

**Tutu Wellfield Contamination**  
**St. Thomas, U. S. Virgin Islands**

**Review of Documents**

**Evaluation of Contributing to the Contamination**

**Gassett Motors/Consolidated Auto Parts**

**Parcel 214 Estate Anna's Retreat, Tutu**

**Az. GE 9313123**

TUT 006 1315

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**Project:** Tutu Wellfield Contamination  
St. Thomas, U. S. Virgin Islands

**Assignment:** Review of Documents  
Evaluation of Contributing to the Contamination  
Gassett Motors/Consolidated Auto Parts  
Parcel 214 Estate Anna's Retreat, Tutu

**Your Ref.:**

**Our Ref.:** Dr. Ga/Gt

**Ref. No.:** GE 9313123

**Project manager:** Dr.-Ing. Gartung

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-570

**Nuremberg,** Ocotober 28, 1993

## CONTENS

|                                     | Page |
|-------------------------------------|------|
| 1 Authorization .....               | 1    |
| 2 Reviewed Documents .....          | 1    |
| 3 Waste Source Information .....    | 2    |
| 4 Path of Waste Oil Migration ..... | 3    |
| 5 Contamination at Parcel 214 ..... | 4    |
| 6 Summary and Conclusions .....     | 5    |

## **1 Authorization**

In the Tutu area, St. Thomas, US Virgin Islands, the contamination of several wells for drinking water supply was discovered in July 1987. Sampling and analysis of 24 wells detected high concentrations of chlorinated organic compounds. At least nine Potentially Responsible Parties (PRPs) were identified as to contributing to this groundwater contamination. One of these PRPs is Consolidated Autoparts (Gassett Motors) a company operating under the direction of Thomas A. Gassett who is holding a leasehold interest in Parcel 214. The owners of Parcel No 214, Estate Anna's Retreat (Tutu), No 1 New Quarter, St. Thomas, U. S. Virgin Islands, Mr. and Mrs. Torinus, authorized the Institute of Geotechnical Engineering of LGA to review the available technical and scientific data concerning Parcel 214 with respect to the potential of contributing to the groundwater contamination at the Tutu wellfield.

## **2 Reviewed Documents**

The following documents were reviewed in regard of the potential of Parcel 214 contributing to the groundwater contamination at the Tutu wellfield. For convenience in the following text the documents are referenced as Doc 2.1, Doc 2.2 and Doc 2.3.

### **Doc 2.1:**

Final Draft Preliminary Assessment Gassett Motors St. Thomas, U.S. Virgin Islands, Prepared under Technical Document No 02-8902-41, Contract No 68-01-7346 for the Environmental Services Division U. S. Environmental Protection Agency, March 24, 1989, NUS Corporation Superfund Division.

### **Doc 2.2:**

United States Environmental Protection Agency, Washington DC 20460, Office of Emergency and Remedial Response, Hazardous Site Evaluation Division, Site Assessment Branch, HRS Documentation Record, Tutu Wellfield (Region 2), signed by Regional Coordinator and Branch Chief.

Doc 2.3:

Technical Memorandum II, Results of the Field Program Tutu Service Station Investigation, St. Thomas, US Virgin Islands, Volumes 1 and 2, May 1993, Prepared for Tutu Environmental Investigation Committee San Juan, Puerto Rico, Prepared by Geraghty & Miller Inc. 201 West Passaic Street, Rochelle Parc, New Jersey 07662.

3 Waste Source Information

Doc 2.1 states that on Parcel 214 drums were detected which contained liquid waste oil from automotive repair and servicing operations. Doc 2.1 further suspects that the drums may also contain small quantities of gasoline, kerosene or degreasing solvents. These liquids are potentially hazardous with respect to groundwater and surface water.

The waste oil was not properly contained and there were numerous spills in the area, a large pool and waste oil originates in a drainage ditch were observed. The quantity of waste oil kept at Parcel 214 is not stated explicitly, but it can be estimated on the basis of the NUS report.

Doc 2.1 contains handwritten notes dated February 15th 1989 reporting the observations made by the project manager Diane Trube and the site manager Joseph Mayo. While the sketched site map mentions five 55-gal drums in the northern corner of Parcel 214, the text states only four such drums. Since the formal document of the Potential Hazardous Waste Site Preliminary Assessment consistently mentions four 55-gal drums, this number is accepted as being correct.

In addition to the four 55-gal drums, three 20-gal drums are mentioned in the handwritten text and in the formal assessment. They are not documented on the site map. There seems to be a slight uncertainty with respect to the number of drums, but assuming that it is correct that there were four 55-gal drums and three 20-gal drums, then the total storage capacity for waste oil amounted to 280 gallons at Parcel 214.

Since the waste oil was not properly contained, there were spills and a pool. Waste oil originates were observed in a drainage ditch and the site was not kept in good order. Doc 2.1 II.6 concludes that at the time of investigation a potential for waste migration to surface water and groundwater existed at Parcel 214.

Comment:

*Liquid waste oil is a hazardous substance. Under the conditions described in Doc 2.1 a potential may have existed at Parcel 214 for surficial waste migration. After cleanup of the site and proper containment of the waste oil under responsible supervision this potential no longer exists.*

#### 4 Path of Waste Oil Migration

The geology at the site is described in Doc 2.1, Part III,2 in great detail. However the document does not mention that the ground surface at Parcel 214 is paved. This detail is clearly marked on the site map Doc 2.1.

In Doc 2.3 chapter 4.6 soil boring B-5 is reported as being located exactly at the spot where the oil pool or puddle had been observed. The sample/core log of B-5 Appendix A of Doc 2.3 reports asphalt from 0 to 0.4 foot depth and clay with a little silt, a little fine to medium sand, a trace of fine gravel and a trace of coarse sand at a depth from 0.4 to 2.4 feet. Below this layer down to bedrock which was encountered at 2.8 feet, the ground is composed of clay with a little silt, a little fine to medium sand and a trace of organic material.

Being aware of this ground profile, Part III: Hazard Assessment in Doc 2.1 has to be revised under point 2. The headline of point 2 says: "Describe the aquifer of concern; include information such as depth, thickness, geologic composition, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction."

Boring log B-5 permits a more detailed description of the strata overlying the aquifer than given in Doc 2.1. The 0.4 foot thick asphalt layer at the ground surface essentially acts as a surface sealing and the 2.4 feet thick clay stratum is an additional barrier against the migration of liquids especially of waste oil which has a relatively high viscosity, into the deeper ground. In fact the log of B-5 contains no indication that waste oil has reached the natural soil below the asphalt. In view of these important informations which were unknown at the time of field investigations for the Preliminary Assessment, the potential paths of migration of liquid wastes from Parcel 214 reduce to surficial flow to the drainage ditch.

Comment:

*The results of more recent field investigations presented in Doc 2.3 demonstrate that the soil at the location where an oil pool had been detected on Parcel 214 is not contaminated. The groundwater at the site is effectively protected by an asphalt layer and soil of low permeability. So there is no potential path for groundwater contamination at the site. As long as waste oil was improperly stored at Parcel 214 there may have been a potential for surface water contamination. However, since the runoff from Parcel 214 was collected by a ditch and conducted towards the rainwater drainage system, it cannot have contributed to the contamination of the Tutu wellfield.*

*On the review cover sheet of the HRS documentation record, Doc 2.2, EPA makes the statement that the nearby surface water body, an intermittent stream which leads to Turpentine Run is not known to be used for drinking water and that there are minimal environmental threats. So the oil spills that existed in the past at Parcel 214 cannot be considered a source of groundwater contamination at the Tutu Wellfield.*

## 5 Contamination at Parcel 214

According to Doc 2.3 a soil sample was recovered from boring B-5 at the location on Parcel 214 which was suspected of being a potential source of hazardous waste contamination. Chapter 4.6 of Doc 2.3 reports the following result of the chemical analysis of this soil sample.

Concentrations of acetone(92 ppb), 2-butanone(18 ppb), methylene chloride (9 ppb estimated) were found but have to be regarded as laboratory artifacts. The concentration of toluene was estimated at 2 ppb which is below reporting limit, 1.3 ppb MTBE was detected. There were no VOC compounds and no BNA. The TPH value was 53 ppm. For comparison purposes a figure can be selected which is given for a soil sample considered certainly uncontaminated. A soil sample from MW-6 at Four Winds Plaza yielded a TPH value of 120 ppm.

Comment:

*One soil sample from the critical area of Parcel 214 was analysed. It showed no contamination. This result leads to the conclusion that the ground at Parcel 214 is not contaminated with hydrocarbons or petroleum products.*

## 6 Summary and Conclusions

A drinking water supply wellfield at Tutu, St. Thomas is contaminated. Nine Potentially Responsible Parties have been identified by U. S. EPA. Three of them have contributed to the contamination, the other six are suspected of having contributed to the contamination.

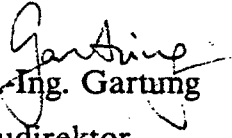
Consolidated Auto Parts (Gassett Motors) who is operating a business on Parcel 214 owned by Mr. and Mrs. Torinus is among the suspects. The site investigation by NUS Corporation Superfund Division in 1989 revealed that liquid waste oil was kept on Parcel 214 in drums improperly. There was an oil pool at the ground surface, the drainage ditch contained oil originates and the property was kept in a messy manner. Based on these findings EPA identified Gassett Motors as a Potentially Responsible Party and states in Doc 2.2 that Gassett Motors may have contributed to the contamination of the Tutu wellfield.

In 1993 Geraghty & Miller, Inc. issued Technical Memorandum II, Results of the Field Program Tutu Service Station Investigation. This document contains information about a reconnaissance boring and soil sampling in the most critical area of Parcel 214.

The ground profile shows that an impervious asphalt pavement and a clay layer which act as barriers against groundwater contamination. The chemical analysis of a soil sample from the site shows no indication of any contamination with petroleum products. This result means that Gassett Motors on Parcel 214 can no longer be regarded as a Potentially Responsible Party with respect to the contamination of the Tutu wellfield.

Based on the findings of Doc 2.3 the assessment of EPA in Doc 2.2 should be revised, and Gassett Motors on Parcel 214 dropped from the list of Potentially Responsible Parties.

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Department GE

  
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TO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

Re. Tutu Wellfield (Region 2)

HRS DOCUMENTATION RECORD TUTU WELLFIELD (REGION 2)

02 - 9102 - 11 - HR

Rev. No. 1

Ladies and Gentlemen:

The Documentation Record mentioned above under the heading "Source Description, 2.2 Source Characterisation", on page 12 deals with Gassett Motors / Consolidated Auto Parts. It introduces the matter: "The facility is suspected of contributing to the groundwater contamination ...", and on page 13 it concludes: "The analytical data and historical information indicate that Gassett Motors / Consolidated Auto Parts may have contributed to the groundwater contamination." These statements are primarily based upon reference number 24: "Preliminary Assessment Report for Gassett Motors, St. Thomas, U. S. Virgin Islands, NUS Corp. Region 2 FI T, March 24, 1989 TDD No. 02 - 8902 - 41. (24 pages).

In the meantime Geraghty & Miller Inc. 201 West Passaic Street, Rocelle Parc New Jersey 07662 issued: "Technical Memorandum II, Results of the Field Program Tutu Service Station Investigation, St. Thomas, U.S. Virgin Islands, Volume 1 and 2, May 1993.". The investigations documented in this report include boring B - 5 located on Parcel 214, the site of Gassett Motors / Consolidated Auto Parts owned by Mr. and Mrs. Torinus. B - 5 was drilled at the location where a waste oil pool had been detected previously and where a source of ground water contamination had been suspected. The soil sample retrieved from B - 5 and analysed for hazardous substances contained no indications of any ground contamination. Below a 0.4 ft thick asphalt layer which efficiently seals the ground surface a 2.4 ft thick clayey stratum of soils of low hydraulic conductivity was encountered. This soil layer above the bedrock acts as a barrier against waste oil migration and intercepts a potential pathway towards the ground water resources.

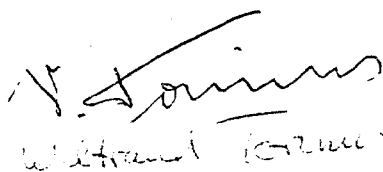
The oil pools formerly detected have been cleaned up in the meantime. Any waste oil generated by the facilities at Parcel 214 has been contained properly since the cleanup, the facility is being supervised with respect to environmental issues.

According to the statement on HRS Documentation Record Review Cover Sheet 02 - 9102 - 11 HR Rev. No. 1 the surface water body (an intermittent stream which leads to Turpentine Run) is not known to be used for drinking water and there are minimal environmental threats. So any surface migration of waste oil and oil originates from Parcel 214 which may have occurred in the past, cannot be regarded as contributions to the Tutu Wellfield contamination.

On the basis of the evidence documented in the referenced Geraghty & Miller Inc. "Technical Memorandum II", the facilities of Gassett Motors / Consolidated Auto Parts on Parcel 214 can no longer be suspected of having contributed to the Tutu Wellfield contamination. We kindly request to revise the HRS Documentation Record accordingly.

Sincerely,

the owners of the facility: Siegfried Torinus  
Waltraud Torinus



# SAMPLE/CORE LOG

Boring/Well B-5 Project/No. TUTU SITE/PRO13.01 Page 1 of 1

Site Location ST. THOMAS Drilling Started 8/13/92 Drilling Completed 8/13/92

Total Depth Drilled 2.8 feet Hole Diameter 6 inches Type of Sample/  
Coring Device SPLIT-SPOON

Length and Diameter of Coring Device 2' 3" Sampling Interval CONTINUOUS feet

Land-Surface Elev. 181.0 feet ☐ Surveyed ☒ Estimated Datum MEAN SEA LEVEL

Drilling Fluid Used NONE Drilling Method HOLLOW STEM AUGER

Drilling Contractor SOIL TECH Driller J. RIVERA Helper J. DIAZ  
J. MILLET

Prepared By R. PONCIANO Hammer Weight 140 Hammer Drop 30 inches

Sample/Core Depth  
(feet below land surface)  
From To  
Core Recovery  
(feet)  
Time/Hydraulic  
Pressure or  
Blows per 6  
Inches

Sample/Core Description

|     |      |     |               |                                                                                                                              |
|-----|------|-----|---------------|------------------------------------------------------------------------------------------------------------------------------|
| 0   | 0.4  |     |               | ASPHALT.                                                                                                                     |
| 0.4 | 2.4  | 1.6 | 5-8-<br>12-14 | CLAY; little Silt; little Sand, fine to medium; trace Gravel,<br>fine; trace Sand, coarse, gray to reddish brown, stiff, dry |
|     |      |     |               | Soil samples collected for VOC, BNA, metals and TPH<br>analysis.                                                             |
|     |      |     |               | HNu = 5.0 ppm.                                                                                                               |
|     |      |     |               | GC sample: 2.0'.                                                                                                             |
| 2.4 | 2.80 | 0.4 | 50/0.4'       | CLAY; little Silt; little Sand, fine to medium; trace organic<br>material, wood; gray, very hard, dry.                       |
|     |      |     |               | HNu = 1.0 ppm.                                                                                                               |
|     |      |     |               | GC sample: 2-4'                                                                                                              |
|     |      |     |               | Split-spoon was refused at 2.8 ft bls.                                                                                       |
|     |      |     |               | Top of bedrock inferred at 2.8 ft bls.                                                                                       |
|     |      |     |               | Total depth = 2.8 ft bls.                                                                                                    |
|     |      |     |               |                                                                                                                              |
|     |      |     |               |                                                                                                                              |
|     |      |     |               |                                                                                                                              |
|     |      |     |               |                                                                                                                              |

The most significant results for these two soil samples are the reported estimated concentrations in Sample B-2 of benzo(a)pyrene (270 ppb), benzo(g,h,i)perylene (290 ppb), and pyrene (220 ppb). No other BNA compounds were detected in either samples. TPH was detected in Sample B-2 at 110 ppm but was not detected in Sample B-3. No metals or cyanide concentrations exceeded one order of magnitude above background levels.

#### **4.6 ANTILLES AUTO REPAIR SOIL SAMPLING RESULTS**

Soil Boring B-5 was drilled at Antilles Auto Repair (formerly Gassett Auto Parts). This location was selected because an "oil pool" or puddle was noted in this vicinity during a site inspection on February 15, 1989 by NUS Corporation (1989). A split-spoon soil sample (B-5) was collected from 0 to 2 feet bls for laboratory analysis. Reported organic compounds in Sample B-5 included estimated concentrations of acetone (92 ppb), 2-butanone (18 ppb), and estimated concentrations of methylene chloride (9 ppb). As stated previously, methylene chloride, acetone, and 2-butanone are suspected laboratory artifacts (USEPA 1991c). Estimated concentrations of toluene (2 J ppb), and MTBE (1.3 ppb) were detected. No other chlorinated VOC compounds were detected. No BNA compounds were detected. This sample had a reported TPH value of 53 ppm, and no metals or cyanide were detected at concentrations exceeding background values by one order of magnitude.

#### **4.7 TEXACO SERVICE STATION SOIL SAMPLING RESULTS**

Four soil samples (B-4, MW-3, MW-4, and MW-4D) were collected at the Texaco Service Station for laboratory analysis. Soil Boring B-4 was drilled through a strip of unpaved soil at the northwestern corner of the Texaco Service Station where cars are commonly repaired. A split-spoon sample (B-4) was collected from 8 to 10 feet bls for laboratory analysis. Acetone was reported at an estimated value of 55 ppb in Sample B-4. Because acetone is a common laboratory contaminant, this reported result may be due to laboratory contamination (USEPA 1991c). All other organic analytical results for TCL VOCs, TCL BNAs, and TPH were non-