Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Tennessee Gas Pipeline Compressor Station 224 Site
Town of French Creek, Chautauqua County
Site Number 9-07-014

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 224
Town of French Creek, Chautauqua County, New York
Site No. 9-07-014

Statement of Purpose and Basis

This Record of Decision (ROD) presents the selected remedial action for the Tennessee Gas Pipeline Compressor Station 224 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 224 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 224 site and the criteria identified for evaluation of alternatives, the NYSDEC has selected excavation of contaminated soils and sediments for off-site disposal; placement of erosion controls in erodible areas with residual PCBs; grouting of the contaminated drainline located on-site; groundwater monitoring.

The components 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:

- Drainline B will be filled with grout (i.e., cement and bentonite mixture) to eliminate the potential for migration of contaminants from the drainline.

- Excavation of all PCB contaminated soils and sediments above the cleanup goal. Contaminated soils and sediments with concentrations above the 25 ppm cleanup goal will be disposed of in a TSCA landfill. Based on the RI data, the remedy will effectively excavate and remove all tributary sediments with PCB concentrations greater than 7 ppm.

- Erosion controls will be installed, in erodible areas of the on-site tributary, where excavation occurs or where residual PCBs are present below the cleanup goal. Based on the RI data, the remedy will include erosion controls over all remaining tributary sediments with PCB concentrations above 3.6 ppm (with the exception of one sample at a depth of 6-12 inches with a PCB concentration of 4.7 ppm).

- Sediment samples will be taken in the tributary, downstream of the area of remediation, as a part of the long term monitoring program.

- A 12-inch soil cover will be placed over the retired burn pit, as well as a portion of Scrap Yard Area A.

- Groundwater will be monitored to determine the need to continue and/or modify the monitoring program.

- Deed restrictions will be placed on the future use of areas of the property where residual PCBs will be present.

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.

3/25/97
Date

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

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RECORD OF DECISION

TENNESSEE GAS PIPELINE COMPRESSOR STATION 224
Town of French Creek, Chautauqua County, New York
Site No. 9-07-014
March 1997

SECTION 1: SITE LOCATION AND DESCRIPTION

TGPL Station 224 occupies 206 acres along Ravlin Hill Road, approximately 1 mile south of the hamlet of French Creek (figure 1). Only a small portion of this 206 acre property actually contains elevated levels of contamination, as discussed in Section 3. The area around this site is characterized by hilly topography with fields and farms located immediately east and west of the site and woods immediately north and south. The closest residence is located opposite the station entrance. Residences near the site draw water from private wells. Land use in the area is generally agricultural with local farmers raising cattle for beef and dairy products as well as growing grapes, corn, and oats.

The compressor station is located near the top of a ridge, approximately 250 feet above the French Creek - Beaver Meadow Brook drainage system, located west and south of the site. Most of the surface drainage from the site flows to an unnamed tributary of French Creek, located northeast of the station buildings, which then flows northwest.

The soils beneath the site are primarily silts and clays mixed with some small siltstone pebbles and shale fragments. The unconsolidated material below the site is approximately 10 feet thick with bedrock below that consisting of shale, siltstone, and sandstone.

The layout of Station 224 is shown on Figure 2. The station contains four reciprocal-type natural gas compressor engines in the Compressor Building, which are started with a single air starting system located in the Auxiliary Building. The starting air system consists of starting air compressors and associated air receiver tanks (ARTs) and piping. A single set of three ARTs is located immediately west of the Auxiliary Building. Other major buildings and structures at the station include a pipeline warehouse, a water treatment building, a combination office/garage, a meter building, and an administrative office.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

The site is a gas pipeline compressor station that has been in use since 1959. PCB-containing oil (Pydraul) was used in the starting air system compressors up until the early 1970's. At that point, the use of Pydraul was discontinued. Condensate generated from the starting air system is removed at knock-out bottles near the air compressors and at blow-down valves located at the ARTs. Historically, condensate from the air compressors was discharged into floor drains in the Auxiliary Building and onto the ground from the ARTs. As a result, PCB contamination has occurred in soils and sediments adjacent to the Auxiliary Building, the Compressor Building, the ARTs and through Drainline B to the Separator Pond. Currently, non-hazardous condensate is collected and disposed of off-site.

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-three samples were collected and analyzed for PCBs. The samples were collected from various locations including from the starting air compressor system, near blow-downs, and from site drainage courses. Media analyzed includes oils, soils, sediments, and condensate liquid. The highest PCB concentrations detected were around the ARTs (14,557 ppm and 4,312 ppm). One condensate sample, taken from the air bottles, had a PCB concentration of 158,000 ppm. The remainder of the sample results indicated PCB concentrations from less than 1 ppm to 499 ppm.

Based on the results 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

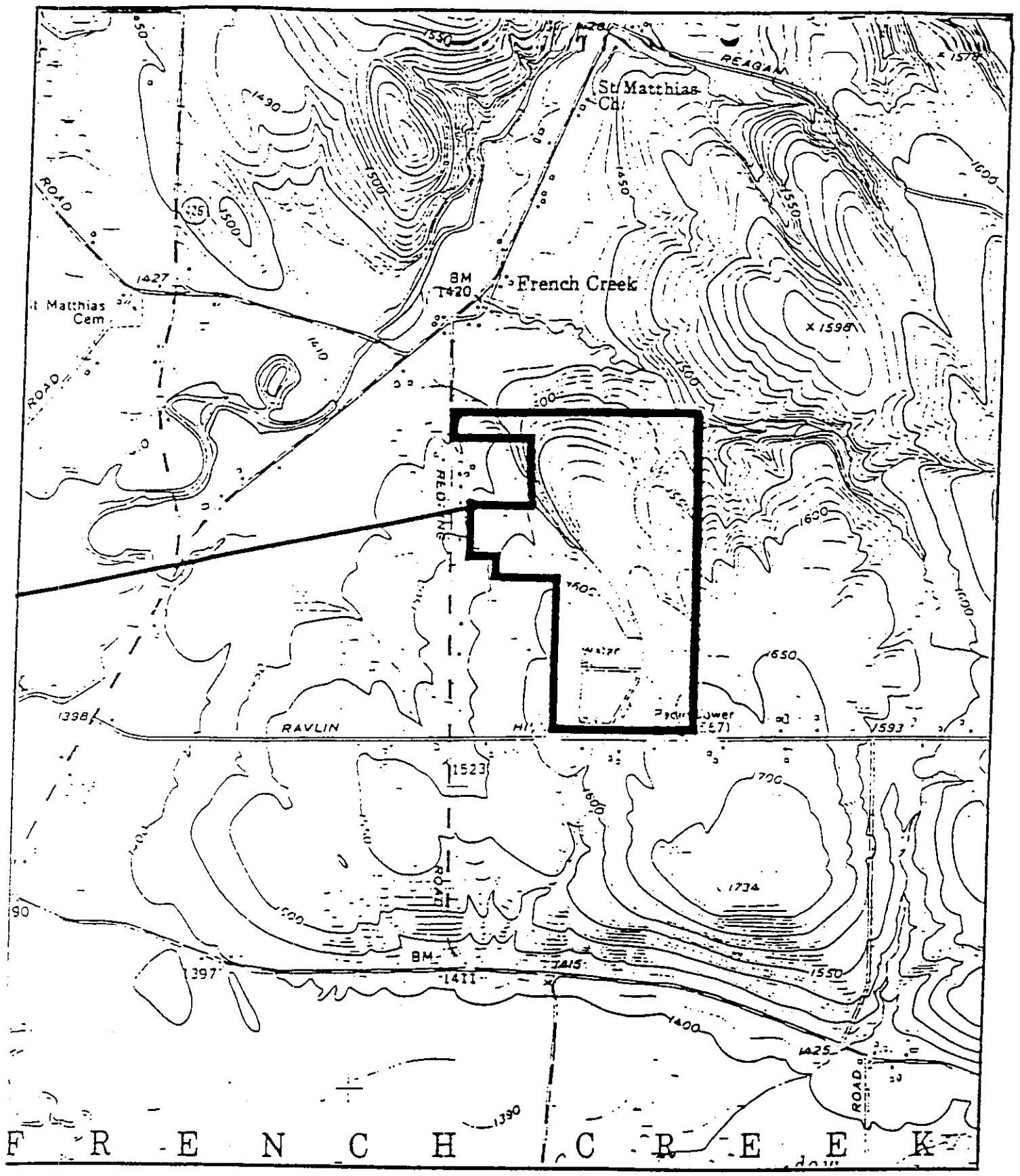
In response to a determination that the presence of hazardous waste at the Site presents a significant threat to human health and the environment, a Remedial Investigation/Feasibility Study (RI/FS) has recently been completed.

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 April 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 in chronological order):

- Remedial Investigation, Volumes I, II and III - the results of the initial RI sampling are presented in these reports (dated 8/91).
- Habitat Based Assessment - the evaluation to determine if and what impacts the site may have upon fish and wildlife in the area (part of Volume III of the RI Report dated 8/91).
- Second Round Groundwater Report (11/91).
- Addendum to Remedial Investigation Volume II - Phase IIC Soil and Sediment Sampling - additional soil and sediment samples were collected in the Separator Pond area, the tributary area, and on-site areas previously sampled during grid sampling (2/92 Report).
- Third Round Groundwater Report (10/92).
- Addendum to Remedial Investigation Volume II - Burn Pit Sampling Report (10/92 Report)
- Phase II Habitat Based Assessment (HBA) Verification Work - the second phase of the HBA was conducted to verify, in the field, some of the information generated during the first phase of the HBA conducted during the initial phase of the RI (2/93 Report).
- Evaluation of Groundwater Monitoring Data; Addendum to Remedial Investigation Report (9/93 Report).
- Fish Sampling Results from a Reach of French Creek (2/94 Report).
- Soils Adjacent to Drainlines - an evaluation was conducted for Station 224 (based on information gathered at other TGPL sites in New York) to determine if there was a potential for contamination in drainlines to migrate to soils adjacent to drainlines. These issues are discussed in Section 1.4.5 of the Feasibility Study Report).



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Scale in Feet

SITE LOCATION MAP

FIGURE 1

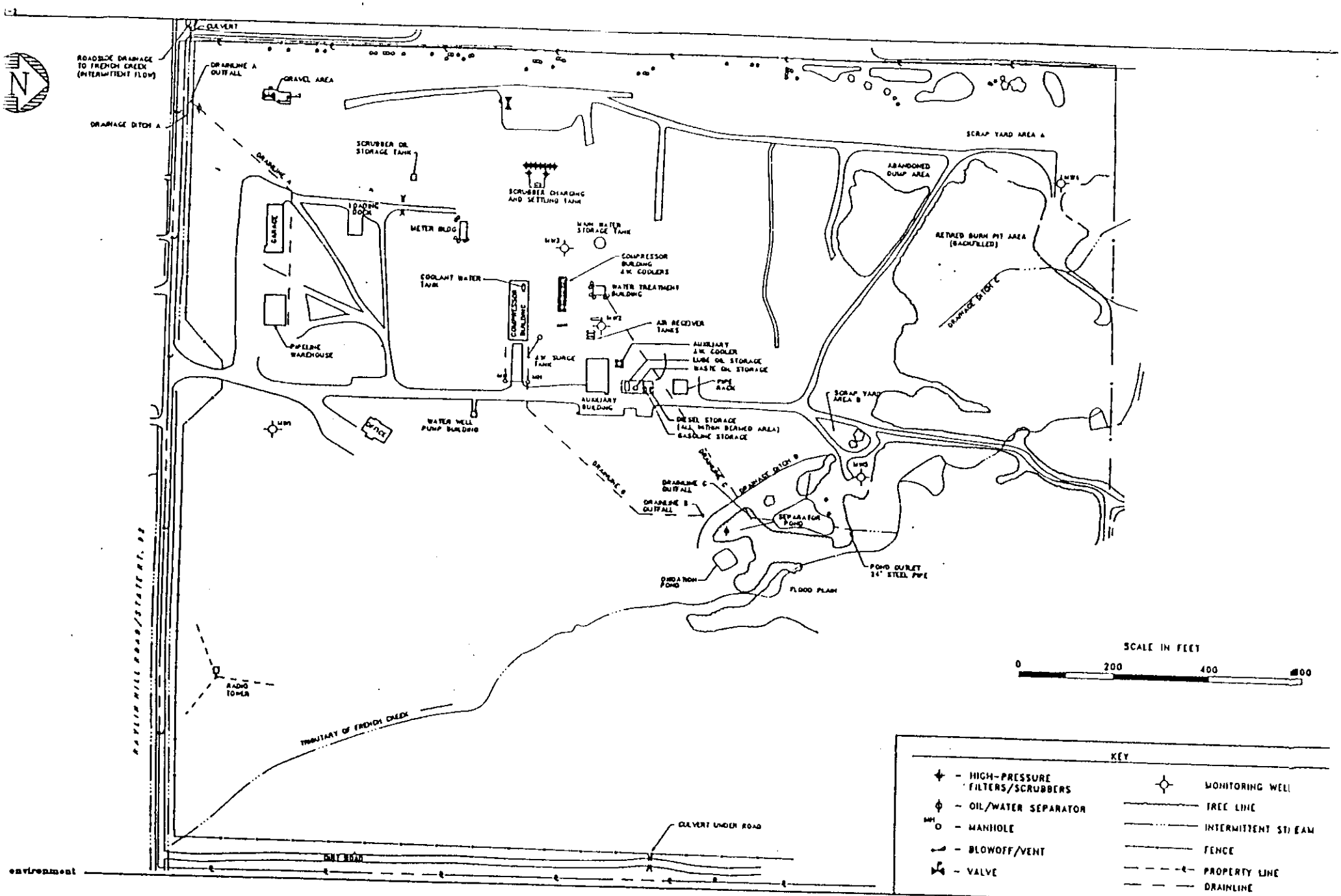


FIGURE 2

SITE PLAN

- Supplemental Investigation of the Separator Pond Area (10/96 Report).

To determine which media (soil, groundwater, etc.) is contaminated at levels of 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 and analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals.

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 Report.

Chemical concentrations are reported in parts per billion (ppb), 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. PCBs are the primary contaminant of concern. PCBs have been found in on-site soils and sediments, however, they are not very soluble in water and have not been found in groundwater.

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 contaminant fate and transport can be found in Section 6 of the RI Report.

3.1.2 Extent of Contamination

Table 1 summarizes the extent of contamination, based on the results from the RI, in surface/ subsurface soil, groundwater, and sediments and compares the data with the proposed cleanup goals for the site.

Surface Soils

For the purpose of this discussion, surface soils are those soils down to a depth of one foot. PCB contamination was detected above the 25 ppm cleanup goal in 41 surface soil samples with a maximum concentration of 9700 ppm. Elevated PCB concentrations, in surface soils, were detected primarily in the Air Receiver Tank (ART) area, near the Auxiliary Building, near the Compressor Building, and adjacent to the Separator Pond.

Soil samples from a portion of Scrap Yard Area A indicated slightly elevated levels of certain semi-volatile organic compounds. In addition, soil samples taken from the retired burn pit area indicated slightly elevated concentrations of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

Subsurface Soil

For subsurface soils (at or below a depth of one foot), 16 of the RI samples exceeded the cleanup goal of 25 ppm with a maximum concentration of 7000 ppm.

Sediment

Sediment samples were collected from drainline oil/water separators and manholes, as well as from the Separator Pond and the tributary to French Creek. The sample taken from Drainline B's oil/water separator had a PCB concentration of 2880 ppm. The highest PCB concentration detected in the Separator Pond was 320 ppm. PCBs were detected in on-site tributary sediment samples as high as 17 ppm with all of the off-site tributary sediment sample results indicating PCB concentration below 1 ppm (the highest was 0.62 ppm).

Drainlines

The only sample taken from the drainlines which indicated elevated levels of PCBs was the sediment sample taken from Drainline B's oil/water separator (2880 ppm). The sediment sample taken from Drainline A's oil/water separator indicated a PCB concentration of 2.8 ppm.

Groundwater

PCBs have not been detected in any of the groundwater samples.

Biota

A total of 21 fish samples were collected from French Creek and analyzed for PCBs. The highest concentration present in a fillet sample (0.09 ppm) was below the guidance levels for the protection of human health and the protection of sensitive wildlife species.

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:

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

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 at the site include:

- Dust could become airborne and migrate from the site. 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.

- Although there is a fence to limit access to certain areas of the property, there is the potential for unauthorized access and, as a result, potential for skin contact and ingestion of contaminated soils.

TABLE 1
Representative Constituents
Tennessee Gas Pipeline Station 224 (French Creek, 9-07-014)

Surface Soil
(up to 1 foot depth)

Constituent	Concentration Range, ppm			Cleanup Goal (ppm)	No. of samples	No. That Exceed Cleanup Goal
	Minimum	Maximum	Average [1]			
PCB	1.2	9,700	75.29	25	525	41

Subsurface Soil
(greater than 1 foot depth)

Constituent	Concentration Range, ppm			Cleanup Goal (ppm)	No. of samples	No. That Exceed Cleanup Goal
	Minimum	Maximum	Average [1]			
PCB	1.2	7,000	216.84	25	90	16

Ground Water

Constituent	Concentration Range, ppm			Cleanup Goal (ppm)	No. of samples	No. That Exceed Cleanup Goal
	Minimum	Maximum	Average [1]			
PCB	ND	ND	NA	0.1	36	0

Sediments in Drainline B Manholes / Oil-Water Separator

Constituent	Concentration Range, ppm			Cleanup Goal (ppm)	No. of samples	No. That Exceed Cleanup Goal
	Minimum	Maximum	Average [1]			
PCB	0.56	2,880	960.52	25	3	1

Sediments in Separator Pond / Tributary

Constituent	Concentration Range, ppm			Cleanup Goal [2] (ppm)	No. of samples	No. That Exceed Cleanup Goal
	Minimum	Maximum	Average [1]			
PCB	0.14	320	11.4	25	120	8

Notes:

ND - Below detection limit.
NA - Not applicable.
[1] - Non-detects entered at one-half the detection limit.
[2] - The action level for erodible soils/sediments includes placement of engineering controls in selected areas.

- There is the potential for future exposure through the consumption of contaminated fish. However, as indicated above, sampling of fish in French Creek indicated that the PCB concentrations were below levels of potential concern for the protection of human health.

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 French Creek. The on-site tributary does not contain aquatic resources that could bioaccumulate PCBs, however PCBs could migrate via surface runoff to downstream resources in French Creek. During the Remedial Investigation a Habitat Based Assessment (HBA) was performed. As a part of the HBA, fish in French Creek were sampled. The results indicated that PCBs were not present in the fish at levels of potential concern for the protection of sensitive wildlife species.

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 summarizes the enforcement history of this site:

Date	Index	Subject
1/22/91	DO-0005-8903	Implementation of the RI/FS
7/19/93	A4-0302-93-6	Implementation of an IRM to clean the compressor air piping system

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 remedy selected 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.

The remedial goals selected for this site are:

- Reduce, to the extent practicable the contamination present within the on-site soils to levels indicated in Table 1 and below.

- 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.

As shown in Table 1, PCB is the contaminant of concern at this site. The specific cleanup goals for this site include the following:

Contaminant	Soil	Sediment
PCB	* 25 ppm	** 25 ppm

* This level is higher than the goal typically selected for PCBs in restricted access/subsurface soils. This higher level was selected after considering the following factors: 1) access to the site is limited by fencing &/or difficult terrain; 2) groundwater monitoring has indicated no significant groundwater degradation; 3) it is consistent with the approach taken in EPA guidance; 4) the increase in costs (to achieve a lower goal) is not commensurate with an increase of protectiveness to human health and the environment; 5) it is expected that the site will continue in the same use for an extended period of time; the site owner will be required to control access, create deed restrictions, and comply with worker safety requirements; 6) after the remedial program has been completed the site will continue to be monitored to evaluate the effectiveness of the program.

** In erodible areas that contain residual PCBs below 25 ppm, erosion control measures would be installed, as necessary, based on the location and the PCB concentration. Examples of potential erosion control measures include the placement of geotextile followed by the placement of either topsoil/sod or rip-rap.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

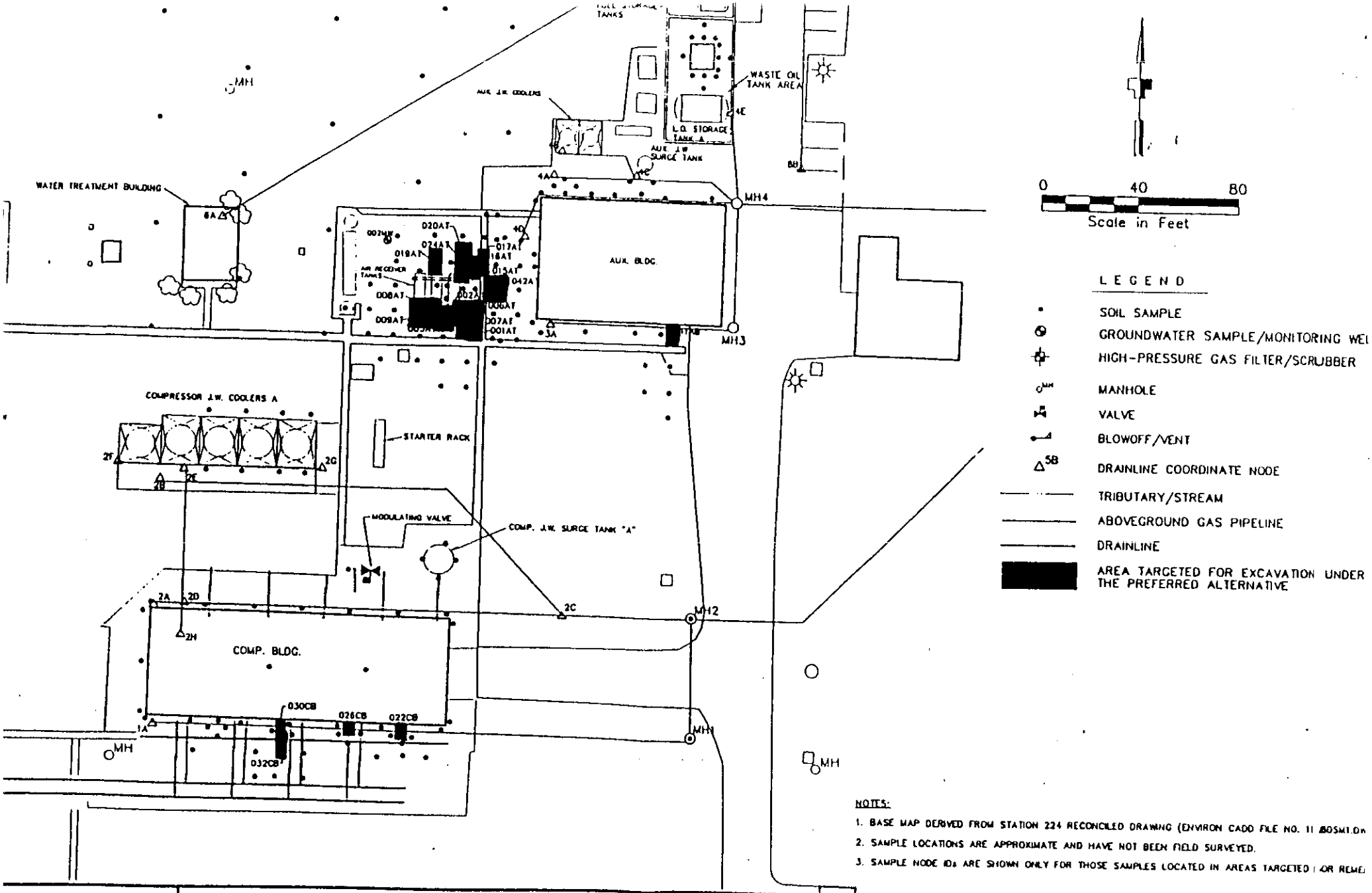
Potential remedial alternatives for the TGPL Compressor Station 224 site were identified, screened and evaluated in a three phase Feasibility Study. This evaluation is presented in the report entitled Feasibility Study Report, TGPL Compressor Station 224 dated November 1996. A summary of the detailed analysis follows.

6.1: Description of Alternatives

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

No Further Action

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



NOTES:

1. BASE MAP DERIVED FROM STATION 224 RECONCILED DRAWING (ENVIRON CADD FILE NO. 11 B0SM1.Dw
2. SAMPLE LOCATIONS ARE APPROXIMATE AND HAVE NOT BEEN FIELD SURVEYED.
3. SAMPLE NODE IDs ARE SHOWN ONLY FOR THOSE SAMPLES LOCATED IN AREAS TARGETED FOR REME

AREAS TARGETED FOR PCB REMEDIATION

TENNESSEE GAS PIPELINE COMPANY

COMPRESSOR STATION 224 – CLYMER, NEW YORK

Figu

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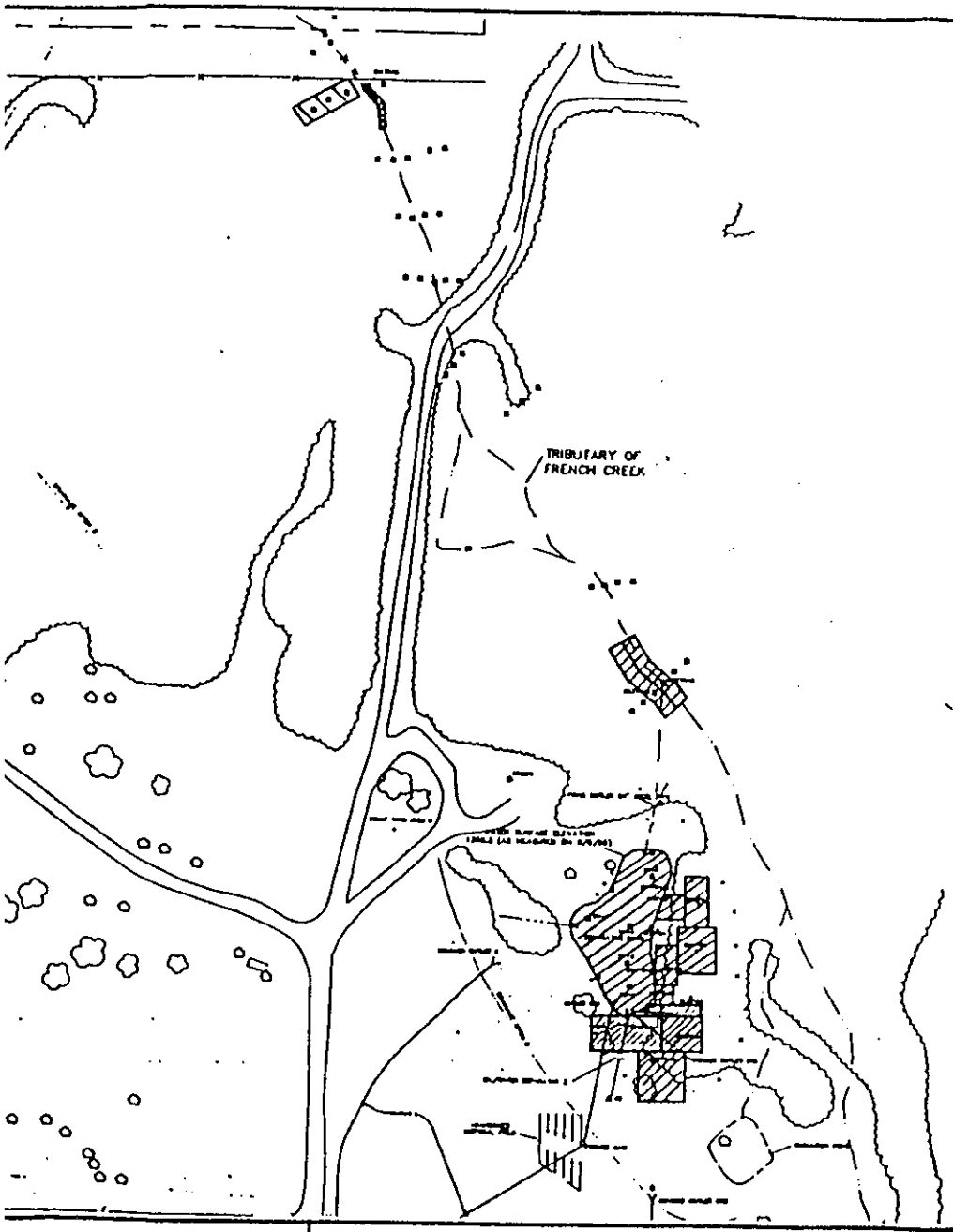

0 100 200

Scale in Feet

LEGEND

- SOIL SAMPLE
- GROUNDWATER SAMPLE/MONITORING WELL
- HIGH-PRESSURE GAS FILTER/SCRUBBER
- MANHOLE
- OUTFALL
- VALVE
- BLOWOFF/VENT
- Δ^{SB} DRAINLINE COORDINATE NODE
- PROPERTY BOUNDARY
- TREELINE
- FENCE
- TRIBUTARY/STREAM
- DRAINLINE
- AREA TARGETED FOR EXCAVATION UNDER THE PREFERRED ALTERNATIVE
- AREA TARGETED FOR EROSION CONTROL MEASURES

NOTES:

1. BASE MAP DERIVED FROM STATION 224 RECONCILED DRAWING (ENVIRON CADD FILE NO. 11180SM1.DWG).
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AREAS TARGETED FOR PCB REMEDIATION
TENNESSEE GAS PIPELINE COMPANY
COMPRESSOR STATION 224 – CLYMER, NEW YORK

Figure
4

This is an unacceptable alternative as the site would remain in its present condition and the threat presented by the PCB 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 Drainlines (approximately 1085 linear feet).

Alternative 1D - No Further Action

Present Worth $0

No additional action would take place other than the abandonment and outlet capping that have already been carried out.

Alternative 2D - Plug and Abandon

Present Worth $25,000
Capital Cost $25,000
Time to Construct . . . . . < 1 month

This alternative would involve plugging the outlet of the drainline (inlets are already plugged) and filling only the drainline appurtenances (manholes, cleanouts, oil/water separator) with grout. This alternative would contain PCB materials between the drainline sections to reduce the potential for migration of PCB from the drainline.

Alternative 3D - Fill with Grout

Present Worth $62,000
Capital Cost $62,000
Time to Implement . . . . . < 1 month

This alternative would fill the entire length of the affected drainline with grout (containing the PCB sediments between the hardened grout and the drain pipe) to minimize the potential for migration of PCBs to or from the drainline.

Alternative 4D - Flush and Cap

Present Worth $115,000
Capital Cost $115,000
Time to Implement . . . . . < 1 month

This alternative would flush the drainline with high pressure water to remove any loose sediments and debris. All flush water and sediment would be removed and disposed of off-site. After flushing all of the entrance and exit points of the drainline would be capped.

Alternative 5D - Excavation and Treatment/Disposal

Present Worth $189,000
Capital Cost $189,000
Time to Implement . . . . . < 1 month

This alternative involves excavating and removing the drainline for off-site disposal. Approximately 570 feet of the drainline is considered "inaccessible" to excavation and would be plugged and grouted.

B. Remedial Alternatives for PCB Soils/Sediments (approximately 1510 tons)

Alternative 1S - No Further Action

Present Worth $0

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

Alternative 2S - Containment by Capping

Present Worth $623,000
Capital Cost $569,400
Annual O&M $3,500
Time to Implement ..... 2 months

This alternative would involve the excavation and off-site disposal of PCB contaminated soils and sediments, in the separator pond area, with concentrations above 500 ppm. The remaining PCB contamination (above the cleanup goal) in the separator pond area would be capped in-place. The cap would be consistent with USEPA's 1990 document entitled Guidance on Remedial Actions for Superfund Site with PCB Contamination.

All soils and sediments, above the cleanup goal, from areas other than the separator pond (adjacent to buildings, ART, and the on-site tributary to French Creek) would be excavated and disposed of off-site.

Alternative 3S - Stabilization

Present Worth $1,319,000
Capital Cost $1,283,200
Annual O&M $2,300
Time to Implement ..... 2 Months

This alternative would involve excavating the PCB contaminated soils/sediments and mixing them with cement, fly ash and water to form a monolithic block which would immobilize the PCBs. The final solidified mass would either be redeposited in the excavated area or placed in a selected disposal area on-site.

In addition, the excavated area of the Separator Pond and tributary channel would be backfilled and made erosion resistant. If there were any erodible areas that contained residual PCBs below the 25 ppm cleanup goal, these areas would include the placement of erosion control measures, as necessary, based on location and PCB concentration.

Alternative 4S - Thermal Desorption

Present Worth $1,907,000
Capital Cost $1,873,700
Annual O&M $2,200
Time to Implement ..... 2-3 Months

This alternative would involve heating the excavated soils/sediments to volatilize PCBs and remove them with a heated air stream. The vapor stream would either be condensed or absorbed onto solvents to remove the PCBs. The treated soils could be redeposited in the excavated areas.

In addition, the tributary channel would be made erosion-resistant as described in Alternative 3S.

Alternative 5S - Off-site Incineration

Present Worth	$3,737,000
Capital Cost	$3,703,700
Annual O&M	$2,200
Time to Implement	2 Months

This alternative would involve the excavation, of soil/sediment exceeding the cleanup goal, and the off-site incineration of this material to destroy the PCBs

The tributary channel would be made erosion-resistant as described in Alternative 3S.

Alternative 6S - Off-site Landfill

Present Worth	$1,016,900
Capital Cost	$983,600
Annual O&M	$2,200
Time to Implement	2 Months

This alternative would involve the excavation and off-site disposal of PCB contaminated soils/sediments with concentrations above the cleanup goal. Soils and sediments with PCB concentrations of 25 ppm or greater (all of the material above the cleanup goal) would be disposed of in an off-site TSCA landfill.

This alternative would also include a 12 inch soil cover, over the retired burn pit area as well as a portion Scrap Yard Area A, to address the potential for contact with contaminants detected in the surface soils (see Section 3.1.1).

Alternative 7S - On-site Consolidation

Present Worth	$860,000
Capital Cost	$786,300
Annual O&M	$4,800
Time to Implement	2 months

This alternative would involve the excavation and off-site disposal of PCB contaminated soils and sediments above 500 ppm. All PCB contaminated soils and sediments with concentrations between 25 and 500 ppm would be excavated, consolidated in an on-site area, and capped.

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.

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. Drainlines

1. Protection of Human Health and the Environment

Alternative 1D (see Table 2 for listing of Alternatives) would not be protective and would not achieve the remedial objectives.

Alternatives 2D and 3D would achieve the remedial action objectives by preventing the migration of residual PCBs from the drainlines. Information gathered indicates that contaminants are not migrating to the soils adjacent to the drainlines. Alternatives 2D and 3D would provide confidence that future migration would not occur.

Alternative 4D would use a high pressure flush to remove contamination from the drainlines. This is considered less protective because of the potential for the high pressure flushing to promote migration of the contaminants from cracks or joints in the pipe to surrounding soil.

Alternative 5D would be the most protective of human health and the environment. It would be permanent (relative to the site), it would be reliable, and could be implemented in a relatively short time frame.

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

As presented in Table 1, the cleanup goal for subsurface PCB contamination is 25 ppm. Alternatives 2D, 3D, 4D, and 5D would achieve SCGs either through some type of on-site containment or through off-site disposal. Alternative 1D would do nothing to address the contamination in the drainlines.

3. Short Term Impacts and Effectiveness

Alternatives 2D and 3D would be expected to have no short term impacts associated with their implementation. Alternative 4D would have potential short term impacts associated with the high pressure flushing possibly forcing contamination out of the drainline through joints and cracks. Little could be done to prevent this type of impact to the environment. Alternative 5D would have short term impacts associated with excavation activities (dust, erosion). Appropriate controls could be used to prevent erosion and control dust. These

controls could be easily implemented and would be reliable. Alternative 1D would have no short term impacts. All five of the alternatives would be implemented in a short time frame (one month).

4. Long Term Effectiveness and Permanence

Alternative 5D would be the most effective and permanent remedy because the contamination would be excavated and disposed of off-site. Alternative 4D would also be effective since the drainlines would have contaminants removed. However, there could be residuals left behind. Alternative 3D would be effective in isolating the contamination and preventing it from migrating. Alternative 2D would prevent migration from the outlet of the drainline, but would not be as effective in minimizing the potential of future migration from cracks and joints in the drainline. Alternative 1D would not reduce the potential for future releases from the drainlines.

5. Reduction of Toxicity, Mobility and Volume

Alternatives 4D and 5D would reduce the toxicity, mobility, and volume relative to the site since the contamination would be removed and disposed of off-site. Alternative 3D would decrease the mobility of the contamination by filling the drainline with a grout mix to prevent flow in to and out of the drainline. The residuals would not pose a problem since there would be little to no potential for them to migrate. Alternative 2D would decrease mobility, but would not be as reliable as Alternative 3D. Alternative 1D would not reduce the toxicity, mobility or volume from the situation which currently exists.

6. Implementability

All four alternatives involve readily available resources that could be easily implemented with a great deal of confidence. The implementability of Alternative 5D is limited to accessible areas for excavation.

7. Cost

The following table summarizes the costs for the drainline remedial alternatives.

Alternative	Capital Cost	Annual O&M	Total
1D	0	0	0
2D	$25,000	0	$25,000
3D	$62,000	0	$62,000
4D	$115,000	0	$115,000
5D	$189,000	0	$189,000

B. Soils

1. Protection of Human Health and the Environment

Alternatives 5S and 6S would be the most protective of human health and the environment since the contaminated soils would be removed and disposed of off-site. Alternative 4S would be the next most protective since it would treat the waste, however, controls would be necessary during implementation to

prevent short term impacts. Alternative 3S would control the potential for contact with and migration of contaminants, however, the waste material would remain. Alternatives 2S and 7S would isolate contaminants to prevent surface contact and to reduce the potential for migration. Alternative 1S would not address remedial objectives. All seven of the remedial alternatives could be implemented in a relatively short time frame and any potential short term impacts could be reliably controlled with appropriate contingencies, as necessary.

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

Alternatives 3S, 4S, and 6S would achieve soil SCGs at the site either through some type of on-site treatment or through proper disposal of the material off-site. Although alternatives 2S and 7S would not include treatment or off-site disposal, they are containment type remedies and would eliminate the potential for direct contact with, and erosion/off-site migration of surface soils. Alternative 1S would not address soil SCGs.

3. Short-term Effectiveness and Impacts

Alternatives 3S, 4S, 5S, 6S, and 7S would all involve excavation of contaminated soil and would have the potential for short-term impacts through fugitive dust emissions. Alternative 4S would have additional potential short term impacts associated with vapor emission. 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 emissions and runoff of contaminated excavated material. As long as these control measures are used properly, they are effective in minimizing any potential short term impacts.

Alternative 2S would have little short term impacts. Alternative 1S would nave no short term impacts. All of the alternatives would be completed in less than three months.

4. Long-term Effectiveness and Permanence

Alternatives 5S and 6S are permanent relative to the site. Contaminated soil would be removed from the site so any potential risk or exposure pathway would be removed. Alternatives 3S and 4S would treat soils on-site and thus would offer long term effectiveness and permanence by removing/isolating contaminants. The level of confidence would be greater for alternative 4S as compared to alternative 3S. Alternatives 2S and 7S are not permanent/treatment technologies, but rather would offer isolation of the waste material. Alternative 1S would not be considered permanent or offer any long term effectiveness.

5. Reduction of Toxicity, Mobility or Volume

Alternatives 5S and 6S would reduce the toxicity, mobility, and volume, relative to the site, by removal and off-site treatment/disposal. Alternative 4S would reduce the mobility and volume by using on-site treatment by thermal desorption. Alternative 3S would reduce the mobility of the waste material, however, it is likely to increase the volume as a result of the solidification process. Alternatives 2S and 7S would reduce the mobility of the waste material by limiting the amount of infiltration and preventing erosion. Alternative 1S 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 2S represents the most readily implementable alternative, other than alternative 1S (no action), due to the relatively simple constructability of a cap. However, some excavation and off-site disposal (PCB

contaminated material above 500 ppm) would be involved. Alternatives 5S and 6S would be more difficult to implement (compared to 1S and 2S) since excavation and off-site transport all contaminated material, above the cleanup goal of 25 ppm, would be required. Alternatives 3S and 4S may be difficult to implement because of the need to excavate, treat the contaminated material, and backfill the treated material on-site. Alternative 7S would also be difficult to implement because it would involve excavation and off-site disposal of PCB-contaminated material above 500 ppm, as well as excavation and on-site consolidation of PCB-contaminated material between 25 ppm and 500 ppm.

7. Cost

The costs for each of the remedial alternatives for soil are summarized below:

Alternative	Capital Cost	Annual O&M	Total
1S	0	0	0
2S	$569,400	$3,500	$623,000
3S	$1,283,200	$2,300	$1,319,00
4S	$1,873,700	$2,200	$1,907,000
5S	$3,703,700	$2,200	$3,737,000
6S	$983,600	$2,200	$1,016,900
7S	$786,300	$4,800	$860,000

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 3D and 6S (filling drainlines with grout, excavation and off-site disposal of contaminated soils/sediments) as the remedy for this site.

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

For drainlines, alternative 4D could cause short and long term impacts by promoting migration of contaminants from the drainlines. Alternative 2D would not be as reliable in reducing the mobility of residual contamination, compared to alternative 3D. Both alternatives 3D and 5D would be protective of human health and the environment, however, the cost of 5D was greater than the cost for 3D.

For soils, alternatives 2S, 3S, 4S, 5S, 6S and 7S would address all soils and sediments above the cleanup goal of 25 ppm for PCBs. Alternatives 3S and 4S would involve on site treatment. Although there would be reliable engineering controls in place, there would be a greater potential for short-term impacts as compared with alternatives 5S and 6S. Alternatives 2S and 7S would involve a combination of off-site disposal and on-site containment. Since alternatives 5S and 6S would remove the material from the site they would be more effective in the long term, compared to alternatives 2S, 3S, 4S, and 7S.

Alternatives 5S and 6S would provide similar protection (both would dispose of material off-site), however, the cost for 5S is much greater than the cost for 6S.

The estimated present worth cost to carry out the remedy is $1,078,900. The cost to construct the remedy is estimated to be $1,045,300 and the estimated average annual cost for operation and maintenance/ monitoring will be $2,200 (cost comparisons made upon a basis of 30 years operation, maintenance, and monitoring).

The elements of the proposed 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:

- Drainline B will be filled with grout (i.e., cement and bentonite mixture) to eliminate the potential for migration of contaminants from the drainline.

- Excavation of all PCB contaminated soils and sediments above the cleanup goal. Contaminated soils and sediments with concentrations above the 25 ppm cleanup goal will be disposed of in a TSCA landfill. Based on the RI data, the remedy will effectively excavate and remove all tributary sediments with PCB concentrations greater than 7 ppm.

- Erosion controls will be installed, in erodible areas of the on-site tributary, where excavation occurs or where residual PCBs are present below the cleanup goal. Based on the RI data, the remedy will include erosion controls over all remaining tributary sediments with PCB concentrations above 3.6 ppm (with the exception of one sample at a depth of 6-12 inches with a PCB concentration of 4.7 ppm).

- Sediment samples will be taken in the tributary, downstream of the area of remediation, as a part of the long term monitoring program.

- A 12-inch soil cover will be placed over the retired burn pit, as well as a portion of Scrap Yard Area A.

- Groundwater will be monitored for a period of up to 30 years. Groundwater monitoring data will be periodically evaluated (e.g. every 5 years) to determine the need to continue and/or modify the monitoring program.

- Deed restrictions will be placed on the future use of areas of the property where residual PCBs will be present.

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 October 1994 a Fact Sheet was sent, to the people on the mailing list, to update the status of the project.
- In August 1995 another Fact Sheet was sent to the people on the mailing list.
- On February 7, 1997 a Fact Sheet was sent, to the people on the mailing, to update the status of the project and to announce the February 25,1997 public meeting.
- On February 25, 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
1D	No Further Action	$0	$0	$0
2D	Plug and Abandon	$25,000	$0	$25,000
3D	Fill with Grout	$62,000	$0	$62,000
4D	Flush and Cap	$115,000	$0	$115,000
5D	Excavation-Treatment/Disposal	$189,000	$0	$189,000

Soils/Sediments

	Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
1S	No Further Action	$0	$0	$0
2S	Capping In-place	$569,400	$3,500	$623,000
3S	Solidification	$1,283,200	$2,300	$1,319,000
4S	Thermal Desorption	$1,873,700	$2,200	$1,907,000
5S	Off-site Incineration	$3,703,700	$2,200	$3,737,000
6S	Off-site Landfill	$983,600	$2,200	$1,016,900
7S	On-site Consolidation/Capping	$786,300	$4,800	$860,000

APPENDIX A

RESPONSIVE SUMMARY

Tennessee Gas Pipeline Compressor Station 224

Chautauqua County
ID No. 9-07-014

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 11, 1997 and March 13, 1997 to receive comments on the proposal. A public meeting was held on February 25, 1997 at the Clymer Community Building 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 the contamination at the Tennessee Gas Pipeline Compressor Station 224 (TGPL 224) Site. The soils and sediments contaminated with PCBs will be removed and the on-site drainline (containing PCB contamination) will be grouted (filled with cement). 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:

   - The contaminated drainlines will be filled with grout (i.e., cement and bentonite mixture) to eliminate the potential for migration of contaminants from the drainline.

   - Excavation of all PCB contaminated soils above cleanup goals. Contaminated soils will be disposed of in a TSCA landfill.

   - Erosion control measures will be installed in erodible areas of the on-site tributary where excavation occurs, or where residual PCBs are present below the cleanup goal.

   - A 12 inch soil cover will be placed over the retired burn pit, as well as a portion of Scrap Yard Area A.

   - Groundwater will be monitored for a period of up to 30 years. At approximately 5 year intervals the data will be evaluated to determine the need to continue and/or modify the monitoring program.

   - Sediment samples will be taken, downstream of the area of remediation, as a part of the long term monitoring program.

- Deed restrictions will be placed on the future use of areas of the property where residual PCBs will be present.

I. Questions / Comments Raised During Public Meeting

1. **Issue**: Does the PCB cleanup goal of 25 ppm provide a sufficient level of protection?

   Response: Yes, the PCB cleanup goal of 25 ppm for on-site soils and sediments is protective. The Department combines generic guidance concentrations with site-specific information to develop cleanup goals. The PCB cleanup goal of 25 ppm was established for this site based on a number of site specific factors, including: 1) access to the site is limited by fence and/or difficult terrain; 2) any erodible soils, with the potential to contain residual PCBs, will have erosion control measures installed; 3) groundwater monitoring has indicated no significant groundwater degradation; 4) it is consistent with the approach taken in EPA guidance; 5) the increase in costs (to achieve a lower goal) is not commensurate with and increase of protectiveness to human health and the environment; 6) it is expected that the site will continue in the same use for an extended period of time; the site owner will be required to control access, create deed restrictions, and comply with worker safety requirements; 7) after the remedial program has been completed the site will continue to be monitored to evaluate the effectiveness of the program. Based on a review of all of the site-specific information, the PCB cleanup goal of 25 ppm, for on-site soils and sediments, is protective.

2. **Issue:**Are wildlife (e.g., turkey, deer) contaminated as a result of the contamination present at this site?

   Response: As a part of the Remedial Investigation (RI), a Habitat Based Assessment (HBA) was performed to evaluate any potential impacts to fish and wildlife as a result of contamination at this site. PCBs are not very soluble in water and tend to attach to soil/sediment. As a result, the primary pathway for potential migration is through erosion of soils and sediments by surface water flow. Since fish are in constant contact with surface water and suspended sediment in the water, they are the most susceptible to potential impacts as a result of the PCBs present at this site. As a part of the HBA, fish samples were collected from French Creek and analyzed for PCBs. The results indicated very low PCB concentrations, well below the level of potential concern for the protection of human health. As indicated, fish represent the worst case situation, relative to potential wildlife impacts and sample results indicate that they do not contain PCB concentrations at a level of concern.

3. **Issue**: Are there PCBs in French Creek?

   Response: PCBs are not present in French Creek at levels of potential concern. There is a drainage ditch/tributary that passes through the corner of the site property and then runs into French Creek. The distance between the outlet of Station Pond and French Creek is approximately 6,000 feet. This whole stretch of the tributary has been sampled and PCB concentrations in the sediment drop below 1 ppm approximately 4,000 feet before the tributary enters French Creek. Based on this data there was no need to sample sediments in French Creek itself. However, as mentioned above, the fish in French Creek have been sampled and do not contain PCBs at a level of concern. There are currently no significant impacts on French Creek, as a result of contamination from this site, and the remedy will minimize the potential for any future migration of contaminants from this site.

4. **Issue**: What is the function of the separator pond (Station Pond)?

   Response: In the past, the on-site pond was in-place as a backup in case there ever was a spill on-site. If there had been a spill, the pond would have acted to contain it until it could be cleaned up. Currently,

the outlet of drainline B is cut off (previously emptied into Station Pond) and there is a diversion ditch directing surface flow away from Station Pond.

5. Issue: How long do PCBs last in the environment?

   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.

6. Comment: One citizen indicated that he felt the PCB issue was overblown. He indicated that if the contamination has been on-site for years without any off-site impacts, there is no need to do any remediation at the site.

   Response: Although there are currently no impacts to off-site areas adjacent to this site, the source of the contamination remains uncontrolled and if it is not remediated, could remain for quite some time (see response to comment#5). The proposed remedial plan will address the current source areas in order to prevent the potential for future off-site impacts.

7. Issue: Do PCBs accumulate in plants?

   Response: Based on the information available to us, PCBs do not accumulate in plants to any significant extent. Due to the chemical characteristics of PCBs, they tend to attach themselves to soil and sediment particles and are not very soluble in water. As a result, the mechanism for the potential "uptake" of PCBs does not exist.

8. Issue: What was placed in the burn pit?

   Response: Materials from the site that went to the burn pit included oil filters and miscellaneous site garbage.

9. Issue: How long will O&M /monitoring continue?

   Response: For cost estimate purposes, a time frame of up to 30 years was used. Periodically, site information will be evaluated to determine the need to modify or discontinue the long-term monitoring. The O&M program will continue as long as there is the potential for the degradation of the erosion control measures that will be installed as a part of the remediation.

10. Issue: When will sediment removal take place?

    Response: The current plan calls for the removal of sediment some time this July or August so that the work can be performed during the driest time of the year.

11. Issue: During the excavation of the sediments, in Station Pond and the tributary, will there be temporary erosion controls in place to prevent the potential for migration of contaminated sediment?

Response: Yes. During construction there will be temporary erosion controls in place and, to the extent possible, surface water flow will be diverted away from the area of excavation. Once the remedial construction is completed permanent erosion controls will be installed and maintained. This will be done to insure that any residuals are not in contact with surface water and do not have the potential to move off-site.

12. **Issue**: What impacts would there be if nothing was done at this site?

    Response: Although the PCBs at this site have not migrated off-site at significant levels, there are very high concentrations present on-site. Since PCBs are very persistent in the environment (see response #5), the PCB source on-site would remain for quite some time, in an uncontrolled condition, and could potentially migrate where the contamination could cause significant impacts (i.e., off-site residential areas, French Creek). As a result, it is necessary to remediate this site to remove the PCB source areas.

13. **Issue**: What will be the cost of this cleanup?

    Response: The estimated cost of the remedial construction, including the O&M and long term monitoring, is $1,078,900.

14. **Issue**: It was indicated that the drainline from the area if the on-site buildings will be filled with cement (grout) as a part of the remedial program. Will new drains be installed?

    Response: Yes. Tennessee Gas Pipeline intends to install new drains to handle water around the compressor station buildings.

II. Questions/Comments Received in Writing

No written comments were received during the public comment period.

APPENDIX B
ADMINISTRATIVE RECORD
Tennessee Gas Pipeline Compressor Station 224
Chautauqua County
ID No. 9-07-014

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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-0005-89-03, dated January 1991.
4. Remedial Investigation (RI) Report, Volumes I, II, and III, dated August 1991.
5. Second Round Groundwater Report, Volume 1, dated November 1991.
6. Addendum to RI Vol. II, Phase IIC Soil and Sediment Sampling Report, dated February 1992.
7. Third Round Groundwater Report, Volume 1, dated October 1992.
8. Burn Pit Sampling Report, dated October 1992.
9. Phase II Habitat Based Assessment (HBA) Verification Work Report, dated February 1993.
10. Evaluation of Groundwater Monitoring Data, dated September 1993.
11. Report on Results of French Creek Fish Sampling, dated February 1994.
12. Fact Sheet, dated October 1994.
13. Fact Sheet, dated August 1995.
14. Feasibility Study, dated November, 1996.
15. NYSDOH concurrence with 2/97 PRAP, dated January 27, 1997.
16. Fact Sheet, announcing February 25, 1997 Public Meeting, dated February 7, 1997.
17. Responsiveness Summary, prepared in March 1997 and attached to Record of Decision as Appendix A.
18. NYSDOH concurrence with 1/97 ROD.