

**Tutu Environmental Investigation Committee
(TEIC)**

G.P.O. Box 4269
San Juan, Puerto Rico 00936-4269

Ana Gloria Ramos, P.E.
Designated Coordinator

September 10, 1993

Eng. Caroline Kwan
Project Manager
New York/Caribbean Superfund Branch II
Emergency and Remedial Response Division
US Environmental Protection Agency Region II
26 Federal Plaza
New York, New York 10278

RE: Tutu Well Site
Administrative Order on Consent
Index No. II-RCRA-Proceeding
7003 and 9003-92-0401
Monthly Progress Report No. 19

Dear Mrs. Kwan:

Attached find the Written Monthly Progress Report for the subject Administrative Order.

If you have any question regarding this matter, please contact the undersigned at (809) 749-8943.

Very truly yours,



Ana Gloria Ramos, P.E.
Designated Coordinator

AGR/mpt/EPKAWAN

Attachments

pc: Mr. C. S. Griffith
Mr. D. Lee
Steve Kirkland, Esq. - Texaco, Inc.
Mr. Paul Ryan - Texaco, Inc.
Mr. William J. Stack - Exxon Corp.
Mr. José Font - EPA Caribbean Field Office
Mr. Roy E. Adams - Commissioner DPNR-USVI
Mr. Leonard Reed/ Mr. Benjamin Nazario - DPNR-USVI
Mr. J. C. Agrelot - Soil Tech
Mr. T. Danahy - Geraghty & Miller
Andrew Prashak, Esq. - USEPA Caribbean Field Office

TUT 006 1353

MONTHLY PROGRESS REPORT NO. 19
September 9, 1993

RE: Administrative Order on Consent
Index No. II - RCRA - Proceeding
7003 & 9003-92-0401

This status report includes the work performed during the period from August 1 through August 31, 1993.

WORK COMPLETED DURING PREVIOUS MONTH

- Continued data analysis and preparation of the RI Report.
- Completed electronic transfer of chemical data to the U.S. Environmental Protection Agency's (USEPA) subcontractor, CDM Federal Programs, who is currently reviewing the data for a risk assessment.
- Participated in a conference call with the USEPA to discuss comments made by the Potentially Responsible Parties' (PRPs') Technical Group in an August 13, 1993 letter.

WORK TO BE COMPLETED DURING NEXT MONTH

- Participate in conference call with PRPs' Technical Group re: data compilation.
- Continue data analysis and preparation of the RI Report.
- Prepare a letter to the USEPA outlining the schedule required to compile and evaluate additional data to be provided by PRPs.

ANA GLORIA RAMOS

Attachments:

1. Letter from EPA dated August 9, 1993 addressed to Designated Coordinator - Forwarding comments on Technical Memo II and RI from the Tutu's Technical Group.
2. Letter from EPA dated August 30, 1993 addressed to Mr. A. Gutiérrez copy to Designated Coordinator



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

JACOB K. JAVITS FEDERAL BUILDING

NEW YORK, NEW YORK 10278-0012

AUG 19 1993

EXPRESS MAIL
RETURN RECEIPT REQUESTED

Ana Gloria Ramos, P.E.
Designated Coordinator
Tutu Environmental Investigation Committee
P.O. Box 364269
San Juan, Puerto Rico 00936-4269

Re: Comments on Technical Memo II and RI from the Tutu's Technical Group

Dear Ms. Ramos:

Enclosed please find the above-referenced document. I would like to have your consultant review the contents of this document. A conference call is scheduled for Wednesday, August 25, 1993 at 2:30 pm to discuss the contents of this document. Please dial (202) 260-4276 at 2:30 pm to access the conference line.

Please call me if you have any questions.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Caroline Kwan".

Caroline Kwan
Project Manager
New York/Caribbean Superfund Branch II

Enclosures

cc: Sally Odland-CDM
Thomas Danahy- G&M

TUT 006 1355

August 13, 1993

**TELEFAX AND
FED EXPRESS**

Ms. Caroline Kwan
Project Manager
USEPA - Region II
26 Federal Plaza, Room 737
New York, New York 10278

**RE: COMMENTS ON TECHNICAL MEMORANDUM II AND RI, TUTU SITE,
U.S. VIRGIN ISLANDS**

Dear Ms. Kwan:

The group (Technical Group) comprised of the technical representatives of the PRPs listed below is pleased to submit our comments on Technical Memorandum II prepared by Geraghty and Miller and our further recommendations on how we can promptly proceed to completion of an appropriate RI/FS and ROD. All were afforded an opportunity to participate on the Technical Group including the Government of the Virgin Islands, the Virgin Island Housing Authority, and Mr. and Mrs. Torinus. Those not joining in this document indicated that they had not yet obtained technical representatives and therefore could not participate in the drafting of these comments. It is the unanimous opinion of the technical group that the Technical Memorandum II and the additional recommended work will not comprise a complete RI for the Tutu site. Therefore, we believe that it is necessary to supplement the existing and proposed site database to facilitate a timely, technically feasible and cost-effective solution for the remediation of the Tutu problem. Prior to executing additional investigations, the development and implementation of a supplemental work plan that incorporates appropriate data quality objectives and recognizes the importance of significant additional work performed outside the TEIC committee is critical. A supplemental work plan should be developed with the cooperation of the Technical Group to ensure participation of all interested parties.

The purpose of the Technical Group is cooperation toward implementing an effective remedy for the observed soil and groundwater impacts at the site. By pooling our collective knowledge about the site and by scheduling any required field work at each site, we believe that we can deliver a superior remedial strategy at a reasonable cost. Towards this end, you will note that we have spent considerable time and energy to develop specific comments on additional work required to reach a defensible ROD.

TUT 006 1356

Ms. Caroline Kwan

Page 2

August 13, 1993

As we explained to you in our teleconference of 8/10/93, the group is just beginning to work together and a formal agreement has not been completed; however, we have provided specific and useful comments directed towards the completion of an RI/FS and ROD on the timetable presented to us by you. We believe the formation of this Technical Group is a very positive step toward a cost-effective remedy for the site. We look forward to working with USEPA in resolving this matter.

Sincerely,

Alberto A. Gutierrez, CPG
Coordinator, Technical Group

AAG/54153/KWAN001/LTR

Enclosures

THE TECHNICAL GROUP CONSISTS OF:

John T. Burkart, R.G., REA - Cooper Environmental, Ramsay Motors, Inc.
Ivan A. Cooper, P.E. - Cooper Environmental, Ramsay Motors, Inc.
Stephen Dubyk - H*GCL, Inc., Texaco Caribbean, Inc.
Donald P. Galya, P.E. - ENSR Consulting and Engineering, Western Auto, Inc.
Bruce K. Green - Caribbean Hydro-Tech, Inc., Four Winds Plaza Partnership
Randall T. Hicks - H*GCL, Inc., Texaco Caribbean Inc.
David E. Langseth - Arthur D. Little, Inc., Andreas Gal & Paul Lazare
Kenneth L. Loy - International Technology Corporation, L'Henri, Inc.
Thomas F. Maquire, CPG - Blasland & Bouck Engineers, P.C., Esso, S.A.
Belinda K. Price, MS, RPG - International Technology Corporation, L'Henri, Inc.

**TECHNICAL GROUP COMMENTS ON
TECHNICAL MEMORANDUM II AND
RECOMMENDATIONS FOR REMEDIAL INVESTIGATION**

The following are a series of comments that are intended to provide the USEPA Region II with recommendations to supplement Technical Memorandum II, thereby establishing a comprehensive Remedial Investigation (RI). The comments were developed by the Technical Group. Our comments relating to Technical Memorandum II are presented in Section A. Section B consists of our recommended objectives for a RI. Work elements which should be completed prior to implementation of Remedial Investigation field work are discussed in Section C. Section D presents a list of work elements and justification which, based on our present knowledge of the site, are required to meet the stated objectives of the RI. Implementation of Section C (below) may show that additional field programs are required.

A. General Comment by PRP Group Concerning Geraghty and Miller Technical Memorandum II

1. Tech Memo II made some conclusions that are not supported by information presented in this report. The data presented in the report includes only that from the TEIC wells; and the analyses and conclusions of the report focus on the TEIC well data. It is recommended that the conclusions of the report should be disregarded, except to the extent that conclusions support specific recommendations regarding future field work. The Memorandum should base recommendations upon data included in the document or data which are clearly referenced in other available documents. The data provided in Technical Memorandum II and data collected by the recommended work will not be sufficient for a complete RI.

B. Provide a list of objectives which should be addressed by a Remedial Investigation for the site

The selection of an appropriate set of objectives to assure that a RI/FS achieves the desired goal of supporting a ROD is critical in this effort. Since significant additional work has been completed at this site beyond that considered in Tech Memo II and outside the TEIC group, it is necessary to incorporate these data to the extent that they are helpful in developing a RI/FS that can be supported by all PRPs. Based upon our evaluation of the site conditions and the data available to the PRPs, the following remedial responses are possible at the site:

- i. Source control/remediation, point of use treatment, no active aquifer restoration program
- ii. Point of use treatment only
- iii. An integrated source/aquifer remediation program
- iv. No action

Following from the remedial responses presented above, the following objectives for the RI are appropriate:

- 1. Provide sufficient data to determine the radius of influence of each production and large-diameter monitor wells in or near the contaminant groundwater plume to permit design of point of use treatment.
 - 2. Provide sufficient data to predict contaminant concentrations in production wells within the Tutu aquifer to permit design of point of use treatment.
 - 3. Examine existing data to determine concentrations of major ions in groundwater to permit prediction of operation and maintenance costs of point of use treatment systems.
 - 4. Provide sufficient data to determine aquifer characteristics, contaminant distribution, exposure pathways, and receptors to permit the development of a defensible risk assessment and an evaluation of remedial alternatives for the site.
 - 5. Provide sufficient data to determine the magnitude and extent of unsaturated zone contamination at each potential source in sufficient detail to design/implement appropriate source control/remediation.
 - 6. Provide sufficient data to determine soil and aquifer characteristics to permit the selection of interim remedial actions, short-term measures or remedial designs for source control/remediation at each potential source.
 - 7. Provide sufficient data to determine contributions from surface runoff, sanitary and storm sewer line leakage.
- C. Suggested work elements which need to be conducted prior to any additional field work towards a Remedial Investigation**
- 1. Compile and provide to PRPs a complete bibliography of site information. All published reports, public documents (e.g. submitted to EPA), non-privileged documents (e.g. reports the PRPs are willing to release), depositions, correspondence, and historic aerial photographs, should be included in this bibliography.

2. Compile and synthesize chemical data into a computerized database for the purposes of statistical analyses and map generation. Chemical data reported in dissimilar units (such as ppmv versus $\mu\text{g/L}$ in the soil vapor surveys) must be converted and standardized to the same unit of measurement. Data from all PRPs should be included in this database. Geraghty and Miller may already have developed a database which may be expanded to meet the needs of future field work.
 3. Develop a computerized base map for the entire area, including all impacted water supply wells.
 4. Update the existing well inventory compiled by Geraghty and Miller and also identify locations of all soil borings, soil vapor points, surface soil sampling locations, sump and tank pit sampling locations, monitor wells, production wells and rock outcrops on the base map (item 3, above). This will allow data gaps to be identified. Many sample and soil boring locations, and monitor wells installed by the PRPs are not presented in Technical Memorandum II.
 5. Prepare a summary of all lithologic logs and well completion diagrams for wells/borings on site. Hydrogeologic cross sections should be included in this summary.
 6. Review and analyze all applicable data and analyses based upon a specific set of Data Quality Objectives.
 7. Evaluate existing aquifer test data to determine adequacy of tests. Tests conducted by Caribbean Hydro-Tech may be sufficient to characterize certain portions of the site. Aquifer test data presented in Technical Memorandum II are of limited application toward a RI due to the documented logistical problems associated with the tests.
- D. Work elements required as part of a Remedial Investigation to be incorporated into imminent field work currently scheduled to be performed in 1993**
1. Survey all wells to a common datum within the investigation area; establish a site coordinate system. This will permit creation of complete and accurate potentiometric surface maps.
 2. Those monitor wells where analytical results were compromised due to elevated detection limits, or where other problems have affected analyte identification should be re-sampled. Detection limits must equal or surpass drinking water standards for the analytes of concern.
 3. A single-event water quality analysis program should be performed on all wells in the area. Field analysis of dissolved oxygen and dissolved carbon dioxide should be included in this program. Samples for analysis of known or suspected contaminants should be collected and these data used to determine protocol for future regular sampling as needed.

4. Additional shallow and deep wells are necessary to fully define the pattern of groundwater contamination. However, we strongly urge that the items listed in Section C must be completed before any additional field work is done. Notwithstanding our unanimous opinion that the items in Section C must be completed before specific well locations can be evaluated or recommended in a technically-defensible manner, we offer the following comments on Geraghty & Miller's recommendations for additional wells as shown on Figure 7-1 of Tech Memo II.
- MW-15: The proposed location for this well should be moved approximately 50 feet west-northwest to ensure that the well does not lie close to locations of documented releases. The new location should be hydraulically equivalent to the original MW-15 location.
 - MW-16: Provided site conditions are appropriately dealt with such that the underground storage tank at this location can be removed without jeopardizing the integrity of the well.

Examples of additional wells that were discussed by the Technical Group and may be useful in the delineation of groundwater contamination are as follows:

- An additional shallow well should be located equidistant between MW-9 and proposed MW-18 to further define the down-gradient extent of organic contamination.
- A monitoring well should be installed up-gradient of the O'Henry laundry. This should be located 100 feet north-northeast of existing well MW-2 on the O'Henry property.
- Monitoring wells should be installed 300 feet due east of existing well MW-7 and 200 feet due east of MW-10 and -10D, adjacent to Highway 382.
- Several wells should be installed down-gradient of the Harvey well.
- A monitoring well should be installed at the fence line between Ramsay Motors and Antilles Motors directly south of the original proposed location of MW-15.

Justifications for these additional wells will be provided in subsequent communications upon EPAs request.

5. With respect to recommendations for additional soil borings, the PRP Group has examined the proposed recommendations from Geraghty & Miller. Although those recommended locations may indeed provide useful additional information, the group feels that without the systematic completion of the items included in Section C it is not prepared to individually comment on the soil boring locations suggested by Geraghty & Miller.

6. An evaluation of contaminant migration pathways arising from sanitary and storm sewers is necessary. The potential for these features to act as sources has not been investigated; therefore, appropriate measures should be taken to examine the potential for these sources.

The process by which any additional field investigations should take place is described below:

- Complete items included in Section C
- Evaluate need for additional field work, recommend and design additional field work
- Implement additional field work
- Complete data evaluation
- Complete RI/FS

The PRP Group feels that it is important, in order to arrive at a defensible RI for the site, that the data included as part of Section C activities be thoroughly considered in the development of the final RI/FS.

E. Preliminary recommendations for additional work required for a complete Remedial Investigation

1. Complete additional soil vapor surveys and obtain additional soil samples as necessary to define extent and magnitude of unsaturated zone contamination at each potential source area.
2. Agree to a single sampling and analysis protocol (including Data Quality Objectives) for the RI and any sampling conducted for subsequent interim remedial actions, tank removals, etc. Soil samples at all sites should be evaluated for solvents and other organic contaminants using standardized sampling and analytical techniques which will optimize the recovery and analysis of representative samples. Air permeability, bulk density, soil moisture, soil clay and organic content, and grain-size distribution measurements at specific locations may be appropriate if soil venting techniques are to be considered for contaminant control and source remediation at each potential source area. The method for determining the depth to bedrock in borings and wells must be standardized.
3. Obtain quarterly water level measurements on all wells identified in the area.

4. Develop adequate conceptual models of the hydrogeologic system, contaminant distribution, contaminant transport pathways and controlling fate mechanisms.

This memorandum was developed by the following Technical Group:

John T. Burkart, R.G., REA - Cooper Environmental, Ramsay Motors, Inc.
Ivan A. Cooper, P.E. - Cooper Environmental, Ramsay Motors, Inc.
Stephen Dubyk - H*GCL, Inc., Texaco Caribbean, Inc.
Donald P. Galya, P.E. - ENSR Consulting and Engineering, Western Auto, Inc.
Bruce K. Green - Caribbean Hydro-Tech, Inc., Four Winds Plaza Partnership
Randall T. Hicks - H*GCL, Inc., Texaco Caribbean Inc.
David E. Langseth - Arthur D. Little, Inc., Andreas Gal & Paul Lazare
Kenneth L. Loy - International Technology Corporation, L'Henri, Inc.
Thomas F. Maquire, CPG - Blasland & Bouck Engineers, P.C., Esso, S.A.
Belinda K. Price, MS, RPG - International Technology Corporation, L'Henri, Inc.

54153/RESPONS4.LTR

August 30, 1993

EXPRESS MAIL-
RETURN RECEIPT REQUESTED

Mr. Alberto A. Gutierrez, CPG
Coordinator, Technical Group for the Tutu Wells Site
H+GCL
505 Marguette NW, Ste. 1100
Albuquerque, NM 87102

Re: Review of August 13, 1993 Technical Group Comments on
Technical Memorandum II and RI,
Tutu Wells Site, USVI

Dear Mr. Gurtierrez:

The U.S. Environmental Protection Agency (EPA) has completed the reviewed of the August 13, 1993 letter submitted by HGCL on behalf of the Tutu Wells Site Technical Group presented by the following companies: 1) Ramsay Motors, Inc., 2) Texaco Caribbean, Inc., 3) Western Auto, Inc., 4) Four Winds Plaza Partnership, 5) Andreas Gal & Paul Lazare, 6) L'Henri, Inc., and 7) Esso, S.A..

This letter addresses the Group's comments on Technical Memorandum II (prepared by Geraghty and Miller for the Tutu Environmental Investigation Committee - TEIC, as required by the Administrative Order on Consent with EPA) and offers recommendations for the remedial investigation (RI) of the Tutu Site in St. Thomas, U.S.V.I.

This HGCL letter does not offer many specific comments on Technical Memorandum II, other than to states that in reference to Technical Memorandum II, "some conclusions are not supported by information presented in this report" and that "the data provided in Technical Memorandum II and data collected by the recommended work will not be sufficient for a complete RI". The letter then provides a list of data objectives which the Technical Group believes must be addressed by the RI and suggests work which it feels must be completed prior to any additional field work. The Group then suggests specific field work it would like included in the upcoming field season and recommends additional work it believes is required for a complete RI.

TUT 006 1364

Comments on Section A: General Comment by PRP Group Concerning Geraghty & Miller Technical Memorandum II

As stated in the Revised Technical Memo II report dated May 1993, the purposes of the Technical Memo II are to evaluate the adequacy of the monitoring wells system and to develop recommendations regarding sampling and analytical procedures for the second round of ground-water sampling and if additional field works need to be implemented prior to the finalization of the RI.

EPA agrees that conclusions should not be drawn in Technical Memorandum II Report without reviewing all existing data. EPA also agrees that it is not the intent of this report to make definite conclusions except to the extent that the conclusions support specific recommendations regarding future field work.

Comments on Section C: Suggested work elements which need to be conducted prior to any additional field work towards a Remedial Investigation.

We would hope that the Technical Group (which also presented by Texaco and Esso) has not done this already. EPA agrees that it would be useful to have a compilation of all available background materials. Much of the information requested here (bibliography of site information, computerized database of chemical data, computerized base map, summary of lithologic logs and well completion diagrams) should already have been compiled by Texaco's and Esso's contractor, Geraghty and Miller, for the TEIC investigation. The newly identified potentially responsible parties (PRPs) and L'Henri must provide data not previously available to EPA or TEIC concerning their own independent investigations. The Technical Group must designate a contractor who will perform the compilation of this information.

EPA strongly recommends that the database should be compile by the Group and for the Group to reach a consensus identifying data gaps and additional required field work by October 1, 1993.

Comments on Section D: Work elements required as part of a Remedial Investigation to be incorporated into field work currently scheduled to be performed in 1993

1. Survey all wells to a common datum; establish a site coordinate system.

This has probably already been done by Geraghty and Miller. The Group should share any additional information with each other and establish one site coordinate system.

2. Those monitor wells where analytical results were compromised due to elevated detection limits, or where other problems have affected analyte identification should be re-sampled. Detection limits must equal or surpass drinking water standards for the analytes of concern.

EPA agrees problem wells should be resampled, and they will be in the upcoming season. EPA also agrees that low-concentration

methods are necessary to determine if groundwater samples meet drinking water standards. However, EPA disagrees that low-concentration methods should be used in all cases. Low-concentration methods are appropriate at locations where low levels of contamination are expected. Wells in the heart of the plume, such as MW-5 on the Tillet property have high concentrations of organic compounds. High concentration samples are difficult to analyze using low-concentration methods because they must be diluted until the concentrations are within the sensitivity range of the instrument. This results in significantly elevated detection limits, which can mask the presence of many compounds. This issue was discussed with TEIC during review of their work plan, where it was decided to use low-concentration methods only after the first groundwater sampling round, and then only in wells near or beyond the plume edge to better define the plume boundary. Low-concentration analyses will also be required to ascertain the effectiveness of remediation (whether point-of-use or aquifer treatment is selected), once implemented.

3. A single-event water quality analysis program should be performed on all wells in the area. Field analysis of dissolved oxygen and dissolved carbon dioxide should be included in this program. Samples for analysis of known or suspected contaminants should be collected and these data used to determine protocol for future regular sampling as needed.

EPA agrees that all available wells should be sampled in a single round. EPA and Geraghty and Miller had previously agreed that chemical data from all TEIC monitor wells and accessible public supply wells would be considered together in the RI to determine the nature and extent of the groundwater plume. The Group must ensure that it makes other wells (installed by L'Henry and Caribbean Hydrotech etc.) available for the second round of groundwater sampling.

The Group has not made clear whether it is requesting conventional water quality parameters, such as total dissolved solids, nitrates, sulfates, chlorides, etc. be analyzed along with the target compound list of organic contaminants. Such analyses could certainly be incorporated into the upcoming field work. Field analyses of dissolved oxygen and dissolved carbon dioxide could be performed at the same time as sampling for laboratory analyses. The field determination of Eh and the oxidation state of iron (+2 or +3) would also provide information to determine whether the groundwater conditions are aerobic or anaerobic.

4. Additional shallow and deep wells are necessary to fully define the pattern of groundwater contamination. However, we strongly urge that the items listed in section C must be completed before any additional field work is done....

Modifications to locations recommended by G&M

MW-15: The proposed location [on the Ramsay property] should be moved approximately 50 feet west-northwest to ensure that the well does not lie close to locations of documented releases.

EPA disagrees. The purpose of the well is to monitor immediately

downgradient of a suspected source area. The location should stay where it is or be moved south towards the Antilles fence to meet the objectives of a different request (see below).

MW-16: Approved by the Technical Group providing proposed underground storage tank removal does not jeopardize the integrity of the well.

EPA agrees.

Examples of additional wells that may be useful

The Group offered to provide justification for these locations upon EPA request. Justifications should have been provided in the August 13, 1993 letter to EPA. EPA does not believe all the wells are necessary.

a) An additional shallow well equidistant between MW-9 and proposed MW-18 to further define the downgradient extent of the petroleum hydrocarbon plume.

EPA believes that wells MW-10S and CHT-2 should adequately meet this objective without the installation of another well.

b) A well 100 feet north-northeast of MW-2 on the O'Henry property.

EPA does not know where O'Henry's MW-2 is located or whether the proposed well is to be shallow or deep. Further details and justification must be provided to evaluate this location. However, this information should have been supplied to EPA with the August 13 proposal and it does not justify delaying the next field event. If the information is submitted to EPA prior to the field event, a proper determination can be made with regard to this request.

c) A well 300 feet due east of MW-7 and one 200 feet due east of MW-10 and MW-10D, adjacent to Highway 382.

These locations are apparently suggested to define the eastern boundary of the plume. It is true that the eastern limit of the plume is not well defined at present. However, EPA does not believe these wells are essential for two reasons:

1) The steep valley topography controls surface flow as well as natural (non-pumping) groundwater flow and these locations are topographically and hydraulically upgradient of any suspected sources.

2) The bedrock fracture system ultimately funnels groundwater contamination to the valley axis (under non-pumping conditions) and the supply wells in this part of the valley are also situated close to the valley axis. Control and/or treatment of the groundwater plume will therefore be concentrated in the valley axis. It is not critical to the RI or any of the probable remedies to obtain more information from these proposed locations.

d) Several wells should be installed down-gradient of the Harvey well.

EPA agrees. The eighth round of supply well sampling (March/April 1993) shows detectable chlorinated compounds in groundwater at the LaPlace, Smith and Steele supply wells. Additional wells are warranted south-southeast of the O'Henry property between these wells and the Harvey well and within the Turpentine Run immediately south-southeast of these wells to determine the downgradient extent of the chlorinated plume. This could not be adequately determined in the TEIC investigation, which necessarily was conducted in closer proximity to the Texaco and Esso service stations.

e) A well should be installed at the fence line between Ramsay Motors and Antilles Motors directly south of the original proposed location of MW-15.

EPA believes that this objective as well as the original objective of MW-15 (to sample downgradient of the drums and reported spill area) could be met by moving MW-15 slightly south of its proposed location.

5. The Group stated that it could not comment on the additional soil boring locations suggested by G&M without the completion of the items included in Section C.

To our knowledge, G&M has not proposed any additional soil borings, only monitoring wells and piezometers.

6. An evaluation of contaminant migration pathways arising from sanitary and storm sewers is necessary. The potential for these features to act as sources has not been investigated; therefore appropriate measures should be taken to examine the potential for these sources.

The Technical Group should submit a proposal detailing exactly what it proposes for this investigation. This proposal should include the justification for determining this investigation is relevant, a detailed scope of work, schedule of implementation and an explanation of who will perform the work. This proposal must be submitted to EPA by October 1, 1993.

Comments on Section E: Preliminary recommendations for additional work required for a complete RI

1. Complete additional soil vapor surveys and obtain additional soil samples as necessary to define extent and magnitude of unsaturated zone contamination at each potential source area.

Based on information already available, EPA believes that sufficient data has been collected to reasonably identify the sources of groundwater contamination. In order to justify the need for additional soil vapor surveys and soil samples, the Group would have to provide the rationale for specific sampling points and the benefit of the information as it relates to the groundwater contamination.

2. Agree to a single sampling and analysis protocol (including Data Quality Objectives) for the RI and any sampling conducted for subsequent interim remedial actions, tank removals, etc....

This has been done as far as possible in the TEIC RI conducted to date. Now that the scope of the investigation has expanded, it is the responsibility of the Group to ensure that newly obtained data is standardized.

3. Obtain quarterly water level measurements on all wells identified in the area.

Based on previous experience, it will be difficult to obtain measurements in some of the supply wells fitted with pumping equipment. However, it is true that more rounds of water level measurements using all PRPs and supply wells should be collected in an effort to identify and evaluate the effects of pumping of local supply wells.

4. Develop adequate conceptual models of the hydrogeologic system, contaminant distribution, contaminant transport pathways and controlling fate mechanisms.

This was always the intent of the RI. It was not the intent of Technical Memorandum II. Based on the failure of the G&M aquifer test to adequately stress the aquifer, however, additional pumping test data will be needed to meet this objective. The existing Caribbean Hydrotech aquifer tests should be evaluated to this end.

I will be on maternity from September 7, 1993 till September 27, 1993. Please direct your questions to Andrew Praschak in the interim.

Sincerely yours,

Caroline Kwan
Project Manager
New York/Caribbean Superfund Branch II

cc: Anna Gloria Ramos- TEIC Coordinator
Andrew Praschak- EPA/CFO
Sally Odland- CDM-FPC