tesa tape Inc.
Middletown, New York

Site Management Plan
tesa tape Middletown Facility
NYSDEC Site # 336056

April 2004

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File No. 442-340

tesa tape Inc.
Middletown, Orange County, NY
NYSDEC Site #336056

SITE MANAGEMENT PLAN

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CHAPTER 1

INTRODUCTION

1.1 PURPOSE AND OBJECTIVES

The purpose of this plan is to provide general guidance and procedures for intrusive activities at the former tesa tape inc (tesa) Middletown facility. The site was formerly used to manufacture various tape products for retail sale and production at the site was discontinued in January 2004. This facility is currently in a routine operations/maintenance and monitoring (OM&M) phase for a remedial action that was initiated to address past accidental releases of toluene at the site. The guidance and procedures for intrusive activities found in this plan are intended to:

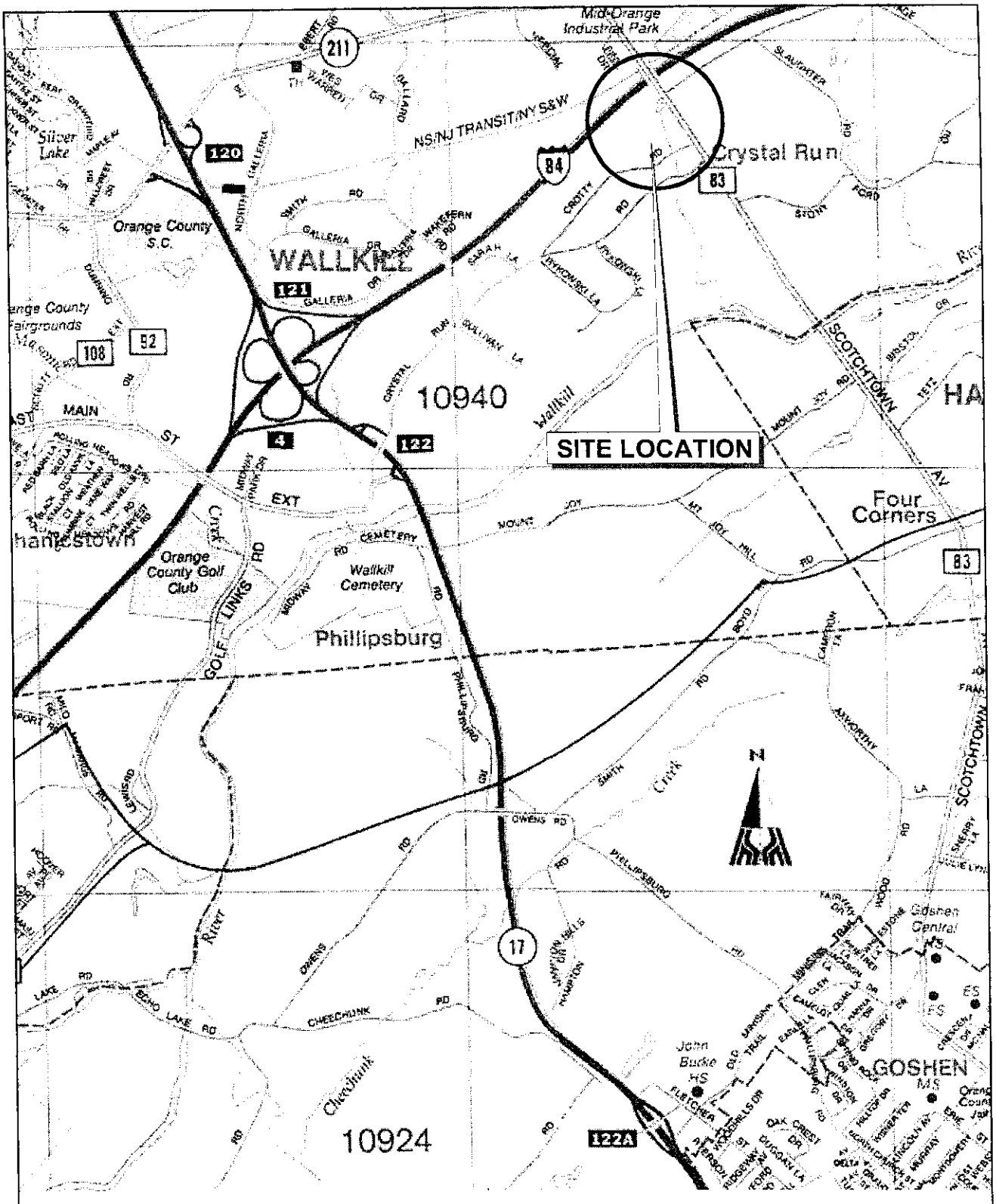
- Limit potential exposure to on-site workers.
- Prevent any unnecessary interruptions in the remedial activities.
- Insure proper handling and disposal of surplus soils that might be generated during intrusive activities at the site.

This plan was developed at the request of the New York State Department of Environmental Conservation (NYSDEC) and will be modified as appropriate based on any future redevelopment that may occur at the site. Tesa has retained ownership of the land and buildings at the site and are currently evaluating potential options for future use of the site.

1.2 SITE LOCATION AND DESCRIPTION

The former tesa Middletown facility is located at 135 Crotty Road, in the Town of Wallkill, Orange County, New York (Figure 1). The site occupies a rectangular piece of property measuring approximately 1900 ft by 750 ft (Figure 2). The site is bounded on the north by Interstate Route 84, on the south by Crotty Road and a cement manufacturer and on the east and west by residential areas. The site consists of a large single floor central building, a smaller manufacturing building, and several warehouse type structures and outbuildings. A majority of the western portion of the site is either paved or covered by the existing buildings.

The former manufacturing processes at the Middletown site consisted of saturating, coating, and converting pressure sensitive tapes. As part of this manufacturing process large volumes of toluene were used at the site beginning in 1985. Tape production at the site was discontinued in January 2004 when tesa sold its retail customer base to another tape manufacturer. As part of this transaction, tesa retained ownership of the site. Although it is unlikely that tape manufacturing will resume, the site will be redeveloped for some other commercial or industrial use.



Map source:
Hagstrom Map of Rockland/Ornage/Ulster Counties, 2000.

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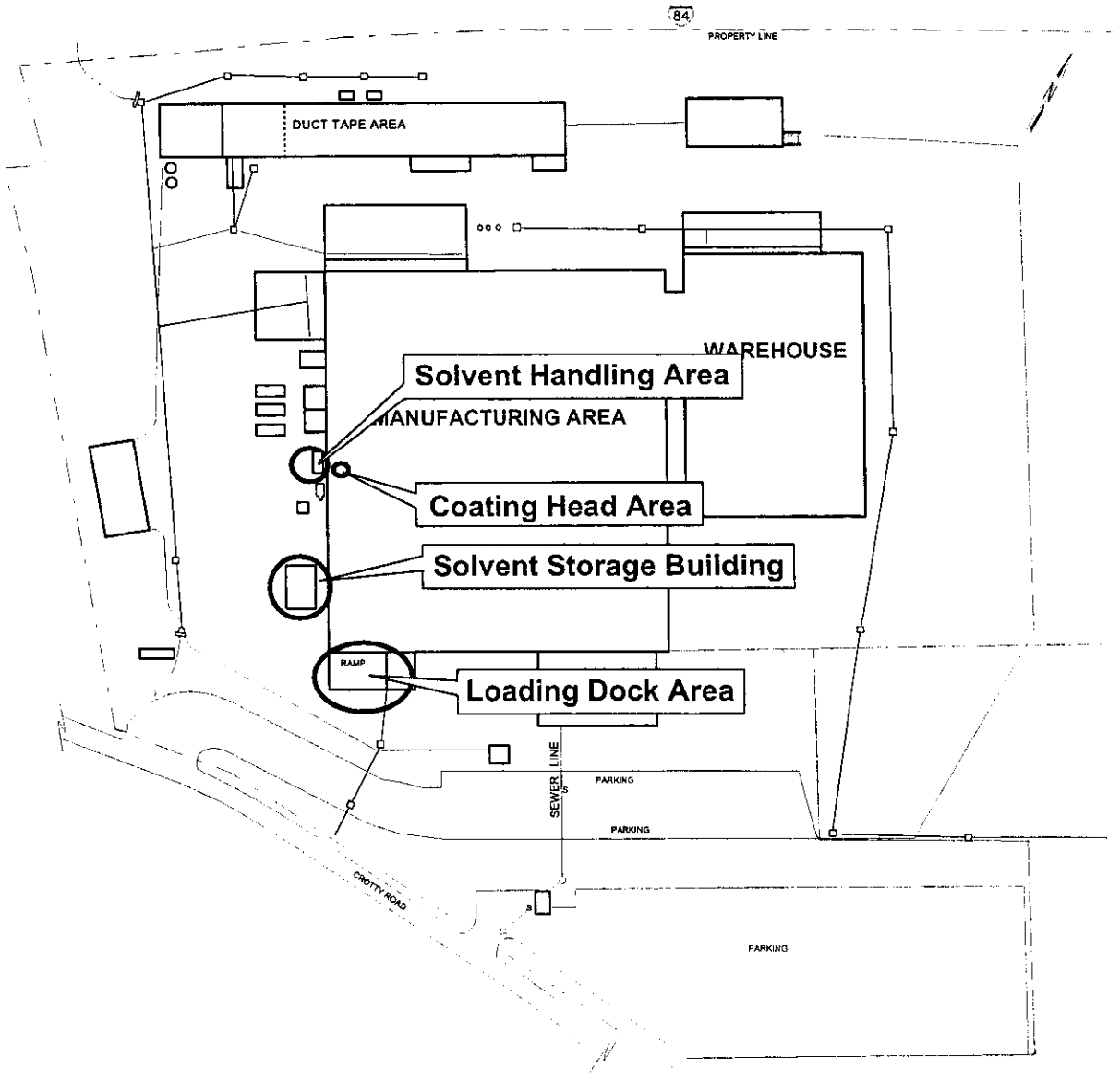
LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Site Location** **tesa tape inc. • Middletown, New York**	**Figure 1**



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LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Site Plan Showing Areas of Concern** tesa tape Inc. • Middletown, New York	Figure 2

Potential impacts to the soils and groundwater at the site were first recognized in 1996 during modification to equipment on the western side of the facility when an on-site excavation discovered toluene stained soils. Subsequently, a detailed site investigation was conducted and a total of seven areas of concern (AOCs) were identified at the site. As appropriate interim remedial measures (IRMs) were conducted at the site that served to mitigate all of the known impacts to the soil and groundwater. The final remedial investigation (RI) report for the site (LMS 2003) fully describes the existing site conditions essentially up to the time that production was suspended at the facility. In February 2004 NYSDEC issued the proposed remedial action plan (PRAP) which proposed No Further Action at the site beyond continued operation of the existing IRMs and continued groundwater monitoring. In March 2004 NYSDEC issued a Record of Decision (ROD) that selected No Further Action as described above.

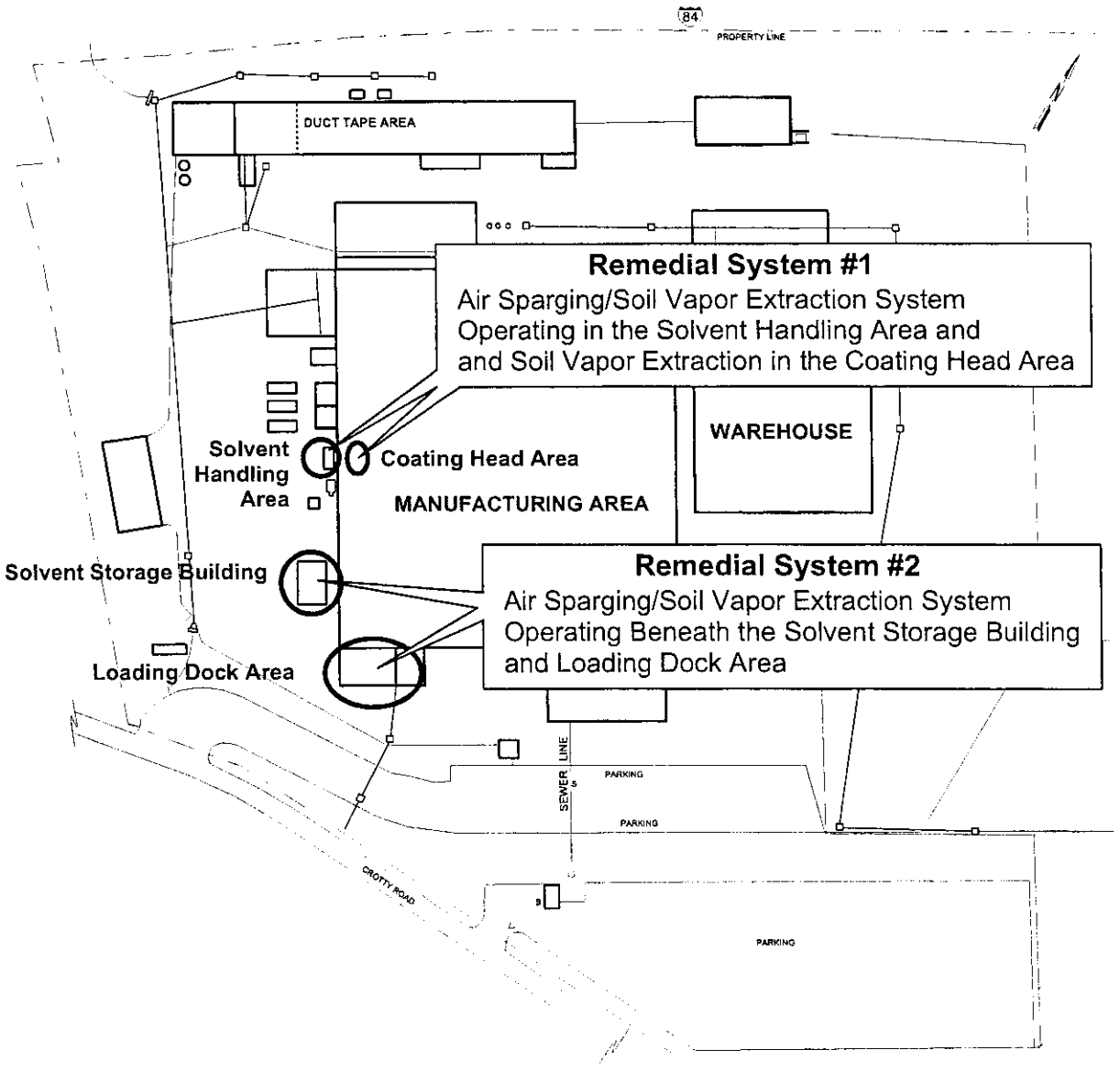
On-going remedial activities at the site include two active air sparging/soil vapor extraction (AS/SVE) systems that remove toluene from the impacted soils and groundwater at the site. The basic system components include a network of subsurface piping that serves to inject and recover subsurface vapors, a series of air injection wells, and two remedial system trailers that house the necessary mechanical equipment (Figure 3). In addition to the AS/SVE system components a series of 13 monitoring wells are found at the site (Figure 4) that are used in the quarterly groundwater monitoring program.

1.3 SITE SUBSURFACE CONDITIONS

Borings advanced on-site have revealed that the fill material underlying the site typically consists of brown to orange-brown fine to medium grained sand, with some silt and occasional clay. The clay lenses present in the fill material periodically cause a localized perched water conditions during early spring or other times following heavy precipitation. The fill material on-site may actually be native glacial deposits that were reworked during site construction and are no longer in their original depositional position.

Bedrock on-site has been encountered at depths ranging from 8 ft to 14 ft below grade. Bedrock consists of brown to grey shale. Although cores have not been retrieved, samples examined from borings indicate bedrock to be the Mount Merino Shale member of the Normanskill Shale Formation. Typically, weathered pieces of the shale were noted in the samples retrieved from test borings before competent bedrock was encountered.

Groundwater is found both as perched and under unconfined conditions ranging from 5.5 ft to 10.0 ft below grade. Perched conditions occur where shallow clay lenses are present that prevent downward percolation.



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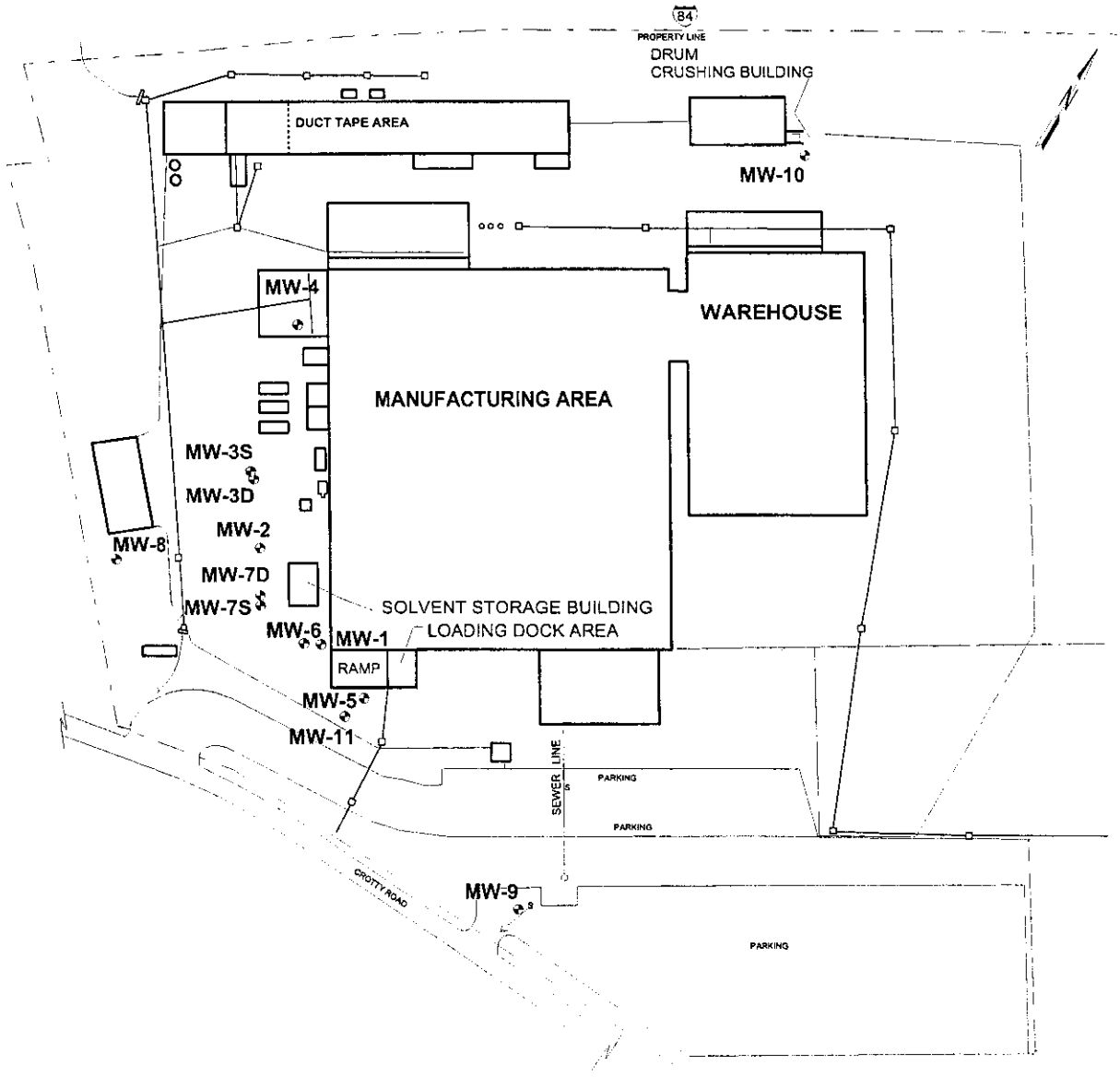
LMS Lawler, Matusky & Skelly Engineers LLP One Blue Hill Plaza • Pearl River, New York 10965 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS	**Location of Remedial System #1 and #2** **tesa tape Inc. • Middletown, New York**	**Figure 3**



Legend

- Monitoring well

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1.4 MANAGEMENT PLAN ORGANIZATION

Chapter 2 provides a description of each of the AOCs at the site including a summary of the potential to encounter impacted soils or groundwater during intrusive activities at the site. Chapter 3 presents guidelines for monitoring during intrusive activities and Chapter 4 outlines general soil handling, analysis, and disposal requirements.

CHAPTER 2

EXISTING SITE CONDITIONS

2.1 INTRODUCTION

A total of seven areas of concern (AOC) have been identified at the site (Figure 2) of these the four listed below are still under active remediation and existing data indicates that VOC impacted soils and groundwater may still be present in the area.

1. Loading Dock Area
2. Solvent Storage Building
3. Solvent Handling Area
4. Coating Head Area

The investigations conducted from 1996 to 2003 at each of the AOCs on-site included sampling and analysis of soil and groundwater samples. The results served to characterize the nature and extent of the impact and full documentation of the site data is found in the RI/IRM Completion Report for the site (LMS 2003). The primary contaminant of concern for this site is toluene, which was used in large quantities as part of the tape manufacturing process at the site. Several chlorinated volatile organic compounds (VOCs) including 1,1- trichlorethane, (TCA), 1,1- dichloroethane (DCA), and 1,1- dichloroethene (DCE) have also been detected at low concentrations in the site groundwater.

Two of the remaining three AOCs were found not to be impacted by activities at the site. The final AOC associated with the roof downspouts was subject to an IRM that included removal of all impacted soils above the remedial action objectives. Intrusive activities near these AOCs are not anticipated to encounter impacted soils. In these areas normal excavation procedures can be utilized and all subsurface utilities should be identified in these areas prior to any excavation.

2.2 EXISTING REMEDIAL MEASURES

As of February 2004 active remediation continues at the site as part of two IRMs at the site. The NYSDEC has concluded that the IRMs will achieve the remediation goals for the site and that No Further Action is needed other than OM&M and several institutional and engineering controls. The current remedial systems at the site include two separate soil vapor extraction/air sparging systems (SVE/AS). Both systems are house in remedial trailers located on the west side of the facility (Figure 3). The systems include both above ground mechanical equipment and a network of above and below ground piping. The systems are operated and maintained on a monthly basis by LMS Engineers.

Prior to conducting any intrusive subsurface work in the vicinity of the Loading Dock Area, the former Solvent Storage Building, Solvent Handling Area, and Coating Head Area the location of all subsurface and above ground piping associated with the remedial systems must be identified to avoid possible damage to the systems. The power feed for the systems is directly connected to the plant and in the event that the power in the plant must be interrupted LMS should be notified to reset the power to the remedial systems.

2.3 ESTABLISHED REMEDIAL ACTION OBJECTIVES

The established remedial action objectives for the tesa site are based on the NYSDEC recommended soil cleanup objectives and NYSDEC Class GA groundwater standards. The soil cleanup objectives are found in NYSDEC's technical and administrative guidance memorandum (TAGM) HWR-94-4046 entitled "Determination of Soil Cleanup Objectives and Cleanup Levels" (dated 24 January 1994). The soil cleanup objectives are intended to provide a measure of contaminant source control to mitigate further migration of the contaminants to the groundwater from the source area. For toluene the soil cleanup objective is 1.5 mg/kg (1,500 µg/kg). The NYSDEC Class GA groundwater standard is intended to insure that the groundwater's of the state are of drinking water quality, the Class GA standard for toluene is 5 µg/l. The Class GA standards for the chlorinated VOCs found at the site including TCA, DCA, and DCE are also all 5 µg/l.

2.4 AREAS EXHIBITING SOIL IMPACTS

2.4.1 Loading Dock Area

The RI results indicate that the impacted area was very limited in depth and area. Toluene concentrations exceeding the remedial action objective of 1.5 mg/kg were detected in 4 of the 19 total soil samples collected at this AOC and toluene concentrations in the 4 samples ranged from 3.6 mg/kg to 175 mg/kg. The samples with toluene concentrations above the guidance were confined to locations closest to the northeast corner of the ramp leading to the loading dock. Approximately 50 tons of soil were removed from this area in June 2000 as part of a soil removal IRM. Results of soil gas sampling in the nearby mixing room indicate that the toluene impacted soils do not extend further beyond the loading dock into the mixing room within the building. The impacted area associated with the loading dock was very isolated and confined to the dock area. Since a majority of the impacted soils were removed from this area it is unlikely that soils above the remedial action objective will be encountered in this area. However, modifications to the dock will likely encounter low residual concentrations of toluene in the soils. Active soil vapor extraction (SVE) continues in this area along one of the SVE legs associated with System #2.

2.4.2 Solvent Storage Building

Eight of the eleven RI soil samples collected from beneath the floor slab of the solvent storage building exceeded the remedial action objective for toluene. The results of the soil gas sampling within the building confirm the elevated concentrations of toluene in soil beneath the floor slab; significant vapor concentrations were detected at each sample point within the solvent storage building. With the exception of the samples collected adjacent to the sump, the soil and soil gas samples are generally consistent. The distribution of toluene as detected by the soil and soil gas results indicates it is present under the entire floor. Results from the exterior soil sampling collected along the perimeter of the solvent storage building (northwest, southwest, and southeast walls), did not indicate the presence of toluene at levels above the remedial action objective. All soil samples collected along the exterior of the building were found to have toluene present at concentrations less than 0.010 mg/kg. Active remediation by System #2 continues in the vicinity of the solvent storage building. As part of the IRM for this area of concern the building perimeter was ringed with SVE lines and air sparging (AS) points. Performance data from System #2 continues to indicate that significant concentrations of toluene are found below the solvent storage building slab. Any modifications to this building that would breach the floor slab should be carefully considered and planned since it is likely that soils above the remedial action objective will be found.

2.4.4 Solvent Handing Area

The initial investigation in 1996 consisted of 13 soil probes that were completed to various depths in the vicinity of the solvent recovery building. Toluene concentrations in the soil ranged from essentially ND to 142 mg/kg. Of the 25 samples that were collected three of the samples exceeded the remedial action objective for toluene. Nine additional borings were performed in this area to delineate the extent of the known toluene impact. Toluene concentrations in the soils were generally low at each of the 9 locations and all well below the remedial action objectives. These samples served to delineate and define the area of impacted soils found during the first phase of the investigation at the site. Subsequently a SVE/AS system (System #1) was installed to address this area and the system was placed in operation in June 1998 and has remained in operation since that time. Performance monitoring for this system indicate that significant progress has been made toward completing the remediation in this area. Several of the AS wells continue to exhibit elevated toluene concentrations in the shallow groundwater indicating that the remedial activities should be continued in this area.

2.4.5 Coating Head Room

Soil samples collected from the coating head AOC showed toluene concentrations above the remedial action objective in that area of the facility's manufacturing building. The toluene appears

to be confined to the coating head area and the soil conditions, even at the shallow depth of 2 ft below the slab, indicated that the soil was very compact and limits any significant downward migration of toluene. Soil gas samples from the same area suggests that the toluene may be distributed over a wider area beneath the floor slab than was indicated by the soil samples alone. However, the soil gas distribution may be associated with off-gassing of the impacted soil around the coating head. Free phase product was encountered under the floor at two locations. Evaluation of the physical conditions in the area, as well as the soil and soil gas sampling results, implies that the area immediately around the coating head is a source area. In December 2000 SVE lines were installed in this area and the lines were connected to System #1. Performance data from the System #1 coating head lines indicate that significant progress has been made toward removing the toluene from this area. During the most recent monitoring on the soil vapors recovered from the coating head the toluene concentrations ranged from 0.1 to 0.2 ppm/v which is a decrease of approximately 2 orders of magnitude from startup of these System #1 lines.

2.5 AREAS EXHIBITING GROUNDWATER IMPACTS

The areas of toluene impacted groundwater at the site are limited to southwest corner of the facility in the immediate vicinity of the known spill areas associated with the solvent recovery operation, solvent storage building, and the loading dock. The results from the quarterly sampling events conducted to date indicated that the groundwater at the site contains other VOCs. Specifically TCA and its breakdown products are found in the sites groundwater at low concentrations in both the upgradient and downgradient monitoring wells. Generally the groundwater at the site is not a concern for shallow intrusive activities that might be conducted at the facility. However, should dewatering operations be required for deep excavations this water should be managed as potentially contaminated until analytical data proves otherwise. Institutional controls that will be instituted at the facility through environmental easements will restrict the use of groundwater for potable or process water use unless the water is properly treated. Regardless of the groundwater use restrictions the aquifers in the immediate vicinity of the facility exhibit a limited yield and for this reason it is unlikely the groundwater at the site will be used for any purpose.

2.6 SUMMARY OF EXPOSURE PATHWAY ANALYSIS

Currently there are no pathways of exposure to the on-site soil or groundwater contamination. A majority of the site is paved or covered by building foundations that serve to isolate the contaminants from any on-site workers or visitors to the site. The groundwater at the site is not utilized in any capacity, including as a source of drinking water eliminating this potential exposure pathway. The existing engineering controls associated with the IRM systems eliminate any potential for vapor intrusion into the on-site buildings from either the impacted soils or groundwater preventing potential exposure to workers or visitors.

Although future modifications to the facility that would involve intrusive work are not planned at this time this type of work has the potential to expose site workers in several of the AOCs including the solvent handling area, solvent storage building, coating head room, and loading dock area. Any intrusive work in these areas should be carefully assessed and should follow the guidelines presented in Chapter 3 of this management plan. The guidelines describe the necessary monitoring and engineering controls to minimize potential expose and protect worker health and safety.

CHAPTER 3

MONITORING GUIDANCE FOR INTRUSIVE ACTIVITIES

3.1 SITE SPECIFIC HEALTH & SAFETY PLAN

If intrusive activities are planned in the vicinity of the AOCs specific health and safety protocols and procedures must be followed to insure the protection of worker health and safety. The primary potential exposure pathways during intrusive activities are inhalation and dermal contact. A site specific health and safety plan (HASP) must be prepared that identifies site hazards, personnel training requirements, personal protective equipment, monitoring procedures, and site control measures. A site superintendent must be assigned in the HASP who will be responsible for health and safety performance in the field. The site superintendent must direct site activities in accordance with the HASP and can temporarily halt work if an unsafe condition is encountered. The site superintendent must also be aware and comply with all applicable federal, state, and local occupational health and safety regulatory requirements.

3.2 MONITORING PROCEDURES

The primary chemical of concern at the site is toluene and the following information should be used to develop action levels in the HASP:

Toluene

- PEL/TWA- 200 ppm
- STEL/IDLH- 500 ppm
- LEL- 1.1%
- Symptoms of exposure include eye and nose irritation, mental confusion, incoordination.

Previous intrusive activities at the site have shown that typical excavations will not result in any inhalation hazard to on-site workers. However, on-site monitoring must be conducted in the breathing zone to insure that the specific action levels found in the HASP are not being approached in the work zone.

Monitoring procedures during intrusive activities should include monitoring with a combustible gas indicator to monitor for the presence toluene that might be present above the lower explosive limit (LEL). In addition a photo-ionizing detector (PID) should be utilized to monitor for toluene or other volatile organic compounds.

On a daily basis the meters must be calibrated against known standards and this information recorded on a daily log along with any meter readings that are noted. Prior to conducting any excavation the background meter readings should be established within the work zone. During the initial phases of the excavation frequent meter readings must be collected to adequately characterize the airspace in the breathing zone. If meter reading are consistently low the monitoring frequency can be reduced but should be noted at least every 30 minutes or whenever any noticeable changes in the soil characteristics are encountered. Typically concentrations of organic vapors greater than 5 ppm over back ground levels indicate the need to upgrade the level of personal protective equipment (PPE). Specific action levels and the required levels of PPE should be clearly established in the site specific HASP.

CHAPTER 4

SOIL HANDLING, ANALYSIS, & DISPOSAL GUIDANCE

4.1 SOIL HANDLING

Excess soils removed from the following AOCs listed below may exhibit toluene concentrations that exceed the TAGM 4046 guidance value of 1.5 mg/kg.

1. Loading Dock Area
2. Solvent Storage Building
3. Solvent Recovery Area
4. Coating Head Area

Any intrusive activities conducted in these areas must be documented and the proper level of PPE utilized by all workers who may come in contact with the soils and vapors that may originate from the excavation. Specific action levels and the proper level of PPE must be established in the site specific HASP.

Excess soils removed from the AOCs should be managed as potentially contaminated until analytical data proves that the soils exhibit a toluene concentration less than 1.5 mg/kg. During any intrusive activities associated with soil excavation in these AOCs the monitoring procedures described in Chapter 3 should be followed. If the monitoring program indicates levels below the established action levels it is appropriate to continue the work and any excavated soils should be staged on polyethylene sheeting at an established on-site location. This location should be secured from other site workers and on completion of the excavation the soils should be covered with polyethylene sheeting to protect the soils from the elements and to prevent any erosion from the stockpile. Soils from different areas should be segregated into distinct stockpiles and documentation as to the origin, volume, and nature of the soils must be maintained to insure that the soils are managed properly. Stockpiled soils cannot be removed from the site until they are adequately characterized for disposal as described in Section 4.2.

4.2 SOIL ANALYSIS

If excess soils are generated as part of on-site excavations within the impacted AOCs the stock piled soils should be analyzed as soon as possible to determine if they are impacted above the remedial action objective. During this initial characterization 4 samples should be collected per 100 yards

of stockpiled soils. The samples should be submitted to an ELAP certified laboratory for analysis of VOCs using EPA Method 8260B. For initial characterization purposes analyzing for VOCs only is appropriate since past sampling has shown that other contaminants are not present above NYSDEC cleanup objectives. If the soils are found to exhibit VOC concentrations below cleanup objectives it is appropriate to reuse these soils on-site as a source of backfill. The ideal re-use of these soils is below pavement or building floors such that they are isolated from the environment.

If stockpiled soils are considered for off-site disposal they must be fully characterized prior to removal from the site. Typically disposal facilities will require analytical data demonstrating the concentrations of various constituents including:

- VOCs
- SVOCs
- TPH (total petroleum hydrocarbons)
- Pesticides/Herbicides/PCBs
- Total and leachable metals
- Hazardous characteristics

Since each disposal facility has individual permit requirements and special conditions the exact analytical requirements and sampling frequency must be determined in consultation with the receiving facility.

4.3 SOIL DISPOSAL

Although toluene is a listed hazardous waste as identified in 6 NYCRR Part 371 the concentrations in the soils in the vicinity of the four AOCs listed above are relatively low. NYSDEC TAGM-3028 describes the policy for handling soils and groundwater that are contaminated with hazardous waste but exhibit concentrations of the hazardous constituents that are below established action levels. The policy establishes "contained-in" action levels whereby soils found to exhibit concentrations below the action levels may be managed as a solid waste, the "contained-in" action level for toluene is 16,000 mg/kg. In order to dispose of soils under this policy the work must be conducted pursuant to this soil management plan which was submitted in partial fulfillment of the existing Order. This policy cannot be self-implemented by the facility, but will be put into effect by the NYSDEC on a case-by-case basis with a "contained-in" demonstration. The "contained-in" demonstration includes the following elements:

- A work plan identifying the source of the soil and the purpose of the removal. The work plan should also present any existing data for the soils in the area and the analytical

methods that will be used to determine the concentrations in the soil.

- A request must be submitted to the NYSDEC for a "contained-in" determination. This request should include the volume of soil for disposal, analytical data demonstrating that the soil concentrations are below action levels, and the anticipated final disposal location or facility.

If the soils are found to be contaminated above the action level for toluene (16,000 mg/kg) this material must be managed as a hazardous waste and disposed of at a secure permitted facility. If the soils are found to be free of contamination it is appropriate to reuse these materials as on-site fill.