

FEB 26 1991

February 26, 1991

Mr. Edward Belmore, Director
Bureau of Western Remedial Action
Division of Hazardous Waste Remediation
NYS Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233

Re: Endicott Wellfield; Endicott, NY
Proposed Plan

Dear Mr. Belmore:

Enclosed please find several copies of the Final Proposed Plan prepared by the U.S. Environmental Protection Agency, dated February 1991, for the proposed interim remedial action at the Endicott Wellfield Superfund Site. EPA will hold a public meeting at 7:00 p.m. on March 6, 1991 at the Village of Endicott Municipal Building, Endicott, New York. The public comment period started February 22, 1991 and will end on March 23, 1991.

If you have any immediate comments or questions, please contact me at (212) 264-1858.

Thank you for your cooperation.

Sincerely yours,

Carole Petersen, Chief
New York/Caribbean Superfund Branch II

Enclosures

cc: Steve Scharf, NYSDEC w/enclosure
~~Robert Schick, NYSDEC w/o enclosure~~



Superfund Proposed Plan

Endicott Wellfield Superfund Site

Endicott, New York



Region 2

February 1991

ANNOUNCEMENT OF PROPOSED PLAN

This Proposed Plan identifies the U.S. Environmental Protection Agency's (EPA's) proposed interim remedial action to restrict and reduce the volume of groundwater contamination at the Endicott Wellfield Site, located in Broome County, Endicott, New York (the Site). EPA developed this proposed plan in consultation with the New York State Department of Environmental Conservation (NYSDEC).

COMMUNITY ROLE IN THE SELECTION PROCESS

This Proposed Plan is being distributed to solicit public comments regarding EPA's proposed interim remedial action. The public comment period will begin on February 22, 1991 and continue until March 23, 1991. As the lead agency, EPA, with the support of NYSDEC, will select the proposed remedy for the Site only after the public comment period has ended and the information received during this time has been reviewed and considered. Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), requires publication of a notice and brief analysis of proposed plans for site remediation. The information in this Proposed Plan is based on two key documents: the Interim Remedial Investigation (Phase I RI) Report dated August 1990, which is the first part of an on-going investigation to determine the nature and extent of contamination in suspected source area(s); and the Technical Memorandum for the Implementation of Interim Remedial Measures, dated January, 1991, which describes how the two alternatives were developed and evaluated.

Copies of the RI and other Site-related documents for the Endicott Wellfield Site are available at the following public information repositories:

U.S. Environmental Protection Agency
Region II Office
26 Federal Plaza, Room 747
New York, New York 10278

Endicott Village Clerk's Office
Municipal Building
Endicott, New York 13760

The public is encouraged to review and comment on the proposed alternatives identified herein.

Written comments can be sent to:

Sherrel D. Henry
Project Manager
U.S. Environmental Protection Agency
26 Federal Plaza, Room 747
New York, New York 10278

EPA will hold a public meeting at 7:00 p.m. on March 6, 1991 at the Village of Endicott Municipal Building, Endicott, New York. All interested persons are encouraged to attend to ask questions and provide comments.

SITE BACKGROUND

The Site is located in the Village of Endicott, Broome County, New York. The Site consists

of the Ranney Well and its zone of influence on area groundwater. The boundaries of this area have been generally delineated by Main Street to the north, the eastern boundary of the En-joie Golf Course to the east, the Susquehanna River to the south and the Tri-Cities Airport and Airport Road to the west. The southerly flowing Nanticoke Creek generally bisects the area.

As illustrated in the map, the project study area is comprised primarily of open land associated with the En-Joie Golf Course and the facilities of the Village of Endicott Sewage Treatment Plant (STP) and the Endicott Landfill. There are two inactive landfills and a few industrial tracts in the northern portion of the study area. Private homes are not located within the study area. The Site is underlain by more than 100 feet of unconsolidated glacial and alluvial deposits on top of mantle shale and sandstone bedrock.

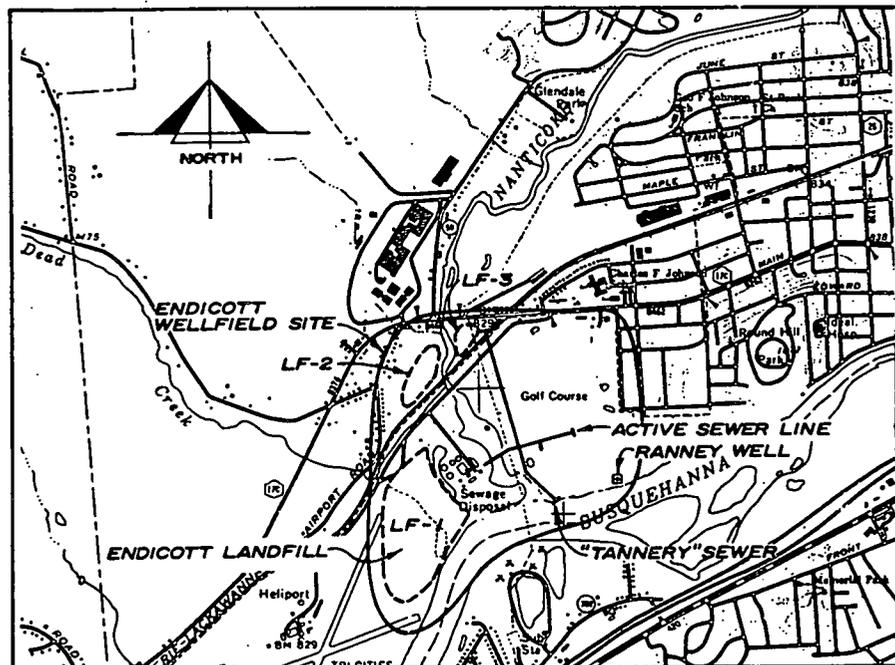
The Ranney Well was designed over 30 years ago and provides water for the Village of Endicott Municipal System. It operated without major problems until May 1981, when the EPA detected vinyl chloride and trace amounts of other volatile organic compounds (VOCs) in the Well's discharge. VOCs are

compounds that tend to vaporize easily at low temperatures. Subsequent sampling by the EPA and the New York State Department of Health confirmed EPA's initial findings and, as a result, four of the lateral supply lines to the well were closed and air stripping equipment was installed to reduce the levels of VOCs.

Additional studies were undertaken by the NYSDEC Division of Water, beginning in April 1983. The first study included the installation of nine monitoring wells, and the sampling and analytical testing of groundwater from selected wells. A pump test was also performed in September 1983 by turning off the Ranney well for a period of 24 hours and measuring recovery rates in nearby monitoring wells. The results of this study indicated that the source of contamination was located either west or northwest of the Ranney well.

Based on the results of these investigations, in July, 1984, a Purge Well designed to pump approximately 600 gallons per minute and three additional monitoring wells were installed on the En-joie Golf Course to intercept and monitor groundwater contamination before it reached the Ranney Well. Water from the Purge Well is pumped to the Golf Course pond system where it is

Site Location Map



aerated before it is ultimately discharged to Nanticoke Creek. The discharge from the Purge Well is permitted by the New York State Pollutant Discharge Elimination System (NYS PDES) which requires sampling of the Purge Well, pond discharge, and the three monitoring wells on a monthly basis.

In July, 1987, a Remedial Investigation/Feasibility Study (RI/FS) was completed at the Site which investigated the nature and extent of contamination in the Ranney Well. On September 25, 1987, the EPA issued a Record of Decision (ROD) which selected air stripping at the Ranney Well and the continued use of the existing Purge Well system.

Presently, the preferred remedial alternative of air stripping to treat the water from the Ranney Well is scheduled to begin operation in the Spring of 1991. The work is being performed by the Village of Endicott, pursuant to a Consent Decree entered into by the EPA, the Town of Union, and the Village of Endicott.

The RI/FS also concluded that the information obtained then was inadequate to confirm the source(s) of the VOCs in the groundwater reaching the Ranney Well. Therefore, the 1987 ROD required that a supplemental RI/FS be initiated to further investigate the nature and extent of contamination in suspected source areas and to evaluate possible source control measures.

On September 19, 1988, EPA, International Business Machines (IBM), the Village of Endicott, and the Town of Union entered into an Administrative Order on Consent for implementation of the supplemental RI/FS aimed at identifying the source(s) of contamination in the Ranney Well. The RI/FS activities are being undertaken by IBM, through its consultants, Lozier/Groundwater Associates. Field work for Phase 1 of the RI/FS was initiated in October, 1989.

The RI Report for the Phase I study was approved by EPA in November, 1990. A second phase to further delineate groundwater contaminant plumes is on-going and is

expected to be completed by the summer of 1991.

PHASE I RI FINDINGS

The Phase I RI demonstrated the following:

- Groundwater in the aquifer from which the Ranney Well obtains water is impacted by VOCs at above Maximum Contaminant Levels (MCLs), promulgated under the Safe Drinking Water Act, primarily chloroethane, vinyl chloride, and 1,2-dichloroethene. The risks to human health and the environment posed by these contaminants is discussed in a subsequent section.
- The Endicott Landfill appears to be the most significant source of the VOCs detected at the site.
- Under non-pumping conditions, groundwater flow in the aquifer is reported to be from northeast to southwest. However, the Ranney Well and the existing Purge Well combined pumping influence of 4,300 gallons per minute have locally reversed groundwater flow. Groundwater in the vicinity of these wells now flows generally from the northwest to the southeast.
- The combined cone of influence developed by the Ranney and the Purge Wells extends beyond the limits of the Endicott Landfill; therefore, contaminants entering the groundwater system from the Landfill will generally be drawn to the wells.
- Some of the groundwater monitoring wells sampled had total metal concentrations for certain metals above MCLs. Among the metals were lead at 75.5 parts per billion (ppb), chromium at 195 ppb and barium at 5,410 ppb.

SCOPE AND ROLE OF INTERIM REMEDY

This Proposed Plan focuses on EPA's selection of an interim remedial action to restrict migration of the groundwater contaminant plume emanating from the Endicott Landfill. EPA is proposing to implement an interim remedial action to increase the efficiency of the existing Purge Well system and to aid in aquifer cleanup by reduction of the contaminant plume. Based upon available data, the majority of the contaminated groundwater is being intercepted by the existing Purge Well located east of Nanticoke Creek. However, it appears that the existing Purge Well is not fully effective in capturing the VOC contaminated groundwater plume emanating from the Endicott Landfill and that migration of the plume is more controlled by the Ranney Well influence.

Additionally, low levels of VOCs were detected downgradient of the Purge Well. Therefore, it is also possible that VOCs may potentially be migrating around, and under the catchment area of the existing Purge Well system under the pumping influences of the Ranney Well. The existing Purge Well system appears to be inadequate in fully controlling the migration of VOCs from the Endicott Landfill.

EPA's decision to address the groundwater contamination problem as an interim remedial action will serve to further reduce migration of contaminated groundwater and the potential threat to the Ranney Well.

To the extent possible, this interim remedial action will be consistent with any planned future actions.

The overall supplemental RI which is ongoing will address source control and aquifer restoration. EPA will solicit public comment on the selection of a source control/aquifer restoration remedial action at a later date.

SUMMARY OF SITE RISKS

An analysis of the results of the Phase I RI report was conducted by EPA to determine health impacts which could potentially result from the contamination detected at the Endicott Well Field Site.

The data revealed that numerous VOCs and several metals were detected in groundwater samples above MCLs. Some of these chemicals are suspected carcinogens (cancer causing) in humans or are known carcinogens in animals (1,2-dichloroethane, tetrachloroethylene, trichloroethylene). Other chemicals detected in the samples are known human carcinogens (vinyl chloride and benzene). All of these compounds are hazardous substances within the meaning of CERCLA.

A quantitative Risk Assessment (RA) was not performed for this interim remedial action. However, one was performed for the first operable unit for the site. That Risk Assessment determined that ingestion of contaminated Ranney Well water posed the greatest human health risk at the Site. The Ranney Well draws water primarily from the Susquehanna River, with the balance derived from area groundwater. The start-up of the air-stripper will significantly reduce the risk.

However, the results of the Phase I RI indicated that the existing remedial measures may not be effective in curtailing the source of the contamination to the Ranney Well.

A detailed RA will be performed as part of the overall investigation for the site.

Actual or threatened releases of hazardous substances from this site, if not addressed by the preferred alternative, may present a current or potential threat to public health, welfare, or the environment through the groundwater exposure pathway.

SUMMARY OF REMEDIAL ALTERNATIVES

The objective of the present proposed action is to enhance groundwater cleanup while an additional investigation to curtail the source(s) of groundwater contamination and to evaluate aquifer restoration is undertaken. While the purpose of this interim remedial action is to work toward the goal of restoration, it does not constitute a final action for the Site.

ALTERNATIVE 1: No Action

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 requires that the "No-Action" alternative be considered at every site. Under this alternative, the site would remain in its present condition with continued operation of the existing systems, i.e. purge well and aeration system and the air stripper, and associated monitoring. No remediation measures would be implemented at this time.

Capital cost:	\$0
Annual Operation & Maintenance:	\$22,000
Estimated Present Worth:	\$207,000

Time to Implement: Immediate

ALTERNATIVE 2: Supplemental Purge Well

This alternative consists of upgrading the existing Purge Well system with the installation of an additional Purge Well, to be installed west of Nanticoke Creek essentially between the suspected source of the VOCs to the aquifer (Endicott Landfill) and the receptor (the Ranney Well). The proposed location of the Purge Well is chosen to intercept the plume near its suspected source and to begin remediation of the aquifer.

The proposed well is estimated to be 110 feet deep and would be screened across the majority of the aquifer between the depths of approximately 50 and 110 feet. This design would intercept the majority of the flow within the contaminated portion of the aquifer, and prevent contaminated groundwater from continuing to move under the purge well system, as may be happening with the existing purge well. However, the actual design will be based upon a pilot hole drilled at the proposed location during the Phase II RI. Operation and Maintenance cost for this alternative only applies to the additional Purge Well.

Capital cost:	\$150,000
Annual Operation & Maintenance:	\$24,000
Estimated Present Worth:	\$376,000

Time to Implement: 24 months

COMPARATIVE ANALYSIS OF ALTERNATIVES

EPA evaluated the remedial alternatives according to nine criteria. The first two criteria, protection of human health and the environment and compliance with applicable or Relevant and Appropriate Requirements (ARARs) are considered by EPA to be threshold criteria which each alternative must meet. The nine remedial evaluation criteria are as follows:

- Overall protection of human health and the environment addresses whether or not a remedial alternative provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
- Compliance with ARARs addresses whether or not a remedial alternative would meet all of the Federal or State ARARs and/or satisfy the criteria for

invoking a waiver as set forth in Section 121(d)(4) of CERCLA. State drinking water standards or wetlands protection laws are examples of ARARs.

- Long-term effectiveness and permanence refers to the ability of a remedial alternative to maintain reliable protection of human health and the environment over time, once cleanup goals have been met.
- Reduction of toxicity, mobility, or volume evaluates the anticipated performance of the treatment technologies a remedial alternative may employ, or how successfully particular treatment methods could reduce the harmfulness of contaminants, or their potential to move in the environment.
- Short-term effectiveness addresses the level of protectiveness of human health and the environment achieved during the construction and implementation of a remedy, before clean up goals are reached.
- Implementability evaluates the technical and administrative feasibility of a remedial alternative, including the availability of materials and services needed to implement the chosen solution.
- Cost considers estimated capital and operation and maintenance costs, and net present worth cost of the alternatives.
- State acceptance indicates whether, based on its review of the RI/FS and the Proposed Plan, the State concurs with, opposes, or has no comment on the selected remedial alternative at the present time.
- Community acceptance will be assessed in the ROD and refers to the public's general response to the alternatives

described in the Proposed Plan and the RI/FS reports.

The last two criteria are assessed primarily after the close of the public comment period on the Proposed Plan and are evaluated in the Record Of Decision.

ANALYSIS OF ALTERNATIVES

The following is a summary of the comparison of the two alternatives' strengths and weaknesses with respect to the nine evaluation criteria.

1. Overall Protection of Human Health and the Environment

The no-action alternative would not ensure that the Ranney Well will not be impacted by VOCs emanating from the Endicott Landfill. However, the operation of the air-stripper is designed to remove VOCs to below MCLs.

Upgrading the existing Purge Well system would be beneficial in maintaining the protection of public health and the environment.

Although the existing Purge well appears to be capturing a majority of the VOCs emanating from the Landfill, results from the Phase I RI indicates that the potential exists for VOCs to migrate under, and around, the purge well to the Ranney Well. The additional purge Well will be located and designed to be more effective in intercepting and removing the contaminant plume closer to its suspected source. This should reduce the potential for VOCs to migrate to the Ranney Well, thus further protecting public health and the Environment. This interim system may be incorporated into the design of the source control remedy for the Site.

2. Compliance With ARARs

Neither action may, by itself, achieve final cleanup levels for the groundwater at the site. MCLs will not be ARARs for this action

because they are beyond the scope of the interim remedial action.

However, an additional purge well will aid in the ability to comply with chemical-specific ARARs by reducing the potential for a primary drinking water supply (the Ranney Well) from being further impacted by VOCs.

Treatment options for the additional Purge Well discharge will be dependent upon VOC concentrations in the Purge Well water. At this time it is assumed that the Purge Well water can be routed through the STP.

3. Long-term Effectiveness

Uncertainties still exist in the no-action alternative's effectiveness to remediate the aquifer. Upgrading the Purge Well system with the additional Purge Well will be effective in controlling plume migration as long as it is operational.

4. Reduction of Toxicity, Mobility, or Volume

The no-action alternative will not further reduce the toxicity, mobility, or volume of the contaminated groundwater. Installation of an additional Purge Well will initiate reduction in the volume of groundwater contaminated by VOCs through its removal from the aquifer and subsequent treatment. In addition the Purge Well will also reduce the mobility of the contaminants by capturing contaminated groundwater within its cone of influence.

Data to support the extent to which the mobility, and volume are reduced will be further evaluated following installation and testing of the additional Purge Well.

5. Short-term Effectiveness

Short-term effectiveness is not a major concern for either alternative. Since there is a large amount of open, publicly-owned land available, and there are no residences in the immediate area.

6. Implementability

Installation of the additional Purge Well can be achieved using standard and readily available technology. The technology to monitor the performance and adequacy of the Purge Well is reliable and proven. Subsequent testing of the additional Purge Well would provide the data necessary to evaluate the technical feasibility of the Purge Well system as a control for the migration of the contaminant plume.

7. Cost

The costs for the two alternatives are listed on the previous pages. Capital cost is the present value for implementing the remedial action. Annual operation and maintenance (O&M) costs are used to quantify the yearly expense of O&M. The 30 year annual cost is then calculated and expressed in current value terms.

The capital cost for the additional Purge Well include the drilling and installation of the Purge Well and pump, well pit, electric installation, meter and controls, and a direct discharge line to Nanticoke Creek. The estimated capital costs for these items is \$150,000.

The O&M of the alternative include energy cost for the pump, two samples analyses per month, and well maintenance. These costs are estimated to be \$24,000. The net present worth of the additional Purge Well is estimated to be \$376,000.

8. State Acceptance

The State of New York concurs with the proposed alternative.

9. Community Acceptance

This criterion will be addressed following review of the public comments received on the Proposed Plan.

EPA'S PREFERRED ALTERNATIVE

Based on the results of the Phase I RI Report and the Technical Memorandum for implementation of the Interim Remedial Measures, EPA has selected Alternative 2, Supplemental Purge Well, as the preferred choice for the interim remedy at the Endicott Wellfield site. The cost of this remedy is estimated to be \$376,000.

This alternative calls for the design and implementation of a supplemental Purge Well to protect human health and the environment.

The supplemental Purge Well is estimated to be 110 feet deep and would be screened across the majority of the aquifer between the depths of approximately 50 and 110 feet. However, the actual design will be based upon a pilot hole drilled at the proposed location during the Phase II RI.

Following installation of the Purge Well, a detailed aquifer pump test will be conducted using the Purge Well as the pumping well. It is envisioned that the discharge from the test can be routed through the STP. Based upon the quality result from the aquifer test, the treatment requirements for the Purge Well discharge will be determined.

A Purge Well monitoring plan will be implemented concurrently with the Purge Well operation. This will monitor the effects of the Purge Well on contaminant migration in the aquifer of concern. This plan will include provisions for taking chemical analysis and groundwater elevations of the Purge Well and surrounding monitoring wells.

The goals of this interim remedial action are to increase the efficiency of the existing Purge Well and to aid in aquifer cleanup by reduction of the contaminant plume.

This interim remedial action is not intended to replace the existing Remedial Measures, but is designed to increase their ability to protect public health and the environment. The

ultimate goal of remediation will be determined in a final remedial action for the Site. Upon completion of the Phase II RI/FS, this interim system may be incorporated into the design of the source control remedy for the Site.

NEXT STEPS

After EPA has presented the interim remedy at the March 6, 1991 public meeting and has received comments and questions during the public comment period, the Agency will consider and evaluate these questions and comments. In addition, EPA will respond to the questions and comments in a Responsiveness Summary, which becomes part of the official decision document for the Site, the Record of Decision.

In addition to the Responsiveness Summary, the ROD includes a description of the final alternative selected by EPA and the rationale for selecting it.

EPA will place the ROD in the agency's Administrative Record, which will be located at EPA and at the local information repository. The Administrative Record includes all site findings and reports that were instrumental in the Agency's decision regarding the interim remedy.

Upon acceptance and final approval of the remedy, EPA will negotiate with the responsible parties to prepare the interim remedy design. At that time, EPA will prepare a fact sheet for public distribution which describes the design.

File on eDOCs Yes _____ No

Site Name Endicott

Site No. 704009

County Broome

Town Endicott

Foailable Yes _____ No

File Name 1991-02-26, Proposed Plan

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