Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Tennessee Gas Pipeline Compressor Station 229 Site
Town of Eden, Erie County
Site Number 9-15-140

March 1997

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* John P. Cahill, *Acting Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Tennessee Gas Pipeline Compressor Station 229
Town of Eden, Erie County, New York
Site No. 9-15-140

Statement of Purpose and Basis

This Record of Decision (ROD) presents the selected remedial action for the Tennessee Gas Pipeline Compressor Station 229 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 (40 CFR 300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Tennessee Gas Pipeline Compressor Station 229 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 Compressor Station 229 and the criteria identified for evaluation of alternatives the NYSDEC has selected the multi-component approach. The components of the 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 also be resolved, as needed.

2. The implementation of the remedial program will include the following components:

- PRP purchase of the "tributary corridor" properties (to a point approximately 2500 feet downstream of Station Lake - this is a point approximately half-way between Station Lake and North Boston Road).

- Access to approximately the first 2,400 feet of the tributary will be restricted through the construction of a physical barrier (combination of fence and/or vegetative barrier tied into the current perimeter fence around the site).

- Tributary system soils and sediments will be addressed with a combination of removal (in erosional areas) and covering (in non-erosional areas) as shown on Figures 4A/4B.

- The main channel through the bog will be excavated, backfilled, and stabilized to remove the erodible contaminant source and to minimize braiding of the stream through the bog.

- The potential for downstream transport of residuals will be further reduced by the installation of a sediment trap approximately 2,400 feet downstream of Station Lake.

- Certain soils, in residential areas along North Boston Road (with PCB concentrations above 1 ppm, but below 10 ppm), will be covered and the area restored.

- All excavated/covered areas will be restored.

- Removal of fish from Station Lake and monitoring to insure that they are not re-introduced in the future.

- Deed restrictions will be placed on future use of on-site/ "tributary corridor" areas of the property where residual PCBs are present.

- A comprehensive operation and maintenance plan will be implemented to ensure the structural integrity of the sediment trap, to remove accumulated sediment in the trap, and to maintain restored areas.

- A groundwater monitoring program will be carried out at the perimeter of the site to insure that groundwater contamination is not migrating from the site. Contingency measures will be taken if monitoring indicates migration away from the site. Periodic evaluations will be done to determine the need for additional monitoring.

- Groundwater at the downstream end of the bog will be monitored.

- Fish from the breached pond and the tributary near Hickman Road will be sampled regularly. The data generated will be evaluated to determine if the PCB concentrations are decreasing over time (towards the guidance level for the protection of sensitive wildlife species).

- Sediment monitoring will be conducted from the sediment trap (for disposal purposes) and from three additional locations between the trap and North Boston Road.

- Surface water sampling will be conducted in the tributary. The data generated will be evaluated to determine if the PCB concentrations are decreasing over time (towards the surface water standard for the protection of wildlife).

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 preference for remedies that reduce toxicity, mobility, or volume as a principal element.

3/24/97
Date

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

TABLE OF CONTENTS

RECORD OF DECISION

Tennessee Gas Pipeline Compressor Station 229
Town of Eden, Erie County, New York
Site No. 9-15-140
March 1997

SECTION 1: SITE LOCATION AND DESCRIPTION

TGPL Station 229 occupies 50.5 acres along East Eden Road, approximately 4 miles south of the Village of Hamburg, in the Town of Eden, Erie County, New York (see Figure 1). Former Tennessee Gas Pipeline corporate housing lies approximately 90 feet north of the station's northern property boundary; a small cemetery, a dairy farm, and a private residence are located east of the site; a truck farm is located along the south border of the station property; and wooded lots are located immediately west of the station. Soil in the area is composed primarily of glacial till with clay and shale fragments. Groundwater flows to the southwest, towards Station Lake. A municipal water system provides potable water to a majority of the residents adjacent to the site. West of the site along North Boston Road, many of the residences use private groundwater wells.

Land use in the vicinity of the station is primarily agricultural and partly residential. Local farmers grow a variety of fruits and vegetables including corn and berries. The tributary is not used for recreational purposes, but Eighteenmile Creek is used for fishing, swimming, and other types of recreation. Hunting of deer, turkey, and small game is reportedly common around the facility.

The layout of Station 229 is shown on Figure 2. The operations area of the station contains six reciprocal-type natural gas compressor engines in the Compressor Building, which are started with a single air starting system in the Auxiliary Building. The starting air system consists of two starting air compressors and associated air receiver tanks (ARTs) and piping. A single set of seven ARTs is located immediately west of the Auxiliary Building. Other buildings at the station include a pipeline warehouse, a shop, an equipment garage, a utility building, an office, a radio building, a hanger, and three meter station facilities (referred to as Meter Building A, the Colden Meter Station, and the Hamburg Sales Meter Station) which are used to support the gas transmission operation. Buildings associated with dehydration of natural gas from the Colden gas storage field occupy an area in the southeastern corner of property. Pipe racks and a scrap yard are located along the western side of the property. A concrete sump tank is located south of the Auxiliary Building. A waste oil storage tank is located northwest of the Compressor Building.

Near the buildings, the topography is flat. In the northern portion of the station property and north of the station buildings, the ground surface reaches a high point. Surface runoff south of this point flows to the south and the west, towards Station Lake. Station Lake is a 1-acre lake, up to 17 feet in depth, which discharges to an unnamed tributary of Hunt Creek (see Figure 3). The tributary is typically 3-6 feet wide and flows west-northwest for 1.5 to 2 miles before entering Hunt Creek. Hunt Creek discharges to the South Branch of Eighteenmile Creek.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

The site is a gas pipeline compressor station that has been in use since 1951 (see Figure 2). PCB-containing oil (Pydraul) was used in the starting air system compressors until 1974. In 1974, TGPL's use of Pydraul was discontinued. PCB contamination has occurred in soils, mainly in drainage areas, from the air compressor condensate blowdown pipes. Certain volatile organics, which may have been used to clean the compressor piping system, are present in on-site groundwater.

2.2: Remedial History

TGPL conducted a preliminary sampling program in 1988 to determine if PCBs were present in the starting air system and the drainage system. Twenty-eight samples were collected, and analyzed for PCBs, in 1988. The samples were collected from various locations in the starting air system, near blowdowns, and from site drainage courses. Media analyzed included oils, soils, sediments, and condensate liquid.

PCB concentrations as high as 13,000 ppm were detected in soils adjacent to the ARTs. Concentrations as high as 5,600 ppm were detected in sediment samples taken from the station's drainage system.

Based on the findings of TGPL's 1988 sampling program, this site became listed on New York State's Registry of Inactive Hazardous Waste Sites as a class 2 site (a class 2 site is defined as a site which poses a significant threat to public health or the environment - action required).

SECTION 3: CURRENT STATUS

In response to a determination that the presence of hazardous waste at the Site presents a significant threat to human health and the environment, a Remedial Investigation/Feasibility Study (RI/FS) has recently been completed.

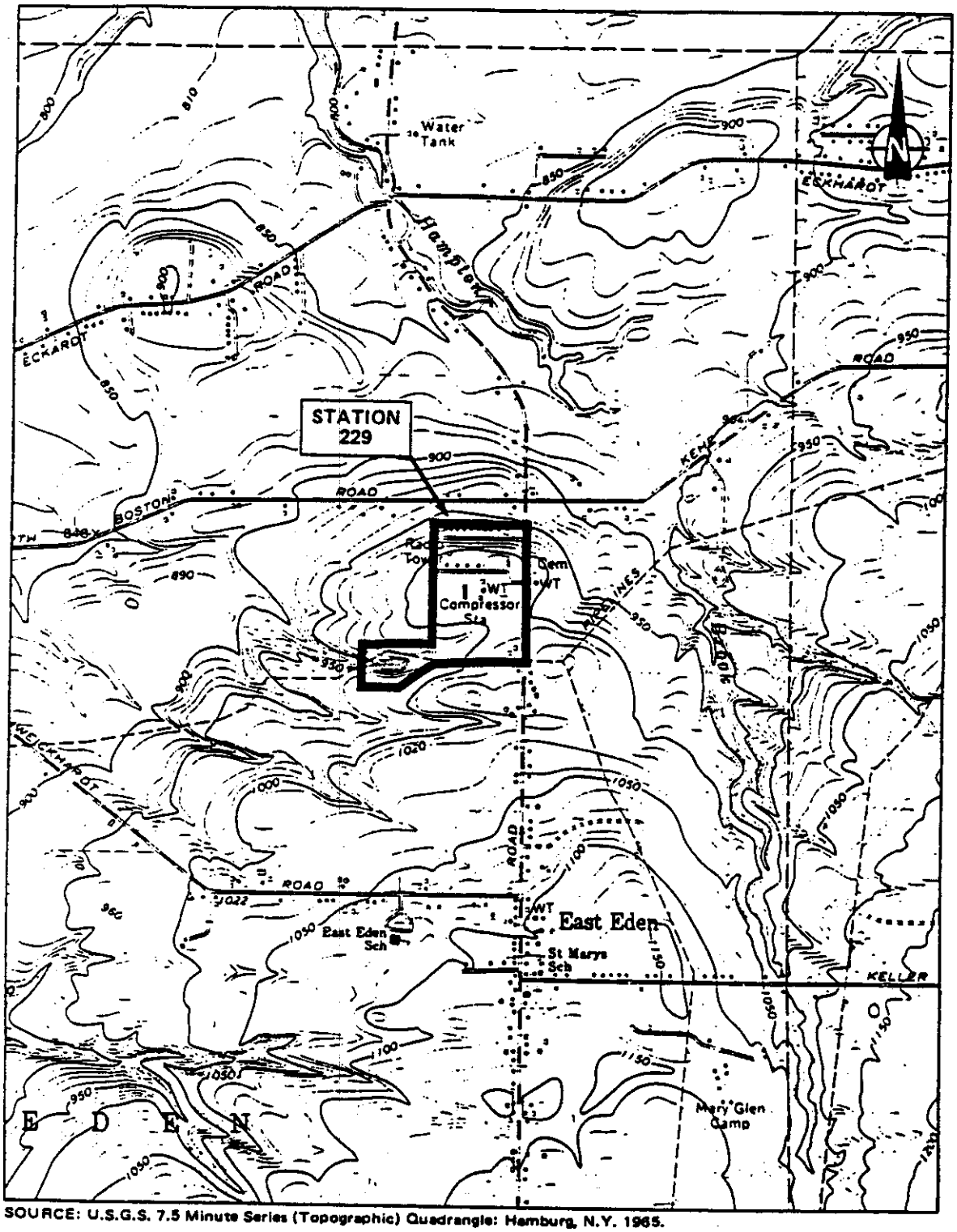
3.1: Summary of the Remedial Investigation

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 steps with the collection of additional information, as necessary, to fill in data gaps. The Final RI/FS Work Plans were submitted in December 1990. The initial RI sampling was completed by March 1991 and included the sampling of soil, sediment, surface water, and groundwater to define the presence of PCBs and to screen the station area for any additional contaminants which may be present. The following Reports document the work conducted as a part of the RI (listed, by category, in chronological order):

General RI Documents

- Remedial Investigation, Volumes I, II and III - the results of the initial RI sampling are presented in these reports (dated 8/91).
- Addendum to RI Volume II, Additional Phase IIC Sampling Report - presentation of results from sampling soils and sediments near fenceline, pipe racks, drainage ditch B, off-site pond/tributary area, and areas previously sampled as a part of the on-site grid sampling (2/92).



SOURCE: U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle: Hamburg, N.Y. 1965.

SCALE

0 ½ 1 MILE

0 .5 1 KILOMETER

LOCATION OF TENNESSEE GAS PIPELINE COMPRESSOR STATION 229, EAST EDEN, NY

Figure 1

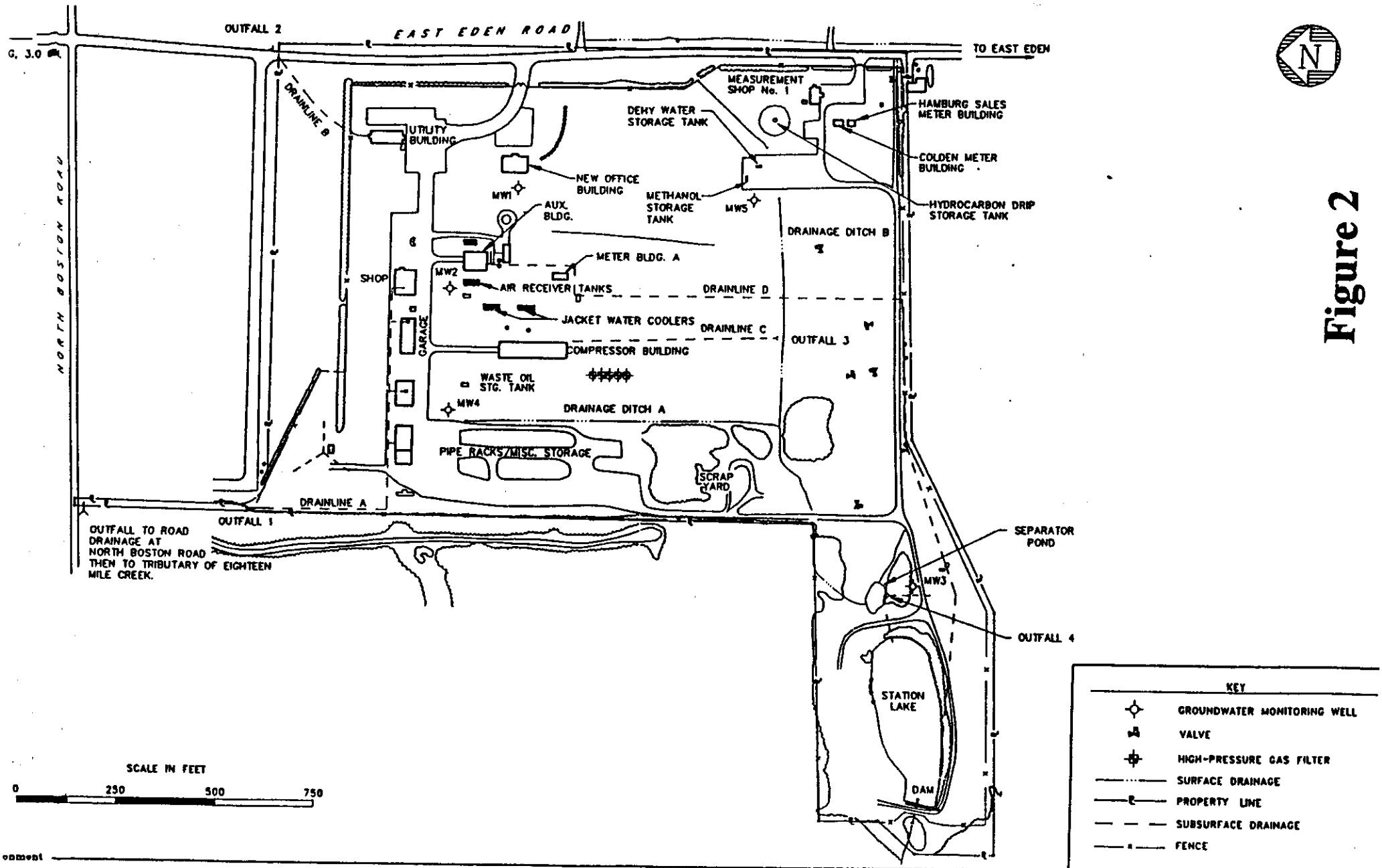

OUTFALL 2
EAST EDEN ROAD
TO EAST EDEN
G. 3.0
NORTH BOSTON ROAD
DRAINLINE B
UTILITY BUILDING
MEASUREMENT SHOP No. 1
DEHY WATER STORAGE TANK
HAMBURG SALES METER BUILDING
COLDEN METER BUILDING
HYDROCARBON DRIP STORAGE TANK
NEW OFFICE BUILDING
MW1
AUX. BLDG.
METHANOL STORAGE TANK
MW5
DRAINAGE DITCH B
METER BLDG. A
SHOP
MW2
AIR RECEIVER TANKS
DRAINLINE D
GARAGE
JACKET WATER COOLERS
DRAINLINE C
OUTFALL 3
COMPRESSOR BUILDING
WASTE OIL STG. TANK
MW4
DRAINAGE DITCH A
PIPE RACKS/MISC. STORAGE
SCRAP YARD
DRAINLINE A
OUTFALL 1
OUTFALL TO ROAD DRAINAGE AT NORTH BOSTON ROAD THEN TO TRIBUTARY OF EIGHTEEN MILE CREEK.
SEPARATOR POND
MW3
OUTFALL 4
STATION LAKE
DAM
SCALE IN FEET
0
250
500
750
KEY
GROUNDWATER MONITORING WELL
VALVE
HIGH-PRESSURE GAS FILTER
SURFACE DRAINAGE
PROPERTY LINE
SUBSURFACE DRAINAGE
FENCE

Figure 2

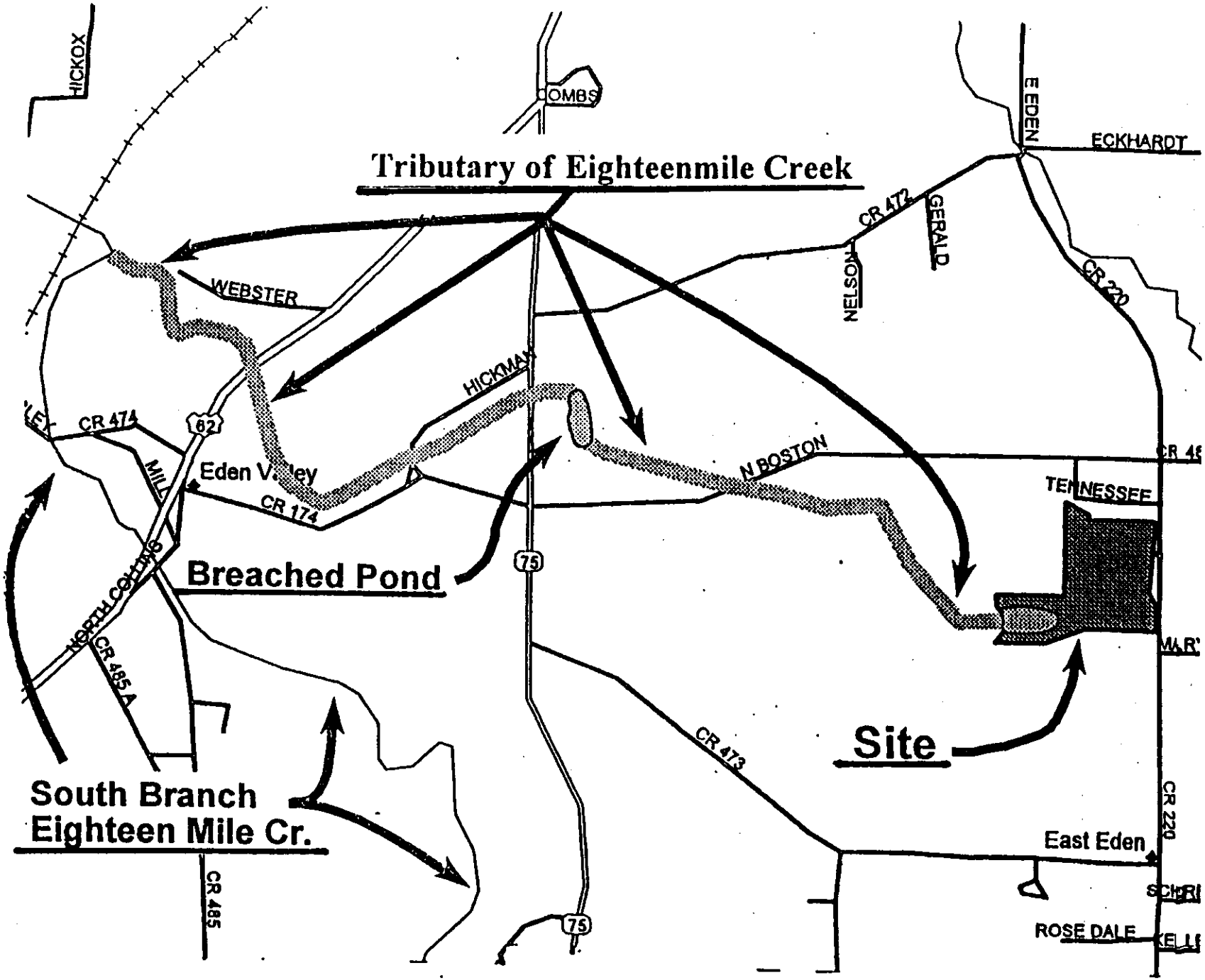

Tributary of Eighteenmile Creek
Breached Pond
Site
South Branch
Eighteen Mile Cr.
HICKOX
OMBS
E EDEN
ECKHARDT
CR 472
GERALD
NELSON
CR 220
WEBSTER
HICKMAN
CR 474
62
Eden Valley
CR 174
N BOSTON
TENNESSEE
75
NORTH COLLINS
CR 485A
CR 473
East Eden
CR 485
ROSE DALE

Figure 3

- Second Addendum to RI Volume II, Additional Phase IIC Sampling Report - documents additional sampling near fenceline, drainage ditch B, drainline A area, an off-site floodplain area, and an off-site farm area (5/92).
- Data Summary for Residential Water Sampling (6/92).
- Third Addendum to RI Volume II, Additional Phase IIC Sampling Report - documents results of sampling north of the off-site pond (7/92).
- Investigation of Soils Adjacent to Drainlines Report - documents the results of an investigation to determine if PCBs migrated from contaminated drainlines (8/94).
- Phase III Supplemental Site characterization Report - documents the results of a site screening to determine if there were any other areas of potential concern (2/95).
- Interim Remedial Measure Report (2/96).

Groundwater Documents

- Second Round Groundwater Report (11/91).
- Third Round Groundwater Report (10/92).
- Evaluation of Groundwater Monitoring Data (7/93).
- Phase I (additional) Groundwater Characterization - temporary drivepoints were installed across the site to determine the areal extent of groundwater contamination (2/94 Report).
- Phase II Groundwater Characterization - additional monitoring wells were installed based on the information gathered during the Phase I characterization (11/94 Report).
- Phase II Supplemental Groundwater Report (4/95).
- Report on VOC Source Characterization (6/95).

Station Lake/Tributary Documents

- Addendum to Phase IIA and B Sampling, Off-Site Sampling Areas (3/91).
- Final Report Phase II Habitat-Based Assessment Verification Work, June 1992 (2/93).
- Fishing Sampling Results from Station Lake, the Breached Pond, and the Tributary Between the Ponds near Tennessee Gas Compressor Station 229 (3/94).
- Report: Fish and Sediment Sampling Results from a Tributary and a Breached Pond near TGPL Station 229 (2/95).
- Station Lake Investigation Report (4/95).
- Report: Soil and Sediment Sampling Results from a Tributary and a Breached Pond between Tennessee Gas Compressor Station 229 and Highway 62, December 1994 (5/95)
- Analysis of Transport of PCB Soils and Sediments in Tributary Near Compressor Station 229 (3/96).
- Ecological Evaluation of a Tributary and Associated Habitats Near Tennessee Gas Pipeline Compressor Station 229 (1/96).
- A Summary of PCB Toxicology and A Critical Assessment of Its Human Relevance (2/96).

To determine which media (soil, groundwater, etc.) are contaminated at levels of potential concern, the analytical data obtained from the RI were compared to environmental Standards, Criteria, and Guidance (SCGs, defined in Section 6.2 below). Groundwater, drinking water and surface water SCGs identified for this site were based on NYSDEC Ambient Water Quality Standards and Guidance Values. 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. Sediment analytical data were compared to the values in the NYSDEC Technical Guidance for Screening Contaminated Sediments.

Based upon the results of the remedial investigation in comparison to the SCGs and potential public health and environmental exposure pathways, certain areas and media of the site require remediation. These are summarized below. More complete information can be found in the RI Reports.

Chemical concentrations are reported in parts per billion (ppb) and parts per million (ppm). For comparison purposes, SCGs are given for each medium.

3.1.1 Nature of Contamination:

As described in the RI Reports, numerous soil, groundwater, sediment, drainline, and biota samples were collected to characterize the nature and extent of the contamination at the site. In addition, two rounds of surface water samples were recently collected from the tributary. The primary contaminants of potential concern include PCBs, chromium, and certain volatile organics. PCBs have been found in on-site soils, however, they are not very soluble in water and have not been found in groundwater. Relative to PCBs, the volatile organics at the site are much more soluble and are present in on-site groundwater.

Chromium has been detected at elevated concentrations in on-site soils as well as in tributary sediment. The elevated concentrations in on-site soils were limited to an area adjacent to the jacket water coolers. Since this area is isolated, small in extent, and vegetated it was not considered to be an area of potential concern. The tributary sediment will be addressed as a result of the presence of PCBs, as discussed below.

Section 3.3 below describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 5 of the RI Report.

3.1.2 Extent of Contamination

Based on the results from the RI, Table 1 summarizes the extent of contamination in surface soil, subsurface soil, sediment, surface water, and groundwater. As discussed in Section 3.2, on-site soils were addressed during an "Interim Remedial Measure" completed in 1995. Therefore the soil, sediment, and surface water data in Table 1 pertain to the off-site tributary.

Table 1 includes a column entitled "reference levels." The purpose of this column is to provide the reader with a frame of reference when reviewing the data. The reference levels for surface and subsurface soils (1 and 10 ppm, respectively) are taken from NYSDEC guidance which provides the starting point for determining cleanup goals. Site specific factors are then taken into consideration to develop remediation goals (Section 5) that are protective of human health and the environment, implementable, and cost effective. For example, a PCB soil cleanup goal of 25 ppm was developed for the on-site IRM that was performed in the summer of 1995. Reference levels were used as the starting point and then site-specific factors, discussed in Section 3.2, were taken into consideration.

Surface Soils

For the purpose of this discussion, surface soils are those soils down to a depth of one foot. Prior to the IRM, the highest concentration present in on-site surface soils was 2,800 ppm. On-site areas which contained elevated PCB concentrations in surface soils included the Air Receiver Tank (ART) area, the Auxiliary Building area, the Compressor Building Area, a section of Drainage Ditch B, an area along the western fenceline, soils adjacent to a former waste oil/solvent tank (adjacent to the Shop Building), the

Table 1: Representative Contaminants
Tennessee Gas Pipeline Station 229 (Eden, 9-15-140)

[SEE SECTION 7 FOR THE SELECTED REMEDY
TO ADDRESS THESE CONTAMINANTS]

Tributary Sediments--Station Lake to Lower Bog

	Concentration Range, ppm			Reference	No. that	No. of
Contaminant	Minimum	Maximum	Average	Level	Exceed	Samples
PCB	0.05	410	40.8	1.0	23	30

Tributary Surface Soils--Station Lake to Lower Bog

	Concentration Range, ppm			Reference	No. that	No. of
Contaminant	Minimum	Maximum	Average	Level*	Exceed	Samples
PCB	0.05	960	42.6	10.0	30	83

Tributary Subsurface Soils--Station Lake to Lower Bog

	Concentration Range, ppm			Reference	No. that	No. of
Contaminant	Minimum	Maximum	Average	Level	Exceed	Samples
PCB	0.05	26	1.8	10.0	1	22

Tributary Sediments--Lower Bog to Hickman Road

	Concentration Range, ppm			Reference	No. that	No. of
Contaminant	Minimum	Maximum	Average	Level	Exceed	Samples
PCB	0.05	3.6	0.6	1.0	13	70

Tributary Surface Soils--Lower Bog to Hickman Road

	Concentration Range, ppm			Reference	No. that	No. of
Contaminant	Minimum	Maximum	Average	Level	Exceed	Samples
PCB	0.05	8.6	1.0	1.0	32	126

Tributary Subsurface Soils--Lower Bog to Hickman Road

	Concentration Range, ppm			Reference	No. that	No. of
Contaminant	Minimum	Maximum	Average	Level	Exceed	Samples
PCB	0.05	3.4	0.5	10.0	0	18

Tributary Surface Water--Station Lake to Hickman Road

	Concentration Range, ppb			Reference	No.	No. of
Contaminant	Minimum	Maximum	Average	Level**	Detected	Samples
PCB	0.015	0.713	0.125	0.001	15	24

Non-detects entered at approx. one-half of detection limit.

Table 1: Representative Contaminants
Tennessee Gas Pipeline Station 229 (Eden, 9-15-140)

[SEE SECTION 7 FOR THE SELECTED REMEDY
TO ADDRESS THESE CONTAMINANTS]

Groundwater

Contaminant	Concentration Range, ppb			Cleanup Goal	No. that Exceed	No. of Samples
	Minimum	Maximum***	Average			
1,1-Dichloroethene	0.1	1800	43.7	5	16	69
1,1,1-Trichloroethane	0.07	8400	253.7	5	23	69
1,1-Dichloroethane	0.125	200	7.7	5	13	69
Benzene	0.09	200	9.0	0.7	34	69
Xylenes (total)	0.08	200	9.0	5	9	63
Chloroform	0.07	200	11.6	7	16	69

*Assumes tributary corridor property purchase has been completed.

** Although the surface water standard for PCB is 0.001 ppb, the analytical detection limit is 0.050 ppb. Of the 24 samples, 15 contained PCBs above the detection limit.

*** Groundwater maximums of 200 ppb reflect non-detects at high detection limits. Detected maximums were 17 ppb (1,1-DCA); 75 ppb (benzene); 67 ppb (xylenes); and 110 ppb (chloroform).

Non-detects entered at approx. one-half of detection limit.

scrap yard area, and the pipe racks area. All on-site soils with PCB concentrations above 25 ppm were excavated and disposed of off-site as a part of the IRM.

Subsurface Soils

For on-site subsurface soils prior to the IRM, the highest concentration detected was 1,700 ppm (sample collected at a depth of 6-18 inches) near the ARTs. On-site areas which contained elevated PCB concentrations in subsurface soils included the ART area, the Auxiliary Building Area, the Compressor Building area, the Shop Building area, and a section of Drainage Ditch B. All on-site soils, with PCB concentrations above 25 ppm, were excavated and disposed of off-site as a part of the IRM.

Tributary, Station Lake, Separation Pond Soil/Sediment

Sediment samples were collected from the on-site drainlines, as well as from the Separator Pond, Station Lake, and the unnamed tributary to Eighteenmile Creek. Results form the on-site drainlines are discussed below. Eleven sediment/soil samples were collected from the Separator Pond; the highest PCB concentration in sediment was 14 ppm with an average concentration of approximately 1.9 ppm. Twenty two sediment/soil samples were taken in Station Lake; the highest PCB concentration was 6.6 ppm with an average concentration of approximately 1.4 ppm.

The following discussion, on the tributary of Eighteenmile Creek, reflects the results from the December 1994 tributary sampling.

Upper Reach of Tributary

The tributary begins at the outlet of Station Lake. The "upper reach" of the tributary is approximately 1,300 feet long. It is characterized by a relatively steep, shale bottomed channel (with pockets of sediment) and steep side slopes/banks. The highest PCB concentration detected in the sediment in the upper reach was 91 ppm. In this reach, the highest PCB concentration detected in soil was 960 ppm in a sample collected from an old stream channel, immediately adjacent to the current channel. On the north side of the stream channel, about 800-900 feet downstream of Station Lake, there is a relatively flat area adjacent to the stream channel. In this "depositional" area PCBs have been detected in soil samples as high as 140 ppm.

Bog Area

Approximately 1,300 feet downstream of Station Lake, the stream channel flattens out and the area is swampy. There is one main stream channel through the bog, however there are many smaller channels that meander across a relatively wide area. The bog is heavily vegetated and extends to approximately 2,300 feet downstream of Station Lake.

The highest PCB concentration detected in the sediment (in the bog) was 410 ppm, found in a sample taken from the beginning of the bog. The highest concentration in soils adjacent to the stream channel was 230 ppm. Approximately half-way through the bog area, PCB concentrations in the sediment typically drop to less than 1 ppm. At this point PCBs were detected in soil samples adjacent to the stream channel at concentrations as high as 48 ppm. At the downstream end of the bog, all PCB concentrations in soils and sediments were at or below 5 ppm.

Downstream of Bog Area

Approximately 230 soil and sediment samples were collected below the bog, down to the stretch of the tributary between Hickman Road and Route 62. The results indicated relatively low PCB concentrations, with only 5 of the samples containing concentrations above 5 ppm (the highest being 8.6 ppm).

The NYSDEC screening level (for the protection of fish and wildlife) for PCBs in sediment is 14 ppb, assuming one percent organic carbon in the sediment. Based on the information gathered, the site-specific PCB sediment criterion is approximately 14-28 ppb, depending on the location. This criterion was compared to sediment sample results to determine if there was the potential for impacts to wildlife. Since the PCB concentrations in the sediment exceeded this level, fish samples were collected to further evaluate the potential impacts to wildlife.

Biota (fish)

In October 1993, 20 fish samples from Station Lake were collected and analyzed for PCBs. Discrete samples (individual fish) were collected and each was analyzed for PCB content in the fillet as well as in the whole body sample. The results of the fillet samples indicated a PCB concentration range from 1.4-16 ppm; the results of the whole body samples indicated a PCB concentration range from 9.76-48.06 ppm.

Station Lake is on-site and access is limited by a fence. In addition, TGPL employees have been notified not to fish in Station Lake. The fish caught in the tributary were not large enough to produce edible fish fillets.

In July 1994, additional fish sampling was conducted in the tributary. Since a majority of the fish available in the tributary were very small (minnow-sized), most of the samples were composited (more than one fish) to allow a sufficient sample size and only whole body analysis was possible. Samples were collected from the breached pond down to a point approximately 3200 feet upstream of Eighteenmile Creek. A total of 68 samples were collected; the range of PCB concentrations in the whole body samples was 0.46-5.8 ppm with an average concentration of 1.53 ppm.

The PCB guidance level for the protection of human health is 2 ppm for edible fish fillets. The PCB guidance level for protection of sensitive piscivorous wildlife is 0.11 ppm, based on whole body analysis. Fish from Eighteenmile Creek were not collected for PCB analysis. Therefore, the extent of potential impacts to sensitive piscivorous wildlife has not been clearly defined.

Surface Water

Within the last year, NYSDEC collected a total of 24 surface water samples from the off-site tributary during two separate sampling events (7/96 and 11/96). At each sample location, two samples were collected, one filtered and one unfiltered. The surface water standard for the protection of wildlife is 0.001 ppb (1 part per trillion or ppt). Analyzing samples to achieve detection limits this low is extremely difficult and very costly. As a result, all of the samples were analyzed at the relatively low detection limit of 50 ppt. The first sampling event occurred after a relatively heavy rainstorm. Results indicated PCB concentrations in the surface water as high as 0.7 ppb (700 ppt). As expected, the unfiltered samples indicated a higher concentration, compared to the filtered sample at the same location. Concentrations were highest in the bog area and dropped down below the detection limit in the sample taken adjacent to Route 75.

A second round of samples were collected in November 1996 after a week long period without significant precipitation. The results indicated very low levels of PCBs in the tributary above the bog with slightly higher levels in the surface water within the bog. The sample at North Boston Road, as well as all samples downstream of that location, did not detect PCBs.

Groundwater

As a part of the initial RI fieldwork, five groundwater monitoring wells were installed on-site (MW-1 through MW-5). In October 1993, 15 groundwater samples were collected from drive points/temporary monitoring wells as a part of the Phase I Additional Groundwater Characterization. In the spring and summer of 1994 nine additional monitoring wells were installed.

Groundwater sampling results indicate elevated concentrations of certain volatile organics (see Table 1). The highest concentrations were detected adjacent to the Auxiliary Building and the ARTs. Groundwater flow direction is to the southwest, towards Station Lake. Groundwater data from the monitoring wells located adjacent to Station Lake have not detected volatile organics above groundwater standards. This indicates that the groundwater contamination has not migrated as far as Station Lake and its areal extent is limited.

Groundwater samples were also collected and analyzed for metals. At each location, a filtered and an unfiltered groundwater sample was collected and analyzed. If soil particles are not removed from the groundwater before a sample is collected, the sample results for the unfiltered sample will include what is present in the soil, and thus, may not be representative of what is dissolved in the groundwater. Filtering of groundwater samples removes soil particles from turbid groundwater samples. The results of the groundwater samples analyzed for metals were generally much lower from the filtered sample compared to the unfiltered sample from the same well. This indicates a problem with high turbidity in the groundwater samples. As a result, the unfiltered samples do not truly represent the dissolved phase concentration in the groundwater. A review of the filtered groundwater samples indicates that metals contamination in groundwater is not significant at this site (the most notable result from filtered groundwater was one slight exceedance of the standard for chromium in one sampling round).

3.2 Interim Remedial Measures:

Interim Remedial Measures (IRMs) are conducted at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. The following IRM has been conducted at this site:

August 1993 - An IRM was implemented to remove any residual PCBs from the compressed air piping system.

July - September 1995 - An IRM was implemented to address on-site soil and drainline PCB contamination. The PCB cleanup goal for this IRM was 25 ppm. The 25 ppm cleanup goal was established after considering the following factors:

- The site is secured by a chain link fence and is operated 24 hours a day. Due to the somewhat remote nature of the site, unauthorized persons are unlikely to gain access and be exposed to the contaminated soil. Worker exposures can be controlled by appropriate on-site controls and policies.
- Although PCB contamination has been present in site soils for many years, in high concentrations in some locations, groundwater monitoring shows that PCB soil contamination is not resulting in

significant groundwater degradation. Therefore, groundwater quality is expected to stay the same or improve; not decline. Continued groundwater monitoring will be in place to verify this conclusion.

- The cleanup level of 25 ppm is consistent with the approach taken in EPA guidance.
- The increase in cost to remediate to lower levels is not commensurate with an increase of protectiveness to human health or the environment.
- It is expected that the site will continue in the same use for an extended time. The site owner will be required to control access, create deed restrictions on the use of contaminated areas of the parcel, and comply with worker safety requirements.
- After the overall remedial program has been completed, the site will remain on the Registry of Inactive Hazardous Waste sites, as a class 4 site - "site has been properly closed - requires continued monitoring."

The IRM implemented, as documented in the July 1995 IRM Document and the February 1996 IRM Report, included the excavation and off-site disposal of PCB contaminated soils and sediments above 25 ppm, as well as the grouting of contaminated drainlines.

3.3 Summary of Human Exposure Pathways:

An exposure pathway is the process by which an individual is exposed to a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media (e.g., soil, groundwater) and transport mechanisms; 3) the point of exposure; 4) the route of exposure (e.g., ingestion, inhalation); and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Completed pathways known to or that may exist as a result of the contamination in tributary system soils and sediments, as well as in groundwater, include:

- Dust could become airborne and migrate. This would provide the potential for inhalation or ingestion of these materials. Although this is a potential exposure pathway, the site is well vegetated which minimizes the amount of dust being generated.

- There is the potential for contact with and/or ingestion of contaminated groundwater as a result of its use as a water supply. Although there are off-site users of groundwater, the contamination in the groundwater has not migrated away from the site and thus has not migrated to potential receptors.

- There is the potential for skin contact and ingestion of contaminated soils.

- There is the potential for future exposure through the consumption of contaminated fish. However, Station Lake is on-site and access to it is limited by a fence. In addition, TGPL employees have been instructed not to fish in Station Lake. The fish sampled in the tributary were very small, young of the year fish. Fish this size are too small to produce edible fillets. The whole body PCB concentrations in the fish sampled between Hickman Road and Route 62 (the sample location furthest downstream) indicated concentrations at or below the guidance level for the protection of human health (via consumption of fish) for edible fillets. Generally, the PCB concentration in a whole body sample is greater than in a fillet sample from the same fish.

3.4 Summary of Environmental Exposure Pathways:

The presence of contamination in an ecosystem can result in a variety of effects on wildlife population, ranging from a reduction in population size to changes in the community structure. In addition, PCBs can accumulate in the food chain. As a part of the RI field work, the area was characterized in terms of terrestrial and aquatic ecosystems.

The contamination is limited to areas on TGPL's property as well as in the tributary to Eighteenmile Creek. However PCBs could migrate via surface runoff to downstream resources, such as Eighteenmile Creek. During the Remedial Investigation, a Habitat Based Assessment (HBA) was performed. As a part of the HBA, fish in the tributary to Eighteenmile Creek were sampled. The tributary is not very large and only support small minnow-size fish. Sampling of these fish did indicate the presence of PCBs. Although, as mentioned above, the fish samples taken at the downstream end of the sampling area contained PCB concentrations in the fish at or below the guidance level for the protection of human health, they were above the guidance level for the protection of sensitive piscivorous wildlife species (0.11 ppm), indicating a potential threat to wildlife that may consume these fish.

Fish in Station Lake have elevated PCB concentrations and pose a potential threat to wildlife that may consume these fish.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The NYSDEC and the Tennessee Gas Pipeline Corporation (TGPL) entered into a Consent Order on January 23, 1991. The Order obligates the responsible parties to carry out an RI/FS. Upon issuance of the Record of Decision, the NYSDEC will request that the PRP implement the selected remedy under another Order on Consent.

The following is the chronological enforcement history of this site.

Date	Index	Subject
1/23/91	DO-004-8903	Implementation of the RI/FS
7/19/93	A4-0302-93-06	Implementation of an IRM to clean the compressed air piping system
4/24/95	A9-0328-9503	Implementation of an IRM to address on-site soils and drainlines contaminated with PCBs

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. These goals are established under the overall goal of protecting human health and the environment and meeting all Standards, Criteria, and Guidance (SCGs).

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

Due to the complex nature of the tributary system, an extensive amount of time and effort was put into developing goals for the remedial program. It was necessary to weigh the potential physical impacts of an extensive removal against the benefits of that type of remedy. What resulted was the development of "performance based" goals instead of the more traditional "concentration based"goals.

The Department believes that the following remedial goals, for on-site areas, were achieved by completing the 1995 IRM, described above:

- Reduce, to the extent practicable, the contamination present within the on-site soils to the goals identified for the IRM.
- Prevent, or greatly reduce, the potential for migration of contaminants via surface run-off from the contaminated on-site soils/ sediments.
- Prevent, or greatly reduce, the potential for migration of contaminants via on-site drainlines.
- Prevent, or greatly reduce, the potential for direct human or animal contact with the contaminated soils/sediment on-site.

The remaining goals for the site are:

- Prevent the migration of contaminated groundwater to off-site receptors.
- To the extent practicable, provide for attainment of SCGs for groundwater.
- Reduce, to the extent practical, exposures to contaminants present in soils/sediments along the path of the tributary.
- Prevent, or greatly reduce, the potential for migration of contaminants in the tributary system via: erosion of contaminated soils into the tributary; transport of suspended sediment with the surface water; and transport of contaminants dissolved in the surface water.
- Prevent, or greatly reduce, the potential for exposing fish and wildlife to levels of PCBs above the standards/ guidance values.
- Prevent the potential for exposure via consumption of fish from Station Lake.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Section 3.2 discusses the IRM performed in the summer of 1995 to address on-site PCB contaminated soil/sediments and drainlines. This IRM is discussed in greater detail in the July 1995 IRM Decision Document (prepared by NYSDEC) and the February 1996 IRM Report (prepared by Blasland, Bouck & Lee for TGPL). As discussed above, this IRM addressed the first four goals presented above. As a result, no further action is necessary for on-site soils/sediments and drainlines.

Potential remedial alternatives for the TGPL Compressor Station 229 site were identified, screened and evaluated in a three phase Feasibility Study. This evaluation is presented in the report entitled Feasibility Study Report, TGPL Compressor Station 229, dated January 1997. A summary of the detailed analysis is presented below.

6.1: Description of Alternatives

The potential remedies are intended to address the contaminated soils and sediments in and adjacent to the tributary, as well as groundwater at the site.

No Further Action

The no further action alternative recognizes the remediation of the site completed under the previously completed IRMs.

This is an unacceptable alternative as the site would remain in its present condition and the threat presented by the PCB and volatile organic contamination would remain.

It has been included below as a baseline condition against which the other response actions will be compared.

A. Remedial Alternatives for Groundwater

Alternative 1G - No Further Action

Present Worth $0
Capital Cost $0
Time to Implement . . . . . N/A

The no further action alternative has been included as a baseline for comparison purposes. This alternative would include no remediation or monitoring of the groundwater.

Alternative 2G - Monitoring

Present Worth $40,200
Capital Cost $12,000
Annual O&M . . . . . $ 6,500
(First 5 years)
Time to Construct . . . . . 1 Month (well installation)

The groundwater data collected to date has indicated that groundwater contamination is limited to the site area. This alternative would include groundwater monitoring and contingencies to insure that groundwater contamination would not threaten potential receptors. After approximately five years the data would be evaluated to determine the need for further monitoring. If further monitoring is necessary, a sampling schedule would be developed at that time.

Alternative 3G - Enhanced In-Situ Degradation

Present Worth $1,023,000
Capital Cost . . . . . $ 653,000
Annual O&M $85,500
(First 5 years)
Time to Implement . . . . . 12 months

This alternative would involve the in-situ delivery of nutrients of other additives, as necessary, to accelerate biological degradation of the volatile organics in the groundwater. In order to facilitate the design of this system in the fractured bedrock present at this site, a treatability study would be necessary. It might also be necessary to evaluate subsurface flow conditions through tracer testing to assist in the design of the delivery system to ensure that the necessary additives could be adequately distributed within the subsurface. This alternative would include groundwater monitoring to determine the effectiveness of the system.

Alternative 4G - Groundwater Extraction and Treatment

Present Worth $513,000
Capital Cost $414,800
Annual O&M . . . . . $ 22,800
(First 5 years)
Time to Implement . . . . . 6 months

This alternative would extract groundwater for treatment in an aboveground unit. Containment of the on-site groundwater plume could be accomplished using a system of groundwater recovery wells or groundwater interceptor trenches. Aboveground treatment would consist of a number of treatment technologies including air stripping or activated carbon treatment. For the detailed evaluation, groundwater recovery trenches were selected with groundwater treatment consisting of air stripping or oxidation followed by carbon polishing, as necessary. Downgradient monitoring wells would be monitored to evaluate the effectiveness of this system.

B. Remedial Alternatives for Tributary System Soils and Sediments

Alternative 1T - No Action

Present Worth $0

This no action alternative would leave the tributary system in its current condition. This is the baseline alternative against which the other alternatives will be compared.

Alternative 2T - Institutional Action

Present Worth $810,000
Capital Cost $781,400
Annual O&M . . . . . $ 1,900
(Over a 3 year period)
Time to Implement . . . . . 2 weeks

This alternative would involve the restriction of access through the construction of a fence around the area containing the soils and sediments with the highest PCB concentrations. Access to the area surrounding the first 2,000 feet of the tributary would be restricted with a combination of a chain link fence, three-strand wire fence and/or a vegetative barrier. Purchase options on certain "tributary corridor" properties would be exercised.

Alternative 3T- Multi-component Alternative

Present Worth $2,200,000

Capital Cost $2,081,500
Annual O&M $8,800
Time to Implement . . . . . Approximately 3 months

This performance based alternative would consist of a variety of actions implemented in combination as follows:

- Purchase options on certain "tributary corridor" properties would be exercised.
- Deed restrictions would be placed on the "tributary corridor" property discussed in the first bullet.
- Access to approximately the first 2,400 feet of the tributary would be restricted by the construction of a physical barrier (combination chain link, wire, and/or vegetative barrier).
- Contaminated soils and sediments in the "tributary corridor" would be addressed with a combination of removal (in erosional areas) as shown on Figures 4A/4B.
- The main channel through the bog would be excavated, backfilled, and stabilized for two purposes: 1) to remove the contaminated sediments, and 2) to provide one main channel through the bog and prevent/minimize the braiding of channels through this area.
- The potential for downstream sediment transport of residuals would be further reduced by the installation of a sediment trap approximately 2,400 feet downstream of Station Lake.
- Certain soils, in residential areas along North Boston Road (with PCB concentrations below 10 ppm), would be covered and the areas restored.
- All excavated and covered areas would be restored.
- A comprehensive operation and maintenance plan would be implemented to ensure the structural integrity of the sediment trap, to remove accumulated sediment in the trap, and to maintain covered and restored areas.
- Groundwater, at the downstream end of the bog, would be monitored.
- Removal of fish from Station Lake and monitoring to insure they would not be re-introduced.
- Fish from the breached pond and the tributary near Hickman Road would be sampled regularly.
- Sediment monitoring would be conducted from the sediment trap (for disposal purposes) and from three additional points between the trap and North Boston Road.
- Surface water sampling would be conducted.

If this alternative were chosen and implemented, information gathered from the long-term monitoring program would be evaluated to determine if the alternative was successfully addressing the performance goals. The performance goals include: minimizing the potential for exposure to contaminated areas and reducing the potential for PCB migration.

Alternative 4T - Removal and Off-site Disposal

Present Worth $14,000,000
Capital Cost $13,761,200
Annual O&M $15,500
Time to Implement . . . . . Approximately 8 Months

This concentration-based alternative would involve the excavation and off-site disposal of all contaminated soils and sediments with PCB concentrations above 1 ppm. This would include material up to a distance of 9,300 feet downstream of Station Lake, including the sediments in Station Lake itself. Approximately 31,400 cubic yard of soils and sediments would be removed and approximately 13 acres of woods would be cleared to implement this alternative. The areas excavated would be backfilled and covered. These restored areas would be regularly inspected and maintained.

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.

1. **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.

2. **Compliance with New York State Standards, Criteria, and Guidance (SCGs)**. Compliance with SCGs addresses whether a remedy will meet applicable environmental laws, regulations, standards, and guidance.

The most significant SCGs for this site include:

40 CFR 761	Toxic Substance Control Act (TSCA) - Federal Regulations which govern how PCBs are handled.
6 NYCRR Part 375	Regulation directing the investigation/cleanup of inactive hazardous waste sites.
6 NYCRR Parts 700-705	Water Quality Regulations for surface water and groundwater.
TAGM HWR-4031	Fugitive dust suppression and particulate monitoring.
TAGM HWR-4046	Guidance regarding soil cleanup objectives and cleanup levels.
6 NYCRR Parts 370-376	Regulations governing the management of hazardous waste.
6 NYCRR Part 212 and Air Guide 1	Requirements and Guidance regulation regarding the control of air contaminants.
Technical Guidance for Screening Contaminated Sediments; 7/94	Sediment screening levels.
6 NYCRR Part 608	Protects certain classified streams; includes permitting requirements for impoundments, structures, dredge, and fill.
Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (FWIA); 10/94	Guidance to help assess ecological impacts.
6 NYCRR Part 663	Procedural requirements for various activities in and adjacent to wetlands.

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.

4. **Long-term Effectiveness and Permanence**. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response action. 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.

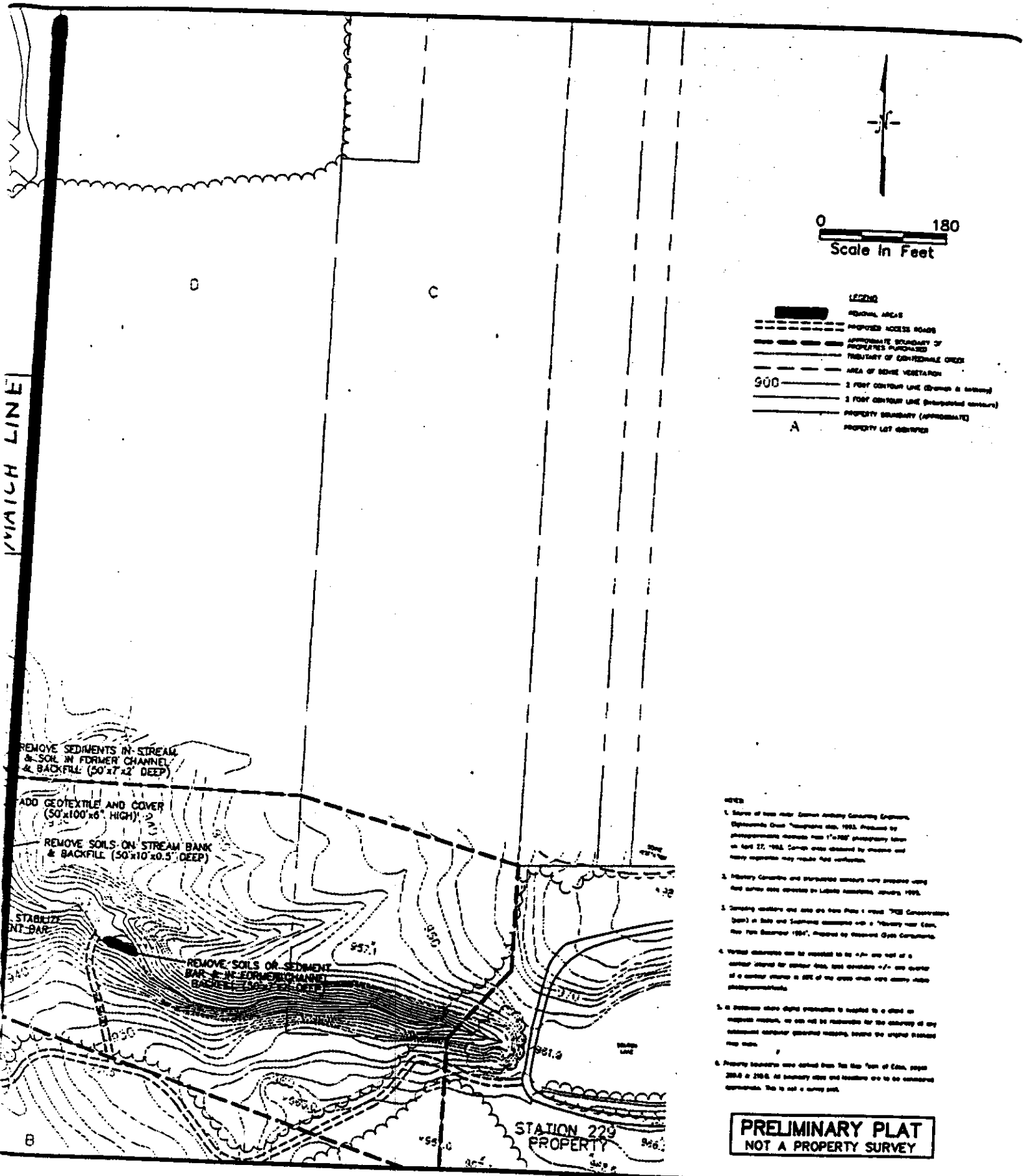


Figure 4A

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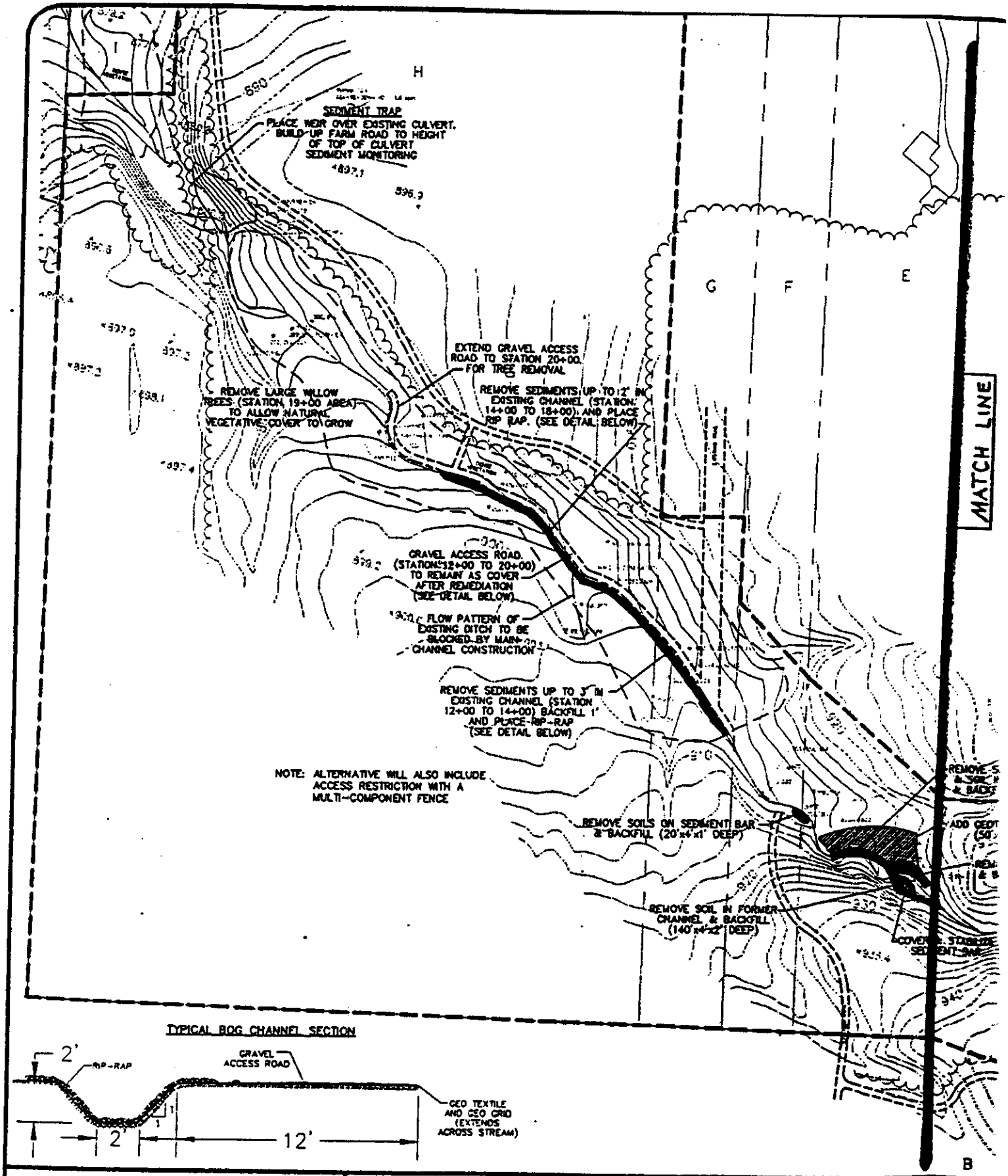

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Figure 4B

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.

6. **Implementability**. The technical and administrative feasibility of implementing each alternative is evaluated. Technical feasibility 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 equipment is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

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. In the evaluations below, present worth costs were estimated using a discount rate of five percent.

8. **Community Acceptance** - Concerns of the community regarding the RI/FS Reports, IRM, and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's response to the concerns raised. In general the public comments received were supportive of the selected remedy. Most of the comments consisted of questions regarding details of the remedy and site conditions.

A. GROUNDWATER

1. Protection of Human Health and the Environment

Alternative 1G would not address the remedial objectives and would not be protective.

Alternatives 2G, 3G and 4G would all be protective of human health and the environment. Alternative 4G would be the most protective since the groundwater would be removed and treated, Alternative 3G would treat groundwater, but the treatment would be in-situ without extraction of contaminated groundwater. Given the conditions at this site, there is some uncertainty regarding the ability of this approach to achieve significantly better results than Alternatives 2G or 4G. Alternative 2G would depend on natural attenuation to restore groundwater quality and a comprehensive monitoring/ contingency plan to insure that groundwater contamination would not migrate to potential off-site receptors. Alternative 2G would be protective since groundwater users in the area of the site are not currently threatened, nor are they likely to be threatened in the future. Alternatives 3G and 4G are permanent remedies. Alternative 4G is a control/isolation technique that would be reliable for controlling any threat to human health and the environment.

It is anticipated that Alternatives 3G and 4G would restore the aquifer, to the extent practicable, within a time frame of approximately 5-10 years. Within 5 years it is anticipated that Alternative 2G should clearly demonstrate that contaminant concentrations in groundwater are decreasing over time and that contaminants are not threatening potential receptors.

2. Compliance with New York State Standard, Criteria and Guidance (SCGs)

Alternatives 3G and 4G would actively address the contaminated groundwater and would restore groundwater quality, to the extent practicable, in a time frame of approximately 5-10 years. Alternative 2G would not actively address contamination in the groundwater. As a result it would take a longer period of time to restore the on-site groundwater quality by natural attenuation. Alternative 2G would monitor groundwater and incorporate contingencies to address any contamination that would potentially threaten

any users of groundwater. Alternative 1G would not monitor groundwater so any potential off-site migration of contaminants at elevated levels would go undetected.

3. Short-term Impacts and Effectiveness

Alternatives 1G, 2G, and 3G essentially present no short-term impacts due to construction. During the construction of Alternative 4G, any potential emissions could be easily controlled.

With the exception of operating any aquifer restoration program, all alternatives can be implemented in a short time frame (less than 1 year).

4. Long-term Effectiveness and Permanence

Alternatives 2G, 3G, and 4G would all prevent off-site migration of contaminated groundwater and would result in eventual restoration of groundwater quality. Alternatives 3G and 4G would actively remediate groundwater and would restore aquifer quality, to the extent practicable, within approximately 5-10 years. Alternative 2G would not actively remediate groundwater. With Alternative 2G, contingencies would be in place to prevent significant off-site migration.

Alternatives 3G and 4G would be considered permanent remedies. Alternative 1G would not be effective in the long-term.

5. Reduction of Toxicity, Mobility and Volume

Alternatives 3G and 4G would reduce the toxicity, mobility, and volume of volatile organics in the groundwater. Alternative 2G would monitor groundwater to insure that contamination does not mobilize to off-site areas.

6. Implementability

All of the alternatives would utilize readily available construction equipment/materials and would be reliable. Since the site is rather large, there would be no space constraints during implementation. There would be no difficulties associated with coordinating with other divisions/agencies.

The soils at this site are "tight" and the aquifer has a relatively low permeability. As a result, there could be difficulty associated with delivery of biostimulants (3G) and the extraction of groundwater from a low yielding aquifer (4G). This would make it difficult to effectively implement these remedies to restore the aquifer.

7. Cost

The costs for the groundwater remediation alternatives are summarized below:

Alternative	Capital Cost	Annual O&M	Total
1G	$0	0	0
2G	$12,000	$6,500	$40,200
3G	$653,000	$85,500	$1,023,200
4G	$414,800	$22,800	$513,000

B. Tributary System Soils and Sediments

1. Protection of Human Health and the Environment

Defining "protectiveness" for these conditions is difficult for several reasons. Possible "measures" of protectiveness could include the concentration of PCBs in sediments, in surface water, and biota (e.g., in fish flesh). All of the alternatives that are reasonably implementable involve leaving behind residual levels of PCBs in each media. It is not possible to definitively predict what the post-remediation concentrations would be after implementing either Alternative 3T or 4T. Alternative 4T would be the most protective of human health and the environment since the contaminated soils and sediments, down to a concentration of 1 ppm, would be removed and disposed of off-site. The Department believes that Alternative 3T would also be protective since it would implement a combination of removal and isolation/control components to achieve the desired performance goals. However, as discussed above, it is not possible to predict with certainty what the post-remediation concentrations of PCBs will be in surface water and biota. The implementation of both Alternatives 3T and 4T would require the placement of controls to prevent downstream migration of contaminants during excavation. Alternative 2T would limit access to areas with elevated PCB concentrations, but it would do nothing to prevent the migration of PCBs. Alternative 1T would not address the remedial goals. All four of the remedial alternatives could be implemented in a relatively short time frame and any potential short-term impacts could be reliably controlled with proper engineering controls and appropriate contingencies, as necessary.

2. Compliance with New York State Standards, Criteria and Guidance (SCGs)

Alternative 4T would achieve soil SCGs through excavation and off-site disposal. Alternative 3T is a combination removal/containment remediation and would minimize the potential for direct contact and migration of contaminated material. Although Alternative 3T would not strictly meet the concentration-based soil cleanup objectives given in Department guidance, it would meet the intent of the guidance. The two objectives that form the basis for the soil cleanup guidance are to prevent significant human exposures to contaminated soils and to protect groundwater. Since the combination of removal and containment/isolation prevents significant exposures, the exposure objective is met. Since most of the PCB mass would be removed and PCBs are not a groundwater problem at the site, the second objective would also be met. Alternative 2T would only limit access to areas with elevated PCB concentrations. Alternative 1T would not address soils SCGs. Exposure of fish and wildlife to PCBs above SCGs in sediments and surface water would be most effectively reduced by alternative 4T. Alternative 3T would reduce wildlife exposures, but not to the extent of alternative 4T. Neither 1T nor 2T would reduce wildlife exposure.

3. Short-term Effectiveness and Impacts

Alternatives 3T and 4T would involve excavation of contaminated soils and sediments and would have the potential for short-term impacts through fugitive dust emissions, migration of contaminated material downstream, and impacts to the habitat for wildlife in the area. The potential for suspension/transport of contaminated sediments during excavation could be difficult to control. Construction techniques to address this situation are rather involved and could include temporary re-routing of the stream or the damming of sections of the stream combined with the pumping of the water around that section. Since alternative 4T would involve excavation of significantly more soils and sediments, there would be greater potential for short-term impacts, compared to alternative 3T. Site remediation workers would be protected through use of appropriate personal protection equipment as required by the Occupational Safety and Health Administration (OSHA) and the site specific health and safety plan to be developed prior to remediation. The surrounding community would be protected through measures to prevent fugitive dust and runoff of

contaminated material. As long as these control measures are used properly they are effective in minimizing any potential short-term impacts.

Alternative 2T would have little short-term impacts and Alternative 1T would nave no short-term impacts. All of the alternatives would be completed in less than a year.

4. Long-term Effectiveness and Permanence

Alternative 4T would be permanent relative to the site. The contaminated soil and sediment would be removed so any potential risk would be removed. Although alternative 3T would not be as permanent as alternative 4T, it would offer long-term effectiveness and permanence through a combination of removal, containment, and monitoring. The containment portion of alternative 3T could be susceptible to weathering, but proper maintenance could easily restore it to its original level of effectiveness. Alternative 2T is not permanent, but rather would limit access to contaminated areas. Alternative 1T would not be considered permanent or offer any long-term effectiveness.

5. Reduction of Toxicity, Mobility or Volume

Alternative 4T would reduce the toxicity, mobility, and volume, relative to the site, by removal and off-site disposal. Alternative 3T would reduce the mobility and the volume to a somewhat lesser degree through a combination of removal and containment. Alternatives 1T and 2T would not reduce the toxicity, mobility, or volume.

6. Implementability

All of the alternatives could be implemented and the required materials/services are readily available. Alternative 2T represents the most readily implementable alternative, other than Alternative 1T (no action), due to the relatively simple constructability of the physical barrier (fence and/or vegetative barrier). Alternative 3T would be more difficult to implement (compared to 1T and 2T) since excavation, off-site transport/ disposal and restoration would be required. Alternative 4T would be most difficult to implement because of the significantly larger area/ volume to be addressed, compared to Alternative 3T.

7. Cost

The cost for each of the remedial alternatives for tributary soils and sediments are summarized below:

Alternative	Capital Cost	Annual O&M	Total
1T	0	0	0
2T	$781,400	$1,900	$810,000
3T	$2,081,500	$8,800*	$2,200,000
4T	$13,761,200	$15,500	$14,000,000
* Includes first 5 years of monitoring.			

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, as well as the evaluation presented in Section 6, the NYSDEC is selecting the combination of alternatives 2G and 3T (groundwater monitoring along with the

multicomponent approach to address the tributary system) as the remedy for this site. The 1995 IRM has successfully addressed the PCB contaminated soils and drainlines on-site.

The no action alternatives, for various media, were not acceptable because they would not address the remedial goals.

For groundwater, Alternatives 2G, 3G, and 4G would prevent potential users of groundwater from being exposed to contaminants. Alternatives 3G and 4G would include active remediation of the groundwater. Alternative 2G would not include active remediation but would include monitoring and contingencies to insure the groundwater contamination did threaten potential receptors. As a result Alternatives 2G, 3G, and 4G would all be protective (although to different degrees). However, given the conditions at this site and the uncertainties regarding the potential for significantly improving groundwater conditions, Alternatives 3G and 4G would be very difficult to implement and would not be cost effective.

For tributary soils and sediments, Alternatives 3T and 4T would address the performance based cleanup goals presented in Section 5. Alternatives 1T and 2T would not address these goals. Although there would be reliable engineering controls in place, Alternative 4T would pose greater potential for short-term impacts compared to Alternative 3T. Alternative 4T would also be more difficult to implement than Alternative 3T.

In summary, although Alternative 4T would be the most protective, Alternative 3T would still be reasonably protective and would involve less impacts, would be more implementable, and would cost significantly less than Alternative 4T.

The costs incurred for the IRM to address on-site soils and drainlines was $1.3 million. The estimated present worth cost to carry out the selected remedy is $2,240,200. The cost to construct the remedy is estimated to be $2,093,500 and the estimated average annual cost for operation and maintenance/monitoring will be $15,300 (which includes the first 5 years of monitoring and 30 years of O&M).

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 also be resolved, as needed.

2. The implementation of the remedial program will include the following components:

- PRP purchase of the "tributary corridor" properties (to a point approximately 2500 feet downstream of Station Lake - this is a point approximately half-way between Station Lake and North Boston Road).

- Access to approximately the first 2,400 feet of the tributary will be restricted through the construction of a physical barrier (combination of fence and/or vegetative barrier tied into the current perimeter fence around the site).

- Tributary system soils and sediments (in the "tributary corridor") will be addressed with a combination of removal (in erosion areas) and covering (in non-erosional areas) as shown on Figures 4A/4B. Some residual soils and sediments, containing low concentrations of PCBs, will remain behind. In the "tributary corridor," these residuals will be managed through the placement of deed restrictions and the implementation of the long-term O&M and monitoring program, as described

below. In the lower tributary and in areas considered non-erodible reisduals would be left in place and monitored.

- The main channel through the bog will be excavated, backfilled, and stabilized to remove the erodible contaminant source and to minimize braiding of the stream through the bog.

- The potential for downstream transport of residuals will be further reduced by the installation of a sediment trap approximately 2,400 feet downstream of Station Lake.

- Certain soils, in residential areas along North Boston Road (with PCB concentrations above 1 ppm, but below 10 ppm), will be covered and the area restored.

- All excavated/covered areas will be restored.

- Removal of fish from Station Lake and monitoring to insure that they are not re-introduced in the future.

- Deed restrictions will be placed on future use of on-site/ "tributary corridor" areas of the property where residual PCBs are present.

- A comprehensive operation and maintenance plan will be implemented to ensure the structural integrity of the sediment trap, to remove accumulated sediment in the trap, and to maintain restored areas.

- A groundwater monitoring program will be carried out at the perimeter of the site to insure that groundwater contamination is not migrating from the site. Contingency measures will be taken if monitoring indicates migration away from the site. Periodic evaluations will be done to determine the need for additional monitoring.

- Groundwater at the downstream end of the bog will be monitored.

- Fish from the breached pond and the tributary near Hickman Road will be sampled regularly. The data generated will be evaluated to determine if the PCB concentrations are decreasing over time (towards the guidance level for the protection of sensitive wildlife species).

- Sediment monitoring will be conducted from the sediment trap (for disposal purposes) and from three additional locations downstream of the sediment trap.

- Surface water sampling will be conducted in the tributary. The data generated will be evaluated to determine if the PCB concentrations are decreasing over time (towards the surface water standard for the protection of wildlife).

- Based upon the results of monitoring all media, an evaluation will be made as to what, if any, enhancements to the remedy may be necessary to ensure protection of human health and the environment.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As a part of the remedy selection process, a number of Citizen Participation (CP) activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners, local political officials, local media, and other interested parties.
- In March 1993 a Fact Sheet was sent, to the people on the mailing list, to update the status of the project.
- In October 1993 a Fact Sheet was sent, to the people on the mailing list, to update the status of the project.
- In September 1994 a Fact Sheet was sent, to the people on the mailing list, to update the status of the project.
- In February 1995 a Fact Sheet was sent, to the people on the mailing, to update the status of the project and to announce the March 1, 1995 public meeting.
- On March 1, 1995 a public meeting was held to update the status of the project.
- In April 1995 a Fact Sheet was sent, to the people on the mailing, to update the status of the project and to announce the May 9, 1995 public meeting.
- On May 9, 1995 a public meeting was held to present the plans for the Interim Remedial Measure (IRM) to address on-site soils and drainlines.
- In June 1995 NYSDOH issued a Fact Sheet, which was sent to the people on the mailing list.
- In July 1995 a Fact Sheet was sent, to the people on the mailing list, to announce the availability of the IRM Decision Document.
- In September 1995 a Fact Sheet was sent, to the people on the mailing, to update the status of the project and to announce the September 28, 1995 Availability Session.
- On September 28, 1995 an Availability Session was held to allow people the opportunity to talk one-on-one with representatives of NYSDEC and NYSDOH.
- In July 1996 a Fact Sheet was sent, to the people on the mailing list, to update the status of the project.
- In February 1997 a Fact Sheet was sent, to the people on the mailing, to update the status of the project and to announce the March 11,1997 public meeting.
- On March 11, 1997 a public meeting was held to present the Proposed Remedial Action Plan (PRAP).
- In March 1997 a Responsiveness Summary was prepared, and made available to the public, to address the comments received during the public comment period for the PRAP.

Table 2
Remedial Alternative Costs

Drainlines

	Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
1G	No Further Action	$0	$0	$0
2G	Monitoring	$12,000	$6,500	$40,200
3G	Enhanced In-Situ Degradation	$653,000	$85,500	$1,023,200
4G	Groundwater Extraction and Treatment	$414,800	$22,800	$513,000

Tributary System Soils and Sediments

	Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
1T	No Action	$0	$0	$0
2T	Institutional Action	$781,000	$1,900	$810,000
3T	Multi-component Alternative	$2,081,500	$8,800*	$2,200,000
4T	Removal/Off-site Disposal	$13,761,200	$15,500	$14,000,000

* Includes first 5 years of monitoring

APPENDIX A
RESPONSIVENESS SUMMARY
Tennessee Gas Pipeline Compressor Station 229
Erie County
ID No. 9-15-140

This document summarizes the comments and questions received by the New York State Department of Environmental Conservation (NYSDEC) regarding the Proposed Remedial Action Plan (PRAP) for the subject site. A public comment period was held between February 19, 1997 and March 21, 1997 to receive comments on the proposal. A public meeting was held on March 11, 1997 at the New Emergency Squad Building (located at the Town Hall Complex) to present the results of the investigations performed at the site and to describe the PRAP. The information below summarizes the comments and questions received and the Department's responses to those comments.

DESCRIPTION OF THE SELECTED REMEDY

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the site and the criteria identified for the evaluation of alternatives, the NYSDEC has selected a remedy to address soil, sediment, and groundwater contamination at the Tennessee Gas Pipeline Compressor Station 229 (TGPL 229) Site. The selected remedy is the same as was proposed in the PRAP.

The major elements of the selected remedy include:

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 also be resolved, as needed.

2. The implementation of the remedial program will include the following components:

- PRP purchase of the "tributary corridor" properties (to a point approximately 2500 feet downstream of Station Lake - this is a point approximately half-way between Station Lake and North Boston Road).

- Access to approximately the first 2,400 feet of the tributary will be restricted through the construction of a physical barrier (combination of fence and/or vegetative barrier tied into the current perimeter fence around the site).

- Tributary system soils and sediments will be addressed with a combination of removal (in erosion areas) and covering (in non-erosional areas) as shown on Figures 4A/4B.

- The main channel through the bog will be excavated, backfilled, and stabilized to remove the erodible contaminant source and to minimize braiding of the stream through the bog.

- The potential for downstream transport of residuals will be further reduced by the installation of a sediment trap approximately 2,400 feet downstream of Station Lake.

- Certain soils, in residential areas along North Boston Road (with PCB concentrations above 1 ppm, but below 10 ppm), will be covered and the area restored.

- All excavated/covered areas will be restored.

- Removal of fish from Station Lake and monitoring to insure that they are not re-introduced in the future.

- Deed restrictions will be placed on future use of on-site/ "tributary corridor" areas of the property where residual PCBs are present.

- A comprehensive operation and maintenance plan will be implemented to ensure the structural integrity of the sediment trap, to remove accumulated sediment in the trap, and to maintain restored areas.

- A groundwater monitoring program will be carried out at the perimeter of the site to insure that groundwater contamination is not migrating from the site. Contingency measures will be taken if monitoring indicates migration away from the site. Periodic evaluations will be done to determine the need for additional monitoring.

- Groundwater at the downstream end of the bog will be monitored.

- Fish from the breached pond and the tributary near Hickman Road will be sampled regularly. The data generated will be evaluated to determine if the PCB concentrations are decreasing over time (towards the guidance level for the protection of sensitive wildlife species).

- Sediment monitoring will be conducted from the sediment trap (for disposal purposes) and from three additional locations between the trap and North Boston Road.

- Surface water sampling will be conducted in the tributary. The data generated will be evaluated to determine if the PCB concentrations are decreasing over time (towards the surface water standard for the protection of wildlife).

I. Questions / Comments Raised During Public Meeting

1. Issue: How much soil will be excavated and where will it be taken for disposal?

   Response: It is estimated that just over 300 cubic yards of soils and sediments will be excavated from the tributary system for off-site disposal. This material will be taken to Model City, in Niagara County, New York. Model City a permitted landfill which meets the requirements necessary to accept this type of contaminated material.

2. Issue: The 1994 storm event (approximately 5 inches of rain in less than an hour) was discussed earlier in the public meeting presentation. If there were another storm event of this magnitude, would the system that is being proposed contain the sediments?

   Response: The remedy includes the excavation and off-site disposal of the majority of the contaminated sediments in the stream channel, as well as the placement of erosion controls in erodible areas where residual contamination will remain in soils on the banks of the tributary. Although these steps will greatly reduce the potential for movement of contaminated soils and sediments, a sediment trap will be installed at the downstream end of the bog (approximately 2,400 feet downstream of Station Lake) to further reduce this potential. As a result, it is anticipated that after the remediation is completed there will be no significant transport of contaminated soils and

sediments to areas downstream of the bog. As a part of the long-term monitoring program sediment samples will be taken to confirm that residual contamination is not migrating to areas downstream of the bog. In response to the question, yes, it is anticipated that remedial program will control the migration of contaminated material over time, even during a heavy rain storm. Periodic sampling will be conducted to confirm that this is being achieved.

3. **Issue**: Will the deed restrictions apply to the property recently purchased by Tennessee Gas Pipeline (TGPL) along the tributary as well as along the west side of the station? What will the deed restriction state?

   Response: The deed restrictions will apply to all property where there will be residual PCB contamination present after the remediation. This will include the compressor station area as well as the recently purchased property along the tributary. A representative from TGPL indicated that all of the property owned by TGPL may be combined into one deed. If that is the case the restriction will be placed on that deed, and thus on all of the property that TGPL owns.

   Although the exact wording of the deed restriction has not been determined, the intent of the restriction will be to notify anyone in the future that: 1) there is residual PCB contamination present in certain areas of the property, 2) these residuals exist in a "controlled" condition, and 3) do not disturb these areas in any way that could promote the potential for contact with, or migration of, these residuals.

4. **Issue**: One individual held up a figure (handed out at the meeting) which showed the entire length of the tributary (approximately 3 miles long) which runs from Station Lake to the South Branch of Eighteenmile Creek. He asked if access would be limited to this whole stretch of the tributary.

   Response: No. As identified in the February 1997 Proposed Remedial Action Plan (PRAP), access will be limited to the "tributary corridor;" the "tributary corridor" is defined as approximately the first 2,500 feet, from Station Lake to the lower end of the bog. As a frame of reference, the "tributary corridor" includes approximately the first half of the section of the tributary between Station Lake and North Boston Road.

5. **Issue**: Will the purchase of these properties by TGPL, combined with the implementation of this remedy, have a negative impact on surrounding property values?

   Response: It is our understanding that other property in the area has recently sold for market value. This remedy is protective and the residual contamination will not pose a significant threat. If someone was pursuing the purchase of property in the area and contacted us, we would inform them that the remedy will be protective of human health and that the site does not pose a threat.

6. **Issue**: What about wildlife in the area that comes in contact with the contamination?

   Response: Terrestrial animals (deer, turkey, water fowl) would only have the potential for short exposure to the contamination present in the tributary system. Fish have the greatest potential for exposure to the contamination in the tributary since they are in constant contact with sediments at the bottom of the channel, as well as anything suspended in the water column. Terrestrial animals have the potential to be exposed through the consumption of fish from the tributary. The fish in the tributary do contain somewhat elevated PCB concentrations. However, since the tributary is such a small body of water, there are not a lot of fish present, and those that are there are very small, minnow-sized fish. The fish in this tributary could not act as the sole food source for terrestrial

wildlife. As a result there is little chance for significant impacts up the food chain as the result of wildlife consumption of fish from this tributary.

7. **Issue**: What kind of fencing will be placed around the "tributary corridor" to limit access?

   Response: The details of the physical barrier to be installed will be worked out as a part of the design. However, it will include a combination of a fence (e.g., chain link) and a vegetative barrier (e.g., thorny hedgerow).

8. **Issue**: Will the fencing effect deer and turkey who move through the area?

   Response: The area that will be fenced is relatively small with either woods or open fields surrounding it. It is not anticipated that there will be any significant impacts to deer or turkey as a result of this action. The design of the remedy will take into consideration ways to restrict access to the corridor without unduly inhibiting movement by wildlife.

9. **Issue**: How soon will the remediation start and how long will it take?

   Response: Once the Record of Decision is issued (anticipated by the end of March) the design will be prepared which will include the project specifications along with the plan drawings. After the design is completed the remedy will be implemented. It is anticipated that the cleanup will be initiated this summer (July or August) and will take about three months to complete.

10. **Issue**: How long does it take for PCBs to break down and become harmless?

    Response: Polychlorinated biphenyls, or PCBs, are a family of stable industrial chemicals, with very low solubilities in water, that were widely used until 1978 (1974 at this site). In general, PCBs remain in the environment for a long time. A rough estimate of 5-50 years has been used for the time frame for PCBs to remain in the environment. However, the potential for PCBs to be broken down in the environment depends on a number of factors, such as the amount of chlorination of the molecule, concentration, and other environmental factors. As a result it is difficult to determine the rate at which PCBs degrade naturally in the environment. However, there is widespread opinion that the higher chlorinated biphenyls (including Aroclor 1254, which is present at this site) are resistant to biodegradation, and thus are very persistent.

11. **Issue**: Was any testing done on surrounding land; specifically, was the large pond, located to the north-northwest of the station (near Eckardt Road) sampled?

    Response: As a part of the investigation the whole site was sampled and source areas were identified. From these source areas, potential migration pathways were determined and sampled until the extent of the contamination was defined. The pond that was referred to in the question is not in the same drainage system as the tributary that leads away from Station Lake. The tributary from Station Lake flows to the west into the South Branch of Eighteenmile Creek. The pond, located to the north-northwest of the Station near Eckardt Road, is connected with Hampton Brook, which is located to the east and north of the site. Since there is no way that contamination from this site could have migrated to the pond in question, there was no need to collect samples from this pond.

12. **Issue**: The report that is in the document repository at the library (January 1997 Feasibility Study Report) states that PCBs have little effect on human health. Does the NYSDEC/NYSDOH agree with this type of statement? If not, why didn't the State issue something that indicated that we did not agree?

Response: No, NYSDEC/NYSDOH does not agree with this statement. There is an ongoing debate across the country relative to the potential effects of PCBs. Some of the statements that are made in the FS are definitely not endorsed by the State. The FS is a document that is issued by TGPL. It will not be final until after the public comment period closes. At that point a letter will be issued that indicates that the State does not agree with all of the technical opinions presented in the FS, but that sufficient information was included in the FS so that NYSDEC could prepare/issue the PRAP and the Record of Decision (ROD). There have been several meetings and exchanges of correspondence between the Department and TGPL regarding this issue.

13. **Issue**: It was indicated that just over 300 cubic yards of contaminated soils/sediments will be removed from the bog area. Does this mean that there will be contamination left behind, and if so, since PCBs take so long to break down does this mean that the "tributary corridor" property cannot be used for the rest of our lifetime?

    Response: Yes, there will be some PCB contamination left behind in the bog area. This material will be left in a controlled, non-erodible condition that will: 1) reduce the potential for migration of contamination away from the bog, and 2) reduce the potential for contact with the residual contamination. The property will be owned by TGPL and they will be responsible for long term maintenance and monitoring. As long as there are residual PCB present on TGPL's property, TGPL will be responsible for insuring that the remedy continues to perform/be protective so that there will not be the potential for off-site impacts. This will include the maintenance of the physical barrier around the "tributary corridor".

14. **Issue**: Since there will be residual PCBs present after the remediation, won't this effect property values?

    Response: We understand the importance of property value issues and how nearby "hazardous waste" sites can be an issue. At any time, any interested party can review the information available in the document repository, or contact NYSDEC/NYSDOH directly. We are available to answer any specific questions to help an individual, or a financial institution, understand that this remedy will be protective and will not cause any significant off-site impacts.

15. **Issue**: Will NYSDEC oversee the cleanup?

    Response: Yes, construction oversight will be performed by either a NYSDEC inspector or by an oversight contractor working for NYSDEC. The party doing the oversight will insure that the remedy is implemented consistent with the State approved design.

16. **Comment**: A statement was made by a resident of North Boston Road; he wanted to go on record that he feels this is a good plan.

II. Questions / Comments Received in Writing

One comment letter was received during the public comment period. The issues/concerns expressed in that letter are presented below:

Issues: "I have been informed by the New York State Department of Transportation (NYSDOT) that the culvert for the Eighteenmile Creek tributary crossing Sisson Highway (Route 75) is scheduled to be replaced this summer. A portion of the tributary on my property (7474 Sisson Highway) will be relocated as a part of the project. The NYSDOT will require workers to use

Tyvek coveralls and wear proper eye protection to ensure the worker's safety when on the site. Also, any excess soil will be sent to a sanitary landfill.

The Proposed Remedial Action Plan (PRAP) presented at the public meeting on March 11, 1997 does not include the removal of any contaminated soil on my property. Since the NYSDEC believes that the PCBs on my land are not a threat to human health, why is NYSDOT taking the above mentioned safety precautions with my property? Perhaps the NYSDOT knows something that the NYSDEC has not told the residents of Eden.

It seems to me the PRAP for the Compressor Station 229 Hazardous Waste Site is a compromise in Tennessee Gas Pipeline's favor."

Response: In December 1994, the soils and sediments along the tributary to Eighteenmile Creek were sampled from Station Lake down to Highway 62. The results are presented in a May 1995 Report which is present in the document repositories for this site, located at the Town Supervisor's Office as well as at the Eden Free Library. The results of this sampling event indicate that all samples in the area of Sisson Highway, both immediately upstream and downstream, indicate PCB concentrations in soils and sediments below 1 ppm. When developing cleanup goals, the Department combines generic guidance concentrations with site-specific information. The generic cleanup goal for PCBs in residential surface soils is 1 ppm. This goal was established based on a worst-case situation of surface soils present in a vegetable garden. If PCB concentrations were above 1 ppm then site-specific factors would have been evaluated to determine what cleanup goal that would be appropriate based on the potential for exposure. Since PCB concentrations in the soils and sediments adjacent to Sisson Highway are below 1 ppm, no additional consideration needs to be given to this area.

We were not aware of the work that is proposed by NYSDOT, nor have we been contacted by NYSDOT requesting information. As far as the "safety precautions" that you indicate NYSDOT personnel will be taking, each employer/worker is responsible for determining what actions are appropriate to ensure worker health and safety. We are in the process of contacting NYSDOT to discuss this situation in greater detail, after which the writer of this comment letter will be contacted to follow-up on the specific issues he has raised relative to his property.

APPENDIX B
ADMINISTRATIVE RECORD
Tennessee Gas Pipeline Compressor Station 229
Erie County
ID No. 9-15-140

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1. Record of Decision, dated March 1997.

2. Proposed Remedial Action Plan, dated February 1997.

3. Consent Order to perform RI/FS, Index # DO-004-8903, dated January 1991.

4. Addendum to Phase IIA and B Sampling - Off-Site Sampling Areas, dated March 1991.

5. Remedial Investigation (RI) Report, Volumes I, II, and III, dated August 1991.

6. Second Round Groundwater Report, Volume 1, dated November 1991.

7. Addendum to Remedial Investigation - Phase IIC Soil Sampling, dated February 1992.

8. Second Addendum to Remedial Investigation - Additional Phase IIC Soil Sampling, dated May 1992.

9. Data Summary for Residential Water Sampling, dated June 1992.

10. Third Addendum to Remedial Investigation - Additional Phase IIC Soil Sampling, dated July 1992.

11. Third Round Groundwater Report, Volume 1, dated October 1992.

12. Phase II Habitat Based Assessment (HBA) Verification Work Report, dated February 1993.

13. Fact Sheet, dated March 1993.

14. Evaluation of Groundwater Monitoring Data Report, dated July 1993.

15. Fact Sheet, dated October 1993.

16. Report on Phase I Additional Groundwater Characterization, dated February 1994.

17. Report on Fish Sampling Results from Station Lake, the Breached Pond, and the Tributary Between Ponds, dated March 1994.

18. Investigation of Soils Adjacent to Drainlines at Station 229 Report, dated August 1994.

19. Letter from A. English (NYSDEC) to D. Kraft (USEPA) regarding disposal requirements, dated August 4, 1994.

20. Fact Sheet, dated September 1994.

21. Report on Phase II Groundwater Characterization, dated November 1994.

22. Report on Fish Sampling Results from the Tributary and the Breached Pond Near Station 229, dated February 1995.

23. Phase III Supplemental Site Characterization Report, dated February 1995.

24. Fact Sheet, announcing March 1,1995 Public Meeting, dated February 1995.

25. Phase II Supplemental Groundwater Report, dated April 1995.

26. Station Lake Investigation Report, dated April 1995.

27. Fact Sheet, announcing May 9, 1995 Public Meeting, dated April 1995.

28. Interim Remedial Measure Work Plan, dated April 1995.

29. Report on Soil and Sediment Sampling Results the Tributary and the Breached Pond Near Station 229 ("Tributary Re-characterization Report"), dated May 1995.

30. NYSDOH Fact Sheet, dated June 1995.

31. Report on VOC Source Characterization, dated June 1995.

32. Interim Remedial Measure Decision Document, dated July 1995.

33. Interim Remedial Measure Design Plan, dated July 1995.

34. Fact Sheet, announcing the availability of the Interim Remedial Measure Decision Document, dated July 1995.

35. Fact Sheet, announcing September 28, 1995 Availability Session, dated September 1995.

36. Interim Remedial Measure Report, dated February 1996.

37. Fact Sheet, dated July 1996.

38. Letter from J. Moras (NYSDEC) to E. Schaper (TGPL) regarding the approval of the Remedial Investigation, dated May 13, 1996.

39. Tennessee Gas Pipeline's "Key Points", regarding off-site remediation, and NYSDEC Responses, dated May 1996.

40. Summary of NYSDEC July 1996 tributary surface water sample results.

41. Summary of NYSDEC November 1996 tributary surface water sample results.

42. NYSDEC comments on September 1996 draft Feasibility Study Report ("General Overview" section only), dated December 2, 1996.

43. Feasibility Study Report, Tennessee Gas Pipeline Compressor Station 229, prepared by Environ Engineering Associates of New York, P.C., dated January 10, 1997.

44. NYSDOH concurrence with 2/97 PRAP, dated February 11, 1997.

45. Fact Sheet, announcing March 11,1997 Public Meeting, dated February 1997.

46. Citizen comment letter from M. Steffen regarding planned NYSDOT replacement of Route 75 culvert, dated March 18, 1997.

47. Responsiveness Summary, prepared in March 1997 and attached to Record of Decision as Appendix A.

48. NYSDOH concurrence with 3/97 ROD.

49. Letter from J. Moras (NYSDEC) to E. Schaper (TGPL) regarding the approval of the Feasibility Study Report, dated April 3, 1997.