cc: Doug

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

NOV 0 8 1996

Michael D. Zagata
Commissioner

Lorenzo Thantu
Remedial Project Manager
United States Environmental Protection Agency
290 Broadway
New York, NY 10017

Dear Mr. Thantu:

Re: Site Code 1-30-015
Claremont Polychemical
Suffolk County

The Department reviewed the revised Performance Test report for the site referenced above and found it satisfactory. As stated in prior correspondence, the Department recommends that the performance test parameters should be used as guidance values for the operational limits for the project.

If you have any questions, please call me or John Grathwol at (518) 457-9285.

Sincerely,

Robert C. Knizek

Robert C. Knizek, P.E.
Chief, Eastern Field Services Section
Bureau of Construction Services
Division of Environmental Remediation

cc: M. Kucera - USACOE
R. Becherer - NYSDEC Reg. 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

March 28, 1997

Mr. John Grathwol
Eastern Field Services Section
Bureau of Construction Services
New York State Department of
Environmental Conservation
50 Wolf Road - Room No. 267
Albany, New York 12233

Mark Kucera, Resident Engineer
Department of the Army
Corps of Engineers - New York District
Metro Area Resident Office
1900 Hempstead Turnpike, Suite 316
East Meadow, New York 11554

Ref: Claremont Polychemical Corporation Superfund Site - Final OU III Remedial Action Report for LTEV Treatment Completion

Dear John and Mark:

Enclosed for your file is the final OU III Remedial Action Report (RAR) for LTEV remedial action. This document was approved by the EPA Management on March 21, 1997.

If you have any questions, please contact me at (212) 637-4240.

Sincerely yours,

Lorenzo Thantu
Eastern New York Remediation Section

Enclosures

cc: Doug Garbarini, EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

DATE: MAR 2 1 1997

SUBJECT: Approval of the *Remedial Action Report* for the Claremont Polychemical Corporation Superfund Site Operable Unit III (OU III) Soil Remediation

FROM: Doug Garbarini, Chief
Eastern New York Remediation Section

TO: John E. La Padula, P.E., Chief
New York Remediation Branch

Attached for your approval is a *Remedial Action Report*, documenting the completion of the OU III soil remedial action at the Claremont Polychemical Corporation Superfund site.

Please denote your approval of the subject document by signing below.

Attachment

Approved: John E. La Padula 3/21/97

John E. La Padula, P.E., Chief
New York Remediation Branch

Date

G:\USER\SHARE\THANTU\OU3-APPR.RAR

SYMBOL —>	ENYRS	ENYRS						
SURNAME ->	THANTU	GARBARINI						
DATE ——>	3/20/97	3/20/97						

FINAL REMEDIAL ACTION REPORT

REMEDIATION OF CONTAMINATED SOILS VIA LOW-TEMPERATURE ENHANCED VOLATILIZATION (OPERABLE UNIT III)

CLAREMONT POLYCHEMICAL CORPORATION SUPERFUND SITE OLD BETHPAGE, NASSAU COUNTY, NEW YORK

MARCH 21, 1997

INTRODUCTION

This document presents the final Remedial Action Report (RAR) for the Operable Unit III (OU III) soil remedy at the Claremont Polychemical Corporation Superfund site (the Site) in Old Bethpage, New York. This report was prepared consistent with the requirements of the U.S. Environmental Protection Agency (EPA) guidance documents entitled, "Remedial Action Report Documentation for Operable Unit Completion (June 1992)," and "Closeout Procedures for National Priorities List Sites (OSWER Directive 9320.2-09, August 1995)."

The final RAR has been based on the remedial action work completed at the Site by Dow Environmental, Inc. (Dow) pursuant to EPA- and U.S. Army Corps of Engineers (USACE)-approved final remedial design (RD) for the OU III soil remedy. The RD was performedby Rust Environmental & Structure (Rust, August 1994), based on and consistent with EPA's September 1990 Record of Decision (ROD) for the Site.

In addition, the final RAR was developed by EPA in consultation with the New York State Department of Environmental Conservation (NYSDEC). The NYSDEC's input and comments on the draft RAR are reflected in this final document. NYSDEC has concurred with the final RAR.

Site Description

The Site is located in the industrial section of Old Bethpage in Nassau County, New York. The Site property consists of a 1-story building, covering 40,000 square feet, which is situated on approximately 9.5 acres of land. About 47,000 people within three miles of the Site depend on groundwater as their water supply. The nearest public supply well is 3,500 feet northwest of the Site.

Site History

Claremont Polychemical produced pigment for the coloring of plastics and inks, coated metallic flakes, and vinyl stabilizers from August 1966 through October 1980. The Claremont Polychemical Corporation operated the plant and performed the activities which resulted in the contamination of the property. By mortgages and agreements in 1969 and 1973, the Claremont Polychemical Corporation granted and released ownership of its real and capital properties to Winding Road Estates (land) and Winding Road Properties (land, building and contents). Claremont Polychemical Corporation and its affiliated companies, Winding Road Estates and Winding Road Properties, entered into receivership in 1980. These three corporations have no assets other than the Claremont property and have substantial liabilities. The officers of all three corporations were Mr. Murray Marlove (deceased with no estate) - President and Treasurer, and Mr. Walter Neitlich - Vice President and Secretary. Under the supervision of the U.S. Bankruptcy Court, two tenant businesses, L&L Excavating Corporation and Maniac Leasing, operated for several years at the Site.

The Site was proposed for inclusion on the National Priorities List in October 1984 and was listed in June 1986.

In September 1988, the EPA Region II Response and Prevention Branch performed work consisting of the overpacking and/or stabilization of deteriorated containers, treatment basins, and aboveground tanks. The second operable unit remedial investigation and feasibility study (OU II RI/FS), dealing with the ultimate disposal of the above-mentioned hazardous wastes, was completed by EPA in July 1989 and a ROD was signed on September 22, 1989. The remedy called for compatibility testing, bulking/consolidation, and treatment/disposal of the wastes at off-Site Resource Conservation and Recovery Act (RCRA)-permitted facilities. Remedial funds totaling $1,500,000 were provided to the EPA Region II Removal Action Branch, which utilized its contractor to complete the implementation of the remedial action in 1990.

A comprehensive RI/FS was initiated in March 1988. Under this RI/FS, EPA sampled the surface and subsurface soil, the groundwater, underground storage tanks, and the building. The RI/FS reports were released to the public in August 1990. The RI/FS findings indicated that on-Site soils contaminated with tetrachloroethene (PCE), located in the former "spill area", constituted a potential threat to groundwater resources. Fifteen underground tanks holding liquid and sludge wastes containing several organic compounds were present at the Site. Contents of the tanks were dominated by volatile organic compounds (VOCs), namely, 2-butanone, toluene and xylenes. Heavy metals (e.g., copper, zinc, etc.) were present in dust accumulated throughout the process building. In addition, the shallow groundwater was found to be contaminated in excess of federal and/or New York State Maximum Contaminant Levels (MCLs) with PCE, trans-1,2-dichloroethene, trichloroethene, 1,1,1-trichloroethane, ethylbenzene, acetone, benzene, 1,1-dichloroethane, methylene chloride, xylenes and vinyl chloride; heavy metals detected in excess of federal and state standards included arsenic, chromium, lead and manganese.

A comprehensive remedy for the Site was documented in a September 1990 ROD and included: treatment of the underground storage tanks (OU I) (implemented by the EPA Region II Removal Action Branch in August 1991); treatment of PCE-contaminated soils via low-temperature enhanced volatilization (LTEV) (OU III); treatment of the "on-Site" VOC-contaminated groundwater via air stripping/carbon absorption (OU IV); treatment of the "off-Site" VOC-contaminated groundwater via air stripping/carbon absorption (OU V), and decontamination of the metals-contaminated building structure (OU VI). The groundwater remediation strategy consists of two separate and sequenced events, OU IV and OU V. The OU V remedial component will not be designed and implemented until the effects which the OU IV remedy and the Old Bethpage Landfill groundwater remediation program have on the off-Site plume can be assessed.

In September 1990, EPA entered into an interagency agreement (IAG) with the USACE to perform the design of the above-described on-Site soils treatment system (OU III), on-Site groundwater treatment system (OU IV), and on-Site building decontamination (OU VI). The design work for these remedial components was completed in February 1995. In September

1993, EPA entered into another IAG with the USACE for oversight of the construction activities at the Site. The USACE awarded a contract to Dow in September 1995 for the implementation of these remedies.

Field preparation for mobilization and construction of the LTEV system began following the award of the remedial action contract; in July 1996, the LTEV equipment was brought on Site for mobilization and construction. The performance testing of the OU III LTEV system was completed in October 1996. The purpose of the performance testing was to demonstrate the LTEV system's ability to meet soil treatment criteria and air emission requirements, and to establish a range of standard operating conditions for the full-scale operation of the system. The results from this performance testing were reviewed and approved by EPA and the NYSDEC. The full-scale operation of the LTEV system began in November of 1996 and ended in December of 1996. The OU VI building decontamination work is expected to be completed by the Summer of 1997. The construction and operation of the OU IV on-site groundwater treatment system is expected to begin in the Spring of 1997 and be completed in early 1998.

CHRONOLOGY OF EVENTS

Date	Event
September 28, 1990	The ROD for comprehensive cleanup of the Site, including OUIII, signed.
September 28, 1990	IAG with the USACE for the remedial design of the comprehensive site remedy (OU III, OU IV, and OU VI) executed.
September 30, 1993	USACE tasked as EPA's authorized representative to oversee the construction activities at the Site.
September 29, 1995	USACE awarded the remedial action contract for the implementation of the OU III, OU IV, and OU VI remedies to Dow Environmental, Inc.
July 12, 1996	Mobilization and construction activities relating to the OU III LTEV system commenced.
September 26, 1996	Performance testing of the LTEV system conducted.
October 8, 1996	Pre-construction inspection conducted by the USACE, EPA, and the NYSDEC.

Date	Event
October 29, 1996	Final report on the performance testing results completed and submitted by Dow to the USACE, EPA, and the NYSDEC.
November 7, 1996	Full-scale operation of the LTEV system began.
December 12, 1996	Pre-final construction inspection conducted by the USACE, EPA, and the NYSDEC.
December 19, 1996	Full-scale operation of the LTEV system ended.
December 19, 1996	Demobilization of the LTEV system began.
January 20, 1997	Demobilization of the LTEV system completed.
March 12, 1997	Final construction inspection conducted by the USACE, EPA, and the NYSDEC.

CONSTRUCTION ACTIVITIES

The LTEV system was designed to remove and control emissions of organic constituents, in particular, PCE. The contaminated soils were heated to 400°F - 500°F to thermally desorb the organic constituents. The off gases from the desorption unit were sent to a baghouse to remove the fine particulate matter entrained in the gas stream. The PCE removed from the soil and source material was then catalytically converted, at a temperature of about 770°F, to carbon dioxide, water, and hydrogen chloride gases. The acidic gas stream was scrubbed using water to remove the hydrogen chloride and produce a very dilute acid stream. The resulting acid stream was then neutralized with sodium hydroxide solution to produce sodium chloride that was dissolved in scrubber effluent.

In July 1996, once all technical standards and substantive requirements relating to the LTEV operation were fulfilled by Dow, field preparation for mobilization and construction of the LTEV system was initiated. Initial Site work consisted of clearing and grubbing, grading and excavation, and utilities installations.

On September 26, 1996, Dow conducted a performance test of the LTEV system. The performance test consisted of three one-hour test trials at operating temperatures of 400°F - 500°F. The performance test was conducted prior to full-scale implementation of LTEV operations to:

- Demonstrate that the treatment unit could meet the specified soil treatment criteria of 200 micrograms per kilogram (μg/kg);

- Demonstrate that the unit would be operated in a manner protective of human health and the environment; and

- establish operational performance criteria to ensure compliance with performance levels.

During the performance test, a number of operating parameters, including treated soil waste feed rate, discharge temperature, catalyst inlet temperature, catalyst exit temperature, drum draft, and scrubber water conductivity were continuously monitored. These were the primary operational parameters that would be monitored during the full-scale operation of the LTEV system to evaluate operation efficiency. During the testing period, the LTEV system operated at a maximum feed rate of 15.8 tons/hr and an average feed rate of 14.7 tons/hr. The soil exhaust temperature averaged 433°F and catalyst inlet temperatures averaged approximately 773°F. The average exhaust gas flow rate through the stack was 5,540 dry standard cubic feet per minute (dscfm), with an average moisture content of 21.4%.

Results from the performance test showed that the PCE concentration in the treated soils was below the analytical detection limit of 5 μg/kg in treated soils from all three test runs performed, well below the contract required soil clean-up level. The level of PCE measured in the scrubber water effluent was also below the detection limit of 5 μg/kg.

The air monitoring results also indicated that the LTEV system performed within the New York State and national regulatory limits. All emissions levels and maximum modeled ambient concentrations of PCE, HCL, NO_x, SO_2, and CO were in compliance with levels well below the applicable regulatory limits. The short-term maximum ambient concentration of PCE based on the dispersion modeling results was less than 1% of the New York State standard. The destruction and removal efficiency (DRE) for PCE was calculated to be greater than 99.9%, on average, and 99.99% for individual measurements of PCE in the exhaust stream based on an approach of using the caustic consumption in the scrubber to estimate the incoming PCE. Using an analysis of chloride in the scrubber effluent to estimate the incoming PCE, the DRE calculation ranged from 98.1% to 99.7% The low DRE estimate resulted from the test run showing the most variability (i.e., 4 orders of magnitude) in inlet PCE concentrations. Measured concentrations of PCE in the incoming soil grab samples ranged from 1.2 μg/kg to 68,000 μg/kg; due to the low concentration of some incoming soils a DRE of 99.9% could not be calculated. Notwithstanding the lower-end 98.1% DRE, most importantly, the performance test demonstrated that the LTEV system met the specified soil treatment criteria of 200 μg/kg; as explained above, the measured concentrations of PCE were below the analytical detection limit of 5 μg/kg in treated soils from all three test runs performed. In summary, the LTEV system showed that it could meet the required performance criteria and could properly remediate the soils at the Site in a manner protective of human health and the environment.

Subsequent to EPA's approval of Dow's October 1996 Performance Test Report, the full-scale operation of the LTEV system began on November 7, 1996. One significant discovery was made during the OU III remedial action excavation activities which took place concurrently with the

full-scale operation of the LTEV. While excavating in the Target Concentration Area (TCA), i.e., the portion of the former "spill area" with the highest PCE contamination, free-product dense non-aqueous phase liquid (DNAPL) and light non-aqueous phase liquid (LNAPL), interbedded within the soil matrix, were discovered at approximately 9-foot excavation depth at the western boundary of the TCA. Presence of DNAPL and LNAPL were confirmed by analytical results from a verification sample that showed 9,600,000 μg/kg PCE, which is almost 1% by weight and 2,900,000 μg/kg toluene. The DNAPL/LNAPL-interbedded soils quantity was limited in volume and had a thickness of about a foot. Further vertical excavation in the area revealed that the 1-foot thick DNAPL/LNAPL-interbedded soils sat atop a localized confined clay lense, which appeared to be preventing any further migration, both vertical and horizontal, of DNAPL, in particular, to the saturated zone; the water table is at an average depth of 65 feet below grade.

The remedial action contract specifications called for minimum excavation depth of 8 feet and maximum excavation depth of 20 feet in the TCA. EPA, in consultation with the NYSDEC, authorized the USACE to actively remove the DNAPL and LNAPL discovered atop the localized confined clay lense and collect samples to verify that all DNAPL/LNAPL-interbedded soils were removed. In order to eliminate any future potential for vertical and lateral migration of the DNAPL and LNAPL, Dow conducted additional excavation vertically to a depth of about 25 feet and laterally westward 3 feet, outside the TCA, towards the former process building. Post-excavation verification samples confirmed that all DNAPL/LNAPL-interbedded soils were removed and that average levels of residual PCE were below 200 μg/kg.

During this full-scale operation, a total quantity of approximately 8,762 tons of PCE-contaminated soils (approximately 5,190 yd^3) was remediated through the LTEV system. This actual quantity of PCE-contaminated soils that was subjected to LTEV treatment is significantly more than what was estimated in the September 28, 1990 ROD. This increase is a result of additional PCE contamination in soils detected by the post-excavation confirmatory sampling effort, in excess of the 200 μg/kg PCE soil clean-up criteria; EPA, after consultation with the NYSDEC, authorized the USACE to feed these additional quantities of PCE-contaminated soils through the LTEV system.

PERFORMANCE STANDARDS AND CONSTRUCTION QUALITY CONTROL

In accordance with the final RD, Dow submitted the Phase I Remedial Design Sampling and Analysis Plan on June 28, 1996. This document included the Field Sampling Plan and the Quality Assurance Project Plan (QAPP). Both the final RD and the Phase I Remedial Design Sampling and Analysis Plan described the performance standards and construction quality control requirements. The June 28, 1996 Phase I Remedial Design Sampling and Analysis Plan detailed the field activities and quality assurance/quality control (QA/QC) measures that were followed by Dow during the OU III remedial action.

The performance standards that were met during the OU III remedial action included excavation standards and soil treatment standards. As noted above, excavation of PCE-contaminated soils exceeded the limits of excavation specified in the final RD. The additional excavation was necessary to address NAPL found outside the RD excavation limits. Sampling results indicated that the 200 μg/kg PCE soil clean-up criteria specified in the September 28, 1990 ROD was satisfied. The treated soils also satisfied the 200 μg/kg PCE soil treatment criteria for use of soils for backfilling.

Construction quality control information required by the final RD was also generated during the remedial action construction activities by Dow, under the supervision of the USACE, to document that the OU III soil remedy performance standards were being achieved. Some examples of this construction quality control information generated included: (1) LTEV stack exhaust monitoring data to ensure compliance with the New York State and national ambient air contaminant regulatory limits, (2) soil sampling data to verify soil clean-up criteria, and (3) daily inspection and reporting on LTEV-associated construction, chemical, operational conditions.

As described above, the LTEV performance test was critical in the determination of the maximum waste feed throughput capacity at which the LTEV could operate efficiently to meet soil cleanup and air emissions requirements for the unit. Extensive monitoring of the LTEV system conducted during the performance test confirmed that all LTEV treatment requirements for soils and air emissions were met and the LTEV system operations fully conformed with the final RD. The LTEV system's critical operating parameters, described above, were optimized during and subsequent to the performance test and were complied with as standards during the LTEV system's full-scale operation.

The OU III remedial action sampling was performed in compliance with all EPA, USACE, and NYSDEC sample QA/QC procedures and protocols. QA/QC procedures were followed during both the performance test and the full-scale operation to ensure that the LTEV system met the required performance criteria.

The sample analyses of treated and untreated (including post-excavation) soils for VOCs during the OU III remedial action were performed by NEI/GTEL Environmental Laboratories, Inc. Triplicate QA/QC samples were frequently collected and analyzed. Soils samples were prepared and analyzed for VOCs in accordance with EPA Method publication SW846: analytical test method SW8260.

FINAL INSPECTION

A pre-construction inspection was conducted by the USACE, EPA, and the NYSDEC on October 8, 1996. Ronnie Lee of the NYSDEC; Lorenzo Thantu and Doug Garbarini of EPA; Mark Kucera, Resident Engineer of the USACE; and representatives of Dow were present for the pre-construction inspection. A pre-final construction inspection was conducted by the USACE, EPA, and the NYSDEC on December 12, 1996. John Grathwol of the NYSDEC, Lorenzo

Thantu, Doug Garbarini, Mark Kucera, and representatives of Dow were present for the pre-final construction inspection.

During the pre-final construction inspection of December 12, 1996, it was noted that approximately 6,550 tons of soils that had been treated were still being stockpiled and had yet to be backfilled into the previously excavated areas. This was the only deficiency construction item that was noted and included on a punch list. A final construction inspection was conducted by the USACE, EPA, and the NYSDEC on March 12, 1997. John Grathwol and Pat Pagano of the NYSDEC, Lorenzo Thantu, and Mark Kucera were present for the final construction inspection. The punch list item relating to backfilling of treated soils identified during the December 12, 1996 pre-final construction inspection had been completed by the March 12, 1997 final construction inspection. All 8,762 tons of treated soils had been backfilled into the previously excavated areas.

CERTIFICATION THAT REMEDY IS OPERATIONAL AND FUNCTIONAL

Based on the field observations associated with the USACE's full-time OU III construction and remedial action oversight, and the pre-final construction inspection and the final construction inspection conducted by the USACE, EPA, and the NYSDEC, it has been determined that the remediation of PCE-contaminated soils has been completed and that the construction activities were performed consistent with the final RD and conform with the remedy selected in the September 1990 ROD.

OPERATION & MAINTENANCE

There are no elements of this OU III soil remedy that require operation and maintenance.

SUMMARY OF PROJECT COSTS

EPA's current "approximate" cost for the excavation and on-Site treatment of approximately 8,762 tons of PCE-contaminated soils via the LTEV is $911,992. The final cost figure is expected to be made available by the USACE by the Spring of 1997.

REFERENCES

1. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, 1992. *Remedial Action Report Documentation for Operable Unit Completion*, June 1992.

2. U.S. Environmental Protection Agency, Region II, 1990. *Record of Decision for the Claremont Polychemical Corporation Site, Old Bethpage, New York*, September 28, 1990.

3. Rust Environmental & Structure, August 1994. *Final 100% Remedial Design for the Claremont Polychemical Corporation Site, Old Bethpage, New York*, August 30, 1994.

4. Dow Environmental, Inc., 1996. *Phase I Remedial Design Sampling and Analysis Plan for the Claremont Polychemical Corporation Site, Old Bethpage, New York*, June 28, 1996.

5. Dow Environmental, Inc., 1996. *Performance Test Report for the Low Temperature Enhanced Volatilization System for the Claremont Polychemical Corporation Site, Old Bethpage, New York*, October, 1996.

Approved:

John E. La Padula 3/21/97

John E. La Padula, P.E., Chief — Date
New York Remediation Branch