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**Final Report
Addendum**

**United States Military Academy
Village Farm Landfill Remediation
West Point, New York**

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Project No. 776182

January 1999

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1.0 Introduction

This summary addendum presents activities performed during the United States Military Academy (USMA), Village Farm Landfill Remediation Project, under Contract Number DACW45-94-D-0054, Delivery Order Number 19, at West Point, New York. Activities associated with the Village Farm Landfill Remediation Project were performed during four Phases of work occurring periodically from December 18, 1996 through November 5, 1998. See USACE Scope of Work in Appendix A for project objectives.

The four Phases of work performed at the Village Farm Landfill consisted of the following:

- Phase I: Determine Village Farm Landfill dimensions and associated volumes of waste material by excavating nineteen test pits and calculating results.
- Phase II: Perimeter drainage improvement and temporary landfill cover grading, grooming, and reseeding.
- Phase III: Excavation of all waste material from Village Farm Landfill and consolidation of associated waste into the Cragston Landfill.
- Phase IV: Concrete pad construction and compressed gas cylinder characterization and disposal.

2.0 Project Activities

2.1 Phase I: Determining Village Farm Landfill Dimensions for Waste Removal

Project activities commenced December 18, 1996 when International Technology Corp (IT) performed a series of test pit excavations at the Village Farm Landfill site to establish landfill dimensions and associated volumes of waste material. Nineteen test pits were excavated using a John Deere 510B backhoe with results indicating that the landfill contained approximately 2000 cubic yards of waste material. See Visual Classification of Soils Logs in Appendix B for test pit details. See test pit photographs in Appendix C. See Village Farm Landfill Test Pit Survey Map and Village Farm Landfill Assumed Fill Area Map in Appendix D for test pit locations and extent of waste material. Following test pit excavation the pits were backfilled and straw was placed over the backfill for erosion control.

The project site was demobilized on December 19, 1996.

2.2 Phase II: Drainage Improvements and Temporary Landfill Cover Grading at Village Farm

Phase II activities occurred during the period June 4, through June 6, 1997. The USACE OSR, a West Point representative, two IT operators, and the IT Project Manager were on site for this phase of work.

During this phase of work a drainage trench was excavated using a John Deere 490E excavator at the up gradient perimeter and across the width of the Village Farm Landfill perpendicular to grade and sheet water flow. This trench was excavated to prevent surface erosion caused by surface water sheet flow across the existing temporary landfill cover. The trench excavation measured approximately four feet wide by three feet deep.

Following excavation a non-woven geotextile style fabric was placed on the slopes and floor of trench. A layer of riprap was then placed on the geotextile fabric to stabilize the trench walls, eliminate erosion due to drainage flow and to prevent vegetative growth. It performed several additional perimeter drainage enhancements to improve overall drainage conditions at the Village Farm Landfill site.

The entire landfill area was then regraded, resloped and groomed using both the John Deere 490E excavator and a John Deere 550G LGP dozer. The temporary landfill cover was then seeded and mulched.

The project site was demobilized on June 6, 1997.

2.3 Phase III: Excavation of Debris from Village Farm Landfill and Consolidation of Debris into Cragston Landfill

In an IT memorandum dated October 22, 1997 the area that would receive waste at the Cragston Landfill from the Village Farm Landfill was calculated and drawn. See Drawing No. F-833-90-10 and memorandum in Appendix D for additional details.

Mobilization occurred the week of August 2, 1998 when an IT Site Supervisor, two technicians, and two operators arrived on site.

Erosion control measures were installed at both the Cragston Landfill and the Village Farm Landfill prior to excavation by placing silt fence and hay bales around staging areas and down gradient from excavation operations. Traffic control signage was posted at the entry points of both locations and along affected roadways.

Initial removal activities consisted of peeling away the Cragston Landfill soil cover using a John Deere 850C LGP dozer and preparing the area for waste consolidation from the Village Farm Landfill. The relocation of Village Farm Landfill waste to the Cragston Landfill was approved by the New York State Department of Environmental Conservation (NYSDEC) in a letter dated November 14, 1997 at the request of the USMA. See NYSDEC letter in Appendix F for additional details.

Waste material was excavated from the Village Farm Landfill using a Kobelco SK 300LC excavator and was loaded into 20 ton capacity tri-axle, dump body trucks using a John Deere 621B articulated wheel loader. The material was then transported and staged at Cragston Landfill in 250 cubic yard piles. Each pile was then sampled for TCLP lead and total lead. Once analytical results determined that the material was not above regulatory levels for lead the waste piles were consolidated into the Cragston Landfill. All sample results were below regulatory limits for lead. See sample designations VFC in Table 1 for additional details. Complete analytical results can be reviewed in Appendix E.

Upon confirmation from associated soil analytical results metal debris was sent to the transfer station and stacked into containers. Old tires were placed in a dumpster and sent to the USMA transfer station. Following waste material placement, the cover at the Cragston Landfill was replaced, regraded and compacted using track equipment. The entire area was then seeded and mulched. See photographic log in Appendix C for site activities.

Groundwater which had infiltrated into the Village Farm Landfill open excavation was sampled, characterized, and then transported by USMA personnel to the USMA public

owned treatment works (POTW) for disposition. See sample VF-1 in Table 1 for additional details. See analytical results in Table 1.

Following the removal of approximately 2000 cubic yards of waste material from the Village Farm Landfill the floor and walls of the excavation were sampled for total lead. Closure sample designations VFE and VFS were collected from the excavation sidewalls of the Village Farm Landfill and VFB closure sample designations were collected from the bottom of the completed excavation at the Village Farm Landfill. See analytical results in Table 1, and Appendix E for details.

Following review of analytical data, which indicated results were below regulatory limits, the entire site was then backfilled and track equipment compacted. A minimum of twelve inches of backfill was placed and compacted at the Cragston Landfill following waste material consolidation. Backfill was provided by the USMA. The Village Farm Landfill was then regraded, seeded and mulched. A foot bridge was also constructed over the drainage trench which had been installed during Phase II activities.

A concrete pad was also demolished and was sent to the USMA transfer station. A set of bleachers was also removed from the Village Farm Landfill cover but remained on site for future placement .

The site was demobilized on September 4, 1998.

2.4 Phase IV: Concrete Pad Construction and Compressed Gas Cylinder Disposal at the Village Farm Landfill

Phase IV activities were performed during the period November 3, through November 5, 1998. On November 3, the compressed gas cylinders were inspected, and characterized, and a location was chosen for concrete pad construction.

Ten compressed gas cylinders had been unearthed during the Village Farm Landfill excavation of August 1998. All ten compressed gas cylinders were found to be empty. Two acetylene gas cylinders were determined to have an asbestos lining. The asbestos was non-friable and therefore non-hazardous. The two compressed gas cylinders containing the non-friable asbestos and the other eight empty compressed gas cylinders were all were disposed of at the USMA transfer station. See IT memorandum dated December 15, 1998 in Appendix F for additional details.

Concrete pad construction work was performed by Earthworks, Inc. Stone was delivered to the site to raise and level the area where the concrete pad was placed. The stone was spread across the 23 foot by 30 foot area and compacted.

The concrete pad form work was performed on November 4, with wire mesh being placed on the floor of the pad area. Cement with fiberglass reinforcement was poured at the pad area and brush finished on September 5. See concrete pad drawing (Figure 1) for details.

The site was demobilized on November 5, 1998.

This concludes project activities for this report.