NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID & HAZARDOUS MATERIALS

STATEMENT OF BASIS
FOR
KODAK PARK INVESTIGATION AREA XIA-218 FINAL CORRECTIVE MEASURES SELECTION

FINAL
May 2002

FACILITY: **Eastman Kodak Company**
Kodak Park
ROCHESTER, NEW YORK
MONROE COUNTY

USEPA ID No.: NYD980592497
NYSDEC Permit Application No.: 8-2614-00205/00104-0
Inactive Hazardous Waste Site Code: 8-28-092

Introduction

The purpose of this Statement of Basis is to provide an opportunity for the public to be informed of and to participate in the selection of a final remedy that will be protective of human health and the environment for soils and groundwater at Investigation Area XIA-218, located in the northeastern portion of Kodak Park Section KPX, in Rochester, New York (see Figure 1). The investigation area is comprised of a grouping of solid waste management units that were identified during the RCRA Facility Assessment. The grouping has been designated XIA-218.

This document:

- Provides a brief overview of the site history and site investigations which were conducted at XIA-218;
- Identifies the proposed remedy and presents the basis for its selection;
- Describes the remedial goals that were considered;
- Solicits public review and comment on the proposed remedy and other plausible remedies; and
- Provides information on how the public can be involved in the remedy selection process.

The New York State Department of Environmental Conservation (NYSDEC or Department) has selected a proposed remedy. Changes to the proposed remedy, or the selection of an alternative remedy may be made if public comments or additional data indicate that such changes are warranted. The Department will select a final remedy for the facility after the public comment period has ended and the comments have been reviewed and considered.

This document summarizes information that can be found in greater detail at the document repositories identified below. The Department encourages the public to review the documents at the repositories to gain a more comprehensive understanding of the nature and extent of contamination which has occurred at XIA-218, and the possible remedies to address that contamination.

<u>Proposed Remedy</u>

The Department has tentatively selected the remedy for XIA-218 described below.

The proposed remedy includes:

- continued operation of the existing Building 206 (B-206) groundwater Migration Control System (MCS). This system includes a 250-foot long french drain, constructed in the overburden, at the interface with the top of bedrock, on the west side of B-206. Groundwater is removed from the MCS through a single pump well and is discharged to the industrial sewer for treatment at Kodak's Kings Landing Wastewater Purification Plant (KLWPP), located next to the Genesee River in KPE.

- a groundwater monitoring program to assess the effectiveness of the remedy. This program includes routine groundwater quality monitoring, water elevation measurements, and reporting requirements to ensure that the MCS continues to operate as designed.

- periodic water quality testing in the 48-inch storm sewer. Groundwater discharges to this storm sewer within the XIA-218 area. Current monitoring has shown that contaminant concentrations within the storm sewer are very low (below groundwater quality criteria) to non-detectable. Future testing will be conducted to ensure that concentrations continue to remain within acceptable levels.

- administrative controls to address potential exposure to contaminated soils and groundwater.

Facility Background

Since the late 1800's Kodak Park has been Eastman Kodak Company's primary photographic manufacturing facility. Primary operations at the site include the manufacture of film and paper base; preparation and coating of photographic emulsions; production of vitamins and food additives; manufacture of electrophotographic toner; cutting, packaging and distribution of finished products; and the production of synthetic organic chemicals, dyes, and couplers.

The XIA-218 investigation area is located in northeastern Kodak Park Section X (KPX). KPX is bounded by the Kodak Park Section called KPW to the east, Mount Read Boulevard and Kodak Park Section M to the west, Ridge Road to the north, and Ramona Park and Wheatland Street to the south (Figure 1). Development in KPX began in the 1920's, following development of KPE and KPW. KPX has historically been used primarily for material storage and distribution. XIA-218 includes the Building 218 (B-218) hazardous waste incinerator; several related storage areas; and Building 206 (B-206), currently used for offices and a wood shop. The incinerator began operating in 1976.

A railroad yard and former coal storage yard are located to the east of B-218. Kodak recreation fields (inactive) are located to the north of B-218. The DeWain Street, Needham Street, and Lancaster Street residential area is located to the northwest of XIA-218. Numerous subsurface utilities underlie XIA-218, including sewer, water, electric, and gas. XIA-218 is connected to the Kodak Park industrial sewer. A major municipal storm water sewer passes under XIA-218. The Monroe County Combined Sewer Overflow Abatement Program (CSOAP) Tiger-Carlisle tunnel leg also passes under XIA-218, in the bedrock, at a depth of approximately 70 feet. The tunnel provides storm surge capacity for the county's sanitary sewer system. These features are shown on Figure 2.

The B-218 complex includes storage facilities for solid and liquid hazardous wastes. These include drum, tank and trailer/lugger offloading and staging areas. In the 1990's, Kodak subsequently reconstructed and upgraded the liquid waste storage tanks and transfer station system at B-218. Since the early 1990's, Kodak also implemented several interim corrective measures to control and recover contaminated groundwater.

In 1998, Kodak completed a RCRA Facility Assessment for Kodak Park. The assessment identified solid waste management units (SWMUs) subject to corrective action requirements. To administer corrective action, SWMUs were grouped into investigation areas, based on geographic and operational concerns. This statement of basis is for the SWMU grouping XIA-218. This grouping includes the 16 SWMUs listed in Table 1 (see Figure 2 for SWMU locations).

Various remedial alternatives were examined in more detail in the Corrective Measures Study Report for XIA-218, dated April 30, 1999, as revised April 2000. The NYSDEC has reviewed this report and is soliciting public comment on the tentative selection of a final remedy to address conditions at XIA-218.

Facility Investigations

The RCRA Facility Investigation (RFI) for XIA-218 was completed and documented in a May 1998 report. The investigation area contains 16 SWMUs. Subsurface investigations in XIA-218 were conducted in a number of phases, between 1989 and 1998.

Subsurface Conditions/Groundwater

The field investigations initially focused on the immediate B-218 area to assess overburden environmental quality conditions and horizontal flow direction in the overburden groundwater flow zone. This first phase of investigation was completed in 1990 in response to releases from the B-218 complex. Subsequent investigations were conducted to assess subsurface conditions of the overburden, upper bedrock and lower bedrock units in the B-218 and KPX north fence line areas. A total of approximately 50 wells have been installed in the XIA-218 area.

The investigations identified a number subsurface zones that have contrasting hydrogeologic properties. In order of increasing depth, these include:

- Overburden - Unconsolidated sands, silts, and clays and in some cases fill material including construction/demolition debris and boiler ash. The water table generally occurs in this interval.

- Top-of-Rock - The uppermost bedrock, typically moderately to highly fractured sandstone/siltstone of variable thickness but generally on the order of 15-20 feet. The top-of-rock and overburden are collectively referred to as the upper flow zones.

- Intermediate Grimsby - Sandstone/siltstone with relatively few fractures, exhibiting generally low hydraulic conductivity.

- Grimsby/Queenston (GQ) - Interval of moderately fractured (conductive) bedrock occurring within approximately 15 feet above or below the contact between the Grimsby Sandstone and the Queenston Shale. The GQ and the underlying Queenston are collectively referred to as the lower bedrock flow zones.

- Queenston Shale - Interbedded siltstones and shales with no discernible horizontal interval of elevated hydraulic conductivity. This zone was not investigated within XIA-218, but was for the adjacent Kodak Park section KPW, located to the east.

Figure 3 shows the relationship between these zones in the XIA-218 area (a north-south oriented cross-sectional view of the subsurface, presented as if looking to the west). Figures 4-1, 4-2 and 4-3 are potentiometric surface maps, indicating general groundwater flow directions for the different flow zones. Groundwater contamination is present primarily in the overburden and top of rock flow zones. The principal contaminants are volatile organic compounds (VOCs). Figures 5-1 and 5-2 show total VOC concentrations in groundwater for the overburden and top of rock flow zones, respectively. Concentrations are highest in the vicinity of the B-218 courtyard area, on the west side of B-218, where several documented releases occurred. Low levels of contamination have only been detected sporadically in the GQ flow zone, so a concentration plot was not prepared for that zone. The most recent comprehensive data set for the GQ had a low level detection in only one well. For this reason, the underlying Queenston was not investigated.

There have been a number of significant liquid waste releases in XIA-218 that have contaminated the subsurface. Some releases have involved non-aqueous phase liquids (NAPLs - organic liquids with very low solubility in water). It is likely that some of these events resulted in subsurface NAPL at the time of release, but NAPL may not be present now, due to response actions (soil excavation), the dissolution of the contaminants into the groundwater, and possible diffusion of contaminants into the rock matrix.

Although contaminated soils were excavated and removed from the site during the upgrade activities, residual contamination, possibly in bedrock and/or soil in the courtyard area, still may be serving as a source for the release of contaminants to the groundwater. Data comparisons between 1992 (see Figures 6-1 and 6-2) and 1997 (see Figures 5-1 and 5-2) show significant reductions in contaminant concentrations and size of the groundwater plume, indicating that the interim measures that Kodak has taken have improved conditions in the XIA-218 area.

<u>Soils</u>

Soil sampling has been conducted for various reasons in XIA-218. In addition to soil sampling specifically for the RFI, Kodak has tested soil during well installations, for tank and transfer station closures and upgrades, for closure of the coal storage site, and for other routine site activities. Borings have identified three types of unconsolidated deposits in KPX: imported fill, lacustrine deposits and glacial till. The uppermost 5-10 feet is imported granular fill, consisting of sand, silt, gravel, mixed with minor amounts of wood, bricks, cinders, slag and glass. The lacustrine deposits range from 2-18 feet in thickness and are relatively coarse-grained sands and gravels, likely derived from reworking of the underlying till. The till thickness varies from not present to about 9 feet, with the thickness generally increasing to the south within XIA-218 (see Figure 3).

Soils have been tested for the following contaminants: volatile organic compounds (131 samples), semi-volatile organic compounds (SVOCs - 157 samples), pesticides/PCBs (117 samples) and metals (102 samples). Detection of organic contaminants has been limited to the immediate B-218 area, where there has been a history of spills and releases. Table 2 summarizes soils results for XIA-218 and also provides comparison criteria, discussed in more detail in the Summary of Facility Risks, below.

Summary of Facility Risks

Contaminated Media and Chemicals of Concern

The investigations have shown contamination of the soil and groundwater in XIA-218, primarily in the vicinity of B-218. In response to these findings, Kodak conducted a Corrective Measures Study (CMS), to identify potential risks to human health and the environment and to evaluate various remedial alternatives to address site conditions.

Contaminants of concern in XIA-218 include chlorinated and non-chlorinated volatile and semivolatile organic compounds and metals. Volatile organic chemicals are the most widespread type of contaminant observed in the groundwater and soil. Tables 3-1 through 3-6 list chemicals that have been found in groundwater in the overburden, top-of-rock and GQ flow zones. Relevant groundwater quality criteria are also shown in the tables. Groundwater at the site and in the surrounding neighborhood is not used as a source for drinking water. Drinking water in this area is supplied by a municipal system operated by Monroe County.

Baseline Exposure Scenarios

Soils

Kodak used a two step screening process to identify soils that have the potential to pose a health threat under differing future uses of XIA-218. The first step looked at unrestricted use and screened soil results against residential exposure criteria based on a direct ingestion/contact explore pathway. If soils did not exceed this screening criteria, there would not be any reason to restrict future use to protect against this exposure pathway. The next step evaluated results against criteria developed to represent a commercial/industrial exposure scenario.

None of the VOC or pesticide/PCB values detected exceeded the residential direct contact/ingestion screening criteria. Only three SVOCs were detected at concentrations exceeding the residential screening criteria. These detections were very low, below the analytical method's ability to produce reliable concentration results. The detected SVOCs are polynuclear aromatic hydrocarbons (PAHs), compounds that are present in much of the fill placed at Kodak Park and are typically present in industrial and urban settings. PAHs can be naturally occurring or from anthropogenic processes and most commonly result from incomplete combustion of fossil fuels (coal) and coal combustion fly ash. The values, while exceeding the residential screening criteria, were still below the range typically considered background for Kodak Park. Arsenic was the only inorganic constituent detected at concentrations exceeding the commercial/industrial screening criteria. Although the arsenic screening criteria was exceeded, the 95% upper confidence limit value (6.96 milligrams per kilogram (mg/kg) or part per million) was still within the range of typical background concentrations listed in NYSDEC Technical Administrative Guidance Memorandum (TAGM) HWR-94-4046. The detected arsenic concentrations are considered indicative of background for Kodak Park. These detections of PAHs and arsenic could also be related at least in part to the imported fill present in XIA-218. Cinders, ash and slag generally have elevated metals and often have detectable levels of PAHs.

Even though the arsenic value was consistent with background values for this area, Kodak still performed a pathway evaluation for this constituent. A baseline assessment identified the following potential exposure pathway for soils in XIA-218: exposure to soils by incidental ingestion and through possible inhalation of dust. Under current conditions and use of the site, the potential for human health exposure is very low. Although the facility is an active industrial site, buildings, related structures and pavement cover soils in the area of interest in XIA-218. In the future there is potential for worker exposure during excavation activities. Such exposures would be of limited duration and would rarely occur. The duration and frequency of exposure under current conditions and anticipated future conditions are very low. Furthermore Kodak's existing excavation management protocol address worker health and safety considerations.

The reasonably anticipated future use of XIA-218 is also industrial. This facility is listed in the registry of *Inactive Hazardous Waste Disposal Sites in New York State* that is published by the NYSDEC as Site Code 8-28-092. The facility is also under federal hazardous waste management facility permit, and has applied for a NYSDEC 6NYCRR Part 373 hazardous waste management facility permit. The old closed B-218 hazardous waste tank farm area is subject to a 30 year post-closure care period. Due to these circumstances, use of XIA-218 for purposes other than industrial are not expected or likely.

Even though the soils do not appear to pose an unacceptable risk via the direct contact/ingestion pathway, to reduce potential exposures to site soils, Kodak has recommended continued use of institutional controls. To limit potential exposure associated with subsurface excavations, Kodak has developed and implemented a soils excavation master plan. This plan imposes conditions, including health and safety provisions, that must be followed during the excavation and management of subsurface materials (soil) at the site.

Soil Impacts to Groundwater Quality

In this evaluation, contaminant concentrations from all soil samples (both from the surface and at depth from borings) were screened to identify soils that have the potential to cause groundwater to be contaminated at concentrations higher than New York State groundwater comparison values (listed in NYSDEC TAGM HWR-94-4046). These values are generally much lower than the ingestion exposure values discussed above. This screening showed a few samples exceeding the TAGM 4046 soils criteria for groundwater protection in XIA-218, generally for the more soluble contaminants. This shows that the soils are sufficiently contaminated to pose a threat to the groundwater through potential leaching of contaminants. This was expected and is consistent with results from groundwater monitoring wells that show elevated contaminant levels.

Development of the site limits measures that could be taken to address the soil contamination. The high density of subsurface utilities, and the presence of buildings and foundations in the area where elevated soil contamination was found complicates and reduces the potential effectiveness of excavation and treatment/disposal as a remedial alternative for the soils. In light of the difficulties and limited expectation for success (complete removal would not be achievable, so action would still need to be taken for the groundwater), widespread excavation and removal of soils was eliminated further consideration. Excavation and treatment of localized areas of highly contaminated soils has been retained as a possible remedial component, however, the CMS has not identified any areas where such actions are planned. Rather than directly addressing the potential impact of the soils on groundwater quality, Kodak has proposed a groundwater remedial alternative that will also address contaminants leaching from soils. It should be noted that under the Kodak Park soils management plan, visibly contaminated soils and soils that exhibit elevated organic vapor readings will be removed and disposed of off-site if encountered during excavation activities.

Groundwater

Groundwater in the vicinity of B-218, especially on the west and north sides of the building, is generally contaminated above New York State Groundwater Standards, with portions showing very high concentrations of contaminants. The existing B-206 MCS provides control for most the groundwater contaminant plume. The groundwater does pose a potentially complete exposure pathway through infiltration of contaminated groundwater into the 48-inch storm sewer that passes under XIA-218, with ultimate discharge to the Genesee River.

Groundwater contamination can pose a potential threat to residential indoor air quality. However, for XIA-218, the existing groundwater migration control system has effectively controlled groundwater flow in the contaminated area, and prevented off-site migration of the groundwater plume. Therefore this exposure pathway is not complete. Since continued operation of the migration control system is part of the proposed remedy, such exposures would not be expected to occur in the future either. For this reason, this exposure pathway was not given further consideration.

Potential for exposure due to the ingestion of contaminated groundwater was also considered. Although groundwater concentrations at the site are far above drinking water standards, the current risk of such exposure is precluded by availability of high quality water from the municipal water system that supplies drinking water in this area, the generally poor quantity and natural quality of the groundwater in this region (low well yields because of the low permeability subsurface geology; high concentrations of dissolved solids - iron, etc.).

Potential migration of groundwater contaminants to the Genesee River via the storm sewer was evaluated. Contaminated groundwater can infiltrate into the storm sewer in the XIA-218 area. The storm sewer ultimately discharges to the Genessee River, without treatment. This exposure route was assessed by two different methods. The first determined loadings based on observed storm sewer contaminant concentrations and storm sewer flow rates near XIA-218 (approximately 20 gallons per minute). Under this approach, loadings were calculated only for those constituents (Bis[2-Ethylhexyl] phthalate and 1,4-Dioxane) detected in the storm water samples collected near XIA-218. These loading rates were then used to evaluate potential impacts (calculate contaminant concentrations) in the Genesee River, assuming minimal river flow rates. The river concentrations derived from this method show that the calculated values for the two contaminants are several orders of magnitude below the New York State ambient water quality criteria, indicating that potential exposures associated with this pathway are negligible.

The second method evaluating the storm sewer migration pathway utilized groundwater flows derived from simulations of the groundwater system. This approach involved evaluating contaminant concentrations throughout the groundwater plume and selecting a concentration value for each groundwater contaminant near the maximum observed value (95% upper confidence limit value). The simulated flow approach is very conservative since it assumes a high contaminant concentration (near the maximum observed value from any well) is present throughout the plume (i.e., representative of all of the water discharging to the storm sewer). These concentrations and the modeled flow rate for groundwater infiltrating to the storm sewer (approximately 5 gallons per minute) were then used to calculate mass loading rates. These rates were then used to evaluate potential impacts on the Genesee River, in a manner similar to that described for the first method. This information is summarized in Table 4. Note that this table presents three different estimated surface water concentrations, for all detected groundwater contaminants, based on three different Genessee River flow rates. The river concentrations derived from this method show that the calculated values for contaminants, even at extreme low river flow rates, are all below, generally several orders of magnitude, the New York State ambient water quality criteria. This indicates that potential exposures associated with this pathway are negligible. The evaluations show that existing conditions are protective of human health and the environment.

Remedial Goals

With the nature and extent of site contamination characterized and the potential risks identified, remedial goals were established. In order for a remedy to be acceptable, it needs to satisfy the remedial goals listed below. The primary goal is to protect human health and the environment from potential impacts associated with XIA-218. The following goals have been identified:

1. Soils - Reduce exposure potential by utilizing the soils management plan (Excavation Master Plan II) for subsurface activities conducted in XIA-218 and by imposing deed restrictions on future use of this area.

2. Groundwater -

   A. Control migration of contaminated groundwater to the extent necessary to protect human health and the environment. This includes preventing the expansion of the contaminant plume in the upper flow zones (precludes off-site exposures) and minimizing the potential discharge of contaminated groundwater to the storm sewer.

   B. Long-term operation of the groundwater control measures will reduce the contaminant mass in the subsurface in XIA-218. The long-term goal for this remedy is the restoration of groundwater quality in this area to New York State Ambient Water Quality Criteria. Since the B-206 MCS became operational in 1992, groundwater contaminant concentrations have been reduced significantly. The MCS shall remain in operation until such time as Kodak can demonstrate that any residual contamination will not result in an exceedance of the groundwater quality criteria in TAGM 4046 at the point of exposure. The Department will seek public comment prior to making a determination regarding termination of operation of the groundwater measures.

Remedial Actions to Date

Kodak has already taken a number of actions to control groundwater contamination at XIA-218. These measures have included collection and treatment of groundwater as well as measures to reduce the potential for further groundwater contamination, such as the renovation of the tank-storage facilities and upgrading segments of the sewer system. In 1991 Kodak closed the tank farm that had been installed in the 1970s, on the west side of B-218. The tanks were replaced by a new tank system that was installed in an above ground vault. In addition to providing containment of possible spills, the above grade construction allows for visual inspections of the integrity of the vault. Kodak also installed a vapor monitor system within the vault to detect leaks. In addition to upgrading the tank system, Kodak also replaced the transfer station used by tank trucks and load luggers. The station provides secondary containment during waste transfers and also for temporary storage/parking of truck trailers. Kodak also upgraded the small tank system, used to blend wastes for the incinerator, that is adjacent to the west wall of B-218.

In 1990 Kodak also installed two pumping wells on the west side of B-218 to recover contaminated groundwater. Although these wells experienced numerous operational problems, they recovered a substantial amount of contaminant mass since they were installed in an area of highly contaminated groundwater (at the suspected release site). These pumping wells had severe biofouling problems and were eventually abandoned, since the contaminant mass recovery rate had decreased sharply and the wells were not providing reliable control of the migration of contaminated groundwater. In 1992, Kodak constructed and began operating the B-206 MCS. The B-206 MCS was designed to provide hydraulic control of contaminated overburden groundwater.

Scope of Proposed Corrective Action

For groundwater in the overburden/top-of-rock (upper) flow zones, the goal is prevention of offsite groundwater migration from XIA-218 (containment that precludes further expansion of the plume in this zone). This will be accomplished by active pumping from B-206 MCS and through passive infiltration of groundwater to the industrial sewer system. This will eliminate potential future risk to offsite residents associated with contaminant exposure from groundwater migration. It will also remove contaminant mass from the subsurface environment in XIA-218. This should eventually result in decreasing contaminant concentrations in the groundwater, although levels would be expected to remain above state groundwater criteria for an extended period of time.

The remedy will include a groundwater monitoring program to ensure that the implemented measure continues to meet its design objectives. The monitoring program will provide a means of identifying and correcting problems that may develop in the future. The program will also provide data that can be used to aid in the design of enhancements to the remedy that may be needed in the future. Based on the investigations, the primary need is to control the migration of contaminated groundwater. Facility upgrades that Kodak has implemented for the tank systems and transfer stations have reduced the potential for future releases to the environment in this area. Monitoring results indicate that the B-206 MCS that was installed as an interim corrective measure has been providing effective control for the groundwater. A minor component of flow does discharge to the storm sewer, but both observed and modeled impacts associated with this discharge are negligible. Continued monitoring is needed to assess effectiveness of the B-206 MCS and to identify change in conditions that could affect contaminant loadings to the storm sewer.

Groundwater at this site will require long-term remedial action. These actions will also address any potential contaminants leaching from soils, so the only exposure associated with soils that needs to be considered is direct contact/ingestion. As discussed in the potential risks section, the soils concentrations in XIA-218 are consistent with background values found throughout Kodak Park, and do not indicate unacceptable exposure risk even under a residential use scenario. Nevertheless, Kodak has developed and implemented a NYSDEC approved soils management plan (Excavation Master Plan II) that specifies the procedures and controls, including health and safety requirements, that must be followed when conducting excavation activities within Kodak Park. It should be noted that this remedy was selected with the understanding that the area is in industrial use, and that the reasonably anticipated future use of this area is also industrial. However, as a precautionary measure, Kodak will follow a NYSDEC approved soils management plan for future excavation activities in XIA-218. The plan specifies routine procedures designed to minimize potential exposures associated with soil excavation activities.

Summary of Alternatives

Kodak analyzed three remedial alternatives for XIA-218 in detail in a Corrective Measures Study (CMS) report. All alternatives include the same recommended action for soils and differ only in how they address the groundwater contamination. The industrial sewer system, the 48-inch storm sewer, and to a lesser degree the CSOAP tunnel system exert an influence on groundwater flow in both the overburden/top-of-rock and GQ monitoring horizons. A significant volume of groundwater in the overburden and top-of-rock horizons passively discharges to these sewer systems. All groundwater alternatives described below incorporate some degree of this "passive" component of groundwater capture. Kodak's computer modeling of the groundwater flow system indicates that under all of the various alternatives described below, passive discharge to these systems accounts for a substantial fraction of groundwater flow in the XIA-218 area.

The 3 groundwater alternatives evaluated were: (1) continued operation of the existing B-206 MCS; (2) continued operation of the existing B-206 MCS, supplemented with 2 additional pumping wells in the B-218 courtyard area to enhance contaminant mass recovery; and, (3) continued operation of the existing B-206 MCS, supplemented with slip-lining or other engineering controls to reduce groundwater discharge to the 48-inch storm sewer. Each of these alternatives would include groundwater monitoring to assess the effectiveness of the remedial alternative, along with operation and maintenance of the components of the remedy (recovery systems).

Remedial Alternative #1, that the Department is proposing be implemented for XIA-218, is also the alternative that was recommended in the CMS report that Kodak submitted. The CMS and related environmental investigation reports are available for review at the NYSDEC Region 8 office located in Avon and at the Kodak Park Neighborhood Information Center located in Rochester.

Evaluation of Alternatives

Each remedial alternative was evaluated by the NYSDEC for technical feasibility, implementability, and short-term and long-term effectiveness with respect to the remedial goals identified above. The alternatives that have been developed are technically feasible. The alternatives rely on routinely available equipment and engineering practices. Some differences in implementability were identified due to legal and administrative concerns.

<u>Alternative 1</u> - Operate exisiting MCS. The current MCS has been in operation since 1992. Performance monitoring has demonstrated the MCS's effectiveness in containing and controlling groundwater in the vicinity of B-218. The fenceline monitoring well network shows that the system has prevented contaminated groundwater from migating offsite. The operational history for the MCS has shown that the system has been reliable, with very few incidents requiring that

the system be taken off-line for extended periods of time.

Under this alternative, a fraction of the groundwater will continue to discharge to the 48-inch storm sewer that passes near B-218. Direct testing in the storm sewer has shown that contaminant loadings are very low, with the water showing very low to non-detectable levels of site-related contaminants. Groundwater flow simulations were used to evaluate loadings that could be expected to occur in the future. These simulations indicate that loadings should remain low in the future. The impact of the loadings on the Genesee River was also evaluated and the risks to human health and the environment were found to be negligible. Although the simulations show that future loadings are also expected to remain protective of human health and the environment, the NYSDEC will still be requiring Kodak to periodically test the water in the storm sewer to verify this conclusion. If this testing identifies a substantial change in conditions indicating that the remedy may no longer be sufficiently protective, Kodak will be required to consider other mitigative actions.

The 30-year costs for Alternative #1 are estimated to be $1.17 million. Since the B-206 MCS was already constructed, those capital costs were not included in the estimate.

<u>Alternative 2</u> - Operate exisiting MCS plus two mass recovery wells in B-218 Courtyard. The MCS performance would be similar to that described for Alternative 1. Addition of courtyard pumping wells would not be expected to significantly expand the capture zone for the remedial system. The additional pumping wells would compete with the MCS and divert water from that system. Contaminant concentrations within the courtyard area are relatively high so these wells could potentially increase the contaminant mass recovery rate. However, placement of wells in the courtyard raises implementation and operation and maintenance concerns. Access to the courtyard is restricted by above and below grade structures and utilities, limiting wells placements. Historical groundwater recovery activities at B-218 have shown that pumping wells in the courtyard would likely suffer from severe biofouling problems. In 1990, Kodak installed two pumping wells in this area. The wells were taken out of operation in 1992, and subsequently abandoned because of continuing operational problems caused by severe bio-fouling. Even with intensive maintenance, the wells were not reliable. In 1992, Kodak installed the B-206 MCS to provide more reliable control of groundwater in this area.

Even if operationally reliable recovery wells could be established in the courtyard area, they would not be expected to appreciably reduce the time that will be required to remediate the groundwater. Contaminants have diffused into the water contained within the matrix of the bedrock. The water in the rock matrix is not mobile and can't be recovered by pumping wells. The transfer of contaminants back out of the rock matrix is controlled by diffusion, and can't be appreciably altered even through more agressive pumping of groundwater. Even with courtyard wells, the B-206 MCS would also still be needed to provide containment of the plume.

Courtyard wells would significantly increase O&M costs. Based on operating records for the old courtyard pumping system, recovery wells and pumps would require frequent replacement, even with routine preventive maintenance activities. Kodak has estimated the 30 year costs for such a system at $1.98 million. Since the B-206 MCS was already constructed, those capital costs were not included in the estimate.

Alternative 3 - Operate existing MCS, and seal a portion of the 48-inch storm sewer. In response to the NYSDEC request, Kodak has performed additional groundwater flow simulations to evaluate the effect of reducing infiltration into the 48-inch storm sewer. Kodak has acknowledged that contaminated groundwater from the B-218 area is infiltrating into this storm sewer. The purpose of the request was to get additional information about potential benefits of reducing this infiltration, and the costs that could be involved. Under exisiting conditions, the storm sewer competes with the B-206 MCS for groundwater. If infiltration to the sewer is reduced, by slip-lining, in-situ forming or similar means, more water would be directed to and collected by the B-206 MCS. This would be expected to increase the B-206 MCS capture zone. The simulations have shown that complete elimination of infiltration (something that as a practical matter could not really be achieved) would not result in a discernible expansion of the B-206 MCS capture zone. Some water would be expected to bypass the relined segment by migrating through the sewer bedding and then entering the sewer, upstream or downstream of the relined segment.

Kodak has provided an estimate for the cost of in-situ forming the storm sewer. Because of the large diameter, depth and access limitations, costs are estimated at approximately $900 per foot. The area of interest is approximately 1100 feet long, so capital costs for lining the storm sewer are estimated to be on the order of $1 million dollars. There are a number of legal and administrative complexities associated with this alternative, since the storm sewer is owned and operated by Monroe County, not Eastman Kodak Company.

Selection of the Proposed Remedy

In evaluating the different remedy options, the NYSDEC has determined that Alternative 1 (continued operation and monitoring of the existing B-206 MCS) satisfies the selection criteria and recommends that this alternative be implemented as the final corrective measure for XIA-218. This alternative adequately addresses potential threats to the environment and human health, associated with XIA-218. It has also been demonstrated to be an effective, reliable remedy based on operating records for the system's use as an interim corrective measure.

Although alternatives #2 and #3 provide a similar level of protection for human health and the environment, they do so at considerably greater costs. These alternatives do not provide an incremental increase in protection that would warrant the additional cost.

Public Participation

The Department encouraged input from the community on the tentatively selected remedy. Documents about the proposed remedy selection were placed in local document repositories. Copies of this Statement of Basis, the Fact Sheet, the RFI Report, the CMS Report for XIA-218 were available for inspection at the following locations:

NYSDEC - Region 8
6274 East Avon-Lima Road
Avon, NY 14414-9519
Contact Person: Mark Domagala
Telephone (716) 226-5305

Kodak Park Neighborhood Information Center
200 Ridge Road West
Rochester, NY 14652-3413
Telephone (716) 722-1707

NYSDEC - Albany
Bureau of Solid Waste & Corrective Action
Division of Solid & Hazardous Materials
625 Broadway - 8th Floor
Albany, NY 12233-7252
Contact Person: Larry Thomas
Telephone (518) 402-8594

The proposed remedy was initially public-noticed from July 11, 2001 to September 12, 2001. During this period, one set of comments was received from the public. A copy of these comments is included in Appendix A. The Department's response to these comments is also included in Appendix A.

In reponse to those comments, the Department reopened the comment period on February 27, 2002 and also held a public meeting on March 14, 2002. The second public comment period closed on March 29, 2002 to allow for the submission of written comments arising from the public meeting. No additional written comments were received. The Department has prepared a responsiveness summary listing comments raised during the meeting, followed by the Department's responses. This is included in Appendix B.

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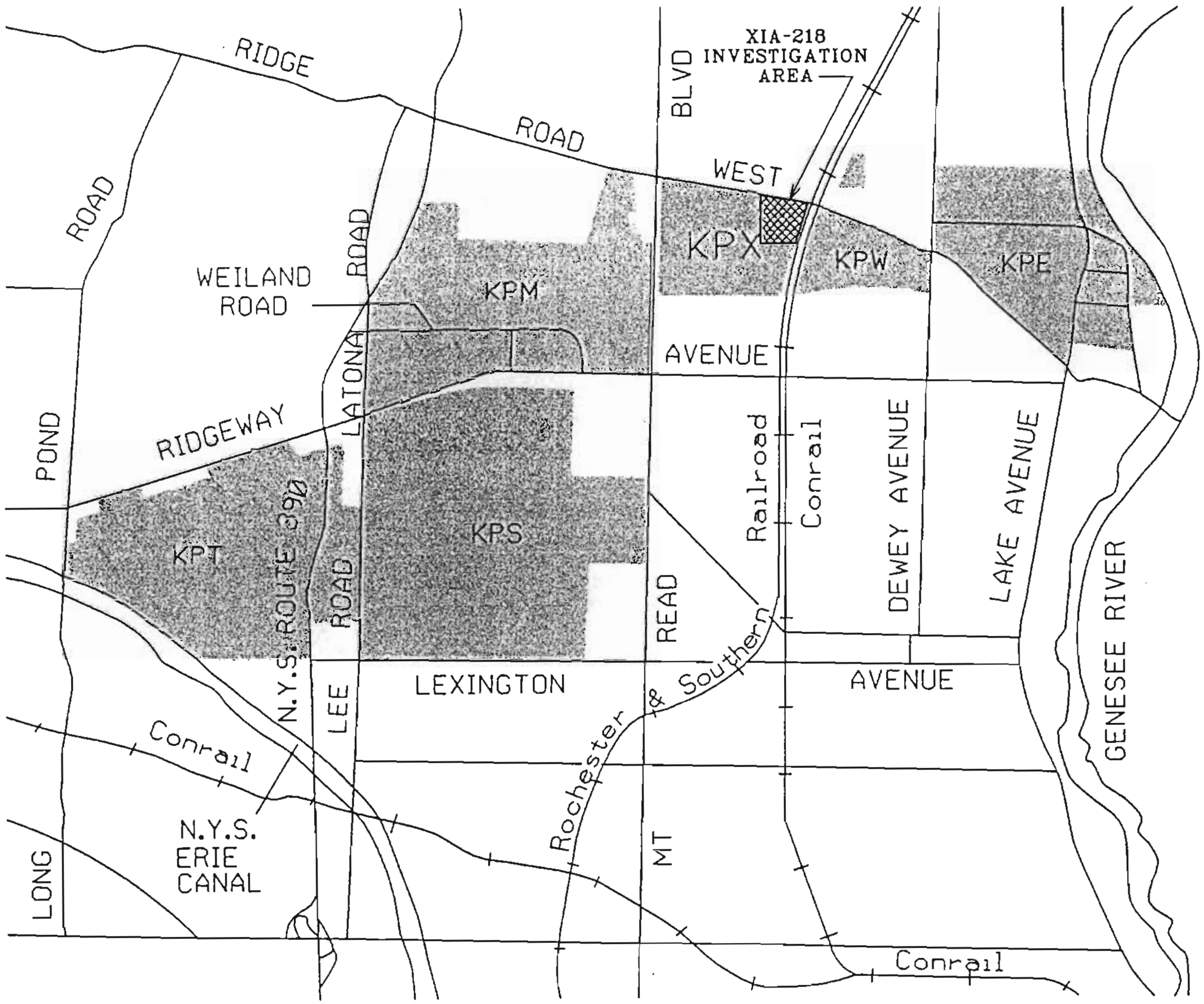


FIGURE 1

LOCATION MAP

XIA-218 CMS REPORT
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK

NOTE:
SHADED AREAS DENOTE KODAK PARK FACILITY

FILE NAME: F:09518040/09518L01.DGN 4/29/99 DIV54 RCB

NO SCALE

EASTMAN KODAK COMPANY
KODAK PARK HSE DIVISION
GROUNDWATER QUALITY SECTION

BBL
4/29/99
09536L02.DGN

XIA-218 CMS REPORT
LOCATION MAP

EKP FIGURE 1

KODAK PARK
CORRECTIVE ACTION PROGRAM
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK

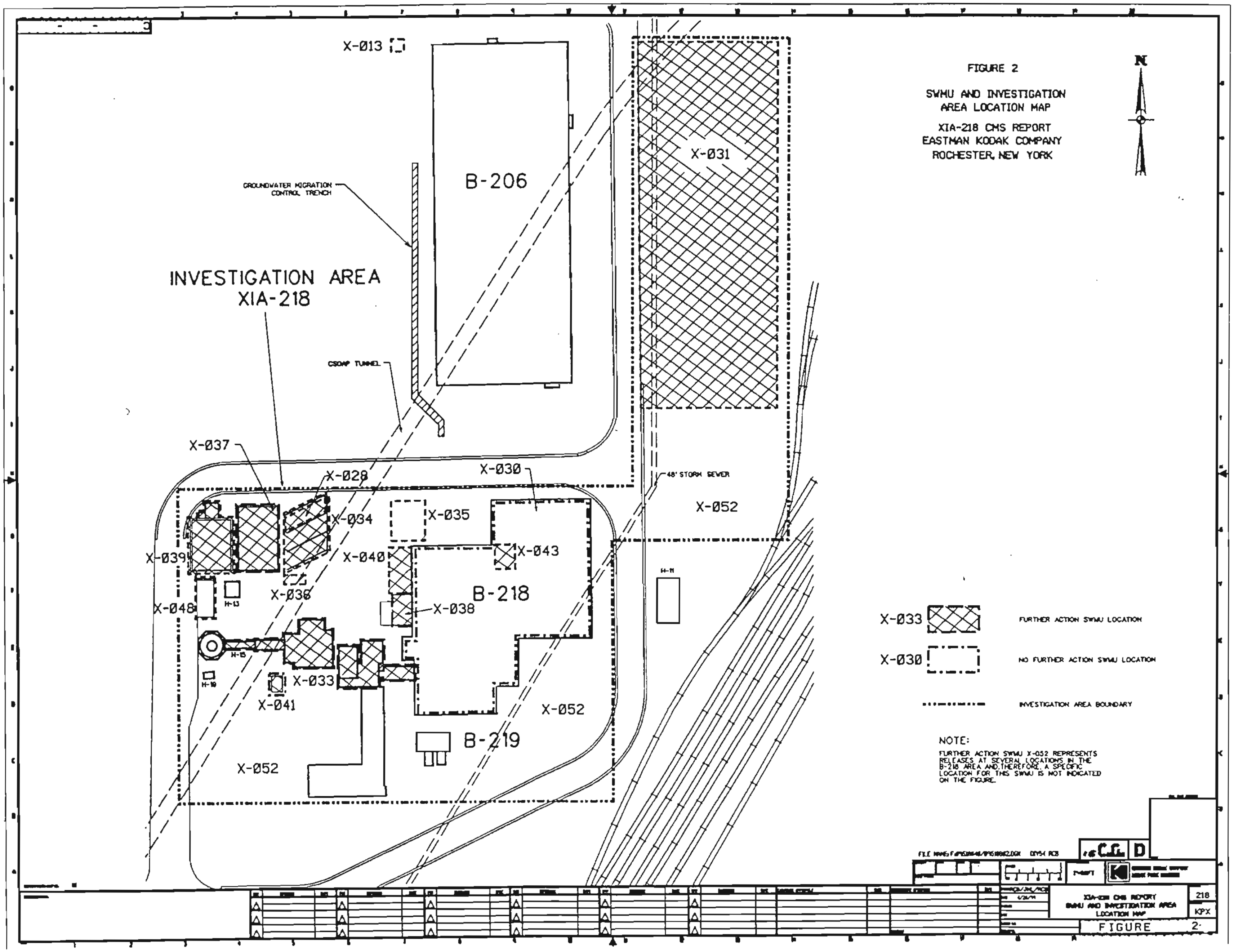
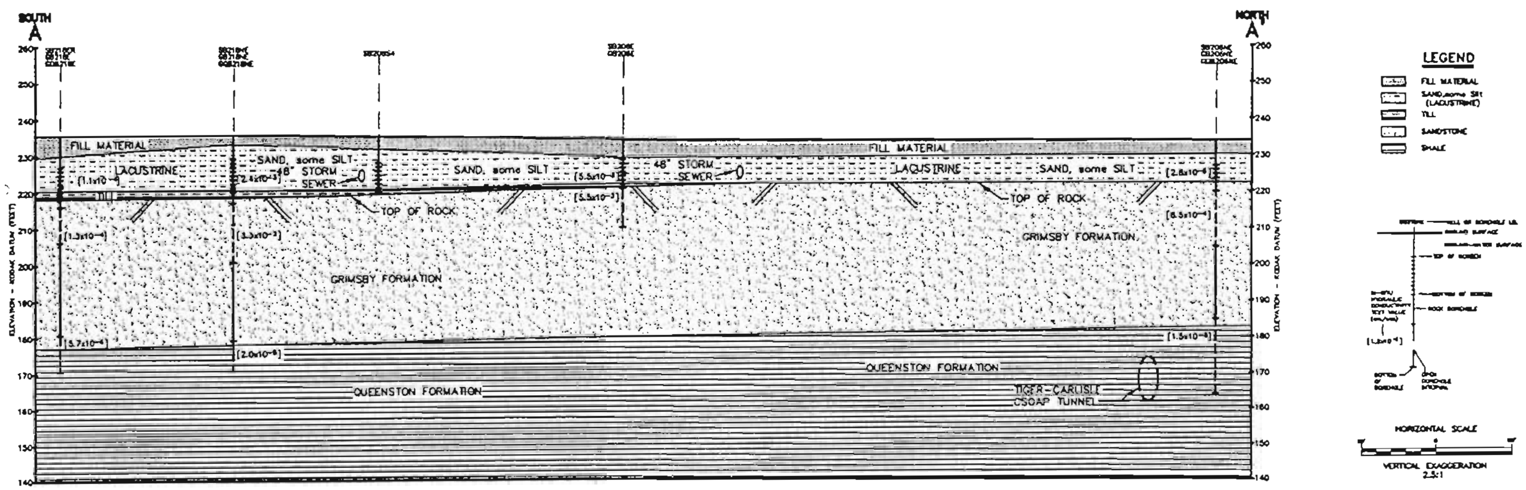


FIGURE 2
SWMU AND INVESTIGATION AREA LOCATION MAP
XIA-218 CMS REPORT
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK
N
INVESTIGATION AREA XIA-218
B-206
B-218
B-219
X-013
X-031
X-052
X-037
X-028
X-034
X-035
X-030
X-043
X-039
X-040
X-036
X-038
X-048
X-033
X-041
GROUNDWATER MIGRATION CONTROL TRENCH
CSOAP TUNNEL
48" STORM SEWER
X-033 FURTHER ACTION SWMU LOCATION
X-030 NO FURTHER ACTION SWMU LOCATION
INVESTIGATION AREA BOUNDARY
NOTE:
FURTHER ACTION SWMU X-052 REPRESENTS RELEASES AT SEVERAL LOCATIONS IN THE B-218 AREA AND, THEREFORE, A SPECIFIC LOCATION FOR THIS SWMU IS NOT INDICATED ON THE FIGURE.
XIA-218 CMS REPORT
SWMU AND INVESTIGATION AREA LOCATION MAP
FIGURE 2
218
KPX
D



RCRA FACILITY INVESTIGATION
XIA-218 CMS REPORT
GEOLOGIC CROSS-SECTION
A-A'

EASTMAN KODAK COMPANY
KODAK PARK DIVISION

PQL/RCB 1/13/99

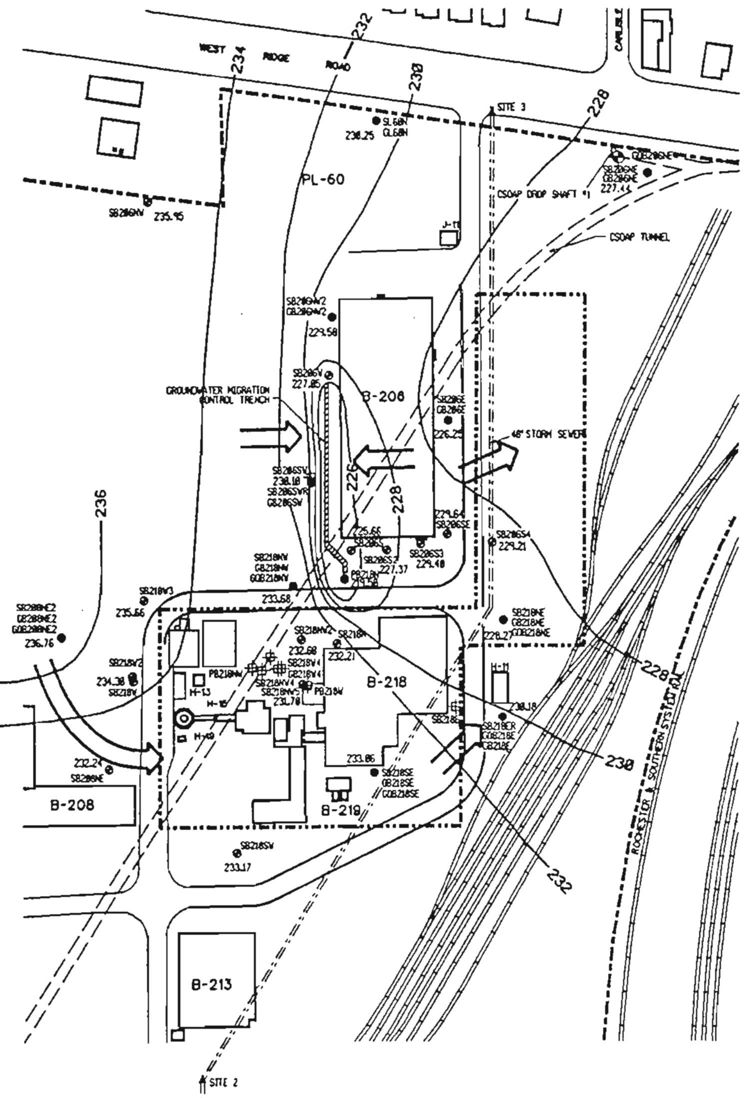
218
KPX

FIGURE NO. 3

FIGURE 4-1

OVERBURDEN GROUNDWATER CONTOURS MAP
FEBRUARY 16 - MARCH 8, 1998

XIA-218 CMS REPORT
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK



LEGEND

- NEW GRIMSBY-QUEENSTON (GQ) MONITORING WELL
- OVERBURDEN MONITORING WELL
- MONITORING WELL CLUSTER
- OVERBURDEN PUMP WELL
- ABANDONED WELL
- KODAK PARK BOUNDARY
- XIA-218 BOUNDARY
- STORM SEWER SAMPLING POINT
- 233.71 OVERBURDEN GROUNDWATER ELEVATION IN FEET
- 234 —— OVERBURDEN GROUNDWATER ELEVATION CONTOUR IN FEET
- ⇨ HORIZONTAL COMPONENT OF GROUNDWATER FLOW DIRECTION

COORDINATES AND AZIMUTHS SHOWN ARE BASED ON THE NEW YORK STATE TRANSVERSE MERCATOR PROJECTION PLANE CO-ORDINATE SYSTEM FOR THE WEST ZONE. "0" AZIMUTH IS CONSIDERED TO BE GRID NORTH. ALL DISTANCES SHOWN ARE GROUND LENGTHS. ELEVATIONS ARE KODAK PARK DATUM.

MAP PREPARED BY PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHY EXPOSED APRIL 1982 BY LOCKWOOD MAPPING INC. ROCHESTER NEW YORK. SOME FEATURES ARE BASED ON DRAWINGS PRODUCED SINCE 1986.

APPROXIMATE SCALE IN FEET
100' 0 100'

1"=160FT

XIA-218 CMS REPORT
OVERBURDEN GROUNDWATER CONTOURS MAP - FEBRUARY 16 - MARCH 8, 1998

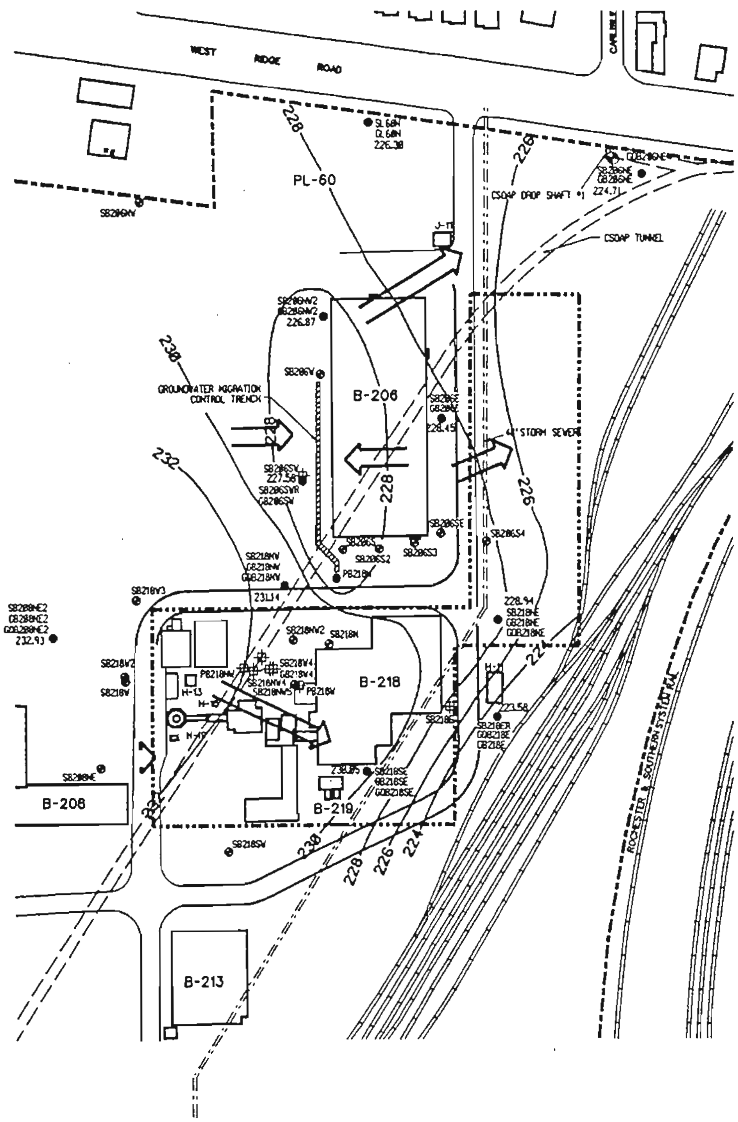
218
KPX

FIGURE 4-1

FIGURE 4-2

TOP-OF-ROCK GROUNDWATER
POTENTIOMETRIC CONTOURS
FEBRUARY 14-19, 1998

XIA-218 CMS REPORT
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK



LEGEND

- NEW GRIMSBY-QUEENSTON (GQ) MONITORING WELL
- SB206NV — OVERBURDEN MONITORING WELL
- SB206E / GB206E — MONITORING WELL CLUSTER
- PB218N — OVERBURDEN PUMP WELL
- SB206SV — ABANDONED WELL
- KODAK PARK BOUNDARY
- XIA-218 BOUNDARY
- 227.12 — TOP-OF-ROCK GROUNDWATER ELEVATION IN FEET
- 228 — TOP-OF-ROCK GROUNDWATER ELEVATION CONTOUR IN FEET
- HORIZONTAL COMPONENT OF GROUNDWATER FLOW DIRECTION

COORDINATES AND AZIMUTHS SHOWN ARE BASED ON THE NEW YORK STATE TRANSVERSE MERCATOR PROJECTION PLANE CO-ORDINATE SYSTEM FOR THE WEST ZONE. "0" AZIMUTH IS CONSIDERED TO BE GRID NORTH. ALL DISTANCES SHOWN ARE GROUND LENGTHS. ELEVATIONS ARE KODAK PARK DATUM.

MAP PREPARED BY PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHY EXPOSED APRIL 1982 BY LOCKWOOD MAPPING INC. ROCHESTER NEW YORK. SOME FEATURES ARE BASED ON DRAWINGS PRODUCED SINCE 1986.

APPROXIMATE SCALE IN FEET: 100' 0 100'

1"=160FT

XIA-218 CMS REPORT
TOP-OF-ROCK GROUNDWATER
POTENTIOMETRIC CONTOURS - FEB. 14-19, 1998

218
KPX
FIGURE 4-2

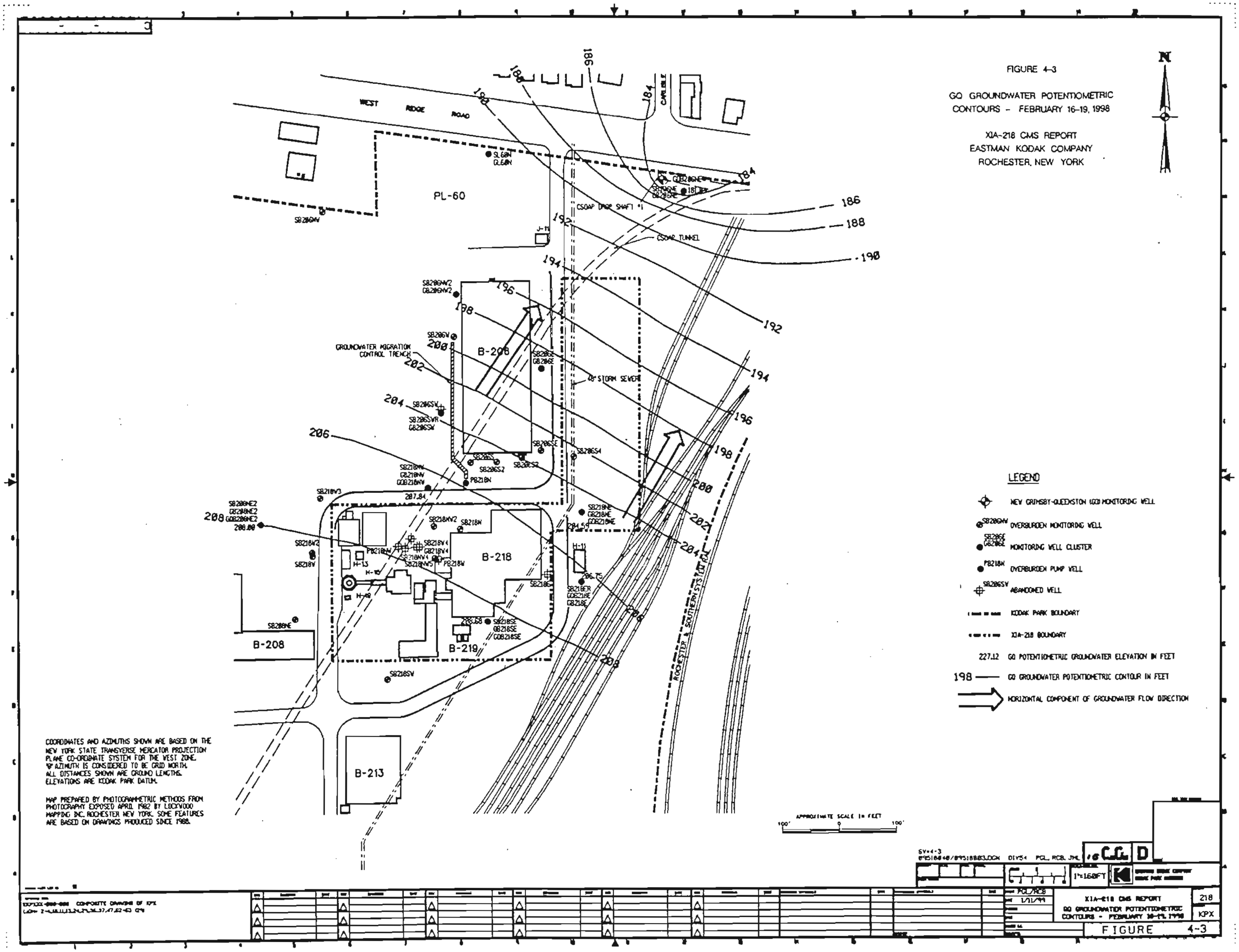


FIGURE 4-3
GQ GROUNDWATER POTENTIOMETRIC CONTOURS - FEBRUARY 16-19, 1998
XIA-218 CMS REPORT
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK
N
LEGEND
NEW GRIMSBY-QUEENSTON (GQ) MONITORING WELL
OVERBURDEN MONITORING WELL
MONITORING WELL CLUSTER
OVERBURDEN PUMP WELL
ABANDONED WELL
KODAK PARK BOUNDARY
XIA-218 BOUNDARY
227.12 GQ POTENTIOMETRIC GROUNDWATER ELEVATION IN FEET
198 GQ GROUNDWATER POTENTIOMETRIC CONTOUR IN FEET
HORIZONTAL COMPONENT OF GROUNDWATER FLOW DIRECTION
WEST RIDGE ROAD
PL-60
B-206
B-218
B-219
B-208
B-213
CSOAP DROP SHAFT #1
CSOAP TUNNEL
48" STORM SEWER
GROUNDWATER MIGRATION CONTROL TRENCH
ROCHESTER & SOUTHERN SYSTEM RR
COORDINATES AND AZIMUTHS SHOWN ARE BASED ON THE NEW YORK STATE TRANSVERSE MERCATOR PROJECTION PLANE CO-ORDINATE SYSTEM FOR THE WEST ZONE. 0° AZIMUTH IS CONSIDERED TO BE GRID NORTH. ALL DISTANCES SHOWN ARE GROUND LENGTHS. ELEVATIONS ARE KODAK PARK DATUM.
MAP PREPARED BY PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHY EXPOSED APRIL 1982 BY LOCKWOOD MAPPING INC. ROCHESTER NEW YORK. SOME FEATURES ARE BASED ON DRAWINGS PRODUCED SINCE 1988.
APPROXIMATE SCALE IN FEET
1"=160FT
XIA-218 CMS REPORT
GQ GROUNDWATER POTENTIOMETRIC CONTOURS - FEBRUARY 16-19, 1998
FIGURE 4-3
218
KPX

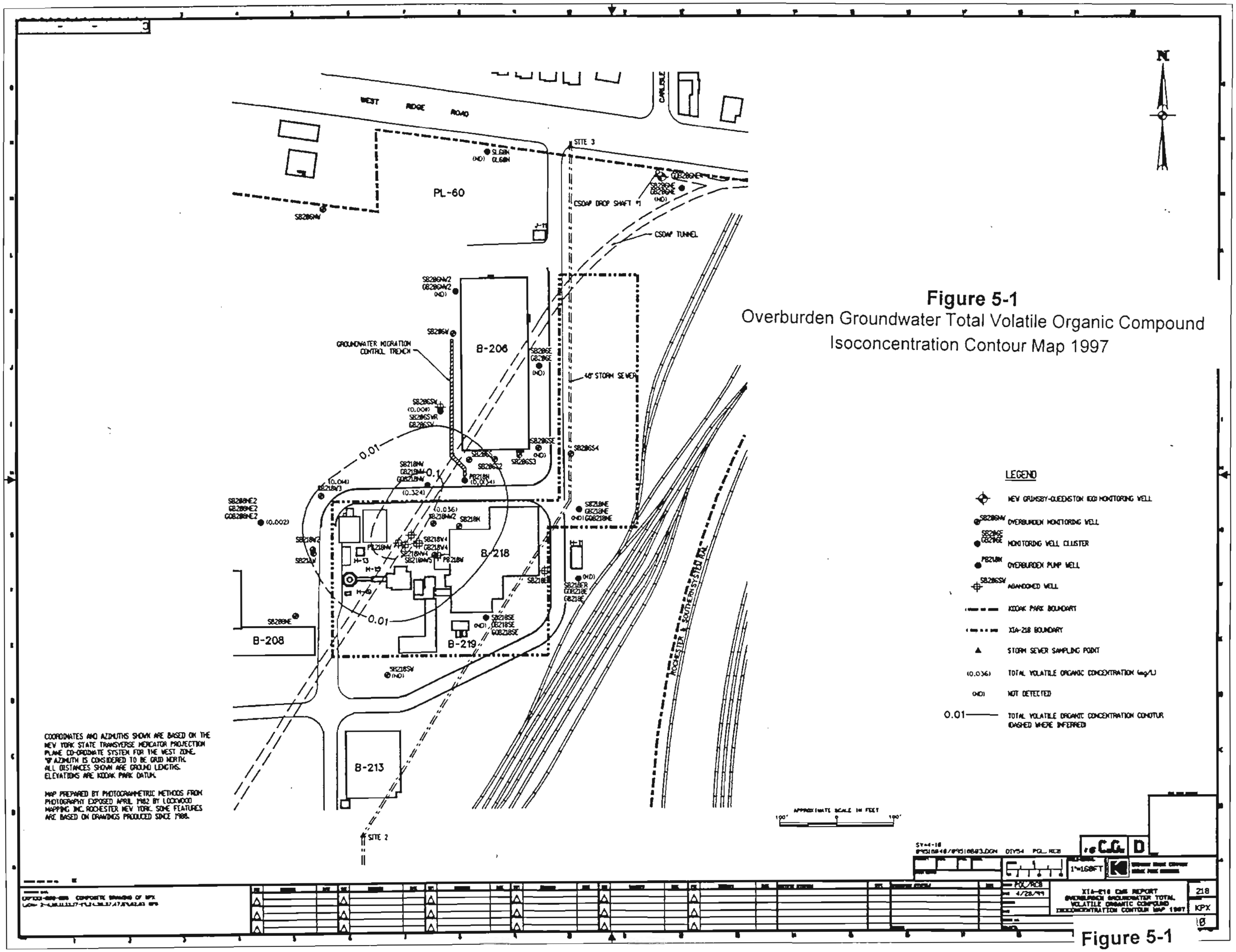


Figure 5-1

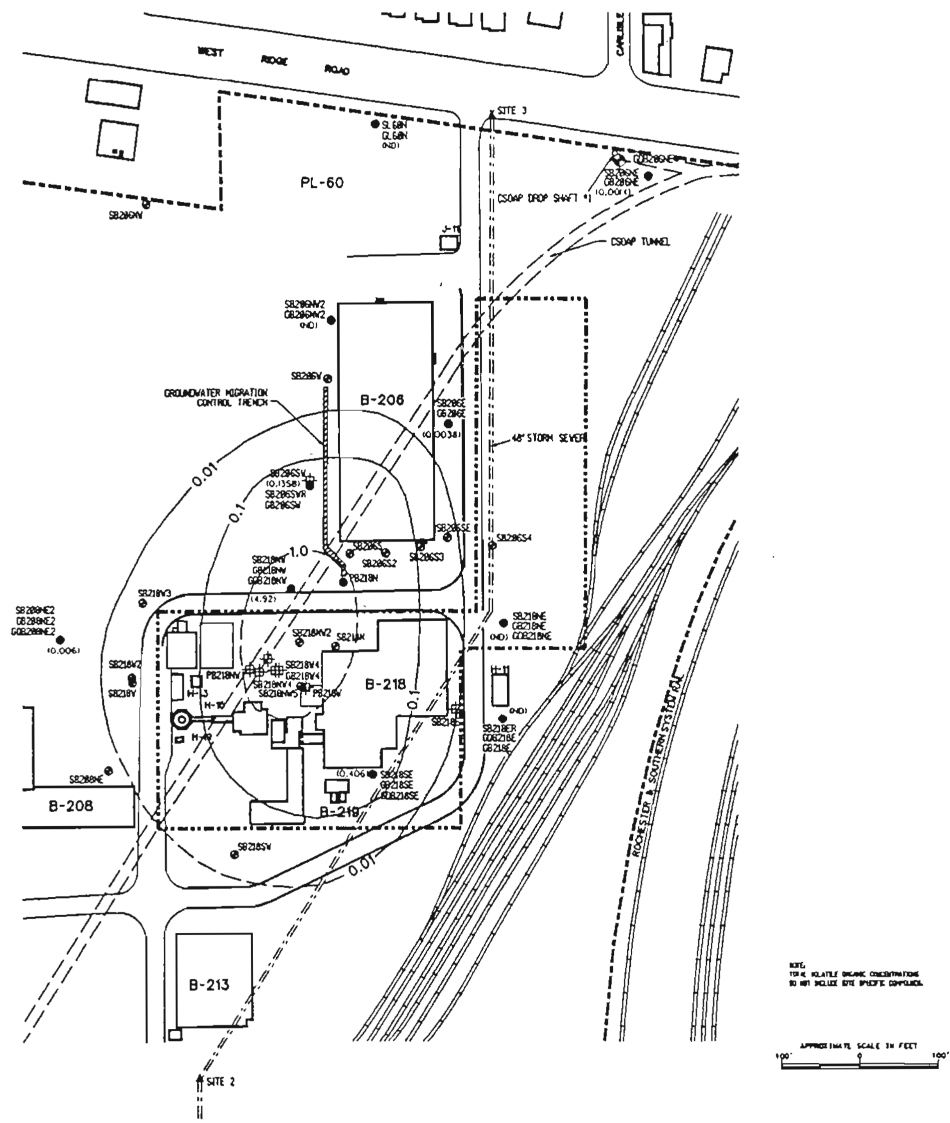
Overburden Groundwater Total Volatile Organic Compound Isoconcentration Contour Map 1997

Figure 5-1

Figure 5-2

TOP-OF-ROCK GROUNDWATER
TOTAL VOLATILE ORGANIC COMPOUND
ISOCONCENTRATION CONTOUR MAP
1997

XIA-218 CMS REPORT
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK



LEGEND

- NEW GRIMSBY-QUEENSTON (GQ) MONITORING WELL
- SB206NW OVERBURDEN MONITORING WELL
- SB206E GB206E MONITORING WELL CLUSTER
- PB218N OVERBURDEN PUMP WELL
- SB206SV ABANDONED WELL
- KODAK PARK BOUNDARY
- XIA-218 BOUNDARY
- STORM SEWER SAMPLING POINT
- (0.006) TOTAL VOLATILE ORGANIC CONCENTRATION (mg/L)
- 0.01 —— NOT DETECTED
- (ND) TOTAL VOLATILE ORGANIC CONCENTRATION CONTOUR (DASHED WHERE INFERRED)

NOTE: TOTAL VOLATILE ORGANIC CONCENTRATIONS DO NOT INCLUDE SITE SPECIFIC COMPOUNDS.

APPROXIMATE SCALE IN FEET: 100' 0 100'

COORDINATES AND AZIMUTHS SHOWN ARE BASED ON THE NEW YORK STATE TRANSVERSE MERCATOR PROJECTION PLANE CO-ORDINATE SYSTEM FOR THE WEST ZONE. "0" AZIMUTH IS CONSIDERED TO BE GRID NORTH. ALL DISTANCES SHOWN ARE GROUND LENGTHS. ELEVATIONS ARE KODAK PARK DATUM.

MAP PREPARED BY PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHY EXPOSED APRIL 1982 BY LOCKWOOD MAPPING INC. ROCHESTER NEW YORK. SOME FEATURES ARE BASED ON DRAWINGS PRODUCED SINCE 1966.

XIA-218 CMS REPORT
TOP-OF-ROCK GROUNDWATER
TOTAL VOC ISOCONCENTRATION 1997

1"=160FT

218 KPX

Figure 5-2

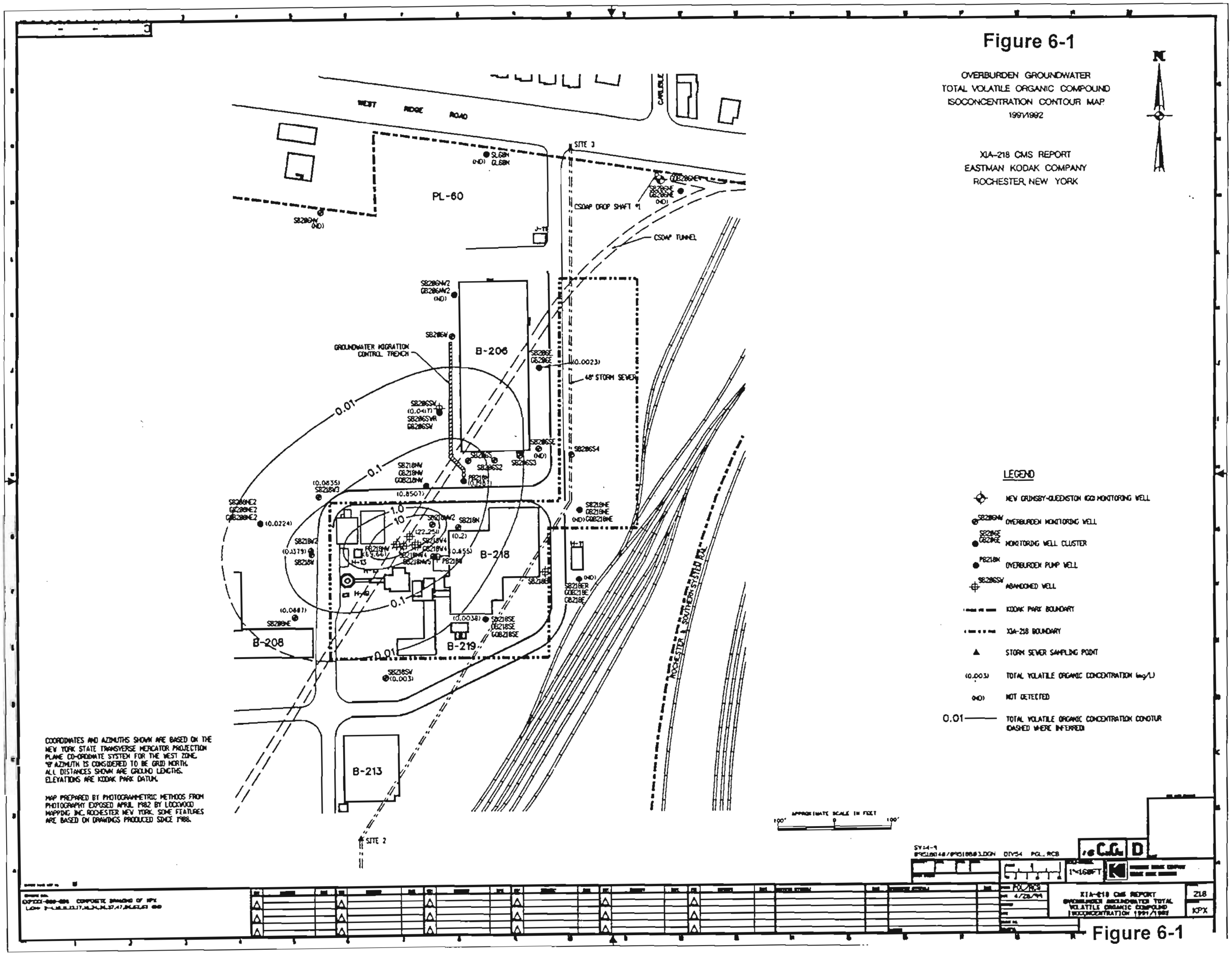


Figure 6-1
OVERBURDEN GROUNDWATER
TOTAL VOLATILE ORGANIC COMPOUND
ISOCONCENTRATION CONTOUR MAP
1991/1992
XIA-218 CMS REPORT
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK
N
WEST RIDGE ROAD
PL-60
B-206
B-218
B-219
B-208
B-213
SITE 3
SITE 2
CSOAP DROP SHAFT #1
CSOAP TUNNEL
48" STORM SEWER
GROUNDWATER MIGRATION CONTROL TRENCH
ROCHESTER & SOUTHERN STATE RR
0.01
0.1
1.0
10
LEGEND
NEW GRIMSBY-QUEENSTON (GQ) MONITORING WELL
OVERBURDEN MONITORING WELL
MONITORING WELL CLUSTER
OVERBURDEN PUMP WELL
ABANDONED WELL
KODAK PARK BOUNDARY
XIA-218 BOUNDARY
STORM SEWER SAMPLING POINT
(0.003) TOTAL VOLATILE ORGANIC CONCENTRATION (mg/L)
(ND) NOT DETECTED
0.01 TOTAL VOLATILE ORGANIC CONCENTRATION CONTOUR DASHED WHERE INFERRED
COORDINATES AND AZIMUTHS SHOWN ARE BASED ON THE NEW YORK STATE TRANSVERSE MERCATOR PROJECTION PLANE CO-ORDINATE SYSTEM FOR THE WEST ZONE. "0" AZIMUTH IS CONSIDERED TO BE GRID NORTH. ALL DISTANCES SHOWN ARE GROUND LENGTHS. ELEVATIONS ARE KODAK PARK DATUM.
MAP PREPARED BY PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHY EXPOSED APRIL 1982 BY LOCKWOOD MAPPING INC. ROCHESTER NEW YORK. SOME FEATURES ARE BASED ON DRAWINGS PRODUCED SINCE 1986.
APPROXIMATE SCALE IN FEET
XIA-218 CMS REPORT OVERBURDEN GROUNDWATER TOTAL VOLATILE ORGANIC COMPOUND ISOCONCENTRATION 1991/1992
218
KPX
Figure 6-1

Figure 6-2

TOP-OF-ROCK GROUNDWATER
VOLATILE ORGANIC COMPOUND
ISOCONCENTRATION CONTOUR MAP
1991/1992

XIA-218 CMS REPORT
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK

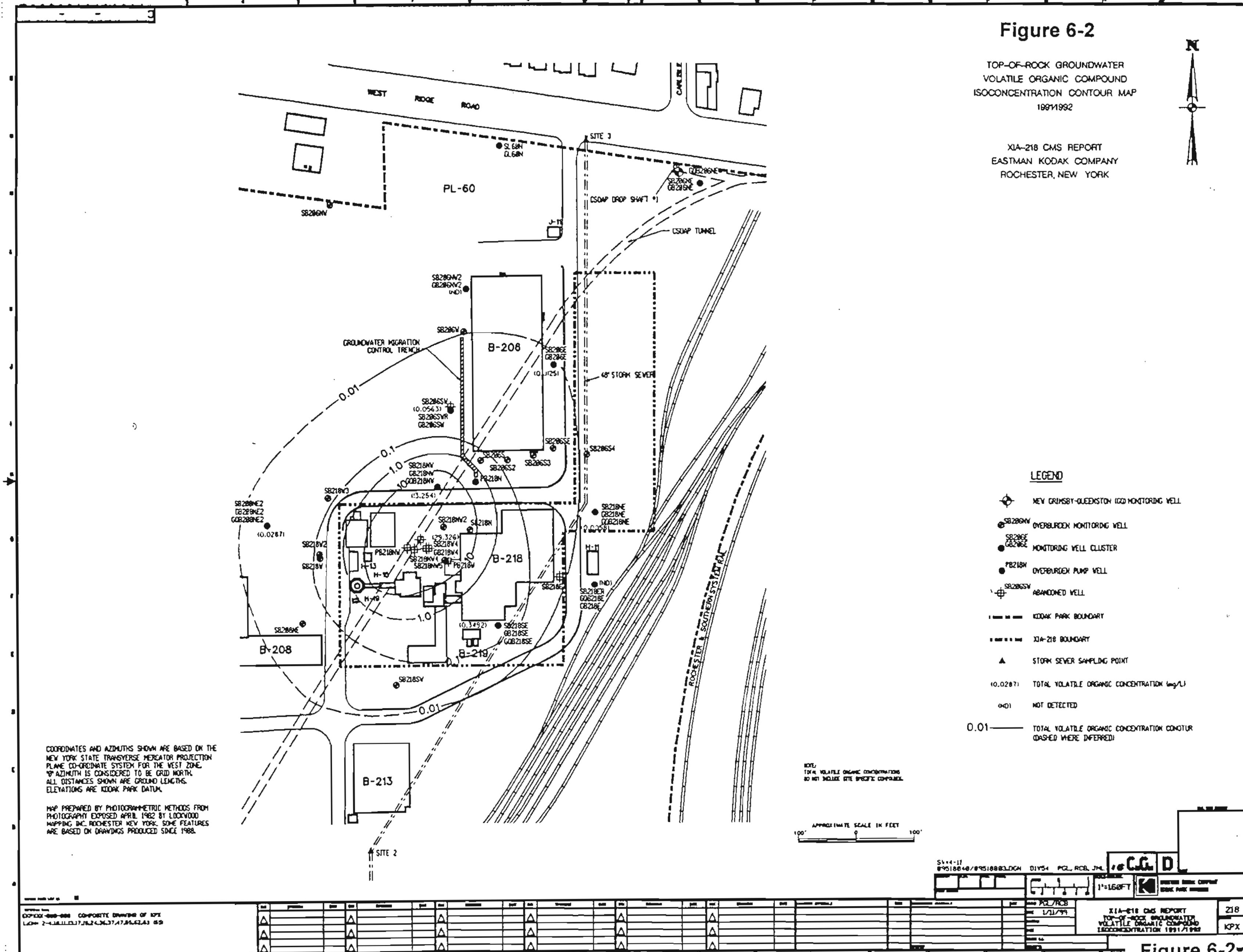


Figure 6-2

TABLE 1

XIA-218 CMS
KODAK PARK, ROCHESTER, NEW YORK

SWMU DESCRIPTION SUMMARY

SWMU No.	Unit* Type	Status**	General Description	Location	Dates of Operation	Constituent(s) of Concern	Release Summary
X - 013	TT	NFA	Trap Tank No.TT2206IS	Northwest of B-206	1942 - 1990	Process waste, paints, solvents	Leach field
X - 028	CS	FA	4,000-gallon, 90-day Container storage area	Concrete/asphalt pad northwest of B-218	1989 - 1994	Hazardous	
X - 030	CS	NFA	Indoor drum storage area	Inside B-218	1976 - Present	Spent halogenated and non-halogented wastes; mixed solvents, waste chemicals, and off-spec corrosive waste	
X - 031	CS	FA	Drum storage area	30' x 360' Gravel area northeast of B-218	1980's - Present	Spent halogenated and non-halogenated wastes	Evidence of releases during previous inspections
X - 033	I	FA	B-218 Chemical waste incinerator	West of B-218	1976 - Present	Spent halogenated and non-halogenated wastes	Releases from scrubber water line
X - 034	TS	FA	TS#218-321 5,000-gallon Tank farm trailer station	Concrete pad northwest of B-218	1976 - Present	Waste solvents	Multiple releases
X - 035	TS	NFA***	TS#218-319 5,500-gallon transfer station	Concrete pad north of B-218	1976 - Present	DMT dregs and glycol sludge	
X - 036	TT	FA	10,000-gallon trap tank No. TT4075IS	West of B-218	1975 - 1994	Hazardous wastewater	
X - 037	TAS	FA	Six 10,000-gallon aboveground storage tanks	Northwest of B-218	1976 - 1992	Spent halogenated and non-halogenated wastes	Multiple releases
X - 038	TAS	FA	Two 3,000-gallon aboveground storage tanks	West of B-218	1976 - Present	Spent halogenated and non-halogenated wastes	Multiple releases
X - 039	TAS	FA	Three 25,000-gal. aboveground storage tanks	Northwest of B-218	1991 - Present	Spent halogenated and non-halogenated wastes	Multiple releases
X - 040	TS	FA	TS#218-320 2,000-gallon west lugger station	Concrete pad west of B-218	1976 - Present	Mixed hazardous waste	Multiple releases
X - 041	TS	FA	TS#218-340 sewer station	South of kiln	1976 - Present	Wastewater consisting of lime slurry, liquid gelatin, drilling water, and S-26 pond water	
X - 043	TS	FA	TS#218-318 2,000-gallon east lugger station	East of B-218, below building expansion	1976 - 1992	Waste solvents	
X - 048	UST	NFA	20,000-gallon underground storage tank	West of B-218	1975 - Present	Petroleum	
X - 052	R	FA	Release sites	B-218 area	Not applicable	Spent halogenated and non-halogenated wastes	Multiple releases

* Unit Type:

CS = Container Storage	TS = Transfer Station
I = Incinerator	TT = Trap Tank
R = Release	UST = Underground Storage Tank
S = Sump	
TaS = Storage Tank	

** Status (as presented in the conclusions to the RFI Report, prior to evaluation in the CMS):
FA - Further Action
NFA - No Further Action

*** Per the RFI, SWMU X-035 is considered NFA for organics in soils. Inorganics to be addressed as part of the site-wide soils evaluation.

Table 2

XIA-218
Kodak Park, Rochester, New York

Summary of Constituent Concentrations in Soil
Organics

Constituent	Number of Samples	Number of Detections	Frequency of Detections (%)	Maximum Detected Concentration (mg/kg)
Volatile Organic Compounds				
Acetone	131	103	78.63%	140
Acetonitrile	131	8	6.11%	45
Benzene	131	3	2.29%	0.004
1-Butanol	131	5	3.82%	12
Chlorobenzene	131	7	5.34%	0.17
Chloroform	131	10	7.63%	0.1
Cyclohexane	131	5	3.82%	0.15
1,1-Dichloroethane	131	1	0.76%	0.001
1,2-Dichloroethane	131	11	8.40%	2.8
1,2-Dichloropropane	131	8	6.11%	0.01
Ethanol	131	32	24.43%	300
2-Ethoxyethanol	131	1	0.76%	0.86
Ethyl Acetate	131	3	2.29%	0.013
Ethyl Benzene	131	23	17.56%	10
Ethylene Glycol	131	8	6.11%	0.3
Ethyl Ether	131	1	0.76%	0.0008
Heptane	131	17	12.98%	43
n-Hexane	131	18	13.74%	3.8
2-Hexanone	131	2	1.53%	0.012
Isopropanol	131	16	12.21%	130
Isopropyl Ether	131	9	6.87%	45
Methanol	131	25	19.08%	820
Methyl Acetate	131	1	0.76%	0.002
Methyl Bromide	131	1	0.76%	0.002
Methylcyclopentane	131	1	0.76%	0.002
Methylene Chloride	131	58	44.27%	14
Methyl Ethyl Ketone	131	22	16.79%	2.5
Methyl Isobutyl Ketone	131	19	14.50%	1.6
3-Methylhexane	131	1	0.76%	60
3-Methylpentane	131	1	0.76%	0.004
2-Nitropropane	131	1	0.76%	0.051
1,1,2,2-Tetrachloroethane	131	1	0.76%	0.002
Tetrachloroethylene	131	1	0.76%	0.002
Tetrahydrofuran	131	43	32.82%	18
Toluene	131	39	29.77%	64
1,1,1-Trichloroethane	131	24	18.32%	68
1,1,2-Trichloroethane	131	3	2.29%	0.34
Trichloroethylene	131	5	3.82%	7
Trichlorofluoromethane	131	2	1.53%	0.005
1,1,2-Trichloro-1,2,2-Trifluoroethane	131	1	0.76%	0.027
Vinyl Acetate	131	1	0.76%	0.053
Vinyl Chloride	131	6	4.58%	0.034
Xylenes, Total	131	26	19.85%	84

Table 2

XIA-218
Kodak Park, Rochester, New York

Summary of Constituent Concentrations in Soil
Organics

Constituent	Number of Samples	Number of Detections	Frequency of Detections (%)	Maximum Detected Concentration (mg/kg)
Semi-Volatile Organic Compounds				
Acenaphthene (3)	157	1	0.64%	0.026
Acenapthylene	157	1	0.64%	0.14
Acetophenone	157	5	3.18%	0.17
Anthracene (3)	157	8	5.10%	0.26
Benzo (a) Anthracene	157	18	11.46%	1.2
Benzo (b) Fluoranthene	157	16	10.19%	1.1
Benzo (k) Fluoranthene	157	9	5.73%	1.3
Benzo (g,h,i) Perylene	157	5	3.18%	0.31
Benzoic Acid	157	3	1.91%	0.32
Benzo (a) Pyrene	157	13	8.28%	0.63
Bis (2-chloro-1-methylethyl) Ether	157	5	3.18%	3.4
Bis (2-ethylhexyl) Phthalate (3)	157	46	29.30%	4
Butyl Benzyl Phthalate	157	3	1.91%	1.5
2-Chlorophenol	157	2	1.27%	0.32
Chrysene	157	16	10.19%	1.6
m & p Cresol	157	4	2.55%	2.1
Dibenzofuran	157	5	3.18%	0.59
Di-n-butyl Phthalate	157	77	49.04%	43
Dichlorobenzene	157	1	0.64%	0.16
1,2-Dichlorobenzene	157	1	0.64%	0.082
2,4-Dichlorophenol	157	5	3.18%	0.72
Diethyl Phthalate	157	5	3.18%	0.26
Dimethyl Phthalate	157	4	2.55%	0.82
Dinoseb	157	1	0.64%	0.67
Di-n-octyl Phthalate	157	8	5.10%	0.63
Disulfoton	157	1	0.64%	0.67
Famphur	157	1	0.64%	0.67
Fluoranthene (3)	157	14	8.92%	2.4
Fluorene	157	2	1.27%	0.039
Indeno (1,2,3-cd) Pyrene	157	8	5.10%	0.41
Kepone	157	1	0.64%	0.14
2-Methyl-1,2-dioxolane	133	39	29.32%	36
2-Methylnaphthalene	157	16	10.19%	2.7
Methyl Parathion	157	1	0.64%	0.67
Naphthalene	157	23	14.65%	1.9
Parathion	157	1	0.64%	0.67
Phenanthrene (3)	157	22	14.01%	1.4
Phenol	157	8	5.10%	0.43
Pyrene (3)	157	14	8.92%	2.1
Pyridine	157	1	0.64%	6.9
1,2,4-Trichlorobenzene	157	2	1.27%	0.3
Triphenyl Phosphate	157	0	0.00%	0

Table 2

XIA-218
Kodak Park, Rochester, New York

Summary of Constituent Concentrations in Soil
Organics

Constituent	Number of Samples	Number of Detections	Frequency of Detections (%)	Maximum Detected Concentration (mg/kg)
Pesticides/PCBs				
Aldrin	117	2	1.71%	0.02
alpha-BHC	117	6	5.13%	0.062
beta-BHC	117	1	0.85%	0.0083
delta-BHC	117	1	0.85%	0.0047
gamma-BHC	117	2	1.71%	0.0092
4-DDE	117	1	0.85%	0.0019
Endosulfan I	117	1	0.85%	0.0053
Endosulfan II	117	2	1.71%	0.0087
Heptachlor	117	4	3.42%	0.063
Methoxychlor	117	2	1.71%	0.051
Toxaphene	117	1	0.85%	0.17
Aroclor-1016	117	1	0.85%	0.013
Aroclor-1254	117	1	0.85%	0.051
Aroclor-1260	117	8	6.84%	0.18

Inorganics

Constituent	Number of Samples (1)	Number of Detections	Frequency of Detections (%)	Minimum Detected Concentration (mg/kg)	Maximum Detected Concentration (mg/kg)
Aluminum	102	101	99.02%	–	11400
Antimony	95	15	15.79%	–	171
Arsenic	101	96	95.05%	–	33
Barium	102	101	99.02%	–	251
Beryllium	102	46	45.10%	–	1
Cadmium	102	40	39.22%	–	11
Calcium	102	101	99.02%	–	193000
Chromium (4)	102	100	98.04%	–	50
Cobalt	102	92	90.20%	–	28
Copper	102	102	100.00%	4.60	551
Cyanide	101	46	45.54%	–	4
Iron	102	102	100.00%	5190	26000
Lead (5)	102	85	83.33%	–	236
Magnesium	102	101	99.02%	–	98300
Manganese	102	100	98.04%	–	1320
Mercury	102	61	59.80%	–	2
Nickel	102	101	99.02%	–	94
Potassium	102	101	99.02%	–	2500
Selenium	102	40	39.22%	–	26
Silver	102	54	52.94%	–	91
Sodium	102	96	94.12%	–	7080
Thallium (6)	97	13	13.40%	–	12
Vanadium	102	97	95.10%	–	31
Zinc	102	102	100.00%	12.3	1070

Table 3-1

XIA-218 CMS
Kodak Park, Rochester, New York

Summary of Historic and Current Groundwater
Analytical Results
VOCs
Overburden Wells

Constituent	Number of Samples	Number of Detections	Frequency of Detections (%)	Minimum Concentration Detected (mg/L)	Maximum Concentration Detected (mg/L)	Number of Samples	Number of Detections	Frequency of Detections (%)	Minimum Concentration Detected (mg/L)	Maximum Concentration Detected (mg/L)	Potentially Applicable Remediation Level: Groundwater Standards/Guidance Values TOGS 1.1.1 (mg/L)	Potentially Applicable Remediation Level: YS Ambient Water Quality TAGM 3028 (mg/L)
Volatile Organic Compounds	1992					1997						
Acetone	31	12	38.7%	0.0068	0.034	19	1	5.3%	0.024	0.024	0.05	0.05
Benzene	31	8	25.8%	0.0011	0.74	19	4	21.1%	0.002	0.3	0.0007	0.0007
Bromodichloromethane	31	0	0.0%	--	--	19	0	0.0%	--	--	0.05	0.05
Carbon Disulfide	31	0	0.0%	--	--	19	0	0.0%	--	--	0.05	0.05
Carbon Tetrachloride	31	0	0.0%	--	--	19	0	0.0%	--	--	0.005	0.005
Chlorobenzene	31	6	19.4%	0.0021	0.0097	19	1	5.3%	0.01	0.01	NV	0.005
Chloroethane	31	1	3.2%	0.017	0.017	19	0	0.0%	--	--	0.005	0.005
Chloroform	31	2	6.5%	0.0014	0.0017	19	0	0.0%	--	--	0.007	0.007
1,1-Dichloroethane	31	10	32.3%	0.0013	0.026	19	4	21.1%	0.0011	0.014	0.005	0.005
1,2-Dichloroethane	31	4	12.9%	0.0016	0.011	19	0	0.0%	--	--	0.005	0.005
1,1-Dichloroethylene	31	2	6.5%	0.001	0.0011	19	0	0.0%	--	--	0.005	0.005
1,2-Dichloroethene, Total	31	9	29.0%	0.0014	0.016	19	1	5.3%	0.004	0.004	0.005	0.005
1,2 Dichloropropane	31	0	0.0%	--	--	19	0	0.0%	--	--	0.005	0.005
Ethyl Benzene	31	6	19.4%	0.0012	0.065	19	2	10.5%	0.0037	0.0066	0.005	0.005
2-Hexanone	31	0	0.0%	--	--	19	0	0.0%	--	--	0.05	0.05
Methylene Chloride	31	6	19.4%	0.0023	0.0057	19	0	0.0%	--	--	0.005	0.005
Methyl Ethyl Ketone	31	4	12.9%	0.0024	0.015	19	1	5.3%	0.009	0.009	0.05	0.05
Methyl Isobutyl Ketone	31	2	6.5%	0.0076	0.095	19	0	0.0%	--	--	NV	0.05
Tetrachloroethylene	31	4	12.9%	0.0016	0.0076	19	1	5.3%	0.002	0.002	0.005	0.005
Toluene	31	4	12.9%	0.0013	0.027	19	1	5.3%	0.001	0.001	0.005	0.005
1,1,1-Trichloroethane	31	5	16.1%	0.0011	0.025	19	1	5.3%	0.003	0.003	0.005	0.005
1,1,2- Trichloroethane	31	0	0.0%	--	--	19	0	0.0%	--	--	0.005	0.005
Trichloroethylene	31	8	25.8%	0.002	0.0087	19	2	10.5%	0.002	0.004	0.005	0.005
Vinyl Acetate	31	0	0.0%	--	--	19	0	0.0%	--	--	NV	0.05
Vinyl Chloride	31	4	12.9%	0.005	0.014	19	1	5.3%	0.002	0.002	0.002	0.002
Xylenes, Total	31	4	12.9%	0.018	0.057	19	2	10.5%	0.0026	0.01	0.005	0.005
Site-Specifics												
Acetonitrile	31	0	0.0%	--	--	12	0	0.0%	--	--	NV	0.05
Cyclohexane	2	0	0.0%	--	--	5	0	0.0%	--	--	0.005	NV
Ethanol	31	2	6.5%	0.19	0.24	10	0	0.0%	--	--	NV	NV
Ethylene Glycol	31	1	3.2%	0.0013	0.0013	12	0	0.0%	--	--	0.05	0.05
Isopropanol	31	0	0.0%	--	--	12	0	0.0%	--	--	NV	NV
Isopropyl Ether	31	7	22.6%	0.0056	0.49	12	2	16.7%	0.027	0.039	NV	NV
Methanol	31	1	3.2%	0.64	0.64	12	0	0.0%	--	--	NV	0.05
Tetrahydrofuran	31	0	0.0%	--	--	12	1	8.3%	0.0084	0.0084	0.05	0.05

Notes:
All results are reported in milligrams per liter (mg/L)
Results reported for 1992 do not include the following B-218 courtyard monitoring/recovery wells: SB218W4, PB218W, and PB218NW, which were abandoned by Kodak.
-- = Not detected above the practical quantitation limit (PQL) or lower level of quantitation (LLQ).
NV = No Value.

Table 3-2

XIA-218 CMS
Kodak Park, Rochester, New York

Summary of Groundwater Analytical Results
Inorganics
Overburden Wells

Constituent	Number of Samples	Number of Detections	Frequency of Detections (%)	Minimum Concentration Detected (mg/L)	Maximum Concentration Detected (mg/L)	Frequency of Exceedances of Groundwater Remediation Levels (%)	Potentially-Applicable Remediation Levels	
							NYSDEC TAGM 3028 Ambient Water Quality Criteria (mg/L)	NYSDEC TOGS 1.1.1 Standards/ Guidance Values (mg/L)
Metals, Total								
Aluminum	69	65	94%	--	172	0%	NV	NV
Antimony	69	3	4%	--	0.314	4%	0.003	0.003
Arsenic	69	21	30%	--	0.295	22%	0.025	0.025
Barium	69	35	51%	--	2.71	12%	1	1
Beryllium	67	3	4%	--	0.012	4%	0.004	0.003
Cadmium	69	6	9%	--	0.043	4%	0.005	0.01
Calcium	69	67	97%	--	779	0%	NV	NV
Chromium	69	39	57%	--	21.3	38%	0.05	0.05
Cobalt	69	12	17%	--	0.172	0%	NV	NV
Copper	69	36	52%	--	0.44	7%	< 0.200	0.2
Iron	69	69	100%	0.535	173	100%	0.3	0.3
Lead	69	48	70%	--	2.2	42%	0.015	0.025
Magnesium	69	61	88%	--	358	59%	35	35
Manganese	69	67	97%	--	11.5	87%	0.3	0.3
Mercury	69	23	33%	--	0.008	9%	0.002	0.0007
Nickel	69	35	51%	--	570	39%	0.1	0.1
Potassium	69	26	38%	--	65.1	0%	NV	NV
Selenium	65	3	5%	--	0.512	5%	0.01	0.01
Silver	69	6	9%	--	0.11	3%	0.05	0.05
Sodium	69	64	93%	--	2760	86%	< 20	20
Thallium	69	0	0%	--	--	0%	0.002	0.0005
Vanadium	69	9	13%	--	0.31	3%	0.25	NV
Zinc	69	50	72%	--	0.57	0%	5	2.0

Notes:
All concentrations reported in milligrams per liter (mg/L)
-- = Not detected above the practical quantitation limit (PQL) or lower level of quantitation (LLQ).
NV = No Value.

Table 3-3

XIA-218 CMS
Kodak Park, Rochester, New York

Summary of Historic and Current Groundwater
Analytical Results
VOCs
TOR Wells

Constituent	Number of Samples	Number of Detections	Frequency of Detections (%)	Minimum Concentration Detected (mg/L)	Maximum Concentration Detected (mg/L)	Number of Samples	Number of Detections	Frequency of Detections (%)	Minimum Concentration Detected (mg/L)	Maximum Concentration Detected (mg/L)	Potentially Applicable Remediation Levels: Groundwater Standards/Guidance Values TOGS 1.1.1 (mg/L)	Potentially Applicable Remediation Levels: NYS Ambient Water Quality TAGM 3028 (mg/L)
	1992					1997						
Volatile Organic Compounds												
Acetone	15	4	26.7%	0.0058	2.6	12	0	0.0%	--	--	0.05	0.05
Benzene	15	6	40.0%	0.0036	8.8	12	2	16.7%	0.065	1.6	0.0007	0.0007
Bromodichloromethane	15	0	0.0%	--	--	12	0	0.0%	--	--	0.05	0.05
Carbon Disulfide	15	1	6.7%	0.0015	0.0015	12	0	0.0%	--	--	0.05	0.005
Carbon Tetrachloride	15	0	0.0%	--	--	12	0	0.0%	--	--	0.005	0.005
Chlorobenzene	15	3	20.0%	0.0066	0.058	12	2	16.7%	0.0013	0.027	NV	0.005
Chloroethane	15	1	6.7%	0.0082	0.0082	12	1	8.3%	0.038	0.038	0.005	0.005
Chloroform	15	1	6.7%	0.0012	0.0012	12	0	0.0%	--	--	0.007	0.007
1,1-Dichloroethane	15	5	33.3%	0.0026	0.086	12	4	33.3%	0.002	0.08	0.005	0.005
1,2-Dichloroethane	15	2	13.3%	0.14	0.16	12	1	8.3%	0.047	0.047	0.005	0.005
1,1-Dichloroethylene	15	1	6.7%	0.0074	0.0074	12	0	0.0%	--	--	0.005	0.005
1,2-Dichloroethene, Total	15	8	53.3%	0.0033	0.04	12	5	41.7%	0.0014	0.037	0.005	0.005
1,2 Dichloropropane	15	1	6.7%	0.015	0.015	12	0	0.0%	--	--	0.005	0.005
Ethyl Benzene	15	5	33.3%	0.0027	1.6	12	2	16.7%	0.036	1.2	0.005	0.005
2-Hexanone	15	1	6.7%	0.092	0.092	12	0	0.0%	--	--	0.05	0.05
Methylene Chloride	15	1	6.7%	0.092	0.092	12	0	0.0%	--	--	0.005	0.005
Methyl Ethyl Ketone	15	3	20.0%	0.011	0.2	12	0	0.0%	--	--	0.05	0.05
Methyl Isobutyl Ketone	15	2	13.3%	0.14	0.37	12	0	0.0%	--	--	NV	0.05
Tetrachloroethylene	15	3	20.0%	0.0028	0.21	12	1	8.3%	0.28	0.28	0.005	0.005
Toluene	15	5	33.3%	0.0018	1.2	12	2	16.7%	0.0021	0.36	0.005	0.005
1,1,1-Trichloroethane	15	0	0.0%	--	--	12	0	0.0%	--	--	0.005	0.005
1,1,2- Trichloroethane	15	0	0.0%	--	--	12	0	0.0%	--	--	0.005	0.005
Trichloroethylene	15	5	33.3%	0.002	0.039	12	3	25.0%	0.0014	0.027	0.005	0.005
Vinyl Acetate	15	1	6.7%	0.049	0.049	12	0	0.0%	--	--	NV	0.05
Vinyl Chloride	15	5	33.3%	0.0042	0.072	12	4	33.3%	0.002	0.015	0.002	0.002
Xylenes, Total	15	5	33.3%	0.0024	5.7	12	2	16.7%	0.014	1.6	0.005	0.005
Site-Specifics												
Acetonitrile	15	2	13.3%	0.17	3.3	9	0	0.0%	--	--	NV	0.05
Cyclohexane	1	0	0.0%	--	--	5	0	0.0%	--	--	0.005	NV
Ethanol	15	0	0.0%	--	--	9	0	0.0%	--	--	NV	NV
Ethylene Glycol	15	1	6.7%	0.0007	0.0007	9	1	11.1%	0.0018	0.0018	0.05	0.05
Isopropanol	15	2	13.3%	3.6	13	9	0	0.0%	--	--	NV	NV
Isopropyl Ether	15	11	73.3%	0.0027	7	9	6	66.7%	0.0012	0.032	NV	NV
Methanol	15	3	20.0%	0.36	5.2	9	0	0.0%	--	--	NV	0.05
Tetrahydrofuran	15	3	20.0%	0.032	1.1	9	1	11.1%	0.0069	0.0069	0.05	0.05

Notes:
All results are reported in milligrams per liter (mg/L)
Results reported for 1992 do not include the followingB-218 courtyard monitoring/recovery wells: GQ218W4,
which was abandoned by Kodak.
-- = Not detected above the practical quantitation limit (PQL) or lower level of quantitation (LLQ).
NV = No Value.

Table 3-4

XIA-218 CMS
Kodak Park, Rochester, New York

Summary of Groundwater Analytical Results
Inorganics
TOR Wells

Constituent	Number of Samples	Number of Detections	Frequency of Detections (%)	Minimum Concentration Detected (mg/L)	Maximum Concentration Detected (mg/L)	Frequency of Exceedances of Groundwater Remediation Levels (%)	Potentially-Applicable Remediation Levels: NYSDEC TAGM 3028 Ambient Water Quality Criteria (mg/L)	Potentially-Applicable Remediation Levels: NYSDEC TOGS 1.1.1 Standards/ Guidance Values (mg/L)
Aluminum	24	18	75%	--	36.1	0%	NV	NV
Antimony	24	2	8%	--	0.0256	8%	0.003	0.003
Arsenic	24	7	29%	--	0.165	21%	0.025	0.025
Barium	24	12	50%	--	3.74	17%	1	1
Beryllium	24	3	13%	--	0.095	4%	0.004	0.003
Cadmium	24	1	4%	--	0.0027	0%	0.005	0.01
Calcium	24	23	96%	--	1200	0%	NV	NV
Chromium	24	10	42%	--	0.258	13%	0.05	0.05
Cobalt	24	2	8%	--	0.161	0%	NV	NV
Copper	24	7	29%	--	0.1332	0%	< 0.200	0.2
Iron	24	23	96%	--	87	83%	0.3	0.3
Lead	24	6	25%	--	0.095	4%	0.015	0.025
Magnesium	24	23	96%	--	300	79%	35	35
Manganese	24	23	96%	--	29.2	63%	0.3	0.3
Mercury	24	8	33%	--	0.0007	0%	0.002	0.0007
Nickel	24	7	29%	--	0.386	17%	0.1	0.1
Potassium	24	18	75%	--	300	0%	NV	NV
Selenium	24	1	4%	--	0.0058	0%	0.01	0.01
Silver	24	1	4%	--	0.0028	0%	0.05	0.05
Sodium	24	24	100%	74.4	1780	100%	< 20	20
Thallium	24	1	4%	--	0.0091	4%	0.002	0.0005
Vanadium	24	0	0%	--	--	0%	0.25	NV
Zinc	24	12	50%	--	3.74	0%	5	2.0

Notes:
All concentrations reported in milligrams per liter (mg/L)
-- = Not detected above the practical quantitation limit (PQL) or lower level of quantitation (LLQ).
NV = No Value.

Table 3-5

XIA-218 CMS
Kodak Park, Rochester, New York

Summary of Historic and Current Groundwater Analytical Results
VOCs
GQ Wells

Constituent	Number of Samples	Number of Detections	Frequency of Detections (%)	Minimum Concentration Detected (mg/L)	Maximum Concentration Detected (mg/L)	Number of Samples	Number of Detections	Frequency of Detections (%)	Minimum Concentration Detected (mg/L)	Maximum Concentration Detected (mg/L)	Potentially Applicable Remediation Levels: Groundwater Standards/Guidance Values TOGS 1.1.1 (mg/L)	Potentially Applicable Remediation Levels: NYS Ambient Water Quality TAGM 3028 (mg/L)
	1992					1997						
Volatile Organic Compounds												
Acetone	5	3	60.0%	0.0071	1.3	8	1	12.5%	0.0052	0.0052	0.05	0.05
Benzene	5	2	40.0%	0.0053	1.3	8	2	25.0%	0.001	0.0046	0.0007	0.0007
Bromodichloromethane	5	1	20.0%	0.0026	0.0026	8	0	0.0%	--	--	0.05	0.05
Carbon Disulfide	5	0	0.0%	--	--	8	0	0.0%	--	--	0.05	0.005
Carbon Tetrachloride	5	0	0.0%	--	--	8	0	0.0%	--	--	0.005	0.005
Chlorobenzene	5	0	0.0%	--	--	8	0	0.0%	--	--	NV	0.005
Chloroethane	5	0	0.0%	--	--	8	0	0.0%	--	--	0.005	0.005
Chloroform	5	2	40.0%	0.0033	0.01	8	0	0.0%	--	--	0.007	0.007
1,1-Dichloroethane	5	0	0.0%	--	--	8	0	0.0%	--	--	0.005	0.005
1,2-Dichloroethane	5	0	0.0%	--	--	8	0	0.0%	--	--	0.005	0.005
1,1-Dichloroethylene	5	0	0.0%	--	--	8	0	0.0%	--	--	0.005	0.005
1,2-Dichloroethene, Total	5	1	20.0%	0.0012	0.0012	8	2	25.0%	0.002	0.003	0.005	0.005
1,2 Dichloropropane	5	0	0.0%	--	--	8	0	0.0%	--	--	0.005	0.005
Ethyl Benzene	5	2	40.0%	0.0029	0.41	8	0	0.0%	--	--	0.005	0.005
2-Hexanone	5	0	0.0%	--	--	8	0	0.0%	--	--	0.05	0.05
Methylene Chloride	5	1	20.0%	0.0035	0.0035	8	0	0.0%	--	--	0.005	0.005
Methyl Ethyl Ketone	5	0	0.0%	--	--	8	0	0.0%	--	--	0.05	0.05
Methyl Isobutyl Ketone	5	0	0.0%	--	--	8	0	0.0%	--	--	NV	0.05
Tetrachloroethylene	5	0	0.0%	--	--	8	0	0.0%	--	--	0.005	0.005
Toluene	5	1	20.0%	0.52	0.52	8	1	12.5%	0.002	0.002	0.005	0.005
1,1,1-Trichloroethane	5	3	60.0%	0.0013	0.0025	8	0	0.0%	--	--	0.005	0.005
1,1,2- Trichloroethane	5	0	0.0%	--	--	8	0	0.0%	--	--	0.005	0.005
Trichloroethylene	5	1	20.0%	0.0042	0.0042	8	0	0.0%	--	--	0.005	0.005
Vinyl Acetate	5	0	0.0%	--	--	8	0	0.0%	--	--	NV	0.05
Vinyl Chloride	5	0	0.0%	--	--	8	2	25.0%	0.003	0.005	0.002	0.002
Xylenes, Total	5	1	20.0%	0.48	0.48	8	0	0.0%	--	--	0.005	0.005
Site-Specifics												
Acetonitrile	5	0	0.0%	--	--	3	0	0.0%	--	--	NV	0.05
Cyclohexane	0	0	0.0%	--	--	2	0	0.0%	--	--	0.005	NV
Ethanol	5	0	0.0%	--	--	3	0	0.0%	--	--	NV	NV
Ethylene Glycol	5	2	40.0%	0.0005	0.0008	3	0	0.0%	--	--	0.05	0.05
Isopropanol	5	1	20.0%	2	2	3	0	0.0%	--	--	NV	NV
Isopropyl Ether	5	5	100.0%	0.0015	0.76	3	1	33.3%	0.0099	0.0099	NV	NV
Methanol	5	1	20.0%	47	47	3	0	0.0%	--	--	NV	0.05
Tetrahydrofuran	5	0	0.0%	--	--	3	0	0.0%	--	--	0.05	0.05

Notes:
All results are reported in milligrams per liter (mg/L)
-- = Not detected above the practical quantitation limit (PQL) or lower level of quantitation (LLQ).
NV = No Value.

Table 3-6

XIA-218 CMS
Kodak Park, Rochester, New York

Summary of Groundwater Analytical Results
Inorganics
GQ Wells

Constituent	Number of Samples	Number of Detections	Frequency of Detections (%)	Minimum Concentration Detected (mg/L)	Maximum Concentration Detected (mg/L)	Frequency of Exceedances of Groundwater Remediation Levels (%)	Potentially-Applicable Remediation Levels: NYSDEC TAGM 3028 Ambient Water Quality Criteria (mg/L)	Potentially-Applicable Remediation Levels: NYSDEC TOGS 1.1.1 Standards/ Guidance Values (mg/L)
Metals, Total								
Aluminum	5	5	100%	0.755	3.88	0%	NV	NV
Antimony	5	0	0%	--	--	0%	0.003	0.003
Arsenic	5	3	60%	--	0.02	0%	0.025	0.025
Barium	5	2	40%	--	0.337	0%	1	1
Beryllium	5	0	0%	--	--	0%	0.004	0.003
Cadmium	5	0	0%	--	--	0%	0.005	0.01
Calcium	5	5	100%	24.1	214	0%	NV	NV
Chromium	5	1	20%	--	0.032	0%	0.05	0.05
Cobalt	5	0	0%	--	--	0%	NV	NV
Copper	5	0	0%	--	--	0%	< 0.200	0.2
Iron	5	5	100%	0.841	8.67	100%	0.3	0.3
Lead	5	4	80%	--	0.01	0%	0.015	0.025
Magnesium	5	4	80%	--	54	20%	35	35
Manganese	5	5	100%	0.099	1.16	80%	0.3	0.3
Mercury	5	3	60%	--	0.0005	0%	0.002	0.0007
Nickel	5	1	20%	--	0.059	0%	0.1	0.1
Potassium	5	5	100%	9.31	48.4	0%	NV	NV
Selenium	5	0	0%	--	--	0%	0.01	0.01
Silver	5	1	20%	--	0.017	0%	0.05	0.05
Sodium	5	5	100%	173	867	100%	< 20	20
Thallium	5	0	0%	--	--	0%	0.002	0.0005
Vanadium	5	0	0%	--	--	0%	0.25	NV
Zinc	5	4	80%	--	0.0505	0%	5	2.0

Notes:
All concentrations reported in milligrams per liter (mg/L)
-- = Not detected above the practical quantitation limit (PQL) or lower level of quantitation (LLQ).
NV = No Value.

Table 4

XIA-218 CMS
Kodak Park, Rochester, New York

Estimation of Surface Water Concentrations (Genesee River)
Resulting from Groundwater Infiltration into 48-inch Storm Sewer
VOCs

Constituent	95% UCL/ Maximum Groundwater Concentration (mg/L)[1]	Estimated Genesee River Surface Water Concentration (mg/L)			NYSDEC TOGS 1.1.1 Surface Water Standard/Guidance Value (mg/L)[2]
		MA7CD10	MA30CD10	Avg. flow	
Volatile Organic Compounds					
Acetone	12	3.85E-04	3.20E-04	4.92E-05	0.050
Benzene	14	4.49E-04	3.73E-04	5.74E-05	0.001
Bromodichloromethane	0.0025	8.02E-08	6.66E-08	1.03E-08	0.050
Carbon Disulfide[3]	0.00105	3.36E-08	2.79E-08	4.30E-09	3.5
Carbon Tetrachloride	0.0032	1.01E-07	8.42E-08	1.30E-08	0.0004
Chlorobenzene	0.0377	1.21E-06	1.00E-06	1.55E-07	0.005
Chloroethane	0.0075	2.42E-07	2.01E-07	3.10E-08	0.005
Chloroform	0.0012	3.82E-08	3.17E-08	4.89E-09	0.007
1,1-Dichloroethane	0.191	6.14E-06	5.10E-06	7.85E-07	0.005
1,2-Dichloroethane	0.569	1.82E-05	1.52E-05	2.33E-06	0.001
1,1-Dichloroethylene	0.0089	2.84E-07	2.36E-07	3.63E-08	0.001
1,2-Dichloroethene, Total	0.0179	5.76E-07	4.78E-07	7.36E-08	0.005
1,2 Dichloropropane	0.0195	6.27E-07	5.21E-07	8.02E-08	0.001
Ethyl Benzene	5.90	1.89E-04	1.57E-04	2.42E-05	0.005
2-Hexanone	0.0049	1.57E-07	1.31E-07	2.01E-08	0.050
Methylene Chloride	0.490	1.57E-05	1.31E-05	2.01E-06	0.005
Methyl Ethyl Ketone	0.230	7.37E-06	6.12E-06	9.43E-07	0.050
Methyl Isobutyl Ketone[3]	0.152	4.88E-06	4.05E-06	6.24E-07	2.800
Tetrachloroethylene	0.0039	1.27E-07	1.05E-07	1.62E-08	0.001
Toluene	8.40	2.70E-04	2.24E-04	3.45E-05	0.005
1,1,1-Trichloroethane	0.0587	1.89E-06	1.57E-06	2.41E-07	0.005
1,1,2- Trichloroethane	0.00073	2.33E-08	1.94E-08	2.98E-09	0.001
Trichloroethylene	0.0059	1.88E-07	1.57E-07	2.41E-08	0.005
Vinyl Acetate[3]	0.0030	9.48E-08	7.88E-08	1.21E-08	35
Vinyl Chloride	0.055	1.75E-06	1.45E-06	2.24E-07	0.0003
Xylenes, Total	9.0	2.89E-04	2.40E-04	3.69E-05	0.005
Site-Specifics					
Acetonitrile[3]	0.442	1.42E-05	1.18E-05	1.81E-06	0.210
Cyclohexane	0.0006	2.01E-08	1.67E-08	2.56E-09	NV
Ethanol	0.147	4.70E-06	3.91E-06	6.01E-07	NV
Ethylene Glycol	0.00059	1.91E-08	1.58E-08	2.44E-09	0.050
Isopropanol	7.97	2.56E-04	2.13E-04	3.27E-05	NV
Isopropyl Ether	17.0	5.46E-04	4.53E-04	6.98E-05	NV
Methanol[3]	1.78	5.73E-05	4.76E-05	7.32E-06	18
Tetrahydrofuran	22	7.06E-04	5.86E-04	9.03E-05	0.050

Notes are found on page 2

Table 4

XIA-218 CMS
Kodak Park, Rochester, New York

Estimation of Surface Water Concentrations (Genesee River)
Resulting from Groundwater Infiltration into 48-inch Storm Sewer
SVOCs

Constituent	95% UCL/ Maximum Groundwater Concentration (mg/L)(1)	Estimated Genesee River Surface Water Concentration (mg/L)			NYSDEC TOGS 1.1.1 Surface Water Standard/Guidance Value (mg/L)(2)
		MA7CD10	MA30CD10	Avg. flow	
Semi-Volatile Organic Compounds					
Acenaphthene(4)	0.0013	4.01E-08	3.33E-08	5.1288E-09	0.0053
Benzoic Acid(3)	0.0145	4.64E-07	3.85E-07	5.932E-08	140
Benzyl Alcohol(3)	0.0105	3.37E-07	2.80E-07	4.3118E-08	11
Bis(2-chloroethyl) Ether	0.0020	6.41E-08	5.33E-08	8.1975E-09	0.00003
Bis(2-ethylhexyl) Phthalate(4)	0.0028	9.11E-08	7.57E-08	1.1648E-08	0.0006
Butyl Benzyl Phthalate	0.0016	5.09E-08	4.23E-08	6.5052E-09	0.05
4-Chloroanaline	0.339	1.09E-05	9.03E-06	1.3895E-06	0.005
4-Chloro-3-methylphenol(3)	0.0027	8.82E-08	7.33E-08	1.128E-08	70
2-Chlorophenol	0.0038	1.21E-07	1.01E-07	1.5476E-08	NV
m&p Cresol	0.0165	5.30E-07	4.40E-07	6.7735E-08	NV
1,2-Dichlorobenzene	0.0014	4.53E-08	3.76E-08	5.7872E-09	0.003
1,3-Dichlorobenzene	0.0014	4.35E-08	3.61E-08	5.5639E-09	0.003
1,4-Dichlorobenzene	0.0014	4.41E-08	3.66E-08	5.6398E-09	0.003
2,4-Dichlorophenol(5)	0.0070	2.25E-07	1.87E-07	2.8732E-08	0.00003
Diethyl Phthalate	0.0026	8.42E-08	6.99E-08	1.0764E-08	0.05
2,4-Dimethylphenol	0.0039	1.24E-07	1.03E-07	1.5826E-08	0.05
Di-n-butyl Phthalate	0.0018	5.88E-08	4.88E-08	7.5168E-09	0.05
Di-n-octyl Phthalate	0.0014	4.62E-08	3.84E-08	5.9051E-09	0.05
Isophorone	0.0025	8.02E-08	6.66E-08	1.025E-08	0.05
2-Methylphenol	0.0032	1.02E-07	8.49E-08	1.3065E-08	NV
4-Methylphenol	0.0044	1.43E-07	1.19E-07	1.8249E-08	NV
Naphthalene(5)	0.0019	6.01E-08	5.00E-08	7.6906E-09	0.01
Nitrobenzene	0.0025	8.04E-08	6.68E-08	1.0282E-08	0.0004
Phenanthrene(4)	0.0013	4.01E-08	3.33E-08	5.1288E-09	0.005
Phenol(5)	0.0450	1.44E-06	1.20E-06	1.8452E-07	0.001
1,2,4-Trichlorobenzene	0.0013	4.01E-08	3.33E-08	5.1288E-09	0.005
Site-Specifics					
1,4-Dioxane(3)	5.1	1.64E-04	1.36E-04	2.0925E-05	0.0077
2-Methyl-1,3-dioxolane	0.146	4.70E-06	3.90E-06	6.0032E-07	0.05
Pyridine	0.0043	1.38E-07	1.15E-07	1.765E-08	0.05

Notes:
(1) The 95% UCL value for site groundwater is presented unless the derived concentration was greater than the historic maximum concentration, in which case the value is the historic maximum detected concentration.
(2) Unless otherwise indicated, surface water standards/guidance values are based on the primary use as a drinking water source. Where a lower standard/guidance value is reported for a different use (e.g., fish propagation, aesthetics) that value is used.
(3) Indicates a surface water value was derived for this constituent using methodology presented in Appendix A.
(4) Reported surface water standard/guidance value is for fish propagation in fresh waters.
(5) Reported surface water standard/guidance value is for aesthetics.

Estimated Surface Water Flow Rates: MA7CD10 = 368 cfs; MA30CD10 = 443 cfs; Avg. flow = 2845 cfs; were obtained from USGS (Station 04232000), Genesee River at Driving Park Bridge.