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

STATEMENT OF BASIS
FOR
KODAK PARK INVESTIGATION AREA MIA-333

FINAL
October 2006

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 Disposal Site Code: 8-28-082

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 for that will be protective of human health and the environment from soil and groundwater contamination that is present at the investigation area MIA-333 ,located in the central portion of Kodak Park Section M (KPM), 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 MIA-333.

This document:

- Provides a brief overview of the site history and site investigations which were conducted at MIA-333;
- Summarizes current and potential pathways of human exposure to contaminants in MIA-333;
- Describes the remedial goals that were considered; and
- Identifies the proposed remedy and presents the basis for its selection.
- Solicits public review and comment on selection of the proposed remedy.

The New York State Department of Environmental Conservation (NYSDEC or Department), in consultation with the New York State Department of Health, has tentatively 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 finalize remedy selection 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 environmental investigations and related activities that have been undertaken for MIA-333, and the possible remedies to address that contamination.

<u>Proposed Remedy</u>

The Department has tentatively selected the remedy for MIA-333 described below. The proposed remedy consists of:

- continued operation and maintenance of the MIA-333 and KPM hydraulic control (sewer and groundwater extraction) systems;
- installation and monitoring of a groundwater extraction system within monitoring well SB326SWR for additional hydraulic control;

- installation of an LNAPL skimmer within monitoring well SB326SWR for free-phase product removal;

- disposal of the extracted groundwater and LNAPL in the Kodak Park industrial sewer system for treatment at the KLWPP;

- revisiting the components of the selected remedy in 5 years to determine if elements of the selected remedy can be eliminated and/or if additional or alternative technologies can be employed for remediation based on the then current site conditions;

- continued groundwater monitoring in KPM , in accordance with the NYSDEC-approved Kodak Park Groundwater Sampling and Analysis Plan (KPGSAP)(Kodak, 1993) to assess the effectiveness of the remedy;

- administrative controls to address potential exposure to contaminated soils and groundwater. This includes continued implementation of existing institutional controls (i.e., site access restrictions) and adding deed restrictions to limit the future use and development of the property to commercial and industrial uses only . This will include a restriction preventing the future use of groundwater as a source of potable water. Volatile chemicals in MIA-333 groundwater can be a source for contaminated soil vapor, which can potentially affect indoor air quality through the process of vapor intrusion. Due to the presence of volatile organic compounds in groundwater, the potential for vapor intrusion to indoor air must be evaluated prior to any new construction or change in use of existing structures on the site. Administrative controls also include an operation and maintenance plan specifying routine monitoring, maintenance, and reporting for existing soil cover systems for areas with soils concentrations above industrial/commercial (I/C) comparison values;

- continued implementation of the Kodak Park Master Plan II and project specific health and safety protocols for any future excavations within MIA-333 that may be necessary (e.g., to conduct routine maintenance activities); and,

- annual certification by the property owner that the institutional controls and engineering controls are in place and continue to be effective.

Facility Background

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

The MIA-333 investigation area includes approximately 8 acres and is located in the western portion of KPM (Figure 1). MIA-333 is a subsection of KPM, a site listed on the New York State Department of Environmental Conservation Registry of Inactive Hazardous Waste

Disposal Sites. MIA-333 currently includes two existing buildings. Building 333 operations include vehicle/truck storage and maintenance, crane storage operations offices, and dispatch.

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 MIA-333. This grouping includes the 10 SWMUs listed in Table 1. The location of MIA-333 and the position of the SWMUs are shown on Figure 2. Solid Waste Management Units (SWMUs) in the B-326 area included a historic open burn/open detonation area and a trap tank.

The RCRA Facility Investigation (RFI) and Corrective Measures Study (CMS) for MIA-333 were completed in 2003 and 2004, respectively. In the CMS report Kodak reviewed site conditions and made recommendations for long-term care of MIA-333.

Facility Investigation Results

The RCRA Facility Investigation (RFI) for MIA-333 was completed in 2003. Subsurface investigations in MIA-333 have been conducted in a number of phases, between approximately 1990 and 2003. Investigations have focused on soils and groundwater. The field investigations initially focused on the fence line of KPM, and were implemented to determine if off-site contaminant migration was occurring in the overburden and upper bedrock.   Additional subsurface investigations were subsequently implemented to more fully assess groundwater conditions in the overburden and bedrock within the interior of KPM, where MIA-333 is located. A total of approximately 16 wells have been installed in and near the MIA-333 area.

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

- Overburden - Unconsolidated materials, primarily glacially derived sands, silts, and clays and fill material including road sub-base material, sand and gravel and occasionally crushed concrete. The overburden increases in thickness to the south in MIA-333. The water table occurs in this interval.

- Top-of-Rock (TOR) - The uppermost bedrock, typically moderately 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. In MIA-333 the upper bedrock is generally more competent and less fractured than in sections of Kodak Park located to the east of KPM.

- Intermediate Grimsby - Sandstone/siltstone with relatively few fractures, exhibiting generally low hydraulic conductivity. This unit functions as an aquitard and is not considered a flow zone for groundwater.

- 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 MIA-333, but has been in some areas of Kodak Park located to the east.

Figure 3 shows the vertical relationship between these zones in the MIA-333 area. Figures 4 and 5 show the groundwater potentiometric surface and general flow directions for overburden and TOR zones, respectively. For the overburden zone the horizontal component of groundwater flow is to the north, with radial components to the northeast and northwest. The geometric mean hydraulic conductivity is 2.59×10^{-4} cm/sec.

Groundwater flow pattern for the top-of-rock zones is similar to the overburden. The geometric mean hydraulic conductivity is 4.17×10^{-4} cm/sec.

As part of the MIA-333 RFI, groundwater elevations were plotted and contoured on several cross-sections to determine the nature of groundwater flow. Figure 3 from the CMS report shows a representative cross-section. The gradients are predominantly horizontal, with a a slight upward gradient between the overburden and TOR zones in the B326SWR well cluster area.

During the RFI, groundwater flow simulations were performed using the Kodak Park Regional Groundwater Flow Model (RGFM). The model was used to evaluate the net flux and fate of groundwater in the MIA-333 area. The RGFM also indicates that flow within the overburden and TOR zones is predominantly horizontal. The RGFM results are discussed further, in the groundwater section, below.

<u>Soils</u>

Soil characterization has been conducted for various reasons in MIA-333. In addition to soil sampling specifically for the RFI, Kodak has tested soil during well installations, for tank and transfer station closures and upgrades, and for other routine site activities. The maximum total thickness of the soil is approximately 45 feet (near well GL72SW), but generally averages 25 to 30 feet. Investigations have identified three types of unconsolidated deposits in MIA-333: imported fill, lacustrine deposits and glacial till. The fill, consisting of: sand, silt, gravel, mixed with minor amounts of granular road-base material and crushed concrete, is the uppermost deposit and ranges in thickness from a few inches to six feet. The lacustrine deposit is next and contains dense, silt to fine sand, with small proportions of gravel and trace clay. The lacustrine deposit is the major component of the three overburden materials. The glacial till is the minor component of the overburden. The till generally consists of very dense, poorly sorted granular material (fine sand and silt, with trace gravel).

As evaluated in the CMS report, the soil quality data set includes approximately 55 samples collected within MIA-333 (see Figure 14 for soil sample locations). These include results from soil boring and well installations, as well as results from soil piles and luggers (portable containers/roll-offs) generated during excavations for tank removals and other site maintenance activities. Soils data were screened against NYSDEC Technical Administrative Guidance Memorandum (TAGM) 3028 and TAGM 4046 comparison values. A tiered screening level risk assessment (SLRA) process was used to identify contaminants that may pose human health or ecological risks.

The SLRA evaluated the soils results against residential use criteria for the direct ingestion pathway, and also under a industrial/commercial (I/C) use scenario. In the SLRA, all soil samples were conservatively assumed to be from the upper 2 feet of the subsurface. The upper 2 feet of overburden was conservatively considered to be surface soil" regardless of the depth interval in which they were actually collected (some were collected up to 14 feet below ground surface). For the residential use screening, concentrations were compared to TAGM 3028 soil action levels. The TAGM 3028 actions levels were calculated using a methodology consistent with the USEPA Soil Screening Guidance (USEPA, 1996a; USEPA 1996b; USEPA, 1996c). For the industrial/commercial (I/C) use scenario, exposure assumptions (e.g., duration) were adjusted in accordance with USEPA default values.

For the VOCs, there were TAGM 3028 and/or TAGM 4046 exceedances for xylene, or acetone and xylene, for the samples associated with SWMU Group M-115/M-189 (soil samples B01B326SW110502, M95-03-01072398 and SSAB8P6-01070998). With one exception (xylene in B01B326SW110502 at 12-14 ft bgs), the concentrations of the VOCs noted above only slightly exceeded the TAGM 4046 comparison values and are several orders of magnitude below the TAGM 3028 comparison values.

For the SVOCs, there were slight TAGM 4046 and/or TAGM 3028 exceedances for benzo(a)pyrene, in soil borings associated with SWMU M-151. This SWMU is the former open burn/open detonation unit, so exceedances of this PAH compound may be associated with historic operations in this area. Slight exceedances of TAGM values for PAHs were noted at other locations within MIA-333, but the exceedances did not appear to be associated with operation of the SWMUs.

For pesticides/polychlorinated biphenyl (PCB) compounds, there were no exceedances of either TAGM 4046 or TAGM 3028 comparison values.

Most locations had TAGM 4046 and/or TAGM 3028 exceedances for one or more metals, with exceedances being most common for arsenic, beryllium, chromium, iron and zinc. The levels of these metals in and around Kodak Park commonly exceed comparison values, and do not appear to be related to SWMUs within the investigation area. It appears that background concentrations in the area are often above the comparison values. Iron and zinc were also frequently detected above TAGM values, but are constituents typical of glacially derived soils in the area. Exceedances of arsenic fell within New York State background concentrations of 3-12 mg/kg, as reported in TAGM 4046. There were no other inorganic constituents noted in soils samples collected for specific MIA-333 SWMUs investigations. However, there were exceedances for other inorganics in historic soil samples. Sample B01B333SW060491, collected as part of a roadway construction project, included exceedances for cadmium and copper in addition to the investigation area-wide constituents noted above. This sample was not associated with a specific SWMU. Nickel exceedances of TAGM 4046 values were also noted at two historic soil sampling locations (B02B333SOL0491 and P01BM95E110595). Nickel is not known to be associated with any SWMUs in MIA-333. The detections of nickel were within New York State background concentrations of 0.5-25 mg/kg, as reported in TAGM 4046, and did not exceed

TAGM 3028.

The SLRA identified benzo(a)pyrene, benzo(b)fluoranthene, arsenic and beryllium as exceeding residential use criteria. Of these, only benzo(a)pyrene and arsenic exceeded the industrial/commercial screening values. When existing cover conditions were assessed, all but one location had protective cover (i.e. was located beneath asphalt or other protective surface). The exception was location B01B333NE110802. At this location, the constituent of concern is arsenic at 4.97 mg/kg. This concentration is within the typical background range recognized in TAGM 4046, so it was not further evaluated within the SLRA.

Contaminated soils have been excavated in the M-95 vehicle fueling tank farm, during tank replacement activities conducted as part of the Kodak Park Storage Tank Improvement Program (STIP). STIP upgrades in MIA-333 involved tanks at B-333 and M-95.

Even though the soils do not appear to pose an unacceptable risk via the direct contact/ingestion pathway under existing conditions, to reduce potential future exposures to site soils, Kodak has recommended continued use of institutional controls to maintain current conditions through existing institutional controls and site operation and maintenance procedures. 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.

The reasonably anticipated future use of MIA-333 is also industrial. MIA-333 is currently included as a portion of a site listed in the registry of *Inactive Hazardous Waste Disposal Sites in New York State* that is published by the NYSDEC as Site Code 8-28-082. 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. Due to these circumstances, use of MIA-333 for purposes other than industrial are not expected or likely. The proposed remedy will add deed restrictions to restrict future use of the MIA-333 area to industrial/commercial uses only.

Groundwater Flow

The region groundwater flow model (RGFM) was used to make quantitative estimates of groundwater flow in MIA-333 and to make groundwater fate determinations utilizing particle trace simulations. Water budget results generated by the model for the overburden and TOR zones are shown on figures 6 and 7, respectively. The figures show the net flow of groundwater (in cubic feet per day) across the lateral, upper and lower boundaries, and also flow into any groundwater capture device located within the investigation area boundaries.

Based on the flow simulations, the total net volumetric flow rate in the overburden in MIA-333 is about 416 cubic feet per day (CFD), or 2.2 gallons per minute (gpm). Of this total flux, 46% enters the flow system as surface recharge, while 54% enters from the southern boundary. As shown on Figure 6, 59%, 15%, and 7% of the total net flux exits the area across the northern, western and eastern boundaries, respectively. Nineteen percent of the overburden groundwater discharges to the TOR. The overburden flow budget is composed mainly of flow entering laterally from the south and from surface recharge, with discharges composed mainly of lateral groundwater flux, with most of this water exiting to the north.

The total net volumetric flow rate in the TOR in MIA-333 is about 181 CFD, or 0.9 gpm, of which 56% enters from the southern boundary (see Figure 7). The remaining 44% of the flow enters from the overburden. Of the total net flux 75% exits to the north, 16% exits to the west, and 9% exits to the east. The remaining groundwater flux (0.05 CFD, or less than 1% of the total flux) discharges downward onto the layer below. The TOR flow budget is composed mainly of flow entering laterally from the south and from the overburden, with outflows composed almost entirely of lateral groundwater, most of which exits to the north.

The RGFM was used to make groundwater fate determinations utilizing particle tracking. The model has the ability to track the fate and movement of particles that are "started" in particular positions and layers within the model. Results for the overburden are shown in the fate diagram and the pathline delineations shown on Figures 8 and 10, respectively. The fate diagram for the TOR is shown in Figure 9. The results indicate that groundwater in these two zones is expected to discharge to the following:

- industrial and storm sewers outside of MIA-333 but within KPM;
- the MIA-329 migration control system eastern segment (PB329E2);
- sewers outside of Kodak Park. These were modeled using the RGFM's evapotranspiration boundary condition to represent municipal strom water drainage systems in the urbanized area outside of Kodak Park; and
- a drainage channel along New York Interstate Route 390.

As shown on Figure 8, all particles started in the overburden within MIA-333 are captured outside of the investigation area. These overburden particles are captured by KPM sewers (83%), sewers outside of Kodak Park (17%), and the drainage channel (<1%).

For the TOR, shown on Figure 9, all particles started within MIA-333 are also captured outside of the investigation area. The TOR particles are captured by KPM sewers (75%), sewers outside of Kodak Park (20%), the eastern segment of the MIA-329 MCS (4%) and the drainage channel (1%).

<u>Groundwater Quality</u>

Figure 11 shows the distribution of organic contaminants that exceed groundwater quality comparison values in overburden and TOR wells in MIA-333. The comparison values were from TAGM 3028 and/or NYSDEC Technical and Operational Guidance Series 1.1.1 (TOGS).

In the overburden, for the most recent sampling results, there were volatile organic compound (VOC) exceedances for: acetone, benzene, ethylbenzene, methylene chloride, styrene, toluene, and xylene. Most of the exceedances are at wells installed near the M-95 (SWMU M-189) fueling station, where elevated concentrations of BTEX (benzene, toluene, ethylbenzene, and xylene). Ten semi-volatile organic compounds (SVOC) exceeded comparison values. These exceedances were also found primarily in the fueling station area. There were exceedances for nine inorganic constituents in the overburden. Six constituents (sodium, iron, magnesium, manganese, lead, and thallium) had exceedances in the majority of the wells that were sampled. Chromium was found in three wells and barium and antimony in a single well each. The inorganic exceedances were distributed more broadly than the organic constituents.

In the TOR, for the most recent sampling results, there were volatile organic compound (VOC) exceedances for: acetone, toluene, and xylene. Although there were exceedances, the concentrations were in the low, part per billion levels, and were only slightly above the comparison values. The exceedances were primarily near the fueling station. The only SVOC exceedance was for bis(2-ethylhexyl)phthalate, at well GL72SW. That result only slightly exceeded the comparison value. There were exceedances for eleven inorganic constituents. Sodium, iron, and magnesium were most frequently detected above comparison values, in the majority of the wells that were sampled. Well GB333NEZ had about three times as many inorganic constituent exceedances than the other wells.

Since the overlying TOR interval had limited, low level exceedances, the underlying GQ zone was not investigated in MIA-333.

During the RFI and the CMS, soil and groundwater data was evaluated against criteria commonly used to screen for the likely presence of Non-Aqueous Phase Liquid (NAPL). That evaluation indicated that there is the potential for current and/or historical NAPL in MIA-333. Light Non-aqueous phase liquid has also been visually observed in well SB326SWR, installed near the fueling station. Staining and odors on soils collected in the fueling station area also suggested the potential for BTEX NAPL. Based on this information, areas of potential BTEX NAPL were identified as shown on Figure 12. NAPL has also historically been present near SWMU M-196, where hydraulic oil has been found in a sump within the building. Wells and borings subsequently installed in the M-196 area did not find NAPL, but there was some staining and odor observed on the soils.

The groundwater flow and fate modeling results indicate that there is the potential for MIA-333 contaminated groundwater in the overburden and TOR zones to migrate off-site, and thus pose a potential groundwater exposure pathway for off-site receptors. In particular, field measurements indicate a potential for northwestward flow of contaminated groundwater from the M-95 (SWMU M-189) fueling area to off-site areas.

Comparison values used for screening groundwater quality data for MIA-333 are values designed for the protection of drinking water quality. However, groundwater at and in the vicinity of MIA-333 is not used as a drinking water source, due to availability of publicly supplied water. Therefore, presently there is no complete direct ingestion exposure pathway associated with the groundwater exceedances. Volatile chemical contaminants in MIA-333 groundwater can be a source for contaminated soil vapor, which can potentially affect indoor air quality in existing and future MIA-333 structures through the process of vapor intrusion. Due to the presence of volatile organic compounds in groundwater, the potential for vapor intrusion to indoor air must be evaluated prior to any new construction or change in use of existing structures on the site.

Remedial Goals

The remedial goals for MIA-333 are to eliminate or reduce to the extent practicable:

- exposures to subsurface soil contaminants listed below by utilizing the soils management plan (Excavation Master Plan II) for excavation activities conducted in MIA-333.

- exposures to VOC contaminants in groundwater by controlling migration of contaminated groundwater. This will include containment of groundwater in the area of potential LNAPL near the M-95 fueling station, reducing the volume of NAPL in the environment, mitigating a potential on-going source of groundwater contamination.

- exposures to groundwater by restricting future use of groundwater as a source of potable water; and

- exposures to the constituents in soil and groundwater through the maintenance of existing institutional controls and through implementation of deed/land use restrictions to limit future use to industrial/commercial activities.

Further, the remedial goals for MIA-333 include attaining to the extent practicable:

- Reduction of the contaminant mass in the subsurface. The long-term remedial goal is the restoration of groundwater quality in this area to New York State Ambient Water Quality Criteria. This will require that the remedy remain in operation until such time as Kodak can demonstrate that any residual contamination will not result in an exceedance of New York State Ambient Water Quality Criteria at the point of exposure. The Department will seek public comment prior to making a determination regarding termination of operation of the active groundwater recovery measures that are a component of the remedy.

Identification of Remedial Alternatives

A number of remedial technology screening studies have been completed for Kodak Park. These have include the KPW Distilling/Southwest Area Feasibility Study Report (Eckenfelder, 1992), a Pre-Investigation Evaluation of Corrective Measures Technologies (Eastman Kodak 1994), and the NE-KPE RCRA Corrective Measures Study (SSP&A, 1999). These studies included contaminant release scenarios similar to that present in MIA-333, so they have applicability. For the soils, technologies that were considered included: soil excavation and disposal, biological treatment, soil vapor extraction, chemical enhanced recovery, containment (low permeability cover, geosynthetic cap, paving/asphalt cover), and institutional controls.

For the groundwater, technologies that were considered included: extraction (with various enhancements such as hydrofracturing, pneumatic fracturing, and blasting), treatment after removal (air/steam srtipping, thermal oxuidation, carbon adsoprtion, oil/water separation, phase separation, UV peroxide/ozoneoxidation, on-site biological treatment; and discharge to the existing wastewater treatment facility (Kings Landing). In-situ treatment options for the groundwater were also presented in the CMS report. In-situ technologies were not retained for further consideration for current conditions generally because of the presence of NAPL, which can limit effectiveness, and/or access limitations due to infrastructure present in the area of concern.

As a consequence, in the CMS report, the following groundwater remedial technologies were selected for additional consideration:

- groundwater containment utilizing a groundwater extraction system installed in well SB326SWR for hydraulic control (with the added benefit of contaminant mass removal);
- a petroleum skimming pump installed in well SB326SWR for the removal of LNAPL; and
- institutional controls.

Two remedial alternatives were developed for detailed evaluation. These are:

- Alternative 1 - Existing Hydraulic Control/Institutional Controls

This alternative relies on current conditions, including continued operation and maintenance of the MIA-333 and KPM hydraulic control (current sewer and groundwater extraction) systems, to limit potential off-site contaminant migration. This would include additional groundwater monitoring wells near the M-95 fueling station to track conditions in that area. Continued implementation of existing institutional controls, supplemented with deed/land use restrictions in certain areas of the investigation area would also be required. This would include continued implementation of the Kodak Park excavation and health and safety protocols for soil management activities.

- Alternative 2 - Groundwater Extraction/LNAPL Skimmer/Institutional Controls

This alternative includes a groundwater extraction system installed in well SB326SWR to control groundwater in the vicinity of the M-95 fueling station, where LNAPL is present. This will control potential migration of contaminants from the release site. In addition, contaminant source will be removed by the LNAPL skimmer. This will reduce the free product mass in the area, expediting site restoration. This alternative will also include institutional controls and deed/land use restrictions to limit the exposure of site workers to impacted soils and groundwater.

Evaluation of Remedial Alternatives

The following criteria were used to evaluate the identified alternatives:

- technical
- environmental
- human health
- institutional
- reduction of toxicity, mobility, or volume
- cost
- public acceptance

Both alternatives rely on technologies that are routinely implemented, so there are no technical impediments related to their use. There is a higher degree of uncertainty associated with the projected groundwater flowpaths for Alternative 1 than for Alternative 2. However, even for

Alternative 1, the flow simulations suggest that under current conditions, groundwater from the M-95 area would migrate beyond the limits of the investigation area, but would be captured by the industrial sewer line located on the north side of B-326. Alternative 2 provides greater certainty that contaminant migration from M-95 would be controlled. Alternative 1 appears to be protective of the environment. As mentioned above, modeling results as well as groundwater monitoring data indicate that contamination is contained on-site, and that it is likely to remain so in the future. Alternative 2 is also protective of the environment, as it includes the elements of Alternative 1, but has supplemental extraction and greater certainty of groundwater containment. For human health, the screening level risk assessment identified a potential pathway related to the off-site migration of groundwater under Alternative 1. Although current results do not indicate off-site migration at this time, additional periodic monitoring, as proposed under this alternative, would be needed to ensure that the alternative remains protective. Alternative 2 is designed to provide containment of groundwater contamination in the vicinity of M-95, which is protective of human health because it addresses exposure pathways associated with the groundwater. The institutional aspects of both alternatives are similar, and include land use and groundwater use restrictions. A NYSDEC-approved corrective measures implementation plan would be required. Alternative 1 is not expected to provide any significant reduction of toxicity, mobility or volume. However, Alternative 2 provides for the direct removal of LNAPL and contaminated groundwater in the vicinity of M-95. This will decrease the volume of contaminated media in the environment. On a cost basis, Alternative 1 has en estimated 30 year present value cost of $89,000. Alternative 2 has an estimated 30 year cost of $146,000, assuming groundwater and LNAPL extraction continues for the duration of that period. However, Kodak anticipates that the remedy may only require that these elements operate for 5 years, to accomplish removal of the LNAPL and reduction of contaminant concentrations within the M-95 fueling area plume. Under this operating scenario, the 5 year cost estimate is about $62,000, less expensive and with a greater environmental benefit than Alternative 1. After 5 years of operation, this alternative would be revisited to determine the need for continued operation of the elements of the remedy. Additional or alternate remedies could also be proposed at that time, taking into consideration use of the area and subsurface conditions (potential lack of LNAPL) at that time. The presence of LNAPL is currently an impediment, making it infeasible to pursue certain in-situ treatment remedial technologies.

Proposed Corrective Measures

Based on the analysis of alternatives, Alternative 2 Groundwater Extraction/LNAPL Skimmer/Institutional Controls is the proposed corrective measures alternative for MIA-333. Alternative 2 includes the following elements:

- continued operation and maintenance of the MIA-333 and KPM hydraulic control (sewer and groundwater extraction) systems;
- installation and monitoring of a groundwater extraction system within monitoring well SB326SWR for additional hydraulic control;
- installation of an LNAPL skimmer within monitoring well SB326SWR for free-phase product removal;

- disposal of the extracted groundwater and LNAPL in the Kodak Park industrial sewer system for treatment at the KLWPP;

- revisiting the components of the selected remedy in 5 years to determine if elements of the selected remedy can be eliminated and/or if additional or alternative technologies can be employed for remediation based on the then current site conditions;

- continued groundwater monitoring in KPM , in accordance with the NYSDEC-approved Kodak Park Groundwater Sampling and Analysis Plan (KPGSAP)(Kodak, 1993) to assess the effectiveness of the remedy;

- administrative controls to address potential exposure to contaminated soils and groundwater. This includes continued implementation of existing institutional controls (i.e., site access restrictions) and adding deed restrictions to limit the future use and development of the property to commercial and industrial uses only This will include a restriction preventing the future use of groundwater as a source of potable water. Volatile chemicals in MIA-333 groundwater can be a source for contaminated soil vapor, which can potentially affect indoor air quality through the process of vapor intrusion. Due to the presence of volatile organic compounds in groundwater, the potential for vapor intrusion to indoor air must be evaluated prior to any new construction or change in use of existing structures on the site. Administrative controls also include an operation and maintenance plan specifying routine monitoring, maintenance, and reporting for soil cover systems for areas with soils concentrations above industrial/commercial (I/C) comparison values;

- continued implementation of the Kodak Park Master Plan II and project specific health and safety protocols for any future excavations within MIA-333 that may be necessary (e.g., to conduct routine maintenance activities); and,

- annual certification by the property owner that the institutional controls and engineering controls are in place and continue to be effective.

Under the remedy, the property owner would be required to provide an annual certification that the institutional controls and engineering controls are in place and remain effective. This will require at least annual inspections. The intent is to ensure that no unauthorized changes have occurred since the previous certification and nothing has occurred that would impair the ability of the controls to protect public health or the environment. This would also include verifying that administrative controls such as the soils management plan (Excavation Master Plan II) are being followed.

The CMS report 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. The NYSDEC has determined that the proposed remedy satisfies the selection criteria and recommends that this remedy be implemented as the final corrective measure for MIA-333. The proposed remedy adequately addresses potential threats to the environment and human health, associated with MIA-333.

Corrective Measures Implementation

With the exception of deed restrictions, groundwater extraction/LNAPL recovery and the annual certification requirements, the elements that comprise the proposed corrective measures are being implemented as part of Kodak's current operational practices. Upon finalization of remedy selection for MIA-333, Kodak shall within 45 days submit plan for the groundwater and LNAPL recovery system. Within 180 days of remedy selection, Kodak shall also implement the deed restrictions noted above.

Public Participation

NYSDEC solicits public comment before making final determinations about selection of remedies. The NYSDEC issues responsiveness summaries if comments are received during the comment period. Documents about the proposed remedy selection have also been placed in local document repositories. Copies of this Statement of Basis, the Fact Sheet, the RFI Report, the CMS Report were made available for public review.

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