

**JONES SANITATION**  
**LONG TERM MONITORING AND O & M PROGRAM**  
**2003 ANNUAL REPORT**

Hyde Park, New York

January 2004

?

Prepared by:

**LAWLER, MATUSKY & SKELLY ENGINEERS LLP**  
Environmental Science & Engineering Consultants  
One Blue Hill Plaza  
Pearl River, New York 10965

Project No. 442-236

## CHAPTER 1

### EXECUTIVE SUMMARY

The Jones Sanitation site is located on Cardinal Road, approximately 0.5 mile northeast of its intersection with Crum Elbow Road in Hyde Park, Dutchess County, New York. The remedial action to address the on-site soils at the site was completed in 2001 and included the removal and consolidation of 13,864 yards of material beneath a 4 acre capped area at the site. In order to assess the effectiveness of the remedial action at the site and to assess the migration and natural attenuation of contaminant levels over time a long term groundwater monitoring program was instituted at the site. During the second year after the remedial action this groundwater monitoring program included the following:

- Annual groundwater sampling and analysis of 10 nearby residential supply wells
- Annual groundwater sampling and analysis of 15 on-site monitoring wells
- Quarterly water level measurements on 22 on-site monitoring wells.

In addition to the long term groundwater monitoring program, a routine operations and maintenance (O&M) program was also conducted that included:

- Routine inspections of the capped area
- A gas vent monitoring program
- Maintenance of the established vegetation cover within the capped area

This annual report describes the activities at the site during 2003 and summarizes the results of both the long term groundwater monitoring and O&M program.

The O&M activities were conducted at the site during the months of March, July, September and November and the annual residential well sampling was completed concurrently with the annual on-site monitoring well sampling (March). The field procedures and methods utilized during this effort were as described in the approved Long Term Monitoring and O&M Plan (January 2002) for the site.

Each of the groundwater samples that were collected were analyzed by a New York State Department of Health (NYSDOH) approved laboratory and the all of the data was subsequently reviewed by an independent data validation service. The final validated data indicate that there is no off-site impact to the shallow overburden and bedrock aquifer. The on-site groundwater was found to only be minimally impacted by past site activities. Three volatile organic compounds (VOCs) were present above New York State Department of Environmental Conservation

(NYSDEC) Class GA groundwater standards at low levels during the single round of sampling and only three of the wells (JSMW-4B and JSMW-3B) have consistently exhibited VOCs above standards during the 5 rounds of monitoring, albeit at low levels.

The O&M conducted at the site did not identify the need for any corrective measures. The vegetation cover is well established and required mowing once during 2003. The capped materials are generating minor amounts of gas that are being passively vented through the gas vent system. Measurable quantities of gas are only present within the vents and perimeter monitoring indicates that the levels are not of concern.

Our recommendations for 2004 include:

- Continuation of the routine O&M program with a reduction in the frequency of gas vent monitoring to semi-annually.
- Completion of the groundwater monitoring at the site for years 2 to 5 after completion of the remedial action including one annual sampling event of the residential and on-site monitoring wells. This data will be summarized on receipt and will be submitted to USEPA with our recommendations for subsequent monitoring during the following years.

## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 LONG TERM GROUNDWATER MONITORING PROGRAM

The long term monitoring program at the site during 2003 included a single annual sampling of 10 residential groundwater supply wells and 15 on-site monitoring wells as described in the Long Term Monitoring Plan for the Jones Sanitation site. Each of the samples were analyzed by a NYSDOH approved laboratory for VOCs and metals. This data was reviewed and determined to be usable by an independent data validation service (Appendix E). The groundwater quality data indicates that the Jones site is not impacting the off-site groundwater and only minimally impacting the quality of the on-site groundwater.

##### 5.1.2 Residential Well Groundwater Quality

The groundwater quality data for the nearby residential wells indicate that Jones site does not impact the quality of the off-site groundwater in either the shallow overburden or deeper bedrock aquifer in the vicinity of the site.

No VOCs were noted in any of the residential wells that were tested during 2003. This finding is consistent with the 2002 results that showed no site related VOCs in any of the residential wells. During the 2002 sampling event one of the wells (Valkill Park) had exhibited low levels of chlorination by-products which were found not to be present during the 2003 sampling event.

The sodium value exceeded standards in 8 of the 10 residential wells and was consistent with the 2002 findings. Several of the sodium values were highly elevated and apparently indicative of naturally occurring sodium in the groundwater in this area.

Due to an apparent laboratory artifact cadmium exceeded the applicable standard in two of the residential well sampled during the 2003 sampling event. These sampling locations were subsequently re-sampled by LMS and the results indicate that cadmium is not present at detectable concentrations at these locations. Based on the re-sampling data, the 2002 sampling data, and the 2003 residential sampling program blind duplicate LMS has rejected

impact to the on-site groundwater quality. In comparing the 2003 results to the applicable NYSDEC Class GA groundwater standards only three individual VOCs (benzene, chlorobenzene, and 1,2-DCA) were detected above the standards during annual sampling. The noted exceedances were found in three wells JSMW-03B, JSMW-04A, and JSMW-04B, with low levels of VOCs in 2 of the other monitoring wells (JSMW-02B and JSMW-4B). VOCs were not detected in the remaining 10 on-site monitoring wells in the program. Over the five rounds of sampling that have been conducted during 2002 and 2003 the VOC concentrations have been consistent with only two of the wells exhibiting at least one VOC in excess of the standards during each of the rounds. A summary of exceedances for the completed sampling in 2002 and 2003 is presented in Table 5-1. JSMW-03B has consistently shown chlorobenzene in excess of the standards and JSMW-4B has consistently shown 1,2-DCA in excess of standards. In both cases the noted concentrations are only slightly elevated above the standards.

A total of six individual metals were found above applicable standards; of these only three are believed to be site related contaminants including: antimony, chromium, and nickel, (Table 5-1). The noted exceedances for iron, manganese, and sodium do not appear to be related to the site and are naturally elevated in this particular bedrock aquifer.

The noted concentrations of both the VOCs and metals are generally low (at or slightly above standards) and it is anticipated that naturally occurring processes in the aquifer will continue to reduce contaminant levels now that the source of the contamination has been remediated. Since the individual rounds of sampling do not show large temporal differences a reduced schedule of monitoring should be considered for this site if the 2004 sampling event shows similar trends.

## 5.2 OPERATIONS AND MAINTENANCE PROGRAM

The O&M program at the Jones site did not identify any critical items at the site in need of corrective measures. The capped area is functioning as intended and only routine maintenance (mowing, sign replacement) were necessary during the four quarters of O&M at the site. The capped materials are generating minor amounts of gas that is passively venting from the 9 gas vents in the cap. Measurable levels of gas are only noted in the vents themselves and perimeter monitoring did not indicate any gas levels above background. The generated gas does not cause an odor nuisance on-site or for the surrounding properties.

## 5.3 RECOMMENDATIONS

Our recommendations for the 2004 long term monitoring and O&M program are outline below. The recommendations are consistent with the approved Long Term Monitoring Plan and O&M Plan with only minor exceptions. The recommended groundwater sampling reflects the reduced

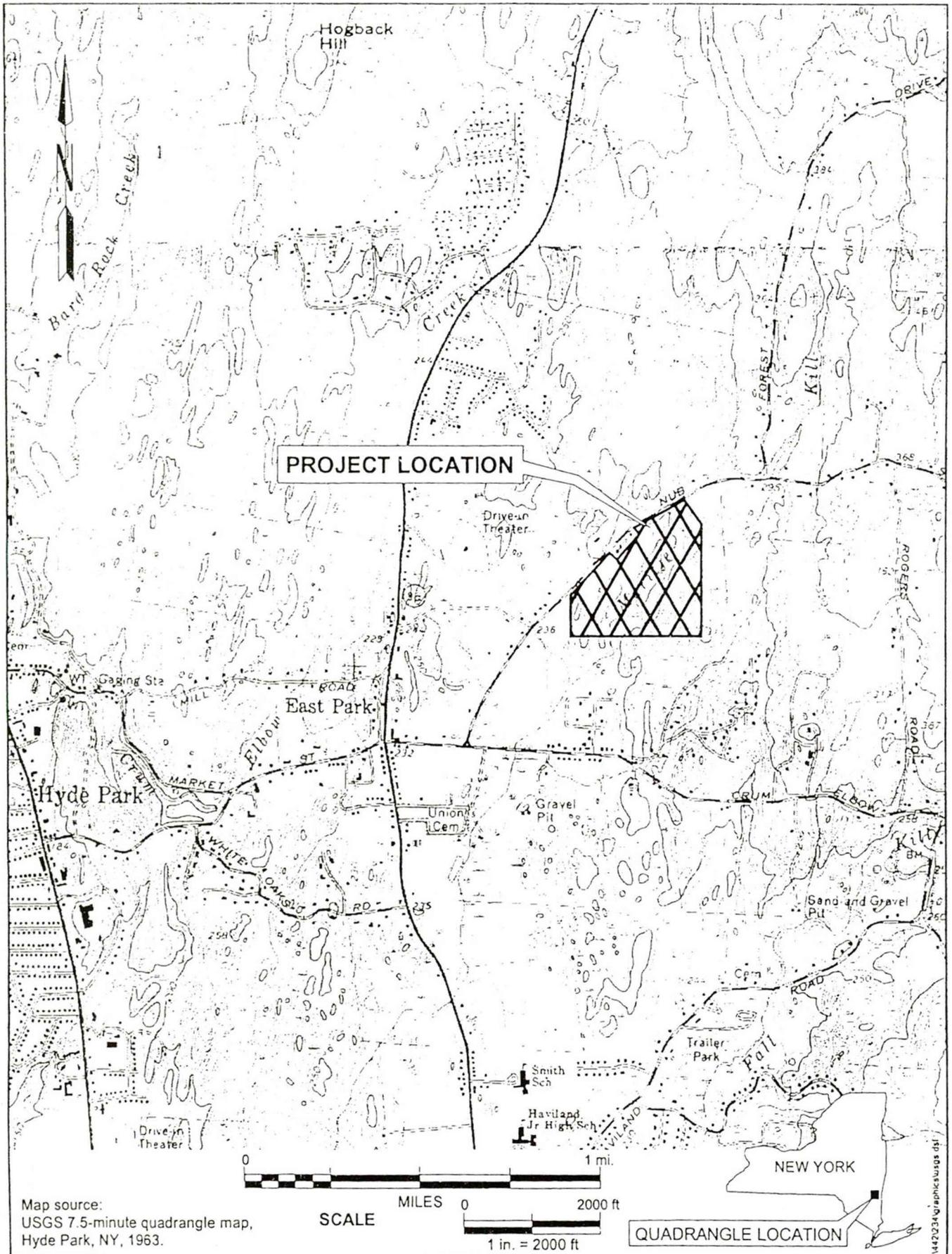
sampling frequency for years 2 to 5 after completion of the remedial action. The existing groundwater quality data indicates that the site does not impact the off-site groundwater quality and only minimal impact was noted on-site in several of the monitoring wells.

#### Long Term Monitoring Program

- Complete one additional round of groundwater sampling for the ten residential wells in the monitoring program. If this data is consistent with the 2002 and 2003 data further annual sampling of the residential wells is not necessary since an off-site impact is not present.
- Complete annual sampling of the on-site monitoring wells during the first quarter of 2003. On receipt of this data LMS will summarize this data and compare it to the previous rounds of data and provide recommendations for the subsequent years of monitoring.
- Continue quarterly monitoring of water levels at the site as outlined in the long term monitoring plan. This activity will be conducted concurrently with the routine O&M inspections.

#### O&M Program

- Continue with O&M program as described in the O&M Plan including inspections and gas monitoring. During 2004 the frequency of gas monitoring at the site will be reduced to semi-annually. Only minor amounts of gas are being generated by the capped material and the gas monitoring results have been consistent and stable over the 8 quarterly rounds of monitoring.
- The frequency of mowing at the site will be reduced to a single annual event. During 2002 and 2003 only one mowing event was necessary and a single mowing event in August or September of 2004 will be adequate for this site based on the cover types that have established themselves on the capped area.
- Complete any corrective measures as needed. At this time no corrective measures are planned or anticipated during 2004.



Map source:  
 USGS 7.5-minute quadrangle map,  
 Hyde Park, NY, 1963.

SCALE  
 0 1 mi.  
 0 2000 ft  
 1 in. = 2000 ft

QUADRANGLE LOCATION

**LMS** Lawler, Matusky & Skelly Engineers LLP  
 One Blue Hill Plaza • Pearl River, New York 10965  
 ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS

**Location Map**  
**JONES SANITATION • HYDE PARK, NEW YORK**

**Figure**  
**1-1**



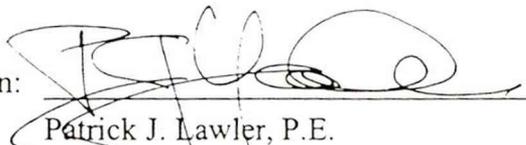
CHAPTER 6

**CERTIFICATION STATEMENT**

Except for the minor deviations noted above in this report the Remedial Action at the Jones Sanitation site that included the excavation of the outlying areas and consolidation on the central disposal area, construction of a cap over the central disposal area, and the installation of groundwater monitoring wells was completed in conformance with the approved plans and specifications.

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Certification:



Patrick J. Lawler, P.E.

Project Coordinator – Lawler, Matusky & Skelly Engineers LLP

NYS License No. 045152



**NOTES:**

- 1) LOCATIONS OF SUSPECTED FORMER TRENCHES ARE BASED ON HISTORIC AERIAL PHOTOGRAPHS REVIEWED BY EPA'S ENVIRONMENTAL PHOTOGRAPHIC INTERPRETATION CENTER. THE LOCATIONS WERE TRANSFERRED ONTO THE BASE MAP FROM SMALLER SCALE PHOTOGRAPHS AND ARE APPROXIMATE.
- 2) SEPTAGE SOLIDIFICATION POND (SSP) AND SAND FILTER (SF) LOCATIONS ARE TAKEN FROM SITE PLAN DEVELOPED BY DUNK GEOSCIENCE CORP DATED JULY 27, 1984.

**LEGEND:**

 SUSPECTED FORMER TRENCH DISPOSAL AREAS

 FORMER SEPTAGE SOLIDIFICATION PONDS (SSP'S) AND SAND FILTERS (SF)

**Legend**

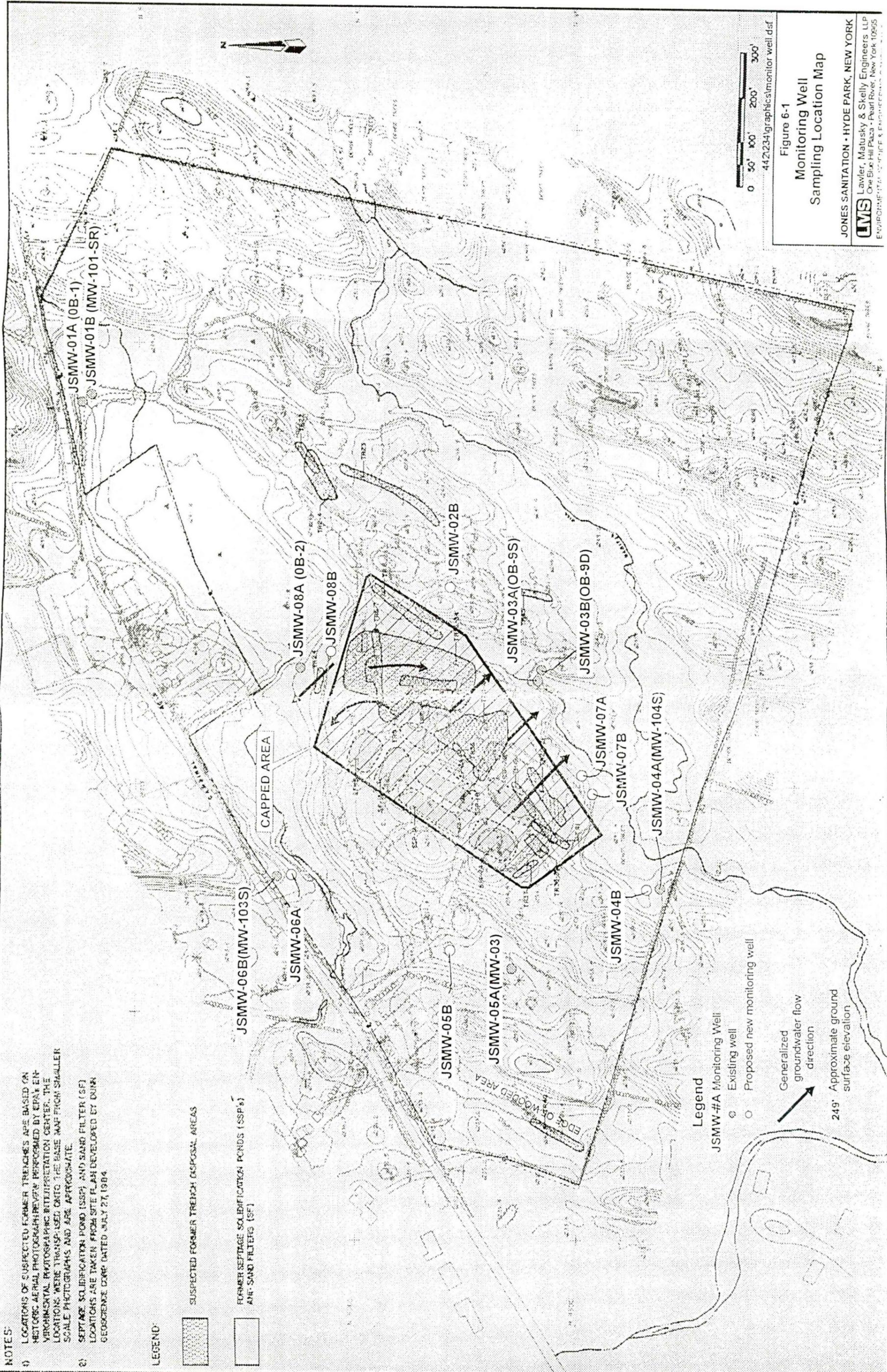
JSMW-#A Monitoring Well

 Existing well

 Proposed new monitoring well

 Generalized groundwater flow direction

 249' Approximate ground surface elevation



442234\graphics\monitor well.dsf

Figure 6-1

**Monitoring Well  
Sampling Location Map**

JONES SANITATION - HYDE PARK, NEW YORK

**LMS** Lawler, Matusky & Skelly Engineers, LLP  
One Blue Hill Plaza - Pearl River, New York 10965  
ENVIRONMENTAL SCIENCE & ENGINEERING