66	3.19	350	319	31
Fannin County	15 863	6 334	4 944	4 126	529	1 490	1 401	753	590	2.50	2.92	129	120	9
Fayette County	62 216	21 054	18 018	16 110	1 430	3 036	2 640	1 001	829	2.96	3.23	197	197	-
Floyd County	77 936	30 516	22 516	17 744	3 852	8 000	7 203	3 506	2 881	2.55	3.02	3 312	1 657	1 655
Forsyth County	43 792	15 936	12 787	11 164	1 113	3 151	2 590	964	775	2.75	3.07	291	276	15
Franklin County	16 286	6 366	4 787	3 980	629	1 579	1 460	776	604	2.56	3.02	364	166	198
Fulton County	626 674	257 140	155 887	98 208	47 519	101 253	79 746	21 475	17 301	2.44	3.11	21 977	8 405	13 572
Gilmer County	13 179	5 072	3 940	3 382	464	1 132	1 036	543	437	2.60	2.99	100	100	-
Glascock County	2 243	867	649	541	84	218	196	98	72	2.59	3.04	114	114	-
Glynn County	61 437	23 947	17 306	13 214	3 346	6 638	5 647	2 319	1 840	2.57	3.04	1 059	645	414
Gordon County	34 740	12 770	9 939	8 230	1 320	2 830	2 530	1 116	917	2.72	3.13	323	322	1
Grady County	20 001	7 354	5 571	4 210	1 116	1 783	1 638	864	729	2.72	3.19	278	242	36
Greene County	11 863	4 083	3 012	2 058	781	1 071	974	503	385	2.86	3.42	130	107	23
Gwinnett County	351 247	126 971	96 396	82 386	10 401	30 575	22 501	3 637	3 036	2.77	3.18	1 663	1 559	104
Habersham County	25 817	9 866	7 672	6 525	846	2 294	2 108	973	787	2.58	3.00	1 804	1 493	311
Hall County	93 879	34 721	26 522	21 462	3 852	8 199	6 958	2 823	2 182	2.70	3.10	1 549	1 035	514
Hancock County	8 747	2 999	2 201	1 279	798	798	725	354	284	2.95	3.56	161	149	12
Haralson County	21 695	8 240	6 252	5 145	898	1 988	1 834	896	739	2.63	3.08	271	271	-
Harris County	17 624	6 454	5 092	4 166	714	1 362	1 234	550	421	2.73	3.12	164	164	-
Hart County	19 390	7 459	5 679	4 534	905	1 780	1 644	847	692	2.60	3.04	322	318	4
Heard County	8 408	3 083	2 398	1 912	364	685	613	290	209	2.75	3.17	130	125	5
Henry County	58 146	20 012	16 784	14 380	1 795	3 228	2 651	1 003	817	2.91	3.19	593	561	32
Houston County	87 924	32 433	24 695	19 712	3 907	7 738	6 677	1 706	1 420	2.71	3.15	1 284	656	628
Irwin County	8 520	3 142	2 380	1 763	490	762	752	402	319	2.71	3.23	129	129	-
Jackson County	29 295	10 721	8 353	6 866	1 093	2 368	2 086	966	781	2.73	3.13	710	546	164
Jasper County	8 389	3 036	2 307	1 755	428	729	644	303	232	2.76	3.21	64	64	-
Jeff Davis County	11 841	4 357	3 379	2 827	392	978	870	392	333	2.74	3.15	91	91	-
Jefferson County	16 999	6 083	4 489	2 925	1 354	1 604	1 497	779	609	2.79	3.35	409	409	-
Jenkins County	8 127	2 951	2 186	1 546	525	765	692	340	272	2.75	3.24	120	99	21
Johnson County	8 168	3 010	2 221	1 630	516	789	745	415	339	2.71	3.28	161	161	-
Jones County	20 519	7 300	5 801	4 906	936	1 499	1 343	470	363	2.81	3.21	220	188	32
Lamar County	12 798	4 680	3 580	2 704	703	1 101	1 001	487	365	2.73	3.16	279	120	159
Lanier County	5 440	1 966	1 505	1 144	287	460	418	184	148	2.78	3.22	71	63	8
Laurens County	38 830	14 514	10 822	8 092	2 294	3 692	3 374	1 589	1 271	2.68	3.16	1 156	1 102	54
Lee County	15 592	5 198	4 393	3 420	687	806	782	300	235	3.00	3.34	858	858	-
Liberty County	46 385	15 136	12 404	10 183	1 833	2 732	2 230	527	412	2.99	3.33	7 420	168	7 252
Lincoln County	7 381	2 702	2 059	1 567	392	643	593	305	231	2.74	3.21	45	28	17

NOTE: The population counts set forth herein are subject to possible correction for undercount or overcount. The United States Department of Commerce is considering whether to correct these counts and will publish corrected counts, if any, not later than July 15, 1991.

U.S. Department of Commerce, Proof Copy of table generated for 1990 CPH-1: Summary Population and Housing Characteristics, issued by Bureau of the Census (April 1991).

Table 6. Household, Family, and Group Quarters Characteristics: 1990 —Con.

[For definitions of terms and meanings of symbols, see text]

State / County / Place and [In Selected States] County Subdivision	Persons in households	All households	Family households: Total	Family households: Married-couple family	Family households: Female householder, no husband present	Nonfamily households: Total	Householder living alone: Total	65 years and over: Total	65 years and over: Female	Persons per—: Household	Persons per—: Family	Persons in group quarters: Total	Persons in group quarters: Institutionalized persons	Persons in group quarters: Other persons in group quarters
COUNTY—Con.														
Long County	6 110	2 196	1 683	1 383	218	513	447	185	136	2.79	3.22	83	4	79
Lowndes County	71 652	26 311	19 123	14 300	4 012	7 188	5 744	2 086	1 661	2.72	3.22	4 329	1 814	2 515
Lumpkin County	13 318	4 976	3 872	3 282	436	1 104	962	370	283	2.68	3.07	1 256	156	1 098
McDuffie County	19 862	7 270	5 508	3 985	1 286	1 762	1 568	676	530	2.73	3.19	257	232	25
McIntosh County	8 622	3 186	2 371	1 680	540	815	730	348	246	2.71	3.19	12	12	–
Macon County	12 626	4 388	3 322	2 098	1 046	1 066	861	513	412	2.82	3.46	288	288	–
Madison County	20 902	7 740	6 061	5 075	740	1 679	1 458	677	558	2.70	3.09	148	109	39
Marion County	5 512	1 962	1 524	1 132	317	438	392	203	166	2.81	3.22	78	78	–
Meriwether County	21 683	7 637	5 800	4 122	1 383	1 837	1 685	838	676	2.87	3.38	518	341	177
Miller County	6 184	2 336	1 741	1 334	319	595	554	316	250	2.65	3.14	96	96	–
Mitchell County	19 966	6 798	5 254	3 530	1 457	1 544	1 414	736	632	2.94	3.42	289	212	77
Monroe County	16 508	5 838	4 547	3 540	800	1 281	1 130	477	374	2.83	3.25	604	599	5
Montgomery County	6 714	2 493	1 842	1 432	323	651	599	313	235	2.69	3.20	449	213	236
Morgan County	12 705	4 399	3 442	2 586	691	957	854	417	329	2.89	3.32	178	158	20
Murray County	25 980	9 363	7 499	6 238	891	1 864	1 628	606	484	2.77	3.14	167	161	6
Muscogee County	171 700	65 650	47 236	33 380	11 808	18 623	16 122	5 847	4 714	2.61	3.12	7 578	2 963	4 615
Newton County	41 040	14 401	11 337	8 908	1 915	3 064	2 633	1 210	987	2.85	3.25	768	318	450
Oconee County	17 474	6 198	4 980	4 253	565	1 198	987	394	329	2.84	3.19	144	140	4
Oglethorpe County	9 661	3 381	2 748	2 168	448	633	737	317	240	2.70	3.14	82	82	–
Paulding County	41 290	14 389	11 980	10 289	1 216	2 387	1 964	772	590	2.88	3.17	322	309	13
Peach County	19 654	7 142	5 465	3 844	1 365	1 677	1 428	603	481	2.79	3.23	1 236	82	1 153
Pickens County	14 252	5 398	4 230	3 607	455	1 147	1 051	516	390	2.65	3.03	180	180	–
Pierce County	13 282	4 807	3 759	3 104	507	1 048	982	488	390	2.76	3.19	86	86	–
Pike County	10 100	3 526	2 824	2 385	317	702	647	321	255	2.88	3.26	124	124	–
Polk County	33 410	12 519	9 455	7 404	1 628	3 064	2 833	1 516	1 217	2.67	3.13	405	379	26
Pulaski County	7 886	3 098	2 185	1 584	504	913	842	432	344	2.58	3.15	122	122	–
Putnam County	13 856	5 229	3 938	3 043	702	1 291	1 118	429	330	2.65	3.07	281	277	4
Quitman County	2 205	857	626	429	167	231	214	112	72	2.57	3.08	4	–	4
Rabun County	11 400	4 630	3 477	2 940	412	1 153	1 036	524	404	2.46	2.89	188	166	22
Randolph County	7 684	2 815	2 003	1 301	595	812	773	463	365	2.73	3.38	329	104	225
Richmond County	179 514	68 675	47 695	32 888	12 384	20 980	17 907	5 732	4 570	2.61	3.18	10 208	3 423	6 782
Rockdale County	53 546	18 337	15 121	12 771	1 817	3 216	2 638	832	790	2.92	3.23	545	499	46
Schley County	3 561	1 315	984	738	176	351	324	171	153	2.72	3.25	7	7	–
Screven County	13 613	5 046	3 680	2 660	865	1 350	1 238	618	500	2.70	3.23	229	204	25
Seminole County	8 420	3 137	2 336	1 729	518	801	747	410	325	2.68	3.19	500	98	402
Spalding County	53 613	19 428	14 901	11 014	3 222	4 525	3 674	1 771	1 467	2.76	3.18	844	838	6
Stephens County	22 688	8 949	6 633	5 463	958	2 316	2 131	1 085	887	2.54	3.00	569	90	479
Stewart County	5 543	1 982	1 439	921	425	543	505	280	213	2.80	3.40	111	111	–
Sumter County	28 811	10 484	7 610	5 034	2 275	2 874	2 544	1 087	885	2.75	3.30	1 417	771	646
Talbot County	6 517	2 346	1 786	1 189	473	560	543	283	198	2.78	3.28	7	7	–
Taliaferro County	1 915	727	492	344	119	235	230	142	114	2.63	3.32	–	–	–
Tattnall County	15 251	5 845	4 272	3 276	826	1 573	1 436	733	580	2.61	3.11	2 471	2 189	282
Taylor County	7 632	2 804	2 070	1 431	530	734	675	387	302	2.72	3.24	10	10	–
Telfair County	10 641	4 017	2 901	2 080	688	1 116	1 044	590	470	2.65	3.20	359	344	15
Terrell County	10 508	3 738	2 772	1 823	804	966	887	489	383	2.81	3.34	145	145	–
Thomas County	38 325	14 323	10 644	7 804	2 584	3 679	3 342	1 624	1 333	2.68	3.16	661	580	81
Tift County	33 450	12 184	9 101	6 801	1 911	3 083	2 724	1 197	978	2.75	3.23	1 548	385	1 163
Toombs County	23 852	8 804	6 386	4 751	1 383	2 418	2 178	973	778	2.69	3.23	420	388	32
Towns County	6 382	2 812	2 058	1 815	183	754	712	367	285	2.26	2.69	392	78	314
Treutlen County	5 917	2 158	1 607	1 176	366	551	513	298	243	2.74	3.27	77	65	12
Troup County	54 500	20 371	14 980	11 063	3 288	5 391	4 771	2 231	1 827	2.68	3.18	1 036	711	325
Turner County	8 589	3 043	2 331	1 683	576	712	673	379	312	2.82	3.32	117	117	–
Twiggs County	9 650	3 296	2 570	1 886	563	726	665	281	222	2.93	3.38	156	151	5
Union County	11 798	4 709	3 653	3 182	355	1 056	980	535	406	2.50	2.88	224	221	3
Upson County	25 840	9 911	7 335	5 467	1 541	2 576	2 377	1 282	1 046	2.61	3.08	460	448	12
Walker County	57 524	21 687	16 867	13 986	2 336	4 810	4 355	2 111	1 758	2.65	3.05	816	806	10
Walton County	38 229	13 433	10 749	8 634	1 613	2 684	2 332	1 101	893	2.85	3.22	357	357	–
Ware County	33 798	13 046	9 416	7 068	1 945	3 630	3 311	1 624	1 317	2.59	3.12	1 683	1 593	90
Warren County	5 974	2 130	1 603	1 056	467	527	487	296	241	2.80	3.30	104	104	–
Washington County	18 786	6 739	4 985	3 386	1 330	1 754	1 608	776	624	2.79	3.32	323	311	12
Wayne County	21 781	7 922	6 113	4 803	1 053	1 809	1 670	783	606	2.75	3.19	595	582	13
Webster County	2 283	798	610	445	131	188	172	86	61	2.84	3.32	–	–	–
Wheeler County	4 817	1 786	1 331	1 028	235	455	441	273	225	2.70	3.21	86	65	21
White County	12 523	4 907	3 798	3 285	382	1 109	1 023	475	374	2.55	2.95	483	161	322
Whitfield County	71 806	26 859	20 506	16 811	2 940	6 353	5 456	1 985	1 633	2.67	3.08	654	571	83
Wilcox County	6 807	2 511	1 833	1 388	360	678	640	376	293	2.71	3.27	201	201	–
Wilkes County	10 511	4 022	2 932	2 132	646	1 090	1 008	566	415	2.61	3.12	86	86	–
Wilkinson County	10 183	3 619	2 795	2 032	616	864	798	352	274	2.81	3.31	45	45	–
Worth County	19 616	6 886	5 428	4 187	1 057	1 467	1 345	675	541	2.85	3.27	127	53	74
PLACE AND COUNTY SUBDIVISION														
Abbeville city	809	303	221	153	54	82	78	40	40	2.67	3.16	98	98	–
Dodge County	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Wilcox County	809	303	221	153	54	82	78	40	40	2.67	3.16	98	98	–
Acworth city, Cobb County	4 517	1 758	1 280	1 017	199	498	402	153	137	2.57	3.04	2	2	–
Adairsville city, Bartow County	2 131	772	587	381	160	185	168	95	78	2.76	3.19	–	–	–
Adel city, Cook County	4 927	1 793	1 289	858	359	504	464	246	207	2.75	3.33	164	128	36
Adrian city	615	238	170	116	45	68	62	33	30	2.58	3.08	–	–	–
Emanuel County	293	113	86	64	18	27	26	15	14	2.59	2.98	–	–	–
Johnson County	322	125	84	52	27	41	36	18	16	2.58	3.18	–	–	–
Ailey city, Montgomery County	484	183	135	100	24	48	45	26	22	2.64	3.15	95	–	95
Alamo city, Wheeler County	849	319	232	162	56	87	85	58	48	2.66	3.24	6	6	–
Alapaha town, Berrien County	789	287	222	146	64	65	63	27	23	2.75	3.20	23	–	23
Albany city, Dougherty County	75 233	27 935	19 677	12 361	6 724	7 949	6 980	2 482	1 992	2.69	3.25	2 899	1 128	1 780
Aldora town, Lamar County	127	46	35	30	4	11	11	6	5	2.76	3.29	–	–	–
Allenhurst town, Liberty County	594	210	163	138	20	47	38	11	10	2.83	3.20	–	–	–
Allentown town	273	105	80	65	14	25	23	13	11	2.60	3.05	–	–	–
Bleckley County	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Laurens County	2	1	1	1	–	–	–	–	–	2.00	2.00	–	–	–
Twiggs County	40	14	11	9	2	3	3	1	1	2.86	3.36	–	–	–
Wilkinson County	231	90	68	55	12	22	20	12	10	2.57	3.01	–	–	–
Alma city, Bacon County	3 533	1 397	959	571	365	438	417	234	181	2.53	3.11	130	121	9
Alpharetta city, Fulton County	12 684	5 186	3 686	3 013	478	1 662	1 282	280	240	2.45	2.95	118	118	–
Alston town, Montgomery County	169	59	42	36	4	14	13	11	8	2.86	3.45	–	–	–

TPS8 (POSTSCRIPT) CPH113 CENSUS90 09/09/91 8:18 AM MACHINE: C DATA:CENSUS90*PH1TPSDAT13, 09/09/91 08:08:14 OUTPUT:CHERTE-P1384 PAGE: 91
TSF:CENSUS90*93, 09/09/91 08:08:20 UTF:CENSUS90*93, 09/09/91 08:08:20 META:CENSUS90*PH1TABLES13, 09/09/91 08:14:57

NOTE: The population counts set forth herein are subject to possible correction for undercount or overcount. The United States Department of Commerce is considering whether to correct these counts and will publish corrected counts, if any, not later than July 15, 1991.

RECORD OF TELEPHONIC CONVERSATION Reference 13

Site Investigation Program

Routing: Randy Williams

Date: December 14, 1987

Time: 12:25 a.m./(p.m.)

File: Young Refining Corporation

Party Spoken To: Mr. Glen Johnson

Title: Agriculturist

Agency/Company: Agriculture Stabilization Service

Address: 3379; Hwy. 5; Suite H

City: Douglasville

Telephone Number: (404) 942 - 1697

State/Zip: Georgia 30135

Subject: Young Refining Corporation - GAD 051011344

Summary of Call: I spoke with Mr. Johnson to obtain information on land irrigated by supply wells within a 3-mile radius of the above mentioned site. Mr. Johnson stated that there was no land irrigated within the 3-mile radius by a supply well. However, eight miles southeast of Douglasville, there is a sod farm (38 acres) and crop farm (18 acres) that are irrigated by supply wells, along the boundary of the Chattahoochee River.

Actions Required: None.

Signature: Gilda A. Knowles December 14, 1987

Follow-up Responses/Additional Comments:

Signature: Date:

SIP-2 9/86

Reference 14

TELEPHONE CONVERSATION RECORD

Date: November 19, 1991 Time: 1040

Between Lori Camp, Douglasville-Douglas County Water Department (404-949-7617), and William E. Vasser, Dynamac Corporation.

William E. Vasser 11/19/91

Content: The system obtains some water from surface intakes located on Bear Creek and Dog River (both located south of Douglasville). Additional water is obtained from the Cobb County - Marietta Water Authority (CCMWA), especially during periods of high demand. In the summer, Douglasville-Douglas County may purchase 2 million gallons or more of water per day from the CCMWA.

The Douglasville and Douglas County water systems have been consolidated since April 1, 1986. All the county is eligible for service, but a few private wells are still used.

2/19/92

February 19, 1992: Icalled to confirm that Lori Camp is the Executive Director Sectretary for the water department.

William E. Vasser

William E. Vasser

TELEPHONE CONVERSATION RECORD

Date: November 18, 1991 Time: 1010

Between Roy Fowler, Cobb-Marietta Water Authority (404-426-8788), and William E. Vasser, Dynamatic Corporation.

William E. Vasser 11/18/91

Content: Water for the authority is obtained from surface intakes located on Lake Allatoona and on the Chattahoochee River. The river intake is located at the Johnson's Ferry Road bridge. The authority supplies water to the Cobb County, North Fulton, Cherokee County, Paulding County, and Douglasville-Douglas County systems. There may be some private wells still in use in Cobb County (most likely in the extreme northern and western parts of the county). However, the Cobb County Water System serves most of the unincorporated areas of the county. The Cobb County system is the largest purchaser of water from the Cobb-Marietta Water Authority.

2/19/92

February 19, 1992: I called to confirm that Mr. Fowler is the Assistant General Manager for the authority.

William E. Vasser

William E. Vasser

Reference 15

Reference 16

TELEPHONE CONVERSATION RECORD
November 18, 1991 1005
Between Filtration Plant Operator, East Point Water Department (404-765-1070), and William E. Vasser, Dynamac Corporation.
William E. Vasser 11/18/91
Content: The surface water intake for the system is located on in Douglas County on Sweetwater Creek, near the confluence with the Chattahoochee River. The location is on Lower River Road (Ben Hill topographic map). Two lines carry water from the intake to the filtration plant in East Point.

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams

Date: December 16, 1987

Time: 2:35 a.m./(p.m.)

File: Young Refining Corporation

Party Spoken To: Kim Primmer

Title: Fishery Supervisor

Agency/Company: Dept. of Natural Resources - Fisheries

Address: Downtown Atlanta

City: Atlanta

Telephone Number: (404) 656 - 3524

State/Zip: Ga 3

Subject: Young Refining Corporation GAD051011344

Summary of Call: I spoke with Mr. Primmer regarding fishing activity in Douglas County and he stated that there was fishing activity at Gothards Creek and Gray Stone Lake. He also stated that to obtain further information, that I should contact Mr. Don Johnson in Social Circle, Ga. (404) 656-4817

Actions Required: Contact Mr. Don Johnson

Signature: Gilda A. Knowles December 16, 1987

Follow-up Responses/Additional Comments: I spoke to Mr. Johnson and he stated that there is some fishing activity in most Creeks and lakes in Georgia

Signature: Gilda A. Knowles

Date: December 16, 1987

SIP-2

9/86

Reference 18

ENDANGERED AND THREATENED SPECIES

U.S. FISH AND WILDLIFE SERVICE

Federally Listed Species by State

GEORGIA

(E=Endangered; T=Threatened; CH=Critical Habitat determined)

Mammals	General Distribution
Bat, gray (*Myotis grisescens*) - E	Northwest, West
Bat, Indiana (*Myotis sodalis*) - E	Extreme Northwest
Manatee, West Indian (*Trichechus manatus*) - E	Coastal waters
Panther, Florida (*Felis concolor coryi*) - E	Entire state
Whale, finback (*Balaenoptera physalus*) - E	Coastal waters
Whale, humpback (*Megaptera novaeangliae*) - E	Coastal waters
Whale, right (*Eubalaena glacialis*) - E	Coastal waters
Whale, sei (*Balaenoptera borealis*) - E	Coastal waters
Whale, sperm (*Physeter catodon*) - E	Coastal waters

Birds	
Eagle, bald (*Haliaeetus leucocephalus*) - E	Entire state
Falcon, American peregrine (*Falco peregrinus anatum*) - E	North
Falcon, Arctic peregrine (*Falco peregrinus tundrius*) - T	Coast, Northwest
Plover, piping (*Charadrius melodus*) - T	Coast
Stork, wood (*Mycteria americana*) - E	Southeastern swamps
Warbler, Bachman's (*Vermivora bachmanii*) - E	Entire state
Warbler, Kirtland's (*Dendroica kirtlandii*) - E	Coast
Woodpecker, ivory-billed (*Campephilus principalis*) - E	South, Southwest
Woodpecker, red-cockaded (*Picoides* (=*Dendrocopos*) *borealis*) - E	Entire state

Reptiles	
Alligator, American (*Alligator mississippiensis*) - T(S/A)*	Coastal plain
Snake, eastern indigo (*Drymarchon corais couperi*) - T	Southeast

*Alligators are biologically neither endangered nor threatened. For law enforcement purposes they are classified as "Threatened due to Similarity of Appearance." Alligator hunting is regulated in accordance with State law.

GEORGIA (cont'd)

	General Distribution
Turtle, Kemp's (Atlantic) ridley (*Lepidochelys kempii*) - E	Coastal waters
Turtle, green (*Chelonia mydas*) - T	Coastal waters
Turtle, hawksbill (*Eretmochelys imbricata*) - E	Coastal waters
Turtle, leatherback (*Dermochelys coriacea*) - E	Coastal waters
Turtle, loggerhead (*Caretta caretta*) - T	Coastal waters

Fishes

Darter, amber (*Percina antesella*) - E,CH	Conasauga R., Murray County
Darter, snail (*Percina tanasi*) - T	S. Chickamauga Cr., Catoosa County
Logperch, Conasauga (*Percina jenkinsi*) - E,CH	Conasauga R., Murray County
Sturgeon, shortnose (*Acipenser brevirostrum*) - E	Coastal rivers

Plants

Baptisia arachnifera (hairy rattleweed) - E	Wayne, Brantley Counties
Isotria medeoloides (small whorled pogonia) - E	Rabun County
Lindera melissifolia (pondberry) - E	Wheeler County
Oxypolis canbyi (Canby's dropwort) - E	Burke, Lee, Sumter Counties
Sarracenia oreophila (green pitcher plant)- E	Towns County
Scutellaria montana (large-flowered skullcap) - E	Floyd, Gordon, Walker Counties
Torreya taxifolia (Florida torreya) - E	Decatur County
Trillium persistens (persistent trillium) - E	Tallulah-Tugaloo River system, Rabun and Habersham Counties

```
Enter the next ring distance
GEMS>

Enter program execution mode: B (batch) or I (interactive)
GEMS> I
```

Young Refining Corporation
LATITUDE 33:44: 0 LONGITUDE 84:45: 0 1980 POPULATION

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	1514	0	0	3290	341	5145
S 2	0	0	0	1336	3582	0	4918
S 3	0	0	0	0	0	0	0
S 4	0	0	0	5300	0	2543	7843
S 5	0	0	0	153	1861	4525	6539
S 6	0	0	0	0	0	1825	1825
RING TOTALS	0	1514	0	6789	8733	9234	26270

```
press RETURN to continue
 Esc for ATtention, ^X to SWitch      ¤      Capture Off          ¤   Local
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Reference 19

Douglas County Sentinel
Tuesday January 11, 1994

ATSDR official: Don't overreact to health assessment

By Johnetta Dillard
Staff Writer

The federal agency in charge of examining the health complaints related to Young Refining and Arivec Chemicals tonight is urging Douglas County residents not to overreact to its health assessment of local neighborhoods.

Bob Safay, regional representative for the Agency for Toxic Substances and Disease Registry (ATSDR), said Monday the assessment does not mean the health of the community is at risk. He said his agency is simply examining a complaint by local environmental activist Pamela Blockey-O'Brien, who contends a health hazard exists in the area of the refinery.

After researching the sites, ATSDR is now ready to begin collecting data from residents at a one-on-one interview session at Eastside Elementary School between 5 and 8 p.m. ATSDR will be here one night; afterward, written reports from residents can be sent to the agency which will then deliver a final report and a recommendation to regulatory agencies regarding the facilities and the area.

Safay said his agency is required to respond in some form to every complaint a citizen lodges regarding community health matters. The response could be in the form of a letter to the complainant, a visit to the facility in question or a recommendation to the U.S. Environmental Protection Agency. Currently, 64 health assessments are planned in eight Southern states.

Although ATSDR is not itself a regulatory agency, it is part of the U.S Public Health Service and can only make recommendations for action. Generally, the agency's recommendations are followed by the EPA, Safay said, but the ATSDR does not have the authority to close a facility or recommend its closure. Its recommendations, however, are designed to correct health hazards, usually caused by toxic contaminants.

"We may recommend that the state or county initiate air monitoring programs, that people get private wells, put a fence around a facility, a clean-up, that people get on alternative water sources or that there is a disassociation with contaminants," he said. "When we make a recommendation to EPA it is generally fol-

See HEALTH, page 2

Health

Continued from page 1

lowed. We could even recommend that a team of doctors be brought in to give everyone physicals."

Assessors want to hear from anyone who has lived within a one-mile radius of Young Refining and Arivec Chemicals. Prior to the assessment, ATSDR representatives visited the area to examine the allegations made by the complainant. They have also prepared a preliminary report of their findings which will be available at the assessment. Answers to questions from residents will also be provided.

The final version of the report will incorporate information collected tonight and over the next 30 days, which will include illnesses, smells or occurrences the residents believe are related to living in a contaminated area.

After tonight's meeting residents will have 30 days to send further information to ATSDR. It could take several months after that before the final report and recommendations are released as the agency is limited by manpower and a large number of complaints.

SCREENING SITE INSPECTION REPORT

YOUNG REFINING CORPORATION
GAD051011344

Gilda A. Knowles G.A.K.
Georgia Environmental Protection Division
December, 1987

Reviewed by: Randolph D. Williams Date: 12/30/87

FACILITY DESCRIPTION PAGE

The Young Refining Corporation refines crude (asphaltic) into asphaltic cements, #2 fuel oil, jet fuel, heavy #5 oil and various roofing asphalts. All process washwater and stormwater from the complex passes through an API separator, which discharges to four NPDES permitted ponds. The facility was found to be in violation of small quantity generator standards by Georgia-EPD in July of 1985. Hazardous wastes (sludges) had been disposed of in the past by spreading on the ground at various locations throughout the facility. The Georgia-EPD also cited the facility in the past for illegal incineration and dilution of waste and for illegal disposal of hazardous wastes at non-permitted dump sites off of Basket Creek Road in Douglas County. In addition to disposing of wastes on-site, the facility also had an oil spill in June of 1973.

On October 28, 1987, a total of 4 samples were collected on-site. There were 2 ground water samples, 1 sludge composite and 1 soil composite collected around the API separator. Samples collected off-site were a soil background sample and a background ground water sample collected from a shallow private well. Ground water samples were void of contaminants; however, heavy metals were found in sludge and soil composite samples collected on-site.

The site is located in a residential, industrial area. The City of Douglasville's drinking water is supplied by surface waters (Annawakee, Little Annawakee and Bear Creeks).

RCRA STATUS PAGE

The Young Refining Corporation has an NPDES permit (GA0001902) from the Georgia-EPD. The site is classified as a small quantity generator.

CONCLUSIONS AND RECOMMENDATIONS PAGE

Since the Georgia-EPD sampled wastes at the site on October 28, 1987, laboratory analyses have shown high concentrations of heavy metals in sludge and soil composites. However, these contaminants have not been found in ground water samples.

A well survey conducted within a three mile radius of the site found one shallow well (20 feet) just outside of the one mile radius. Twenty-three wells were observed during this survey and it is not known whether all wells are drawing from the aquifer of concern. Wells in this aquifer are used for drinking water purposes and the watering of small lawns.

Based on the information currently available, the Georgia-EPD has calculated a preliminary HRS score for the site of 10.22. The score is low because of the lack of targets around the site. Because no documented release of contamination to ground water has occurred, the Georgia-EPD recommends no further action with respect to CERCLA.

TABLE OF CONTENTS

YOUNG REFINING CORPORATION

SCREENING SITE INSPECTION REPORT

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4.0 Waste Types and Quantities 6

5.0 Laboratory Data 7

6.0 Toxicology and Chemical Characteristics 8

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Appendix C - Supporting Documents C-1

Appendix D - References D-1

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Appendix F - Preliminary HRS Package (Draft) F-1

1.0 EXECUTIVE SUMMARY

The Young Refining Corporation is located at 7982 Huey Road (P.O. Box 796) in Douglasville, Douglas County, Georgia 10314. The coordinates are latitude 33° 44' 0.0" and longitude 084° 45' 0.0".

The facility is classified as a small quantity generator and possesses an NPDES permit (GA0001902) that was issued by Georgia-EPD for 4 ponds. Young Refining Corporation was found to be in violation of small quantity generator standards by Georgia-EPD in July of 1985. Hazardous wastes (sludges) had been disposed of in the past by spreading wastes on the ground at various locations throughout the facility. Samples collected in July of 1985 were found to contain barium and lead. On October 28, 1987, a total of four samples were collected on-site. These samples contained barium, chromium and lead.

Potential targets in the area are 23 households that may be using a shallow aquifer as a source of drinking water, within a 3-mile radius of the site. There is only one shallow well just outside the one-mile radius from the site and this well is 20 feet in depth. Most local farms get water for domestic use from shallow dug wells that are usually less than 60 feet in depth. Drilled wells provide water for many of the rural homes and usually range in depths from 200 to 250 feet. The surface waters in the area are used for fishing and recreation. Surface run-off from the site flows in a northeasterly direction and empties into an unnamed creek, which in turn empties into Gothards Creek. The City of Douglasville's drinking water is supplied by Anneewakee, Little Anneewakee, and Bear Creeks, which are located southeast of the site. There are no known intakes used for irrigation purposes.

There are no records of remediation at the site, nor are there records of companies or individuals who may at one time have transported wastes off-site for disposal. Wastes have been disposed of on-site by land application and in ponds. The current RCRA status for the facility is a small quantity generator.

Heavy metals were found in waste samples collected at the site by Georgia-EPD.

2.0 ENVIRONMENTAL SETTING

The site is located in the Central Uplands District of the Piedmont Physiographic Province of Georgia (Appendix A, Figure 1). The northeastern and central portions of this district are a series of low, linear ridges, 1300-1500 feet above sea level, and separated by broad, open valleys (1). Slopes in the vicinity of the site range from 6-10% (2).

Surface run-off from the site flows generally to the northeast (Appendix C, Attachment 1). Even though ponds on-site are adequate and the facility possesses an NPDES permit, there is a small tributary which receives discharge waters from pond #4 and flows to the northeast. Mill Creek and Crystal Lake are located 1.0 mile west of the site, Chism Lake is 1.25 miles northeast of the site and Little Anneewakee Creek and Slater Mill Creeks are located 1.0 - 1.25 miles southeast and south of the site respectively (Appendix C, Attachment 2). The City of Douglasville's drinking water is supplied by large impoundments from which water is drawn from Anneewakee, Little Anneewakee and Bear Creeks. Supplemental water is purchased from Cobb and Marietta Water Systems (Appendix C, Attachment 3).

Douglas County lies entirely within the Piedmont Plateau, which consists of several northeast and southwest trending belts of crystalline rock ranging in age from Precambrian to Triassic (3). About 70 to 75 percent of the county is underlain by schist, biotite gneiss, and other metamorphic rocks. The remaining 25 to 30 percent is underlain by Augen gneiss, hornblende gneiss, granite gneiss, granite intrusions, or other igneous rocks (1). The soil in the area of the site is an Appling sandy clay loam, ranges 6 to 10 percent slopes and is a severely eroded soils (Appendix C, Attachment 4).

The City of Douglasville's drinking water is supplied from large impoundments from which water is drawn from Anneewakee, Little Anneewakee and Bear Creek. Supplemental water is purchased from Cobb and Marietta Water Systems (Appendix C - Attachment 3). Most farms, however, get water from domestic use from shallow dug wells that commonly yield 2 to 5 gallons of water per minute and are less than 60 feet deep (1). A shallow well is observed 2.0 miles away from the facility and was measured at a depth of 20 feet (Appendix C, Attachment 5). Drilled wells are also used to provide water for rural homes. These wells range in depths from 200-300 feet. Generally, there are no water-bearing fractures of an importance at a depth below 250 feet (1). There are five operable wells at Young Refining Corporation that are 300 feet in depth, however, water from these wells is only used to replenish cooling pond water and utility/maintenance purposes (Appendix C, Attachment 6). A well survey was conducted within a 3-mile radius of the facility and 23 wells were observed (Appendix C, Attachment 2).

The mean annual precipitation for the area is 50.0 inches (1). The mean annual lake evaporation is 40.0 inches and the net precipitation is 10.0 inches (4). The 1-year 24-hour rainfall for the area is 3.5 inches (4).

The site is located in a moderately populated area. Areas to the south and southwest of the site are densely populated; north of the site is sparsely populated and east and southeast of the site is moderately populated, (Appendix A, Figure 2). Land use in the immediate vicinity of the site is a mixture of industrial, residential and commercial.

Drinking water within a 3-mile radius of the site is supplied for the most part by surface water (Appendix C, Attachment 3). However, there are both dug and drilled wells in the area (Appendix C, Attachments 2 and 5) (3). There are no critical habitats of an endangered species in Douglas County (Appendix C, Attachment 7).

3.0 TARGET POPULATIONS

As the result of a well survey conducted in the area of the site, 23 households were observed with wells within a three mile radius of the site (Appendix C, Attachment 2). Both drilled and dug wells were observed during the well survey, which indicates that both deep and shallow wells are present in the area. There is a shallow well (depth 20 feet) located just outside the one mile radius (Appendix C, Attachment 5). This shallow well was sampled and residents use it as a drinking water source. There may be potential for contamination of the surficial aquifer, however there is actually only one household target (3.8 people). There is an alternate source of drinking water; the City of Douglasville's drinking water is supplied by surface water and ponds on-site at the facility are regulated (Appendix C, Attachments 2, 3 and 6). The population distribution within one, two and three mile radii of the site is 1,074; 7,064 and 13,954 respectively (4; Appendix C, Attachment 2).

4.0 WASTE TYPES AND QUANTITIES

The types of wastes found at the site were sludge and soil composites which contained heavy metals (barium, chromium and lead). Waste quantities at the facility are unknown.

5.0 LABORATORY DATA

On October 28, 1987, four samples were collected at the facility by Georgia-EPD and two samples (background soil and groundwater) were collected off-site. Laboratory analyses indicated the presence of barium (680 mg/kg), chromium (400 mg/kg) and lead (880 mg/kg) (Appendix B). Benzene (2.7 mg/kg) and xylene (1.7 mg/kg), were found in sludge composite samples. Total zylenes (6,000 ug/kg) and naphthalene (17,000 ug/kg) were found in the soil composite sample that was collected around the API Separator (Appendix B).

6.0 TOXICOLOGY/CHEMICAL CHARACTERISTICS

The following substances have been identified in samples collected at the site (5,6):

Barium - TLV (Threshold Limit Value): Air 500 ug/m^3. There is no data on threshold. Hazard: Toxic, flammable at room temperature in powder form.

HRS Waste Characteristics:

Ground Water and Surface Water	Air Pathway Value
18	9

Lead - Oral-rat TDLo (Lowest Toxic Dose) 790 mg/kg. Tolerance 0.15 mg/per cubic meter of air. Hazard: Toxic by ingestion and inhalation of dust or fume.

HRS Waste Characteristics:

Ground Water and Surface Water	Air Pathway Value
18	9

Chromium - Ivn-rat (Intravenous) TDLo 2160 ug/kg. Hazard: Hexavalent chromium compounds are carcinogenic (OSHA) and corrosive on tissue resulting in ulcers and dermatitis on prolonged contact. TLV: for chromium dust and fume is 0.5 mg/m^3 of air.

HRS Waste Characteristics:

Ground Water and Surface Water	Air Pathway Value
18	9

Napthalene Oral-rat LD50: 1780 mg/kg; Oral-mammal 1,000 mg/kg. Hazard: Toxic by inhalation. TLV: 10 ppm in air. May be used as an insecticide. Systemic reactions include nausea, headache, diaphoresis, hematuria, fever, anemia, liver damage, vomiting, convulsions and coma. Poisoning may occur by inhaling of large doses or by skin absorption.

HRS Waste Characteristics:

Ground Water and Surface Water Pathway Value	Air Pathway Value
9	6

Xylene - Oral-rat LD50: 4300 mg/kg. Hazard: Flammable, moderate fire risk. Toxic by ingestion and inhalation. TLV: 100 ppm in air.

HRS Waste Characteristics:

Ground Water and Surface Water Pathway Value	Air Pathway Value
9	9

Benzene - Oral-human TDLo: 130 mg/kg. Hazard: A carcinogen. Highly toxic. Flammable; dangerous fire risk. Explosive limits in air 1.5 to 8% by volume. TLV: 10 ppm in air.

APPENDIX A

Figure 1 : Physiographic provinces of Georgia

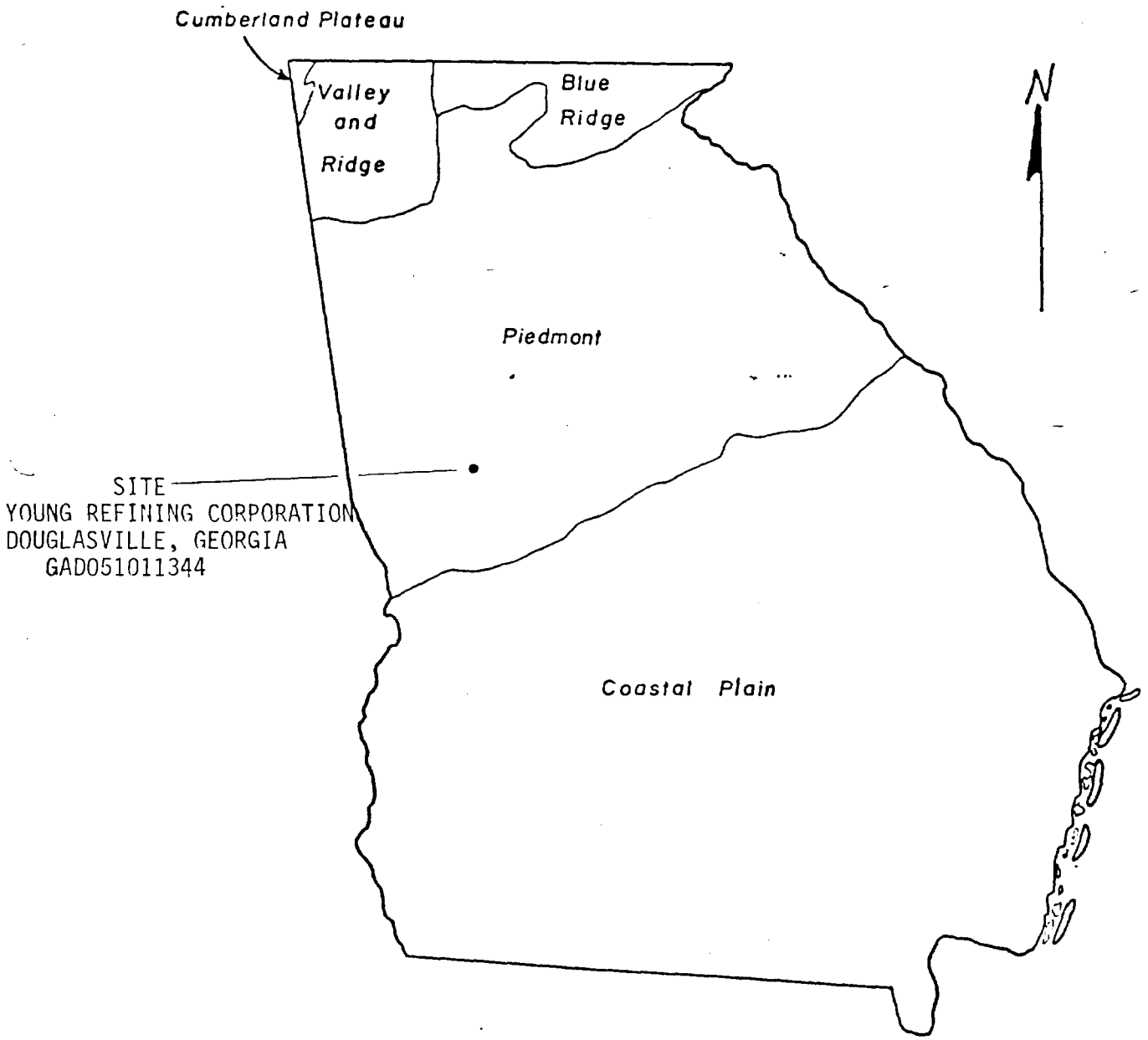


FIGURE 2: SITE LOCATION MAP

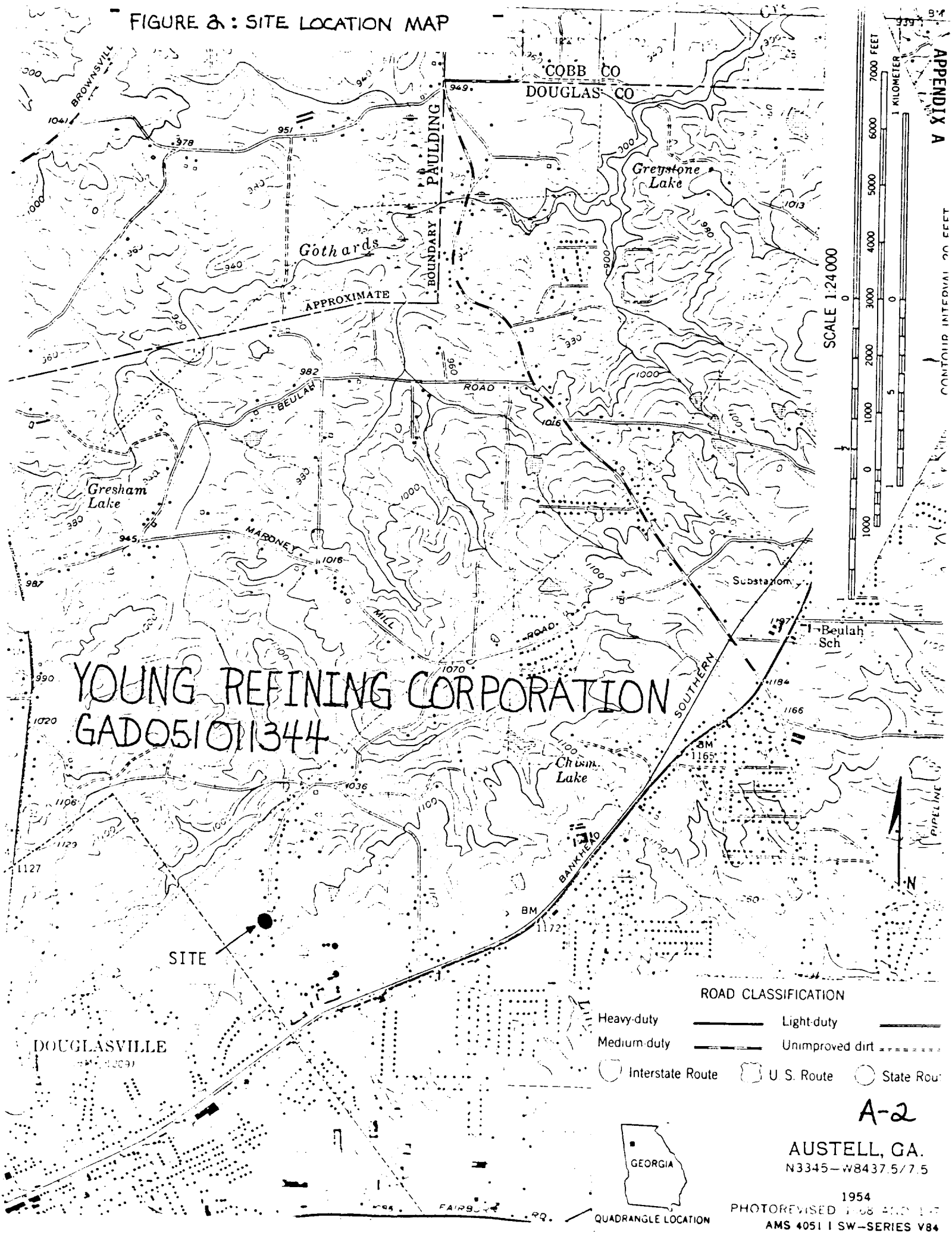
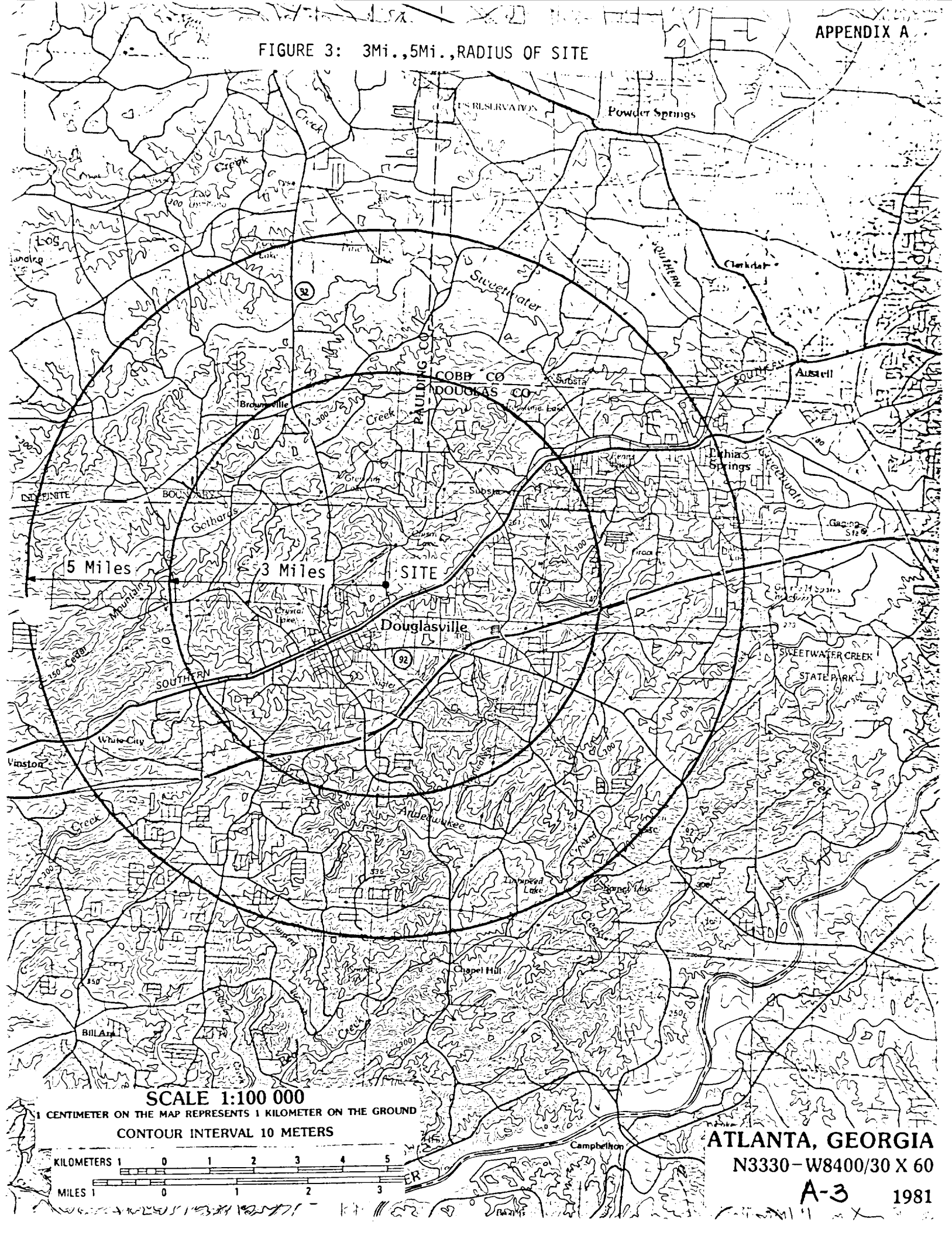


FIGURE 3: 3Mi.,5Mi.,RADIUS OF SITE



E. - 9:28 AM

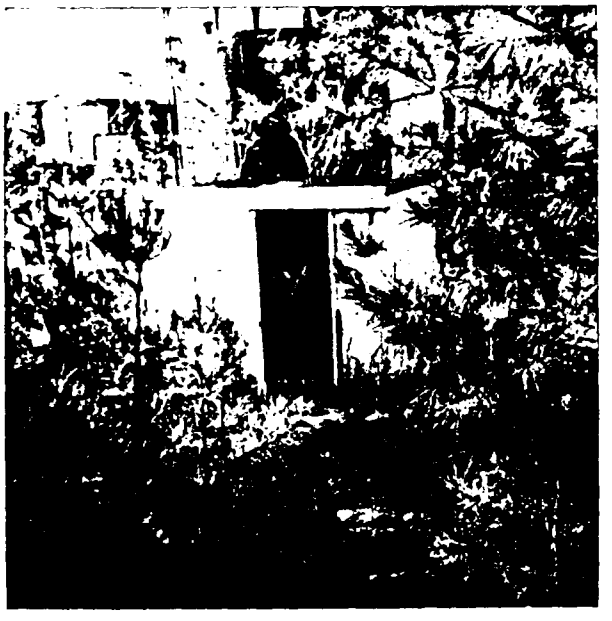
10-28-87

County Name Douglas
Picture No. 1 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well located in rear of plant process area is being purged prior to conductivity readings and sampling.
Other

E. - 9:34 AM

10-28-87

County Name Douglas
Picture No. 2 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well being sampled. (VOA, total metals). [Sample # GW-1).
Other



N.W.- 10:00AM

10-28-87

County Name Douglas
Picture No. 3 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well is situated in the area of the ponds, near tank # 303.
Other

N.W. - 10:05AM

10-28-87

County Name Douglas
Picture No. 4 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Samples being collected for Total Metals, VOA. [Sample # GW-2].
Other

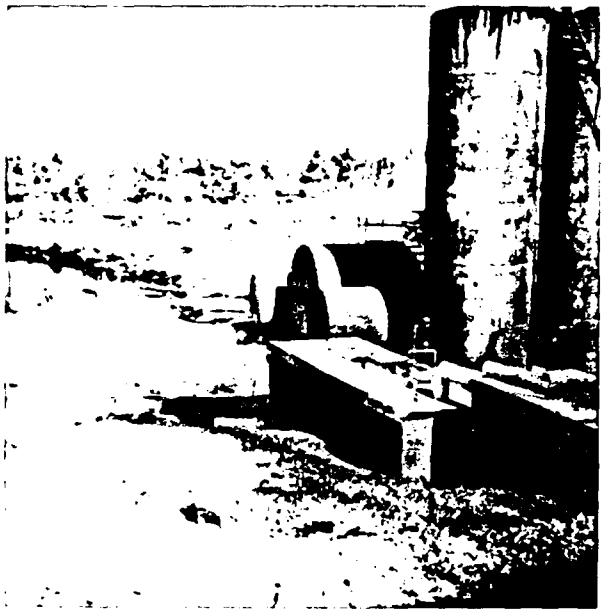
N. -10:19 AM 10-28-87

County Name Douglas
Picture No. 5 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing North
Photographer Charles Evans
Program Site Investigation Program
Explanation Oil-filled drainage ditch observed.

Other

W. -10:40 AM 10-28-87

County Name Douglas
Picture No. 6 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A sludge composite was collected from the bottom layer of Pond #1. Three different
Other areas of Pond #1 were sampled and combined. Mixing of composite sludge sample is shown. (Sample # S-1).



N.E. - 11:25 AM

10-28-87

County Name Douglas
Picture No. 7 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # S-2 is a soil composite collected around API Separator. Sample
Other was collected at a depth of 3-6 inches.

NW. - 11:55 AM.

10-28-87

County Name Douglas
Picture No. 8 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A soil composite background sample was collected 2 miles away from site in a
Other forested area (Malone Street) [Sample # S-3]. Sample was collected from 3-6" in depth.

S. - 12:35 PM. 10-28-87

County Name Douglas
Picture No. 9 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Background ground water sample was collected from a dug well 2.0 miles away from facility. Depth unknown at this time.
Other

W. - 12:40 PM 10-28-87

County Name Douglas
Picture No. 10 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # GW-3 (dug well - background) being collected from spicket.
Other

APPENDIX B

F-49

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
LAND PROTECTION BRANCH

CHAIN OF CUSTODY

FACILITY: Young Refining Corporation

LOCATION: 1982 Huey Road Douglasville, Ga.

SAMPLE #	LOG #	LAB I.D.	DESCRIPTION	COLLECTED BY (Name)	DATE	TIME
GW-1	2883		Well (Ground water) - Rear of Plant Area	G.A. Knowles	10-28-87	9:30 AM
GW-2	2884		Well (Ground water) - Near Pond #1 and Tank #303	G.A. Knowles	10-28-87	10:00 AM
GW-3	2885		Well (Ground water) - Background - Malone Street	G.A. Knowles	10-28-87	12:35 PM
S-1	2886		Sludge Composite - Bottom Layer Pond #1	G.A. Knowles	10-28-87	10:40 AM
S-2	2887		Soil Composite - API Separator	G.A. Knowles	10-28-87	11:25 AM
S-3	2888		Soil Composite - Background	G.A. Knowles	10-28-87	11:55 AM

TRANSFER RECORD

TRANSFERRED BY (Name)	TO (Name) (IF FINAL: Lab Name)	DATE	TIME	METHOD OF TRANSFER	RECEIVED BY (Name)	DATE
Hilda A. Knowles	Instrumentation Lab	10/28/87	1510	Hand	Danny Reel	10/28/87

NALYSES REQUESTED:

HAZARDOUS WASTE ANALYSIS REQUEST

Proposed

DATE: 10-28-87 PROJECT: Young Refining Corp. COLLECTOR: G.A. Knowles

NO. SAMPLES: 3 LOG NOS. 2886-2888 LIQUID ____ SOLID ____ SOIL (2) ✓

CAUSTIC ____ ACID ____ SOLVENT ____ UNKNOWN ____ SLUDGE ✓ (1)

INFORMATION FOUND: Facility refines crude (asphaltic) into asphaltic cements, #2 fuel oil, heavy oil and gasoline. All process wastewater and storm drains from complex passes through an API Separator that discharges to 4 ponds (NPDES).

HAZARDOUS WASTE NOS. ____

HAZARDOUS HANDLING: ____

WORK PRIORITY (CRITICAL NEED) Medium

RECEIVED DEC 21 1987 SITE INVESTIGATION PROGRAM

METALS ANALYSES

	TOT	DIS			
METALS (DW NO Hg)	✓	☐	EP METALS (DW NO Hg) ☐	100X ☐	30X ☐
METALS (DW WITH Hg)	☐	☐	EP METALS (DW WITH Hg)		

	TOT	DIS		TOT	DIS				
NICKEL	☐	☐	CADMIUM	☐	☐	EP NICKEL	☐	EP CADMIUM	☐
ARSENIC	☐	☐	LEAD	✓	☐	EP ARSENIC	☐	EP LEAD	☐
CHROMIUM	✓	☐	MERCURY	☐	☐	EP CHROMIUM	☐	EP MERCURY	☐
CHROM-HEX	✓	☐	SELENIUM	☐	☐	EP CHROM-HEX	☐	EP SELENIUM	☐
____	☐	☐	____	☐	☐	____	☐	____	☐

SPECIFIC ANALYSES

pH	☐	SULFIDE	☐	% SOLIDS	☐	____	☐
FLASH PT	☐	SP.COND.	☐	TOT. PHENOLS	☐	____	☐
CYANIDE TOT.	☐	TOC	☐	CHLORIDE	☐	____	☐
CYANIDE AM.	☐	TOH	☐	FLUORIDE	☐	____	☐

ORGANIC ANALYSES

PESTICIDE SCREEN (EC)	☐	GC-MS ACID EXTRACTABLES	✓
PCB	✓	GC-MS BASE/NEUTRALS	✓
VOLATILE ORGANICS (VOA)	✓		

SPECIFIC ORGANICS: ____

APPROVED: [signature] AUTHORIZED: [signature]

B-1

LABORATORY REPORT

(404) 456-7404

SAMPLE DATE: 10-28-87 PROJECT: Young Refining Corp. COLLECTOR: G.A. Knowles

	HW LOG NO.	2886	2887	2888		
DATE REC'D	10-28-87					
LABEL		S-1 Sludge Composite Bottom Layer Pond #1	S-2 Soil Composite API Separator	S-3 Soil Background (composite)		
TIME REC'D	1510					
REC'D BY:	J Reed					
DEL BY:	Knowle					
	g Harold Lanford LABORATORY MANAGER					
DATE:	12-17-87					
PARAMETERS	LAB NO.	HW2886	HW2887	HW2888		
Total Ag	mg/kg	<1	<1	<1		
" As	"	<3	<3	<3		
" Ba	"	680	32	98		
" Cd	"	1.8	<1	<1		
" Cr	"	400	17	25		
" Pb	"	880	69	17		
" Se	"	<7	<7	<7		
EP Ag	µg/L	<20	—	—		
" As	"	<60	—	—		
" Ba	"	1370	—	—		
" Cd	"	<20	—	—		
" Cr	"	100	—	—		
" Pb	"	640	—	—		
" Se	"	<100	—	—		
PCB's		See Attached Sheets				
VOA		" "		"		
BN and A GC/MS		" "		"		

Comments:

B-2

DATE: 12-15-87
PROJECT: Young Refining Corp
SOURCE: S-1 Sludge
Composite

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PURGEABLE ORGANIC ANALYSIS-WASTE
DATA REPORTING SHEET

SAMPLE TYPE: Sludge
SAMPLE NO.: HW 2886

SAMPLE REC'D (date & time)
SAMPLE START (date & time):
SAMPLE STOP (date & time):

CHEMIST: MB COMPLETE: DR

Compound		Units	Compound		Units
Methylene Chloride	<5	mg/Kg	Acetone	<10	mg/Kg
Trichlorofluoromethane	<1	mg/Kg	Methyl Ethyl Ketone	<10	mg/Kg
1,1-Dichloroethylene		mg/Kg	Carbon Disulfide	<1	mg/Kg
1,1-Dichloroethane		mg/Kg			mg/Kg
1,2-Trans-Dichloroethylene		mg/Kg	Isopropyl Acetate		mg/Kg
Chloroform		mg/Kg	2-Hexanone		mg/Kg
1,2-Dichloroethane		mg/Kg	Methyl Isobutyl Ketone		mg/Kg
1,1,1-Trichloroethane		mg/Kg	Styrene		mg/Kg
Carbon Tetrachloride		mg/Kg	O-Xylene		mg/Kg
Dichlorobromomethane		mg/Kg	P-Xylene } total	1.7	mg/Kg
1,2-Dichloropropane		mg/Kg	M-Xylene		mg/Kg
Trans-1,3-Dichloropropene		mg/Kg	Ethyl Acetate	<1	mg/Kg
Trichloroethylene		mg/Kg	n-Propyl Acetate		mg/Kg
Benzene	2.7	mg/Kg	Butyl Acetate		mg/Kg
Chlorodibromomethane	<1	mg/Kg	Acrolein	<50	mg/Kg
1,1,2-Trichloroethane		mg/Kg	Acrylonitrile	<50	mg/Kg
Cis-1,3-Dichloropropene		mg/Kg	Chloromethane	<10	mg/Kg
2-Chloroethyl Vinyl Ether		mg/Kg	Bromomethane		mg/Kg
Bromoform		mg/Kg	Vinyl Chloride		mg/Kg
1,1,2,2-Tetrachloroethane		mg/Kg	Chloroethane		mg/Kg
Tetrachloroethylene		mg/Kg			mg/Kg
Toluene		mg/Kg			mg/Kg
Chlorobenzene		mg/Kg			mg/Kg
Ethylbenzene	1.1	mg/Kg			mg/Kg

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

M - NOT ANALYZED

No other purgeable organic compound detected with an estimated minimum detection limit of _____

DATE: 12-14-87
PROJECT: Young Refining Corp
SOURCE: Sludge Composite Bottom Layer Pond #1

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-WASTE
DATA REPORTING SHEET

SAMPLE TYPE: Sludge
SAMPLE NO.: HW 2886

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: SB COMPLETED: DR

Compound		Units
1,2-Dichlorobenzene	<100	mg/Kg
1,3-Dichlorobenzene		mg/Kg
1,4-Dichlorobenzene		mg/Kg
Bis(2-Chloroethyl)Ether		mg/Kg
Hexachloroethane		mg/Kg
Bis(2-Chloroisopropyl) Ether		mg/Kg
N-Nitrosodi-N-Propylamine		mg/Kg
Nitrobenzene		mg/Kg
Hexachlorobutadiene		mg/Kg
1,2,4-Trichlorobenzene		mg/Kg
Naphthalene		mg/Kg
Bis(2-Chloroethoxy)-Methane		mg/Kg
Isophorone		mg/Kg
Hexachlorocyclopentadiene	<200	mg/Kg
2-Chloronaphthalene	<100	mg/Kg
Acenaphthylene		mg/Kg
Acenaphthene		mg/Kg
Dimethyl Phthalate		mg/Kg
2,4-Dinitrotoluene	<200	mg/Kg
2,6-Dinitrotoluene	<100	mg/Kg
4-Chlorophenyl Phenyl Ether		mg/Kg
Fluorene		mg/Kg
Diethyl Phthalate		mg/Kg
1,2-Diphenylhydrazine		mg/Kg
N-Nitrosodiphenylamine		mg/Kg
Hexachlorobenzene		mg/Kg
4-Bromophenyl Phenyl Ether		mg/Kg
Phenanthrene		mg/Kg
Anthracene		mg/Kg

Compound		Units
Di-N-Butyl Phthalate	<100	mg/Kg
Fluoranthene		mg/Kg
Pyrene		mg/Kg
N-Butyl Benzyl Phthalate		mg/Kg
Bis(2-Ethylhexyl)Phthalate		mg/Kg
Chrysene		mg/Kg
Benzo(A)Anthracene		mg/Kg
Di-N-Octyl Phthalate		mg/Kg
Benzo-(B)Fluoranthene		mg/Kg
Benzo-(K)Fluoranthene		mg/Kg
Benzo-A-Pyrene		mg/Kg
Indeno(1,2,3-CD)Pyrene		mg/Kg
1,2,5,6-Dibenzanthracene	<200	mg/Kg
Benzo(GHI)Perylene	<100	mg/Kg
2-Chlorophenol		mg/Kg
2-Nitrophenol		mg/Kg
Phenol (GC/MS)		mg/Kg
2,4-Dimethylphenol		mg/Kg
2,4-Dichlorophenol		mg/Kg
2,4,6-Trichlorophenol		mg/Kg
Parachlorometa Cresol		mg/Kg
2,4-Dinitrophenol	<500	mg/Kg
4,6-Dinitro-O-Cresol	<500	mg/Kg
Pentachlorophenol	<200	mg/Kg
4-Nitrophenol	<500	mg/Kg
Benzidine	<800	mg/Kg
3,3'-Dichlorobenzidine	<200	mg/Kg
N-Nitrosodimethylamine	<100	mg/Kg
Sample contained a large amount of hydrocarbons characteristic of an oil		mg/Kg
		mg/Kg
		mg/Kg
		mg/Kg
		mg/Kg
		mg/Kg

No other extractable organic compound detected with an estimated minimum detection limit of _____

DATE: 11/17/87
PROJECT: Young Refinery
SOURCE: Sludge Composite Bottom Layer - Pond 1

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PESTICIDES/PCB's ANALYSIS-WASTE
DATA REPORTING SHEET

SAMPLE TYPE: Sludge
SAMPLE NO.: (tw) 2886

SAMPLE REC'D (date & time:)
SAMPLE START (date & time:)
SAMPLE STOP (date & time:)

CHEMIST: AG COMPLETED: [illegible]

Compound		Units	Compound		Units
Aldrin		mg/Kg			
a-BHC		mg/Kg			
b-BHC		mg/Kg			
d-BHC		mg/Kg			
g-BHC		mg/Kg			
Chlordane		mg/Kg			
4,4'-DDD		mg/Kg			
4,4'-DDE		mg/Kg			
4,4'-DDT		mg/Kg			
Dieldrin		mg/Kg			
Endosulfan I		mg/Kg			
Endosulfan II		mg/Kg			
Endosulfan sulfate		mg/Kg			
Endrin		mg/Kg			
Endrin aldehyde		mg/Kg			
Heptachlor		mg/Kg			
Heptachlor epoxide		mg/Kg			
Toxaphene		mg/Kg			
PCB-1016	<200	mg/Kg			
PCB-1221		mg/Kg			
PCB-1232		mg/Kg			
PCB-1242		mg/Kg			
PCB-1248		mg/Kg			
PCB-1254		mg/Kg			
PCB-1260		mg/Kg			

DATE: 12-15-87
PROJECT: Texas Refining
SOURCE: S 2 Soil
Composite API Separator

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PURGEABLE ORGANIC ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: HW 2887

SAMPLE REC'D (date & time): _____
SAMPLE START (date & time): _____
SAMPLE STOP (date & time): _____
CHEMIST: MB COMPLETED: DL

Compound	Storet#		Units	Compound	Storet#		Units
Methylene Chloride	34426	<5000	µg/Kg	Acetone		<10,000	µg/Kg
Trichlorofluoromethane	34491	<1000	µg/Kg	Methy Ehtyl Ketone		<10,000	µg/Kg
1,1-Dichloroethylene	34504		µg/Kg	Carbon Disulfide		<1000	µg/Kg
1,1-Dichloroethane	34499		µg/Kg	Chloride			µg/Kg
1,2-Trans-Dichloro-ethylene	34549		µg/Kg	Isopropyl Acetate			µg/Kg
				2-Hexanone			µg/Kg
Chloroform	34318		µg/Kg	Methyl Isobutyl Ketone			µg/Kg
1,2-Dichloroethane	34534		µg/Kg	Styrene			µg/Kg
1,1,1-Trichloroethane	34509		µg/Kg	O-Xylene			µg/Kg
Carbon Tetrachloride	34299		µg/Kg	P-Xylene (TOTAL)		6,000	µg/Kg
Dichlorobromomethane	34330		µg/Kg	M-Xylene			µg/Kg
1,2-Dichloropropane	34544		µg/Kg	Ethyl Acetate		<1000	µg/Kg
Trans-1,3-Dichloro-propene	34697		µg/Kg	N-Propyl Acetate		<1000	µg/Kg
				Butyl Acetate		<1000	µg/Kg
Trichloroethylene	34487		µg/Kg	Acrolein	34213	<50,000	µg/Kg
Benzene	34237		µg/Kg	Acrylonitrile	34218	<50,000	µg/Kg
Chlorodibromomethane	34309		µg/Kg	Chloromethane	34421	<10,000	µg/Kg
1,1,2-Trichloroethane	34514		µg/Kg	Bromomethane	34416		µg/Kg
Cis-1,3-Dichloropropene	34702		µg/Kg	Vinyl Chloride	34495		µg/Kg
2-Chloroethyl Vinyl Ether	34579		µg/Kg	Chloroethane	34314		µg/Kg
							µg/Kg
Bromoform	34290		µg/Kg				µg/Kg
1,1,2,2-Tetrachloro-ethane	44519		µg/Kg				µg/Kg
							µg/Kg
Tetrachloroethylene	34478		µg/Kg				µg/Kg
Toluene	34483		µg/Kg				µg/Kg
Chlorobenzene	34304		µg/Kg				µg/Kg
Ethylbenzene	34374		µg/Kg				µg/Kg

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

No other purgeable organic compound detected with an estimated minimum detection limit of _____

M - NOT ANALYZED

B-6

DATE: 12-14-87
PROJECT: Young Refining
SOURCE: S-2 Soil
Composite API Separator

GRORGIA ENVIRONMENTAL PROTECTION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: MW 2887

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: SB COMPLETED:

Compound	Storet#		Units
1,2-Dichlorobenzene	34539	<10,000	µg/Kg
1,3-Dichlorobenzene	34569		µg/Kg
1,4-Dichlorobenzene	34574		µg/Kg
Bis(2-Chloroethyl)Ether	34276		µg/Kg
Hexachloroethane	34399		µg/Kg
Bis(2-Chloroisopropyl) Ether	34286		µg/Kg
N-Nitrosodi-N-Propylamine	34431		µg/Kg
Nitrobenzene	34450		µg/Kg
Hexachlorobutadiene	39705		µg/Kg
1,2,4-Trichlorobenzene	34554		µg/Kg
Naphthalene	34445	17,000	µg/Kg
Bis(2-Chloroethoxy) Methane	34281	<10,000	µg/Kg
Isophorone	34411	<10,000	µg/Kg
Hexachlorocyclopentadiene	34389	<20,000	µg/Kg
2-Chloronaphthalene	34584	<10,000	µg/Kg
Acenaphthylene	34203		µg/Kg
Acenaphthene	34208		µg/Kg
Dimethyl Phthalate	34344		µg/Kg
2,4-Dinitrotoluene	34614	<20,000	µg/Kg
2,6-Dinitrotoluene	34629	<10,000	µg/Kg
4-Chlorophenyl Phenyl Ether	34644		µg/Kg
Fluorene	34384		µg/Kg
Diethyl Phthalate	34339		µg/Kg
4,6-Dinitro-O-Cresol	34660	<50,000	µg/Kg
4-Nitrophenol	34649	<50,000	µg/Kg
3,3'-Dichlorobenzidine	34634	<20,000	µg/Kg
1,2-Diphenylhydrazine	34349	<10,000	µg/Kg
N-Nitrosodiphenylamine	34436		µg/Kg
Hexachlorobenzene	39701		µg/Kg
4-Bromophenyl Phenyl Ether	34639		µg/Kg
Phenanthrene	34464		µg/Kg
Anthracene	34223		µg/Kg

Compound	Storet#		Units
Di-N-Butyl Phthalate	39112	<10,000	µg/Kg
Fluoranthene	34379		µg/Kg
Pyrene	34472		µg/Kg
N-Butyl Benzyl Phthalate	34295		µg/Kg
Bis(2-Ethylhexyl)Phthalate	39102		µg/Kg
Crysene	34323		µg/Kg
Benzo(A)Anthracene	34529		µg/Kg
Di-N-Octyl Phthalate	34599		µg/Kg
Benzo-(B)Fluoranthene	34233		µg/Kg
Benzo-(K)Fluoranthene	34245		µg/Kg
Benzo-A-Pyrene	34250		µg/Kg
Indeno(1,2,3-CD)Pyrene	34406		µg/Kg
1,2,5,6-Dibenzanthracene	34559	<20,000	µg/Kg
Benzo(GHI)Perylene	34524	<10,000	µg/Kg
2-Chlorophenol	34589		µg/Kg
2-Nitrophenol	34594		µg/Kg
Phenol (GC/MS)	34695		µg/Kg
2,4-Dimethylphenol	34609		µg/Kg
2,4-Dichlorophenol	34604		µg/Kg
2;4,6-Trichlorophenol	34624		µg/Kg
Parachlorometa Cresol	34455		µg/Kg
2;4-Dinitrophenol	34619	<50,000	µg/Kg
Pentachlorophenol	39061	<20,000	µg/Kg
Benzidine	39121	<80,000	µg/Kg
N-Nitrosodimethylamine	34441	<10,000	µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg

No other extractable organic compound detected with an estimated minimum detection limit of _____

DATE: -17-87
PROJECT: Young Refinery
SOURCE: S-2 Soil
Composite APE Separator

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PESTICIDES/PCB's ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: HW 2887

SAMPLE REC'D(date & time): _____
SAMPLE START(date & time): _____
SAMPLE STOP (date & time): _____
CHEMIST: AG COMPLETED: [illegible]

Compound	Storet #		Units	Compound	Storet #		Units
Aldrin	39333		µg/Kg				
a-BHC	39076		µg/Kg				
b-BHC	34257		µg/Kg				
d-BHC	34262		µg/Kg				
r-BHC	39343		µg/Kg				
Chlordane	39351		µg/Kg				
4,4'-DDD	39311		µg/Kg				
4,4'-DDE	39321		µg/Kg				
4,4'-DDT	39301		µg/Kg				
Dieldrin	39383		µg/Kg				
Endosulfan I	34364		µg/Kg				
Endosulfan II	34359		µg/Kg				
Endosulfan sulfate	34354		µg/Kg				
Endrin	39393		µg/Kg				
Endrin aldehyde	34369		µg/Kg				
Heptachlor	39413		µg/Kg				
Heptachlor epoxide	39423		µg/Kg				
Toxaphene	39403		µg/Kg				
PCB-1016	39514	<20	µg/Kg				
PCB-1221	39491		µg/Kg				
PCB-1232	39495		µg/Kg				
PCB-1242	39499		µg/Kg				
PCB-1248	39503		µg/Kg				
PCB-1254	39507		µg/Kg				
PCB-1260	39511		µg/Kg				

DATE: 12-15-87
PROJECT: Murray Refining
SOURCE: S-3 Soil
Background

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PURGEABLE ORGANIC ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: AW 2888

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: MB COMPLETED: DR

Compound	Storet#		Units	Compound	Storet#		Units
Methylene Chloride	34426	< 5	µg/Kg	Acetone		<10	µg/Kg
Trichlorofluoromethane	34491	< 1	µg/Kg	Methy Ehtyl Ketone		<10	µg/Kg
1,1-Dichloroethylene	34504		µg/Kg	Carbon Disulfide		< 1	µg/Kg
1,1-Dichloroethane	34499		µg/Kg	Chloride			µg/Kg
1,2-Trans-Dichloro-ethylene	34549		µg/Kg	Isopropyl Acetate			µg/Kg
Chloroform	34318		µg/Kg	2-Hexanone			µg/Kg
1,2-Dichloroethane	34534		µg/Kg	Methyl Isobutyl Ketone			µg/Kg
1,1,1-Trichloroethane	34509		µg/Kg	Styrene			µg/Kg
Carbon Tetrachloride	34299		µg/Kg	O-Xylene			µg/Kg
Dichlorobromomethane	34330		µg/Kg	P-Xylene			µg/Kg
1,2-Dichloropropane	34544		µg/Kg	M-Xylene			µg/Kg
Trans-1,3-Dichloro-propene	34697		µg/Kg	Ethyl Acetate			µg/Kg
Trichloroethylene	34487		µg/Kg	N-Propyl Acetate			µg/Kg
Benzene	34237		µg/Kg	Butyl Acetate			µg/Kg
Chlorodibromomethane	34309		µg/Kg	Acrolein	34213	<50	µg/Kg
1,1,2-Trichloroethane	34514		µg/Kg	Acrylonitrile	34218	<50	µg/Kg
Cis-1,3-Dichloropropene	34702		µg/Kg	Chloromethane	34421	<10	µg/Kg
2-Chloroethyl Vinyl Ether	34579		µg/Kg	Bromomethane	34416		µg/Kg
Bromoform	34290		µg/Kg	Vinyl Chloride	34495		µg/Kg
1,1,2,2-Tetrachloro-ethane	44519		µg/Kg	Chloroethane	34314		µg/Kg
Tetrachloroethylene	34478		µg/Kg				µg/Kg
Toluene	34483		µg/Kg				µg/Kg
Chlorobenzene	34304		µg/Kg				µg/Kg
Ethylbenzene	34374		µg/Kg				µg/Kg

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

No other purgeable organic compound detected with an estimated minimum detection limit of _____

M - NOT ANALYZED

DATE: 12-14-89
PROJECT: Yum, Refining
SOURCE: S-3
Soil background

GRORGIA ENVIRONMENTAL PROTECTION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: HW 2888

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: SB COMPLETED: DR

Compound	Storet#		Units
1,2-Dichlorobenzene	34539	<200	µg/Kg
1,3-Dichlorobenzene	34569		µg/Kg
1,4-Dichlorobenzene	34574		µg/Kg
Bis(2-Chloroethyl)Ether	34276		µg/Kg
Hexachloroethane	34399		µg/Kg
Bis(2-Chloroisopropyl) Ether	34286		µg/Kg
N-Nitrosodi-N-Propylamine	34431		µg/Kg
Nitrobenzene	34450		µg/Kg
Hexachlorobutadiene	39705		µg/Kg
1,2,4-Trichlorobenzene	34554		µg/Kg
Naphthalene	34445		µg/Kg
Bis(2-Chloroethoxy) Methane	34281		µg/Kg
Isophorone	34411		µg/Kg
Hexachlorocyclopentadiene	34389	<400	µg/Kg
2-Chloronaphthalene	34584	<200	µg/Kg
Acenaphthylene	34203		µg/Kg
Acenaphthene	34208		µg/Kg
Dimethyl Phthalate	34344		µg/Kg
2,4-Dinitrotoluene	34614	<400	µg/Kg
2,6-Dinitrotoluene	34629	<200	µg/Kg
4-Chlorophenyl Phenyl Ether	34644		µg/Kg
Fluorene	34384		µg/Kg
Diethyl Phthalate	34339		µg/Kg
4,6-Dinitro-O-Cresol	34660	<1000	µg/Kg
4-Nitrophenol	34649	<1000	µg/Kg
3,3'-Dichlorobenzidine	34634	<400	µg/Kg
1,2-Diphenylhydrazine	34349	<200	µg/Kg
N-Nitrosodiphenylamine	34436		µg/Kg
Hexachlorobenzene	39701		µg/Kg
4-Bromophenyl Phenyl Ether	34639		µg/Kg
Phenanthrene	34464		µg/Kg
Anthracene	34223		µg/Kg

Compound	Storet#		Units
Di-N-Butyl Phthalate	39112	<200	µg/Kg
Fluoranthene	34379		µg/Kg
Pyrene	34472		µg/Kg
N-Butyl Benzyl Phthalate	34295		µg/Kg
Bis(2-Ethylhexyl)Phthalate	39102		µg/Kg
Crysene	34323		µg/Kg
Benzo(A)Anthracene	34529		µg/Kg
Di-N-Octyl Phthalate	34599		µg/Kg
Benzo-(B)Fluoranthene	34233		µg/Kg
Benzo-(K)Fluoranthene	34245		µg/Kg
Benzo-A-Pyrene	34250		µg/Kg
Indeno(1,2,3-CD)Pyrene	34406		µg/Kg
1,2,5,6-Dibenzanthracene	34559	<400	µg/Kg
Benzo(GHI)Perylene	34524	<200	µg/Kg
2-Chlorophenol	34589		µg/Kg
2-Nitrophenol	34594		µg/Kg
Phenol (GC/MS)	34695		µg/Kg
2,4-Dimethylphenol	34609		µg/Kg
2,4-Dichlorophenol	34604		µg/Kg
2,4,6-Trichlorophenol	34624		µg/Kg
Parachlorometa Cresol	34455		µg/Kg
2;4-Dinitrophenol	34619	<1000	µg/Kg
Pentachlorophenol	39061	<400	µg/Kg
Benzidine	39121	<1600	µg/Kg
N-Nitrosodimethylamine	34441	<200	µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg
			µg/Kg

No other extractable organic compound detected with an estimated minimum detection limit of _____

B-10

DATE: 17-87
PROJECT: Young Refinery
SOURCE: S-3 Soil
Background

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
PESTICIDES/PCB's ANALYSIS-SEDIMENT
DATA REPORTING SHEET

SAMPLE TYPE: Soil
SAMPLE NO.: HW 2888

SAMPLE REC'D (date & time):
SAMPLE START (date & time):
SAMPLE STOP (date & time):
CHEMIST: AG COMPLETED: DR

Compound	Storet #		Units	Compound	Storet #		Units
Aldrin	39333		µg/Kg				
a-BHC	39076		µg/Kg				
b-BHC	34257		µg/Kg				
d-BHC	34262		µg/Kg				
γ-BHC	39343		µg/Kg				
Chlordane	39351		µg/Kg				
4,4'-DDD	39311		µg/Kg				
4,4'-DDE	39321		µg/Kg				
4,4'-DDT	39301		µg/Kg				
Dieldrin	39383		µg/Kg				
Endosulfan I	34364		µg/Kg				
Endosulfan II	34359		µg/Kg				
Endosulfan sulfate	34354		µg/Kg				
Endrin	39393		µg/Kg				
Endrin aldehyde	34369		µg/Kg				
Heptachlor	39413		µg/Kg				
Heptachlor epoxide	39423		µg/Kg				
Toxaphene	39403		µg/Kg				
PCB-1016	39514	< 10	µg/Kg				
PCB-1221	39491		µg/Kg				
PCB-1232	39495		µg/Kg				
PCB-1242	39499		µg/Kg				
PCB-1248	39503		µg/Kg				
PCB-1254	39507		µg/Kg				
PCB-1260	39511		µg/Kg				

Prof

DATE: 10-28-87 PROJECT: Young Refining Corp. COLLECTOR: G.A. Knowles

NO. SAMPLES: 3 LOG NOS. 2883-2885 LIQUID ✓(3) SOLID ____ SOIL ____

CAUSTIC ____ ACID ____ SOLVENT ____ UNKNOWN ____ SLUDGE ____

INFORMATION FOUND: Facility refines crude (asphaltic) into asphaltic cements, #2 fuel oil, heavy oil and gasoline. All process wastewater and storm drains from complex passes through an API Separator that discharges to 4 ponds (NPDES).

HAZARDOUS WASTE NOS. ____

HAZARDOUS HANDLING: ____

WORK PRIORITY (CRITICAL NEED) Medium

RECEIVED DEC 21 1987

SITE INVESTIGATION PROGRAM

METALS ANALYSES

	TOT	DIS				
METALS (DW NO Hg)	☑	☐	EP METALS (DW NO Hg)	☐	100X ☐	30X ☐
METALS (DW WITH Hg)	☐	☐	EP METALS (DW WITH Hg)			

	TOT	DIS		TOT	DIS				
NICKEL	☐	☐	CADMIUM	☐	☐	EP NICKEL	☐	EP CADMIUM	☐
ARSENIC	☐	☐	LEAD	☑	☐	EP ARSENIC	☐	EP LEAD	☐
CHROMIUM	☑	☐	MERCURY	☐	☐	EP CHROMIUM	☐	EP MERCURY	☐
CHROM-HEX	☑	☐	SELENIUM	☐	☐	EP CHROM-HEX	☐	EP SELENIUM	☐
____	☐	☐	____	☐	☐	____	☐	____	☐

SPECIFIC ANALYSES

pH	☑	SULFIDE	☐	% SOLIDS	☐	____	☐
FLASH PT	☐	SP.COND.	☐	TOT. PHENOLS	☐	____	☐
CYANIDE TOT.	☐	TOC	☐	CHLORIDE	☐	____	☐
CYANIDE AM.	☐	TOH	☐	FLUORIDE	☐	____	☐

ORGANIC ANALYSES

PESTICIDE SCREEN (EC)	☐	GC-MS ACID EXTRACTABLES	☑
PCB	☐	GC-MS BASE/NEUTRALS	☑
VOLATILE ORGANICS (VOA)	☑		

SPECIFIC ORGANICS: ____

APPROVED: [signature] AUTHORIZED: [signature]

HW/OC3

LABORATORY REPORT

(404) 656-7404

SAMPLE DATE: 10-28-87 PROJECT: Young Refining Corp. COLLECTOR: G.A. Knowles

HW LOG NO.		2883	2884	2885		
DATE REC'D 10-28-87	LABEL					
TIME REC'D 1510						
REC'D BY: D Reed		GW-1 Well ON-SITE (Rear of Plant Area)	GW-2 Well ON-SITE (Near Pond #1 - and Tank #303)	GW-3 Private Dug Well off-site (Malone Street)		
DEL BY: Knowles						
J Harold Lanford LABORATORY MANAGER						
DATE: 12-17-87						
PARAMETERS	LAB NO.	HW 2833	HW 2884	HW 2885		
pH		6.5	6.5	6.3		
Spec. Cond	umho/cm	118	51	42		
Total Ag	ug/L	<10	<10	<10		
" As	"	<30	<30	<30		
" Ba	"	<10	<10	10		
" Cd	"	<10	<10	<10		
" Cr	"	<20	<20	<20		
" Pb	"	<30	<30	<30		
" Se	"	<5	<5	<5		
VOA		See Attached Sheets				
BN and A GC/MS		"	"	"		

REMARKS:

B-13

DATE: [illegible]-24-87

PROJECT: Young Refining Corp

SOURCE: Private Dug Well

Off-site - Malone St.

GEORGIA ENVIRONMENTAL PROTE[illegible]ON DIVISION

PURGEABLE ORGANIC ANALYSIS-WATER

DATA REPORTING SHEET

SAMPLE TYPE: Water

SAMPLE NO.: HW 2885

SAMPLE REC'D (date & time) [illegible]

SAMPLE START (date & time):

SAMPLE STOP (date & time):

CHEMIST: [illegible] COMPLETE: [illegible]

Compound	Storet#	Units	Compound	Storet#	Units
Methylene Chloride	34423 <5	µg/l	Acetone	<10	µg/l
Trichlorofluoromethane	34488 <1	µg/l	Methyl Ethyl Ketone	<10	µg/l
1,1-Dichloroethylene	34501	µg/l	Carbon Disulfide	<1	µg/l
1,1-Dichloroethane	34496	µg/l			µg/l
1,2-Trans-Dichloro-ethylene	34546	µg/l	Isopropyl Acetate		µg/l
Chloroform	32106	µg/l	2-Hexanone		µg/l
1,2-Dichloroethane	32103	µg/l	Methyl Isobutyl Ketone		µg/l
1,1,1-Trichloroethane	34506	µg/l	Styrene		µg/l
Carbon Tetrachloride	32102	µg/l	O-Xylene		µg/l
Dichlorobromomethane	32101	µg/l	P-Xylene		µg/l
1,2-Dichloropropane	34541	µg/l	M-Xylene		µg/l
Trans-1,3-Dichloro-propene	34699	µg/l	Ethyl Acetate		µg/l
Trichloroethylene	39180	µg/l	n-Propyl Acetate		µg/l
Benzene	34030	µg/l	Butyl Acetate		µg/l
Chlorodibromomethane	34306	µg/l	Acrolein	34210 <50	µg/l
1,1,2-Trichloroethane	34511	µg/l	Acrylonitrile	34215 <50	µg/l
Cis-1,3-Dichloropropene	34704	µg/l	Chloromethane	34418 <10	µg/l
2-Chloroethyl Vinyl Ether	34576		Bromomethane	34413	µg/l
Bromoform	32104	µg/l	Vinyl Chloride	39175	µg/l
1,1,2,2-Tetrachloro-ethane	34516	µg/l	Chloroethane	34311	µg/l
Tetrachloroethylene	34475	µg/l			µg/l
Toluene	34010	µg/l			µg/l
Chlorobenzene	34301	µg/l			µg/l
Ethylbenzene	34371	µg/l			µg/l

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

M - NOT ANALYZED

No other purgeable organic compound detected with an estimated minimum detection limit of _____

DATE 11-24-87

PROJECT: Young Refining Corp

SOURCE: GW-2 Well on-site

Near Pond #1 and Tank #505

GEORGIA ENVIRONMENTAL PROTECTION DIVISION

PURGEABLE ORGANIC ANALYSIS-WATER

DATA REPORTING SHEET

SAMPLE TYPE: Water

SAMPLE NO.: HW 2884

SAMPLE REC'D (date & time):

SAMPLE START (date & time):

SAMPLE STOP (date & time):

CHEMIST: MB COMPLETE: DR

Compound	Storet#		Units	Compound	Storet#		Units
Methylene Chloride	34423	<5	µg/l	Acetone		<10	µg/l
Trichlorofluoromethane	34488	<1	µg/l	Methyl Ethyl Ketone		<10	µg/l
1,1-Dichloroethylene	34501		µg/l	Carbon Disulfide		<1	µg/l
1,1-Dichloroethane	34496		µg/l				µg/l
1,2-Trans-Dichloro-ethylene	34546		µg/l	Isopropyl Acetate			
Chloroform	32106		µg/l	2-Hexanone			µg/l
1,2-Dichloroethane	32103		µg/l	Methyl Isobutyl Ketone			µg/l
1,1,1-Trichloroethane	34506		µg/l	Styrene			µg/l
Carbon Tetrachloride	32102		µg/l	O-Xylene			µg/l
Dichlorobromomethane	32101		µg/l	P-Xylene			µg/l
1,2-Dichloropropane	34541		µg/l	M-Xylene			µg/l
Trans-1,3-Dichloro-propene	34699		µg/l	Ethyl Acetate			µg/l
Trichloroethylene	39180		µg/l	n-Propyl Acetate			µg/l
Benzene	34030		µg/l	Butyl Acetate			µg/l
Chlorodibromomethane	34306		µg/l	Acrolein	34210	<50	µg/l
1,1,2-Trichloroethane	34511		µg/l	Acrylonitrile	34215	<50	µg/l
Cis-1,3-Dichloropropene	34704		µg/l	Chloromethane	34418	<10	µg/l
2-Chloroethyl Vinyl Ether	34576			Bromomethane	34413		µg/l
Bromoform	32104		µg/l	Vinyl Chloride	39175		µg/l
1,1,2,2-Tetrachloro-ethane	34516		µg/l	Chloroethane	34311		µg/l
Tetrachloroethylene	34475		µg/l				µg/l
Toluene	34010		µg/l				µg/l
Chlorobenzene	34301		µg/l				µg/l
Ethylbenzene	34371		µg/l				µg/l

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

M - NOT ANALYZED

No other purgeable organic compound detected with an estimated minimum detection limit of _____

DATE 11-24-87

PROJECT: Young Refining Corp

SOURCE: PW-1 Well-on-lot

Rear of Plant area

GEORGIA ENVIRONMENTAL PROTECTION DIVISION

PURGEABLE ORGANIC ANALYSIS-WATER

DATA REPORTING SHEET

SAMPLE TYPE: Water

SAMPLE NO.: HW 2883

SAMPLE REC'D (date & time):

SAMPLE START (date & time):

SAMPLE STOP (date & time):

CHEMIST: MB COMPLETE: DX

Compound	Storet#		Units	Compound	Storet#		Units
Methylene Chloride	34423	<5	µg/l	Acetone		<10	µg/l
Trichlorofluoromethane	34488	<1	µg/l	Methyl Ethyl Ketone		<10	µg/l
1,1-Dichloroethylene	34501		µg/l	Carbon Disulfide		<1	µg/l
1,1-Dichloroethane	34496		µg/l				µg/l
1,2-Trans-Dichloro-ethylene	34546		µg/l	Isopropyl Acetate			
Chloroform	32106		µg/l	2-Hexanone			µg/l
1,2-Dichloroethane	32103		µg/l	Methyl Isobutyl Ketone			µg/l
1,1,1-Trichloroethane	34506		µg/l	Styrene			µg/l
Carbon Tetrachloride	32102		µg/l	O-Xylene			µg/l
Dichlorobromomethane	32101		µg/l	P-Xylene			µg/l
1,2-Dichloropropane	34541		µg/l	M-Xylene			µg/l
Trans-1,3-Dichloro-propene	34699		µg/l	Ethyl Acetate			µg/l
Trichloroethylene	39180		µg/l	n-Propyl Acetate			µg/l
Benzene	34030		µg/l	Butyl Acetate			µg/l
Chlorodibromomethane	34306		µg/l	Acrolein	34210	<50	µg/l
1,1,2-Trichloroethane	34511		µg/l	Acrylonitrile	34215	<50	µg/l
Cis-1,3-Dichloropropene	34704		µg/l	Chloromethane	34418	<10	µg/l
2-Chloroethyl Vinyl Ether	34576			Bromomethane	34413		µg/l
Bromoform	32104		µg/l	Vinyl Chloride	39175		µg/l
1,1,2,2-Tetrachloro-ethane	34516		µg/l	Chloroethane	34311		µg/l
Tetrachloroethylene	34475		µg/l				µg/l
Toluene	34010		µg/l				µg/l
Chlorobenzene	34301		µg/l				µg/l
Ethylbenzene	34371		µg/l				µg/l

U - ANALYZED FOR BUT NOT DETECTED (value reported is detection limit - D.L.)

M - NOT ANALYZED

No other purgeable organic compound detected with an estimated minimum detection limit of _____

DAT 12-14-89

PROJECT: Young Refining Corp

SOURCE: GW-3 Private Dug Well off-site Malone St.

GEORGIA ENVIRONMENTAL PRO TION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-WATER
DATA REPORTING SHEET

SAMPLE TYPE: Water

SAMPLE NO.: AW 2885

SAMPLE REC'D(date & tim

SAMPLE START(date & time):

SAMPLE STOP (date & time):

CHEMIST: SB COMPLETED:

Compound	Storet#		Units
1,2-Dichlorobenzene	34536	<10	µg/l
1,3-Dichlorobenzene	34566		µg/l
1,4-Dichlorobenzene	34571		µg/l
Bis(2-Chloroethyl)Ether	34273		µg/l
Hexachloroethane	34396		µg/l
Bis(2-Chloroisopropyl) Ether	34283		µg/l
N-Nitrosodi-N-Propy-lamine	34428		µg/l
Nitrobenzene	34447		µg/l
Hexachlorobutadiene	38702		µg/l
1,2,4-Trichlorobenzene	34551		µg/l
Naphthalene	34696		µg/l
Bis(2-Chloroethoxy) Methane	34278		µg/l
Isophorone	34408		µg/l
Hexachlorocyclopenta-diene	34386	<20	µg/l
2-Chloronaphthalene	34581	<10	µg/l
Acenaphthylene	34200		µg/l
Acenaphthene	34205		µg/l
Dimethyl Phthalate	34341		µg/l
2,4-Dinitrotoluene	34611	<20	µg/l
2,6-Dinitrotoluene	34626	<10	µg/l
4-Chlorophenyl Phenyl Ether	34641		µg/l
Fluorene	34381		µg/l
Diethyl Phthalate	34336		µg/l
1,2-Diphenylhydrazine	34346		µg/l
N-Nitrosodiphenylamine	34433		µg/l
Hexachlorobenzene	39700		µg/l
4-Bromophenyl Phenyl Ether	34636		µg/l
Phenanthrene	34461		µg/l
Anthracene	34220		µg/l
Di-N-Butyl Phthalate	39110		µg/l

Compound	Storet#		Units
Fluoranthene	34376	<10	µg/l
Pyrene	34469		µg/l
N-Butyl Benzyl Phthalate	34292		µg/l
Bis(2-Ethylhexyl) Phthalate	39100		µg/l
Chrysene	34320		µg/l
Benzo(A)Anthracene	34526		µg/l
Di-N-Octyl Phthalate	34596		µg/l
Benzo-(B)Fluoranthene	34230		µg/l
Benzo-(K)Fluoranthene	34242		µg/l
Benzo-A-Pyrene	34247		µg/l
Indeno(1,2,3-CD)Pyrene	34403		µg/l
1,2,5,6-Dibenzanthracene	34556	<20	µg/l
Benzo(GHI)Perylene	34521	<10	µg/l
2-Chlorophenol	34586		µg/l
2-Nitrophenol	34591		µg/l
Phenol (GC/MS)	34694		µg/l
2,4-Dimethylphenol	34606		µg/l
2,4-Dichlorophenol	34601		µg/l
2,4,6-Trichlorophenol	34621		µg/l
Parachlorometa Cresol	34452		µg/l
2,4-Dinitrophenol	34616	<50	µg/l
4,6-Dinitro-O-Cresol	34657	<50	µg/l
Pentachlorophenol	39032	<20	µg/l
4-Nitrophenol	34646	<50	µg/l
Benzidine	39120	<80	µg/l
3,3'-Dichlorobenzidine	34631	<20	µg/l
N-Nitrosodimethylamine	34438	<10	µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l

No other extractable organic compound detected with an estimated minimum detection limit of _____

DAT 12-14-87
PROJECT: Young Refining Corp
SOURCE: GW-2 Well on Site
Near Pad #1 and Tank # 303

GEORGIA ENVIRONMENTAL PRO. CTION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-WATER
DATA REPORTING SHEET

SAMPLE TYPE: Water
SAMPLE NO.: HW 2884

SAMPLE REC'D(date & tim :
SAMPLE START(date & time):
SAMPLE STOP (date & time):

CHEMIST: SB COMPLETED: OK

Compound	Storet#		Units
1,2-Dichlorobenzene	34536	<10	µg/l
1,3-Dichlorobenzene	34566		µg/l
1,4-Dichlorobenzene	34571		µg/l
Bis(2-Chloroethyl)Ether	34273		µg/l
Hexachloroethane	34396		µg/l
Bis(2-Chloroisopropyl) Ether	34283		µg/l
N-Nitrosodi-N-Propy-lamine	34428		µg/l
Nitrobenzene	34447		µg/l
Hexachlorobutadiene	38702		µg/l
1,2,4-Trichlorobenzene	34551		µg/l
Naphthalene	34696		µg/l
Bis(2-Chloroethoxy) Methane	34278		µg/l
Isophorone	34408		µg/l
Hexachlorocyclopenta-diene	34386	<20	µg/l
2-Chloronaphthalene	34581	<10	µg/l
Acenaphthylene	34200		µg/l
Acenaphthene	34205		µg/l
Dimethyl Phthalate	34341		µg/l
2,4-Dinitrotoluene	34611	<20	µg/l
2,6-Dinitrotoluene	34626	<10	µg/l
4-Chlorophenyl Phenyl Ether	34641		µg/l
Fluorene	34381		µg/l
Diethyl Phthalate	34336		µg/l
1,2-Diphenylhydrazine	34346		µg/l
N-Nitrosodiphenylamine	34433		µg/l
Hexachlorobenzene	39700		µg/l
4-Bromophenyl Phenyl Ether	34636		µg/l
Phenanthrene	34461		µg/l
Anthracene	34220		µg/l
Di-N-Butyl Phthalate	39110		µg/l

Compound	Storet#		Units
Fluoranthene	34376	<10	µg/l
Pyrene	34469		µg/l
N-Butyl Benzyl Phthalate	34292		µg/l
Bis(2-Ethylhexyl) Phthalate	39100		µg/l
Chrysene	34320		µg/l
Benzo(A)Anthracene	34526		µg/l
Di-N-Octyl Phthalate	34596		µg/l
Benzo-(B)Fluoranthene	34230		µg/l
Benzo-(K)Fluoranthene	34242		µg/l
Benzo-A-Pyrene	34247		µg/l
Indeno(1,2,3-CD)Pyrene	34403		µg/l
1,2,5,6-Dibenzanthracene	34556	<20	µg/l
Benzo(GHI)Perylene	34521	<10	µg/l
2-Chlorophenol	34586		µg/l
2-Nitrophenol	34591		µg/l
Phenol (GC/MS)	34694		µg/l
2,4-Dimethylphenol	34606		µg/l
2,4-Dichlorophenol	34601		µg/l
2,4,6-Trichlorophenol	34621		µg/l
Parachlorometa Cresol	34452		µg/l
2,4-Dinitrophenol	34616	<50	µg/l
4,6-Dinitro-O-Cresol	34657	<50	µg/l
Pentachlorophenol	39032	<20	µg/l
4-Nitrophenol	34646	<50	µg/l
Benzidine	39120	<80	µg/l
3,3'-Dichlorobenzidine	34631	<20	µg/l
N-Nitrosodimethylamine	34438	<10	µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l

No other extractable organic compound detected with an estimated minimum detection limit of _____

DATE: 12-14-87
PROJECT: Young Refining
SOURCE: GW-1 Well On-Site
Rear of Plant Area

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
EXTRACTABLE ORGANIC ANALYSIS-WATER
DATA REPORTING SHEET

SAMPLE TYPE: Water
SAMPLE NO.: HW 2883

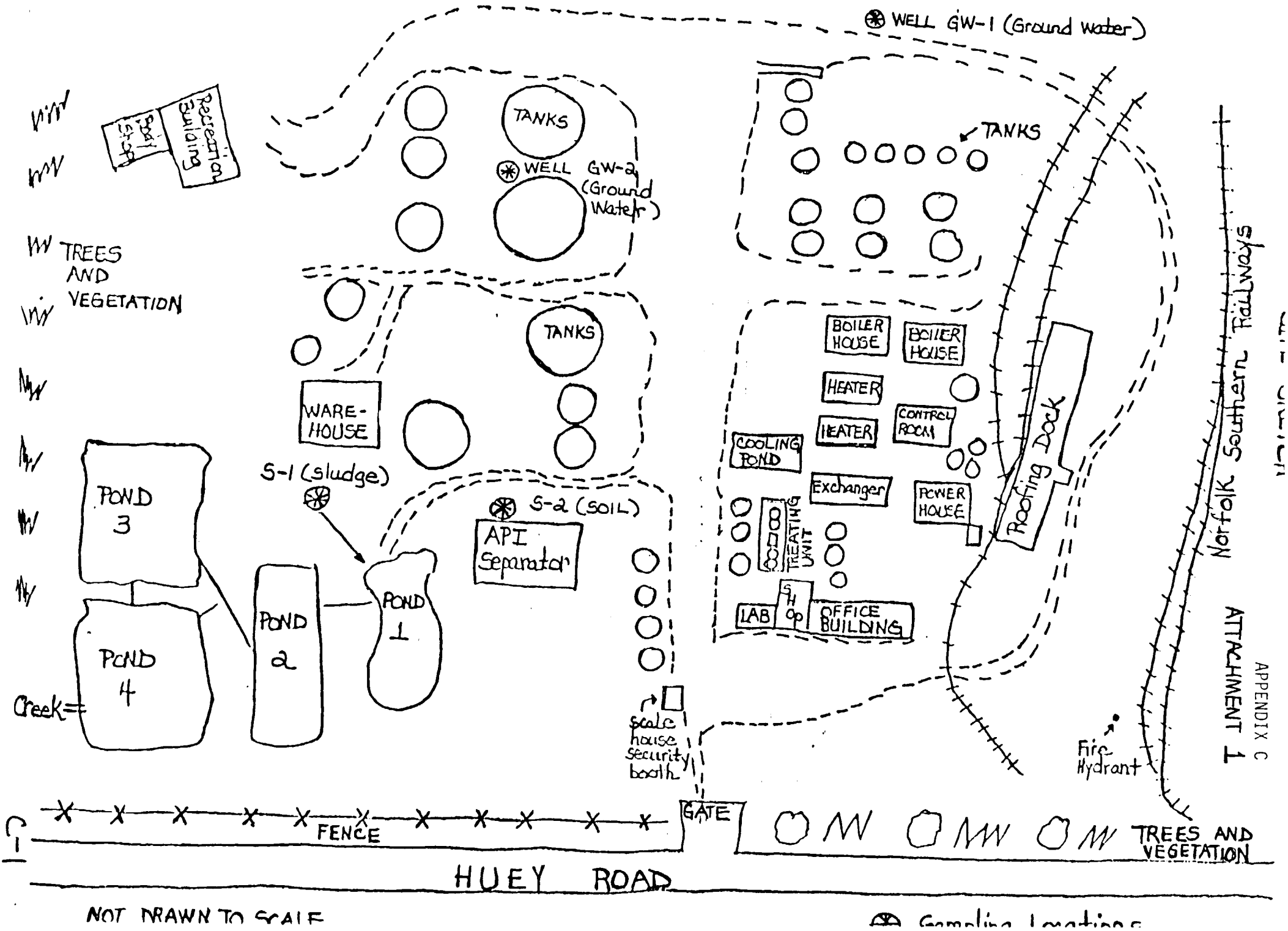
SAMPLE REC'D(date & time):
SAMPLE START(date & time):
SAMPLE STOP (date & time):
CHEMIST: SB COMPLETED: DA

Compound	Storet#		Units
1,2-Dichlorobenzene	34536	<10	µg/l
1,3-Dichlorobenzene	34566		µg/l
1,4-Dichlorobenzene	34571		µg/l
Bis(2-Chloroethyl)Ether	34273		µg/l
Hexachloroethane	34396		µg/l
Bis(2-Chloroisopropyl) Ether	34283		µg/l
N-Nitrosodi-N-Propylamine	34428		µg/l
Nitrobenzene	34447		µg/l
Hexachlorobutadiene	38702		µg/l
1,2,4-Trichlorobenzene	34551		µg/l
Naphthalene	34696		µg/l
Bis(2-Chloroethoxy) Methane	34278		µg/l
Isophorone	34408		µg/l
Hexachlorocyclopentadiene	34386	<20	µg/l
2-Chloronaphthalene	34581	<10	µg/l
Acenaphthylene	34200		µg/l
Acenaphthene	34205		µg/l
Dimethyl Phthalate	34341		µg/l
2,4-Dinitrotoluene	34611	<20	µg/l
2,6-Dinitrotoluene	34626	<10	µg/l
4-Chlorophenyl Phenyl Ether	34641		µg/l
Fluorene	34381		µg/l
Diethyl Phthalate	34336		µg/l
1,2-Diphenylhydrazine	34346		µg/l
N-Nitrosodiphenylamine	34433		µg/l
Hexachlorobenzene	39700		µg/l
4-Bromophenyl Phenyl Ether	34636		µg/l
Phenanthrene	34461		µg/l
Anthracene	34220		µg/l
Di-N-Butyl Phthalate	39110		µg/l

Compound	Storet#		Units
Fluoranthene	34376	<10	µg/l
Pyrene	34469		µg/l
N-Butyl Benzyl Phthalate	34292		µg/l
Bis(2-Ethylhexyl) Phthalate	39100		µg/l
Chrysene	34320		µg/l
Benzo(A)Anthracene	34526		µg/l
Di-N-Octyl Phthalate	34596		µg/l
Benzo-(B)Fluoranthene	34230		µg/l
Benzo-(K)Fluoranthene	34242		µg/l
Benzo-A-Pyrene	34247		µg/l
Indeno(1,2,3-CD)Pyrene	34403		µg/l
1,2,5,6-Dibenzanthracene	34556	<20	µg/l
Benzo(GHI)Perylene	34521	<10	µg/l
2-Chlorophenol	34586		µg/l
2-Nitrophenol	34591		µg/l
Phenol (GC/MS)	34694		µg/l
2,4-Dimethylphenol	34606		µg/l
2,4-Dichlorophenol	34601		µg/l
2,4,6-Trichlorophenol	34621		µg/l
Parachlorometa Cresol	34452		µg/l
2,4-Dinitrophenol	34616	<50	µg/l
4,6-Dinitro-O-Cresol	34657	<50	µg/l
Pentachlorophenol	39032	<20	µg/l
4-Nitrophenol	34646	<50	µg/l
Benzidine	39120	<80	µg/l
3,3'-Dichlorobenzidine	34631	<20	µg/l
N-Nitrosodimethylamine	34438	<10	µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l
			µg/l

No other extractable organic compound detected with an estimated minimum detection limit of _____

APPENDIX C



APPENDIX C
ATTACHMENT 1

APPENDIX C
ATTACHMENT 3

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams **Date:** October 9, 1987

Time: 11:05 (a.m.)/p.m.

File: Young Refining Corporation - GAD051011344

Party Spoken To: Mr. Ken Lawler **Title:** Water Superintendant

Agency/Company: Water Department - Douglasville

Address: P.O. Box 1157 **City:** Douglasville

Telephone Number: (404) 949 - 7617 **State/Zip:** Georgia 30133

Subject: Young Refining Corporation - GAD051011344

Summary of Call: I called Mr. Lawler to obtain information concerning drinking water in the area and he stated the following: (1.) he did not have any information on shallow wells in the area and that I should call the Health Dept (404) 949-2000 and speak to Mr. Doug Daniels; (2.) that the city of Douglasville's drinking water is supplied from large impoundments from which water is drawn from (surface water) Anawakee, Little Anawakee, Bear Creek Reservoir (Bear Creek + Little Bear Creek) and that supplemental water is purchased from Cobb + Marietta Water Systems and (3.) Sweet Water Creek supplies water (drinking) to East Point, Douglas County residents from the East Point Reservoir.

Actions Required:

Call Mr. Doug Daniels for possible well information. Health Dept. (404) 949-2000.

Signature: Hilda A. Knowles October 9, 1987.

Follow-up Responses/Additional Comments: I spoke to the Health Dept. Sanitarian, Mr. Daniels and he stated that he knew of only one shallow well in the area (Huey Road), but that 10 yrs. ago the home converted to city water. The water lines extend down Huey Rd. all the way to Maroney Road.

Signature: Hilda A. Knowles **Date:** October 13, 1987

SIP-2 9/86

The previous renter of the home was Mr. J. Calvin Whitley.

DOUGLAS APPENDIX C
ATTACHMENT 4

Series 1959, No. 1

Issued November 1961

SOIL SURVEY

Douglas County Georgia

OUR SOIL ★ OUR STRENGTH

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
UNIVERSITY OF GEORGIA, COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATIONS

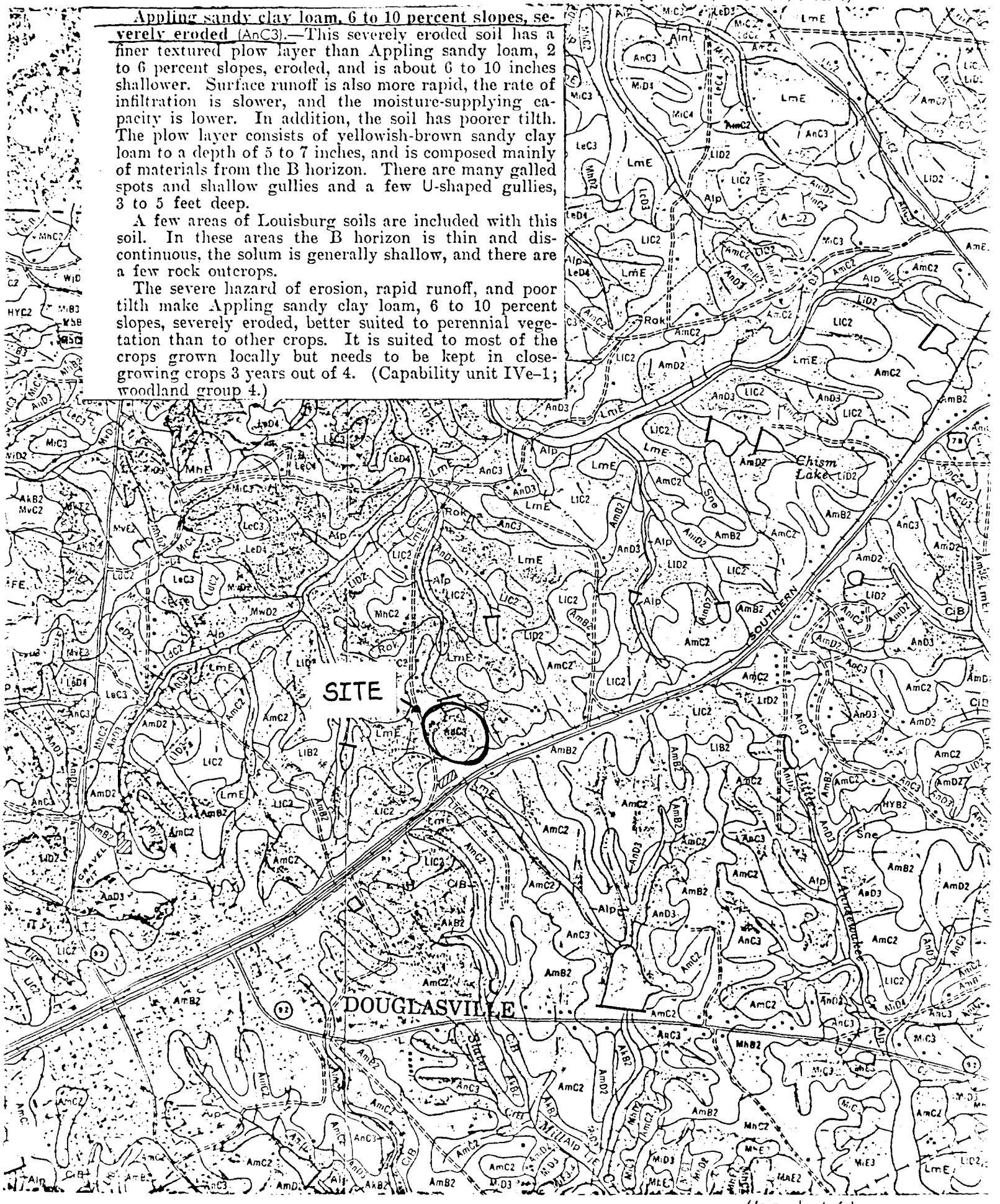
C-4

(Joins inset, sheet 1)

Appling sandy clay loam, 6 to 10 percent slopes, severely eroded (AnC3).—This severely eroded soil has a finer textured plow layer than Appling sandy loam, 2 to 6 percent slopes, eroded, and is about 6 to 10 inches shallower. Surface runoff is also more rapid, the rate of infiltration is slower, and the moisture-supplying capacity is lower. In addition, the soil has poorer tilth. The plow layer consists of yellowish-brown sandy clay loam to a depth of 5 to 7 inches, and is composed mainly of materials from the B horizon. There are many galled spots and shallow gullies and a few U-shaped gullies, 3 to 5 feet deep.

A few areas of Louisburg soils are included with this soil. In these areas the B horizon is thin and discontinuous, the solum is generally shallow, and there are a few rock outcrops.

The severe hazard of erosion, rapid runoff, and poor tilth make Appling sandy clay loam, 6 to 10 percent slopes, severely eroded, better suited to perennial vegetation than to other crops. It is suited to most of the crops grown locally but needs to be kept in close-growing crops 3 years out of 4. (Capability unit IVe-1; woodland group 4.)



(Joins sheet 6)

APPENDIX C
ATTACHMENT 5

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams

Date: October 29, 1987

Time: 1:05 a.m./p.m.

File: Young Refining Corporation

Party Spoken To: (b) (6) [redacted]

Title: Home Owner

Agency/Company: Non-applicable

Address: (b) (6) [redacted]

City: Douglasville

Telephone Number: (b) (6) [redacted]

State/Zip: Ga. 31034

Subject: Young Refining Corporation - GAD051011344

Summary of Call: This call resulted from the sampling of Mrs. Latham's well, which was done on 10-28-87. Following a site inspection of the above facility, a background groundwater sample was needed for comparison with Young Refining Corp's well water. [redacted] dug well was sampled but there was no one at home, so I left my business card in her door to call me with additional information. [redacted] called and stated the following: 1) that her well is used for drinking water and for lawn irrigation, 2.) that the city water lines ended/stopped at the house before hers and 3.) that she does not know the depth of her well, she knows it's not that

Actions Required: deep because they tried to dig the well deeper, but ran into rock. I told her that I would send her a copy of lab results when they became available. *Depth of well is needed.

Signature: Gilda A. Knowles October 29, 1987.

Follow-up Responses/Additional Comments: On November 12, 1987, while completing a well survey, M[redacted] well depth was measured with a water level indicator. Well depth was found to be 20 feet.

Signature: Gilda A. Knowles

Date: November 12, 1987.

SIP-2

9/86

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

TRIP REPORT

October 20, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD05101134
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles G.A.K. Environmental Specialist Site Assessment Unit
ACCOMPANIED BY:	N/A
DATE AND TIME OF INVESTIGATION:	October 20, 1987 8:10 a.m.
OFFICIALS CONTACTED:	Mr. Charles Ellis Plant Manager Young Refining Corporation (404)942-2343 Mr. Fang Kou Plant Engineer Young Refining Corporation (404)942-2343
REFERENCE:	Preliminary Assessment Georgia-EPD State Files Trip Report by Jack Dempsey November 21, 1985

COMMENTS:

The facility refines asphaltic crude that is shipped by railroad car from Mississippi. The corporation's crude terminal is located in Lumberton, Mississippi and crude is purchased from Texaco and Chevron Oil Companies off the pipeline. The facility manufactures jet fuel for the government, heavy #5 oil (atmospheric gas oil), #2 fuel (diesel oil), certified state asphalt, oxidized asphalt (shingle, saturate, coat covering) and four (4) types of roofing asphalt. All products are transported by truck in bulk or packaged products. The various processes that the crude is taken through are heating, distillation, fractionating, oxidation and shipping. The wastes that are generated are solid wastes (collected on-site in dumpsters serviced by the City of Douglasville); wastewater (passes through API separator and is discharged to a series of 4

ponds-NPDES permitted) and sludges (API Separator, Desalter, Heat Exchanger). Mr. Ellis stated that he was not sure of the sludge disposal company that Young Refining Corporation utilizes.

Treatment ponds (4) have never been lined, but on occasion ponds #2, 3 and 4 are cleaned. Mr. Ellis stated that pond #3 is continuously aerated; however, during my tour of the facility aerating equipment at pond #3 was not in operation.

Questions were asked of Mr. Ellis and he stated the following:

1. wastes are not treated or disposed of on-site; only water is treated,

2. the property is 30-40 acres in size,

3. the flocculator is no longer used between ponds # 1 and 2,

4. the facility is supplied city water for drinking and boiler feed water that is used for steam generation,

5. there are 5 operable wells on-site, that are 300 ft. in depth and their water is used for the cooling pond and utility purposes,

6. these wells are sampled daily for treatment purposes and Deerborne Chemical Company of Atlanta treats the well water,

7. there is no dilution of wastes,

8. water was treated for phenols, but none were found and,

9. the facility does not handle lead petroleum, only virgin crude is refined.

During my tour of the facility with Mr. Fang Kou, Plant Engineer, I observed the following:

1. process areas were messy,

2. soil type seemed to be of a sandy, clay consistency,

3. facility is fenced and entrance gate is kept locked when not in operation,

4. two other companies are located within the facility's complex and they are Central Oil & Asphalt Corporation and Elk Roofing Company,

5. Arivec Chemicals Inc. is also located in the area, but is totally surrounded by a fence,

6. sampling areas,

7. slopes varied from 8-40% in various areas of the site and

8. pond #4 discharges water to a small creek (tributary on-site).

APPENDIX C
ATTACHMENT 6

Mr. Kou reviewed the facility's processes with me on a flow chart in his laboratory and supplied a sketch of the facility. I left the site at 10:30 a.m.

I visited the Water Department and spoke with Mr. Winfred Pirkle, Water Superintendent, who supplied me with information on boundaries of water lines and possible areas to check for wells. Ownership and property maps were obtained from the county tax assessors office. A well survey was conducted within one mile of the facility and 2 shallow wells were observed, but residents are believed to be on city water. Deep wells were observed in 2 and 3 mile radius of the site, but were not counted. Roads that need to be checked for an extended well survey on the next site visit are Dallas, Malone, Brown Street and Simon. The water line boundaries are Brownville Road to the North, Bankhead Hwy. and South & North Flat Rock Roads to the West, Gurley Road to the Southwest, Chapel Hill Road to the South and Mount Vernon Road to the East.

CONCLUSIONS:

None can be drawn until samples are collected and analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

On-site sampling should be conducted, off-site sampling and an extended well survey should be completed.

PHOTOGRAPHS: 15 polaroids

NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: None (reconnaissance visit)

REVIEWED BY: **DATE:**

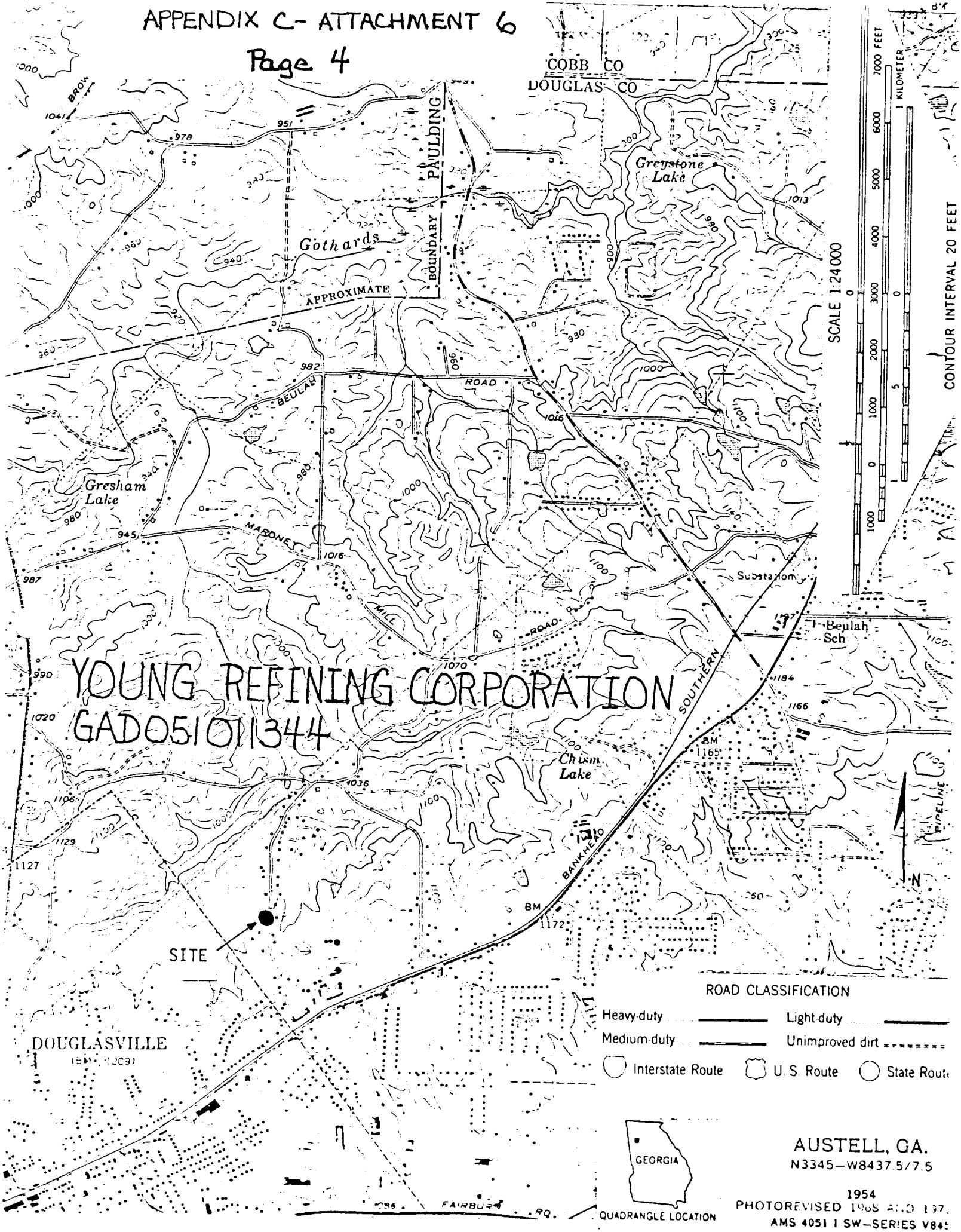
ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

GAK:zcr001

File: Young Refining Corporation

APPENDIX C- ATTACHMENT 6

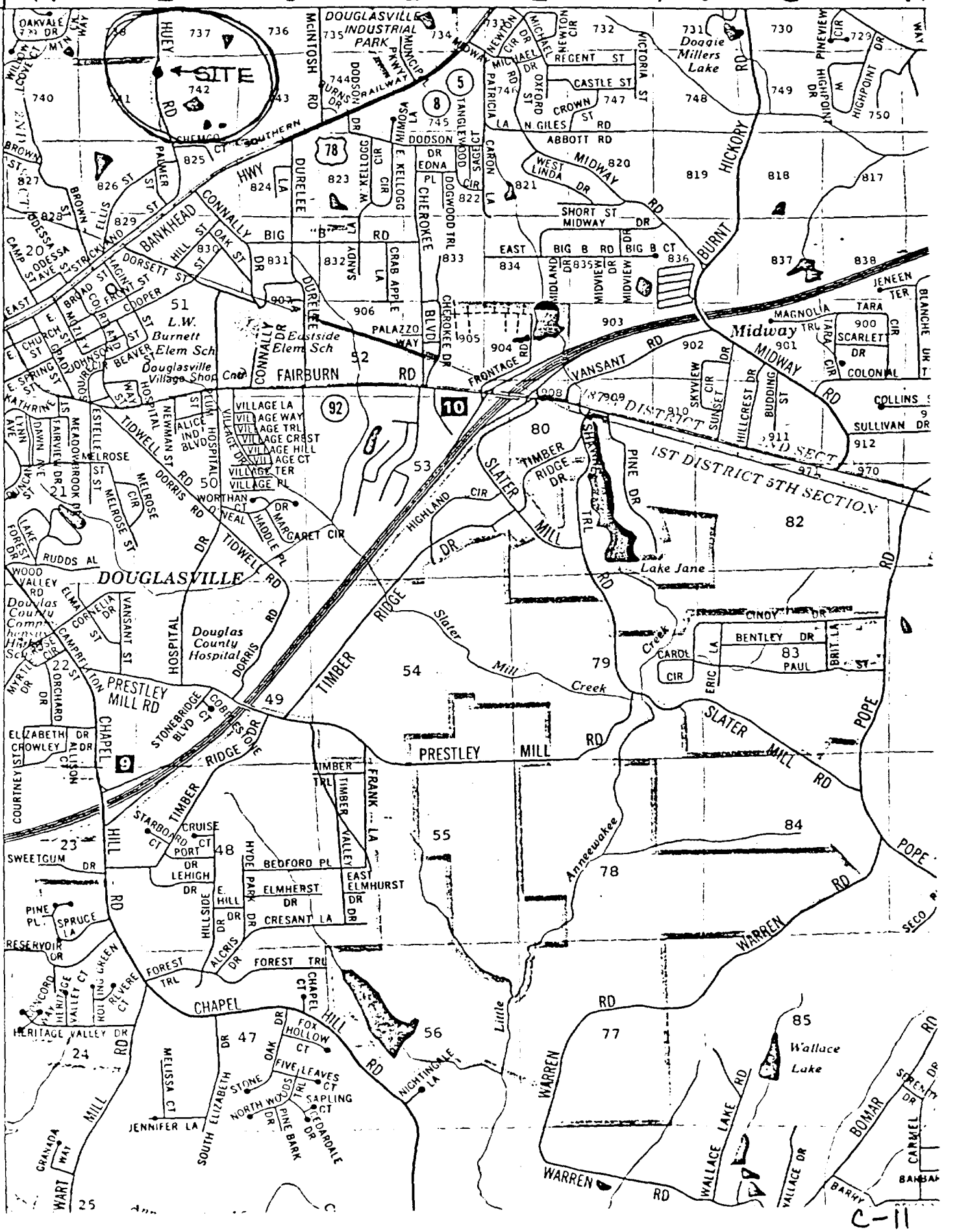
Page 4

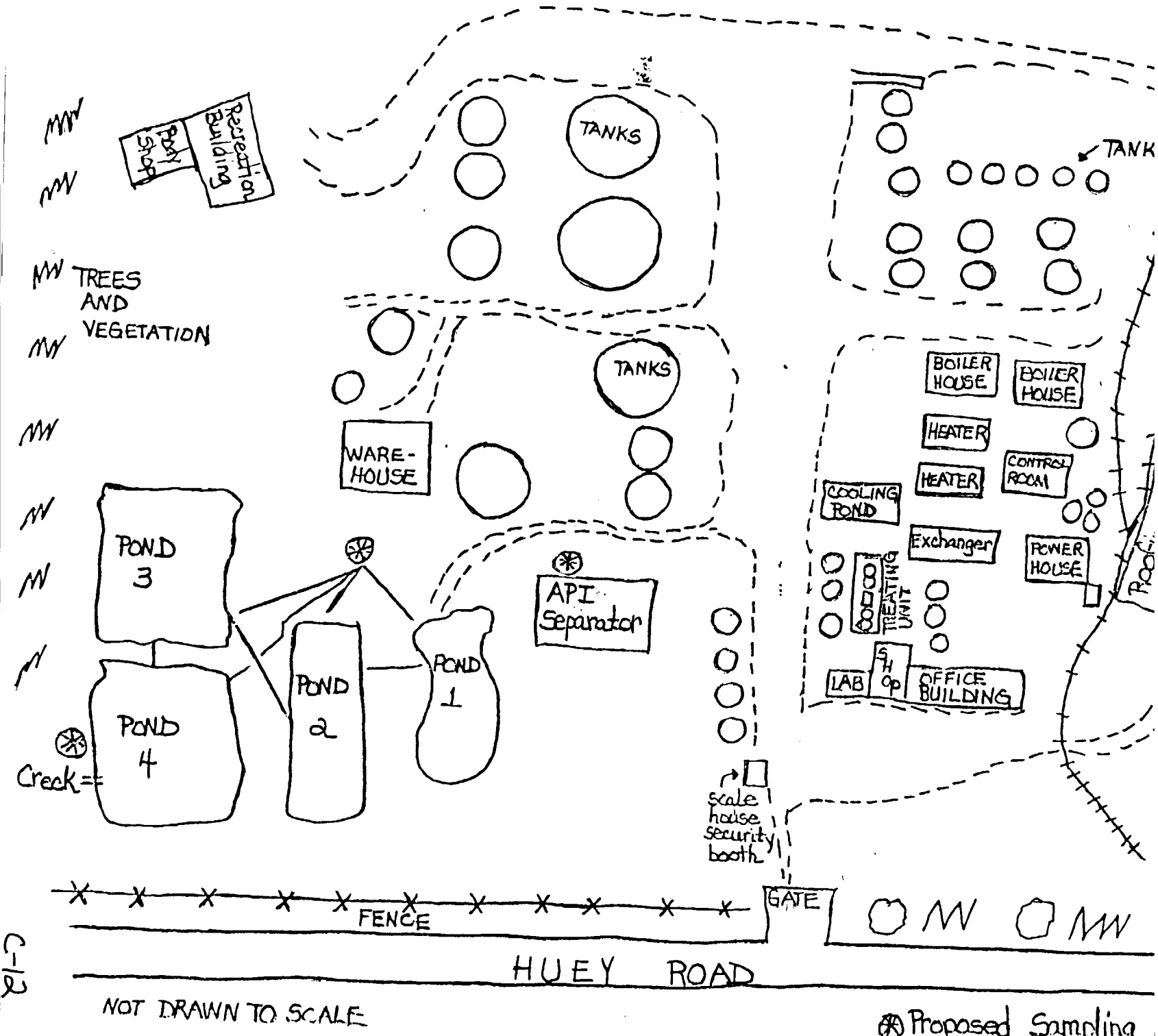


YOUNG REFINING CORPORATION
GAD051011344

C-10

Continued Page 152




Recreation Building
Pool Shop
TANKS
TANK
TREES AND VEGETATION
TANKS
WARE-HOUSE
BOILER HOUSE
BOILER HOUSE
HEATER
HEATER
CONTROL ROOM
COOLING POND
Exchanger
POWER HOUSE
TREATING UNIT
POND 3
POND 4
POND 2
POND 1
API Separator
LAB
Sh Op
OFFICE BUILDING
Creek
scale house security booth
GATE
FENCE
HUEY ROAD
NOT DRAWN TO SCALE
Proposed Sampling

C-2

N. - 8:10 AM

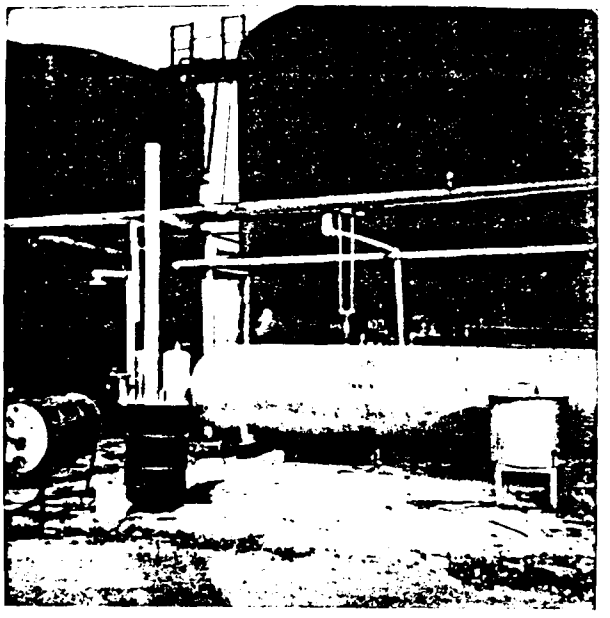
10-20-87

SITE NAME Young Refining Corporation
Picture No. 1 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance of facility off Huey Road. Front entrance; trees and heavy vegetation.
Other

N. 8:30 AM

10-20-87

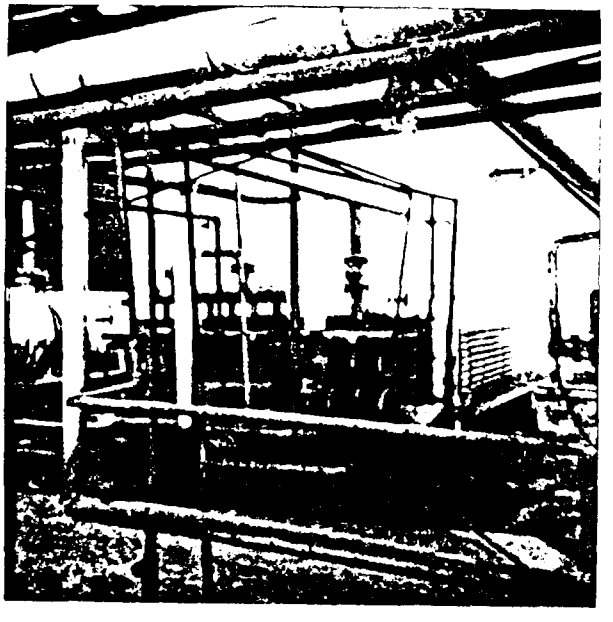
SITE NAME Young Refining Corporation
Picture No. 2 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance gate of facility. Security personnel present in security booth.
Other



N. - 8:35 AM

10-20-87

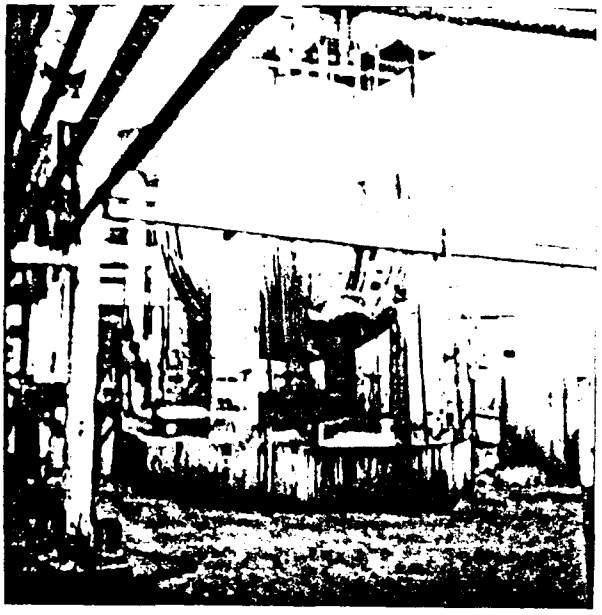
SITE NAME Young Refining Corporation
Picture No. 3 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Holding tanks for crude transported in by railroad car. One (1) tank is able
Other to accomodate 4 railroad cars of crude.



N. 8:40 AM.

10-20-87

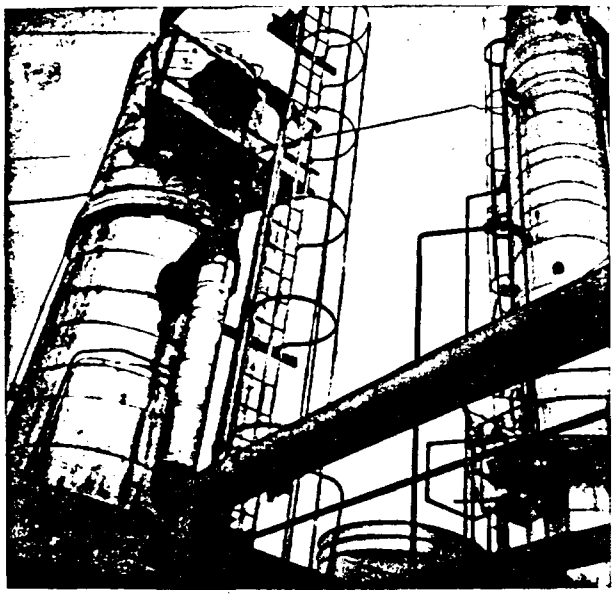
SITE NAME Young Refining Corporation
Picture No. 4 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Crude is heated through several steps with heat exchanger.
Other



W.- 8:45 AM

10-20-87

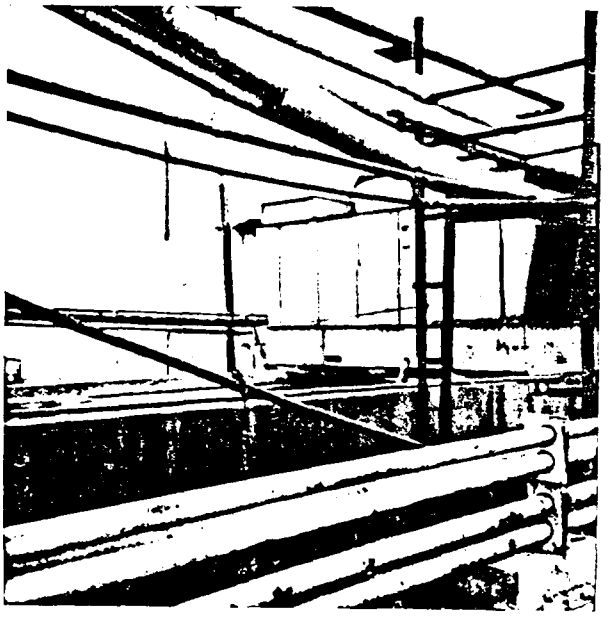
SITE NAME Young Refining Corporation
Picture No. 5 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Crude is eliminated of various salts by the desalter equipment
Other



N.
8:47
A.M.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 6 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Bubble Tower - Crude enters tower where light oils are vaporized out of crude and
Other asphalt goes out the bottom.



W.- 8:48 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 7 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation All wastewater is recycled and cooled down in this cooling pond.
Other

N.E.- 8:50 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 8 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing Northeast
Photographer G. A. Knowles
Program Site Investigation Program
Explanation API Separator - This piece of equipment further separates oil from water. The
Other water from this process flows into the primary catching pond #1.

S.-8:55 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 9 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing South
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #1

Other

N.E.-9:05 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 10 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #1 - Oil is skimmed off the top of the water into a thorgh that leads back through the crude tanks for reprocessing.
Other

W.- 9:15 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 11 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #2 with separator for skimming
Other

E.- 9:25 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 12 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #3 with aerating equipment. Aerator was inoperative at the time of inspection.
Other

N.E. 9:35 AM
10-20-87

SITE NAME Young Refining Corporation
Picture No. 13 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #4, drainage conduit for this pond is discharge to a small creek on-site.
Other

N.E. - 9:45 AM
10-20-87

SITE NAME Young Refining Corporation
Picture No. 14 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Discharge of water from conduit, to small creek (conduit extends from Pond #4).
Other

E.-10:15 AM 10-20-87

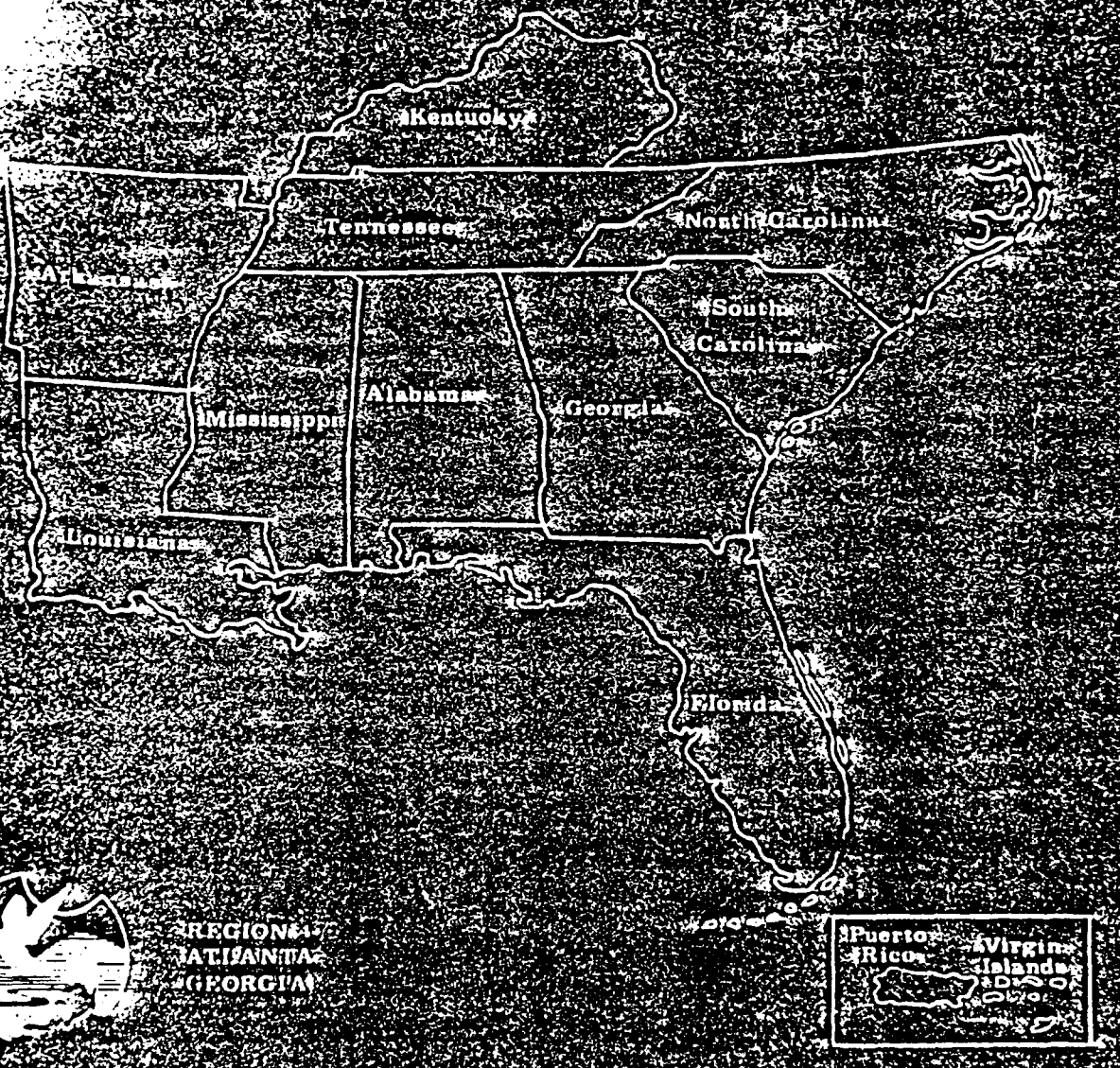
SITE NAME Young Refining Corporation
Picture No. 15 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F.
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Asphalt Roofing Area: Cardboard cartons with tin bottoms are filled with hot asphalt and allowed to cool.
Other

SITE NAME
Picture No. of
County Name
Date Weather
Direction Facing
Photographer
Program
Explanation
Other

APPENDIX C - ATTACHMENT 7

Reference

ENDANGERED AND THREATENED SPECIES OF THE SOUTHEASTERN UNITED STATES



REGIONAL
ATLANTA
GEORGIA

APPENDIX C
ATTACHMENT 7

Reference 19

United States Department of the Interior

FISH AND WILDLIFE SERVICE
75 SPRING STREET, S.W.
ATLANTA, GEORGIA 30303

August 23, 1985

NOTICE

TO: All Project Leaders and Cooperators

FROM: Endangered Species Office, Federal Assistance, FWS, Atlanta, Georgia

SUBJECT: Changes to the Region 4 Endangered Species Notebook

This update covers the following actions: listing of the Carolina northern flying squirrel in North Carolina and Tennessee as endangered, listing of the Tar River spiny mussel in North Carolina as endangered, listing of five Florida pine rockland plants as endangered, listing of the Miccosukee gooseberry in Florida and South Carolina as endangered, listing of Ruth's golden aster in Tennessee and Vahl's boxwood in Puerto Rico as endangered, listing of the amber darter and Conasauga logperch in Georgia and Tennessee as endangered with critical habitat designated, reclassification of the alligator in Florida to threatened by similarity of appearance, and the proposed listing of two plants (pondberry and Florida golden aster).

REGIONAL LIST: Replace.

STATE LISTS: Replace FL, GA, NC, PR, SC, TN.

CRITICAL HABITAT: Replace index; add amber darter and Conasauga logperch designations for GA and TN.

PROPOSED RULEMAKING: Replace previous sheet.

Species Accounts: FISHES - Replace index; add accounts for two fishes.

PLANTS - Replace index; add accounts for eight plants.

Attachments

85-3

RECEIVED
AUG 26 1985
REGION IV
SENT TO

Federally Listed Species by State

GEORGIA

(E=Endangered; T=Threatened; CH=Critical Habitat determined)

Mammals	General Distribution
Bat, gray (*Myotis grisescens*) - E	Northwest, West
Bat, Indiana (*Myotis sodalis*) - E	Extreme Northwest
Manatee, Florida (*Trichechus manatus*) - E	Coastal waters
Panther, Florida (*Felis concolor coryi*) - E	Entire state
Whale, right (*Eubalaena glacialis*) - E	Coastal waters
Whale, finback (*Balaenoptera physalus*) - E	Coastal waters
Whale, humpback (*Megaptera novaeangliae*) - E	Coastal waters
Whale, sei (*Balaenoptera borealis*) - E	Coastal waters
Whale, sperm (*Physeter catodon*) - E	Coastal waters

Birds	
Eagle, bald (*Haliaeetus leucocephalus*) - E	Entire state
Falcon, American peregrine (*Falco peregrinus anatum*) - E	North
Falcon, Arctic peregrine (*Falco peregrinus tundrius*) - T	Coast, Northwest
Stork, wood (*Mycteria americana*) - E	Southeastern swamps
Warbler, Bachman's (*Vermivora bachmanii*) - E	Entire state
Warbler, Kirtland's (*Dendroica kirtlandii*) - E	Coast
Woodpecker, ivory-billed (*Campephilus principalis*) - E	South, Southwest
Woodpecker, red-cockaded (*Picoides* (=*Dendrocopos*) *borealis*) - E	Entire state

Reptiles	
Alligator, American (*Alligator mississippiensis*) - E	Inland coastal plain
Alligator, American (*Alligator mississippiensis*) - T	Coastal areas

GEORGIA (cont'd)

	General Distribution
Snake, eastern indigo (*Drymarchon corais couperi*) - T	Southeast
Turtle, Kemp's (Atlantic) ridley (*Lepidochelys kempii*) - E	Coastal waters
Turtle, green (*Chelonia mydas*) - T	Coastal waters
Turtle, hawksbill (*Eretmochelys imbricata*) - E	Coastal waters
Turtle, leatherback (*Dermochelys coriacea*) - E	Coastal waters
Turtle, loggerhead (*Caretta caretta*) - T	Coastal waters

Fishes

Darter, amber (*Percina antesella*) - E,CH	Conasauga R., Murray County
Darter, snail (*Percina tanasi*) - T	S. Chickamauga Cr., Catoosa County
Logperch, Conasauga (*Percina jenkinsi*) - E,CH	Conasauga R., Murray County
Sturgeon, shortnose (*Acipenser brevirostrum*) - E	Coastal rivers

Plants

Florida torreya (*Torreya taxifolia*) - E	Decatur County
Green pitcher plant (*Sarracenia oreophila*) - E	Towns County
Hairy rattleweed (*Baptisia arachnifera*) - E	Wayne, Brantley Counties
Persistent trillium (*Trillium persistens*) - E	Tallulah-Tugaloo River system, Rabun and Habersham Counties

APPENDIX D

REFERENCES

1. United States Department of Agriculture, Soil and Conservation Service, 1959. Soil Survey, Douglas County, Georgia.

2. Clark, William Z., Jr. and Zisa, Arnold C., 1976. Physiographic Map of Georgia. Department of Natural Resources. The Geologic and Water Resources Division.

3. Arora, Ram, Ph.D., 1984. Hydrogeologic Evaluation for Underground Ingestion Control in North Georgia.

4. National Oil and Hazardous Substances Contingency Plan, Appendix, 40 CFR Part 300, 47 Federal Register 31219.

5. Sax, Irving N., 1984. Dangerous Properties of Industrial Materials: Van Nostrand Reinhold Company, New York 6th Edition.

6. Sax, Irving N. and Lewis, Richard J., eds., 1987. Hawley's Condensed Chemical Dictionary: Van Nostrand Reinhold Company, New York 11th Edition.

APPENDIX E

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051 011344

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Young Refining Corporation	7982 Huey Road (P.O. Box 796)

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Douglasville	Ga.	30134	Douglas	097	06

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
33° 44' 00.0"	084° 45' 00.0"	☑ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
10 28 87 (MONTH DAY YEAR)	☑ ACTIVE ☐ INACTIVE	1955 (BEGINNING YEAR) Present (ENDING YEAR) ☐ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☑ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO
Gilda A. Knowles	Environmental Specialist	DNR-EPD	(404) 656-7404

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Charles Evans	Environmental Specialist	DNR EPD	(404) 656-7404
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Mr. Fang Kou	Plant Engineer	7982 Huey Road	(404) 942-2343
Mr. Charlie Ellis	Plant Manager	Douglasville, Ga. 30134	( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☑ PERMISSION ☐ WARRANT	9:05 AM	Sunny, Cold 58-60°

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO
Mr. Fang Kou	Plant Engineer - Young Refining Corp.	404 942-2343

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Gilda A. Knowles	DNR-EPD	SAU	(404) 656-7404	11 30 87 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☑ A. SOLID
- ☐ B. POWDER, FINES
- ☑ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☑ A. TOXIC
- ☑ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☑ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	Unknown	Unknown	SLUDGE SAMPLE

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	Barium		POND #1 / SLUDGE	680	mg/Kg
	Chromium		POND #1 / SAMPLE	400	mg/Kg
	Lead		POND #1	880	mg/Kg
	TOTAL METALS				
MES	Barium		POND #1 / SLUDGE	1370	ug/L
	Chromium		POND #1 / SAMPLE	100	ug/L
	Lead		POND #1	140	ug/L
	EP METALS				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp. Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ B. SURFACE WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ C. CONTAMINATION OF AIR 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ D. FIRE/EXPLOSIVE CONDITIONS 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ E. DIRECT CONTACT 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ F. CONTAMINATION OF SOIL 03 AREA POTENTIALLY AFFECTED: _____ (Acres)	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ G. DRINKING WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ H. WORKER EXPOSURE/INJURY 03 WORKERS POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
01 ☐ I. POPULATION EXPOSURE/INJURY 03 POPULATION POTENTIALLY AFFECTED: _____	02 ☐ OBSERVED (DATE: _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: GA | 02 SITE NUMBER: D051011344

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills, Runoff, Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 1 mile = 1,074 ; 2 miles = 7,404 ; 3 miles = 13,954

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp. Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☑ A. NPDES	GA0001908	—	—	—
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☑ A. SURFACE IMPOUNDMENT	Unknown	Unknown
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
- ☑ A. INCENERATION (1970's)
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify) N/A.

05 OTHER
- ☑ A. BUILDINGS ON SITE: 3

06 AREA OF SITE: 30-40 (Acres)

07 COMMENTS

The facility refines crude oil. Wastewaters from various processes are discharged to a series of 4 NPDES permitted ponds. These ponds have never been lined, but are occasionally cleaned. Wastewater passes through an API Separator before it is discharged to ponds.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☑ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Ponds have adequate freeboard. Skimming operations take place at Pond #1.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES ☑ NO

02 COMMENTS

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files: Young Refining Corporation Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as appropriate)

	SURFACE	WELL
COMMUNITY	A. ☑	B. ☐
NON-COMMUNITY	C. ☐	D. ☑

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. 3.0 (mi)
B. 2.0 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☑ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER Unknown

03 DISTANCE TO NEAREST DRINKING WATER WELL 2.0 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
14-22 (ft)	Unknown	14.0 (ft)	Unknown (gpd)	☐ YES ☑ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

There are 5 operable wells on-site that are 300 ft. in depth and are only used for the cooling pond and utility purposes. There is a shallow dug well (22 ft in depth) located 2.0 miles from the site used for drinking water.

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES	COMMENTS	☐ YES	COMMENTS
☐ NO	Unknown	☐ NO	...

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☑ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Unnamed Tributary that empties into Gothards Creek	☐	0.5 (mi)
Gothards Creek (down slope from facility)	☐	2.5 (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 1,074 NO. OF PERSONS	B. 7,064 NO. OF PERSONS	C. 13,954 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: Less than 0.5 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE: Excess of 1800

04 DISTANCE TO NEAREST OFF-SITE BUILDING: Less than 0.5 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

The site is located in somewhat of an industrial park section near railroad tracks. However site/park is situated in a residential area.

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE: GA
02 SITE NUMBER: ID051011344

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. 10^{-6} – 10^{-8} cm/sec ☑ B. 10^{-4} – 10^{-6} cm/sec ☐ C. 10^{-4} – 10^{-3} cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE (10^{-4} – 10^{-6} cm/sec) ☑ C. RELATIVELY PERMEABLE (10^{-2} – 10^{-4} cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
5-25.0 (ft)	(ft)	Unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
10.0 (in)	3.0 (in)	5.0 %	Northeast	5-8.0 %

09 FLOOD POTENTIAL: SITE IS IN Unknown YEAR FLOODPLAIN

10: N/A ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. — (mi)
OTHER: B. — (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species): — (mi)

ENDANGERED SPECIES: None

13 LAND USE IN VICINITY

DISTANCE TO COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. .10 (mi)	B. .10 (mi)	C. — (mi)	D. — (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The facility itself is situated in an industrial park section along with 3 other companies. The site in some areas is nearly flat with no slope and in other areas gently sloping (3-6%). There is a heavy residential population south, southwest and east of the site and sparsely populated areas to the north and west. The facility is not completely surrounded by areas of higher elevation.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp. Douglasville, Ga.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	3	Georgia-EPD Laboratory	12/1987
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	2	Georgia-EPD Laboratory	12/1987
VEGETATION			
OTHER SLUDGE	1	Georgia-EPD Laboratory	12/1987

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
N/A	

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Georgia-EPD State Files (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Georgia-EPD State Files

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

A well survey was conducted within a 3-mile radius of the site and 23 wells were observed.

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp. Douglasville, Georgia

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	04 SIC CODE	06 STATE	07 ZIP CODE
Young Refining Corp.				
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
7982 Huey Road (P.O. Box 796)				
05 CITY				
Douglasville			Ga.	30134

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	11 SIC CODE	13 STATE	14 ZIP CODE
10 STREET ADDRESS (P.O. Box, RFD #, etc.)				
12 CITY				

01 NAME	02 D+B NUMBER	04 SIC CODE	06 STATE	07 ZIP CODE
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
05 CITY				

08 NAME	09 D+B NUMBER	11 SIC CODE	13 STATE	14 ZIP CODE
10 STREET ADDRESS (P.O. Box, RFD #, etc.)				
12 CITY				

01 NAME	02 D+B NUMBER	04 SIC CODE	06 STATE	07 ZIP CODE
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
05 CITY				

08 NAME	09 D+B NUMBER	11 SIC CODE	13 STATE	14 ZIP CODE
10 STREET ADDRESS (P.O. Box, RFD #, etc.)				
12 CITY				

01 NAME	02 D+B NUMBER	04 SIC CODE	06 STATE	07 ZIP CODE
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
05 CITY				

08 NAME	09 D+B NUMBER	11 SIC CODE	13 STATE	14 ZIP CODE
10 STREET ADDRESS (P.O. Box, RFD #, etc.)				
12 CITY				

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	04 SIC CODE	06 STATE	07 ZIP CODE
Young Refining Corp.				
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
7982 Huey Road (P.O. Box 796)				
05 CITY				
Douglasville			Ga.	30134

01 NAME	02 D+B NUMBER	04 SIC CODE	06 STATE	07 ZIP CODE
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
05 CITY				

01 NAME	02 D+B NUMBER	04 SIC CODE	06 STATE	07 ZIP CODE
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
05 CITY				

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	04 SIC CODE	06 STATE	07 ZIP CODE
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
05 CITY				

01 NAME	02 D+B NUMBER	04 SIC CODE	06 STATE	07 ZIP CODE
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
05 CITY				

01 NAME	02 D+B NUMBER	04 SIC CODE	06 STATE	07 ZIP CODE
03 STREET ADDRESS (P.O. Box, RFD #, etc.)				
05 CITY				

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Georgia - EPD State Files : Young Refining Corp.
Douglasville, Georgia

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
Young Refining Corp.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
7982 Huey Road (P.O. Box 796)	

05 CITY	06 STATE	07 ZIP CODE
Douglasville	Ga.	30134

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia-EPD State Files: Young Refining Corp., Douglasville, Georgia

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
GA	D051011344

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
N/A	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D 051011344

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ D. SPILLED MATERIAL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ E. CONTAMINATED SOIL REMOVED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ F. WASTE REPACKAGED 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ G. WASTE DISPOSED ELSEWHERE 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ H. ON SITE BURIAL 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ I. IN SITU CHEMICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ J. IN SITU BIOLOGICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ K. IN SITU PHYSICAL TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ L. ENCAPSULATION 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ M. EMERGENCY WASTE TREATMENT 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ N. CUTOFF WALLS 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ P. CUTOFF TRENCHES/SUMP 04 DESCRIPTION	02 DATE	03 AGENCY
01 ☐ Q. SUBSURFACE CUTOFF WALL 04 DESCRIPTION	02 DATE	03 AGENCY

EPA FORM 2070-13 (7-81)

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION
01 STATE: GA | 02 SITE NUMBER: D051011344

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files - Young Refining Corp.
Douglasville, Georgia

EPA FORM 2070-11 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
GA	D051011344

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION [ ] YES [ ] NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Georgia - EPD State Files : Young Refining Corp, Douglasville, Georgia

EPA FORM 2070-13 (7-81)

RECORD OF TELEPHONIC CONVERSATION REF. # 1
Site Investigation Program

Routing: Randy Williams

Date: October 29, 1987

Time: 1:05 a.m./p.m.

File: Young Refining Corporation

Party Spoken To: [redacted]

Title: Home Owner

Agency/Company: Non-a[redacted]licable

Address: [redacted]

City: Douglasville

Telephone Number: [redacted]

State/Zip: Ga. 31034

Subject: Young Refining Corporation - GAD051011344

Summary of Call: This call resulted from the sampling of [redacted] well, which was done on 10-28-87. Following a site inspection of the above facility, a background groundwater sample was needed for comparison with Young Refining Corp's well water. [redacted] dug well was sampled but there was no one at home, so I left my business card in her door to call me with additional information [redacted] called and stated the following: 1) that her well is used for drinking water and for lawn irrigation, 2.) that the city water lines ended/stopped at the house before hers and 3.) that she does not know the depth of her well, she knows it's not that

Actions Required: deep because they tried to dig the well deeper, but ran into rock. I told her that I would send her a copy of lab results when they became available. *Depth of well is needed.

Signature: Gilda A. Knowles October, 29, 1987.

Follow-up Responses/Additional Comments: On November 12, 1987, while completing a well survey, [redacted] well depth was measured with a water level indicator. Well depth was found to be 20 feet.

Signature: Gilda A. Knowles

Date: November 12, 1987

SIP-2

9/86

DOUGLAS REF. #2

Series 1959, No. 1

Issued November 1961

SOIL SURVEY

Douglas County Georgia

OUR SOIL ★ OUR STRENGTH

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
UNIVERSITY OF GEORGIA, COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATIONS

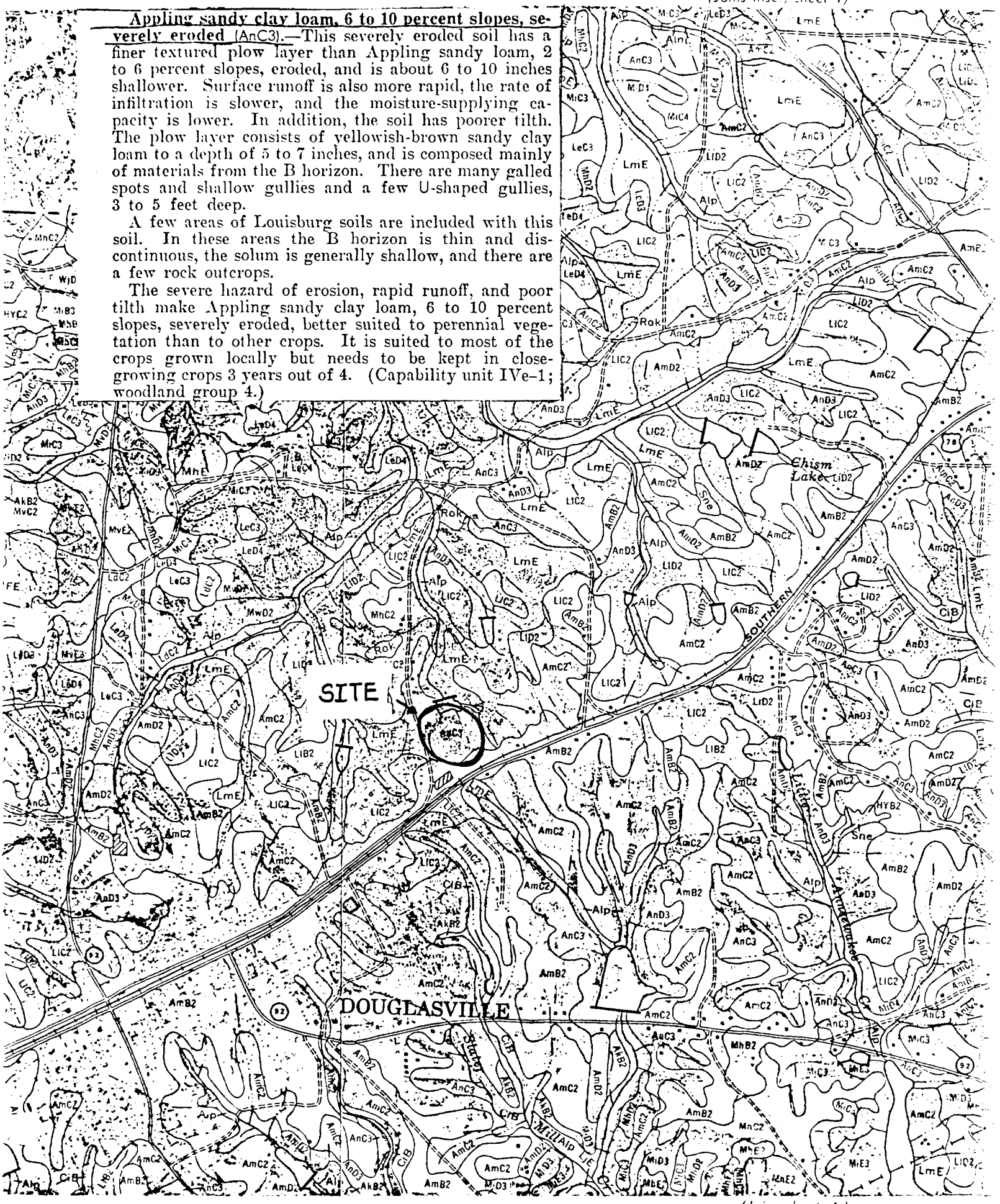
F-27

(Joins inset, sheet 1)

Appling sandy clay loam, 6 to 10 percent slopes, severely eroded (AnC3).—This severely eroded soil has a finer textured plow layer than Appling sandy loam, 2 to 6 percent slopes, eroded, and is about 6 to 10 inches shallower. Surface runoff is also more rapid, the rate of infiltration is slower, and the moisture-supplying capacity is lower. In addition, the soil has poorer tilth. The plow layer consists of yellowish-brown sandy clay loam to a depth of 5 to 7 inches, and is composed mainly of materials from the B horizon. There are many galled spots and shallow gullies and a few U-shaped gullies, 3 to 5 feet deep.

A few areas of Louisburg soils are included with this soil. In these areas the B horizon is thin and discontinuous, the solum is generally shallow, and there are a few rock outcrops.

The severe hazard of erosion, rapid runoff, and poor tilth make Appling sandy clay loam, 6 to 10 percent slopes, severely eroded, better suited to perennial vegetation than to other crops. It is suited to most of the crops grown locally but needs to be kept in close-growing crops 3 years out of 4. (Capability unit IVe-1; woodland group 4.)



(Joins sheet 6)

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

TRIP REPORT

October 28, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD051011344
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles G.A.K. Environmental Specialist Site Assessment Unit
ACCOMPANIED:	Charles Evans Environmental Specialist Site Assessment Unit
DATE AND TIME OF INVESTIGATION:	October 28, 1987
OFFICIALS CONTACTED:	Mr. Fang Kuo Plant Engineer Young Refining Corporation 7982 Huey Road Douglasville, GA 30134
REFERENCE:	Trip Report, October 20, 1987 Georgia-EPD State Files

COMMENTS:

A Screening Site Inspection was conducted at Young Refining Corporation, a facility that refines crude into asphaltic cement and other by-products.

Charles Evans and I arrived on-site at 9:00 a.m. and met with Mr. Fang Kou, Plant Engineer, who accompanied us in our sampling endeavors. Our first sample was collected from a well located at the rear of the plant process area. The well was purged for five minutes and water conductivity readings were taken prior to sampling (70 umhos-1x scale). The second well sampled was located in the vicinity of the pond area and the same procedures were carried out prior to sampling (40 umhos - 1x scale). All ground water samples collected will be analyzed for total metals and organics. The pH range for both wells was 6.4 and 6.3 respectively. Since wells on-site are continuously pumped, bubbles were allowed to clear before filling containers. A sludge sample was collected from three different areas of Pond #1 from the bottom layer. Soil surrounding the API Separator was composited. Soil samples were collected from depths of 3-6 inches. All equipment was clean and disposable tyveks, gloves and boots were left in the dumpster on-site with the permission of Mr. Kou. We left the site at 11:45 a.m.

A forested area Northwest of the site was chosen to collect a soil background sample. Soil was collected from four different areas (3-6" in depth) and composited. A private dug well located on Malone Road, 2.0 miles Northwest of the site was sampled for background. The spigot was purged and conductivity readings (40 umhos - 1x sclae, pH 6.1) were taken prior to sampling. There was no one present at the residence and a GA-EPD business card with message was left in the door. All samples were labeled, bagged, placed on ice and transported to GA-EPD laboratory via state vehicle.

CONCLUSIONS:

None can be drawn until samples have been analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

1. Complete well survey.

2. Obtain name, address, and phone number of resident, whose well was sampled.

PHOTOGRAPHS: 10 Polaroids

NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: 6 samples (attached).

REVIEWED BY: **DATE:**

ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

File: Young Refining Corporation (GAD051011344)

GAK:zr005

REF. #3

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

TRIP REPORT

October 28, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD051011344
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles G.A.K. Environmental Specialist Site Assessment Unit
ACCOMPANIED:	Charles Evans Environmental Specialist Site Assessment Unit
DATE AND TIME OF INVESTIGATION:	October 28, 1987
OFFICIALS CONTACTED:	Mr. Fang Kuo Plant Engineer Young Refining Corporation 7982 Huey Road Douglasville, GA 30134
REFERENCE:	Trip Report, October 20, 1987 Georgia-EPD State Files

COMMENTS:

A Screening Site Inspection was conducted at Young Refining Corporation, a facility that refines crude into asphaltic cement and other by-products.

Charles Evans and I arrived on-site at 9:00 a.m. and met with Mr. Fang Kou, Plant Engineer, who accompanied us in our sampling endeavors. Our first sample was collected from a well located at the rear of the plant process area. The well was purged for five minutes and water conductivity readings were taken prior to sampling (70 umhos-1x scale). The second well sampled was located in the vicinity of the pond area and the same procedures were carried out prior to sampling (40 umhos - 1x scale). All ground water samples collected will be analyzed for total metals and organics. The pH range for both wells was 6.4 and 6.3 respectively. Since wells on-site are continuously pumped, bubbles were allowed to clear before filling containers. A sludge sample was collected from three different areas of Pond #1 from the bottom layer. Soil surrounding the API Separator was composited. Soil samples were collected from depths of 3-6 inches. All equipment was clean and disposable tyveks, gloves and boots were left in the dumpster on-site with the permission of Mr. Kou. We left the site at 11:45 a.m.

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PHOTOGRAPHS: 10 Polaroids

NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: 6 samples (attached).

REVIEWED BY: **DATE:**

ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

File: Young Refining Corporation (GAD051011344)

GAK:zr005

E. - 9:28 AM

10-28-87

County Name Douglas

Picture No. 1 of 10

Site Name Young Refining Corporation

Date 10-28-87 Weather Cold, Sunny

Direction Facing East

Photographer G. A. Knowles

Program Site Investigation Program

Explanation Well located in rear of plant process area is being purged prior to conductivity readings and sampling.

Other

E. - 9:34 AM

10-28-87

County Name Douglas

Picture No. 2 of 10

Site Name Young Refining Corporation

Date 10-28-87 Weather Cold, Sunny

Direction Facing East

Photographer G. A. Knowles

Program Site Investigation Program

Explanation Well being sampled. (VOA, total metals). [Sample # GW-1).

Other

E. - 9:28 AM

10-28-87

County Name Douglas
Picture No. 1 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well located in rear of plant process area is being purged prior to conductivity readings and sampling.
Other

E. - 9:34 AM

10-28-87

County Name Douglas
Picture No. 2 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well being sampled. (VOA, total metals). [Sample # GW-1).
Other

E.-10:15 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 15 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy-69°F.

Direction Facing East

Photographer G.A. Knowles

Program Site Investigation Program.

Explanation Asphalt Roofing Area: Cardboard cartons with tin bottoms are filled with hot asphalt and allowed to cool.

Other

SITE NAME

Picture No. of

County Name

Date Weather

Direction Facing

Photographer

Program

Explanation

Other

REF. # 13

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams Date: October 9, 1987

Time: 11:05 (a.m.)/p.m.

File: Young Refining Corporation - GAD051011344

Party Spoken To: Mr. Ken Lawler Title: Water Superintendant

Agency/Company: Water Department - Douglasville

Address: P.O. Box 1157 City: Douglasville

Telephone Number: (404) 949 - 7617 State/Zip: Georgia 30133

Subject: Young Refining Corporation - GAD051011344

Summary of Call: I called Mr. Lawler to obtain information concerning drinking water in the area and he stated the following: (1.) he did not have any information on shallow wells in the area and that I should call the Health Dept (404) 949-2000 and speak to Mr. Doug Daniels; (2.) that the city of Douglasville's drinking water is supplied from large impoundments from which water is drawn from (surface water) Anawakee, Little Anawakee, Bear Creek Reservoir (Bear Creek + Little Bear Creek) and that supplementa water is purchased from Cobb + Marietta Water Systems and (3.) Sweet Water Creek supplies water (drinking) to East Point, Douglas County residents from the East Point Reservoir.

Actions Required:

Call Mr. Doug Daniels for possible well information. Health Dept. (404) 949-2000.

Signature: Gilda A. Knowles October 9, 1987.

Follow-up Responses/Additional Comments: I spoke to the Health Dept. Sanitarian, Mr. Daniels and he stated that he knew of only one shallow well in the area (Huey Road), but that 10 yrs. ago the home converted to city water. The water lines extend down Huey Rd. all the way to Maroney Road.

Signature: Gilda A. Knowles Date: October 13, 1987

SIP-2 9/86

The previous renter of the home was Mr. J. Calvin Whitley.

N.W.- 10:00AM

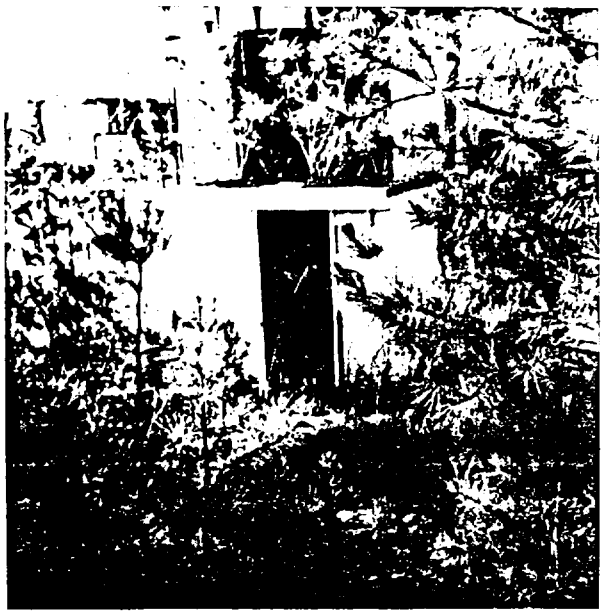
10-28-87

County Name Douglas
Picture No. 3 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well is situated in the area of the ponds, near tank # 303.
Other

N.W. - 10:05AM

10-28-87

County Name Douglas
Picture No. 4 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Samples being collected for Total Metals, VOA. [Sample # GW-2]
Other



N.W.- 10:00AM

10-28-87

County Name Douglas
Picture No. 3 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well is situated in the area of the ponds, near tank # 303.
Other

N.W. - 10:05AM

10-28-87

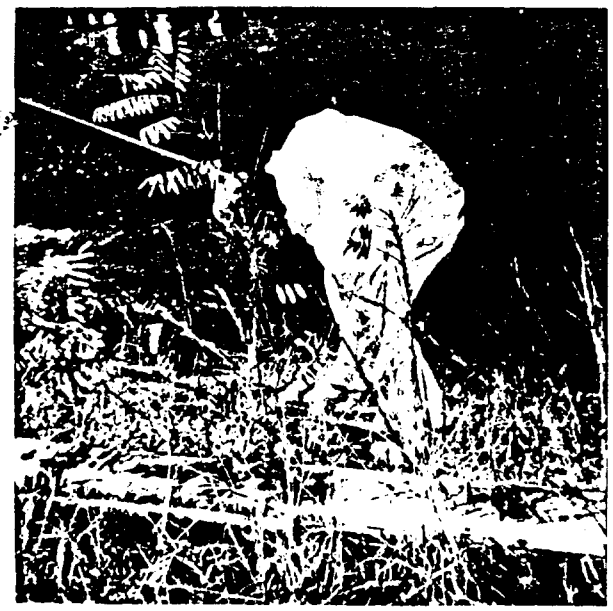
County Name Douglas
Picture No. 4 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Samples being collected for Total Metals, VOA. [Sample # GW-2].
Other

N. - 10:19 AM

10-28-87

County Name Douglas
Picture No. 5 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing North
Photographer Charles Evans
Program Site Investigation Program
Explanation Oil-filled drainage ditch observed.

Other



W. - 10:40 AM

10-28-87

County Name Douglas
Picture No. 6 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A sludge composite was collected from the bottom layer of Pond #1. Three different
Other areas of Pond #1 were sampled and combined. Mixing of composite sludge sample is shown. (Sample # S-1).

N. - 10:19 AM

10-28-87

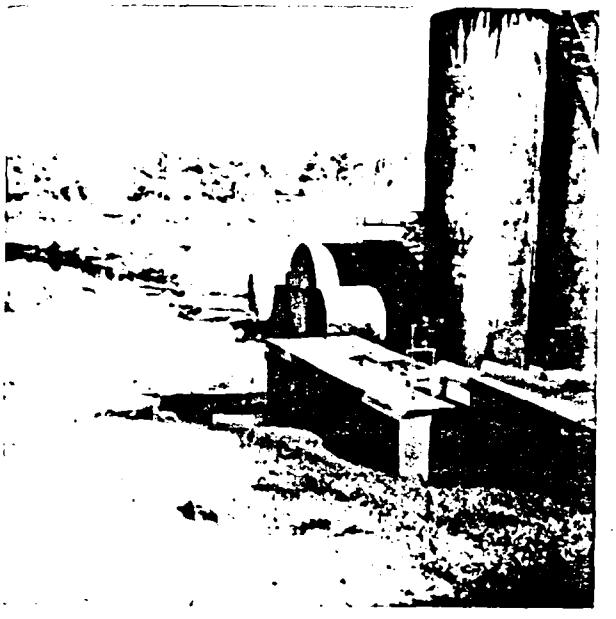
County Name Douglas
Picture No. 5 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing North
Photographer Charles Evans
Program Site Investigation Program
Explanation Oil-filled drainage ditch observed.

Other

W. - 10:40 AM

10-28-87

County Name Douglas
Picture No. 6 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A sludge composite was collected from the bottom layer of Pond #1. Three different
Other areas of Pond #1 were sampled and combined. Mixing of composite sludge sample is shown. [Sample # S-1].



N.E. - 11:25 AM

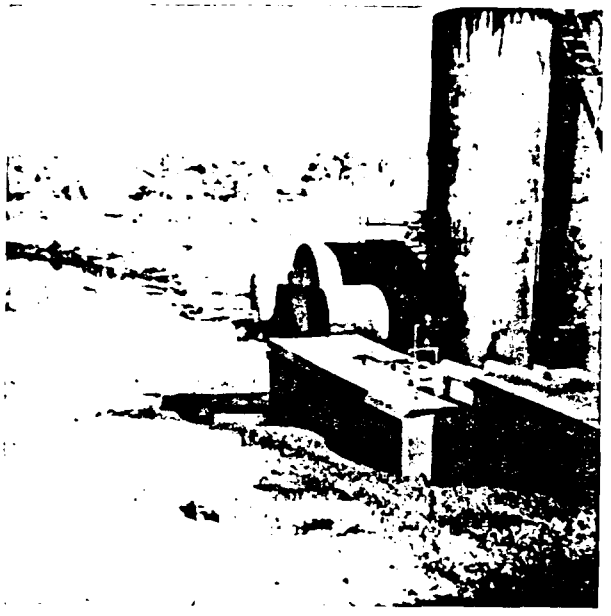
10-28-87

County Name Douglas
Picture No. 7 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # S-2 is a soil composite collected around API Separator. Sample
Other was collected at a depth of 3-6 inches.

NW. - 11:55 AM.

10-28-87

County Name Douglas
Picture No. 8 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A soil composite background sample was collected 2 miles away from site in a
Other forested area (Malone Street) [Sample # S-37. Sample was collected from 3-6" in depth.



N.E. - 11:25 AM

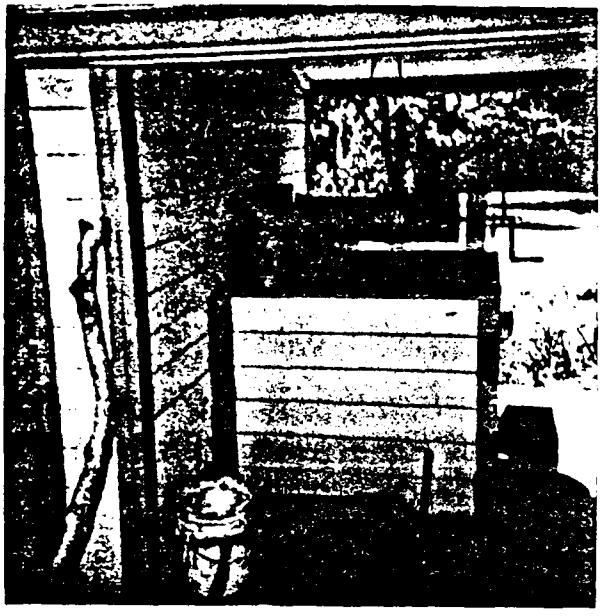
10-28-87

County Name Douglas
Picture No. 7 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # S-2 is a soil composite collected around API Separator. Sample
Other was collected at a depth of 3-6 inches.

NW. - 11:55 AM.

10-28-87

County Name Douglas
Picture No. 8 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A soil composite background sample was collected 2 miles away from site in a
Other forested area (Malone Street) [Sample # S-3]. Sample was collected from 3-6" in depth.

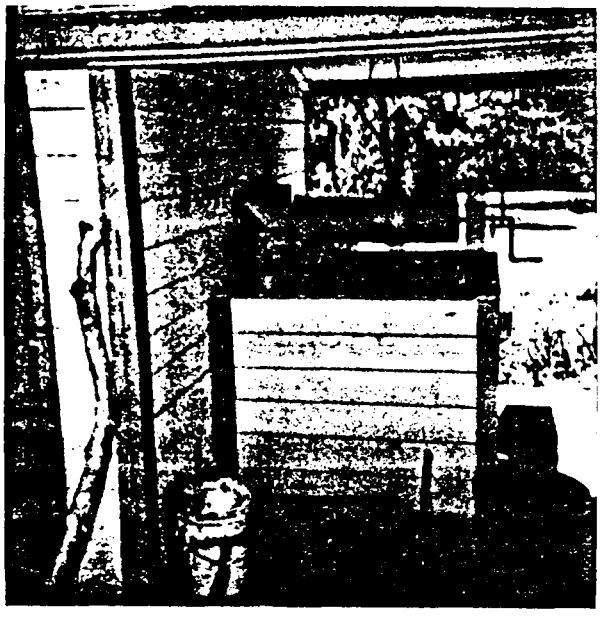


S. - 12:35 PM. 10-28-87

County Name Douglas
Picture No. 9 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Background ground water sample was collected from a dug well 2.0 miles away from facility. Depth unknown at this time.
Other

W. - 12:40 PM 10-28-87

County Name Douglas
Picture No. 10 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # GW-3 (dug well - background) being collected from spicket.
Other

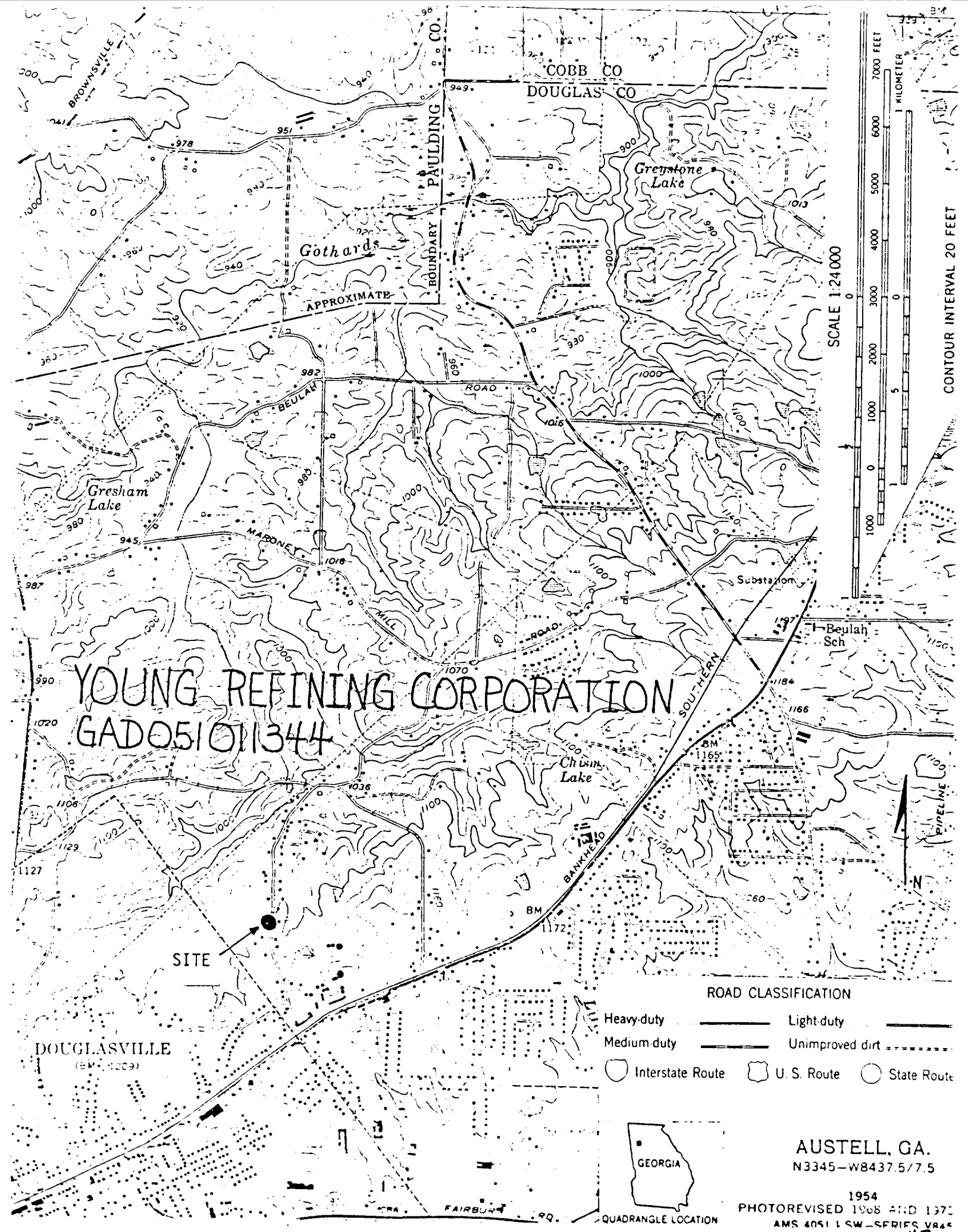


S. - 12:35 PM. 10-28-87

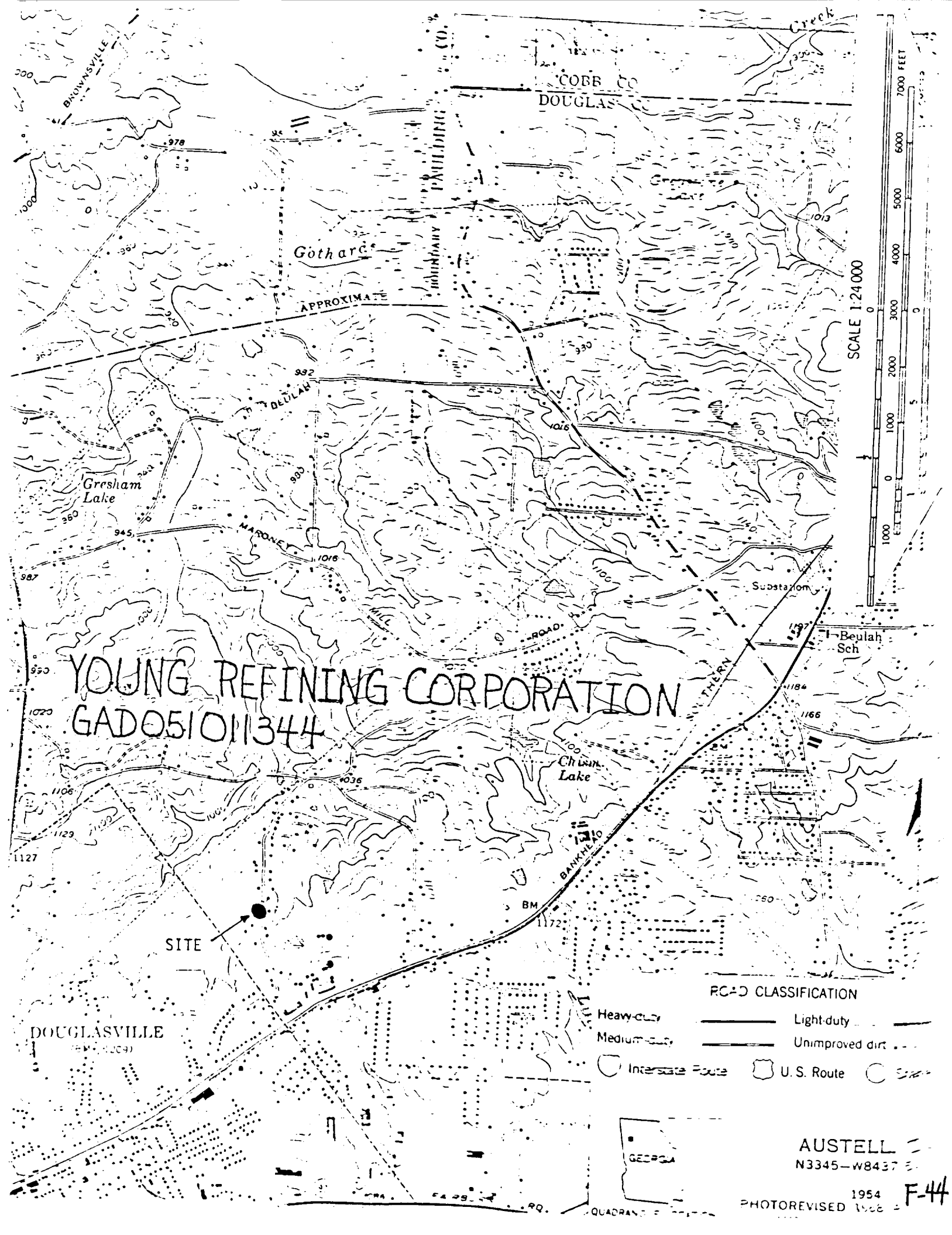
County Name Douglas
Picture No. 9 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Background ground water sample was collected from a dug well 2.0 miles away from facility. Depth unknown at this time.
Other

W. - 12:40 PM 10-28-87

County Name Douglas
Picture No. 10 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # GW-3 (dug well - background) being collected from spicket.
Other

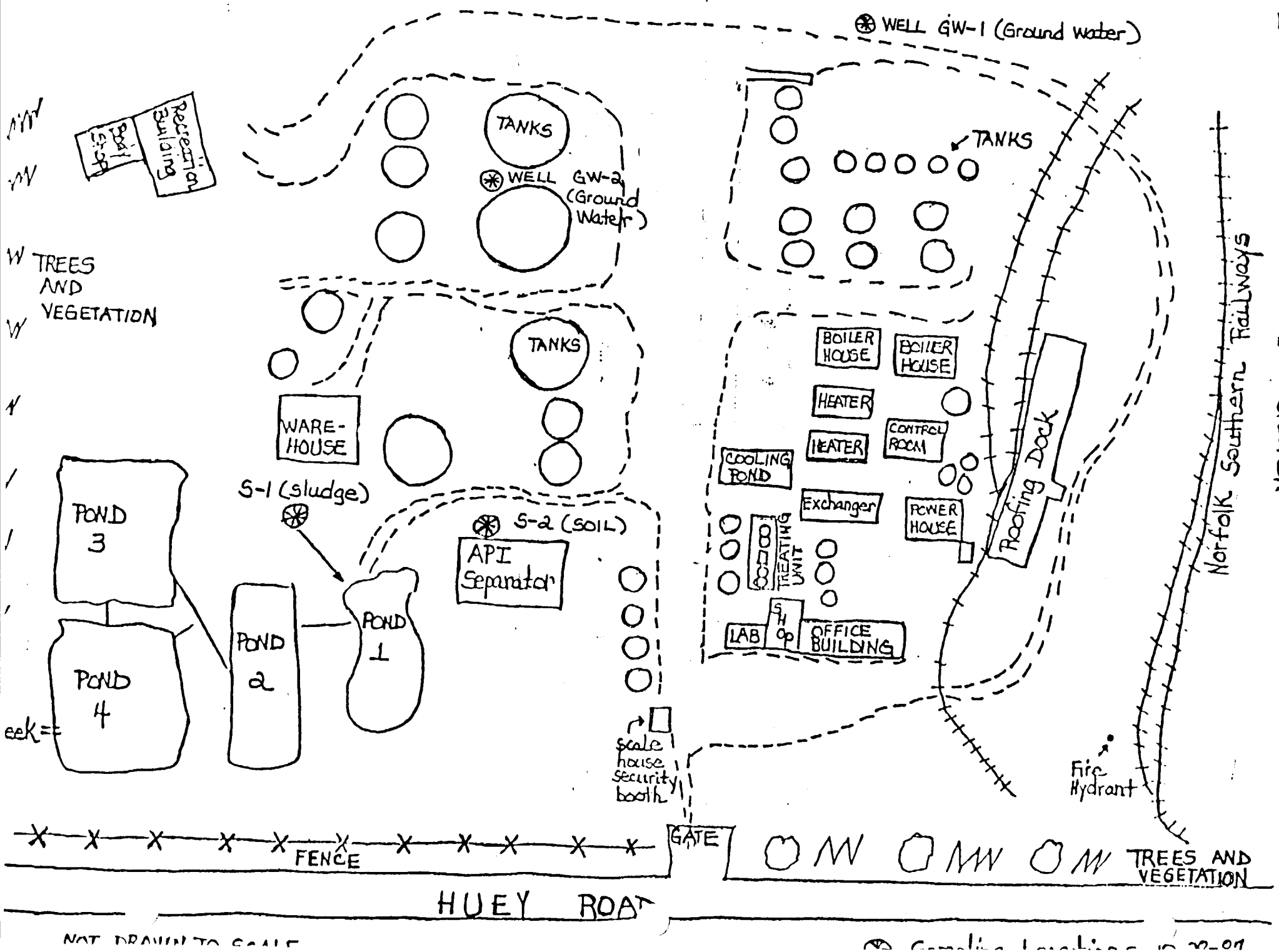

YOUNG REFINING CORPORATION
GAD051011344
SITE
COBB CO
DOUGLAS CO
PAULDING CO.
BOUNDARY
APPROXIMATE
Greystone Lake
Gothards
Gresham Lake
Chism Lake
BEULAH ROAD
MABONEY MILL ROAD
BANKHEAD HIGHWAY
SOUTHERN
Substation
Beulah Sch
BROWNSVILLE
DOUGLASVILLE
FAIRBURN
PIPELINE
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
1 KILOMETER
7000 FEET
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
Interstate Route
U. S. Route
State Route
GEORGIA
QUADRANGLE LOCATION
AUSTELL, GA.
N3345—W8437.5/7.5
1954
PHOTOREVISED 1968 AND 1975
AMS 4051 I SW—SERIES V845

F-43



YOUNG REFINING CORPORATION
GAD051011344
COBB CO
DOUGLAS CO
Gothard
APPROXIMATE
BROWNSVILLE
BEULAH
ROAD
Gresham Lake
MARONEY
MILL
ROAD
Substation
Beulah Sch
SOUTHERN
Chism Lake
BANKHEAD
BM
SITE
DOUGLASVILLE
SCALE 1:24 000
7000 FEET
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
Interstate Route
U.S. Route
GEORGIA
AUSTELL
N3345—W8437
1954
PHOTOREVISED
F-44

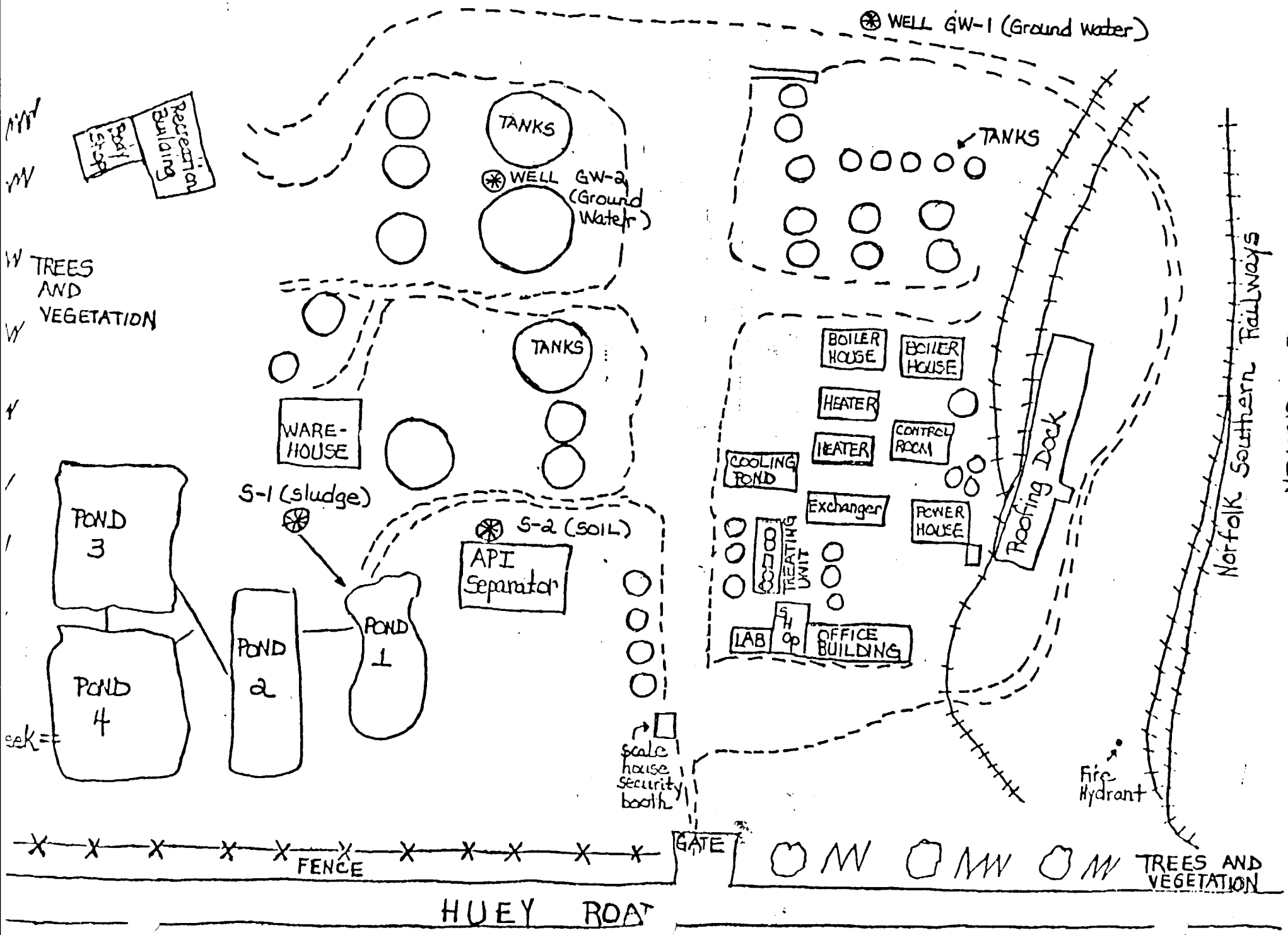
SITE SKETCH



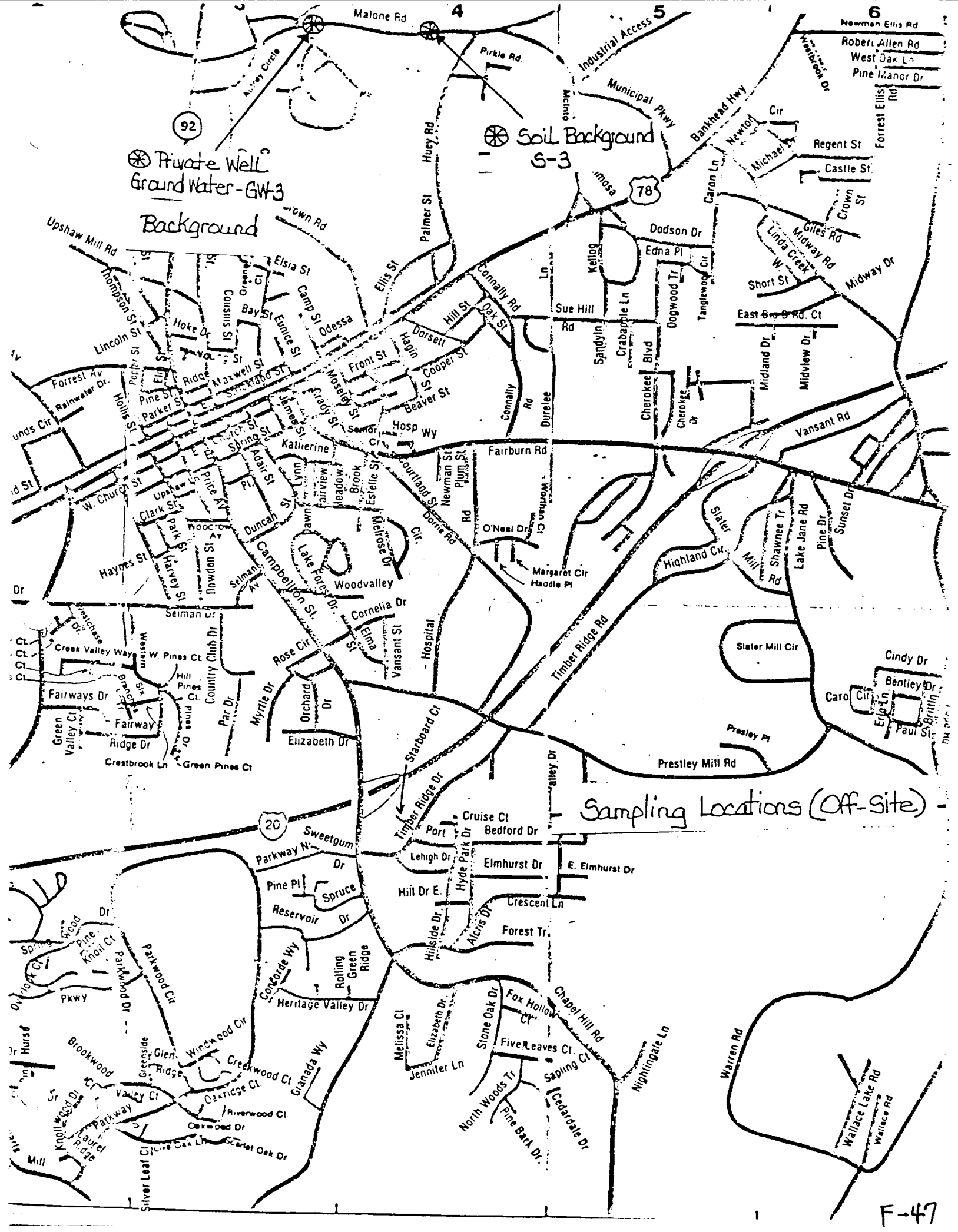
NOT DRAWN TO SCALE

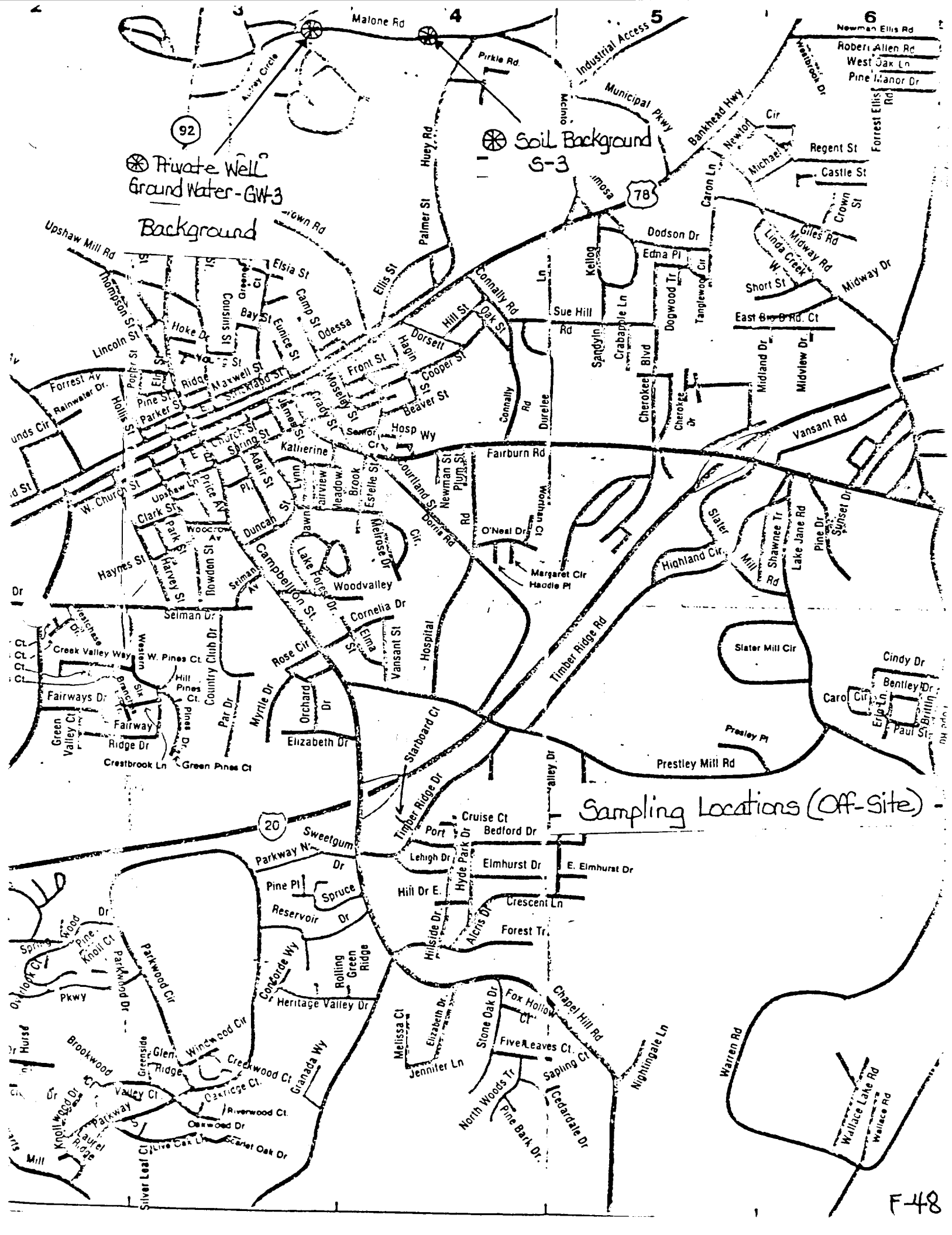
Sampling Locations 10-22-87

SITE SKETCH



NOT DRAWN TO SCALE


Private Well
Ground Water - GW-3
Background
Soil Background
S-3
Sampling Locations (Off-Site)
Malone Rd
Industrial Access
Pirkle Rd
Municipal Pkwy
Bankhead Hwy
Newman Ellis Rd
Robert Allen Rd
West Oak Ln
Pine Manor Dr
Regent St
Castle St
Upshaw Mill Rd
Huey Rd
Palmer St
Ellis St
Connally Rd
Dodson Dr
Edna Pl
Sue Hill Rd
Fairburn Rd
Vansant Rd
Timber Ridge Rd
Hospital
Woodvalley
Campbellton St
Lake Forest Dr
Cornelia Dr
Rose Cir
Elizabeth Dr
Starboard Ct
Prestley Mill Rd
Slater Mill Cir
Cindy Dr
Bentley Dr
Presley Pl
Sweetgum Dr
Parkway N
Pine Pl
Spruce
Reservoir Dr
Cruise Ct
Port
Bedford Dr
Lehigh Dr
Elmhurst Dr
E. Elmhurst Dr
Hill Dr E.
Crescent Ln
Forest Tr
Hillside Dr
Alcris Dr
Hyde Park Dr
Parkwood Cir
Parkwood Dr
Concorde Wy
Rolling Green Ridge
Heritage Valley Dr
Chapel Hill Rd
Fox Hollow Ct
Stone Oak Dr
Five Leaves Ct
Sapling Ct
Cedardale Dr
Nightingale Ln
Warren Rd
Wallace Lake Rd
Melissa Ct
Elizabeth Dr
Jennifer Ln
North Woods Tr
Pine Bark Dr
Granada Wy
Creekwood Ct
Oakridge Ct
Riverwood Ct
Oakwood Dr
Scarlet Oak Dr
Silver Leaf Ct
Brookwood
Greenside
Glen Ridge
Windwood Cir
Valley Ct
Parkway
Laurel Ridge
Knollwood Dr
Pine Knoll Ct
Overlook Ct
Spring Wood Dr
Pkwy
Hurst Dr
Mill
Fairways Dr
Fairway Ridge Dr
Crestbrook Ln
Green Pines Ct
Green Valley Ct
Creek Valley Way
W. Pines Ct
Hill Pines Ct
Pine Branch
Six Pines Dr
Country Club Dr
Par Dr
Myrtle Dr
Orchard Dr
Selman Dr
Selman Av
Haynes St
Harvey St
Clark St
Park St
Upshaw Ln
Price Av
Duncah St
Dowdon St
Adair St
Spring St
Church St
W. Church St
Hollis St
Thompson St
Lincoln St
Forest Av
Rainwater Dr
Hoke Dr
Bay St
Eunice St
Camp St
Odessa
Elsia St
Cousins St
Greene Ct
Maxwell St
Smokland St
Ridge
Pine St
Parker St
Poplar St
Elm St
Mosely St
Grady St
James St
Katherine
Lynn
Fairview
Meadow
Brook
Estelle St
Melrose Dr
Dawn
Courtland St
Newman St
Plum St
Dorsett
Hagin
Front St
Cooper St
Beaver St
Senior Cr
Hosp Wy
Hill St
Oak St
Dorris Rd
O'Neal Dr
Margaret Cir
Haddle Pl
Durelee
Kellog
Sandylin
Crabapple Ln
Dogwood Tr
Tanglewood Cir
Cherokee Blvd
Cherokee Dr
Midland Dr
Midview Dr
East Bro B Rd. Ct
Short St
Midway Dr
Midway Rd
Giles Rd
Linda Creek
Crown St
Caron Ln
Newton Cir
Michael Dr
Forrest Ellis Rd
Westbrook Dr
Slater Mill Rd
Shawnee Tr
Lake Jane Rd
Pine Dr
Sunset Dr
Highland Cir
Caro Cir
Erica Ln
Paul St
Britton Rd
Valley Dr
Mcinto
Mimosa
Airey Circle
92
78
20


Private Well
Ground Water - GW-3
Background
Soil Background
S-3
Sampling Locations (Off-Site)
Malone Rd
Industrial Access
Pirkle Rd
Municipal Pkwy
Bankhead Hwy
Newman Ellis Rd
Robert Allen Rd
West Oak Ln
Pine Manor Dr
Regent St
Castle St
Upshaw Mill Rd
Thompson St
Lincoln St
Hoke Dr
Elsia St
Camp St
Odessa
Ellis St
Palmer St
Huey Rd
Connally Rd
Hill St
Oak St
Dorsett
Hagin
Cooper St
Front St
Maxwell St
Beaver St
Forrest Av
Rainwater Dr.
Hollis St
Parker St
Church St
Spring St
Katherine
Adair St
Price Av
Clark St
Park St
Harvey St
Haynes St
Duncan
Campbellton St
Woodvalley
Selman Dr
Cornelia Dr
Elma St
Vansant St
Hospital
Rose Cir
Myrtle Dr
Orchard Dr
Elizabeth Dr
Fairburn Rd
Vansant Rd
Dodson Dr
Edna Pl
Sue Hill Rd
Kellog
Sandylin
Crabapple Ln
Dogwood Tr
Tanglewood Cir
Cherokee Blvd
Cherokee Dr
Midland Dr
Midview Dr
Midway Rd
Midway Dr
Giles Rd
Linda Creek
Short St
East B-D Rd. Ct
Durelee
Newman St
Plum St
Courtland St
Dorris Rd
O'Neal Dr
Margaret Cir
Hardie Pl
Highland Cir
Slater Mill Rd
Shawnee Tr
Lake Jane Rd
Pine Dr
Sunset Dr
Timber Ridge Rd
Slater Mill Cir
Cindy Dr
Bentley Dr
Carol Cir
Paul St
Presley Pl
Prestley Mill Rd
Starboard Ct
Timber Ridge Dr
Cruise Ct
Port
Bedford Dr
Lehigh Dr
Hyde Park Dr
Elmhurst Dr
E. Elmhurst Dr
Hill Dr E.
Crescent Ln
Forest Tr.
Hillside Dr
Alcris Dr
Sweetgum
Parkway N
Pine Pl
Spruce
Reservoir Dr
Concorde Wy
Rolling Green Ridge
Heritage Valley Dr
Parkwood Cir
Parkwood Dr
Pine Knoll Ct
Overlook Ct
Pkwy
Brookwood
Greenside
Glen Ridge
Winchwood Cir
Creekwood Ct
Granada Wy
Oakridge Ct.
Riverwood Ct.
Oakwood Dr
Scarlet Oak Dr
Live Oak Ln
Silver Leaf Ct
Melissa Ct
Elizabeth Dr
Jennifer Ln
Stone Oak Dr
Fox Hollow Ct
Five Leaves Ct.
Sapling Ct
Chapel Hill Rd
Nightingale Ln
North Woods Tr
Pine Bark Dr
Cedardale Dr
Warren Rd
Wallace Lake Rd
Wallace Rd
Creek Valley Way
W. Pines Ct
Hill Pines Ct.
Country Club Dr
Fairways Dr
Fairway
Green Valley Ct
Ridge Dr
Crestbrook Ln
Green Pines Ct
Pine Dr
Par Dr
Pkwy
Mill
Knollwood Dr
Laurel Ridge
Valley Ct.
Parkway
Mill Dr
Hurst
Dr
Ct
Cir
Pl
Av
St
Wy
Rd
Ln
Blvd
Tr
92
78
20

F-49

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
LAND PROTECTION BRANCH

CHAIN OF CUSTODY

FACILITY: Young Refining Corporation LOCATION: 7982 Huey Road Douglasville, Ga.

SAMPLE #	LOG #	LAB I.D.	DESCRIPTION	COLLECTED BY (Name)	DATE	TIME
GW-1	2883		Well (Ground water) - Rear of Plant Area	G.A. Knowles	10-28-87	9:30 AM
GW-2	2884		Well (Ground water) - Near Pond #1 and Tank # 303	G.A. Knowles	10-28-87	10:00 AM
GW-3	2885		Well (Ground water) - Background - Malone Street	G.A. Knowles	10-28-87	12:35 PM
S-1	2886		Sludge Composite - Bottom Layer Pond #1	G.A. Knowles	10-28-87	10:40 AM
S-2	2887		Soil Composite - API Separator	G.A. Knowles	10-28-87	11:25 AM
S-3	2888		Soil Composite - Background	G.A. Knowles	10-28-87	11:55 AM

TRANSFER RECORD

TRANSFERRED BY (Name)	TO (Name) (IF FINAL: Lab Name)	DATE	TIME	METHOD OF TRANSFER	RECEIVED BY (Name)	DATE
Hilda A. Knowles	Instrumentation Lab	10/28/87	1510	Hand	Danny Reed	10/28/87

ANALYSES REQUESTED:

F-50

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
LAND PROTECTION BRANCH

CHAIN OF CUSTODY

FACILITY: Young Refining Corporation

LOCATION: 7982 Hiey Road Douglasville, Ga.

SAMPLE #	LOG #	LAB I.D.	DESCRIPTION	COLLECTED BY (Name)	DATE	TIME
GW-1	2883		Well (Ground water) - Rear of Plant Area	G.A. Knowles	10-28-87	9:30 AM
GW-2	2884		Well (Ground water) - Near Pond #1 and Tank #303	G.A. Knowles	10-28-87	10:00 AM
GW-3	2885		Well (Ground water) - Background - Malone Street	G.A. Knowles	10-28-87	12:35 PM
S-1	2886		Sludge Composite - Bottom Layer Pond #1	G.A. Knowles	10-28-87	10:40 AM
S-2	2887		Soil Composite - API Separator	G.A. Knowles	10-28-87	11:25 AM
S-3	2888		Soil Composite - Background	G.A. Knowles	10-28-87	11:55 AM

TRANSFER RECORD

TRANSFERRED BY (Name)	TO (Name) (IF FINAL: Lab Name)	DATE	TIME	METHOD OF TRANSFER	RECEIVED BY (Name)	DATE
Hilda A. Knowles	Instrumentation Lab	10/28/87	1510	Hand	Danny Reed	10/28/87

ANALYSES REQUESTED:

Georgia Department of Natural Resources
270 Washington Street, S.W., Room 825, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

November 21, 1985

REF. #5

TRIP REPORT

SITE NAME AND LOCATION: Young Refining Corporation, 7982 Huey Road, Douglasville

TRIP BY: Jack Dempsey JMD

Accompanied by: None

DATE OF TRIP: 7/24/85

OFFICIALS CONTACTED: Charles E. Young, Executive V.P.
Fang Kuo, Plant Engineer
Douglas McLendon, Operations Manager

REFERENCE: Complaint from Arivec Chemicals concerning appearance and regulatory status of Young's surface impoundments.

COMMENTS:

This facility, constructed in 1955, refines asphaltic crude, received by railroad tanks from southeast Mississippi, into asphalt cements, #2 fuel oil, heavy oil, and natural gasoline (60 octane). The facility is currently processing about 126,000 gals./day of crude (60% capacity). Mr. Young said they no longer purchase used oil from jobbers due to problems. Paving and roofing asphalt cements constitute about 55% of product produced.

I. Process:

1) Heating - the crude is heated through several steps with heat exchangers and finally a furnace to achieve 670°F;

2) Distillation - the crude enters a flash tower where light oils are vaporized out of the crude and asphalt goes out the bottom;

3) Fractionating - the light oils are further processed in a fractionating column to obtain the gasoline and various oils;

4) Oxidation - about 40% of the asphalt is oxidized with heat and air to produce roofing and coating asphalt;

5) Shipping - roofing asphalt is packaged in cardboard containers for shipment to users; gasoline, asphalt, and oils are shipped by tanker trucks.

II. Wastes Generated:

1) Solid Waste - collected in on-site dumpsters serviced by the City of Douglasville;

2) Wastewater - all process wastewater and storm drains from the complex converge to pass through an API Separator that discharges to an NPDES permitted wastewater treatment system consisting of 4 ponds in series;

3) API Separator Sludge (K051) - sludge is shoveled from the bottom of the separator about every 6 months and placed on the ground adjacent to the separator; the material hardens and any water from it gravity flows into the first pond; each clean-out reportedly results in about 50 pounds of dewatered material;

4) Dissolved Air Flotation Float (K048) - a flocculator was used between ponds 1 & 2 up until about 1977 and reportedly generated about 100 pounds/year of this waste, that was allowed to harden in a drum and then disposed of on the ground at various locations around plant during construction of tanks and roads; the flocculator was discontinued because it was not needed to meet effluent limits of the NPDES permit;

5) Slop Oil Emulsion Solids (K049) - based on the information obtained, all of the skimmings from the API Separator are pumped back to crude tanks for reprocessing, therefore, none of this waste (emulsion between water and oil) is generated;

6) Heat Exchanger Bundle Cleaning Sludge (K050) - the heat exchangers are reportedly cleaned once each year and about 150 pounds of waste is generated; the officials were unsure of the disposal method, but admitted that it is probably disposed of by placing on the ground on-site;

7) Leaded Tank Bottoms (K052) - no lead is used in the process, therefore, none of this waste is generated; Mr. Young said the crude may have a trace of lead.

III. Plant Inspection:

A tour of the facility confirmed the processes and waste streams described above. Much spillage of asphalt was observed around the tanks and treatment of the wastewater is unsightly. API Separtor sludge has accumulated beside the separator and the first pond has a heavy layer of oil on the surface that is periodically skimmed and pumped back for processing. The second pond has a baffle that traps oil escaping the first pond, but after that no oil was visible on the surface of the ponds. I collected a sludge sample from the influent area of pond #1 and a soil sample from the area the officials said the K050 waste was dumped.

IV. Records Examination:

No records were examined at the facility. The facility filed a Hazardous Waste Facility Permit Application in 1980, but was advised in 1982 to withdraw (based on disposal of small quantities in an NPDES permitted system). Withdrawal was requested and granted in 1982. The facility status was changed to small quantity generator according to the letter. The 1983 Annual Report indicated no waste generated. The Facility Information Report, completed for an inspection on 5/7/82, indicated small quantities of the listed wastes are disposed of in the surface impoundments.

Mr. Young contends that none of these wastes are dumped directly in the ponds, but the whole complex drains to the ponds so any wastes disposed on-site may eventually get in them.

CONCLUSIONS:

The facility is a small quantity generator that has failed to comply with the disposal requirements for same. Small quantities of listed wastes are being disposed of on-site. The soil sample collected at the suspected disposal site of K050 waste was below the detection limits for total and extractable metals and hydrocarbons. The sludge sample collected from the influent area of pond #1 contained 7.4 ppm total lead and small amounts of hydrocarbons typical of oil, but was below the detection limits for EP metals, except for barium (3.0 ppm, limit of 100.0). The background document states that lead and chromium are the constituents of conern in the waste streams, that lead comes predominantly from tetraethyl lead in the blending of leaded products, and chromium comes predominantly from cooling tower blowdown that uses a chromium base corrosion inhibitor. At this point, the document footnotes that refineries not implementing these systems will have lower levels of these metals and delisting is available. Mr. Young stated that they do not use any tetraethyl lead and that the chromium base corrosion inhibitor was replaced about 10 years ago with a complex amine that does not contain any metals. Based on the above information, I recommend that we send an N.O.V. for violation of the small quantity generator requirements, but not pursue regulating the ponds as hazardous waste surface impoundments.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED: Send N.O.V.

REVIEWED BY: JD 12/16

ATTACHMENTS: Sample results *

JD:cen(060)

File: Young Refining Corp., Douglasville (R)

* The lab was not able to do oily waste extraction on samples as originally requested. Otis Woods said method was not EPA approved (?) and lab was not set up to perform. Therefore, lab request was changed to normal extraction procedure.

DATE: 7-24-85 PROJECT: Young Refining Corp. COLLECTOR: Jack Dempsey

NO. SAMPLES: 2 LOG NOS. 1444 & 1445 LIQUID ____ SOLID ____ SOIL 1

CAUSTIC ____ ACID ____ SOLVENT ____ UNKNOWN ____ SLUDGE 1

INFORMATION FOUND: asphalt production from low-grade crude oil

HAZARDOUS WASTE NOS. K048, K049, K050, K051 (Petroleum Refining)

HAZARDOUS HANDLING: none known

WORK PRIORITY (CRITICAL NEED) normal

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OCT 07 1985

ENVIRONMENTAL PROTECTION DIVISION
LAND PROTECTION BRANCH

METALS ANALYSES

	TOT	DIS			
METALS (DW NO Hg)	☐	☐	EP METALS (DW NO Hg)	☒	100X ☐ 30X ☐
METALS (DW WITH Hg)	☐	☐	EP METALS (DW WITH Hg)	☐	

	TOT	DIS		TOT	DIS				
NICKEL	☐	☐	CADMIUM	☐	☐	EP NICKEL	☐	EP CADMIUM	☐
ARSENIC	☐	☐	LEAD	☒	☐	EP ARSENIC	☐	EP LEAD	☐
CHROMIUM	☒	☐	MERCURY	☐	☐	EP CHROMIUM	☐	EP MERCURY	☐
CHROM-HEX	☒	☐	SELENIUM	☐	☐	EP CHROM-HEX	☐	EP SELENIUM	☐
____	☐	☐	____	☐	☐	____	☐	____	☐

on the waste

SPECIFIC ANALYSES

pH	☐	SULFIDE	☐	% SOLIDS	☐	____	☐
FLASH PT	☐	SP.COND.	☐	TOT. PHENOLS	☐	____	☐
CYANIDE TOT.	☐	TOC	☐	CHLORIDE	☐	____	☐
CYANIDE AM.	☐	TOH	☐	FLUORIDE	☐	____	☐

ORGANIC ANALYSES

PESTICIDE SCREEN (EC)	☐	GC-MS ACID EXTRACTABLES	☒
PCB	☐	GC-MS BASE/NEUTRALS	☒
VOLATILE ORGANICS (VOA)	☐		

SPECIFIC ORGANICS: ____

APPROVED: [signature] AUTHORIZED: ____

BW/0089F

F-54

LABORATORY REPORT

DATE: 7-24-85 PROJECT: Young Refining Corporation COLLECTOR: Jack Dempsey

	HW LOG NO.	1444	1445	1445		
DATE REC'D 7/24/85	LABEL I.D.	Soil from behind tank #305	Sludge from inlet of 1st Pond Top Layer	Sludge from inlet of 1st Pond Bottom Layer		
TIME REC'D 4:30 pm						
REC'D BY: M. Basmajian						
DEL BY: Dempsey						
Harold Lanford LABORATORY MANAGER						
DATE: 10-4-85						
PARAMETERS	LAB NO.	HW 1444	HW 1445	HW 1445		
Naphthalene	mg/kg	<1	6.3	8.9		
Dimethyl Naphthalene (total)	"	<1	10 *	13 *		
EP Ag	µg/L (PPB)	<10	<10			
" As	"	<40	<40			
" Ba	"	<3000	3000			
" Cd	"	<10	<10			
" Cr	"	<10	<10			
" Pb	"	<25	<25			
" Se	"	<50	<50			
Total Cr PPM	mg/kg	—	<0.5	—		
" Pb	"	—	7.4			

REMARKS: [illegible]
High Molecular Weight Hydrocarbons typical of an oil present at [illegible]
Bottom Layer appears to be Granular Solids - EP Metals + Total Met
were run on a well Mixed Sample.

LAND PROTECTION BRANCH

HAZARDOUS WASTE ANALYSIS REQUEST

DATE: 7-24-85 PROJECT: Young Refining Corp. COLLECTOR: Jack Dempsey

NO. SAMPLES: 2 LOG NOS. 1444 & 1445 LIQUID ____ SOLID ____ SOIL 1

CAUSTIC ____ ACID ____ SOLVENT ____ UNKNOWN ____ SLUDGE 1

INFORMATION FOUND: asphalt production from low-grade crude oil

HAZARDOUS WASTE NOS. K048, K049, K050, K051 (Petroleum Refining)

HAZARDOUS HANDLING: none known

WORK PRIORITY (CRITICAL NEED) normal

RECEIVED

OCT 07 1985

ENVIRONMENTAL PROTECTION DIVISION

LAND PROTECTION BRANCH

METALS ANALYSES

	TOT	DIS		
METALS (DW NO Hg)	☐	☐	EP METALS (DW NO Hg)	☒ 100X ☐ 30X ☐
METALS (DW WITH Hg)	☐	☐	EP METALS (DW WITH Hg)	☐

	TOT	DIS		TOT	DIS				
NICKEL	☐	☐	CADMIUM	☐	☐	EP NICKEL	☐	EP CADMIUM	☐
ARSENIC	☐	☐	LEAD	☒	☐	EP ARSENIC	☐	EP LEAD	☐
CHROMIUM	☒	☐	MERCURY	☐	☐	EP CHROMIUM	☐	EP MERCURY	☐
CHROM-HEX	☒	☐	SELENIUM	☐	☐	EP CHROM-HEX	☐	EP SELENIUM	☐
____	☐	☐	____	☐	☐	____	☐	____	☐

on the waste

SPECIFIC ANALYSES

pH	☐	SULFIDE	☐	% SOLIDS	☐	____	☐
FLASH PT	☐	SP.COND.	☐	TOT. PHENOLS	☐	____	☐
CYANIDE TOT.	☐	TOC	☐	CHLORIDE	☐	____	☐
CYANIDE AM.	☐	TOH	☐	FLUORIDE	☐	____	☐

ORGANIC ANALYSES

PESTICIDE SCREEN (EC)	☐	GC-MS ACID EXTRACTABLES	☒
PCB	☐	GC-MS BASE/NEUTRALS	☒
VOLATILE ORGANICS (VOA)	☐		

SPECIFIC ORGANICS: ____

APPROVED: HB AUTHORIZED: ____

BW/0089F

F-56

GEORGIA ENVIRONMENTAL PROTECTION DIVISION

LABORATORY REPORT

SAMPLE DATE: 7-24-85 PROJECT: Young Refining Corporation COLLECTOR: Jack Dempsey

HW LOG NO.		1444	1445	1445	
DATE REC'D	7/24/85				
LABEL I.D.		Soil from behind tank #305	Sludge from inlet of 1st Pond Top Layer	Sludge from inlet of 1st Pond Bottom Layer	
TIME REC'D	4:30 pm				
REC'D BY:	M. Basmajian				
DEL BY:	Dempsey				
	Harold Lanford, LABORATORY MANAGER				
DATE:	10-4-85				
PARAMETERS	LAB NO.	HW 1444	HW 1445	HW 1445	
Naphthalene	mg/Kg	<1	6.5	8.9	
Dimethyl Naphthalene (total)	"	<1	10 *	13 *	
EP Ag	µg/L (ppb)	<10	<10		
" As	"	<40	<40		
" Ba	"	<3000	3000		
" Cd	"	<10	<10		
" Cr	"	<10	<10		
" Pb	"	<25	<25		
" Se	"	<50	<50		
Total Cr	mg/Kg	—	<0.5	—	
" Pb	"	—	7.4		

REMARKS: * estimated values.
High Molecular Weight Hydrocarbons typical of an oil present at high [illegible]
Bottom Layer appears to be Granular Solids - EP Metals + Total Metals were run on a well Mixed Sample.

F-57

REF. # 9

RECORD OF TELEPHONIC CONVERSATION

Site Investigation Program

Routing: Randy Williams

Date: December 14, 1987

Time: 12:25 a.m./(p.m.)

File: Young Refining Corporation

Party Spoken To: Mr. Glen Johnson

Title: Agriculturist

Agency/Company: Agriculture Stabilization Service

Address: 3379; Hwy. 5; Suite H

City: Douglasville

Telephone Number: (404) 942 - 0697

State/Zip: Georgia 30135

Subject: Young Refining Corporation - GAD 051011344

Summary of Call: I spoke with Mr. Johnson to obtain information on land irrigated by supply wells within a 3-mile radius of the above mentioned site. Mr. Johnson stated that there was no land irrigated within the 3-mile radius by a supply well. However, eight miles southeast of Douglasville, there is a sod farm (38 acres) and crop farm (18 acres) that are irrigated by supply wells, along the boundary of the Chattahoochee River.

Actions Required: None.

Signature: Gilda A. Knowles December 14, 1987

Follow-up Responses/Additional Comments:

Signature:

Date:

SIP-2

9/86

REF. #10

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams

Date: December 16, 1987

Time: 2:35 a.m./p.m.

File: Young Refining Corporation

Party Spoken To: Kim Primmer

Title: Fishery Supervisor

Agency/Company: Dept. of Natural Resources - Fisheries

Address: Downtown Atlanta

City: Atlanta

Telephone Number: (404) 656 - 3524

State/Zip: Ga. 3

Subject: Young Refining Corporation GAD051011344

Summary of Call: I spoke with Mr. Primmer regarding fishing activity in Douglas County and he stated that there was fishing activity at Gothards Creek and Gray Stone Lake. He also stated that to obtain further information, that I should contact Mr. Don Johnson in Social Circle, Ga. (404) 656-4817

Actions Required: Contact Mr. Don Johnson

Signature: Gilda A. Knowles December 16, 1987

Follow-up Responses/Additional Comments: I spoke to Mr. Johnson and he stated that there is some fishing activity in most Creeks and lakes in Georgia

Signature: Gilda A. Knowles

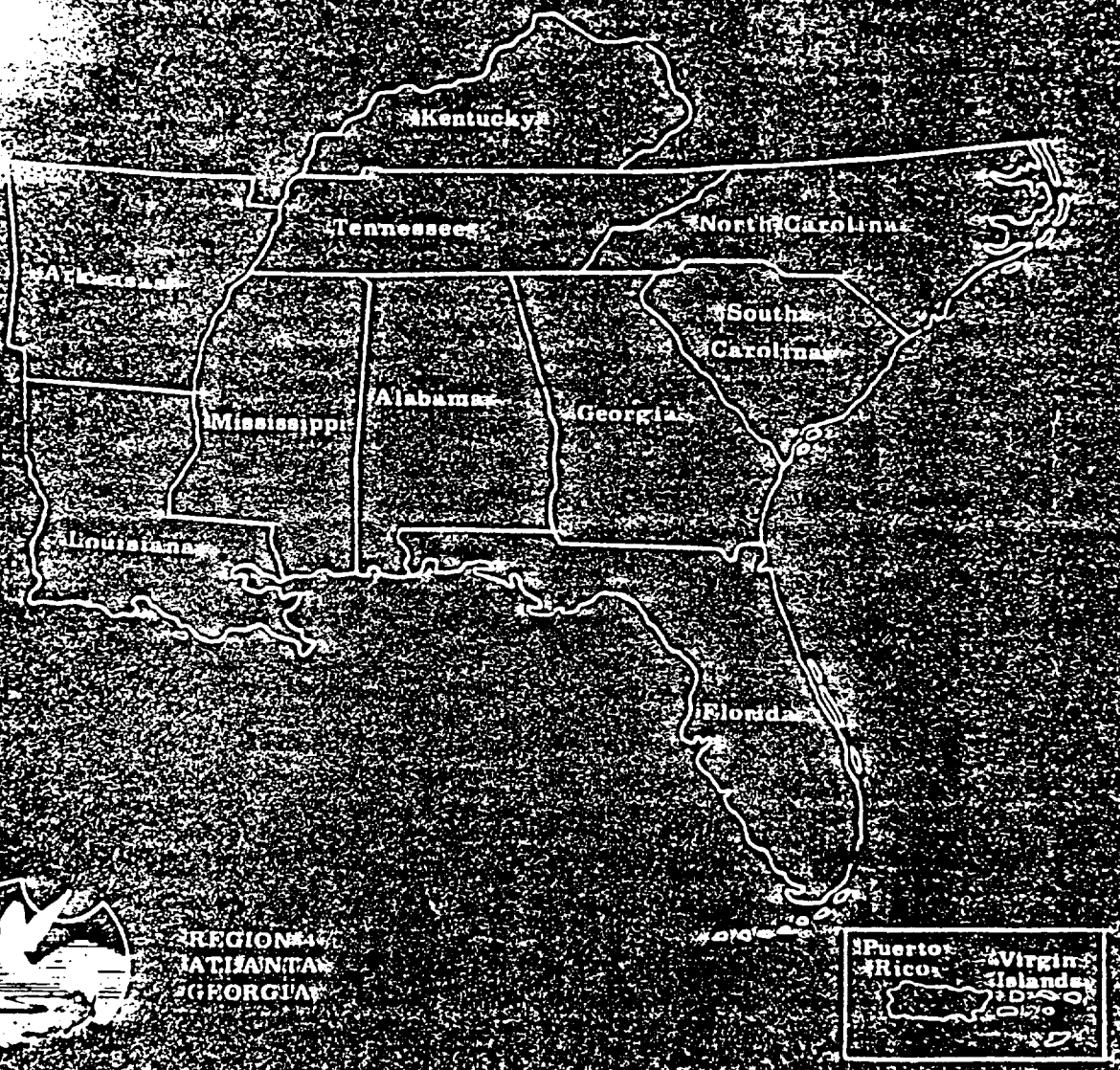
Date: December 16, 1987

SIP-2

9/86

Reference REF. # 11

ENDANGERED AND THREATENED SPECIES OF THE SOUTHEASTERN UNITED STATES



Reference 19

United States Department of the Interior

FISH AND WILDLIFE SERVICE
75 SPRING STREET, S.W.
ATLANTA, GEORGIA 30303

August 23, 1985

NOTICE

TO: All Project Leaders and Cooperators

FROM: Endangered Species Office, Federal Assistance, FWS, Atlanta, Georgia

SUBJECT: Changes to the Region 4 Endangered Species Notebook

This update covers the following actions: listing of the Carolina northern flying squirrel in North Carolina and Tennessee as endangered, listing of the Tar River spiny mussel in North Carolina as endangered, listing of five Florida pine rockland plants as endangered, listing of the Miccosukee gooseberry in Florida and South Carolina as endangered, listing of Ruth's golden aster in Tennessee and Vahl's boxwood in Puerto Rico as endangered, listing of the amber darter and Conasauga logperch in Georgia and Tennessee as endangered with critical habitat designated, reclassification of the alligator in Florida to threatened by similarity of appearance, and the proposed listing of two plants (pondberry and Florida golden aster).

REGIONAL LIST: Replace.

STATE LISTS: Replace FL, GA, NC, PR, SC, TN.

CRITICAL HABITAT: Replace index; add amber darter and Conasauga logperch designations for GA and TN.

PROPOSED RULEMAKING: Replace previous sheet.

Species Accounts: FISHES - Replace index; add accounts for two fishes.

PLANTS - Replace index; add accounts for eight plants.

Attachments

85-3

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REGION IV
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F-61

Federally Listed Species by State

GEORGIA

(E=Endangered; T=Threatened; CH=Critical Habitat determined)

Mammals	General Distribution
Bat, gray (*Myotis grisescens*) - E	Northwest, West
Bat, Indiana (*Myotis sodalis*) - E	Extreme Northwest
Manatee, Florida (*Trichechus manatus*) - E	Coastal waters
Panther, Florida (*Felis concolor coryi*) - E	Entire state
Whale, right (*Eubalaena glacialis*) - E	Coastal waters
Whale, finback (*Balaenoptera physalus*) - E	Coastal waters
Whale, humpback (*Megaptera novaeangliae*) - E	Coastal waters
Whale, sei (*Balaenoptera borealis*) - E	Coastal waters
Whale, sperm (*Physeter catodon*) - E	Coastal waters

Birds	
Eagle, bald (*Haliaeetus leucocephalus*) - E	Entire state
Falcon, American peregrine (*Falco peregrinus anatum*) - E	North
Falcon, Arctic peregrine (*Falco peregrinus tundrius*) - T	Coast, Northwest
Stork, wood (*Mycteria americana*) - E	Southeastern swamps
Warbler, Bachman's (*Vermivora bachmanii*) - E	Entire state
Warbler, Kirtland's (*Dendroica kirtlandii*) - E	Coast
Woodpecker, ivory-billed (*Campephilus principalis*) - E	South, Southwest
Woodpecker, red-cockaded (*Picoides* (=*Dendrocopos*) *borealis*) - E	Entire state

Reptiles	
Alligator, American (*Alligator mississippiensis*) - E	Inland coastal plain
Alligator, American (*Alligator mississippiensis*) - T	Coastal areas

GEORGIA (cont'd)

	General Distribution
Snake, eastern indigo (*Drymarchon corais couperi*) - T	Southeast
Turtle, Kemp's (Atlantic) ridley (*Lepidochelys kempii*) - E	Coastal waters
Turtle, green (*Chelonia mydas*) - T	Coastal waters
Turtle, hawksbill (*Eretmochelys imbricata*) - E	Coastal waters
Turtle, leatherback (*Dermochelys coriacea*) - E	Coastal waters
Turtle, loggerhead (*Caretta caretta*) - T	Coastal waters

Fishes

Darter, amber (*Percina antesella*) - E,CH	Conasauga R., Murray County
Darter, snail (*Percina tanasi*) - T	S. Chickamauga Cr., Catoosa County
Logperch, Conasauga (*Percina jenkinsi*) - E,CH	Conasauga R., Murray County
Sturgeon, shortnose (*Acipenser brevirostrum*) - E	Coastal rivers

Plants

Florida torreya (*Torreya taxifolia*) - E	Decatur County
Green pitcher plant (*Sarracenia oreophila*) - E	Towns County
Hairy rattleweed (*Baptisia arachnifera*) - E	Wayne, Brantley Counties
Persistent trillium (*Trillium persistens*) - E	Tallulah-Tugaloo River system, Rabun and Habersham Counties

REF. # 12

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

TRIP REPORT

October 20, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD05101134
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles G.A.K. Environmental Specialist Site Assessment Unit
ACCOMPANIED BY:	N/A
DATE AND TIME OF INVESTIGATION:	October 20, 1987 8:10 a.m.
OFFICIALS CONTACTED:	Mr. Charles Ellis Plant Manager Young Refining Corporation (404)942-2343 Mr. Fang Kou Plant Engineer Young Refining Corporation (404)942-2343
REFERENCE:	Preliminary Assessment Georgia-EPD State Files Trip Report by Jack Dempsey November 21, 1985

COMMENTS:

The facility refines asphaltic crude that is shipped by railroad car from Mississippi. The corporation's crude terminal is located in Lumberton, Mississippi and crude is purchased from Texaco and Chevron Oil Companies off the pipeline. The facility manufactures jet fuel for the government, heavy #5 oil (atmospheric gas oil), #2 fuel (diesel oil), certified state asphalt, oxidized asphalt (shingle, saturate, coat covering) and four (4) types of roofing asphalt. All products are transported by truck in bulk or packaged products. The various processes that the crude is taken through are heating, distillation, fractionating, oxidation and shipping. The wastes that are generated are solid wastes (collected on-site in dumpsters serviced by the City of Douglasville); wastewater (passes through API separator and is discharged to a series of 4

ponds-NPDES permitted) and sludges (API Separator, Desalter, Heat Exchanger). Mr. Ellis stated that he was not sure of the sludge disposal company that Young Refining Corporation utilizes.

Treatment ponds (4) have never been lined, but on occasion ponds #2, 3 and 4 are cleaned. Mr. Ellis stated that pond #3 is continuously aerated; however, during my tour of the facility aerating equipment at pond #3 was not in operation.

Questions were asked of Mr. Ellis and he stated the following:

1. wastes are not treated or disposed of on-site; only water is treated,

2. the property is 30-40 acres in size,

3. the flocculator is no longer used between ponds # 1 and 2,

4. the facility is supplied city water for drinking and boiler feed water that is used for steam generation,

5. there are 5 operable wells on-site, that are 300 ft. in depth and their water is used for the cooling pond and utility purposes,

6. these wells are sampled daily for treatment purposes and Deerborne Chemical Company of Atlanta treats the well water,

7. there is no dilution of wastes,

8. water was treated for phenols, but none were found and,

9. the facility does not handle lead petroleum, only virgin crude is refined.

During my tour of the facility with Mr. Fang Kou, Plant Engineer, I observed the following:

1. process areas were messy,

2. soil type seemed to be of a sandy, clay consistency,

3. facility is fenced and entrance gate is kept locked when not in operation,

4. two other companies are located within the facility's complex and they are Central Oil & Asphalt Corporation and Elk Roofing Company,

5. Arivec Chemicals Inc. is also located in the area, but is totally surrounded by a fence,

6. sampling areas,

7. slopes varied from 8-40% in various areas of the site and

8. pond #4 discharges water to a small creek (tributary on-site).

Mr. Kou reviewed the facility's processes with me on a flow chart in his laboratory and supplied a sketch of the facility. I left the site at 10:30 a.m.

I visited the Water Department and spoke with Mr. Winfred Pirkle, Water Superintendent, who supplied me with information on boundaries of water lines and possible areas to check for wells. Ownership and property maps were obtained from the county tax assessors office. A well survey was conducted within one mile of the facility and 2 shallow wells were observed, but residents are believed to be on city water. Deep wells were observed in 2 and 3 mile radius of the site, but were not counted. Roads that need to be checked for an extended well survey on the next site visit are Dallas, Malone, Brown Street and Simon. The water line boundaries are Brownville Road to the North, Bankhead Hwy. and South & North Flat Rock Roads to the West, Gurley Road to the Southwest, Chapel Hill Road to the South and Mount Vernon Road to the East.

CONCLUSIONS:

None can be drawn until samples are collected and analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

On-site sampling should be conducted, off-site sampling and an extended well survey should be completed.

PHOTOGRAPHS: 15 polaroids

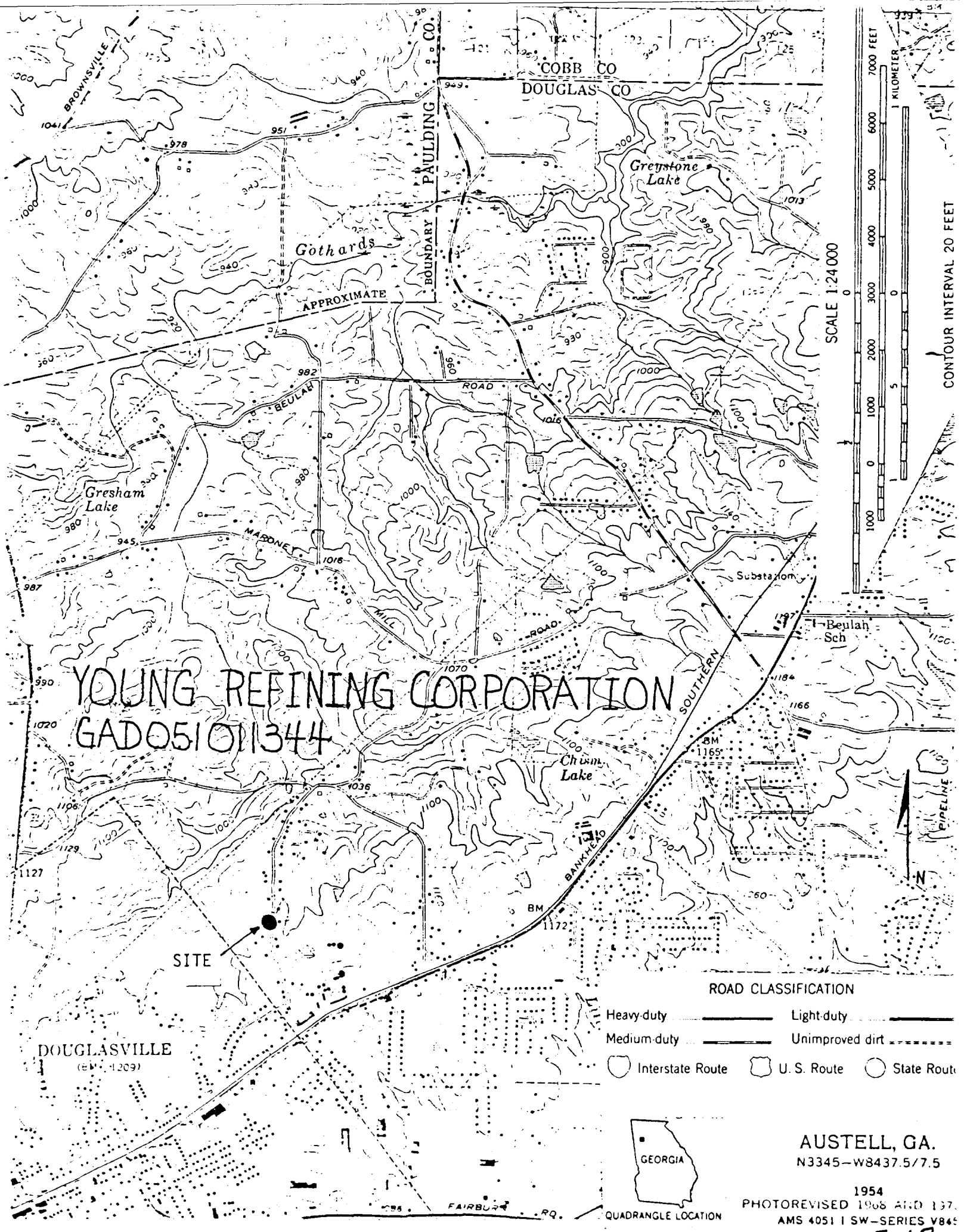
NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: None (reconnaissance visit)

REVIEWED BY: **DATE:**

ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

GAK:zcr001

File: Young Refining Corporation


YOUNG REFINING CORPORATION
GAD051011344
COBB CO
DOUGLAS CO
PAULDING CO.
BOUNDARY
APPROXIMATE
Greystone Lake
Gothards
Gresham Lake
BROWNSVILLE
BEULAH ROAD
MARONEY MILL ROAD
Substation
Beulah Sch
Chism Lake
SOUTHERN
BANKHEAD
PIPELINE
SITE
DOUGLASVILLE
FAIRBURN RD.
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
1 KILOMETER
7000 FEET
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
Interstate Route
U. S. Route
State Route
GEORGIA
QUADRANGLE LOCATION
AUSTELL, GA.
N3345—W8437.5/7.5
1954
PHOTOREVISED 1968 AND 197
AMS 4051 I SW—SERIES V845

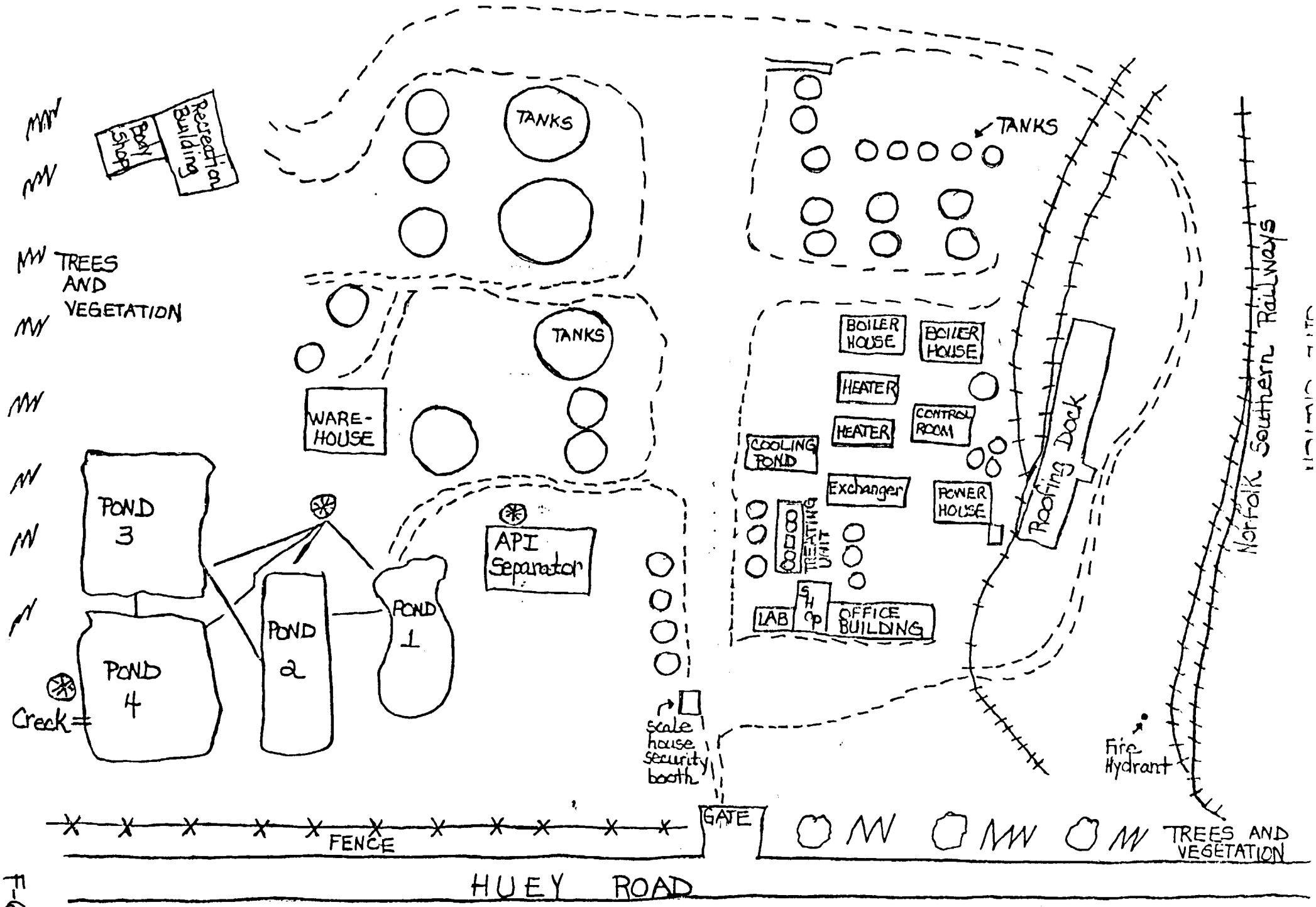
F-67

Continued Page 152

Continued Page 155

SITE
DOUGLASVILLE INDUSTRIAL PARK
Doggie Millers Lake
L.W. Burnett Elem Sch
Douglasville Village Shop Cntr
Eastside Elem Sch
Douglasville
Douglas County Comprehensive High Sch
Douglas County Hospital
Lake Jane
Wallace Lake
Midway
1ST DISTRICT 5TH SECTION
Slater Mill Creek
Anneewakee
Little
Timber Ridge
Prestley Mill Rd
Chapel Hill Rd
Warren Rd
Hickory
Burnt
Hwy 78
Hwy 92
Hwy 10
Hwy 5
Hwy 9
Southern Railway

F-68


Recreation Building
Body Shop
TREES AND VEGETATION
TANKS
TANKS
TANKS
WARE-HOUSE
POND 3
POND 4
POND 2
POND 1
Creek
API Separator
BOILER HOUSE
BOILER HOUSE
HEATER
HEATER
CONTROL ROOM
COOLING POND
Exchanger
POWER HOUSE
TREATING UNIT
LAB
SHOP
OFFICE BUILDING
Loading Dock
Norfolk Southern Railways
Fire Hydrant
scale house security booth
GATE
FENCE
TREES AND VEGETATION
HUEY ROAD
NOT DRAWN TO SCALE
Proposed Sampling Locations

N. - 8:10 AM

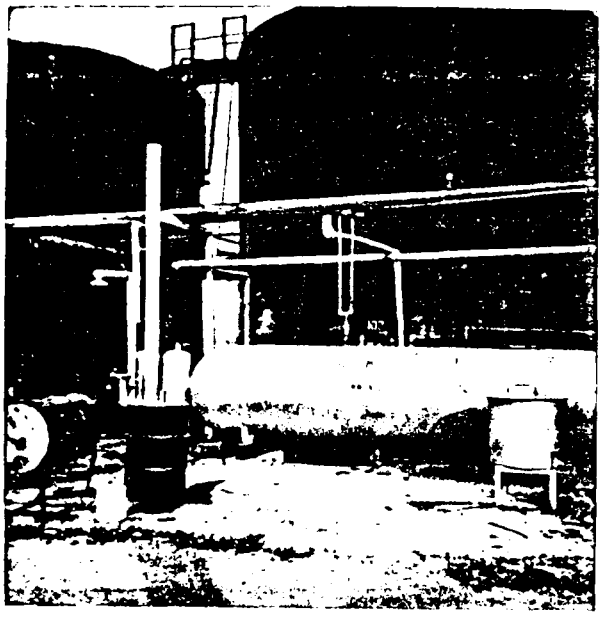
10-20-87

SITE NAME Young Refining Corporation
Picture No. 1 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance of facility off Huey Road. Front entrance; trees and heavy vegetation.
Other

N. 8:30 AM

10-20-87

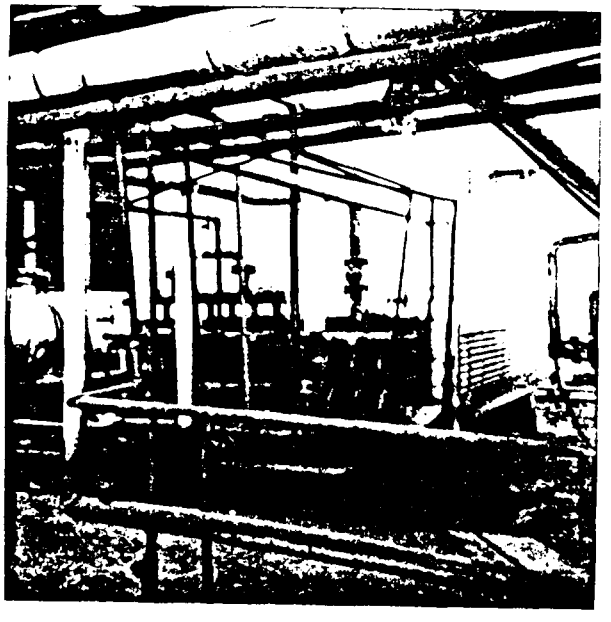
SITE NAME Young Refining Corporation
Picture No. 2 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance gate of facility. Security personnel present in security booth.
Other



N. - 8:35 AM

10-20-87

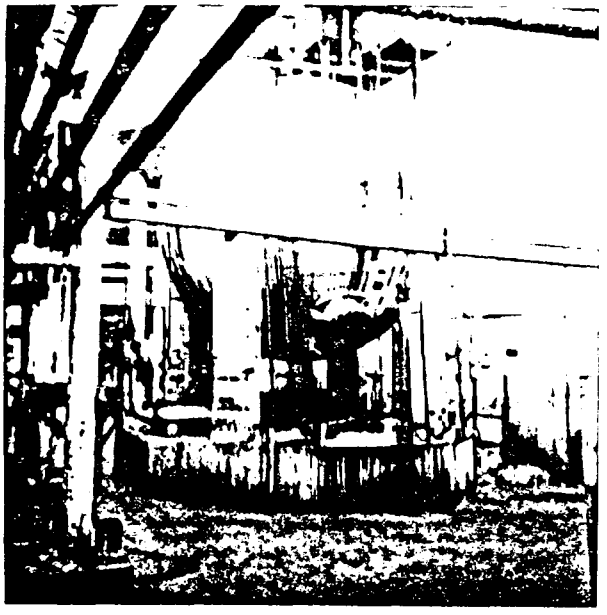
SITE NAME Young Refining Corporation
Picture No. 3 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Holding tanks for crude transported in by railroad car. One (1) tank is able to accomodate 4 railroad cars of crude.
Other



N. 8:40 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 4 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Crude is heated through several steps with heat exchanger.
Other



W. - 8:45 AM

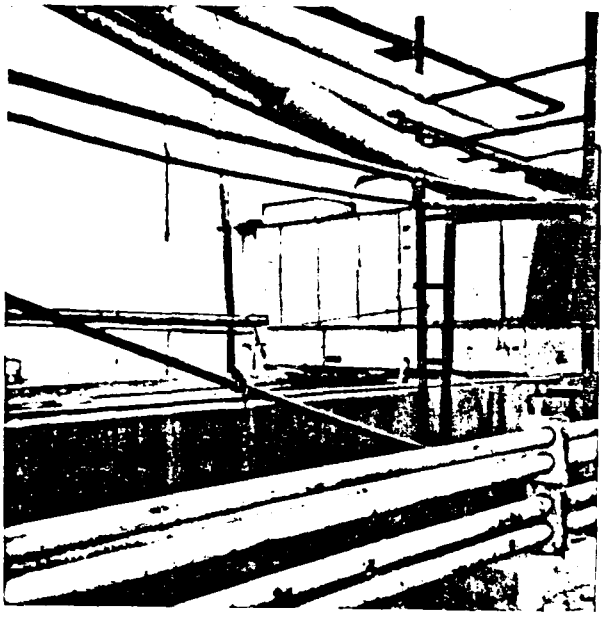
10-20-87

SITE NAME Young Refining Corporation
Picture No. 5 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Crude is eliminated of various salts by the desalter equipment
Other

N.
8:47
A.M.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 6 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Bubble Tower - Crude enters tower where light oils are vaporized out of crude and
Other asphalt goes out the bottom.



W.- 8:48 AM

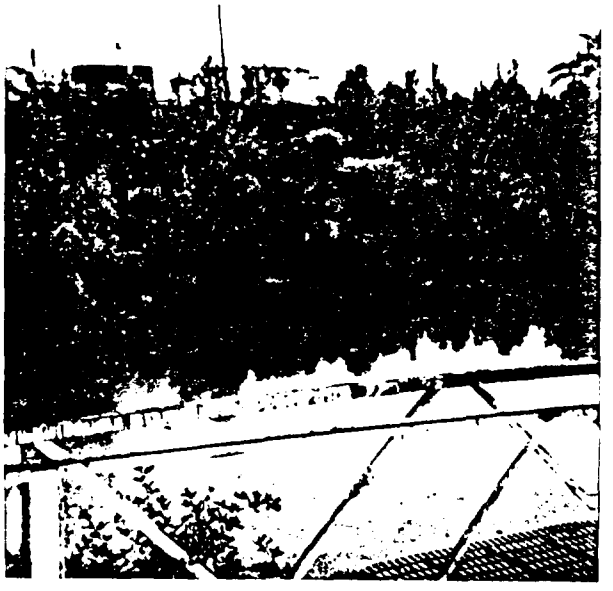
10-20-87

SITE NAME Young Refining Corporation
Picture No. 7 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation All wastewater is recycled and cooled down in this cooling pond.
Other

N.E.- 8:50 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 8 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing Northeast
Photographer G. A. Knowles
Program Site Investigation Program
Explanation API Separator - This piece of equipment further separates oil from water. The
Other water from this process flows into the primary catching pond #1.



S.-8:55 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 9 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing South
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #1

Other

N.E.-9:05 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 10 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #1 - Oil is skimmed off the top of the water into a thorgh that leads back through the crude tanks for reprocessing.
Other

W.-9:15 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 11 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #2 with separator for skimming
Other

E.-9:25 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 12 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing East
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Pond #3 with aerating equipment. Aerator was inoperative at the time of inspection.
Other

N.E. 9:35 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 13 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy 69°F.

Direction Facing Northeast

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Pond #4, drainage conduit for this pond is discharge to a small creek on-site.

Other

N.E. - 9:45 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 14 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy 69°F.

Direction Facing Northeast

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Discharge of water from conduit, to small creek (conduit extends from Pond #4).

Other

APPENDIX F

F.O.I.A.
EXEMPTION 5

Approving Official

5/29/91
Date

CONCLUSIONS AND RECOMMENDATIONS PAGE

Since the Georgia-EPD sampled wastes at the site on October 28, 1987, laboratory analyses have shown high concentrations of heavy metals in sludge and soil composites. However, these contaminants have not been found in ground water samples.

A well survey conducted within a three mile radius of the site found one shallow well (20 feet) just outside of the one mile radius. Twenty-three wells were observed during this survey and it is not known whether all wells are drawing from the aquifer of concern. Wells in this aquifer are used for drinking water purposes and the watering of small lawns.

Based on the information currently available, the Georgia-EPD has calculated a preliminary HRS score for the site of 10.22. The score is low because of the lack of targets around the site. Because no documented release of contamination to ground water has occurred, the Georgia-EPD recommends no further action with respect to CERCLA.

Facility name: Young Refining Corporation

Location: 7982 Huey Road (P.O. Box 796); Douglasville, Ga. 30134

EPA Region: IV

Person(s) in charge of the facility: Mr. Charlie Ellis - Plant Manager
Young Refining Corp.; 7982 Huey Road
Douglasville, Ga. 30134

Name of Reviewer: Gilda A. Knowles Date: November 30, 1987

General description of the facility:
(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

The facility refines crude, which is taken through several processes. The wastewater generated by these processes passes through an API Separator and is then discharged to a series of 4 ponds which are NPDES permitted. These ponds however, are unlined. Sludge taken from API separator has been known to be disposed of on the ground in the past. Potential for infiltration of contaminants through soil and entry into ground water.

Scores: S_M = 10.22 (S_{gw} = 16.70 S_{sw} = 5.84 S_a = NOT SCORED)

S_{FE} = NOT SCORED

S_{DC} = 12.5

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
20 feet — Depth to Aquifer of Concern	0 1 2 (3)	2	6	6	
10 inches — Net Precipitation	0 1 (2) 3	1	2	3	
Sandy clay loam — Permeability of the Unsaturated Zone	0 (1) 2 3	1	1	3	
Sludge — Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			12	15	
3 Containment (Ponds have no liners)	0 1 2 (3)	1	3	3	3.3
4 Waste Characteristics					3.4
Pb, Cr, Ba — Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Quantity — Hazardous Waste Quantity (unknown, assume value of 1)	0 1 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			19	26	
5 Targets					3.5
Drinking H_2O with alternate untreated source — Ground Water Use	0 1 (2) 3	3	6	9	
1 well, shallow 3.8 people — Distance to Nearest Well/Population Served	0 4 6 (8) 10 / 12 16 18 20 / 24 30 32 35 40	1	8	40	
Total Targets Score			14	49	
6 If line 1 is 45, multiply 1 x 4 x 5; If line 1 is 0, multiply 2 x 3 x 4 x 5			9,576	57,330	
7 Divide line 6 by 57,330 and multiply by 100			S_{gw} = 16.70		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain (5-8%)	0 1 2 3	1	2	3	
1-yr. 24-hr. Rainfall (3.0 inches)	0 1 2 3	1	2	3	
Distance to Nearest Surface Water (1000 ft - 1 mile)	0 1 2 3	2	4	6	
Physical State (Sludge)	0 1 2 3	1	3	3	
Total Route Characteristics Score			11	15	
3 Containment (Piles not covered; wastes uncon-solidated; no diversion)	0 1 2 3	1	3	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence (Pb, Cr, Ba)	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity (Quantity unknown, assigned value of 1)	0 1 2 3 4 5 6 7 8	1	1	8	
Total Waste Characteristics Score			19	26	
5 Targets					4.5
Surface Water Use (Fishing and Recreation)	0 1 2 3	3	6	9	
Distance to a Sensitive Environment (>1 mile)	0 1 2 3	2	0	6	
Population Served/Distance to Water Intake Downstream (0, surface waters not used for irrigation)	0 4 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	0	40	
Total Targets Score			6	55	
6 If line 1 is 45, multiply 1 x 4 x 5 / If line 1 is 0, multiply 2 x 3 x 4 x 5			3,762	64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{sw} = 5.84		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet NOT SCORED					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1		45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S_a = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
4 Multiply 1 x 2 x 3				35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a =			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	16.70	278.89
Surface Water Route Score (S_{sw})	5.84	34.10
Air Route Score (S_a)	0.00	0.00
$S_{gw}^2 + S_{sw}^2 + S_a^2$		312.99
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		17.69
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		10.22

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet NOT SCORED					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100	S_{FE} =				

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 3	1	1	3	8.2
3 Containment	0 15	1	15	15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5	15	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4	12	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
Total Targets Score			12	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			2,700	21,600	
7 Divide line 6 by 21,600 and multiply by 100			S_{DC} = 12.5		

Gate guarded locked to entrance

Sludge, de-watered on ground surface

Pb, Cr, Ba

1,074

None

FIGURE 12
DIRECT CONTACT WORK SHEET

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: Young Refining Corporation

LOCATION: 7982 Huey Road; (P.O. Box 796); Douglasville, Georgia 30134

DATE SCORED: November 30, 1987

PERSON SCORING: Gilda A. Knowles

PRIMARY SOURCE(S) OF INFORMATION (e.g., EPA region, state, FIT, etc.):
Georgia-EPD State Files

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:
Air Route
Fire and Explosion

COMMENTS OR QUALIFICATIONS:

GROUND WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected (5 maximum):

Rationale for attributing the contaminants to the facility:

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern Assigned Value = 3

Name/description of aquifer(s) of concern:

The aquifer of concern in the area is a shallow water table aquifer which has a crystalline rock aquifer beneath it. The site is underlain by schist, biotite gneiss and other metamorphic rocks.

(Ref. #s 1, 2)

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

The depth from the ground surface to the highest seasonal level of the saturated zone is less than twenty feet.

(Ref. #s 1)

Depth from the ground surface to the lowest point of waste disposal/storage:

Soil samples were collected from depths of 3-6 inches

(Ref. #s 3)

Net Precipitation Assigned Value = 2

Mean Annual or seasonal precipitation (list months for seasonal):

The mean annual precipitation for the area is 50.0 inches.

(Ref. # 2)

Mean annual lake or seasonal evaporation (list months for seasonal):

The mean annual lake evaporation is 40.0 inches.

(Ref. # 4)

Net precipitation (subtract the above figures):

The net precipitation for the area is

50.0 inches
- 40.0 inches
→ 10.0 inches.

(Ref. # 4)

Permeability of Unsaturated Zone Assigned Value = 1

Soil type in unsaturated zone:

The soil type in the unsaturated zone is sandy clay loam (sandy loam).

(Ref. # 2)

Permeability associated with soil type:

The permeability associated with the above mentioned soil type is 10^{-3} - 10^{-5} cm/sec which is the approximate range of hydraulic conductivity.

(Ref. # 4)

Physical State Assigned Value = 3

Physical state of substances at time of disposal (or at present time for generated gases):

The physical state of substances at time of disposal is liquid/sludge. (Ref. # 5)

3. **CONTAINMENT**

Containment Assigned Value = 3

Method(s) of waste or leachate containment evaluated:
Waste were disposed of on ground surface
(Ref. # 5)

Method with highest score:
The method with the highest score was ponds with no liners. (Ref. # 4)

4. **WASTE CHARACTERISTICS**

Toxicity and Persistence Assigned Value = 18

Compound(s) evaluated:
The compounds evaluated are barium, chromium and lead. These heavy metals were found in sludge and soil composite samples collected at the site.
(Ref. # 6)

Compound with highest score:
All three compounds had high scores of 18
(Ref. # 4, 7).

Hazardous Waste Quantity Assigned Value = 1

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):
The total quantity of hazardous substances at the facility is unknown.
(Ref. # 4)

Basis of estimating and/or computing waste quantity:
Since quantity is unknown, a value of 1 is assigned.
(Ref. # 4)

5. TARGETS

Ground Water Use Assigned Value = 2

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Ground water uses within a 3-mile radius of the facility are for drinking water and irrigation of lawns.

(Ref. # 1)

Distance to the Nearest Well Assigned Value = 3

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

The distance of the nearest well drawing from the aquifer of concern is just outside the one mile radius

(Ref. # 8)

Distance to above well or building:

1.25 miles.

(Ref. # 8)

Population Served by Ground Water Wells Within a 3-Mile Radius Assigned Value = 1

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

There were 26 wells observed within a 3-mile radius of the site. It is not known if all wells are drawing from the aquifer of concern. However, the population for the closest known shallow well is 3.8 (Ref. # 8)

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

There is no land irrigated by supply wells within a 3-mile radius of the site.

(Ref. # 9)

Total population served by ground water within a 3-mile radius:

The total population served by ground water within a 3-mile radius is 87. (Ref. # 8)

SURFACE WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

Rationale for attributing the contaminants to the facility:

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain Assigned Value = 2

Average slope of facility in percent:

The average slop of the facility is 5-8 %.
(Ref. # 8)

Name/description of nearest downslope surface water:

The nearest downslope surface water is an unnamed tributary the empties into Gothards Creek.
(Ref. # 8)

Average slope of terrain between facility and above-cited surface water body in percent:

Average slope of terrain between facility and above-cited surface water is
(Ref. # 8)

Is the facility located either totally or partially in surface water?

The facility is not located in surface water
(Ref. # 8)

Is the facility completely surrounded by areas of higher elevation?
The facility is not completed surrounded by areas of higher elevation.
(Ref. # 8)

1-Year 24-Hour Rainfall in Inches Assigned Value = 2
The 1-year 24-hour rainfall for the area is 3.0 inches.
(Ref. # 4)

Distance to Nearest Downslope Surface Water Assigned Value = 2
0.5 miles
(Ref. # 8)

Physical State of Waste Assigned Value =
The physical state of the waste is a sludge
(Ref. # 5)

6. CONTAINMENT

Containment Assigned Value = 3
Method(s) of waste or leachate containment evaluated:
Wastes (sludges) were disposed of on ground surface.
(Ref. # 5)

Method with highest score:
The method with the highest score is piles not covered; wastes unconsolidated and no diversion.
(Ref. # 4/1)

4. **WASTE CHARACTERISTICS**

Toxicity and Persistence Assigned Value = 18

Compound(s) evaluated:

The compounds evaluated are barium, chromium, and lead.

(Ref. # 6)

Compound with highest score:

All three compounds had high scores of 18.

(Ref. # 4)

Hazardous Waste Quantity Assigned Value = 1

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give reasonable estimate even if quantity is above maximum):

Total quantity of hazardous substances at the facility is unknown.

(Ref. # 4)

Basis of estimating and/or computing waste quantity:

Since waste quantity is unknown, a value of 1 was assigned.

(Ref. # 4)

5. **TARGETS**

Surface Water Use Assigned Value = 2

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Surface water within 3-miles downstream of the substance is used for fishing. (Ref. # 10) Surface waters southeast of the site are used for drinking water purposes. These surface waters are not affected by the site and were not scored (Ref. # 13).

Is there tidal influence?

There is no tidal influence at the site.

(Ref. #8)

Distance to a Sensitive Environment Assigned Value = 0

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

None

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

None

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None

(Ref. #11)

Population Served by Surface Water Assigned Value = 0

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

None

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

N/A

Total population served:

N/A

Name/description of nearest of above water bodies:

N/A

Distance to above-cited intakes, measured in stream miles:

N/A

AIR ROUTE - NOT SCORED

1. OBSERVED RELEASE

Contaminants detected:

Date and location of detection of contaminants:

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

3. TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi. 0 to 1 mi. 0 to ½ mi. 0 to ¼ mi.

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

FIRE AND EXPLOSION – NOT SCORED

1. CONTAINMENT

Hazardous substances present:

Type of containment, if applicable:

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

Ignitability

Compound used:

Reactivity

Most reactive compound:

Incompatibility

Most incompatible pair of compounds:

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

Basis of estimating and/or computing waste quantity:

3. TARGETS

Distance to Nearest Population

Distance to Nearest Building

Distance to Sensitive Environment

Distance to wetlands:

Distance to critical habitat:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Population Within 2-Mile Radius

Buildings Within 2-Mile Radius

DIRECT CONTACT

1. **OBSERVED INCIDENT**

Date, location, and pertinent details of incident:

2. **ACCESSIBILITY** Assigned Value = 1

Describe type of barrier(s):

Gate to entrance is guarded and locked

(Ref. #: 12)

3. **CONTAINMENT** Assigned Value = 15

Type of containment, if applicable:

Sludge was disposed of on ground surface for dewatering.

(Ref. #: 5)

4. **WASTE CHARACTERISITCS**

Toxicity Assigned Value = 15

Compounds evaluated:

Lead, chromium, barium

(Ref. #: 6)

Compound with highest score:

All three compounds had high scores of 18

(Ref. #: 4)

5. **TARGETS**

Population within one-mile radius Assigned Value =

Population within a one-mile radius is 1,074.

(Ref. # 8)

Distance to critical habitat (of endangered species) Assigned Value = 0

None (Ref. # 11)

REFERENCES

HRS DOCUMENTATION

1. Record of Telephonic Conversation, 10/29/87, 11/12/87, between Mrs. Lanette Latham, Private Well Owner and Gilda A. Knowles, Site Assessment Unit.

2. United States Department of Agriculture, Soil Conservation Service, 1961. Soil Survey, Douglas County, Georgia.

3. Georgia Department of Natural Resources, 10/28/87. Trip Report by Gilda A. Knowles, Site Assessment Unit.

4. National Oil and Hazardous Substances Contingency Plan Appendix A, 40 CFR Part 300, 47 Federal Register 31219.

5. Georgia Department of Natural Resources, 11/21/85. Trip Report by Jack Dempsey, Hazardous Waste Management Program.

6. Georgia Department of Natural Resources, 12/19/87. Laboratory Analyses.

7. Sax, Irving N., 1984. Dangerous Properties of Industrial Materials: Van Nostrand Reinhold Company, New York, 6th Edition.

8. U.S.G.S., 1973. Nebo, Georgia: 1954, Austelle, Georgia, 1973, Winston, Georgia; 1954, Campbellton, Georgia. Topographic Map 7.5 Minute Series, Quadrangle Map. Contour Interval 20 feet Well Survey Map - Appendix C, Attachment 2.

9. Record of Telephonic Conversation, 12-14-87. Between Mr. Glen Johnson, Agriculturist and Gilda A. Knowles, Site Assessment Unit.

10. Record of Telephonic Conversation, 12/16/87. Between Mr. Kim Primmer and Don Johnson, Fishery Supervisors and Gilda A. Knowles, Site Assessment Unit.

11. United States Department of the Interior, Fish and Wildlife Service, 8/23/85. Endangered and Threatened Species of the Southeastern United States, Reference 19, Atlanta, Georgia.

12. Georgia Department of Natural Resources, 10/12/87. Trip Report by Gilda A. Knowles, Site Assessment Unit.

13. Record of Telephonic Conversation, 10/9/87. Between Mr. Ken Lawler, Water Superintendent and Gilda A. Knowles, Site Assessment Unit.

REF. # 1

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams

Date: October 29, 1987

Time: 1:05 a.m./p.m.

File: Young Refining Corporation

Party Spoken To: (b) (6) [redacted]

Title: Home Owner

Agency/Company: Non-applicable

Address: (b) (6) [redacted]

City: Douglasville

Telephone Number: [redacted]

State/Zip: Ga. 31034

Subject: Young Refining Corporation - GAD051011344

Summary of Call: This call resulted from the sampling of [redacted] well, which was done on 10-28-87. Following a site inspection of the above facility, a background groundwater sample was needed for comparison with Young Refining Corp's well water. (b) (6) [redacted] dug well was sampled but there was no one at home, so I left my business card in her door to call me with additional information. Mrs. Latham called and stated the following: 1.) that her well is used for drinking water and for lawn irrigation, 2.) that the city water lines ended/stopped at the house before hers and 3.) that she does not know the depth of her well, she knows it's not that deep because they tried to dig the well deeper, but ran into rock. I told her that I would send her a copy of lab results when they became available. *Depth of well is needed.

Actions Required:

Signature: Gilda A. Knowles October 29, 1987.

Follow-up Responses/Additional Comments: On November 12, 1987, while completing a well survey, M[redacted] well depth was measured with a water level indicator. Well depth was found to be 20 feet.

Signature: Gilda A. Knowles

Date: November 12, 1987

SIP-2

9/86

DOUGLAS REF. #2

Series 1959, No. 1

Issued November 1961

SOIL SURVEY

Douglas County Georgia

OUR SOIL ★ OUR STRENGTH

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
UNIVERSITY OF GEORGIA, COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATIONS

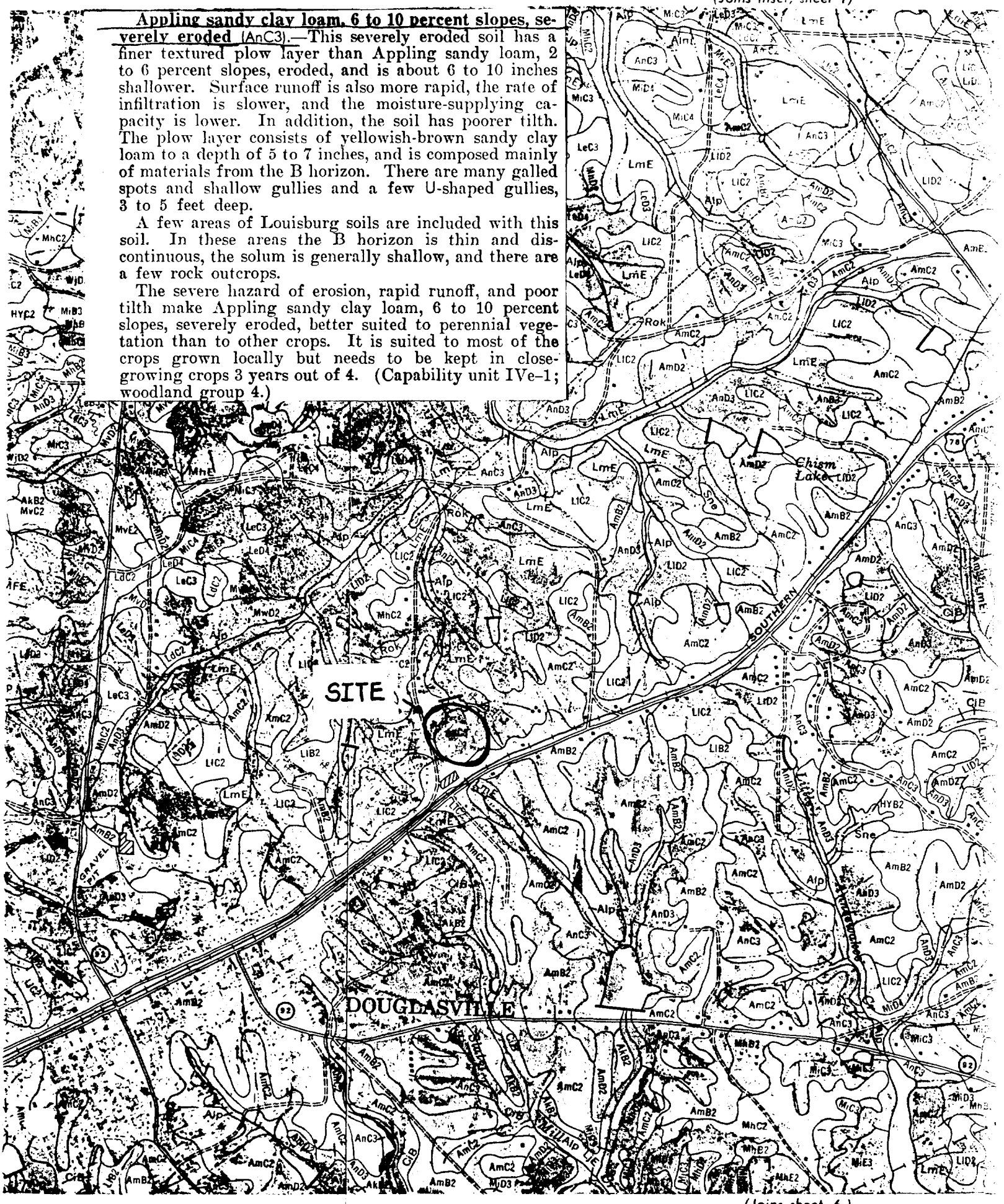
F-26

(Joins inset, sheet 1)

Appling sandy clay loam, 6 to 10 percent slopes, severely eroded (AnC3).—This severely eroded soil has a finer textured plow layer than Appling sandy loam, 2 to 6 percent slopes, eroded, and is about 6 to 10 inches shallower. Surface runoff is also more rapid, the rate of infiltration is slower, and the moisture-supplying capacity is lower. In addition, the soil has poorer tilth. The plow layer consists of yellowish-brown sandy clay loam to a depth of 5 to 7 inches, and is composed mainly of materials from the B horizon. There are many galled spots and shallow gullies and a few U-shaped gullies, 3 to 5 feet deep.

A few areas of Louisburg soils are included with this soil. In these areas the B horizon is thin and discontinuous, the solum is generally shallow, and there are a few rock outcrops.

The severe hazard of erosion, rapid runoff, and poor tilth make Appling sandy clay loam, 6 to 10 percent slopes, severely eroded, better suited to perennial vegetation than to other crops. It is suited to most of the crops grown locally but needs to be kept in close-growing crops 3 years out of 4. (Capability unit IVe-1; woodland group 4.)



(Joins sheet 6)

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

TRIP REPORT

October 28, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD051011344
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles G.A.K. Environmental Specialist Site Assessment Unit
ACCOMPANIED:	Charles Evans Environmental Specialist Site Assessment Unit
DATE AND TIME OF INVESTIGATION:	October 28, 1987
OFFICIALS CONTACTED:	Mr. Fang Kuo Plant Engineer Young Refining Corporation 7982 Huey Road Douglasville, GA 30134
REFERENCE:	Trip Report, October 20, 1987 Georgia-EPD State Files

COMMENTS:

A Screening Site Inspection was conducted at Young Refining Corporation, a facility that refines crude into asphaltic cement and other by-products.

Charles Evans and I arrived on-site at 9:00 a.m. and met with Mr. Fang Kou, Plant Engineer, who accompanied us in our sampling endeavors. Our first sample was collected from a well located at the rear of the plant process area. The well was purged for five minutes and water conductivity readings were taken prior to sampling (70 umhos-1x scale). The second well sampled was located in the vicinity of the pond area and the same procedures were carried out prior to sampling (40 umhos - 1x scale). All ground water samples collected will be analyzed for total metals and organics. The pH range for both wells was 6.4 and 6.3 respectively. Since wells on-site are continuously pumped, bubbles were allowed to clear before filling containers. A sludge sample was collected from three different areas of Pond #1 from the bottom layer. Soil surrounding the API Separator was composited. Soil samples were collected from depths of 3-6 inches. All equipment was clean and disposable tyveks, gloves and boots were left in the dumpster on-site with the permission of Mr. Kou. We left the site at 11:45 a.m.

A forested area Northwest of the site was chosen to collect a soil background sample. Soil was collected from four different areas (3-6" in depth) and composited. A private dug well located on Malone Road, 2.0 miles Northwest of the site was sampled for background. The spigot was purged and conductivity readings (40 umhos - 1x sclae, pH 6.1) were taken prior to sampling. There was no one present at the residence and a GA-EPD business card with message was left in the door. All samples were labeled, bagged, placed on ice and transported to GA-EPD laboratory via state vehicle.

CONCLUSIONS:

None can be drawn until samples have been analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

1. Complete well survey.

2. Obtain name, address, and phone number of resident, whose well was sampled.

PHOTOGRAPHS: 10 Polaroids

NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: 6 samples (attached).

REVIEWED BY: **DATE:**

ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

File: Young Refining Corporation (GAD051011344)

GAK:zr005

REF. #3

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

TRIP REPORT

October 28, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD051011344
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles G.A.K. Environmental Specialist Site Assessment Unit
ACCOMPANIED:	Charles Evans Environmental Specialist Site Assessment Unit
DATE AND TIME OF INVESTIGATION:	October 28, 1987
OFFICIALS CONTACTED:	Mr. Fang Kuo Plant Engineer Young Refining Corporation 7982 Huey Road Douglasville, GA 30134
REFERENCE:	Trip Report, October 20, 1987 Georgia-EPD State Files

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A forested area Northwest of the site was chosen to collect a soil background sample. Soil was collected from four different areas (3-6" in depth) and composited. A private dug well located on Malone Road, 2.0 miles Northwest of the site was sampled for background. The spigot was purged and conductivity readings (40 umhos - 1x sclae, pH 6.1) were taken prior to sampling. There was no one present at the residence and a GA-EPD business card with message was left in the door. All samples were labeled, bagged, placed on ice and transported to GA-EPD laboratory via state vehicle.

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1. Complete well survey.

2. Obtain name, address, and phone number of resident, whose well was sampled.

PHOTOGRAPHS: 10 Polaroids

NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: 6 samples (attached).

REVIEWED BY: **DATE:**

ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

File: Young Refining Corporation (GAD051011344)

GAK:zr005

E. - 9:28 AM

10-28-87

County Name Douglas
Picture No. 1 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Well located in rear of plant process area is being purged prior to conductivity readings and sampling.
Other

E. - 9:34 AM

10-28-87

County Name Douglas
Picture No. 2 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Well being sampled. (VOA, total metals). [Sample # GW-1).
Other

E. - 9:28 AM

10-28-87

County Name Douglas
Picture No. 1 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Well located in rear of plant process area is being purged prior to conductivity readings and sampling.
Other

E. - 9:34 AM

10-28-87

County Name Douglas
Picture No. 2 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing East
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Well being sampled. (VOA, total metals). [Sample # GW-1).
Other

N.W.- 10:00AM

10-28-87

County Name Douglas
Picture No. 3 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well is situated in the area of the ponds, near tank # 303.
Other

N.W. - 10:05AM

10-28-87

County Name Douglas
Picture No. 4 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Samples being collected for Total Metals, VOA. [Sample # GW-2].
Other

N.W.- 10:00AM

10-28-87

County Name Douglas
Picture No. 3 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Well is situated in the area of the ponds, near tank # 303.
Other

N.W. - 10:05AM

10-28-87

County Name Douglas
Picture No. 4 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Samples being collected for Total Metals, YOA. [Sample # GW-2].
Other

N. -10:19 AM 10-28-87

County Name Douglas
Picture No. 5 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing North
Photographer Charles Evans
Program Site Investigation Program
Explanation Oil-filled drainage ditch observed.

Other

W. -10:40 AM 10-28-87

County Name Douglas
Picture No. 6 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A sludge composite was collected from the bottom layer of Pond #1. Three different
Other areas of Pond #1 were sampled and combined. Mixing of composite sludge sample is shown. [Sample # S-1].

N. -10:19 AM 10-28-87

County Name Douglas
Picture No. 5 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing North
Photographer Charles Evans
Program Site Investigation Program
Explanation Oil-filled drainage ditch observed.

Other

W. -10:40 AM 10-28-87

County Name Douglas
Picture No. 6 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A sludge composite was collected from the bottom layer of Pond #1. Three different
Other areas of Pond #1 were sampled and combined. Mixing of composite sludge sample is shown. [Sample # S-1].

N.E. - 11:25 AM

10-28-87

County Name Douglas
Picture No. 7 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # S-2 is a soil composite collected around API Separator. Sample
Other was collected at a depth of 3-6 inches.

NW. - 11:55 AM.

10-28-87

County Name Douglas
Picture No. 8 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A soil composite background sample was collected 2 miles away from site in a
Other forested area (Malone Street) [Sample # S-3]. Sample was collected from 3-6" in depth.

N.E. - 11:25 AM

10-28-87

County Name Douglas
Picture No. 7 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northeast
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # S-2 is a soil composite collected around API Separator. Sample
Other was collected at a depth of 3-6 inches.

NW. - 11:55 AM.

10-28-87

County Name Douglas
Picture No. 8 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing Northwest
Photographer G.A. Knowles
Program Site Investigation Program
Explanation A soil composite background sample was collected 2 miles away from site in a
Other forested area (Malone Street) [Sample # S-3]. Sample was collected from 3-6" in depth.

S.- 12:35 PM. 10-28-87

County Name Douglas
Picture No. 9 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Background ground water sample was collected from a dug well 2.0 miles away from facility. Depth unknown at this time.
Other

W. - 12:40 PM 10-28-87

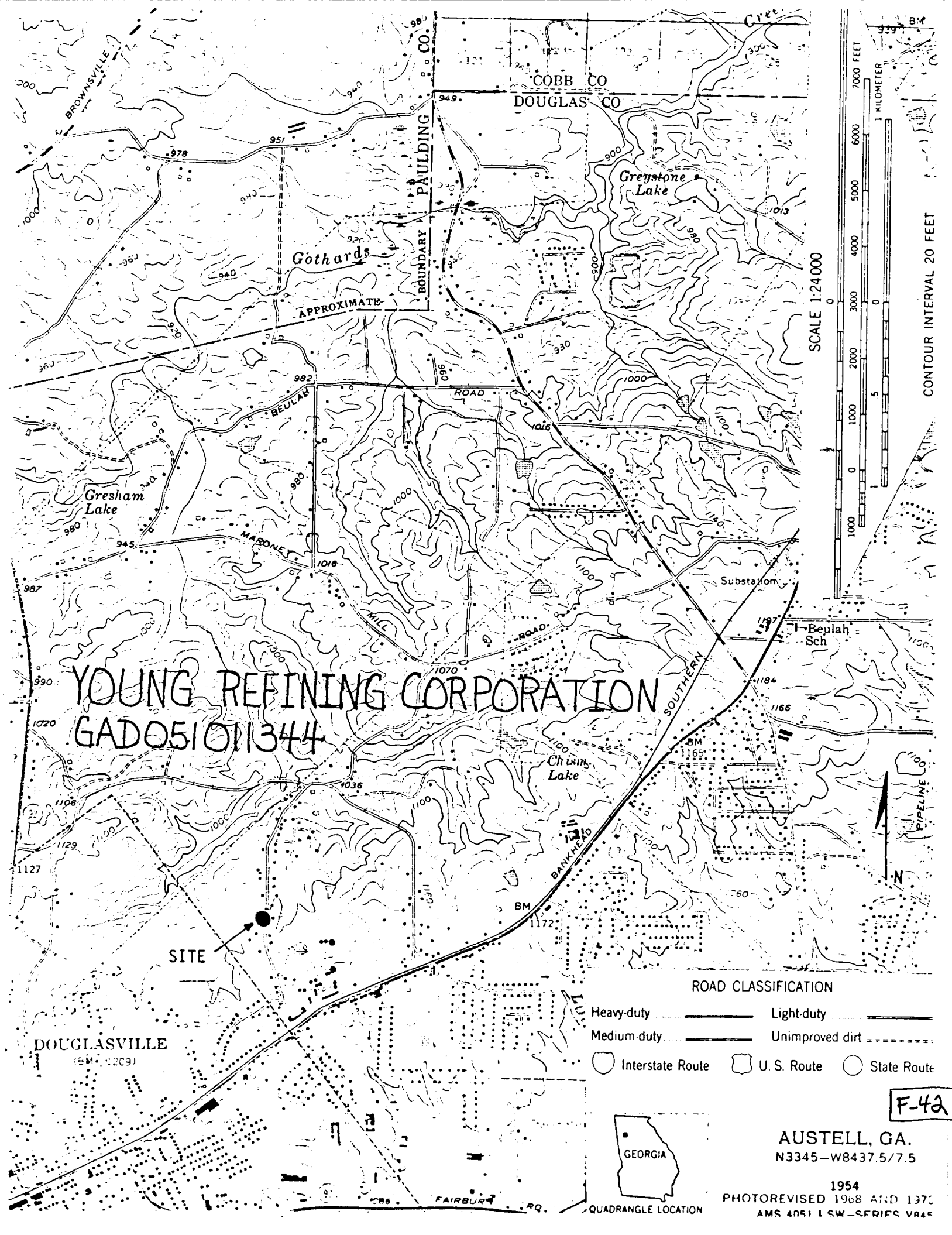
County Name Douglas
Picture No. 10 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # GW-3 (dug well - background) being collected from spicket.
Other

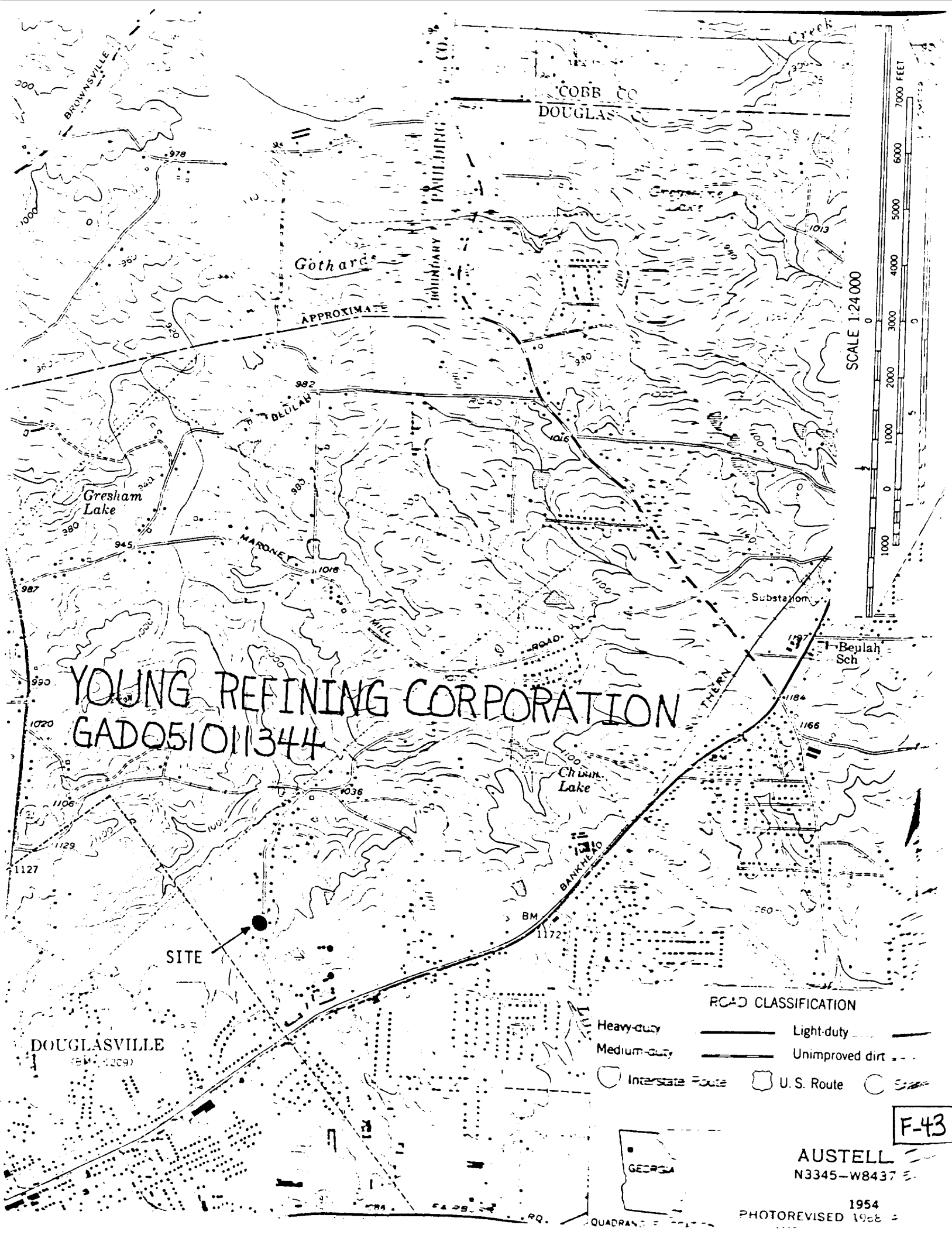
S. - 12:35 PM. 10-28-87

County Name Douglas
Picture No. 9 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Sunny, Cold
Direction Facing
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Background ground water sample was collected from a dug well 2.0 miles away from facility. Depth unknown at this time.
Other

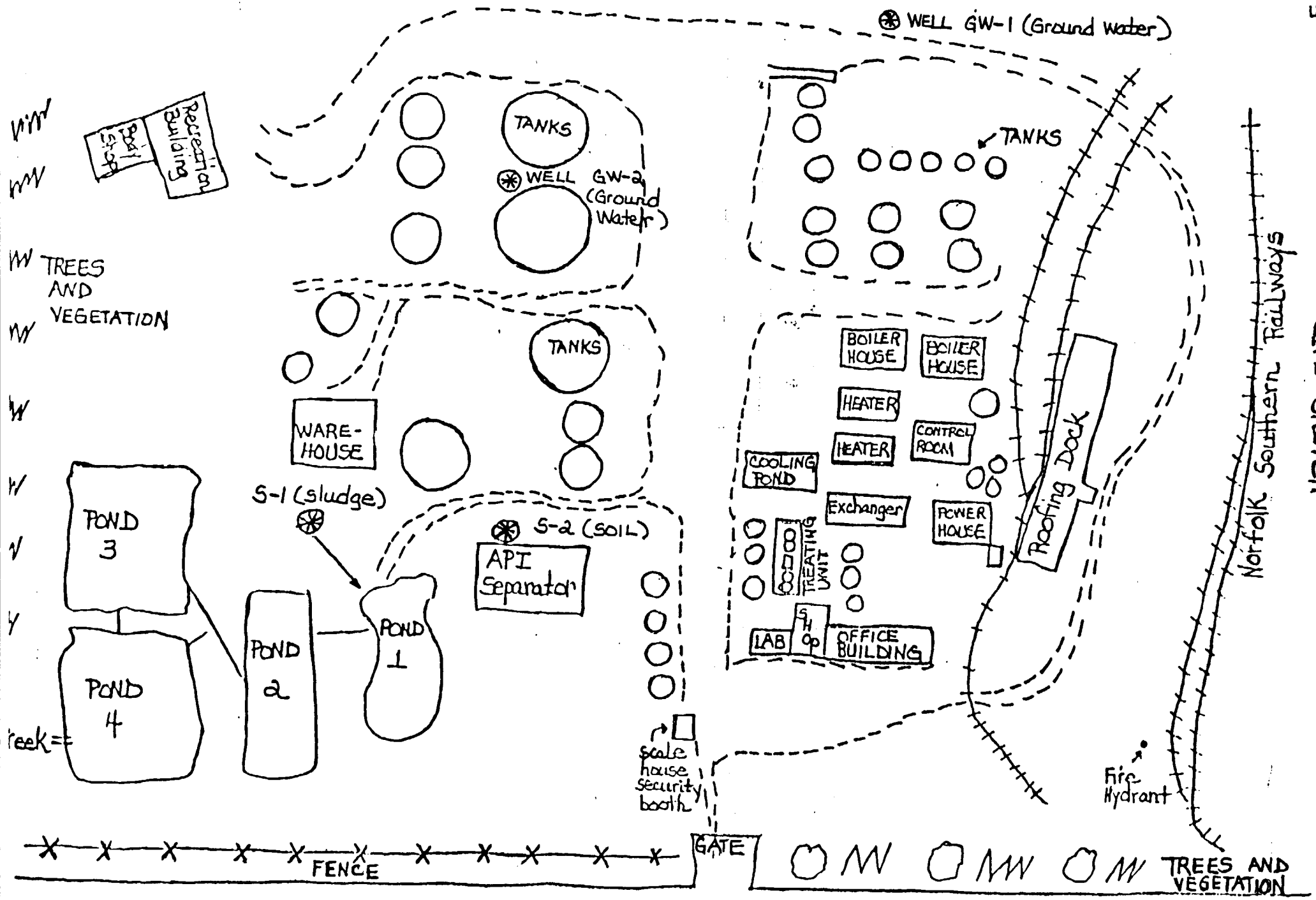
W. - 12:40 PM 10-28-87

County Name Douglas
Picture No. 10 of 10
Site Name Young Refining Corporation
Date 10-28-87 Weather Cold, Sunny
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Sample # GW-3 (dug well - background) being collected from spicket.
Other


YOUNG REFINING CORPORATION
GAD051011344
SITE
COBB CO
DOUGLAS CO
PAULDING CO
BOUNDARY
APPROXIMATE
Gothards
Greystone Lake
Gresham Lake
Chism Lake
BROWNSVILLE
BEULAH ROAD
MARONEY MILL ROAD
SOUTHERN BANKHEAD PIPELINE
Substation
Beulah Sch
DOUGLASVILLE
FAIRBURN RD.
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
1 KILOMETER
7000 FEET
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
Interstate Route
U. S. Route
State Route
GEORGIA
QUADRANGLE LOCATION
F-42
AUSTELL, GA.
N3345—W8437.5/7.5
1954
PHOTOREVISED 1968 AND 1972
AMS 4051 I SW—SERIES V845


YOUNG REFINING CORPORATION
GAD051011344
COBB CO
DOUGLAS
Gothard
APPROXIMATE
BOUNDARY
BROWNSVILLE
BEULAH
ROAD
Gresham Lake
MARONEY
MILL
ROAD
Substation
Beulah Sch
SOUTHERN
BANKHEAD
Chism Lake
SITE
DOUGLASVILLE
SCALE 1:24 000
7000 FEET
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
Interstate Route
U. S. Route
GEORGIA
F-43
AUSTELL
N3345—W8437
1954
PHOTOREVISED

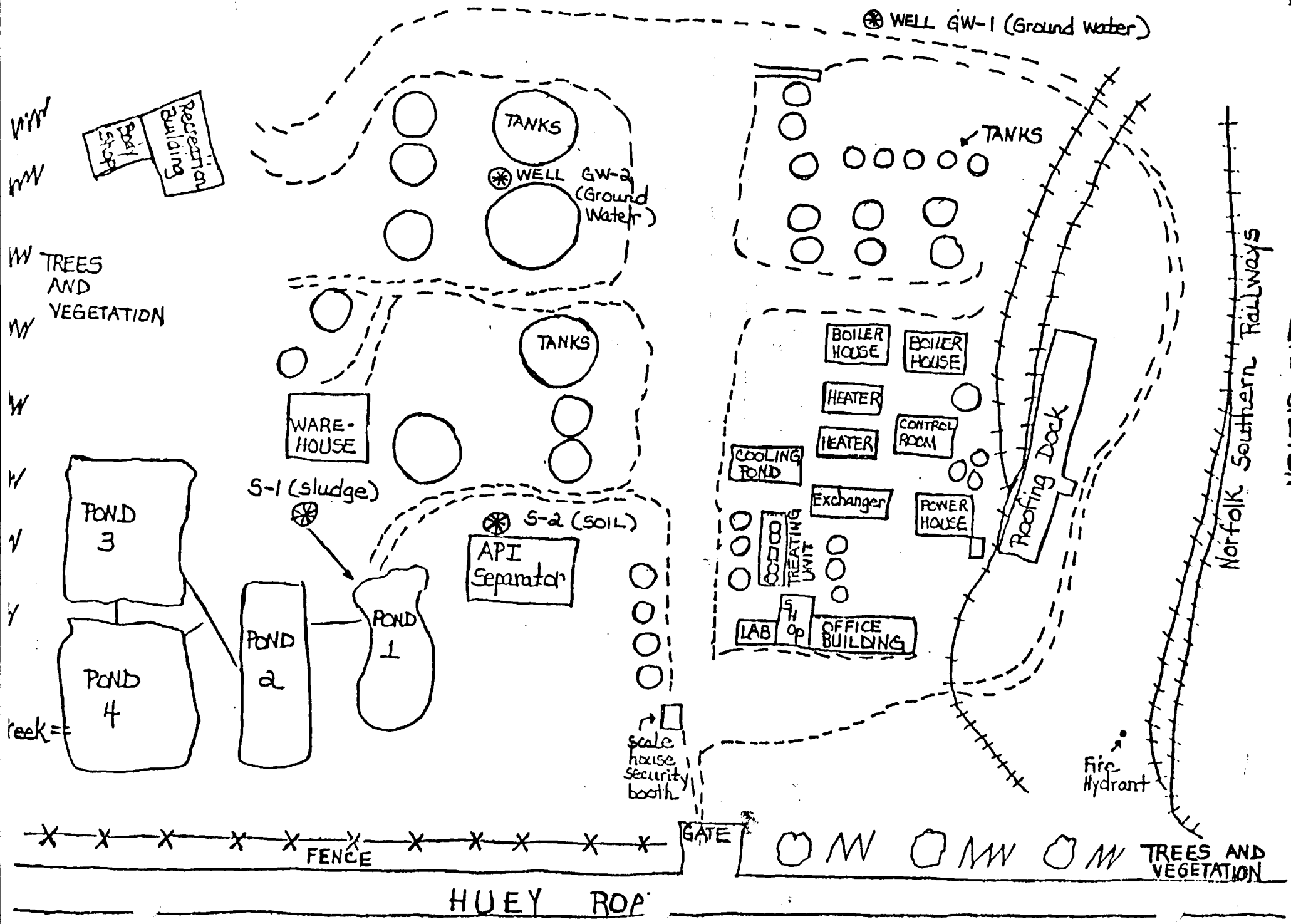
SITE SKETCH



NOT DRAWN TO SCALE

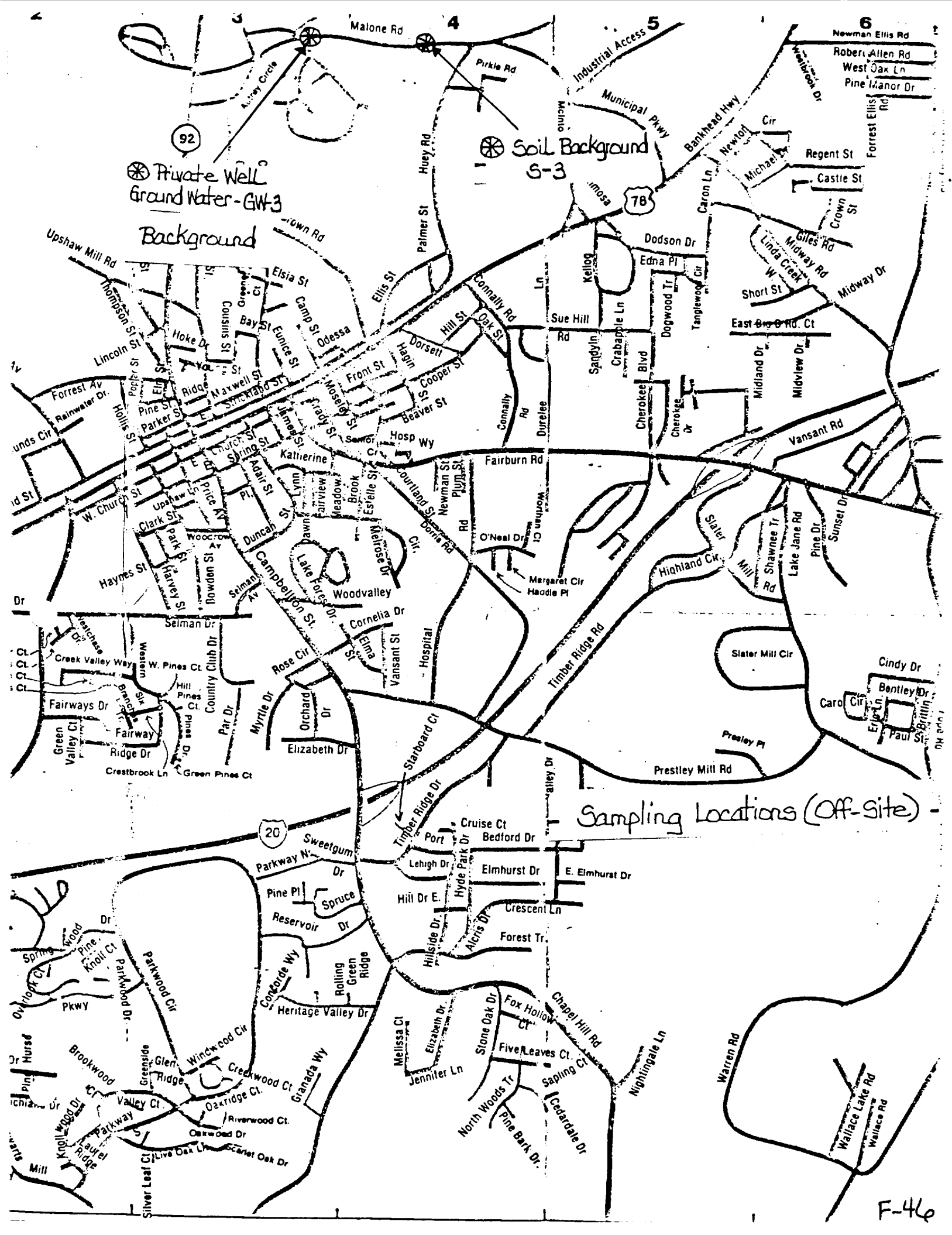
⊛ Sampling Locations 10-28-87

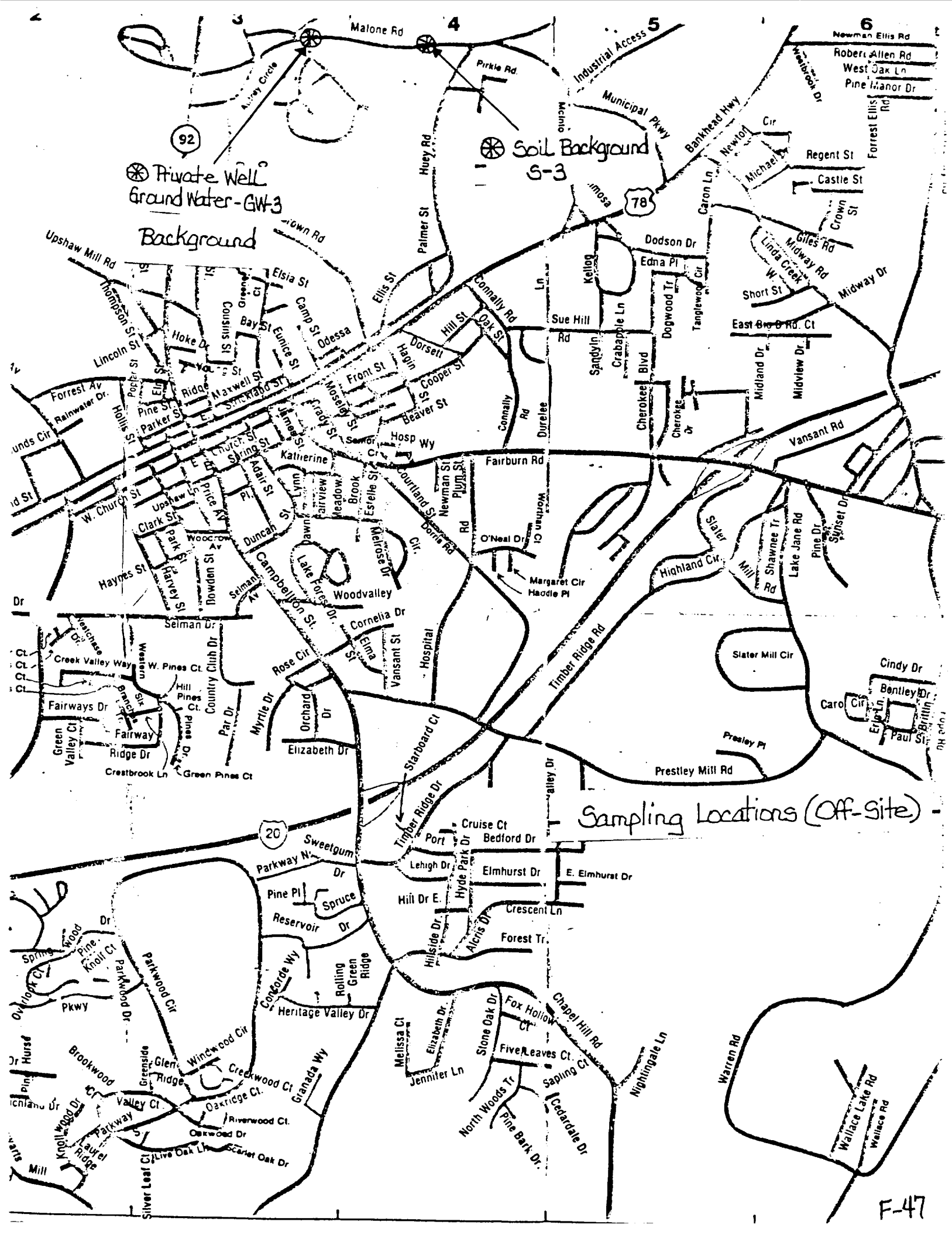
SITE SKETCH



NOT DRAWN TO SCALE

⊛ Sampling Locations 10-28-87


Private Well
Ground Water - GW-3
Background
Soil Background
S-3
Sampling Locations (Off-Site)
Malone Rd
Industrial Access
Pirkle Rd
Municipal Pkwy
Bankhead Hwy
Newman Ellis Rd
Robert Allen Rd
West Oak Ln
Pine Manor Dr
Regent St
Castle St
Upshaw Mill Rd
Thompson St
Lincoln St
Elsia St
Camp St
Odessa
Ellis St
Connally Rd
Hill St
Oak St
Sue Hill Rd
Dodson Dr
Edna Pl
Dogwood Tr
Tanglewood Cir
East Big D Rd. Ct
Midway Rd
Midway Dr
Short St
Giles Rd
Linda Creek
Midland Dr
Midview Dr
Vansant Rd
Fairburn Rd
Forrest Av
Rainwater Dr.
Hollis St
Pine St
Parker St
Maxwell St
Strickland St
Church St
Spring St
Katherine
Beaver St
Cooper St
Front St
Hagin
Dorsett
Hosp Wy
Senior Cir
Courtland St
Newman St
Plum St
Durelee
Cherokee Blvd
Cherokee Dr
Sandylin
Crabapple Ln
Kellog
Palmer St
Huey Rd
Mcinto
Caron Ln
Crown St
Forrest Ellis Rd
Weatbrook Dr
Newton Cir
Michael Dr
Brown Rd
Aubrey Circle
92
78
20
W. Church St
Upshaw Ln
Clark St
Park St
Harvey St
Haynes St
Price Av
Adair St
Duncan
Dowden St
Selman Av
Selman Dr
Campbellton St.
Lake Forest Dr.
Woodvalley
Cornelia Dr
Elma St
Vansant St
Hospital
Rose Cir
Myrtle Dr
Orchard Dr
Elizabeth Dr
Par Dr
Country Club Dr
Fairways Dr
Fairway
Ridge Dr
Green Valley Ct
Crestbrook Ln
Green Pines Ct
Hill Pines Ct.
W. Pines Ct
Creek Valley Way
Westchase Dr
Dawn
Fairview
Meadow Brook
Estelle St
Morrow Dr
Cir.
Dorris Rd
O'Neal Dr
Margaret Cir
Haddie Pl
Highland Cir
Slater Mill Rd
Shawnee Tr
Lake Jane Rd
Pine Dr
Sunset Dr
Slater Mill Cir
Timber Ridge Rd
Cindy Dr
Bentley Dr
Caro Cir
Paul St
Presley Pl
Prestley Mill Rd
Starboard Ct
Timber Ridge Dr
Cruise Ct
Port
Bedford Dr
Lehigh Dr
Hyde Park Dr
Elmhurst Dr
E. Elmhurst Dr
Sweetgum Dr
Parkway N
Pine Pl
Spruce
Hill Dr E.
Crescent Ln
Reservoir Dr
Forest Tr.
Hillside Dr.
Alcris Dr
Spring Wood Dr
Pine Knoll Ct
Overlook Ct
Parkwood Dr
Parkwood Cir
Pkwy
Concorde Wy
Rolling Green Ridge
Heritage Valley Dr
Winckwood Cir
Brookwood Cir
Greenside
Glen Ridge
Creekwood Ct
Granada Wy
Valley Ct
Oakridge Ct.
Riverwood Ct.
Oakwood Dr
Parkway
Knollwood Dr
Laurel Ridge
Live Oak Ln
Scarlet Oak Dr
Silver Leaf Ct
Melissa Ct
Elizabeth Dr.
Jennifer Ln
Stone Oak Dr
Fox Hollow Ct
Five Leaves Ct.
Sapling Ct
North Woods Tr
Pine Bark Dr.
Cedardale Dr
Chapel Hill Rd
Nightingale Ln
Warren Rd
Wallace Lake Rd
Wallace Rd
F-46



Private Well
Ground Water - GW-3
Background
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Midway Dr
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Midland Dr
Midview Dr
Caron Ln
Newton Cir
Michael Dr
Dodson Dr
Edna Pl
Kellog
Dogwood Tr
Tanglewood Cir
Sue Hill Rd
Sandyln
Crabapple Ln
Cherokee Blvd
Cherokee Dr
Vansant Rd
Fairburn Rd
Connally Rd
Durelee Ln
Hill St
Oak St
Dorsett
Hagin
Cooper St
Beaver St
Hosp Wy
Courtland St
Newman St
Plum St
Dorris Rd
O'Neal Dr
Margaret Cir
Haddle Pl
Wortham Ct
Huey Rd
Palmer St
Ellis St
Elsia St
Camp St
Odessa
Bay St
Eunice St
Cousins St
Hoke Dr
Lincoln St
Thompson St
Upshaw Mill Rd
Forrest Av
Rainwater Dr
Hollis St
Pine St
Parker St
Maxwell St
Strickland St
Moseley St
Front St
Church St
Spring St
Katherine
Adair St
Price Av
Upshaw Ln
W. Church St
Clark St
Park St
Woodrow Av
Duncan St
Lynn
Fairview
Meadow
Brook
Estelle St
Melrose Dr
Campbellton St
Lake Forest Dr
Woodvalley
Haynes St
Harvey St
Bowden St
Selman Av
Selman Dr
Cornelia Dr
Elma St
Vansant St
Hospital
Rose Cir
Myrtle Dr
Orchard Dr
Elizabeth Dr
Starboard Ct
Timber Ridge Dr
Timber Ridge Rd
Highland Cir
Slater Mill Rd
Shawnee Tr
Lake Jane Rd
Pine Dr
Sunset Dr
Slater Mill Cir
Cindy Dr
Bentley Dr
Caro Cir
Erie Ln
Brittin
Paul St
Presley Pl
Prestley Mill Rd
Creek Valley Way
W. Pines Ct
Hill Pines Ct
Fairways Dr
Fairway
Ridge Dr
Green Valley Ct
Crestbrook Ln
Green Pines Ct
Country Club Dr
Par Dr
Sweetgum
Parkway N
Pine Pl
Spruce
Reservoir Dr
Cruise Ct
Port
Bedford Dr
Lehigh Dr
Hyde Park Dr
Elmhurst Dr
E. Elmhurst Dr
Hill Dr E.
Crescent Ln
Hillside Dr
Alcris Dr
Forest Tr
Concorde Wy
Rolling Green Ridge
Heritage Valley Dr
Parkwood Cir
Parkwood Dr
Pkwy
Overlook Ct
Spring Wood Dr
Pine Knoll Ct
Windwood Cir
Glen Ridge
Creekwood Ct
Oakridge Ct
Riverwood Ct
Oakwood Dr
Scarlet Oak Dr
Live Oak Ln
Silver Leaf Ct
Granada Wy
Brookwood
Greenside
Valley Ct
Parkway
Knollwood Dr
Laurel Ridge
Mill
Melissa Ct
Elizabeth Dr
Jennifer Ln
Stone Oak Dr
Fox Hollow Ct
Five Leaves Ct
Sapling Ct
North Woods Tr
Pine Bark Dr
Cedardale Dr
Chapel Hill Rd
Nightingale Ln
Warren Rd
Wallace Lake Rd
Wallace Rd
92
78
20

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
LAND PROTECTION BRANCH

CHAIN OF CUSTODY

FACILITY: Young Refining Corporation

LOCATION: 7982 Hwy Road Douglasville, Ga.

SAMPLE #	LOG #	LAB I.D.	DESCRIPTION	COLLECTED BY (Name)	DATE	TIME
GW-1	2883		Well (Ground water) - Rear of Plant Area	G.A. Knowles	10-28-87	9:30 AM
GW-2	2884		Well (Ground water) - Near Pond #1 and Tank # 303	G.A. Knowles	10-28-87	10:00 AM
GW-3	2885		Well (Ground water) - Background - Malone Street	G.A. Knowles	10-28-87	12:35 PM
S-1	2886		Sludge Composite - Bottom Layer Pond #1	G.A. Knowles	10-28-87	10:40 AM
S-2	2887		Soil Composite - API Separator	G.A. Knowles	10-28-87	11:25 AM
S-3	2888		Soil Composite - Background	G.A. Knowles	10-28-87	11:55 AM

TRANSFER RECORD

TRANSFERRED BY (Name)	TO (Name) (IF FINAL: Lab Name)	DATE	TIME	METHOD OF TRANSFER	RECEIVED BY (Name)	DATE
Gilda A. Knowles	Instrumentation Lab	10/28/87	1510	Hand	Danny Reel	10/28/87

ANALYSES REQUESTED:

F-49

GEORGIA ENVIRONMENTAL PROTECTION DIVISION
LAND PROTECTION BRANCH

CHAIN OF CUSTODY

FACILITY: Young Refining Corporation

LOCATION: 7982 Huey Road Douglasville, Ga.

SAMPLE #	LOG #	LAB I.D.	DESCRIPTION	COLLECTED BY (Name)	DATE	TIME
GW-1	2883		Well (Ground water) - Rear of Plant Area	G.A. Knowles	10-28-87	9:30 AM
GW-2	2884		Well (Ground water) - Near Pond #1 and Tank #303	G.A. Knowles	10-28-87	10:00 AM
GW-3	2885		Well (Ground water) - Background - Malone Street	G.A. Knowles	10-28-87	12:35 PM
S-1	2886		Sludge Composite - Bottom Layer Pond #1	G.A. Knowles	10-28-87	10:40 AM
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S-3	2888		Soil Composite - Background	G.A. Knowles	10-28-87	11:55 AM

TRANSFER RECORD

TRANSFERRED BY (Name)	TO (Name) (IF FINAL: Lab Name)	DATE	TIME	METHOD OF TRANSFER	RECEIVED BY (Name)	DATE
Gilda A. Knowles	Instrumentation Lab	10/28/87	1510	Hand	Danny Reed	10/28/87

ANALYSES REQUESTED:

Georgia Department of Natural Resources
270 Washington Street, S.W., Room 825, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

November 21, 1985

REF. #5

TRIP REPORT

SITE NAME AND LOCATION: Young Refining Corporation, 7982 Huey Road, Douglasville

TRIP BY: Jack Dempsey JMD

Accompanied by: None

DATE OF TRIP: 7/24/85

OFFICIALS CONTACTED: Charles E. Young, Executive V.P.
Fang Kuo, Plant Engineer
Douglas McLendon, Operations Manager

REFERENCE: Complaint from Arivec Chemicals concerning appearance and regulatory status of Young's surface impoundments.

COMMENTS:

This facility, constructed in 1955, refines asphaltic crude, received by railroad tanks from southeast Mississippi, into asphalt cements, #2 fuel oil, heavy oil, and natural gasoline (60 octane). The facility is currently processing about 126,000 gals./day of crude (60% capacity). Mr. Young said they no longer purchase used oil from jobbers due to problems. Paving and roofing asphalt cements constitute about 55% of product produced.

I. Process:

1) Heating - the crude is heated through several steps with heat exchangers and finally a furnace to achieve 670°F;

2) Distillation - the crude enters a flash tower where light oils are vaporized out of the crude and asphalt goes out the bottom;

3) Fractionating - the light oils are further processed in a fractionating column to obtain the gasoline and various oils;

4) Oxidation - about 40% of the asphalt is oxidized with heat and air to produce roofing and coating asphalt;

5) Shipping - roofing asphalt is packaged in cardboard containers for shipment to users; gasoline, asphalt, and oils are shipped by tanker trucks.

II. Wastes Generated:

1) Solid Waste - collected in on-site dumpsters serviced by the City of Douglasville;

F-50

2) Wastewater - all process wastewater and storm drains from the complex converge to pass through an API Separator that discharges to an NPDES permitted wastewater treatment system consisting of 4 ponds in series;

3) API Separator Sludge (K051) - sludge is shoveled from the bottom of the separator about every 6 months and placed on the ground adjacent to the separator; the material hardens and any water from it gravity flows into the first pond; each clean-out reportedly results in about 50 pounds of dewatered material;

4) Dissolved Air Flotation Float (K048) - a flocculator was used between ponds 1 & 2 up until about 1977 and reportedly generated about 100 pounds/year of this waste, that was allowed to harden in a drum and then disposed of on the ground at various locations around plant during construction of tanks and roads; the flocculator was discontinued because it was not needed to meet effluent limits of the NPDES permit;

5) Slop Oil Emulsion Solids (K049) - based on the information obtained, all of the skimmings from the API Separator are pumped back to crude tanks for reprocessing, therefore, none of this waste (emulsion between water and oil) is generated;

6) Heat Exchanger Bundle Cleaning Sludge (K050) - the heat exchangers are reportedly cleaned once each year and about 150 pounds of waste is generated; the officials were unsure of the disposal method, but admitted that it is probably disposed of by placing on the ground on-site;

7) Leaded Tank Bottoms (K052) - no lead is used in the process, therefore, none of this waste is generated; Mr. Young said the crude may have a trace of lead.

III. Plant Inspection:

A tour of the facility confirmed the processes and waste streams described above. Much spillage of asphalt was observed around the tanks and treatment of the wastewater is unsightly. API Separtor sludge has accumulated beside the separator and the first pond has a heavy layer of oil on the surface that is periodically skimmed and pumped back for processing. The second pond has a baffle that traps oil escaping the first pond, but after that no oil was visible on the surface of the ponds. I collected a sludge sample from the influent area of pond #1 and a soil sample from the area the officials said the K050 waste was dumped.

IV. Records Examination:

No records were examined at the facility. The facility filed a Hazardous Waste Facility Permit Application in 1980, but was advised in 1982 to withdraw (based on disposal of small quantities in an NPDES permitted system). Withdrawal was requested and granted in 1982. The facility status was changed to small quantity generator according to the letter. The 1983 Annual Report indicated no waste generated. The Facility Information Report, completed for an inspection on 5/7/82, indicated small quantities of the listed wastes are disposed of in the surface impoundments.

Mr. Young contends that none of these wastes are dumped directly in the ponds, but the whole complex drains to the ponds so any wastes disposed on-site may eventually get in them.

CONCLUSIONS:

The facility is a small quantity generator that has failed to comply with the disposal requirements for same. Small quantities of listed wastes are being disposed of on-site. The soil sample collected at the suspected disposal site of K050 waste was below the detection limits for total and extractable metals and hydrocarbons. The sludge sample collected from the influent area of pond #1 contained 7.4 ppm total lead and small amounts of hydrocarbons typical of oil, but was below the detection limits for EP metals, except for barium (3.0 ppm, limit of 100.0). The background document states that lead and chromium are the constituents of conern in the waste streams, that lead comes predominantly from tetraethyl lead in the blending of leaded products, and chromium comes predominantly from cooling tower blowdown that uses a chromium base corrosion inhibitor. At this point, the document footnotes that refineries not implementing these systems will have lower levels of these metals and delisting is available. Mr. Young stated that they do not use any tetraethyl lead and that the chromium base corrosion inhibitor was replaced about 10 years ago with a complex amine that does not contain any metals. Based on the above information, I recommend that we send an N.O.V. for violation of the small quantity generator requirements, but not pursue regulating the ponds as hazardous waste surface impoundments.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED: Send N.O.V.

REVIEWED BY: JD 12/16

ATTACHMENTS: Sample results *

JD:cen(060)

File: Young Refining Corp., Douglasville (R)

* The lab was not able to do oily waste extraction on samples as originally requested. Otis Woods said method was not EPA approved (?) and lab was not set up to perform. Therefore, lab request was changed to normal extraction procedure.

F-52

HAZARDOUS WASTE ANALYSIS REQUEST JW 10/7/85

DATE: 7-24-85 PROJECT: Young Refining Corp. COLLECTOR: Jack Dempsey

NO. SAMPLES: 2 LOG NOS. 1444 & 1445 LIQUID ____ SOLID ____ SOIL 1

CAUSTIC ____ ACID ____ SOLVENT ____ UNKNOWN ____ SLUDGE 1

INFORMATION FOUND: asphalt production from low-grade crude oil

HAZARDOUS WASTE NOS. K048, K049, K050, K051 (Petroleum Refining)

HAZARDOUS HANDLING: none known

WORK PRIORITY (CRITICAL NEED) normal

RECEIVED

OCT 07 1985

ENVIRONMENTAL PROTECTION DIVISION
LAND PROTECTION BRANCH

METALS ANALYSES

	TOT	DIS			
METALS (DW NO Hg)	☐	☐	EP METALS (DW NO Hg)	☒	100X ☐ 30X ☐
METALS (DW WITH Hg)	☐	☐	EP METALS (DW WITH Hg)	☐	

	TOT	DIS		TOT	DIS				
NICKEL	☐	☐	CADMIUM	☐	☐	EP NICKEL	☐	EP CADMIUM	☐
ARSENIC	☐	☐	LEAD	☒	☐	EP ARSENIC	☐	EP LEAD	☐
CHROMIUM	☒	☐	MERCURY	☐	☐	EP CHROMIUM	☐	EP MERCURY	☐
CHROM-HEX	☒	☐	SELENIUM	☐	☐	EP CHROM-HEX	☐	EP SELENIUM	☐
____	☐	☐	____	☐	☐	____	☐	____	☐

on the waste

SPECIFIC ANALYSES

pH	☐	SULFIDE	☐	% SOLIDS	☐	____	☐
FLASH PT	☐	SP.COND.	☐	TOT. PHENOLS	☐	____	☐
CYANIDE TOT.	☐	TOC	☐	CHLORIDE	☐	____	☐
CYANIDE AM.	☐	TOH	☐	FLUORIDE	☐	____	☐

ORGANIC ANALYSES

PESTICIDE SCREEN (EC)	☐	GC-MS ACID EXTRACTABLES	☒
PCB	☐	GC-MS BASE/NEUTRALS	☒
VOLATILE ORGANICS (VOA)	☐		

SPECIFIC ORGANICS: ____

APPROVED: [signature] AUTHORIZED: ____

HW/0089F

LABORATORY REPORT

SAMPLE DATE: 7-24-85 PROJECT: Young Refining Corporation COLLECTOR: Jack Dempsey

	HW LOG NO.	1444	1445	1445		
DATE REC'D 7/24/85	LABEL I.D.	Soil from behind tank #305	Sludge from inlet of 1st Pond Top Layer	Sludge from inlet of 1st Pond Bottom Layer		
TIME REC'D 4:30 pm						
REC'D BY: M. Basmajian						
DEL BY: Dempsey						
Harold Lanford LABORATORY MANAGER						
DATE: 10-4-85						
PARAMETERS	LAB NO.	HW 1444	HW 1445	HW 1445		
Naphthalene	mg/Kg	<1	6.3	8.9		
Dimethyl Naphthalene (total)	"	<1	10 *	13 *		
EP Ag	µg/L (PPB)	<10	<10			
" As	"	<40	<40			
" Ba	"	<3000	3000			
" Cd	"	<10	<10			
" Cr	"	<10	<10			
" Pb	"	<25	<25			
" Se	"	<50	<50			
Total Cr PPM	mg/Kg	—	<0.5	—		
" Pb	"	—	7.4			

REMARKS: * Estimated Values.
Mesh Molecular Weight Hydrocarbons typical of an oil present at high
Bottom Layer appears to be Granular Solids - EP Metals + Total Metals
were run on a well Mixed Sample.

F-54

LAND PROTECTION BRANCH

HAZARDOUS WASTE ANALYSIS REQUEST

DATE: 7-24-85 PROJECT: Young Refining Corp. COLLECTOR: Jack Dempsey

NO. SAMPLES: 2 LOG NOS. 1444 & 1445 LIQUID ____ SOLID ____ SOIL 1

CAUSTIC ____ ACID ____ SOLVENT ____ UNKNOWN ____ SLUDGE 1

INFORMATION FOUND: asphalt production from low-grade crude oil

HAZARDOUS WASTE NOS. K048, K049, K050, K051 (Petroleum Refining)

HAZARDOUS HANDLING: none known

WORK PRIORITY (CRITICAL NEED) normal

RECEIVED

OCT 07 1985

ENVIRONMENTAL PROTECTION DIVISION

LAND PROTECTION BRANCH

METALS ANALYSES

	TOT	DIS		
METALS (DW NO Hg)	☐	☐	EP METALS (DW NO Hg)	☒ 100X ☐ 30X ☐
METALS (DW WITH Hg)	☐	☐	EP METALS (DW WITH Hg)	☐

	TOT	DIS		TOT	DIS				
NICKEL	☐	☐	CADMIUM	☐	☐	EP NICKEL	☐	EP CADMIUM	☐
ARSENIC	☐	☐	LEAD	☒	☐	EP ARSENIC	☐	EP LEAD	☐
CHROMIUM	☒	☐	MERCURY	☐	☐	EP CHROMIUM	☐	EP MERCURY	☐
CHROM-HEX	☒	☐	SELENIUM	☐	☐	EP CHROM-HEX	☐	EP SELENIUM	☐
____	☐	☐	____	☐	☐	____	☐	____	☐

on the waste

SPECIFIC ANALYSES

pH	☐	SULFIDE	☐	% SOLIDS	☐	____	☐
FLASH PT	☐	SP.COND.	☐	TOT. PHENOLS	☐	____	☐
CYANIDE TOT.	☐	TOC	☐	CHLORIDE	☐	____	☐
CYANIDE AM.	☐	TOH	☐	FLUORIDE	☐	____	☐

ORGANIC ANALYSES

PESTICIDE SCREEN (EC)	☐	GC-MS ACID EXTRACTABLES	☒
PCB	☐	GC-MS BASE/NEUTRALS	☒
VOLATILE ORGANICS (VOA)	☐		

SPECIFIC ORGANICS: ____

APPROVED: HB AUTHORIZED: ____

BW/0089F

F-55

GEORGIA ENVIRONMENTAL PROTECTION DIVISION

LABORATORY REPORT

SAMPLE DATE: 7-24-85 PROJECT: Young Refining Corporation COLLECTOR: Jack Dempsey

HW LOG NO.	1444	1445	1445		
DATE REC'D 7/24/85 LABEL I.D.	Soil from behind tank #305	Sludge from inlet of 1st Pond Top Layer	Sludge from inlet of 1st Pond Bottom Layer		
TIME REC'D 4:30 p.m.					
REC'D BY: M. Basmajian					
DEL BY: Dempsey					
Harold Lanford LABORATORY MANAGER					
DATE: 10-4-85					
PARAMETERS LAB NO.	HW 1444	HW 1445	HW 1445		
Naphthalene mg/Kg	<1	6.5	8.9		
Dimethyl Naphthalene (total) "	<1	10 *	13 *		
EP Ag µg/L (PPB)	<10	<10			
" As "	<40	<40			
" Ba "	<3000	3000			
" Cd "	<10	<10			
" Cr "	<10	<10			
" Pb "	<25	<25			
" Se "	<50	<50			
Total Cr mg/Kg	—	<0.5	—		
" Pb "	—	7.4			

REMARKS: * Estimated Values.
High Molecular Weight Hydrocarbons typical of an oil present at high ppm.
Bottom Layer appears to be Granular Solids - EP Metals + Total Metals were run on a well Mixed Sample.

REF. # 9

RECORD OF TELEPHONIC CONVERSATION

Site Investigation Program

Routing: Randy Williams

Date: December 14, 1987

Time: 12:25 a.m./p.m.

File: Young Refining Corporation

Party Spoken To: Mr. Glen Johnson

Title: Agriculturist

Agency/Company: Agriculture Stabilization Service

Address: 3379; Hwy. 5; Suite H

City: Douglasville

Telephone Number: (404) 942-0697

State/Zip: Georgia 30135

Subject: Young Refining Corporation - GAD 051011344

Summary of Call: I spoke with Mr. Johnson to obtain information on land irrigated by supply wells within a 3-mile radius of the above mentioned site. Mr. Johnson stated that there was no land irrigated within the 3-mile radius by a supply well. However, eight miles southeast of Douglasville, there is a sod farm (38 acres) and crop farm (18 acres) that are irrigated by supply wells, along the boundary of the Chattahoochee River.

Actions Required: None.

Signature: Gilda A. Knowles December 14, 1987

Follow-up Responses/Additional Comments:

Signature:

Date:

SIP-2

9/86

REF. #10

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams

Date: December 16, 1987

Time: 2:35 a.m./(p.m.)

File: Young Refining Corporation

Party Spoken To: Kim Primmer

Title: Fishery Supervisor

Agency/Company: Dept. of Natural Resources - Fisheries

Address: Downtown Atlanta

City: Atlanta

Telephone Number: (404) 656 - 3524

State/Zip: Ga. 3

Subject: Young Refining Corporation GAD051011344

Summary of Call: I spoke with Mr. Primmer regarding fishing activity in Douglas County and he stated that there was fishing activity at Gothards Creek and Gray Stone Lake. He also stated that to obtain further information, that I should contact Mr. Don Johnson in Social Circle, Ga. (404) 656-4817

Actions Required: Contact Mr. Don Johnson

Signature: Gilda A. Knowles December 16, 1987

Follow-up Responses/Additional Comments: I spoke to Mr. Johnson and he stated that there is some fishing activity in most Creeks and lakes in Georgia

Signature: Gilda A. Knowles

Date: December 16, 1987

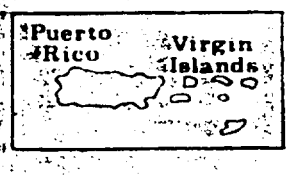
SIP-2

9/86

Reference REF. # 11

ENDANGERED AND THREATENED SPECIES OF THE SOUTHEASTERN UNITED STATES

REGION 4
ATLANTA
GEORGIA



Reference 19

United States Department of the Interior

FISH AND WILDLIFE SERVICE
75 SPRING STREET, S.W.
ATLANTA, GEORGIA 30303

August 23, 1985

NOTICE

TO: All Project Leaders and Cooperators

FROM: Endangered Species Office, Federal Assistance, FWS, Atlanta, Georgia

SUBJECT: Changes to the Region 4 Endangered Species Notebook

This update covers the following actions: listing of the Carolina northern flying squirrel in North Carolina and Tennessee as endangered, listing of the Tar River spiny mussel in North Carolina as endangered, listing of five Florida pine rockland plants as endangered, listing of the Miccosukee gooseberry in Florida and South Carolina as endangered, listing of Ruth's golden aster in Tennessee and Vahl's boxwood in Puerto Rico as endangered, listing of the amber darter and Conasauga logperch in Georgia and Tennessee as endangered with critical habitat designated, reclassification of the alligator in Florida to threatened by similarity of appearance, and the proposed listing of two plants (pondberry and Florida golden aster).

REGIONAL LIST: Replace.

STATE LISTS: Replace FL, GA, NC, PR, SC, TN.

CRITICAL HABITAT: Replace index; add amber darter and Conasauga logperch designations for GA and TN.

PROPOSED RULEMAKING: Replace previous sheet.

Species Accounts: FISHES - Replace index; add accounts for two fishes.

PLANTS - Replace index; add accounts for eight plants.

Attachments

85-3

RECEIVED
AUG 26 1985
REGION IV
SENT TO

F-60

Federally Listed Species by State

GEORGIA

(E=Endangered; T=Threatened; CH=Critical Habitat determined)

Mammals	General Distribution
Bat, gray (*Myotis grisescens*) - E	Northwest, West
Bat, Indiana (*Myotis sodalis*) - E	Extreme Northwest
Manatee, Florida (*Trichechus manatus*) - E	Coastal waters
Panther, Florida (*Felis concolor coryi*) - E	Entire state
Whale, right (*Eubalaena glacialis*) - E	Coastal waters
Whale, finback (*Balaenoptera physalus*) - E	Coastal waters
Whale, humpback (*Megaptera novaeangliae*) - E	Coastal waters
Whale, sei (*Balaenoptera borealis*) - E	Coastal waters
Whale, sperm (*Physeter catodon*) - E	Coastal waters

Birds	
Eagle, bald (*Haliaeetus leucocephalus*) - E	Entire state
Falcon, American peregrine (*Falco peregrinus anatum*) - E	North
Falcon, Arctic peregrine (*Falco peregrinus tundrius*) - T	Coast, Northwest
Stork, wood (*Mycteria americana*) - E	Southeastern swamps
Warbler, Bachman's (*Vermivora bachmanii*) - E	Entire state
Warbler, Kirtland's (*Dendroica kirtlandii*) - E	Coast
Woodpecker, ivory-billed (*Campephilus principalis*) - E	South, Southwest
Woodpecker, red-cockaded (*Picoides* (=*Dendrocopos*) *borealis*) - E	Entire state

Reptiles	
Alligator, American (*Alligator mississippiensis*) - E	Inland coastal plain
Alligator, American (*Alligator mississippiensis*) - T	Coastal areas

GEORGIA (cont'd)

	General Distribution
Snake, eastern indigo (*Drymarchon corais couperi*) - T	Southeast
Turtle, Kemp's (Atlantic) ridley (*Lepidochelys kempii*) - E	Coastal waters
Turtle, green (*Chelonia mydas*) - T	Coastal waters
Turtle, hawksbill (*Eretmochelys imbricata*) - E	Coastal waters
Turtle, leatherback (*Dermochelys coriacea*) - E	Coastal waters
Turtle, loggerhead (*Caretta caretta*) - T	Coastal waters

Fishes

Darter, amber (*Percina antesella*) - E,CH	Conasauga R., Murray County
Darter, snail (*Percina tanasi*) - T	S. Chickamauga Cr., Catoosa County
Logperch, Conasauga (*Percina jenkinsi*) - E,CH	Conasauga R., Murray County
Sturgeon, shortnose (*Acipenser brevirostrum*) - E	Coastal rivers

Plants

Florida torreya (*Torreya taxifolia*) - E	Decatur County
Green pitcher plant (*Sarracenia oreophila*) - E	Towns County
Hairy rattleweed (*Baptisia arachnifera*) - E	Wayne, Brantley Counties
Persistent trillium (*Trillium persistens*) - E	Tallulah-Tugaloo River system, Rabun and Habersham Counties

REF. # 12

Georgia Department of Natural Resources
205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334
J. Leonard Ledbetter, Commissioner
Harold F. Reheis, Assistant Director
Environmental Protection Division

TRIP REPORT

October 20, 1987

SITE NAME AND LOCATION:	Young Refining Corporation 7982 Huey Road Douglasville, GA. 30134
EPA ID NUMBER:	GAD05101134
COUNTY:	Douglas
TRIP BY:	Gilda A. Knowles GAK Environmental Specialist Site Assessment Unit
ACCOMPANIED BY:	N/A
DATE AND TIME OF INVESTIGATION:	October 20, 1987 8:10 a.m.
OFFICIALS CONTACTED:	Mr. Charles Ellis Plant Manager Young Refining Corporation (404)942-2343
	Mr. Fang Kou Plant Engineer Young Refining Corporation (404)942-2343
REFERENCE:	Preliminary Assessment Georgia-EPD State Files Trip Report by Jack Dempsey November 21, 1985

COMMENTS:

The facility refines asphaltic crude that is shipped by railroad car from Mississippi. The corporation's crude terminal is located in Lumberton, Mississippi and crude is purchased from Texaco and Chevron Oil Companies off the pipeline. The facility manufactures jet fuel for the government, heavy #5 oil (atmospheric gas oil), #2 fuel (diesel oil), certified state asphalt, oxidized asphalt (shingle, saturate, coat covering) and four (4) types of roofing asphalt. All products are transported by truck in bulk or packaged products. The various processes that the crude is taken through are heating, distillation, fractionating, oxidation and shipping. The wastes that are generated are solid wastes (collected on-site in dumpsters serviced by the City of Douglasville); wastewater (passes through API separator and is discharged to a series of 4

ponds-NPDES permitted) and sludges (API Separator, Desalter, Heat Exchanger). Mr. Ellis stated that he was not sure of the sludge disposal company that Young Refining Corporation utilizes.

Treatment ponds (4) have never been lined, but on occasion ponds #2, 3 and 4 are cleaned. Mr. Ellis stated that pond #3 is continuously aerated; however, during my tour of the facility aerating equipment at pond #3 was not in operation.

Questions were asked of Mr. Ellis and he stated the following:

1. wastes are not treated or disposed of on-site; only water is treated,

2. the property is 30-40 acres in size,

3. the flocculator is no longer used between ponds # 1 and 2,

4. the facility is supplied city water for drinking and boiler feed water that is used for steam generation,

5. there are 5 operable wells on-site, that are 300 ft. in depth and their water is used for the cooling pond and utility purposes,

6. these wells are sampled daily for treatment purposes and Deerborne Chemical Company of Atlanta treats the well water,

7. there is no dilution of wastes,

8. water was treated for phenols, but none were found and,

9. the facility does not handle lead petroleum, only virgin crude is refined.

During my tour of the facility with Mr. Fang Kou, Plant Engineer, I observed the following:

1. process areas were messy,

2. soil type seemed to be of a sandy, clay consistency,

3. facility is fenced and entrance gate is kept locked when not in operation,

4. two other companies are located within the facility's complex and they are Central Oil & Asphalt Corporation and Elk Roofing Company,

5. Arivec Chemicals Inc. is also located in the area, but is totally surrounded by a fence,

6. sampling areas,

7. slopes varied from 8-40% in various areas of the site and

8. pond #4 discharges water to a small creek (tributary on-site).

Mr. Kou reviewed the facility's processes with me on a flow chart in his laboratory and supplied a sketch of the facility. I left the site at 10:30 a.m.

I visited the Water Department and spoke with Mr. Winfred Pirkle, Water Superintendent, who supplied me with information on boundaries of water lines and possible areas to check for wells. Ownership and property maps were obtained from the county tax assessors office. A well survey was conducted within one mile of the facility and 2 shallow wells were observed, but residents are believed to be on city water. Deep wells were observed in 2 and 3 mile radius of the site, but were not counted. Roads that need to be checked for an extended well survey on the next site visit are Dallas, Malone, Brown Street and Simon. The water line boundaries are Brownville Road to the North, Bankhead Hwy. and South & North Flat Rock Roads to the West, Gurley Road to the Southwest, Chapel Hill Road to the South and Mount Vernon Road to the East.

CONCLUSIONS:

None can be drawn until samples are collected and analyzed.

RECOMMENDATIONS AND FOLLOW-UP REQUIRED:

On-site sampling should be conducted, off-site sampling and an extended well survey should be completed.

PHOTOGRAPHS: 15 polaroids

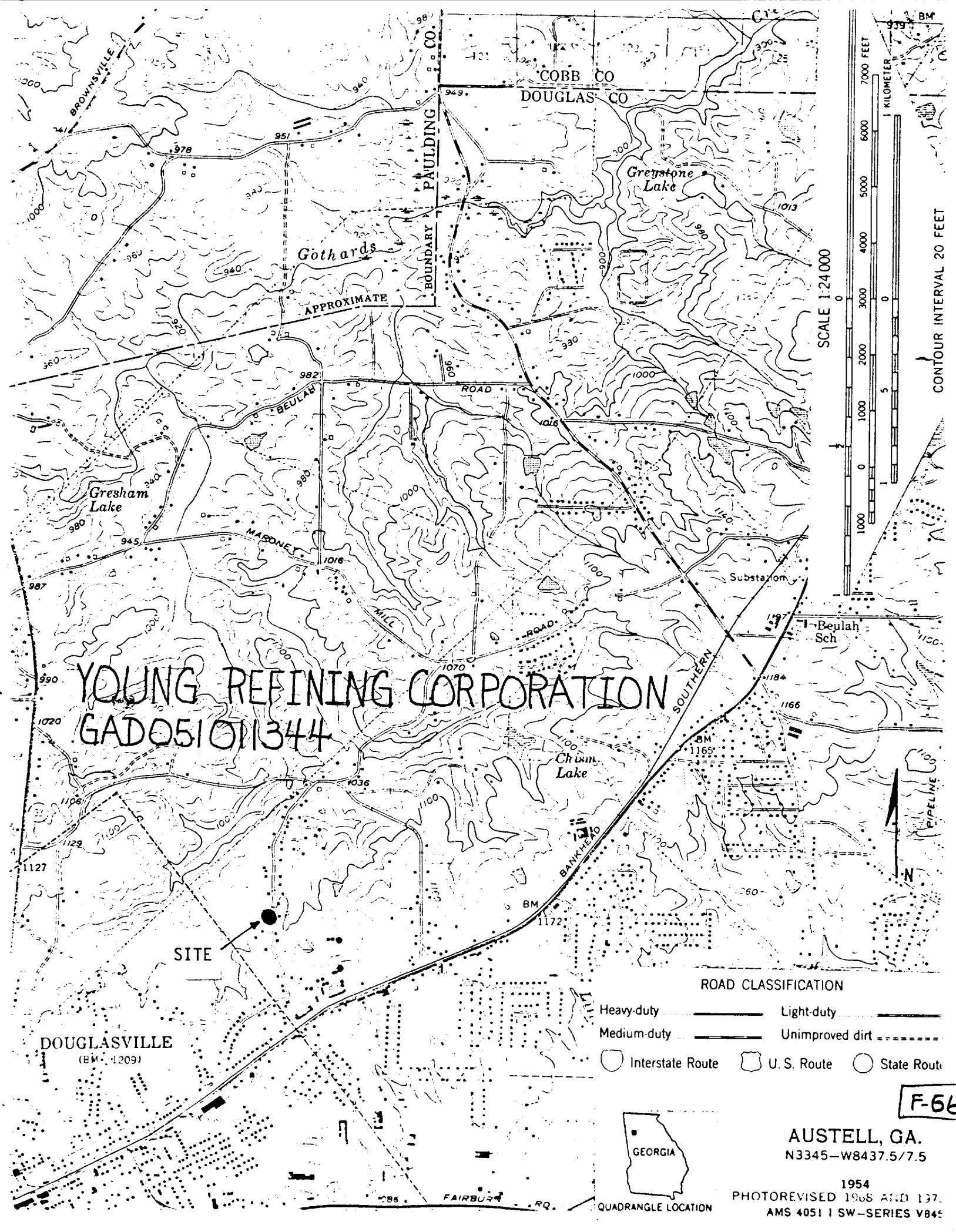
NUMBER OF WASTE/ENVIRONMENTAL SAMPLES TAKEN: None (reconnaissance visit)

REVIEWED BY: **DATE:**

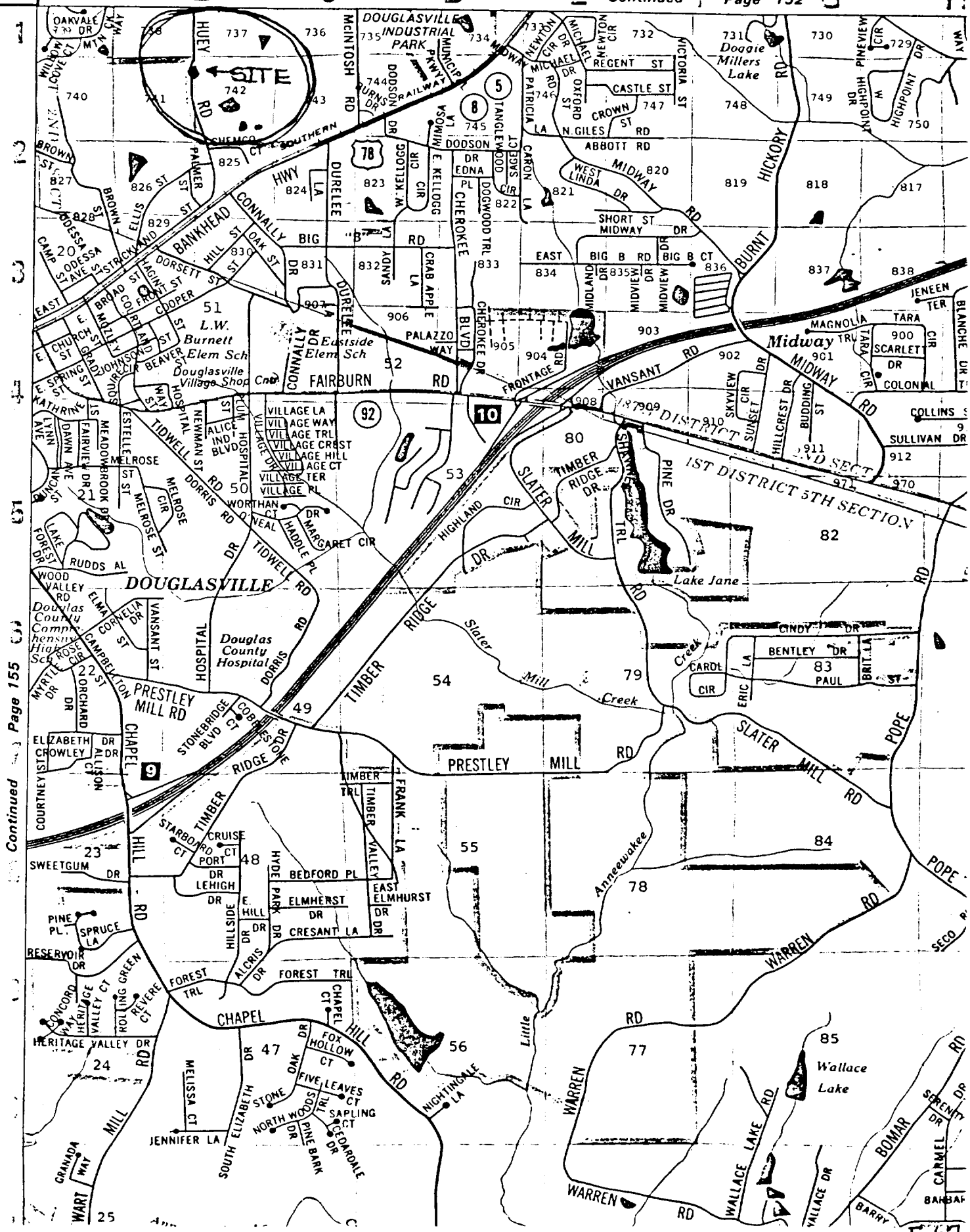
ATTACHMENTS: Site Location Map - Attached
Site Sketch - Attached

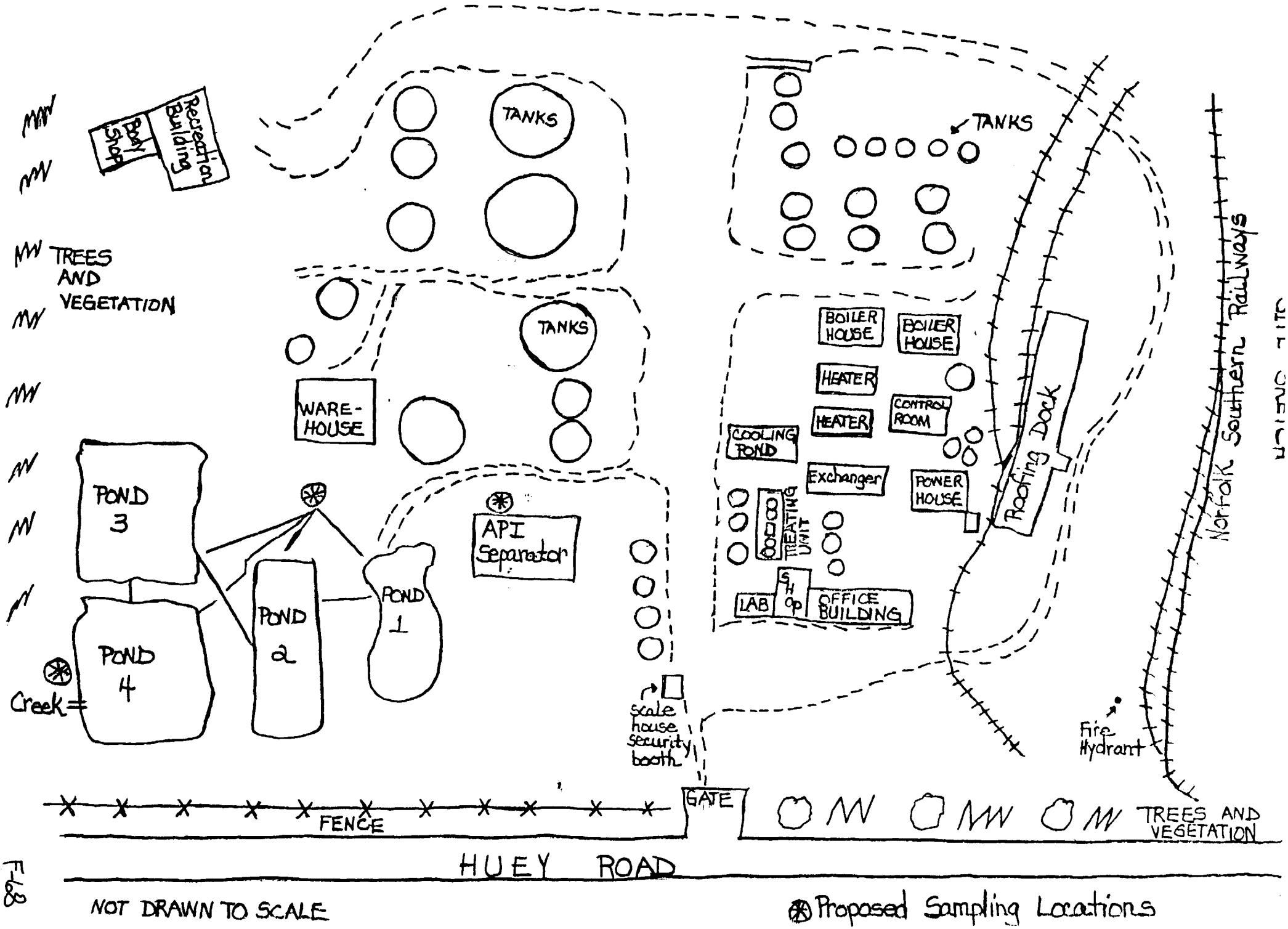
GAK:zcr001

File: Young Refining Corporation


YOUNG REFINING CORPORATION
GAD051011344
SITE
COBB CO
DOUGLAS CO
PAULDING CO.
BOUNDARY
APPROXIMATE
Gothards
Greystone Lake
Gresham Lake
Chism Lake
BROWNSVILLE
BEULAH ROAD
MABONEY MILL ROAD
SOUTHERN
BANKHEAD
PIPELINE
Substation
Beulah Sch
DOUGLASVILLE
(BM 1209)
FAIRBURN RD.
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
1 KILOMETER
7000 FEET
ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
Interstate Route
U. S. Route
State Route
GEORGIA
QUADRANGLE LOCATION
F-66
AUSTELL, GA.
N3345—W8437.5/7.5
1954
PHOTOREVISED 1968 AND 197
AMS 4051 I SW—SERIES V845

Continued Page 152




Recreation Building
Play Shop
TANKS
TANKS
TANKS
TREES AND VEGETATION
WARE-HOUSE
POND 3
POND 4
POND 2
POND 1
Creek
API Separator
BOILER HOUSE
BOILER HOUSE
HEATER
HEATER
CONTROL ROOM
COOLING POND
Exchanger
POWER HOUSE
HEATING UNIT
LAB
SHOP
OFFICE BUILDING
Loading Dock
Norfolk Southern Railways
Fire Hydrant
scale house security booth
GATE
FENCE
TREES AND VEGETATION
HUEY ROAD
NOT DRAWN TO SCALE
Proposed Sampling Locations

F-68

N. - 8:10 AM

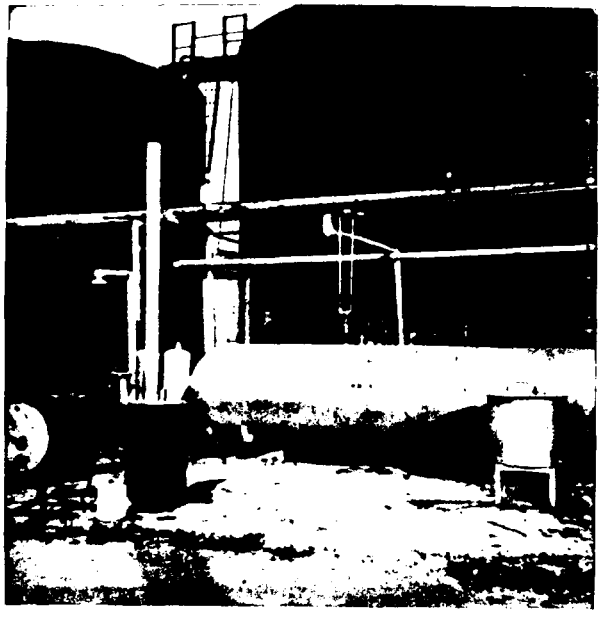
10-20-87

SITE NAME Young Refining Corporation
Picture No. 1 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance of facility off Huey Road. Front entrance; trees and heavy vegetation.
Other

N. 8:30 AM

10-20-87

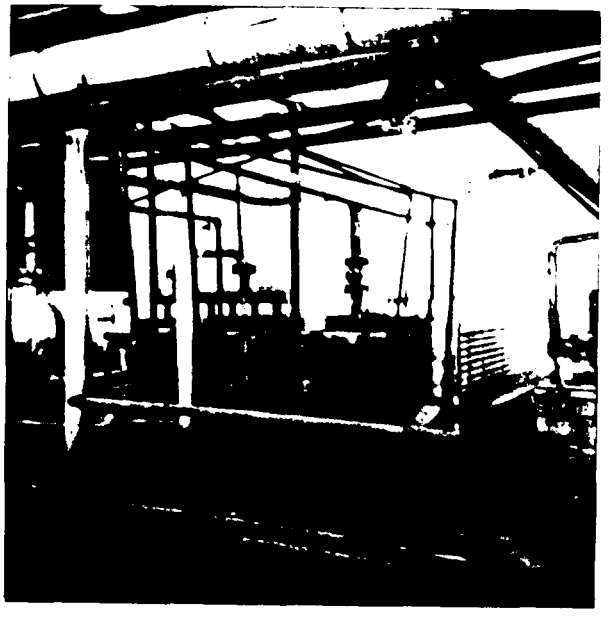
SITE NAME Young Refining Corporation
Picture No. 2 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Entrance gate of facility. Security personnel present in security booth.
Other



N. - 8:35 AM

10-20-87

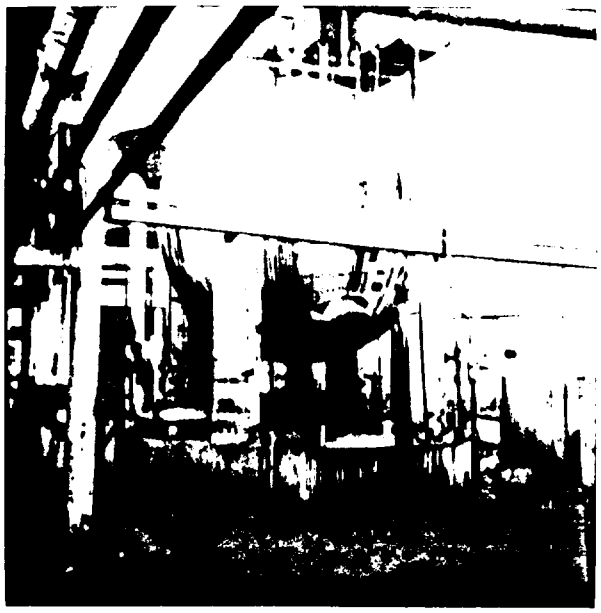
SITE NAME Young Refining Corporation
Picture No. 3 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F.
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Holding tanks for crude transported in by railroad car. One (1) tank is able
Other to accomodate 4 railroad cars of crude.



N. 8:40 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 4 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing North
Photographer G.A. Knowles
Program Site Investigation Program
Explanation Crude is heated through several steps with heat exchanger.
Other



W.- 8:45 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 5 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy 69°F

Direction Facing West

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Crude is eliminated of various salts by the desalter equipment

Other

N.
8:47
A.M.

10-20-87

SITE NAME Young Refining Corporation

Picture No. 6 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy 69°F

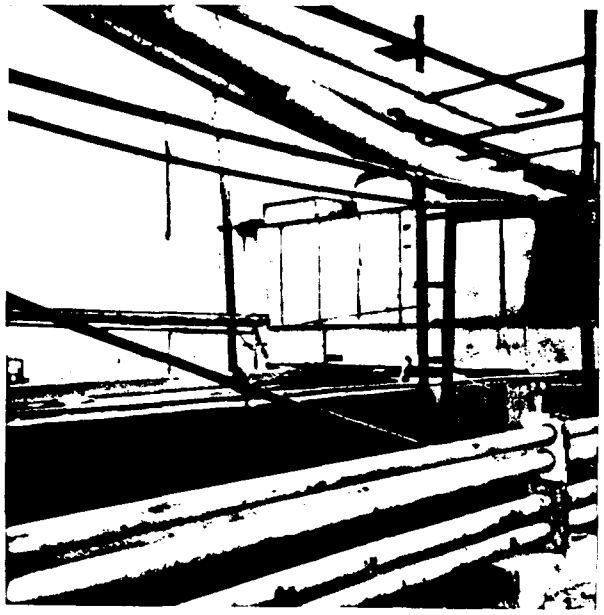
Direction Facing North

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Bubble Tower - Crude enters tower where light oils are vaporized out of crude and asphalt goes out the bottom.

Other



W.- 8:48 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 7 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing West
Photographer G.A. Knowles
Program Site Investigation Program
Explanation All wastewater is recycled and cooled down in this cooling pond.
Other

N.E.- 8:50 AM.

10-20-87

SITE NAME Young Refining Corporation
Picture No. 8 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing Northeast
Photographer G. A. Knowles
Program Site Investigation Program
Explanation API Separator - This piece of equipment further separates oil from water. The water from this process flows into the primary catching pond #1.
Other

S.-8:55 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 9 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy 69°F
Direction Facing South
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Pond #1

Other

N.E.-9:05 AM

10-20-87

SITE NAME Young Refining Corporation
Picture No. 10 of 15
County Name Douglas
Date 10-20-87 Weather Cloudy-69°F
Direction Facing Northeast
Photographer G. A. Knowles
Program Site Investigation Program
Explanation Pond #1 - Oil is skimmed off the top of the water into a thorgh that leads back through the crude tanks for reprocessing.
Other

W.-9:15 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 11 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy 69°F.

Direction Facing West

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Pond #2 with separator for skimming

Other

E.-9:25 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 12 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy 69°F.

Direction Facing East

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Pond #3 with aerating equipment. Aerator was inoperative at the time of inspection.

Other

N.E. 9:35 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 13 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy 69°F.

Direction Facing Northeast

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Pond #4, drainage conduit for this pond is discharged to a small creek on-site.

Other

N.E. - 9:45 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 14 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy 69°F.

Direction Facing Northeast

Photographer G.A. Knowles

Program Site Investigation Program

Explanation Discharge of water from conduit, to small creek (conduit extends from Pond #4).

Other

E.-10:15 AM

10-20-87

SITE NAME Young Refining Corporation

Picture No. 15 of 15

County Name Douglas

Date 10-20-87 Weather Cloudy-69°F.

Direction Facing East

Photographer G.A. Knowles

Program Site Investigation Program.

Explanation Asphalt Roofing Area: Cardboard cartons with tin bottoms are filled with hot asphalt and allowed to cool.

Other

SITE NAME

Picture No. of

County Name

Date Weather

Direction Facing

Photographer

Program

Explanation

Other

REF. # 13

RECORD OF TELEPHONIC CONVERSATION
Site Investigation Program

Routing: Randy Williams **Date:** October 9, 1987

Time: 11:05 (a.m.)/p.m.

File: Young Refining Corporation - GAD051011344

Party Spoken To: Mr. Ken Lawler **Title:** Water Superintendant

Agency/Company: Water Department - Douglasville

Address: P.O. Box 1157 **City:** Douglasville

Telephone Number: (404) 949 - 7617 **State/Zip:** Georgia 30133

Subject: Young Refining Corporation - GAD051011344

Summary of Call: I called Mr. Lawler to obtain information concerning drinking water in the area and he stated the following: (1.) he did not have any information on shallow wells in the area and that I should call the Health Dept (404) 949-2000 and speak to Mr. Doug Daniels; (2.) that the city of Douglasville's drinking water is supplied from large impoundments from which water is drawn from (surface water) Anawakee, Little Anawakee, Bear Creek Reservoir (Bear Creek + Little Bear Creek) and that supplementa water is purchased from Cobb + Marietta Water Systems and (3.) Sweet Water Creek supplies water (drinking) to East Point, Douglas County residents from the East Point Reservoir.

Actions Required:

Call Mr. Doug Daniels for possible well information. Health Dept. (404) 949-2000.

Signature: Gilda A. Knowles October 9, 1987.

Follow-up Responses/Additional Comments: I spoke to the Health Dept. Sanitarian, Mr. Daniels and he stated that he knew of only one shallow well in the area (Huey Road), but that 10 yrs. ago the home converted to city water. The water lines extend down Huey Rd. all the way to Maroney Road.

Signature: Gilda A. Knowles **Date:** October 13, 1987

SIP-2 9/86

The previous renter of the home was Mr. J. Calvin Whitley.

F-77