Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Foster Wheeler Corporation Site
North Dansville (T), Livingston County
Site Number 8-26-001

March 1999

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Foster Wheeler Corporation Inactive Hazardous Waste Site
North Dansville (T), Livingston County, New York
Site No. 8-26-001

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Foster Wheeler Energy Corporation Inactive Hazardous Waste Disposal Site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). This remedial decision is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Foster Wheeler Energy Corporation Inactive Hazardous Waste Disposal 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

Site investigations indicate that hazardous waste at the site is no longer present in consequential amounts, therefore the site no longer represents a potential significant threat to public health and the environment.

Description of Remedial Decision

Based upon the results of the Remedial Investigation (RI) for the Foster Wheeler Energy Corporation site, the NYSDEC has selected No Action for the site and will delist the site from the New York State Listing of Inactive Hazardous Waste Disposal Sites.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the No Action and delisting decision 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.

March 29, 1993
Date

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

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SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has made a final remedial decision for the Foster Wheeler Energy Corporation (FWEC) site. The FWEC site is located in the Town of North Dansville, Livingston County, adjacent to Canaseraga Creek and approximately 0.75 miles northwest of the Village of Dansville. As more fully described in Sections 3 and 4 of this document, historic dumping of solidified paint residues and at least two documented chemical spills at the site have resulted in the disposal of two known hazardous wastes: sodium pentachlorophenate and chromium. In the past, some of these chemicals were released from the site to Canaseraga Creek which bounds the site to the west.

These disposal activities resulted in the following potentially significant threats to the public health and/or the environment:

- a significant environmental threat associated with impacts of contaminants to surface water, as demonstrated by documented historic fish kills in Canaseraga Creek

- a potential significant threat to human health associated with exposure to contaminated soil and groundwater

In 1993, the site was listed as a class 2 site on the New York State Listing of Inactive Hazardous Waste Disposal Sites. A classification 2 means the site poses a significant threat to public health or the environment, and further investigation or other action was required.

Site investigations completed since 1993 indicate that hazardous waste at the site is no longer present in consequential amounts. Hazardous waste detected in site media is not widely distributed, is present at low concentrations, and is relatively immobile. Based on an evaluation of risks of exposure and the identified lack of consequential amounts of hazardous waste, it has been determined that the site no longer poses a significant threat to public health or the environment. Therefore, No Action was selected as the remedy for this site. In addition, the Department will also delist the site from the New York State Listing of Inactive Hazardous Waste Disposal Sites.

SECTION 2: SITE LOCATION AND DESCRIPTION

FWEC owns and operates a steam boiler manufacturing plant in the Town of North Dansville, Livingston County. Figure 1 is a site location map. A five-acre portion of the FWEC Plant site, which contains a former landfill area, a former water storage pond, and two historic spill areas, has been included in the Listing of Inactive Hazardous Waste Disposal Sites in New York State as Site No. 8-26-001. The plant site is located approximately 0.75 miles northwest of the Village of Dansville. The FWEC Plant is bounded on the west by Canaseraga Creek and on the north by a spur of the Dansville and Mount Morris Railroad and an adjacent agricultural field. The southern boundary abuts West Hartman Road and New York Route 36 while the eastern boundary abuts Zerfass and Meter Roads. Figure 2 shows the plant site in relation to these features and identifies the potential areas of concern which were the subject of a site investigation.

The nearest residences are located along West Hartman Road directly southeast of the plant site. The nearest domestic water wells are located northeast of the plant site on Zerfass and Meter Roads and on the west side of Canaseraga Creek. Impact to these private wells from the site is very remote since groundwater flow from the site is due north and these wells are side-gradient (to the northeast). A public water supply well, located approximately 2.3 miles downgradient, serves an additional 30 residences in the site vicinity. Groundwater flowing beneath the site will have a negligible influence on water quality in this distant water supply well.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The FWEC Plant site has a long history and has been used for industrial purposes for over 160 years. Since 1839 the plant has operated as a foundry manufacturing steam engines, superheater equipment for oil refineries, boilers and steam turbines. In 1927, the Foster Wheeler Corporation was formed and foundry operations continued until the late 1960s. FWEC switched to light metal fabrication in 1969; present-day operations consist of metal fabricating, welding, and machining of equipment steam boilers, power plant condensers, coal pulverizers and power transmission equipment.

The former landfill area, which is part of the five-acre inactive hazardous waste site, was used for disposal of plant materials including casting sand, foundry slag, floor sweepings, and miscellaneous solid wastes. Disposal of approximately 0.4 tons per year between 1927 and 1972 (18 tons total) of solidified paint overspray containing chromium was reported in FWEC's Community Right-to-Know submittal. Acetylene generator sludge was also reportedly disposed in the landfill in June 1958 which subsequently discharged into Canaseraga Creek resulting in a fish kill. In July 1964, the contents of the water storage pond, used for plant non-contact cooling water, were discharged into the creek. This discharge resulted in a reported fish kill that extended at least 10 miles downstream. A legal agreement between the NYSDEC and FWEC (called a Consent Order) was signed in 1972 which required the landfill to be closed. The closure plan was approved by the NYSDEC and the work was completed in 1974.

Two former aboveground tanks located east and west of the main plant buildings were used for mixing Super Strypp, a solution used to remove residues from metal parts prior to machining and which contains sodium pentachlorophenate. A spill from the west storage tank occurred in August 1978 when the tank overflowed into the storm sewer and discharged to Canaseraga Creek. The spill resulted in a fish kill which extended 15 miles downstream and killed an estimated 100,000 fish. Another documented spill of Super Strypp occurred in August 1990 from the east storage tank. The tank overflow resulted in the release of approximately 2,000 gallons of unused Super Strypp solution to the creek. There were no reports of fish kills associated with the 1990 spill. FWEC stopped using Super Strypp in 1991. The tanks were closed in 1992 and scrapped. Currently, FWEC employs a physical shot blast method to remove the protective coatings and prepare metal parts prior to fabrication.

3.2: Remedial History

1974: Under a 1972 Consent Order, FWEC completed closure of the former landfill area consisting of two feet of soil cover, seeding, grading and fencing of landfill area. In 1973, following the 1972 flood associated with

Hurricane Agnes, the US Army Corps of Engineers also stabilized a large area of creek bank. Recent site inspections have shown the vegetated cover to be intact and still effective at isolating the industrial wastes suspected of being buried there. Access to the former landfill area is limited to plant employees and contractors.

1982: NYSDEC performed an inspection of the FWEC Plant in 1982. The site was assigned a site classification 2a (a temporary classification assigned to sites that have inadequate and/or insufficient data for inclusion in any of the other classifications).

1983-86: EPA investigations of the site began in 1983 with site inspections and limited stormwater outfall and soil sampling. Surface soil samples collected in 1985 showed several organic contaminants. Additional stormwater outfall sampling was conducted in 1986.

1989: NYSDEC performed a Phase I investigation of the site in November 1989.

1990-96: The NYSDOH sampled two domestic water wells located west of Canaseraga Creek along Route 36 and three domestic wells located approximately 0.5 mile downgradient of the site on Zerfass and Meter Roads. Elevated levels of a variety of naturally-occurring metals, including sodium, were detected. The water was determined to be suitable for drinking, however, and no impacts to these wells attributable to site-related activities were found.

1992: NYSDEC conducted a Preliminary Site Assessment (PSA) in July 1992. Based on the results of the PSA, which found documented disposal of hazardous wastes, the site was reclassified from a class 2a to a class 2 in early 1993.

1993-97: NYSDEC requested FWEC enter into negotiations with the NYSDEC to perform a Remedial Investigation/Feasibility Study (RI/FS). The NYSDEC and FWEC signed a RI/FS Consent Order in May 1997. Field work associated with the first phase of the RI/FS began on July 30, 1997 and was completed in December 1997.

1998: FWEC submitted the final RI report to the NYSDEC in September 1998. The RI report was approved in October 1998. Additional monitoring wells were installed along the north side of the FWEC Plant and a third round of groundwater sampling was conducted in October 1998. A Supplemental RI report on this sampling was submitted to the NYSDEC in December 1998 and approved in January 1999.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination present at the site and to evaluate the potential for a significant threat to human health and the environment posed by the presence of hazardous waste, FWEC has recently completed a Remedial Investigation (RI) under the oversight of NYSDEC personnel.

4.1: Summary of the 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 two phases. The first phase was conducted between July 1997 and

December 1997 and the second phase in October 1998. Two investigation reports have been prepared, one entitled Remedial Investigation Report, Foster Wheeler Energy Corporation, Sept. 1998, which describes the field activities and findings of the initial phase of the RI, the other entitled Supplemental Remedial Investigation Report, Foster Wheeler Energy Corporation, Dec. 1998, which describes the second phase findings.

The first phase of the RI included the following activities:

- Geophysical survey to determine the thickness of the overburden and depth to bedrock.
- Installation of 10 soil borings and 5 monitoring wells (4 shallow and 1 deep overburden wells) for analysis of soils and groundwater.
- Collection of 13 sediment samples in Canaseraga Creek (7 adjacent to the facility, 3 upstream and 3 downstream of the site).
- Collection of 13 surface soil samples (7 samples from the former landfill, 4 samples from the former west spill area, and 2 from the soil berm located northeast of the former landfill).
- Collection of 10 subsurface soil samples (one from each of 5 monitoring well locations plus 5 soil boring locations).
- Collection of 22 groundwater samples over two sampling rounds (designated as Round 1 and Round 2).

Supplemental RI activities completed in October 1998 included the following activities:

- Installation of 3 shallow monitoring wells for analysis of groundwater and hydrogeologic conditions downgradient of the central portion of the FWEC Plant and the former landfill.
- Collection of 13 groundwater samples from 10 pre-existing wells and 3 newly installed wells (designated as Round 3).
- Collection of 13 surface soil samples (7 samples from the former landfill, 4 samples from the former west spill area, and 2 from the soil berm) for analysis of zinc only.

It should be noted that during Round 1 groundwater sampling, the wells were purged and sampled using a hand bailer. Hand bailing tends to agitate the water column in the well and introduces suspended particles (i.e., turbidity) into the sample. The resulting Round 1 water samples were very silty and exhibited high turbidity. After consulting with the NYSDEC, the sampling procedures were modified during subsequent rounds to minimize the amount of agitation and resulting silt in the samples. During Rounds 2 and 3, a low-volume peristaltic pump was used to purge each well and the resulting turbidity of the samples was greatly reduced.

In addition to sampling the monitoring wells, two Hydropunch samples were collected during Round 1. Because of its tendency to introduce soil particles during advancement of the Hydropunch sampler, this groundwater screening technique typically produces more silty or turbid samples than conventional well sampling.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data were compared to New York State Standards, Criteria and Guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the FWEC site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of NYS Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046 provides soil cleanup guidelines for the protection of groundwater, background conditions, and health-based exposure scenarios. Guidance values for evaluating contamination in sediments are provided by the NYSDEC's "Technical Guidance for Screening Contaminated Sediments".

Based on the results of the RI and an evaluation of potential public health and environmental exposures, the site contaminants no longer pose a significant threat to human health or the environment. Based on soil samples data taken directly from the landfill and corroborated by groundwater data, hazardous wastes reportedly disposed in the landfill prior to 1972 were not found at significant levels. Paint wastes reportedly disposed in the landfill either did not contain high concentrations of hazardous constituents when they were generated or the concentrations have diminished over the past 25 years as a result of natural attenuation processes. Residual amounts of hazardous wastes appear to be adequately entombed and immobilized beneath the vegetated landfill cover. In addition, no significant organic residues from past Super Strypp spills were identified. Although isolated detections of some hazardous constituents were found, none were highly elevated or indicative of a source area requiring remediation. More complete information can be found in the RI reports.

4.1.1 Site Geology and Hydrogeology:

The Dansville area is underlain by Devonian limestones and interbedded shales and sandstones. Geophysical data indicates that bedrock beneath the site may be at a depth of approximately 80 feet below ground surface. Shale and siltstone bedrock is exposed in the bed of Canaseraga Creek approximately 850 feet upstream of the site. The overburden geology of this area is largely glacially derived. The resulting deposits of till, drift material, and lacustrine sands, silts, and clays make up the overburden of the region.

The plant site is part of the Genesee River Basin which drains north to Lake Ontario approximately 50 miles away. Northwest-flowing Canaseraga Creek, a Class C stream lying adjacent to the site, is the largest tributary of the Genesee River. Seasonal flooding of Canaseraga Creek has likely resulted in localized floodplain deposits of organic rich material. These soils are believed to be underlain by a thick, dense deposit of lacustrine blue clay. The clay is reported to be up to 450 feet thick, according to the literature.

Soil boring data indicate that the developed portions of the plant site is underlain by fill. Ten feet of fill, comprised of sand with iron slag and some metal fragments, was encountered in the area adjacent to the former landfill. Twelve feet of fill was encountered in the landfill itself and was characterized as brown sand and gravel with brick and glass fragments. In the former pond area, the fill was characterized as gray to black sand and gravel with metal and wood fragments underlain by a gray silt. Beneath the fill, tan or brown sand was encountered. The sand is silty near the surface and coarsen with depth. Lenses of gravel were also encountered within the sand unit. Clay was encountered in deep borings that penetrated the sand unit at depths ranging from 18 to 28 feet below grade. The glacial lacustrine clay is gray to olive-gray in color with varying amounts of silt, fine sand, and gravel. Based on one boring, the clay is more than 42 feet thick.

Groundwater was encountered at a depth of between 10 and 15 feet below ground surface. Shallow groundwater beneath the plant site flows generally south to north. Water elevations in the deep well, which is screened in clay, are consistently higher than those measured in nearby shallow wells.

Permeability testing indicates that the fill and sand units beneath the site are highly permeable (horizontal hydraulic conductivity around 10^{-1} cm/sec), while the deeper clay unit is much less permeable in the horizontal direction (hydraulic conductivity between 10^{-4} and 10^{-5} cm/sec). The clay has a vertical hydraulic conductivity of around 10^{-8} cm/sec, which indicates that the clay is generally an effective barrier to groundwater contaminant migration. These measurements also indicate that groundwater in the clay unit is not hydraulically connected to the shallow groundwater and that shallow groundwater will likely not impact the deeper groundwater zone.

4.1.2 Nature of Contamination:

As described in the RI Report, many soil, groundwater and sediment samples were collected at the site as well as in the site vicinity to characterize the nature and extent of contamination. Overall, the chemicals detected at the site were low in concentration, sporadically present, and thus, not indicative of any consequential amounts of hazardous wastes.

The primary groundwater constituents found at the site are inorganics (metals) and included antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, thallium, and zinc. These metals are commonly found in industrial settings where foundry, electroplating, painting, and machining operations take place. Dissolved forms of some of these metals (especially cadmium and chromium) can be quite toxic, however, most of the metals at the site appear to be bound to particulate matter and are not by nature particularly mobile. For example, with the exception of thallium and zinc, none of the inorganic constituents initially detected in Round 1 were detected during Rounds 2 or 3 when low-volume sampling procedures resulted in less turbid (particle-laden) samples. Because of this sampling bias, Round 1 results are considered not to be representative of site groundwater quality. The potential for these metals to leach into groundwater and migrate from the site is very low since they are not very soluble in water. The potential for these metals to leach into groundwater and migrate from the site is very low since they are not very soluble in water.

In addition to metals, several semivolatile organic compounds (SVOCs) were detected in groundwater but were limited to the following phenolic compounds: phenol, 2,4-dichlorophenol, 2,4-dimethylphenol, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, 4-nitrophenol, and pentachlorophenol. Like the inorganics, most of these organic compounds were shown to be adsorbed to particulates and not mobile in the dissolved phase due to their extremely low solubilities. Xylene was the only volatile organic compound (VOC) detected in groundwater at the site and was detected in only one well (during Round 1) at a level exceeding the SCG for xylene. PCBs (Aroclor 1260) were detected in one sample during Round 1 but, like the other compounds with lower water solubilities, was not confirmed during subsequent rounds.

The primary contaminants in soil are inorganics and polycyclic aromatic hydrocarbons (PAHs). The metals detected most frequently in surface soil samples were arsenic, copper, magnesium, nickel, and zinc. Other metals detected in more than one location include cadmium, calcium, chromium, and mercury. Heavy metals exhibit low mobility in soil and generally adsorb to soil particles forming insoluble precipitates, therefore the tendency for them to leach into groundwater is low. The only SVOCs detected in surface soil above SCGs were PAHs, namely benzo(a)anthracene, benzo(a)pyrene, chrysene, and dibenzo(a,h)anthracene. PAHs are a very common

group of chemicals derived from oil, are a major component of asphalt, and often form through the incomplete combustion of fossil fuels, garbage or other organic substances. PAHs exhibit extremely low solubilities in water and have little tendency to leach to water. One subsurface sample contained elevated concentrations of three SVOCs: methylphenol, phenol, and benzo(a)pyrene.

The primary sediment contaminants found in and along Canaseraga Creek were SVOCs (PAHs and phenols). A few pesticides were detected in sediment, including dieldrin, 4,4'-DDE, 4,4'-DDT and endosulfan II. PCB Aroclor 1254 was detected in one duplicate sample (collected for quality control purposes). A variety of metals were detected and include antimony, arsenic, chromium, copper, iron, lead, manganese, mercury, and nickel.

4.1.3 Extent of Contamination

Tables 1 through 4 summarize the extent of contamination in soil, groundwater, and sediment, respectively, and compare the data with the SCGs for the site. Chemical concentrations are reported in either parts per billion (ppb) or parts per million (ppm). For comparison purposes, where applicable, SCGs are provided for each medium.

The following are the media which were investigated and a summary of the findings of the investigation.

Soil

Soil data are summarized in Table 1. Figure 3 shows both the surface soil sample and soil boring locations. Thirteen surface soil samples were collected during the RI: 7 samples from the former landfill, 4 samples from the former west spill area, and 2 from the soil berm. Benzo(a)pyrene was detected in all surface soil samples above NYSDEC SCGs (140 to 790 ppb). Three other PAHs were also detected in at least one surface soil sample. Metals detected most frequently above the TAGM #4046 guidance numbers in the west spill area surface soils were arsenic (14.7 to 52 ppm), magnesium (5,780 to 11,400 ppm), nickel (39 to 178 ppm), and zinc (60.2 to 455 ppm). Concentrations of metals in the west spill area were similar to those detected in the former landfill area. Metals detected in the former landfill area were copper (50.7 to 481 ppm), magnesium (5,510 to 8,270 ppm), nickel (25.7 to 155 ppm), and zinc (25.7 to 249 ppm). These concentrations are typical of non-hazardous industrial fill, are not representative of a source of hazardous waste, and do not warrant remedial action.

Seven subsurface soil samples were collected and analyzed from the 10 soil borings advanced during the RI. Three samples were collected in the vicinity of the former landfill area, 1 sample (plus 1 duplicate) was collected in the former pond area, 2 samples were collected from the east spill area, and 1 from the west spill area.

No SVOCs, pesticides, or PCBs were detected at elevated levels in subsurface soil from the former landfill area. Magnesium was the only metal detected in the former landfill area which exceeded the TAGM #4046 numbers in more than one subsurface soil sample. These data taken directly from the landfill suggest that the wastes originally placed in the landfill either did not contain high levels of hazardous constituents or have attenuated over the intervening 25 years. Any residual amounts of hazardous wastes appear to be adequately entombed and immobilized beneath the vegetated landfill cover.

The subsurface soil sample collected from the former pond location contained SVOCs in concentrations above TAGM #4046 levels: 2-methylphenol (180 ppb), benzo(a)pyrene (100 ppb), and phenol (170 ppb). The only

metals detected at elevated concentrations in more than one subsurface soil sample were magnesium (5,490 to 18,900 ppm) and zinc (53.8 to 126 ppm).

Groundwater

Groundwater beneath the site is generally encountered at a depth of between 10 and 15 feet below ground surface. Shallow groundwater flows generally south to north. A water table contour diagram based on Round 3 water levels is presented in Figure 4.

Groundwater results are summarized in Table 2. Sampling locations are shown in Figure 4. Data from the Round 1 indicated that many constituents with low water solubilities and a high tendency to adhere to soil particles were detected in the samples. The turbidity levels were also higher than normally accepted sampling protocols recommend. For subsequent rounds, the groundwater purging and sampling procedure was modified to reduce the amount of silt and turbidity in the samples. As a result, the number of compounds detected in Round 2 and Round 3 decreased dramatically and the data are more likely representative of the concentrations of mobile groundwater constituents with some potential to migrate. Because of the low frequency of SCG exceedences and the natural tendency for most of the constituents to adsorb to soil, groundwater is not a media of concern at the site.

A total of 35 samples were analyzed. The only VOC detected in groundwater at a concentration exceeding NYS water quality standards was xylene (5 to 200 ppb) which was detected in one well in the former pond area. Phenols were the only SVOCs detected above groundwater SCGs. Concentrations of phenols in Round 1 ranged from 1 to 64 ppb, with pentachlorophenol being the most widespread, detected in half of the 12 samples. No SVOC exceedences were measured in Round 2. During the third round, 4-nitrophenol was detected at a concentration of 3 ppb in a slightly turbid sample indicating that the compound is likely associated with soil particles. PCBs, which also bind tightly to soil, were detected in one sample during Round 1 sampling (0.62 ppb) but not in Rounds 2 or 3. No pesticides were detected in Rounds 1, 2, or 3.

Elevated levels of metals were detected in most groundwater samples collected during Round 1, but the number of exceedences and the concentrations were substantially less during subsequent rounds as a result of less silty samples being analyzed. For instance, 7 of 12 groundwater samples analyzed during Round 1 exceeded the SCG for chromium (with concentrations as high as 406 ppb) while no chromium exceedences were found in Rounds 2 or 3. As mentioned, the frequent occurrence of metals during the first round is believed to be due to the inadvertent collection of fine soil particles containing metals in the water samples. In Rounds 2 and 3, the metals most often detected at levels exceeding groundwater standards were iron (308 to 15,900 ppb), manganese (421 to 2440 ppb), and sodium (21,600 to 374,000 ppb).

Sediments

Seven sediment samples were collected from Canaseraga Creek in the immediate vicinity of the plant to evaluate possible site impacts to the sediment. In addition, 3 sediment samples were collected upstream of the plant and 3 samples were collected downstream of the plant. All sediment samples were surficial grab samples collected from the top 6 inches. Figure 5 shows the locations of sediment samples collected adjacent to the facility. Figure 6 shows the off-site (upstream and downstream of the plant site) sampling locations. The compounds found in sediments consisted of phenols, PAHs, pesticides/PCBs, and metals. However, most of the compounds detected were found at equivalent or higher levels in upstream samples. This pattern indicates that some contamination adjacent to the site may be attributable to other sources.

Organic contaminants detected in sediment are summarized in Table 3. The sampling results indicated that phenols and PAHs were detected in 7 of the 13 sediment samples in concentrations above NYSDEC Division of Fish and Wildlife sediment screening levels. Phenol was detected in elevated concentrations upstream and downstream of the facility, but not adjacent to the facility. The highest concentrations of methylphenol were detected upstream of the facility (3,000 and 8,000 ppb). Lower concentrations of methylphenol were detected adjacent to the facility and downstream. PAHs were detected both upstream and downstream of the facility. The highest concentrations of PAHs were detected in samples collected from the flood terrace above the creek along the facility reach. These appear to be associated with the plant's stormwater outfalls. Due to their low frequency of occurrences and the limited expected frequency and duration of contact with creek sediments, PAHs in sediments do not represent a significant human health or ecological risk. Review of existing stormwater management plans at the FWEC plant and implementation of appropriate pollution prevention measures by FWEC should eliminate any future contamination of sediments.

Pesticides were detected in 2 sediment samples above sediment criteria. One upstream sample contained 6.5 ppb of dieldrin, above the aquatic bioaccumulation criteria. The sample from the flood terrace location adjacent to Outfall 002 contained 4,4'-DDE and 4,4'-DDT at concentrations of 3 ppb and 3.4 ppb, respectively, which exceed the human health bioaccumulation criteria, and endosulfan II (4.2 ppb) above the benthic aquatic life chronic toxicity criteria (refer to Table 3). PCB Aroclor 1254 was detected at 34 ppb in one duplicate sample (along the flood terrace adjacent to the plant site), which exceeds the sediment SCGs, however the lack of corroborating data suggest that PCBs are not pervasive or widespread.

Inorganic contaminants detected in sediment are summarized in Table 4. Inorganic analytes (metals) detected above aquatic toxicity criteria (either Lowest Effect Level or Severe Effect Level) include arsenic, chromium, copper, iron, lead, manganese, and nickel. Two of the 3 upstream samples contained elevated levels of metals which were not elevated adjacent to the facility. Lead only occurred in elevated concentrations (23 to 99.9 ppm) adjacent to the facility, but was not elevated downstream. One of the downstream samples contained elevated levels of metals including the highest concentrations of iron (70,800 ppm) and nickel (370 ppm) and the only exceedence of chromium (141 ppm).

4.2 Summary of Human Exposure Pathways:

This section evaluates 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 6.1 of the RI Report and Section 4.1 of the Supplemental RI.

An exposure pathway is how an individual may come into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Completed or potential pathways which are known to or may exist at the site include:

- Potential exposure of unprotected workers to contaminants in surface soils during routine, long-term direct contact (incidental ingestion and inhalation) with surface soils.

- Potential exposure of residents to contaminated surface water and sediment via direct (incidental ingestion, inhalation or dermal contact) or indirect (fish ingestion) contact. Sediment and surface water data may reflect contaminant contributions from upstream (background) or from surface water discharges from the site.

- Incidental direct contact (ingestion and dermal contact) with subsurface soil and groundwater or inhalation of volatile compounds by construction workers during long-term excavation activities.

- Potential exposure of residents to contaminated groundwater via ingestion of domestic well water.

The human health risk assessment completed as part of the RI found that no unacceptable risks were estimated to occur at the site or off-site under present conditions for workers, nearby residents, recreationists or trespassers. Access to the site is controlled via FWEC's plant security personnel and limited physical barriers, minimizing potential exposure to non-workers. The results of sampling domestic water wells and site monitoring wells shows that groundwater is not a media of concern.

Two potential future risks of exposure to site contaminants were identified: 1) construction or maintenance workers who might incidentally be exposed to contaminants during long-term excavation activities involving active and direct contact with groundwater, and 2) unprotected workers who actively and directly contact surficial soils on a routine basis over the long term could be exposed to contaminants in surface soils. To mitigate these two concerns, FWEC will review and update, as necessary, its existing "Safety Policies, Procedures and Programs" to protect its own workers engaged in routine plant maintenance activities and FWEC's current "Contractor Safety Package" which requires contractors to review available site data and to develop and implement appropriate procedures to protect their workers during construction activities.

4.3 Summary of Environmental Exposure Pathways:

This section summarizes the types of environmental exposures which may be presented by the site. The fish and wildlife assessment included in Section 6.2 of the RI presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources.

The following potential pathways for environmental exposure have been identified:

- Direct exposure in the terrestrial ecosystems may occur through contact with or ingestion of soil.

- Potential direct exposure may occur through contact with or ingestion of sediment or surface water.

Due to the marginal criteria exceedences and low frequency of occurrences, contaminants in sediments and surface water do not represent a significant ecological risk. Additionally, the contaminants present in creek sediments near the site are commonly encountered in developed areas. Though levels of PAHs and some metals in surface soils may have some potential to impact ecological receptors, the likelihood of wildlife exposure is low because of the limited habitat value for wildlife at the site and the expected low frequency of their contact with contaminated surface soils.

SECTION 5: 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 FWEC entered into a Consent Order (legal agreement) on May 12, 1997. The Order obligates the responsible party to implement a RI/FS remedial program. The following is the chronological enforcement history of this site:

Date: 3/10/72
Index No.: 1057 & 1079

Subject of Order: In the Matters of the Alleged Violations of Article 12 of the Public Health Law of the State of New York and Part 19 of the State Sanitary Code and Part 190 of Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York by Foster Wheeler Corporation.

Date: 4/10/91
Index No.: R8-0824-90-12

Subject of Order: In the Matter of Alleged Violations of State Pollutant Discharge Elimination System Permit No. NY-0002879, Article 17 of the New York State Environmental Conservation Law, and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York by Foster Wheeler Energy Corporation.

Date: 5/12/97
Index No.: B8-0438-93-07

Subject of Order: In the matter of the Implementation of a Remedial Investigation/Feasibility Study for an Inactive Hazardous Waste Disposal Site, under Article 27, Title 13, and Article 71, Title 27 of the Environmental Conservation Law of the State of New York by Foster Wheeler Energy Corporation.

SECTION 6: SUMMARY OF THE REMEDIAL DECISION

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health or the environment presented by the hazardous waste present at the site. For this site, it has been determined that no significant threats remain that would warrant remedial action.

Soil, sediment and groundwater sampling results indicate that consequential amounts of hazardous waste do not remain on site. The data suggests that the wastes placed in the landfill prior to 1972 may not have contained high levels of hazardous constituents to begin with or that their concentrations have diminished over the intervening 25 years to insignificant levels. Non-hazardous wastes disposed in the former landfill prior to 1972 appear to be adequately entombed and immobilized beneath the vegetated landfill cover. Also, no significant organic residues from past spills were identified.

Although isolated detections of some chemicals were found, none were highly elevated or indicative of a source area. Due to the low frequency of occurrences and generally low contaminant mobility, the NYSDEC has determined that site contaminants do not represent a significant threat to the public health or the environment. In addition, existing FWEC safety plans are in place which, when adhered to, should be effective at minimizing potential exposure of site workers to surface soil containing residual levels of contaminants. Therefore, no areas of the site require remediation and the NYSDEC has decided that no action is necessary at the site. The NYSDEC will also delist the site from the New York State Listing of Inactive Hazardous Waste Disposal Sites.

SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation 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 Citizen Participation Plan was prepared by Foster Wheeler and approved by the DEC in March 1997. The CP Plan was developed to guide future CP activities related to the RI/FS.
- An information repository for documents pertaining to the site was established at the Dansville Public Library in June 1997.
- A site mailing list was established which included nearby property owners, local political officials local media and other interested parties.
- A fact sheet was sent to people on the site mailing list in July 1997 after completion of the RI/FS Work Plan.
- A public meeting was held July 29, 1997 to discuss the RI/FS Work Plan.
- Concurrent with the release of the Proposed Remedial Action Plan (PRAP) on February 17, 1999, a fact sheet was sent to people on the site mailing list announcing the start of the 30-day public comment period on the PRAP. The public comment period ran through March 19, 1999.
- A legal notice was published in the Environmental Notice Bulletin and a local newspaper announcing the start of the 30-day public comment period on the proposed remedial decision and site delisting contained in the PRAP.
- A public meeting was held March 3, 1999 to discuss the RI and the PRAP and to solicit comments on the PRAP.
- In March 1999, a Responsiveness Summary was prepared to address the comments received during the public comment period for the PRAP. The Responsiveness Summary is incorporated into this Record of Decision (ROD).

Table 1
Foster Wheeler Energy Corporation Site
Nature and Extent of Contamination

Soils

MEDIA	CLASS	CONTAMINANT	CONCENTRATION RANGE (ppb)	FREQUENCY of RESULTS EXCEEDING SCGs	SCG (ppb)
Subsurface soil	SVOCs	2-Methylphenol	ND to 180	1 of 7	100
		Benzo(a)pyrene	ND to 100	1 of 7	61
		Phenol	ND to 170	1 of 7	30
Surface soils (includes soil berm samples)	SVOCs	Benzo(a)anthracene	ND to 760	4 of 14	224
		Benzo(a)pyrene	ND to 790	11 of 14	61
		Chrysene	ND to 990	1 of 14	400
		Dibenzo(a,h)anthracene	ND to 71	1 of 14	14
	Metals	Beryllium	0.05 to 6.1	1 of 14	1.75*
		Cadmium	0.1 to 5	0 of 14	10
		Chromium	5.8 to 339	4 of 14	50**
		Mercury	ND to 1.5	6 of 14	0.2*
		Selenium	ND to 9.9	2 of 14	3.9*

ppb parts per billion
SCGs NYS Standards, criteria, and guidance values. Based on TAGM #4046 values unless otherwise noted
ND not detected
* SCGs are based on Maximum Eastern USA Background concentrations
** SCGs are based on NYS Background concentrations

Table 2
Foster Wheeler Energy Corporation Site
Nature and Extent of Contamination

Groundwater

CLASS	CONTAMINANT	CONCENTRATION RANGE (ppb)	FREQUENCY of SAMPLES EXCEEDING SCGs		SCG (ppb)
			ROUND 1*	ROUNDS 2 & 3	
VOCs	Xylene	ND to 200	1 of 12	0 of 23	5
SVOCs	Phenol	ND to 2	1 of 12	0 of 23	1
	2,4-Dichlorophenol	ND to 3	1 of 12	0 of 23	1
	2,4-Dimethylphenol	ND to 3	1 of 12	0 of 23	1
	2,4-Dinitrophenol	ND to 20	1 of 12	0 of 23	1
	4-Nitrophenol	ND to 3	0 of 12	1 of 23	1
	4,6-Dinitro-2-methylphenol	ND to 2	1 of 12	0 of 23	1
	Pentachlorophenol	ND to 64	6 of 12	0 of 23	1
PCBs	Aroclor 1260	ND to 0.62	1 of 12	0 of 23	0.1
Metals	Antimony	ND to 30.2	7 of 12	0 of 23	3
	Arsenic	ND to 389	6 of 12	0 of 23	25
	Barium	67.1 to 2,700	4 of 12	0 of 23	1,000
	Beryllium	ND to 8.9	3 of 12	0 of 23	3
	Cadmium	ND to 11.7	1 of 12	0 of 23	10
	Chromium	ND to 406	7 of 12	0 of 23	50
	Lead	ND to 402	11 of 12	0 of 23	25
	Selenium	ND to 12.9	0 of 12	1 of 23	10
	Thallium	ND to 18.2	4 of 12	2 of 23	4
	Zinc	ND to 2,000	9 of 12	0 of 23	300

* Round 1 samples include two Hydropunch samples.
ppb parts per billion
SCGs New York State standards, criteria, and guidance values
ND not detected

Table 3
Foster Wheeler Energy Corporation Site
Nature and Extent of Contamination

Organic Contaminants Detected in Sediment

CLASS	CONTAMINANT	CONCENTRATION RANGE (ppb)	FREQUENCY of SAMPLE RESULTS EXCEEDING SCGs	SCG (ppb)
SVOCs	Phenol	ND to 110	2 of 13	5*
	4-Methylphenol	ND to 8000	6 of 13	5*
	Phenanthrene	ND to 11,000	1 of 13	1,200*
	Benzo(a)anthracene	ND to 5400	3 of 13	13**
	Chrysene	ND to 5400	4 of 13	13**
	Benzo(b)fluoranthene	ND to 3400	4 of 13	13**
	Benzo(k)fluoranthene	ND to 3300	3 of 13	13**
	Benzo(a)pyrene	ND to 4200	4 of 13	13**
	Indeno(1,2,3-cd)pyrene	ND to 1700	4 of 13	13**
Pesticides and PCBs	Dieldrin	ND to 3	1 of 13	1**
	4,4'-DDE	ND to 6.5	1 of 13	0.1**
	Endosulfan II	ND to 4.2	1 of 13	0.3**
	4,4'-DDT	ND to 3.4	1 of 13	0.1**
	Aroclor 1254	ND to 34	1 of 13	0.008**

ppb parts per billion
SCGs New York State standards, criteria, and guidance values
ND not detected
* Concentration presented is the chronic toxicity sediment criteria for protection of benthic aquatic life, normalized using an estimated total organic carbon content of 1 percent, as presented in the NYSDEC's Technical Guidance for Screening Contaminated Sediments (Nov. 1993)
** Concentration presented is the assumed sediment screening level for protection against potential bioaccumulation effects, normalized using an estimated total organic carbon content of 1 percent, as presented in the NYSDEC's Technical Guidance for Screening Contaminated Sediments (Nov. 1993)

Table 4
Foster Wheeler Energy Corporation Site
Nature and Extent of Contamination

Inorganic Contaminants Detected in Sediment

CLASS	CONTAMINANT	CONCENTRATION RANGE (ppm)	FREQUENCY of SAMPLE RESULTS EXCEEDING SCGs	SCG (ppm)
Metals	Antimony	ND to 3.8	3 of 13	2*
	Arsenic	4.3 to 9.5	6 of 13	6*
	Chromium	4.9 to 141	2 of 13	26*
			1 of 13	110**
	Copper	9.4 to 48.2	5 of 13	16*
	Iron	ND to 11,000	5 of 13	20,000*
			1 of 13	40,000**
	Lead	4.7 to 99.9	2 of 13	31*
	Manganese	235 to 2,490	4 of 13	460*
			1 of 13	1100**
	Mercury	ND to 0.18	1 of 13	0.15*
	Nickel	9.3 to 370	5 of 13	16*
			2 of 13	50**

ppm parts per million
SCGs New York State standards, criteria, and guidance values
ND not detected
* Concentration presented is the Lowest Effect Level for aquatic or benthic organisms
** Concentration presented is the Severe Effect Level for aquatic or benthic organisms

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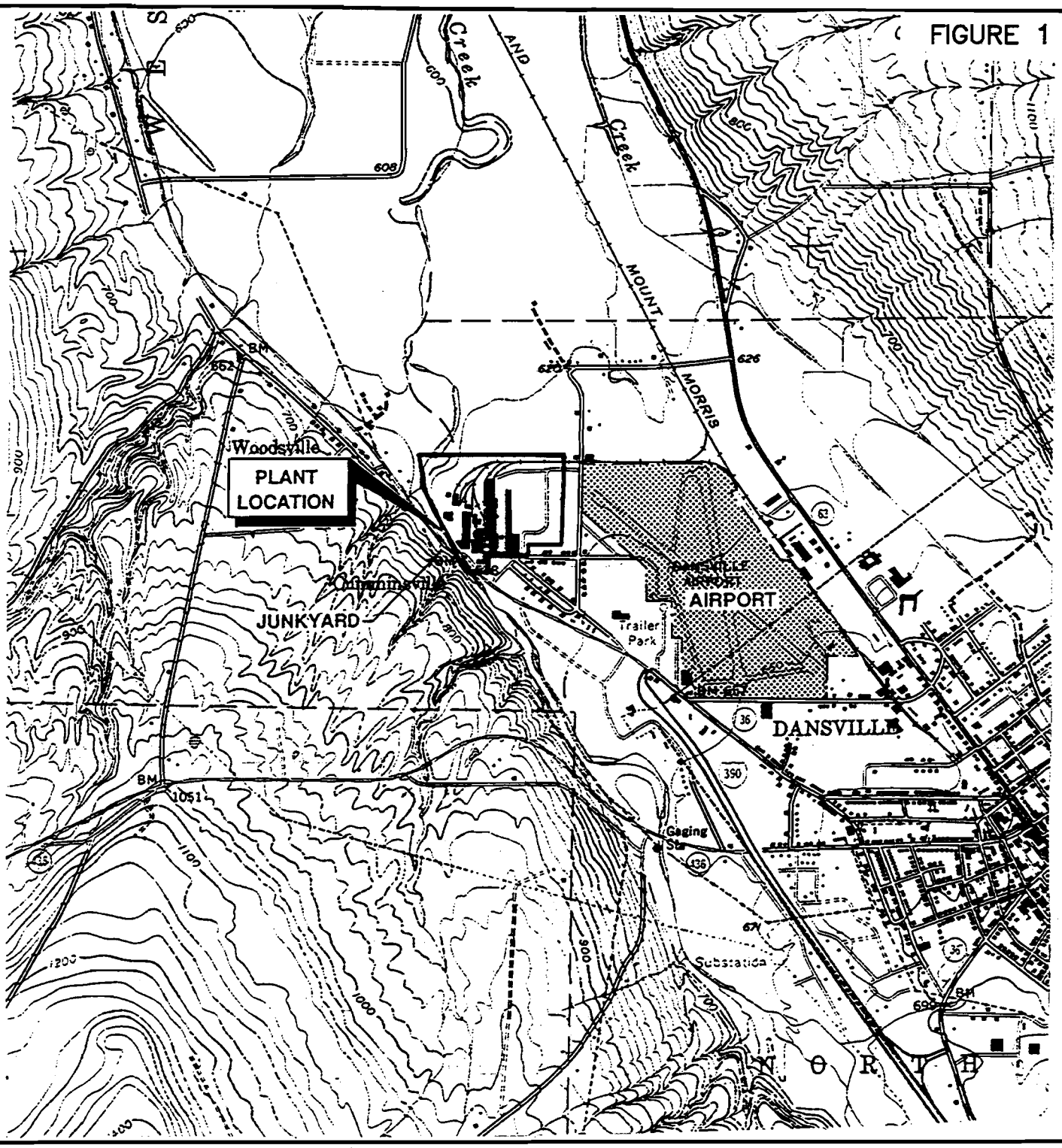
FIGURE 1



USGS 7.5 MINUTE QUADGRANGLE OF DANSVILLE, NY. REVISED 1978

STATE LOCATION MAP

FOSTER WHEELER ENERGY CORPORATION
PROPOSED REMEDIAL ACTION PLAN

SITE LOCATION MAP

8-26-001
JANUARY 1999

1/12/99

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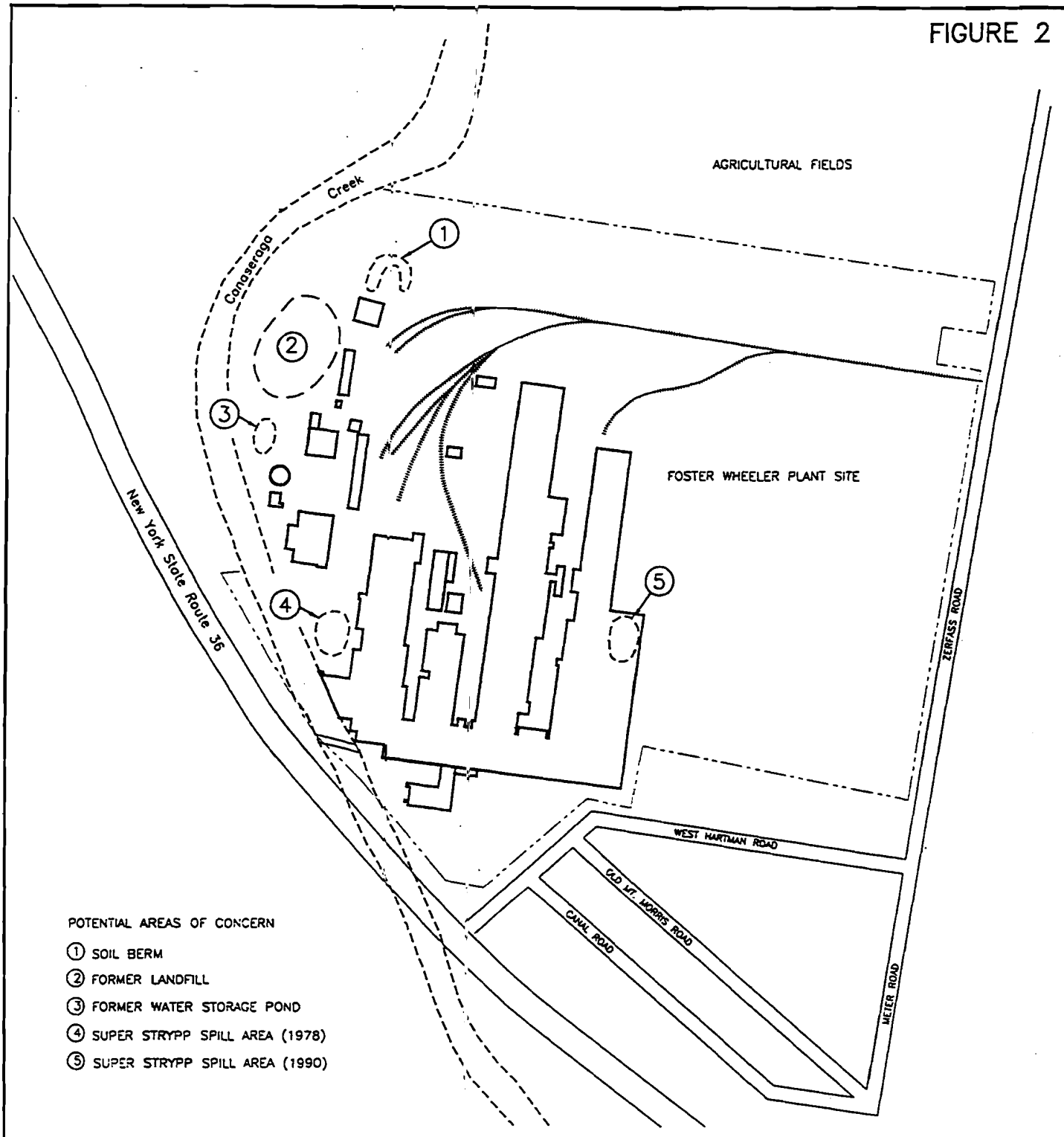
FIGURE 2



POTENTIAL AREAS OF CONCERN

① SOIL BERM
② FORMER LANDFILL
③ FORMER WATER STORAGE POND
④ SUPER STRYPP SPILL AREA (1978)
⑤ SUPER STRYPP SPILL AREA (1990)

FOSTER WHEELER ENERGY CORPORATION
PROPOSED REMEDIAL ACTION PLAN

SITE PLAN

STATE LOCATION MAP

8-26-001
JANUARY 1999

SCALE IN FEET

0 200 400 800

N

1/14/99

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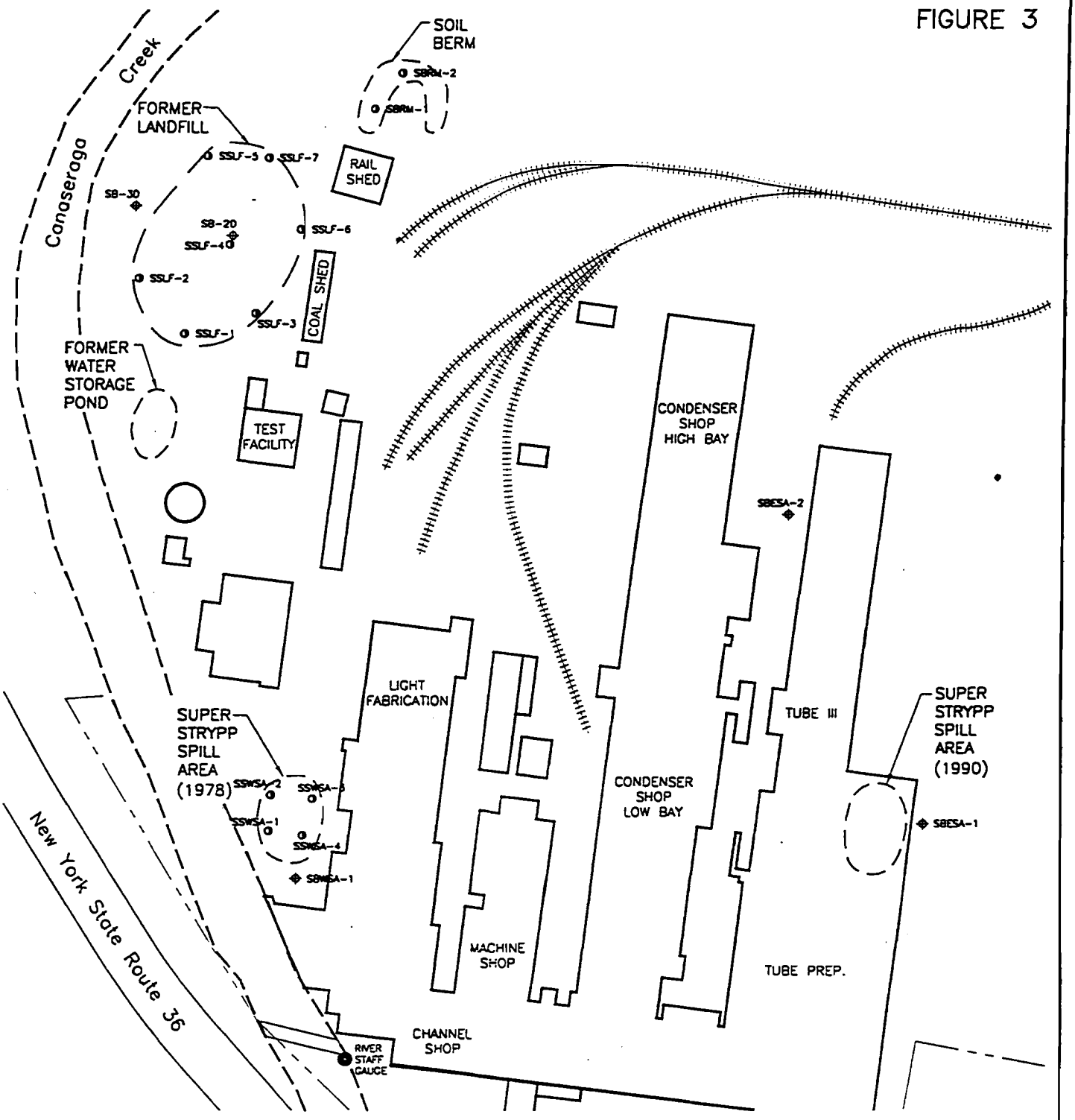
FIGURE 3



FOSTER WHEELER ENERGY CORPORATION
PROPOSED REMEDIAL ACTION PLAN

SOIL SAMPLE LOCATIONS

N

STATE LOCATION MAP

SCALE IN FEET

0 100 200 400

8-26-001
JANUARY 1999

1/12/99

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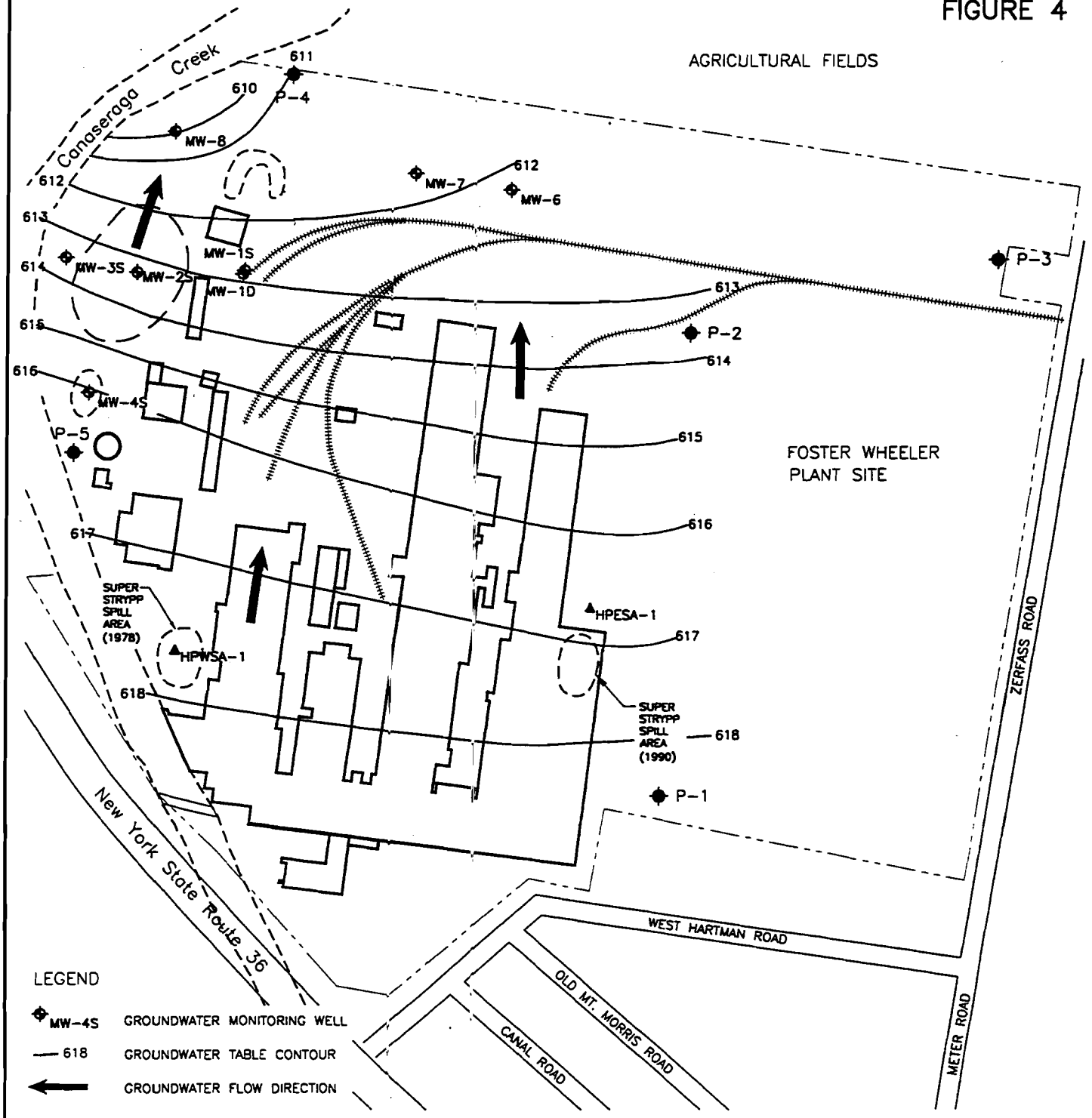
FIGURE 4



FOSTER WHEELER ENERGY CORPORATION
PROPOSED REMEDIAL ACTION PLAN

GROUNDWATER FLOW DIRECTION & WELL LOCATIONS

STATE LOCATION MAP

8-26-001
JANUARY 1999

SCALE IN FEET
0 150 300 600

N

1/14/99

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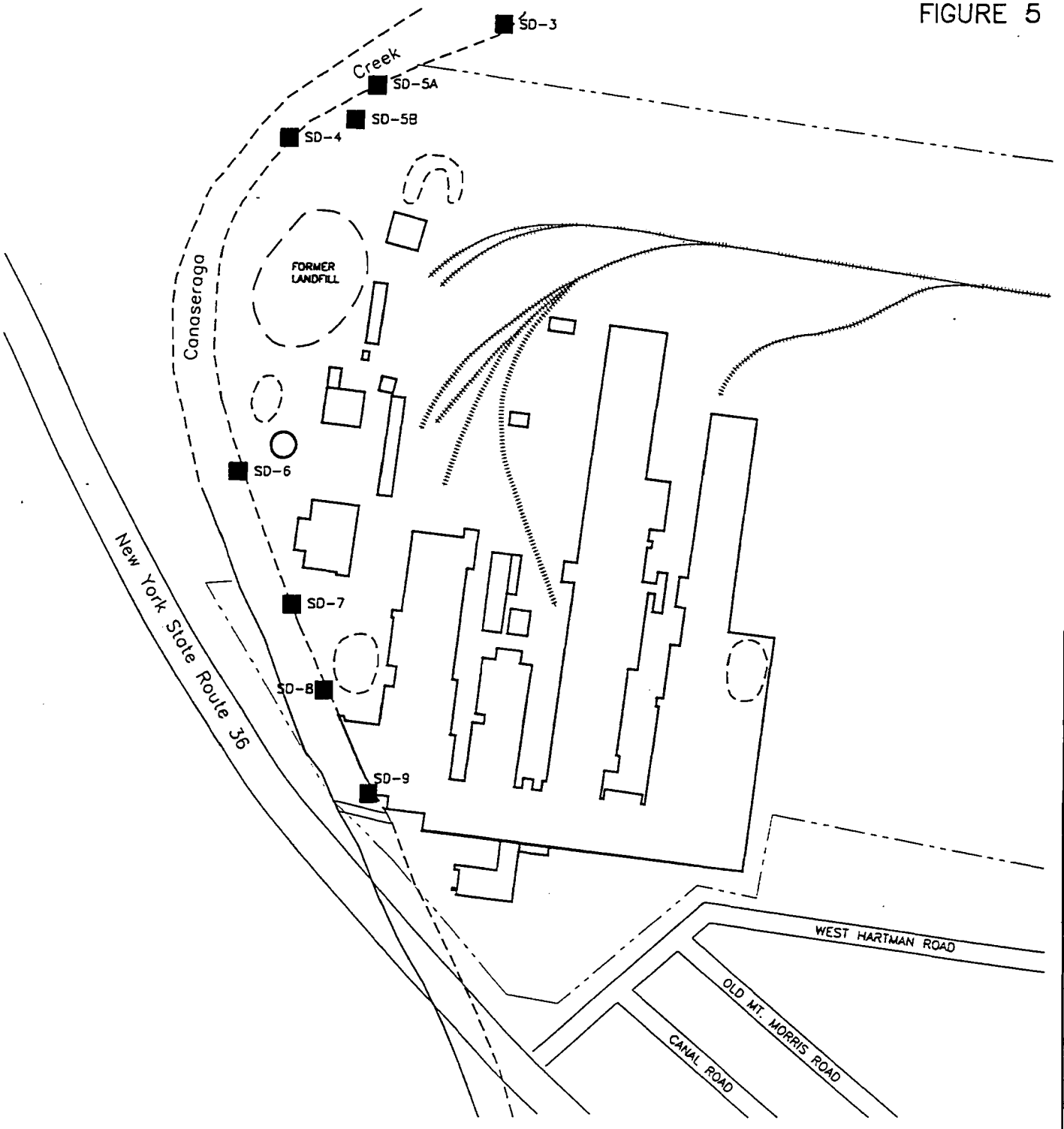
FIGURE 5



FOSTER WHEELER ENERGY CORPORATION
PROPOSED REMEDIAL ACTION PLAN

ON-SITE SEDIMENT SAMPLING LOCATIONS

STATE LOCATION MAP

8-26-001
JANUARY 1999

SCALE IN FEET

0 150 300 600

N

1/14/99

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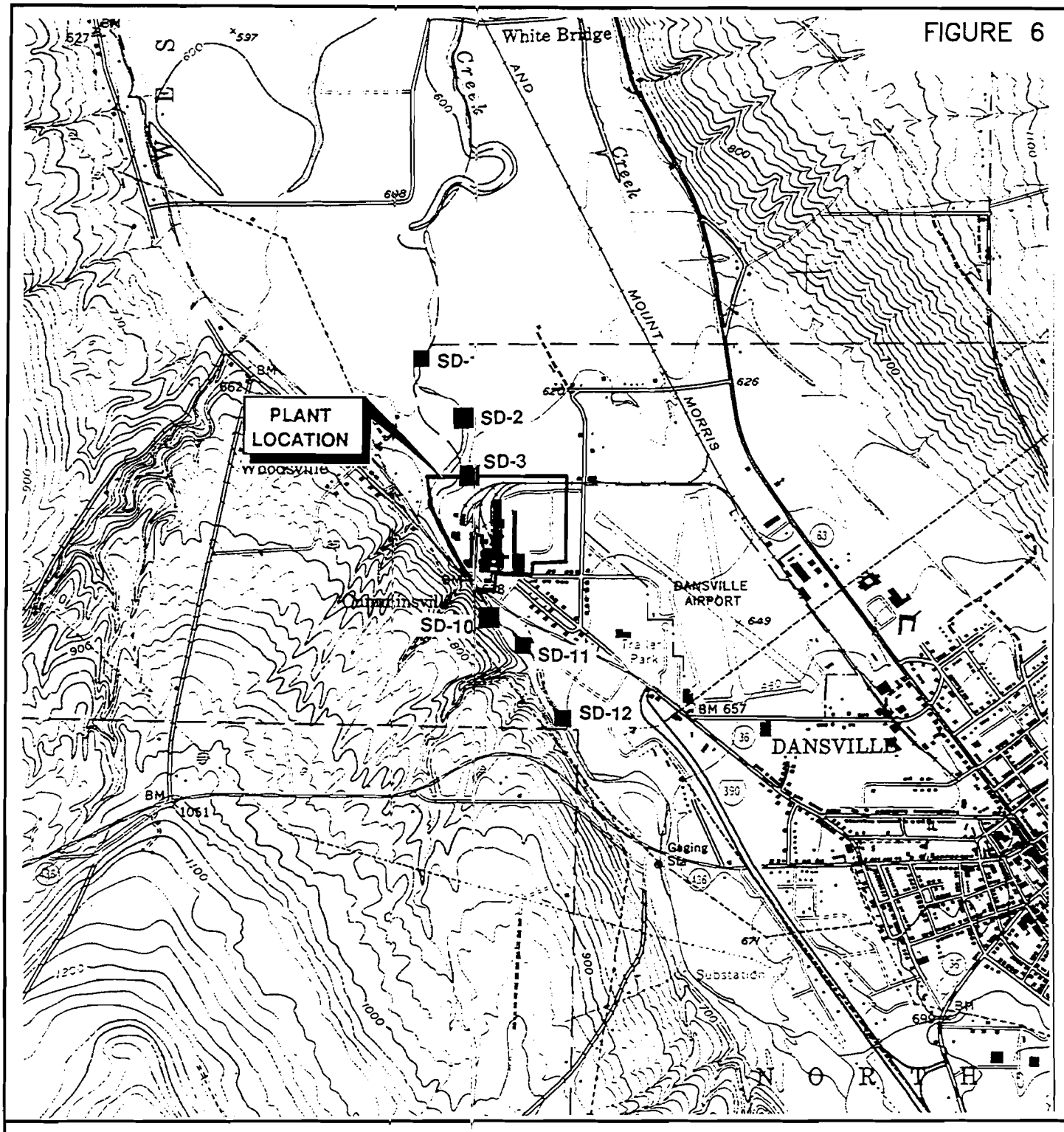
FIGURE 6



FOSTER WHEELER ENERGY CORPORATION
PROPOSED REMEDIAL ACTION PLAN

OFF-SITE SEDIMENT SAMPLING LOCATIONS

STATE LOCATION MAP

8-26-001
JANUARY 1999

SCALE IN FEET

0 1000 2000 4000

N

1/15/99

APPENDIX A

Responsiveness Summary

Foster Wheeler Energy Corporation Site
North Dansville (T),Livingston County
Site No. 8-26-001

The Proposed Remedial Action Plan (PRAP) for the Foster Wheeler Energy Corporation site was prepared by the New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) and issued to the local document repository on February 17, 1999. The PRAP outlined the proposed remedial decision for the Foster Wheeler Energy Corporation site. The preferred remedial decision presented in the PRAP was No Action and delisting.

The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability.

A public meeting was held on March 3, 1999 which included a presentation of the Remedial Investigation (RI) as well as a discussion of the proposed remedial decision. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. No written comments were received. The public comment period for the PRAP ended on March 19, 1999.

This Responsiveness Summary responds to all questions and comments raised at the March 3, 1999 public meeting. There were no comments or new information received during the public comment period that suggested the preferred remedy should be altered.

The following are the comments received at the public meeting, with the NYSDEC's responses:

Comment 1: Land just north of Foster Wheeler on the east side of the creek is starting to wash away. Foster Wheeler put material there many years ago. This is an area stabilized by the US Army Corps of Engineers in the 1970s. Could DEC or Foster Wheeler contact the Corps of Engineers to repair it? We've called the Corps and they haven't sent anyone out to look at it.

Response 1: Ralph Van Houten of the Livingston County Health Department is going to contact the Livingston County Soil and Water Conservation District and ask them to respond to this issue.

Comment 2: Are there levels of contamination that could wash downstream, deposit on adjacent property, and make an owner liable?

Response 2: Not likely. The contaminant levels found in soil and sediment along the creek are at low levels and do not warrant cleanup. Even if some site soils along the bank did wash downstream, it is extremely unlikely that there would be any associated liability for cleanup on an adjacent property.

Comment 3: What are PAHs and where are they found in the environment?

Response 3: PAH is an acronym which stands for *polycyclic aromatic hydrocarbon.* They are a very common group of chemicals derived from oil, are a major component of asphalt, and often form through the incomplete combustion of fossil fuels, wood, garbage or other organic substances. PAHs are found around the home in roofing materials, driveway sealers, and even in home barbeque pits. PAHs exhibit extremely low solubilities in water and have little tendency to leach to water. Several PAHs, benzo(a)pyrene in particular, are potential environmental concerns because they are known or suspected of being cancer causing agents.

Comment 4: If something occurs in the future, like a spill, or an unknown source is found, can the site be placed back on the listing of hazardous waste sites?

Response 4: Yes, the site can be placed back on the listing if new information indicates this is an appropriate action.

APPENDIX B

Administrative Record

Foster Wheeler Energy Corporation Site
North Dansville (T),Livingston County
Site No. 8-26-001

The following documents constitute the administrative record for the Foster Wheeler Energy Corporation Inactive Hazardous Waste Disposal Site:

Phase I Investigation Report, prepared by Recra Environmental, Inc. and Lawler, Matusky & Skelly Engineers for DEC, accepted January 8, 1990.

Preliminary Site Assessment Report, prepared by Ecology and Environment, P.C. for DEC, July 1992.

Project Plans for the Remedial Investigation/Feasibility Study at the Foster Wheeler Energy Corporation Site, Dansville, New York, consisting of the following documents:

"Work Plan" dated March 26, 1997

"Quality Assurance Project Plan" dated March 3, 1997

"Field Sampling Plan" dated March 19, 1997

"Heath and Saftey Plan" dated March 19, 1997

Order on Consent, #B8-0438-93-07, May 12, 1997.

Fact Sheet #1 announcing the start of the RI/FS, July 1997.

Remedial Investigation Report, Foster Wheeler Energy Corporation Site, Dansville, New York, September 30, 1998.

Supplemental Remedial Investigation Report, Foster Wheeler Energy Corporation Site, Dansville, New York, December 16, 1998.

Proposed Remedial Action Plan (PRAP) prepared by DEC for the Foster Wheel Energy Corporation Site, Dansville, New York, February 17, 1999.

Fact Sheet #2 announcing the release and availability of the PRAP, the public meeting date of March 3, 1999, and the start of the public comment period for the PRAP and the site delisting, February 1999.

Legal Notice published in the Environmental Notice Bulletin (ENB) and the Genesee Country Express announcing the release and availability of the PRAP, the public meeting date of March 3, 1999, and the start of the public comment period for the PRAP and the site delisting, February 17, 1999.

Record of Decision (ROD) prepared by DEC for the Foster Wheel Energy Corporation Site, Dansville, New York, March 1999.