DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: Eastman Kodak Company
Kodak Park
Facility Address: 343 State Street, Rochester, New York 14650
Facility EPA ID #: NYD980592497

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   _X_ If yes - check here and continue with #2 below.

   ___ If no - re-evaluate existing data, or

   ___ if data are not available, skip to #8 and enter"IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Site Description, Kodak Park

The facility is located at Kodak Park, in the vicinity of Ridge Road, located on the western side of Rochester, in Monroe County, New York. The facility is approximately 2000 acres in size, and extends approximately 4 miles in an east-west direction (see Figure 1.1). The facility is surrounded by a mix of commercial, industrial and residential properties. The facility is bounded on the east by the Genesee River, and extends to the west to Interstate Route 390. Since 1891, Kodak Park has been Eastman Kodak Company's primary photographic manufacturing facility. Operations at the site include manufacture of film and paper base; preparation and coating of photographic emulsions; production of vitamins and food additives; manufacture of toner; cutting packaging and distribution of finished products; and the production of synthetic organic chemicals, dyes and couplers.

Growth of the facility generally progressed from east to west, so the older, more densely developed portions of Kodak Park are located towards the eastern end. From east to west, Kodak Park is broken geographically into subsections named KPE, KPW, KPX, KPM, KPS and KPT (see Figure 1.2). KPE includes film manufacturing and is supported by solvent storage and recovery operations in KPW that are linked by pipeline. KPE also includes the wastewater treatment plant and sludge incinerator. KPX is mainly used for distribution services, but it also includes a hazardous waste incinerator, and related storage facilities. KPM includes synthetic chemical production, film coating, polyester recovery and a major steam/electric generating plant. KPS and KPT are mainly used for warehousing and distribution of products. Hazardous waste management facilities at Kodak Park include tanks, containers, transfer stations, a wastewater treatment plant, and two incinerators. The New York State Department of Environmental Conservation (NYSDEC) has identified and listed 5 inactive hazardous waste disposal sites at Kodak Park, with designated sites being in KPE, KPW, KPX and KPM. Most of the sites were listed for documented inadvertent releases of hazardous waste to the environment, not for intentional disposal.

Kodak has completed a RCRA Facility Assessment for Kodak Park. To date, more than 720 Solid Waste Management Units (SWMUs) have been identified. SWMUs have been grouped into investigation areas for the administration of subsequent corrective action activities. Since 1988 Kodak has completed more than 90 hydrogeologic investigations. Investigations have been completed and interim and final corrective measures have been implemented for significantly contaminated investigation areas.

The facility is currently operating under NYS interim status requirements. Kodak has submitted a Part 373 permit application and a draft Part 373 permit has been public noticed by NYSDEC, but has not been issued. The facility does have a federal permit issued by U.S. Environmental Protection Agency for the hazardous waste incinerator.

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

__X__ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

[1]"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Site groundwater contaminants include chlorinated and non-chlorinated volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. Numerous chemicals have been detected at concentrations exceeding NYSDEC comparison values. For groundwater, the comparison values that have been applied are those for class GA waters, as compiled in NYSDEC Technical Operational Guidance Series (TOGS) 1.1.1 Ambient Water Standards and Guidance Values (NYSDEC 1998). TOGS 1.1.1 summarizes ambient water quality standards where such have been promulgated, but also provides guidance values where standards are not available. For those constituents that do not have a standard or guidance value listed in TOGS 1.1.1, the groundwater action level in NYSDEC Technical Administrative Guidance Memorandum (TAGM) 3028 has been used (NYSDEC 1997).

The primary VOCs detected in Kodak Park groundwater include: methylene chloride, dichloropropane, cyclohexane, benzene, toluene, xylene, isopropyl ether, methanol, and butanol. The main SVOCs include: various phthalates, 1,4-dioxane, cellosolve, and pyridine. However, a number of other compounds have shown exceedances. Table 2-1 (attached) shows contaminant levels and comparison values reported for bedrock groundwater in Kodak Park Section KPW.

References:

See attached list, provided following response to CA750, Question #8.

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

_X_ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Kodak currently has 33 active groundwater recovery systems in operation (Figure 3.1 shows 30 of the systems. Three additional recovery wells were recently installed and are operating in the MIA-301 area, in eastern KPM.).

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[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

Many of these systems were first installed as part of interim corrective measures, and were subsequently incorporated as part of final corrective measures. In addition to high intensity performance monitoring typically conducted during initial operation of each of these systems to demonstrate effectiveness (e.g., EIA-NEKPE quarterly Performance Reports), there is an on-going program of semi-annual monitoring to assess effectiveness through time. The semi-annual monitoring program includes water level monitoring of approximately 600 wells and groundwater quality testing of selected monitoring wells. This information is used to define areas of hydraulic capture produced by groundwater extraction features including active elements, such as pumping wells, and passive features, including industrial sewer laterals that collect infiltrating groundwater (see Figures 3.2, 3.3, and 3.4). All pumping wells are also included in a water quality monitoring program to provide information on mass recovery, loading to the treatment plant, and to provide information on trends in contaminant levels through time (e.g., see Figure 3.5). Operational information on the active groundwater recovery systems is also collected and reported on a periodic basis. This includes extraction rates, totalized flows and operation & maintenance activities for the reporting periods. Annual reports also present historic operational information so that current performance can be readily compared, to assess trends (e.g., see Tables 3-1 and 3-2). Each year, approximately 50 million gallons of groundwater is recovered by the existing remedial systems, and treated by Kodak's Kings Landing Wastewater Treatment Plant. Another approximately 50 million gallons of groundwater is collected each year by passive infiltration into the industrial sewer network.

Hydrogeologic investigation and corrective measures studies have shown that the size and concentrations of many of the groundwater plumes at Kodak Park are decreasing (see corrective measures studies reports for the following investigation areas: XIA-218, MIA-329, MIA-WRL). Figures 3.6 and 3.7 provide a historic comparison of the XIA-218 plume, between 1991/1992 and 1997. Since a number of the groundwater recovery systems have been operating for approximately 15 years, there is a considerable amount of hydraulic and groundwater quality data available to demonstrate effectiveness and long-term performance. Other areas of Kodak Park, such as KPE, have shown generally stable plumes that are not expanding. Contaminant migration within the bedrock at Kodak Park appears to be strongly attentuated. This is likely due to a number of factors such as contaminant degradation through biologic and physical processes (Golder 2005) and natural attenuation associated with matrix diffusion (Lipson et al. 2005). Investigations at Kodak Park have shown that a significant contaminant mass has diffused into the rock matrix (S.S. Papadopulos & Associates 1995), where it resides in immobile pore water, within the primary porosity of the rock (Parker, et al. 1994). The bedrock at Kodak Park consists of mainly of siltstones and shales, classes of rock that have a relatively high primary porosity. Bedrock groundwater flow occurs through secondary porosity features (e.g., joints, partings, fractures), so the moving water is isolated from water held in the rock matrix. Contaminant transfer between the mobile and immobile waters is controlled by diffusion; there is no physical mixing of the waters. Diffusion is a relatively slow process that controls migration of contaminants between the mobile and immobile water (i.e., between the water moving through fractures in the rock and the water held in the rock matrix). A consequence of matrix diffusion is that contaminants tend to migrate much more slowly than would be expected, based on groundwater flow velocity. This difference in migration rates is described as "retardation." Contaminant migration by bedrock groundwater can be greatly retarded. In some areas of Kodak Park, groundwater monitoring has been conducted for approximately 20 years, with results showing no significant movement of a number of plumes. This is an indication that matrix diffusion and other attenuation mechanisms are strongly retarding contaminant migration at Kodak Park.

While these mechanisms provide the benefit of reducing loadings/contaminant fluxes to potential receptors such as surface water bodies, they complicate and hinder efforts to remove contaminant mass from the environment. Source control actions including the upgrading and/or elimination of tank storage systems and related piping at Kodak Park have reduced the potential for future releases into the environment. As part of the tank upgrade program, Kodak reduced the number of tanks from approximately 1100 to approximately 450 (Eastman Kodak, 1989). Contaminants from historic releases have generally been substantially retarded, so increases in concentrations are not expected. In addition, groundwater recovery operations at Kodak Park provide hydraulic containment of groundwater across much of the site, controlling potential off-site contaminant migration. For these reasons, increases in potential future loadings to surface waters are unlikely. In addition, programs are in place to monitor conditions and identify if there are significant changes in conditions.

References:

See attached list, provided following response to CA750, Question #8.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

__X__ If yes - continue after identifying potentially affected surface water bodies.

____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Groundwater modeling of site flow conditions indicates that groundwater is likely infiltrating into storm sewers that eventually discharge to surface water bodies. Such discharges are expected to occur in a tributary to Paddy Hill Creek for an area in western KPM (near Building 329). Figure 4.1 is an air photo of the northwestern portion of KPM. The storm water from this area discharges to a ditch along the east side of Route 390, near the western (left) edge of the photo. A similar situation exists in KPX (near Building 218), however, in this case the storm sewer is tied to the Merrill Street storm water outfall, and ultimately discharges into the Genesee River. In Figure 4.2, the Building 218 area is in the vicinity of the large white rectangular structure near the west (left) side of the air photo. Merrill Street is the first east-west street north of the large parking lot on the east side of the photo. The storm sewer runs under Merrill Street towards the east, where it discharges into the Genesee River Groundwater from part of KPW and part of KPE is projected to discharge to the Genesee River (see Figure 4.3). The river is near the east side of the photo. KPE and the rest of Kodak Park extends to the west (left) from the river. See responses to subsequent questions for more information and related references.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of <u>key</u> contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

__X__ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected

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[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

concentration[3] of <u>each</u> contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

____ If unknown - enter "IN" status code in #8.

<u>Rationale:</u>

A comparison of the groundwater quality in portions of areas where discharge to surface water is the expected fate shows that observed groundwater values in a number of instances exceed the ten-fold criteria threshold. It should be noted that although groundwater discharge to surface water or storm sewers is expected to be occurring in certain areas, water quality monitoring that has been conducted in several areas (for example in KPX where up and downstream storm water sampling has been conducted) has not shown discernible effects. In the corrective measures studies that have addressed potential storm/surface water discharges of groundwater at Kodak Park, a very conservative approach to assessing potential impacts has been employed. Even though testing has not documented actual contaminant loadings, potential loadings were calculated based on assigning either maximum observed contaminant concentrations for the entire plume within the "discharge" zone, or using the 95th percentile contaminant concentration. This approach assumes a maximum or near maximum concentration for the entire plume, even though that concentration is in many instances associated with only one of the wells representing the plume "discharge" zone. The loading calculations also assumed that there would be no retardation or degradation of contaminants during migration to the surface water body. As noted in response to question #3, this assumption is very conservative since site groundwater data indicates that contaminant migration is generally strongly retarded and that contaminant degradation is occurring.

For EIA-NEKPE the 95th percentile groundwater concentrations used in the surface water loading calculations are presented in Table 5-1. Note that none of the NEKPE contaminant concentrations exceeded 100 times its comparison value, so a annual mass flux calculation is not presented. A number NEKPE contaminant concentrations are less than 10 times the comparison value criteria noted on the CA750 question above, but were still evaluated for potential impacts during the corretive measues study. For the NEKPE corrective measures study, these concentrations and a groundwater discharge rate of 3600 cubic feet per day were used to calculate potential surface water loadings.

<u>References:</u>

See attached list, provided following response to CA750, Question #8.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

__X__ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation

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[4]Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

___ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

___ If unknown - skip to 8 and enter "IN" status code.

Rationale:

As noted in previous responses, where data at Kodak Park indicated the need, potential surface water impacts associated with groundwater discharges were assessed as part of the final remedy decisions. Surface water impact assessments were included as part of the final remedy decisions for the following Kodak Park areas: WIA-KPW, XIA-218, EIA-NEKPE, EIA-KL, MIA-329, and MIA-301. In addition, surface water impact assessments have also been conducted for MIA-308 and EIA-SEKPE, but remedy decisions have not been finalized for these areas. These assessments were performed during the corrective measures study phase (i.e., as part of the CMS/Presumptive Remedy Report, or as an addendum or appendix to that report). The potential loadings were evaluated based on consideration of characteristics of the receiving water, including minimum average daily flow and the State Classification of the receiving water. Receiving water flow was used to calculate potential concentrations. These concentrations were then compared to ambient water quality criteria applicable to the surface water, to determine acceptability. For some of the assessments, base flow rates in the storm sewers were used to calculate potential concentrations. If the calculated storm water concentrations in the pipe (prior to discharge) did not exceed TOGS groundwater comparison values, further evaluation of the receiving surface water was not pursued.

At Kodak Park sampling has been conducted to monitor storm sewer water quality. This has included upstream/downstream sampling in some instances (e.g., XIA-218) and downstream only sampling in some instances (MIA-329). These sampling programs have not shown contravention of relevant comparison values. Sampling of the Genesee River to directly assess potential impact from groundwater discharges has not been performed because the loading rate is so low relative to even the minimum flow in the Genesee River that the groundwater contribution would not be detectable with existing sampling and analytical testing methods.

References:

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[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

See attached list, provided following response to CA750, Question #8.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

_**X**_ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

___ If no - enter "NO" status code in #8.

___ If unknown - enter "IN" status code in #8.

Rationale:

Kodak conducts site-wide groundwater monitoring on a semi-annual basis. Groundwater elevation measures are taken on all available wells, and used to prepare potentiometric surface maps for the three primary flow zone present at Kodak Park (see Figures 3.2, 3.3, and 3.4). Kodak also conducts groundwater quality monitoring of selected wells on a semi-annual basis. The wells and monitoring requirements are specified in the Kodak Park Groundwater Sampling and Analysis Plan. This plan is periodically updated to address issues such as the installation of new wells, or to select alternate monitoring wells depending on historic findings and current areas of concern. Wells sampled during Fall 2003 and Spring 2004 are listed in Table 7-1. Kodak also conducts storm water monitoring as a requirement for corrective measures implementation for XIA-218. This involves periodic water quality testing upstream and downstream of the expected plume discharge area. Kodak has also conducted periodic monitoring of an outfall tributary to Paddy Hill Creek under a provision of a site storm water management permit. The monitoring programs will provide future measurement data to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater." The monitoring programs will also provide data on conditions within plumes, so that significant changes in contaminant concentrations can be identified, and responded to where warranted.

Reference(s):

See attached list, provided following response to CA750, Question #8.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

_X_ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the **Eastman Kodak Company Kodak Park Facility**, **EPA ID # NYD980592497**, located in **Rochester, New York**. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater." This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

_____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

_____ IN - More information is needed to make a determination.

Completed by: ________________________________ Date _____________
Lawrence M. Thomas
Engineering Geologist 2

Supervisor: ________________________________ Date _____________
Daniel J. Evans, P.E.
Chief, Hazardous Waste Engineering Eastern Section
Bureau of Hazardous Waste and Radiation Management

Director: Original signed by:________________________ Date: September 29, 2005
Edwin Dassatti, P.E.
Director, Bureau of Hazardous Waste and Radiation Management
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Locations where References may be found:

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CA750 Table 2-1		
Compound	**NYSDEC Comparison Value (ug/l)**	**Maximum Concentration Detected (ug/l)**
Metals:		
Antimony	**3**	**480**
Arsenic	**25**	**320**
Barium	**1,000**	**2700**
Beryllium	**3**	**3**
Cadmium	**5**	**16**
Chromium	**50**	**2300**
Copper	**200**	**1300**
Iron	**300**	**128000**
Lead	**15**	**364**
Magnesium	**35000**	**518000**
Manganese	**300**	**8800**
Mercury	**2**	**2**
Nickel	**700**	**290**
Silver	**50**	**93**
Sodium	**20000**	**2700000**
Thallium	**4**	**320**
Zinc	**300**	**1500**
Semivolatile Organics:		
Bis(2-Ethylhexyl)phthalate	**50**	**53**
2-Chloronaphthalene	**10**	**48**
2,4-Dichlorophenol	**f**	**26000**
Diethyl Phthalate	**50**	**1200**
2,4-Dimethylphthalate	**f**	**43**
Di-n-Butyl Phthalate	**4**	**52**
Naphthalene	**10**	**21**
n-Nitrosodiphenylamine	**50**	**300**
0-Cresol	**f**	**5**

CA750 Table 2-1		
Compound	**NYSDEC Comparison Value (ug/l)**	**Maximum Concentration Detected (ug/l)**
o-Dichlorobezene	**4.7**	**62**
p-Chloroaniline	**5**	**38**
p-Chloro-m-cresol	**f**	**6**
p-Cresol	**f**	**220**
p-Dichlorobezene	**4.7**	**66**
Phenacetin	**5**	**6.8**
Phenol	**f**	**10000**
Pyridine	**50**	**67000**
p&m-Cresol	**f**	**560**
Triphenyl phosphate	**50**	**5200**
Volatile Organics:		
Acetone	**50**	**50000**
Acetonitrile	**210**	**9200**
Benzene	**0.7**	**610**
Chlorobenzene	**5**	**10000**
Chloroethane	**5**	**4100**
Chloroform	**7**	**230**
1,1-Dichloroethane	**5**	**950**
1,2-Dichloroethane	**5**	**25000**
1,2-Dichloroethene	**5**	**220000**
1,1-Dichloroethylene	**5**	**180000**
1,2-Dichloropropane	**5**	**160000**
1,4-Dioxane	**3.5**	**71000**
Ethylbenzene	**5**	**4500**
Ethylene Glycol	**50**	**80000**
Methyl Alcohol	**18000**	**850000**
Methyl Chloride	**5**	**26**
Methyl Ethyl Ketone	**1800**	**19000**

CA750 Table 2-1		
Compound	**NYSDEC Comparison Value (ug/l)**	**Maximum Concentration Detected (ug/l)**
Methylene Chloride	**5**	**810000**
n-Butyl Alcohol	**3500**	**90000**
Porpylene Oxide	**0.1**	**220**
1,1,2,2-Tetrachlorothane	**5**	**680**
Tetrachloroethylene	**5**	**14**
Tetrahydrofuran	**50**	**510000**
Toluene	**5**	**43000**
1,1,1-Trichloroethane	**5**	**1000**
1,1,2-Trichloroethane	**5**	**150**
Trichloroethylene	**5**	**8500**
Vinyl Acetate	**35000**	**430**
Vinyl Chloride	**2**	**22000**
Xylenes	**5**	**35000**
Pesticides and PCBs:		
Aroclor-1248	**0.1**	**0.5**

f = total phenols not to exceed 1 ug/l.

CA750 Table 5-1

Contaminant	NEKPE 95th Percentile Groundwater Plume Concentration (mg/l)
Aluminum	48.8
Antimony	0.023
Arsenic	0.024
Barium	1.26
Beryllium	0.018
Cadmium	0.002
Chromium	0.057
Cobalt	0.029
Copper	0.083
Iron	65
Lead	0.053
Manganese	34.3
Mercury	0.022
Nickel	0.033
Selenium	0.006
Silver	0.030
Thallium	4.18
Vanadium	0.043
Zinc	0.525
1,2-Dichloroethylene	0.045
Acetone	0.124
Cyclohexane	0.459
Methanol	0.94
Vinyl Chloride	0.068
Xylenes (total)	0.003

CA750 Table 7-1			
Fall 2003	**Spring 2004**	**Spring 2004**	**Spring 2004**
PB350NE2	SB91S	QB135SE	GQES13
PB350NW	SB91S FIELD DUP	QL14SWR	GQWS9
PB350NW DUP	SB97S	GB105NE	PB119NER
PB319N	S1B99W	GQB105NE	PB119ER
SB319N	SB91W	SB134E	GQL41E
GB206NW2	SB93NE	PB53N2	GQL41E DUP
PL73N	SB322W	PB54NW	QL41E
SL73NZ	SB306W	PL73N	QB16N
TRIP BLANK	SB301SE	QL42NE2 MS/MSD	Q1B16E
GB151SE	SB303SE	GL42SE	GB206NE
GB151SE	SB339NE	QL42SER	QB120NW
SB151SER	SB308E2 MS/MSD	PB57W	PB115N
SB135E3	GB305N	PL54W	Q1L28W
PB119ER	SB305W	PB143NW	Q2L28W
PB119NER	SL74NE	PL54E	PB135ER
PB135ER	SL74NE DUP	PL54E DUP	PL54NE2
PB115N	GB303SE	PB54SE	GQL15E MS/MSD
SB135E2	G2B352NW2	PL42W	PL54NE
GB135NER MS/MSD	SB319N	PL42E	PB136S
QB135SE	GB319N	PL50NW3	PL41N
GB105NE	PB350NE2	PL50N2	PL41S
PL50NW3	PB350NW	PL50N3	MH2017ST
PB136S	PB319N	PL50W	MH2009ST
PL50N2	SL73NWZ	SL45N	
PL50N3	SL73NZ	QL27NW	
PL50W	SL72SE	QB81E	
PL54E	GL72SE	GB62SE	
PL54E DUP	GBM32N	GQB16E	
PB143NW	SBM32N	QL45N	
PL54NE2	SB333NW	GL45WR MS/MSD	
PL54NE	GB333NW	GQB23SW	
SB91S	GB349W	QB57NR2	
SB97S	GB329NW	GQB57N	
S1B99W	GB218E	G2ES4	
SB93NE	SL76S	IES4	
PB53N2	GL76S	GQES3	
PB54NW	GL60N	GES7	
PB54SE	SB135E3 MS/MSD	IES7	
PB57W	GB205NE	SMN7	
TRIP BLANK	SB208NE2	SMN7 DUP	
PB53N2	GB206E	SMN3	
PL41N	GB16N	GWN3	
SL45N MS/MSD	GB59E	GWN4	
PL41S	SB135E2	GQWS15	

CA750 Table 7-1			
Fall 2003	**Spring 2004**	**Spring 2004**	**Spring 2004**
PL42W	GB135NER	GWS5	
PL42E	GB135NER DUP	GQWS13	
GB62SE	GB151SE	GQWS12	
QL27NW	SB151SER	GQWN2	
GQL15E	GB206NW2	GWN6 MS/MSD	
GL45WR	GWN1	GWN5	
SB91W	GQWN1		
PL54W			