New York State Department of Environmental Conservation
Division of Environmental Remediation, 12th Floor
625 Broadway, Albany, New York 12233-7011
Phone: (518) 402-9706 • **FAX:** (518) 402-9020
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

JUN 23 2004

Mr. John LaPadula, P.E.
Chief
Emergency Remedial Response Division
United States Environmental Protection Agency
Region II
290 Broadway, 20th Floor
New York, New York 10007-1866

Re: Colesville Landfill, Broome County
Explanation of Significant Differences
NY Site No. 704010

Dear Mr. LaPadula:

The New York State Department of Environmental Conservation has reviewed the proposed Explanation of Significant Differences (ESD) for the above subject site and concur with the description, reasons and determination made in the document.

If you have any questions regarding this matter, please contact Joseph Yavonditte or Gerard Burke at (518) 402-9622.

Sincerely,

Dale A. Desnoyers
Director
Division of Environmental Remediation

cc: J. Yavonditte
G. Burke

New York State Department of Environmental Conservation
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625 Broadway, Albany, New York 12233-7011
Phone: (518) 402-9706 • **FAX:** (518) 402-9020
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Erin M. Crotty
Commissioner

MEMORANDUM

TO: Dale A. Desnoyers, Director, Division of Environmental Remediation

FROM: Salvatore Ervolina, Assistant Director, Division of Environmental Remediation

SUBJECT: Colesville Landfill, Broome County
Site No. 704010
Explanation of Significant Differences

DATE: JUN 23 2004

Attached is a letter to the USEPA concurring with their proposed Explanation of Significant Differences (ESD) for the subject. The USEPA felt an ESD was needed for the work the County will be performing to address the leachate seeps which were discovered adjacent to the landfill. This is a revised version of an ESD sent to us last year and simplifies the handling of the leachate seeps along the North Stream.

The State Health Department has reviewed the ESD and indicated their concurrence with it. A copy of their concurrence letter is attached. The original was sent directly to you.

I have reviewed the attached copy of the ESD and recommend that you sign the concurrence letter to the USEPA.

cc: G. A. Carlson, Ph.D.
D. Hettrick / G. Laccetti / file
B. Denz – Broome Co. HD
J. Yavonditte – DEC
J. La Padula – US EPA

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New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A, 11th Floor
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9622 • **FAX:** (518) 402-9627
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

MEMORANDUM

TO: Salvatore Ervolina, Assistant Director, Division of Environmental Remediation

FROM: Joseph Yavonditte, Remedial Section B
THRU: Chittibabu Vasudevan, Director, Remedial Bureau A

SUBJECT: Colesville Landfill, Broome County
Site No. 704010
Explanation of Significant Differences

DATE: JUN 23 2004

Attached is a letter to the USEPA concurring with their proposed Explanation of Significant Differences (ESD) for the subject. The USEPA felt an ESD was needed for the work the County will be performing to address the leachate seeps which were discovered adjacent to the landfill. This version of the ESD is slightly different from the previous version of this same ESD as it all but eliminates the extensive construction along the North Stream. Although the previously planned construction was an acceptable means of handling these temporary seeps, it would have involved extensive clearly of the wooded area up slope of the stream posing significant restoration and maintenance costs. The seeps will ultimately be treated by the expanding treatment zone of the molasses injection process.

The State Health Department has reviewed the ESD and indicated their concurrence with it. A copy of their concurrence letter is attached. The original was sent directly to Dale.

A copy of the draft ESD is attached for your information.

It is recommended that you sign the attached memo recommending that Dale sign the concurrence letter.

Attachments

ecc: G. Burke

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

January 29, 2004

Mr. Dale Desnoyers, Director
Division of Environmental Remediation
NYS Dept. of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7011

Re: **Explanation of Significant Differences**
Colesville Municipal Landfill
Site #704010
Colesville, Broome County

Dear Mr. Desnoyers:

Staff reviewed the September 2003 Explanation of Significant Differences for the Colesville Landfill. Based on that review, I understand that several natural springs were discovered near the landfill which discharge contaminated water to adjacent streams. An amendment to the March 1991 Record of Decision is necessary to prevent the migration of contaminated spring water to the streams. In addition to the remedy already in place, the amendment calls for construction of a collection trench and water treatment via a combination of abiotic and anaeorbic reductive chlorination processes, aerobic degredation and carbon treatment. The treated water will be discharged to the streams.

Based on this information, I concur with the amendment to the remedy and believe it will be protective of public health. If you have any questions, please call Geoff Laccetti of my staff at (518) 402-7880.

Sincerely,

Gary A. Litwin, Director
Bureau of Environmental Exposure Investigation

cc: G. A. Carlson, Ph.D.
D. Hettrick / G. Laccetti / file
B. Denz – Broome Co. HD
J. Yavonditte – DEC

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Explanation of Significant Differences

COLESVILLE MUNICIPAL LANDFILL SUPERFUND SITE

Town of Colesville
Broome County, New York

EPA
Region 2

March 2004

INTRODUCTION

In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §9617(c), and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan, if after the Environmental Protection Agency (EPA) selects a remedial action, there is a significant change with respect to that action, an explanation of the significant differences (ESD) and the reasons such changes were made must be published.

EPA issued a Record of Decision (ROD) in March 1991 for the Colesville Landfill site that called for, among other things, capping the landfill and collecting and treating contaminated groundwater. Installation of the landfill cap was completed in 1995. In September 2000, EPA issued an ESD to enhance the groundwater remedy specified in the ROD.

In April 2000, EPA performed a five-year review of the site in accordance with Section 121(c) of CERCLA, 42 U.S.C. §9621(c). During an inspection of the site performed as part of the five-year review process[1], EPA found a spring and a low-lying wet area in the vicinity of the landfill. Contaminated water from the spring and the low-lying wet area can discharge to nearby streams.

This ESD describes the measures that have been and will be taken to prevent the migration of contaminated water from the low-lying wet area and spring.

This ESD will become part of the Administrative Record file for the site. The entire Administrative Record for the site, which includes the remedial investigation and feasibility study (RI/FS) reports, ROD, September 2000 ESD, design reports, April 2000 Five-Year Review Report, and other reports and documents related to the site, are available for public review at the following locations:

Town of Colesville Town Hall
Harpursville, NY 13787

New York State Department of
Environmental Conservation
625 Broadway
Albany, NY 12233-7016

and

U.S. Environmental Protection Agency
290 Broadway, 18th floor
New York, New York 10007

The changes to the selected remedy set forth below are not considered by EPA and the New York State Department of Environmental Conservation (NYSDEC) to have fundamentally altered the remedy selected in the ROD. The remedy remains protective of human health and the environment.

SUMMARY OF SITE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY

The Colesville Landfill is an inactive landfill located in the Town of Colesville, Broome County, New York. This area is characterized as extremely rural, and includes large tracts of undeveloped woodlands, as well as large-scale agricultural tracts and scattered residential parcels. Of the 113 acres on which the landfill is situated, only about 35 acres have been used for waste disposal. The area is bounded by East Windsor Road to the west and by unnamed streams to the north, east, and west (termed "North Stream" and "South Stream") (see figure). Surface water in the area drains to the Susquehanna River.

Waste disposal operations at the landfill commenced in 1969. The landfill was owned and operated by the Town of Colesville between 1969 and 1971. Broome County purchased the landfill in 1971, operating it until it closed in 1984.

The landfill was primarily used for the disposal of municipal solid waste, although drummed industrial wastes from various sources were also disposed of between 1973 and 1975. The drums were either buried intact or punctured and crushed prior to burial.

In 1983, samples collected by the Broome County Health Department from residential wells in the vicinity of the site

[1] The purpose of five-year reviews are to assure that implemented remedies protect public health and the environment and that they function as intended.

indicated that the landfill was contaminating the groundwater in the vicinity of the site. The sample results prompted the Broome County Department of Public Works to install carbon filters on wells at the affected residences, to initiate a residential well monitoring program, and to perform further investigation of the landfill in 1983 and 1984. These investigations showed elevated levels of a number of volatile organic compounds (VOCs) in the groundwater.

The site was proposed for inclusion on the Superfund National Priorities List (NPL) in October 1984 and was listed on the NPL in June 1986. NYSDEC was designated the lead agency for this site.

The potentially responsible parties (PRPs) for the site, Broome County and GAF Corporation, completed an RI/FS in 1990, pursuant to an Order on Consent (Index No. T010687) issued by NYSDEC (the "State Order"). The RI/FS showed elevated levels of chlorinated VOCs in the groundwater and identified and evaluated various remedial alternatives to address the contamination problems at the site.

In 1991, based upon the results of the RI/FS, EPA issued a ROD, selecting a remedy for the site. The selected remedy included, among other things, the installation of a multimedia cap on the landfill, the collection and treatment of contaminated groundwater at and downgradient of the landfill, and the provision of new deep wells for six affected residences located in the vicinity of the site.

Pursuant to the State Order, the PRPs began the design of the selected remedy in 1991, completed the design for the landfill cap in 1994 and completed the construction of the landfill cap in 1995.

An alternate water supply well design (deep wells) was approved by the State in 1995. The implementation of the design was delayed, however, while Broome County attempted to purchase the five affected properties and to place deed restrictions preventing the installation and use of groundwater wells on the properties so that there would be no drinking water receptors. The County purchased four of the properties and demolished the dilapidated structures on two of them. One of the purchased properties was vacated and, according to the County, the structure will remain unoccupied. Although the fourth property is still occupied (the resident has life tenancy on the property), the well was replaced by the resident. The water in this well meets drinking water standards. One property that was not purchased is unoccupied and does not have a residential well. Broome County installed two wells on the remaining property (two residences) that was not purchased and an abandoned well on one of these properties was condemned and sealed up.

Based upon design-related aquifer tests conducted at the site, it was determined that extracting contaminated groundwater at the landfill, as called for in the ROD, would not likely be an effective means of remediating the groundwater at the source in a reasonable time frame. Specifically, the aquifer tests determined that the aquifer near the landfill has a low permeability, which would severely limit the area of influence of the extraction wells and would allow the groundwater to be pumped at only a very low rate (0.25 to 0.5 gallon per minute). Such conditions would necessitate the installation of an inordinate number of extraction wells. This conclusion led to an evaluation of alternative groundwater technologies and the performance of a pilot-scale study to evaluate the effectiveness of one of the more promising technologies, enhanced reductive dechlorination. This process involves injecting the contaminated groundwater with an easily degradable carbohydrate solution (*i.e*, molasses), which provides excess organic carbon that promotes microbial activity in the aquifer, enhancing the breakdown of chlorinated VOCs. Based upon the results of the pilot study, which showed a significant decline in VOC concentrations, it was concluded that this technology, in combination with the installation of downgradient extraction wells (as called for in the ROD), offered the most technically feasible approach to restoring groundwater quality in a reasonable time frame. The change to the remedy was documented in a September 2000 ESD.

Molasses injections at the landfill are performed on a periodic basis. The downgradient extraction and treatment system has been operating since 2002.

In April 2000, during an inspection of the site performed as part of the five-year review process, EPA found a spring and a low-lying wet area in the vicinity of the landfill. Contaminated water from the spring and the low-lying wet area discharge to nearby streams.

DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE REASONS FOR THOSE DIFFERENCES

Along the stream bank of the North Stream, which is as close as 100 to 200 feet to the west of the landfill in some areas, is a contaminated spring at the toe of a steep slope that can discharge directly into the stream. In addition, a low-lying wet area, located approximately 375 feet to the south of the landfill, can potentially overflow in rainy conditions to a vegetated drainage swale that conveys water to the South Stream. The source of this low-lying wet area appears to be groundwater discharging upward through a vertical, three-foot diameter concrete structure that extends approximately 2.5 feet below the ground surface. The concrete structure appears to have been placed there to enhance the spring as a source of water for agricultural purposes. Until recently, the opening of this structure was partially buried and obscured by dense vegetation.

Samples from the North Stream spring showed the presence of chlorobenzene, chloroethane, and 1,1-dichloroethane (DCA) at maximum concentrations of 24 micrograms per liter (µg/l), 21 µg/l, and 58 µg/l, respectively. The chlorobenzene detection is greater than the ambient water quality criterion of 5 µg/l for the protection of aquatic organisms from chronic exposure for Class C water bodies. Since there are no detectable levels of VOCs in the North Stream, it appears that the VOCs that discharge into the North Stream from the spring are rapidly attenuated through the processes of dilution and volatilization.

Samples collected from the low-lying wet area located on the south side of the landfill showed the presence of chlorobenzene, chloroethane, and 1,1-DCA at maximum concentrations of 81 µg/l, 23 µg/l, and 45 µg/l, respectively. The chlorobenzene detection is greater than the ambient water quality criterion of 5 µg/l.

Groundwater elevations have remained relatively stable since the landfill was capped, especially in the area between the landfill and the North Stream. Stable water levels in the contaminated spring and in the vicinity of the low-lying wet area suggest that they are naturally occurring at the site. Remedial measures have been and will be taken to prevent the migration of contaminated water to the streams.

The remedy for the low-lying wet area was implemented in September 2003. It consists of a sand filter and granular activated carbon that were placed in the concrete structure (a cover was placed over the top of the structure). The water then flows through another filter and a horizontal 4-inch diameter drainage pipe running through the side of the concrete structure. A riprap-lined outlet structure to prevent erosion was installed at the discharge point of the drainage pipe.

Routine sampling will be conducted to make sure that the remedy is working properly. Maintenance of the system (*e.g.*, granular activated carbon replacement) will be performed, as needed, based upon post-treatment sampling results.

The remedy for the contaminated spring along the North Stream consists of the installation of a subsurface stone collection trench and drainage layer in the area of the spring to prevent the contaminated spring water from exfiltrating above the land surface. Riprap will be placed between the stream and the collection trench to protect the integrity of the trench and infiltration bed during high water conditions. The contaminated groundwater that is the source of the spring is being treated with upgradient molasses injections near the landfill.

The construction of the remedy for the contaminated spring along the North Stream is scheduled to begin in late Spring 2004.

STATE AGENCY COMMENTS

NYSDEC supports the change to the remedy.

AFFIRMATION OF STATUTORY DETERMINATIONS

EPA and NYSDEC believe that the modified remedy is protective of human health and the environment and complies with federal and state requirements that are applicable or relevant and appropriate to this remedial action. In addition, the remedy continues to utilize permanent solutions and alternative treatment technologies to the maximum extent practicable for this site.

PUBLIC PARTICIPATION ACTIVITIES

EPA and NYSDEC are making this ESD and supporting information available to the public in the Administrative Record. Should there be any questions regarding this ESD, please contact:

George Jacob, Remedial Project Manager
U.S. Environmental Protection Agency
290 Broadway, 20th Floor
New York, NY 10007-1866

Telephone: (212) 637-4266
Telefax: (212) 637-3966

E-mail: jacob.george@epa.gov

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

Dave S
Joe Y.

JUN - 7 2004

June 2, 2004

Mr. Dale Desnoyers, Director
Division of Environmental Remediation
NYS Dept. of Environmental Conservation
625 Broadway – 12th Floor
Albany, NY 12233-7011

Re: Explanation of Significant Differences
Colesville Municipal Landfill
Site #704010
Colesville / Broome County

Dear Mr. Desnoyers:

Staff reviewed the March 2004 Explanation of Significant Differences (ESD) for the Colesville Landfill. Based on that review, I understand that a spring at the toe of a slope discharges directly into the North Stream and another spring feeds a low-lying wet area that periodically overflows into the South Stream. A September 2003 ESD called for a combination of abiotic and anaeorbic reductive chlorination processes, aerobic degredation and carbon treatment of water from contaminated springs. Measures implemented in September 2003 to remediate the low-lying wet area included sand and activated carbon treatment of effluent from one of the springs.

The March 2004 ESD calls for measures to prevent water from the other spring (at the toe of the slope) coming to the surface and discharging into the North Stream. This will be done by the construction of a subsurface stone collection trench and a drainage layer. The groundwater that feeds this spring continues to be treated.

Based on this information, I concur with the amendment to the remedy and believe it will be protective of public health. If you have any questions, please call Geoff Laccetti of my staff at (518) 402-7880.

Sincerely,

Gary A. Litwin, Director
Bureau of Environmental Exposure Investigation

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