TECHNOLOGY SECTION

Department of Environmental Conservation

Division of Hazardous Waste Remediation

Tennessee Gas Pipeline Co. Compressor Station 245 Site

Site Number 6-22-015
Town of West Winfield
Herkimer County, New York

Record of Decision

March 1995

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* MICHAEL D. ZAGATA, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

TENNESSEE GAS PIPELINE COMPANY
COMPRESSOR STATION 245
Town of West Winfield, Herkimer County, New York
Site No. 622015

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Tennessee Gas Pipeline Company Compressor Station 245 inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Tennessee Gas Pipeline Company Compressor Station 245 Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Tennessee Gas Pipeline Company Compressor Station 245 and the criteria identified for evaluation of alternatives the NYSDEC has selected excavation and landfilling for PCB contaminated soils, filling a contaminated drainline with cement grout, and removing sediments from that drainline's manholes for disposal. The components of the remedy are as follows:

- Soils containing 25 ppm of PCB or more will be excavated. Those soils containing 50 ppm or greater of PCB will be disposed of in a TSCA landfill. Soils containing at least 25 ppm but less than 50 ppm of PCB will be disposed of in a landfill permitted to accept such waste.

- A drainline will be filled by injection of a cement grout. Any sediment found in the manholes along the drainline will be removed and disposed of by the same method as PCB contaminated soils.

- Programs will be developed to provide long term groundwater monitoring, perform operation and maintenance, control public access and limit worker exposure.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the statutory preference for remedies that reduce toxicity, mobility, or volume as a principal element.

3/31/95
Date

Michael J. O'Toole, Jr., Director
Division of Hazardous Waste Remediation

TABLE OF CONTENTS

SECTION 1: SITE LOCATION AND DESCRIPTION

Tennessee Gas Pipeline Company's (TGPL) Compressor Station 245 (Site # 622015) is located in the Town of West Winfield, Herkimer County. The 97 acre station is in a rural area along Burgess and Woods Corners Roads, approximately 1 mile southeast of West Winfield, New York (see Figure 1). There are primarily farms and fields to the west and east of the site, wetlands and woods to the north, and residences and woods to the south. The nearest residence is 100 feet south of the station.

The station itself consists of a compressor building, auxiliary building, shop building, pipeline warehouse, meter building, equipment garage, office building and radio tower (see Figure 2).

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

Prior to 1972 — An oil containing polychlorinated biphenyl (PCB) was used in the lubricating system of the starting air compressors at the station. The associated compressed air system included blowdown points where condensed water containing the lubricating oil was discharged onto the ground or into floor drains.

June 1988 — TGPL conducted a sampling program which determined that PCB was present and had been released to the environment. TGPL notified the proper authorities, including NYSDEC.

May 1989 — TGPL conducted additional sampling which revealed PCB contamination in station drainageways.

2.2: Remedial History

Dec. 1988 — A Preliminary Site Assessment was conducted resulting in the recommendation that a Remedial Investigation and Feasibility Study (RI/FS) be conducted at this site.

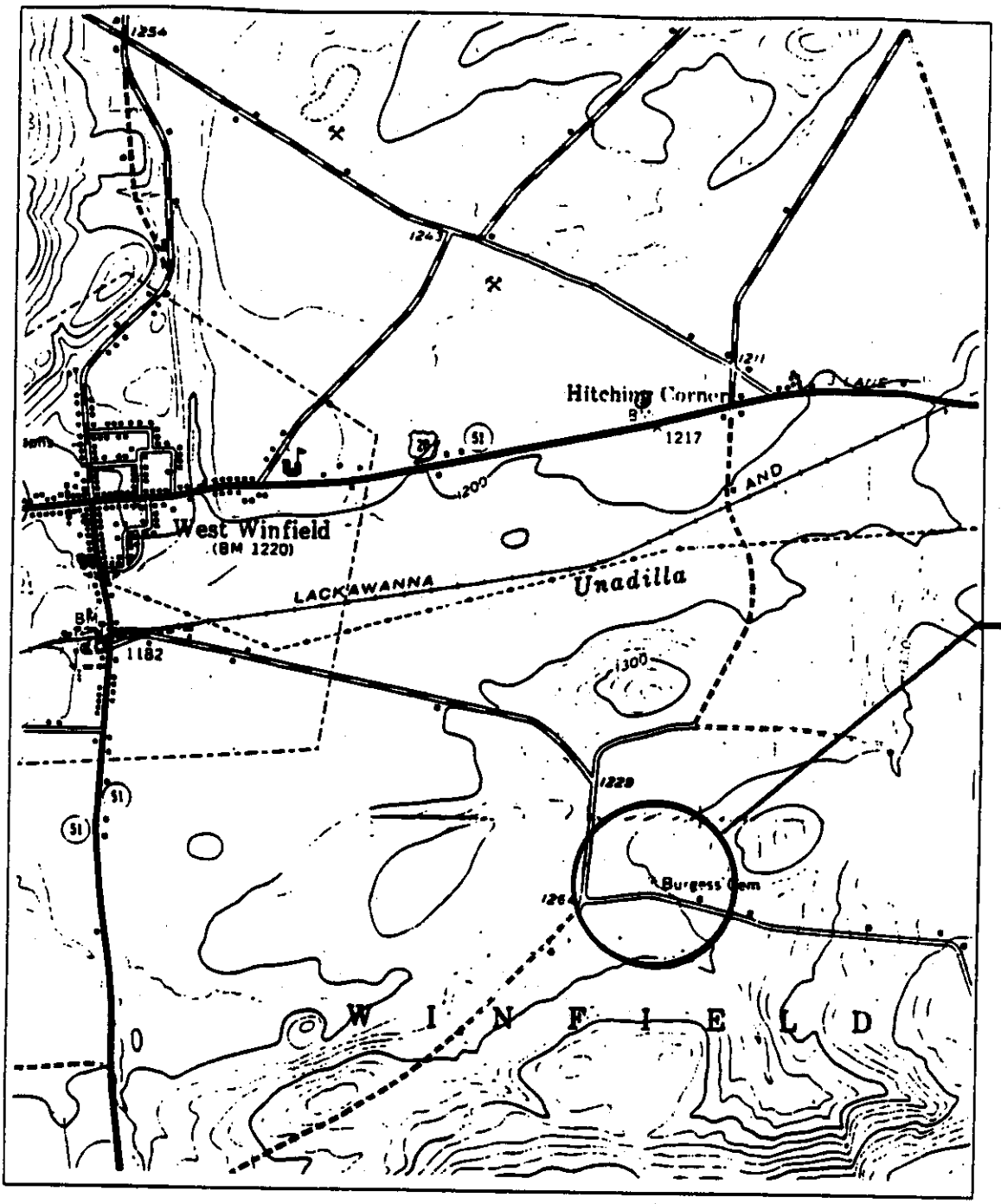
SECTION 3: CURRENT STATUS

The NYSDEC and TGPL entered into an Order on Consent on January 23, 1991 which required TGPL to conduct a Remedial Investigation/ Feasibility Study (RI/FS) to address the contamination at the site.

3.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

The RI was conducted in 2 phases. The first phase was conducted between October 1990 and April 1991. Additional investigations were conducted in 1992 to test manhole sediments, and August 1993 to



Source: USGS Topographic Series, West Winfield, New York 7.5 min Quadrangle 1943, and Unadilla Forks, New York Quadrangle 1943.

ENVIRON Counsel in Health and Environmental Science	SITE LOCATION MAP STATION 245 WEST WINFIELD, NEW YORK	Figure 1
DRAFTED BY: HFZ | DATE: 7/9/93		1119AS01

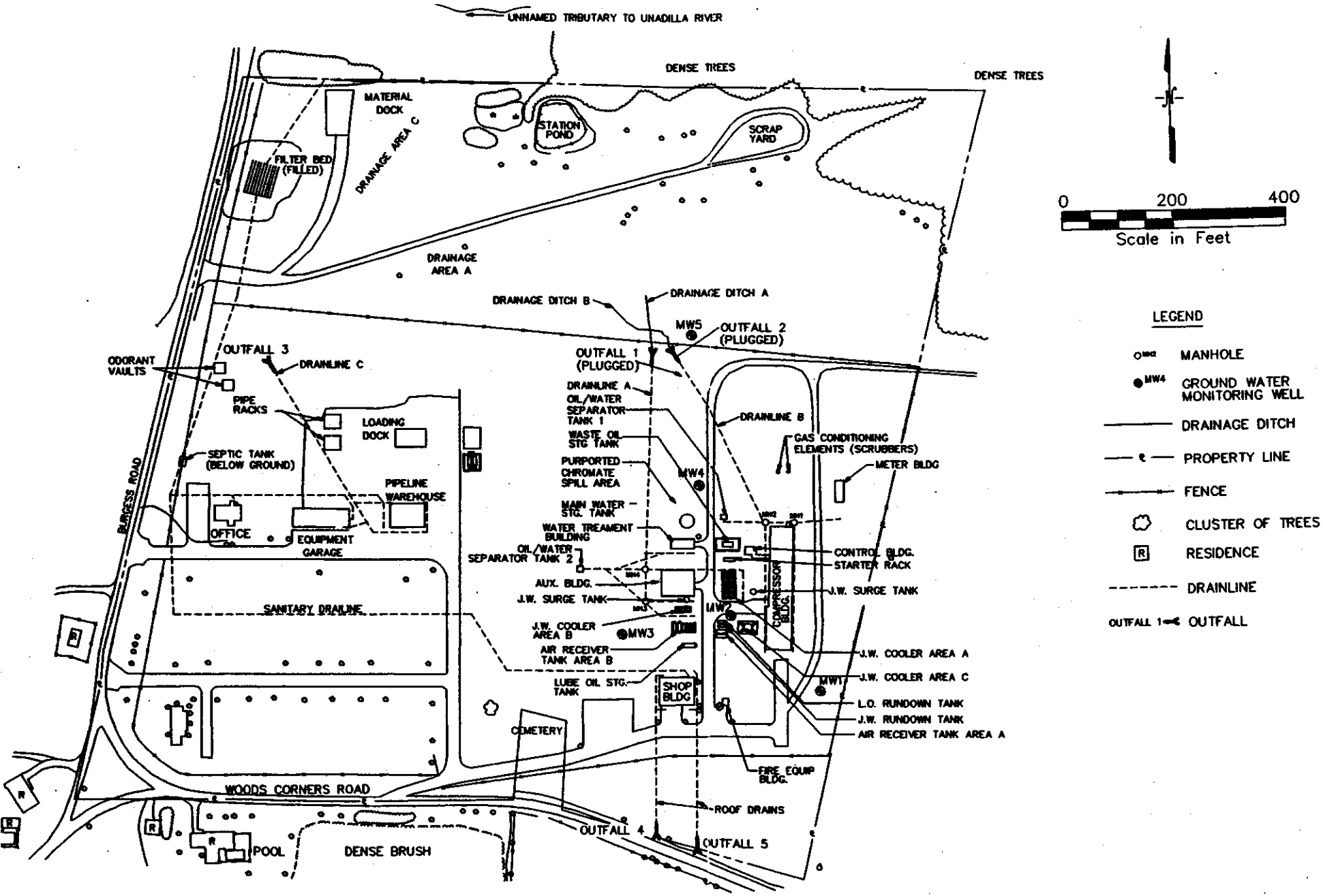


FIGURE 2

SITE PLAN

TENNESSEE GAS PIPELINE COMPANY, COMPRESSOR STATION 245

WEST WINFIELD, NEW YORK

determine the extent of contamination in subsurface soils adjacent to the drainlines known to carry PCB. Reports entitled ***Remedial Investigation - Tennessee Gas Pipeline Company Compressor Station 245 at West Winfield, New York*** and ***Investigation of Soils Adjacent to Drainlines - Tennessee Gas Pipeline Company Compressor Station 245 at West Winfield, New York*** have been prepared describing the field activities and findings of the RI in detail. A summary of these reports follows:

The RI activities consisted of the following:

- *A area grid sampling program to screen the soils of the entire station property for the presence of PCB*
- *Discrete sampling of surface soils in areas known or suspected to contain PCB*
- *Sampling of the station pond and lake, manhole, and oil/water separator sediments*
- *Sampling of surface water from the station pond and lake*
- *Installation of soil borings and monitoring wells for subsurface soil and groundwater sampling as well as information on the physical properties of soil and hydrogeologic conditions.*
- *Excavations to expose drainlines so soils beneath the drainline could be sampled for PCB analysis.*

The analytical data obtained from the RI was compared to Applicable Standards, Criteria, and Guidance (SCGs) in determining remedial alternatives. Groundwater, drinking water and surface water SCGs identified for the TGPL Compressor Station 245 site were based on NYSDEC Ambient Water Quality Standards and Guidance Values, and Part V of NYS Sanitary Code. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals for soil.

Based upon the results of the remedial investigation, in comparison to the SCGs and potential public health and environmental exposure rates, the following areas and media of the site require remediation for PCB contamination:

- Soils in the Outfall 1 and 2/Drainage Ditch A and B areas, located in the north-central portion of the site (Figure 2), which contain PCB at levels that are of potential concern. One sample location exhibited concentrations of PCB in soil of 52,000 ppm with 11 other locations in these areas exhibiting greater than 1000 ppm of PCB. A small area of chromium contamination exists at Outfall 2; however, those soils will be addressed during the PCB remediation so no additional action is required.

- The Air Receiver Tank (ART) Area A, where soils in one location exhibited 1600 ppm of PCB contamination. Only two other locations in this area exhibited contamination in excess of 50 ppm.

- Soils in the Air Receiver Tank Area B, which tested positively in 45 locations with a 9500 ppm maximum. One other location exhibited contamination over 500 ppm and 6 more locations contained between 100 and 500 ppm of PCB.

PCB was found in neither groundwater nor station pond and station lake sediments, nor any off-site location.

A small area containing elevated concentrations of chromium in soils was found at the outfall of Drainline B. These soils will require remediation for PCB contamination so no additional work is required. Soils in the Jacket Water Cooler A area contained chromium at concentrations slightly above background levels (up to 450 ppm of total chromium). These levels are not above a level of concern for this type of restricted access, non-erodible area.

3.2 Interim Remedial Measures:

An Interim Remedial Measure (IRM) was conducted at the site based on findings as the RI progressed. An IRM is implemented when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

In July of 1993 TGPL agreed under an Order on Consent with NYSDEC to conduct an IRM to remove residual PCB contamination from the stations compressed air system. The air lines were flushed with a solvent which was recovered and properly disposed. Work was completed in September of 1993.

3.3 Summary of Human Exposure Pathways:

The human exposure pathways identified for this site are dermal contact with soils containing PCB and ingestion of those soils. The potential receptors for dermal exposure would be station employees and visitors. Since contamination is confined to areas within the station fence, no significant exposure route for area residents exists. No contamination of groundwater has been detected and thus there are currently no health concerns associated with the groundwater. The concentration of chromium in soils in the vicinity of Jacket Water Cooler A is not of concern for an area of this type (restricted aecess, non-erodible).

Both the soils containing chromium and those containing concentrations of PCB below the cleanup level will be covered with sod or pavement.

3.4 Summary of Environmental Exposure Pathways:

The primary exposure pathway for PCB is to terrestrial biota. However, the site's current use precludes any significant numbers of organisms becoming contaminated because of the low quality of the habitat currently on the site. Given this, no significant exposure to wildlife is expected.

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and the Tennessee Gas Pipeline Company entered into a Order on Consent on January 23,

1991. The Order obligates the responsible party to implement a RI/FS only remedial program. NYSDEC has begun negotiations with the PRP to implement the selected remedy under an Order on Consent.

The following is the chronological enforcement history of this site.

Date	Index No.	Subject of Order
1/23/91	D0-0000-8903	RI/FS
7/19/93	A4-0302-93-06	IRM - air piping

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. These goals are established under the guideline of meeting all standards, criteria, and guidance values (SCGs) and protecting human health and the environment.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- *Reduce, control, or eliminate the contamination present within the soils on site.*
- *Eliminate the threat to surface waters by eliminating any future contaminated surface run-off from the contaminated soils on site.*
- *Eliminate the potential for direct human or animal contact with the contaminated soils on site.*

In order to reach these goals for PCB, the contaminant of concern at this site, NYSDEC has established a cleanup level of 25 ppm for soils, all of which are or will be restricted access and non-erodible.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the TGPL Station 245 site were identified, screened and evaluated in a three-phase Feasibility Study. This evaluation is presented in the report entitled Revised Feasibility Study, Tennessee Gas Pipeline Company Compressor Station 245 at West Winfield, New York dated August 10, 1994. A summary of the detailed analysis follows.

6.1: Description of Alternatives

The potential remedies are intended to address the contaminated soils and drainlines at the site.

Drainline Remediation Alternatives

The following alternatives are considered for 1,110 feet of Drainline A that may contain PCB contaminated sediment. Previously, these drainlines were taken out of service and plugged with concrete at the outlet. Other than the no further action alternative, the estimated cost figure does not include long term monitoring. The combined long term monitoring present worth cost for drainlines and soils is estimated to be $ 100,000.

Alternative D-1: No Further Action

Monitoring Cost: $ 100,000 (total monitoring cost for drainlines and soils)

The no further action alternative is evaluated as a procedural matter and as a basis for comparison. This alternative recognizes the remediation of the site completed under the previously completed IRM. It requires continued monitoring only, to evaluate the effectiveness of the remediation completed under the IRM.

Alternative D-2: Fill With Grout

Cost: $ 83,100

This alternative involves injecting concrete grout material into the drainline system via injection pits and manholes, ultimately filling the pipes and manholes with the mixture. This action would contain PCB sediments between the concrete and the drainline, thereby preventing the migration of PCB materials into or out of the drainlines.

Alternative D-3: Manhole Cleaning

Cost: $ 14,500

The manhole cleaning alternative involves cleaning out any sediment deposits or debris from the two manholes in Drainline A. Sediment would be disposed of or treated in a manner similar to that used for PCB bearing soils. A plug in Drainline A would be left in place to reduce the potential for the mobility of any remaining PCB-bearing materials.

Alternative D-4: Flush and Cap

Cost: $ 175,000

Under this alternative, drainlines would be flushed with high pressure water to remove any loose sediment or debris and manholes would be emptied and washed. The drainline would be inspected by video cameras both before flushing to check for breaks, cracks or leaks that could allow a release of drainline sediments, and after flushing to evaluate its effectiveness. All flush water and sediment generated during these cleaning activities would be treated or disposed of properly. If leaks exist but are not detected by video cameras, this alternative could exacerbate existing conditions by flushing PCB containing sediment out of the drainline into the surrounding soils.

Alternative D-5: Excavation and Treatment/Disposal

Cost: $ 234,000

This alternative involves excavating the soils above the drainline and removing the drainline. The accessible manholes associated with the drainlines would also be removed. The drainlines removed under this alternative would be cleaned for reuse, disposed of in a landfill, treated by an applicable technology (e.g. solidification), or tested to determine other appropriate disposal options. As the pipe is cut and removed, any liquids inside the pipe would be contained, analyzed for PCB, and disposed of properly. Due to the number of buried high pressure gas lines and related piping currently in use within the station fence, excavation of much of the drainline located there is not feasible.

As part of this alternative, approximately 200 feet of drainlines that have been designated inaccessible to excavation and remediation would have to be addressed with one of the other remedial actions.

Soil Remediation Alternatives

The following alternatives, using soil cleanup levels of 25 ppm for PCB contaminated soils in restricted access areas if erodible areas are covered with sod or asphalt, result in an estimated 1966 tons of soil to be remediated. Other than the no further action alternative, the estimated cost figure does not include long term monitoring. The combined long term monitoring present worth cost for drainlines and soils is estimated to be $ 100,000.

Alternative S-1: No Further Action

Monitoring Cost: $ 100,000 (total monitoring cost for drainlines and soils)

The no further action alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative recognizes the remediation of the site completed under the previously completed IRM. It requires continued monitoring only, to evaluate the effectiveness of the remediation completed under the IRM.

Alternative S-2: Capping and Containment

Cost: To Be Determined Based on Area Required

This Alternative is proposed as a contingency alternative for soils that cannot be safely remediated under the selected remedy. The locations where capping is appropriate may not be identified until remedial actions begin. However, based on the information currently available the area beneath the air receiver tanks may be the only area at this station where this contingency may be required. Construction drawings indicate that these tanks are supported by concrete spread footings that extend 48" below grade. Therefore excavation below these footings could create structural stability problems with the Air Receiver Tank assembly. Consequently, if it is found that PCB contamination above cleanup levels exists below the 48" depth in the vicinity of the footings, the excavation will be backfilled with clean soils and then capped as discussed in the next paragraph.

Covering PCB contaminated soils with a low permeability cap (clay, asphalt, concrete or synthetic membrane) would result in reduced surface and subsurface migration of PCB. Long term monitoring and maintenance will be required if a significant volume of PCB-bearing soils were left in place.

Alternative S-3: Solidification

Cost: $ 979,000

Under this alternative all PCB-bearing soils exceeding the cleanup goal would be excavated. The soil would then be mixed in an aboveground reactor with cement based materials, fly ash and water and allowed to solidify in forms. The final solidified mass would be either redeposited in the excavated area or placed in a selected disposal area onsite.

Alternative S-4: Thermal Desorption

Cost: $ 1,925,000

The thermal desorption alternative would involve the excavation and stockpiling of the PCB contaminated soils. The soils would then be heated in a thermal desorption unit causing PCB to volatilize. The vapor stream would then be condensed or adsorbed onto solvents to remove PCB. Condensed PCB or PCB-sorbed solvents would require disposal, most likely by off-site incineration. The treated soils would then be redeposited in the excavated area.

Alternative S-5: Off-site Incineration

Cost: $ 4,304,000

All soil exceeding the remedial goal would be excavated and transported off-site to an incinerator permitted under 40 CFR 761.70 for treatment of PCB bearing soil and sediments. The excavated area would be backfilled with clean fill.

Alternative S-6: Off-site TSCA Landfill

Cost: $ 1,223,000

Under this alternative all soils exceeding the remedial goal would be excavated and transported to a landfill that complies with 40 CFR 761.75 (a TSCA landfill) for disposal. The excavated area would be backfilled with clean fill.

Alternative S-7: Off-site TSCA and Industrial Landfills

Cost: $ 1,121,000

All soil containing 50 ppm or more of PCB would be excavated and disposed of in a TSCA landfill as in Alternative S-6. However, soils exceeding the remedial goals but containing less than 50 ppm of PCB

would be excavated and disposed of in an off-site landfill permitted to accept such material. The excavations would then be backfilled with clean fill.

6.2 Evaluation of Remedial Alternatives .

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

Drainlines

While no SCGs deal specifically with drainline sediments, the potential threat posed by these sediments would be similar to that posed by subsurface soils. The SCG for subsurface soils is normally 10 ppm. However, at this site, due to a combination of factors unique to this location, TGPL has requested and NYSDEC granted a cleanup level of 25 ppm. Alternative D-1 would not meet this cleanup level. Alternative D-2 would likewise fail to meet the cleanup level, but would greatly reduce the mobility of the PCB sediments. Alternative D-3 would meet the cleanup level for the manholes but not for the drainline itself. Alternative D-4 may be able to meet cleanup level, however, if drainline breaks or cracks exist and are not detected by in-line video, this alternative could fail to meet cleanup level if the flushing mobilized PCB sediments out of the drainline into the surrounding soils. Alternative D-5 would meet cleanup level, but much of the drainline is inaccessible due to the proximity of high pressure gas lines. Therefore, for some areas within the station fence the cleanup level of 25 ppm for drainlines is impracticable for any of the alternatives.

Soils

Alternatives S-1 and S-2 would not meet SCG's because PCB above the cleanup level of 25 ppm would be left on site. Alternatives S-3, S-4, S-5, S-6, and S-7 could all meet SCG's.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Drainlines

All four alternatives are largely protective of human health and the environment, however, under three of the alternatives a small element of risk remains. Alternative D-1 and D-3 are the least protective of the alternatives. PCB contaminated sediments would be left in the drainline where they could potentially

leak to surrounding soils. This would present a risk of groundwater contamination or human contact if subsequent excavations expose contaminated soil.

Alternative D-2 could present the same hazards as Alternative D-1. However, these hazards are considered much less likely because the cement grout would prevent groundwater from entering and flowing within the drainline to a break or crack.

Alternative D-4 would also present the same hazards as Alternative D-1 if undetected leaks allowed PCB to escape the drainline during flushing.

Alternative D-5 would be effective at protecting human health and the environment because all PCB in the drainline would be removed. However, some areas are not accessible to this alternative.

Soils

Alternative S-1 would not be protective of human health and the environment because PCB would not be removed from the site. Alternative S-2 would be somewhat more protective because the potential for contact with or migration of PCB would be reduced, though still present. Alternatives S-3 through S-7 would be protective of human health and the environment.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared with the other alternatives.

Drainlines

Aside from the risk of drainline flushing causing leakage in alternative D-4, all of the alternatives would meet short term effectiveness criteria. Short term impacts from excavation activities (e.g., fugitive dust, soil erosion) could be mitigated through engineering controls. Excavation would require a slightly longer implementation time than the other alternatives.

Soils

All alternatives would be effective in the short term with minimal, easily controlled adverse impacts. Implementation time would be similar (less than 3 months) for all alternatives.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

Drainlines

Alternatives D-2, D-4, and D-5 would be effective at eliminating discharges of PCB from the drainlines in the long term, although only D-4 and D-5 are permanent and irreversible. Alternative D-1 entails the long term risk of additional drainline degradation and the subsequent leaking of PCB containing sediment.

Soils

Alternative S-1 would not be effective in the long term because no treatment of waste is proposed. Alternative S-2 would reduce the mobility of the PCB, however PCB above cleanup goals would remain on site. This alternative would not be permanent and irreversible. Maintenance for the cap would be required. All other alternatives would be very effective and permanent as no untreated PCB above cleanup levels would remain on site unless the soils could not be safely removed.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Drainlines

Alternative D-2 would reduce the mobility of the PCB in the drainline. Alternatives D-4 and D-5 would reduce either the toxicity or the mobility of the PCB, depending on the method of disposal selected for the removed material. Alternative D-3 would also reduce the toxicity or mobility of the PCB, depending on treatment method, but only for the PCB soils within the manholes. Neither Alternative D-1 nor D-3 would decrease the toxicity, mobility or volume of the PCB sediments in the drainlines.

Soils

Alternative S-1 would have no effect on the toxicity, mobility, or volume of the PCB. Alternatives S-2, S-6 and S-7 would reduce the mobility of the PCB by placement beneath a low permeability cap (on-site for Alternative S-2, at the off-site landfill for Alternatives S-6 and S-7). Alternative S-3 would reduce mobility by solidification. Alternatives S-4 and S-5 would result in the destruction of PCB thus reducing toxicity and volume.

6. Implementability. The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc..

Drainlines

All the alternatives are readily implementable with commonly available equipment and personnel. As previously discussed Alternative D-5 is not implementable for much of the drainline length within the fence due to adjacent underground piping currently in use.

Soils

Alternatives S-4 and S-5 may result in minor equipment delays. Considerable administrative coordination would be required for Alternatives S-3, S-5 and S-7. Somewhat less administrative coordination would be required for Alternatives S-2 and S-4. The other alternatives would require minimal administrative coordination and would result in few, if any, delays

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision.

Drainline Alternative D-1, no further action, has no cost other than monitoring. Drainline Alternatives D-2, grouting, D-3, manhole cleaning, D-4, flushing, and D-5, excavation, would cost $83,100, $14,500, $175,000, and $234,000 respectively.

Soil Alternative S-1, no further action, also has no cost other than monitoring. The cost for Alternative S-2, capping, cannot be determined until the area(s) requiring the cap, if any, are defined. Alternative S-3, solidification, S-4, thermal desorption, and S-5, incineration, would cost $979,000, $1,925,000, and $4,304,000 respectively. The two landfilling alternatives, S-6 and S-7, would cost $1,223,000 and $1,121,000 respectively.

The long term monitoring costs for soils and drainlines will add an estimated combined total of $ 100,000 to the cost of these alternatives.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is focused upon after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. A "Responsiveness Summary" will be prepared that describes public comments received and how the Department has addressed the concerns raised. The final remedy selected does not differ significantly from the proposed remedy.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC is selecting Alternative D-2, grouting, as the remedy for Drainline A and Alternative D-3, manhole cleaning, as the remedy for Drainline A manhole sediments. Alternative S-7, off-site TSCA and 6 NYCRR Part 360 landfill disposal, is selected as the remedy for soils for this site. If necessary, areas that cannot be safely excavated will be capped.

Drainlines

Drainline grouting is selected for Drainline A because: (a) excavation is not easily implementable due to the presence of buried high pressure gas lines in the area, (b) it is considered the most protective and least

uncertain of the remaining four alternatives and (c) station workers are the only people with access to this area and TGPL can control that access to prevent human exposure. Manhole cleaning is selected for Drainline A manholes because it is the most protective remedy for manhole sediments and can be easily implemented. .The no further action alternative would not be protective of human health and the environment and flushing entails the risk of mobilizing the PCB into the soils surrounding the drainlines.

Soils

Off-site TSCA and industrial landfill disposal is selected because Alternatives S-1 and S-2 would not meet SCGs. Alternatives S-3, S-4 and S-5 are no more protective than Alternative S-7 and entail much greater costs. Alternative S-6 is also no more protective than Alternative S-7 and is incrementally higher in cost. In the event that soils above cleanup levels are found to be inaccessible, capping will be used in those areas as it is the only feasible alternative to inaccessible soils.

The estimated cost to implement the Drainline A grouting remedy is $ 83,100 and manhole cleaning cost is estimated to be $ 14,500.

The estimated present worth cost to implement the remedy for soils is $1,121,000.

The estimated, combined present worth cost for long term monitoring of drainlines and soils is $100,000.

The elements of the selected remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Uncertainties identified during the RI/FS will be resolved.

2. Drainline A will be filled by injection of a cement grout. Any sediment found in Drainline A manholes will be removed and disposed of by the same method as PCB contaminated soils.

3. Restricted access soils with PCB concentrations at or above 25 ppm will be excavated. Soils above 50 ppm of PCB will be sent to a TSCA landfill and soils with PCB concentrations from 25 to 50 ppm will be sent to a permitted landfill.

4. A long term groundwater monitoring program will be developed and an additional monitoring well installed. Detection of PCB in groundwater would result in a reevaluation of the selected remedy.

5. An operation and maintenance program will be developed which will address all aspects of site maintenance with special emphasis on monitoring and maintenance of groundwater, surface water, soil erosion, excavation and placement of PCB contaminated soils on or off site, abandonment of the site and change of ownership. Any serious problems detected would cause a reevaluation of the selected remedy.

6. TGPL will be required to control public access and limit employee exposure.

7. A statement will be entered in the deed for the property referencing the existence of a Remedial Design/ Remedial Construction Consent Order, once the order is finalized.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

The public meeting held to describe the findings of the RI/FS, solicit comments, and answer questions from the public was held on March 3, 1995 at the Mount Markhim Central High School in West Winfield, New York. A number of questions and comments were presented by the members of the public attending the meeting. These comments are listed in the responsiveness summary (see Appendix A) along with the responses from NYSDEC and NYSDOH.

Public concerns raised at the meeting centered on whether the TGPL managed investigation was unbiased, concerns as to whether the proposed drainline grouting is protective, and the existence of additional drainlines that do not appear on the station map and were not sampled.

NYSDEC's and NYSDOH's role of oversight to ensure an unbiased investigation was explained. The manner in which drainline grouting prevents PCB migration by eliminating the mechanism of transport (i.e. water flow in the drainline) was also described.

In response to the public comments, sampling of sediment in those drainlines outfalls not previously identified and sampled will be conducted. In addition, the site will be inspected by TGPL and NYSDEC/NYSDOH for any additional drainline outfalls that were not previously known. A review of the proposed drainline alternative revealed that grouting and removal of manhole sediments is still the most protective of the feasible alternatives.

Given the above there were no comments of sufficient significance to warrant changing the selected remedies.

APPENDIX A

Responsiveness Summary

Comments from the Public Meeting

1. Is the groundwater safe to drink?

Response: No PCB or other hazardous contaminants were detected in any of the groundwater samples other than background concentrations of inorganics.

2. Tenneco and their consultants apparently conducted the entire investigation themselves. How do we know that it was an independent investigation?

Response: TGPL did finance the investigation. However, the Remedial Investigation was a cooperative effort between TGPL, NYSDEC and NYSDOH. TGPL did not conduct the investigation without regulatory input. NYSDEC and NYSDOH reviewed and commented on TGPL's proposed work plan to ensure it was thorough and technically sound. NYSDEC conducted oversight of field work and took split samples to verify the results of the samples taken by TGPL's consultant.

3. How do we know we're getting a fair investigation?

Response: The investigation was overseen by NYSDEC. Residential well sampling was conducted by NYSDOH, not TGPL, in the 1980's and again recently on request.

4. I'm not in agreement with the way the investigation was conducted.

Response: We would welcome any suggestions you might have to improve the current system.

5. Has NYSDEC and NYSDOH done their own off-site soil testing?

Response: NYSDOH did some off-site soil sampling at the request of a resident. No PCB above normal background was found.

6. Was this testing exclusively for PCB?

Response: The soil testing was intended to find PCB, but the laboratory would have reported any tentatively identified compounds (TICs) they discovered.

7. Didn't they find (PCB aroclors) 1254 and 1248 there? It's what Tenneco used.

Response: The aroclors of PCB that were found at the station were aroclor 1254 and aroclor 1248.

8. PCB can become airborne. A state official said PCB will move in water.

Response: PCB adheres to dust particles which can become airborne. Engineering controls are utilized during construction to prevent PCB from migrating in this manner. After construction, the sod or asphalt which will cover any PCB contaminated soil remaining on site will prevent dust migration.

PCB is not very soluble in water so water alone does not move the PCB very well. PCB does adhere to soils and sediments. Surface water can move PCB by moving sediments that contain PCB. PCB does not move readily in groundwater because groundwater does not carry sediment.

9. Why did the county dig the ditch out? (The speaker is referring to the drainage ditch running along the north side of Woods Corners Road)

Response: A local resident responded that he asked the county to dig out the ditch to improve drainage.

10. There are pipes going from the lake to Tenneco. The whole front of the compressor station is contaminated. How did you delineate the PCB contaminated areas?

Response: A grid system was developed covering the entire station. Soil samples were taken within this grid on 100 foot centers and analyzed for PCB. The only three grids contained PCB above the detection limit. These grids are the one containing the two air receiver tank areas, the one containing Drainage ditches A and B, and a third grid where the highest PCB concentration found was 6.8 ppm. Additional soil sampling was conducted in any areas considered likely to contain PCB such as:

- The perimeter of any buildings or areas to which compressed air was piped
- Drainline manholes and outfalls
- The waste oil storage tank area
- Station roads
- Scrap yard area

Groundwater and surface water sampling was also conducted where appropriate.

11. What level of PCB is safe?

Response: The Department of Health considers a surface soil value of 1 ppm to be protective of human health in a non-restricted access location.

12. I share the concern about Tenneco doing their own investigation. They have a vested interest to do biased testing, not real testing.

Response: There was NYSDEC oversight of the investigation to assure testing locations and methods were appropriate. NYSDEC also took split samples to verify the results of sampling by TGPL's independent consultant.

13. What percentage of the samples were independently confirmed by the government?

Response: Typically 15 to 20 percent of the sample locations are split sampled by NYSDEC.

14. Were there any major discrepancies in the split samples?

Response: No. If there had been discrepancies we would have asked them to re-test.

15. How would the proposed drainline grouting stop PCB migration? What happens if the drainlines lose their integrity over time. Couldn't the PCB then move out of the drainline?

Response: The grout is intended to fill the void in the drainline which may act as a path for migration. In this manner grouting will prevent water from entering the drainline and carrying any remaining PCB sediment to a crack or break and subsequently into the surrounding soils. It is unlikely that any grouted drainline would lose it's integrity. The drainline cannot collapse if it is filled with cement. If the drainline were to develop cracks there would be no mechanism, i.e. flowing water, to transport PCB sediments out through the crack.

It is important to remember that any PCB remaining in the drainline is only residual levels, and that long term groundwater monitoring will be conducted to ensure the groundwater is being protected.

16. What is the extent and duration of the monitoring program?

Response: Groundwater monitoring will take place on a regular basis as will site inspections to verify that areas in which PCB is left behind remain vegetated and free from erosion. The monitoring program is normally planned to continue for thirty years. A reevaluation occurs periodically to determine if the program should be modified or discontinued based on performance of the remedial action.

17. Who does the monitoring?

Response: TGPL conducts and pays for the monitoring under NYSDEC oversight. Monitoring data is submitted to the state for evaluation.

18. Was an evaluation done to see if Tenneco is following environmental laws elsewhere?

Response: Yes, there are 5 other TGPL stations currently under investigation as inactive hazardous waste sites.

19. If we go forward with filling the drainline with grout can you have Tenneco sample under the drainline from time to time to make sure PCBs are staying in the drainline?

Response: Sampling has been done beneath these drainlines in the past and no contamination was found. At present, no further sampling is contemplated. However, if the monitoring program were to indicate a problem with any portion of the remedy, the possibility of further sampling would be evaluated at that point.

20. The blacktop road near the compressor building runs toward my house. All the (compressed air piping) equipment is near there.

Response: The grid sampling showed no indication of PCB moving in that direction.

21. Where is the manhole that the PCB drained into?

Response: There are two manholes in Drainline A located just west of the auxiliary building.

22. When did Tenneco first report the PCB spill?

Response: In 1988 TGPL reported the release of PCB to both the USEPA and the NYSDEC.

23. Tap water was not tested for PCB in 1988.

Response: PCB is normally the last contaminant to move with the groundwater. Therefore, residential water samples are not usually tested for PCB unless the monitoring wells, located much closer to the source, indicated a PCB groundwater problem. At this site none of the monitoring wells tested positive for PCB so no additional residential water testing was merited.

24. Tenneco should test inside of drainlines to determine what is in there. Perhaps grouting will not work.

Response: Excavation of sections of the drainline would be required to conduct sampling. This excavation would be dangerous due to the presence of high pressure gas lines in service nearby.

Therefore, instead of sampling, it was decided to make the conservative assumption that PCB is present in the drainline and select the remedy accordingly. If PCB is not present, then the chosen remedy will be overprotective but the risk of releasing PCB during sampling will have been avoided.

25. If PCB sediment is trapped between the concrete grout and the drainline and the drainline subsequently cracks then sediment could migrate.

Response: Under this scenario the only PCB sediments exposed would be those immediately inside the drainline cracks. There would be no water flowing through the drainline to carry those sediments out the cracks.

26. Tenneco took out a lot of dirt and moved it to King's Junk Yard when they installed Number 7. (Commenter is referring to construction done to expand the compressor building)

Response: Soils from the excavation were sampled and PCB was not detected.

27. Will there be a moratorium on excavating in the areas where low level contamination remains and around the contaminated drainlines.

Response: Yes

28. What are the levels of PCB found around the tool shop (pipeline warehouse)?

Response: Of the 16 soil samples taken around the pipeline warehouse only 2 contained PCB. The concentrations of PCB in these samples were 1.1 ppm and 2.3 ppm.

29. Why did it take Tenneco from 1972, when PCB use was discontinued, until 1988 to test for PCB?

Response: (TGPL) We didn't have any knowledge of a possible PCB problem until information became available in the 1980's. Tenneco then did testing and reported the results immediately.

30. How did you take homeowner well samples?

Response: Directly from the a faucet in the home.

31. If your kids lived here would you sample your well often? Is there any risk from groundwater?

Response: No site related contamination was found in any of the three groundwater sampling rounds done at the station. Testing of nearby resident's tap water did not indicate the presence of volatile organic compounds or metals above background levels. Without any exposure, no risk is present. Groundwater monitoring will be continued onsite to assure that no future contaminant migration takes place.

32. What did you test the home owner wells for?

Response: When contamination was first reported in 1988, the wells of nearby residents were tested for volatile organic compounds and metals.

33. Are solvents and metals associated with PCB contamination?

Response: Contamination by solvents and metals is associated with industry in general. Testing was done for solvents and metals because they are the contaminants that would be most likely to migrate from the site in groundwater. No contamination was detected.

34. How often should tap water be tested?

Response: Homeowner wells were tested 1988. Monitoring wells were then installed and regularly sampled to provide early warning of any contaminant migration in groundwater. The frequency of sampling for groundwater monitoring will be determined when the long term monitoring plan is developed.

35. How do we know Tenneco reported it and not a former employee?

Response: Every reference to the initial report that I have seen states that TGPL came forward on their own.

36. Any positive PCB test is a hit.

Response: Any positive PCB test result indicates that PCB is present. However, due to the prevalence of PCB use on the planet, with a low enough detection limit a positive PCB test result can be found almost anywhere. A concentration within normal background is well below cleanup levels and no further action is necessary.

37. A question was raised concerning whether outfalls 4 and 5, located on Woods Corners Road south of the shop building, had been sampled. This question led to considerable discussion resulting in the conclusion that there are actually four outfalls in that vicinity. Outfalls 4 and 5 are connected to roof drains from the shop building. The other two drainlines are storm water drains from nearby station roads. Sediments from one of these four drainline outfalls was sampled by NYSDOH and no PCB was found. One citizen stated that the other three should be sampled and an inspection should be conducted to ensure no other drainlines are missed.

Response: The drainline outfalls that had not been previously sampled will be sampled by NYSDOH and NYSDEC in response to this comment. In addition, an inspection will be performed to verify that no other drainlines have been overlooked.

38. Where did you test off site?

Response: We tested a sediment sample from Mr. Hiltz's well, tap water from nearby homes, and sediment from one drainline outfall on Woods Corners Road.

39. How do you know PCB isn't out there in someone's field?

Response: If contaminated soils or sediment had moved off site over the ground surface it would have left a trail behind that would have been detected by the surface soil sampling. If

the sediments moved through a drainline we either have taken or will take a sample to find it.

40. Will any of us get sick?

Response: No PCB has not been found off site.

Other Comments

Mr. Todd M. Ranger, a nearby resident, contacted NYSDEC to inquire about a drainline emptying into the swampy area to the north of the site. This drainline was found to be the outflow from a filter bed connected to the stations sanitary waste disposal system. Four samples were recently taken in the filter bed and an additional sample was taken in a septic tank along the same drainline. Sample results indicate no hazardous waste was disposed of through this system. Mr. Ranger also submitted a comment letter dated March 16, 1995 to the department. The letter readdressed the subject he previously had raised in his telephone call. There were no other environmental issues raised.

Mr. Kenneth D. Neeves submitted a comment letter, dated March 14, 1995, reiterating some of the points made at the public meeting. A summary of Mr. Neeves concerns and the NYSDEC response follows:

1. Grouting of the drainlines would not prevent the PCB from moving if the drainline were to deteriorate or be disturbed by forces such as trees uprooting, burrowing animals, earthquakes, or numerous other possibilities. He was also concerned with the possibility of contaminated sediment moving with the groundwater and future TGPL earthmoving disturbing the drainline.

Response: The possibility of outside forces disturbing the drainlines exists. NYSDEC has therefore mandated periodic inspections to detect such disturbances so they can be remedied. Controls will be in place preventing excavation of contaminated areas without NYSDEC concurrence.

A mechanism would be required to transport PCB contaminated sediments out of any cracks in the drainline. Since no water could be flowing out of the drainline once it is filled with cement grout, no such mechanism exists. In any case the ability of sediments to move below the surface with groundwater is so limited that it is negligible under ambient conditions.

2. Soils at several drainline outfalls have not been sampled for PCB contamination.

Response: The outfalls in question will be sampled and an inspection will be conducted to determine whether any additional drainline outfalls were overlooked.

3. There has been no independent investigation of the site. Any watchdog functions were performed minimally by NYSDEC and NYSDOH.

Response: NYSDEC and NYSDOH reviewed, commented on, and, after any necessary modifications were made, approved all elements of the investigation. A log book detailing NYSDEC field oversight at this site is available for review at the department's central office document repository. TGPL's consultant is licensed by the New York State Education Department and could lose that license if they were found to have falsified data.

APPENDIX B

TENNESSEE GAS PIPELINE COMPANY
COMPRESSOR STATION 245 (WEST WINFIELD)

TOWN OF WEST WINFIELD, HERKIMER COUNTY, NEW YORK

SITE NO.: 622015

ADMINISTRATIVE RECORD INDEX

The following documents are included in the Administrative Record:

1. Revised Feasibility Study, Tennessee Gas Pipeline Company Compressor Station 245 at West Winfield, New York (ENVIRON Engineering Associates of New York, P.C., 1994)

2. Investigation of Soils Adjacent to Drainlines, Tennessee Gas Pipeline Company Compressor Station 245 at West Winfield, New York; Addendum to Remedial Investigation Report (ENVIRON Corporation, 1993)

3. Evaluation of Ground Water Monitoring Data, Tennessee Gas Pipeline Company Compressor Station 245 at West Winfield, New York; Addendum to Remedial Investigation Report (ENVIRON Corporation, 1993)

4. Remedial Investigation, Tennessee Gas Pipeline Company Compressor Station 245 at West Winfield, New York; Volumes I and III (ENVIRON Corporation, 1992)

5. Addendum to the Remedial Investigation Volume II, Phase IIC Soil and Sediment Sampling, Tennessee Gas Pipeline Company Compressor Station 245, West Winfield, New York (ecology and environment, inc., 1992)

6. Remedial Investigation, Tennessee Gas Pipeline Company Compressor Station 245, West Winfield, New York; Volume II, (ecology and environment, inc., 1991)