New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Central Remedial Action, Room 228
50 Wolf Road, Albany, New York 12233-7010
Phone: (518) 457-1741 • **FAX:** (518) 457-7925
Website: www.dec.state.ny.us

John P. Cahill
Commissioner

MEMORANDUM

TO: Michael J. O'Toole, Jr., Director, Division of Environmental Remediation

FROM: William L. Daigle, Acting Director, Bureau of Central Remedial Action

SUBJECT: Explanation of Significant Difference, Sterling Site 3; I.D. #442011
Rensselaer County

DATE: JUL 26 2000

Attached for your final review and signature is the ESD for the Sterling Site 3, including the responsiveness summary.

As you may recall, the ROD for this site called for, among other things, a flood control berm around the capped landfill.

During design, a PRP lead value engineering review of the berm identified a less costly alternative, flood protection consisting of rip rap and specialty vegetation. Consequently, a proposed ESD was developed and issued for public review in mid 1999.

During the comment period, the Rensselaer County Environmental Management Council (Ken Dufty) stated that the Department should secure some financial commitment from the PRP to ensure funds would be available in the event the alternative flood protection system fails to be fully protective. Specifically RCEMC recommended that a $500,000 bond be posted.

Upon reviewing this comment with DEE, it was determined that the state could achieve an equivalent degree of "insurance" by having 360 North Pastoria Environmental Corp (Kodak's operations company) a co-signatory to the RD/RA consent order. This ensures that either Kodak or 360 North Pastoria Environmental Corp. are bonafide responsible parties and liable for any maintenance of the site caused by flooding or for any other reason.

We recommend that you approve the final ESD. This will enable completion of the final cap design.

Attachment

DECLARATION FOR THE EXPLANATION OF SIGNIFICANT DIFFERENCE TO THE RECORD OF DECISION

SITE NAME AND LOCATION

Sterling Drug - Site 3
Rensselaer, New York

OPERABLE UNITS/AREAS OF CONCERN

On-site landfill cap for Sterling Site 3, Site No. 442011, OU No. 1, Rensselaer, New York

STATEMENT OF BASIS AND PURPOSE

This Explanation of Significant Difference (ESD) to the Record of Decision (ROD) presents the selected remedial actions for the above-listed Sterling site developed in accordance with the New York State Environmental Conservation Law (ECL) and Technical Administrative Guidance Memoranda 4059. It is consistent with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 USL Section 9601, et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). The Statement of Basis section of the original rod (3/31/92) lists the documents that comprise the Administrative Record for Sterling Site 3. The documents in the Administrative Record and the attached ESD to the ROD are the basis for the modified remedial action.

ASSESSMENT OF THE SITE

All aspects of the ROD to address actual or threatened releases from this site have been implemented, with the following exception. The final cap design has been on hold pending the processing of the current Explanation of Significant Difference (ESD), to delete a berm around the landfill and the necessity to obtain a new Order on Consent to ensure proper liability for site maintenance.

DESCRIPTION OF THE EXPLANATION OF SIGNIFICANT DIFFERENCE TO THE RECORD OF DECISION

The ESD eliminates the construction of a berm atop the landfill cap for floodplain management. Instead, the landfill cap design will specify protective measures (use of rip rap and reinforced grasses and brush) along the western face of the landfill parallel to the Papscanee Creek. These measures, in addition to the Part 360 soil/synthetic cap on the landfill and intended to protect the integrity of the site, if and when, flood waters reach the site in the future. All other aspects of the remedy selected in 1992 remain the same, including in-situ treatment of contaminated soils, vacuum extraction/bioventing, landfill capping, and groundwater extraction and treatment.

DECLARATION

This significant difference to the ROD will be protective of human health and the environment, and will comply with applicable State Environmental Quality Standards and the Commissioner's Organization and Delegation memorandum 95-24. The New York State Department of Health supports this decision (see attachment).

7/26/2000
DATE

Michael J. O'Toole, Jr.
Director
Division of Environmental Remediation

Responsiveness Summary
For the Explanation of Significant Difference
of the Sterling Site 3 Record of Decision

An Availability Session was held during the Comment Period (May 13, 1999) for the Explanation of Significant Difference of the Sterling Site 3 Record of Decision. The attendees were: Ken Dufty and Sandra Woodward of the Rensselaer County Environmental Management Council, Clyde Siverd of Kodak Corporation, Maureen Hellwig of Quantum Management, Walter VanVeen and Jamie Puskas of Conestoga-Rovers & Associates, and Walter Demick and David Tromp of the New York State Department of Environmental Conservation.

A letter (dated May 6, 1999) with several comments was sent to the NYSDEC from Mr. Dufty prior to the meeting on May 13, 1999. The comments, which were also discussed at the availability session along with the NYSDEC responses, are as follows:

Comment 1: The 1996 Flood at the Sterling Site was not significant.

The 1996 flood near and at the Sterling Site was a result of weather warmer than the seasonal norm, combined with ice-flow interference both north and south of the Papscanee Island Nature Preserve. It was considered a "35-year" flood event by the USGS. However, the flood control management berm that was included as part of a remediation plan in the March 1992 ROD was designed to protect the landfill from a "100-year" flood event.

Therefore, we question whether it is rational and/or reasonable to base a decision of this importance on the occurrence of one smaller and less intense event.

Response 1: Contrary to the commentor's statement we feel the 1996 event was significant. It inundated nearly the entire width of the flood plain and was approximately five feet deep at the treatment plant. It did not, however, cause damage to the temporary soil cap. See further discussion below.

1) In flood control terminology a 100 year flood elevation is not three times deeper than a 35 year flood. The difference is site specific and may only vary a few feet.

2) No flood to date, including the floods in 1977 and 1996, has removed the cover from the site. Currently there exists a natural grassy cover that withstood these floodwaters.

3) The landfill is located at the periphery of the flood plain where velocity of flowing water is minimal compared to mid-channel thereby reducing erosional affects.

4) Cap design calls for excavation of any unnatural material along the banks of the Papscanee, preparation and installation of the liner membrane and armoring which

will further negate erosional effects.

Comment 2: We question whether the cap will "lift off" the waste mass if water infiltrates under the berm.

In this argument, the proponents in favor of eliminating the berm from the remedial plan maintain that water may seep under the berm and lift the cap off because of an "imbalance" of water pressure. This contention is based on a theory that, with the berm in place, there will be no water on top of the cap to offset the effects of water seeping under and into the waste mass.

This argument should be given little, if any, weight. In fact, there is much more likelihood that the cap will "float" off without the berm as opposed to with the berm in place. First, the Papscanee Creek acts as a surface water divide, which diverts the majority of flood and rain water into the Hudson River further to the south. The enhancement of this diversion by the proposed berm will likely eliminate the majority, if not all, of the flood waters which will seek to infiltrate the landfill.

Without the berm, flood waters during a 100-year (or less) flood event will seek to infiltrate the waste mass, seep under the cap, and possibly mix with the contaminants within. This hydraulic mixing may, and probably will, create an internal hydraulic pressure that will act to lift off the cap, exposing more of the hazardous waste to external forces. The theory that the flood waters around the landfill will act to hold down the cap, discouraging it from being "lifted" off, is not supported by factual evidence or hydrogeologic sense.

In presenting this argument against a berm, in reality the proponents have presented a convincing argument to "key" the berm into the subsoils which create the border between the landfill and the Papscanee Creek, an alternative relief measure we are asking the Department to consider.

Response 2: 1) It needs to be understood that no containerized wastes exist at the Sterling 3 landfill. Nearly 9000 drums were removed during 1989-90. The contamination that remains is residual within the landfill's soil mass and the groundwater underneath the site. Ongoing remedial activities, soil vapor extraction and groundwater extraction and treatment with re-injection continually address the remaining residuals, reducing them over-time.

2) With no berm in place flood waters will simply follow the Papscanee channel, or if high enough, inundate the landfill for a short duration. Given that, due to soil permeabilities, the effects of flood waters on groundwater elevations would be fleeting at best, not being significant enough to lift the liner and its barrier material. Waters inundating the landfill would be inhibited from infiltrating the landfill mass by the impermeable liner and the vegetation utilized to maintain liner integrity.

3) As part of the engineering design, the liner will be keyed into original soils around its entire perimeter.

Comment 3: The argument that the berm will decrease the floodplain's ability to store water is specious, at best.

The position is taken by the proponents of the elimination of the berm as a remedial measure that a berm will exacerbate flooding because it will decrease the capacity of the floodplain to store water. This is supposedly based on the fact that, once the landfill mass is isolated from the floodplain by the berm, there will be less mass available to act as a "sponge" and absorb flood waters.

Once again, the argument against a berm is a compelling argument to have the berm installed.

The purpose of the berm, as envisioned in the March 1992 Record of Decision, was to isolate the waste mass in the Sterling Site landfill from water - an admirable goal considering that many of the wastes at this hazardous waste site are water soluble. The last storage area for excess flood waters, which would then recede and be transported by the Papscanee Creek into the Hudson River.

Therefore, we believe that the proponents have once again presented an argument in favor of the berm, as required in the ROD.

Response 3: 1) The construction of a seventeen foot high berm, even at the periphy of the floodplain is an obstruction to the floodway. In no way was there ever a consideration for the waste mass to act as a sump.

2) As noted in item 2.2 above, it is suggested that without a berm, floodwaters would flow gently over the capped landfill. Duration of flooding is not expected to affect groundwater elevations to any significance, the cap will not allow infiltration and flood waters will recede without damage to the integrity or water resilience of the cap.

Comment 4: The berm will not significantly hinder runoff from the landfill.

The installation of a berm will not significantly hinder the landfill's ability to drain water from its surface during non-flood and flood events. Positive drainage is not a technically complicated feat, and the area between the berm and landfill toe can be gently sloped to encourage and allow drainage. The Dewey Loeffel Landfill, which is surrounded on three sides by a natural "berm" is proof that positive drainage works and can be incorporated into a landfill closure design easily, practically, and feasibly.

The argument that a berm will hinder runoff from leaving the landfill should be rejected in its entirety.

Response 4: Given that the landfill lies between the Papscance Creek and the Amtrack rails, design consideration for a berm are limited to a box (4 sided) or an open ended option (open to the high elevation at the east near the Amtrack rails). If the premise of the berm is to keep the possible flood waters off the landfill to the greatest extent then the box approach would be the most appropriate. Such construction would then create a catchment area within the berm, holding rainfall until it could be pumped out thereby stressing the cap unduly. Designing a berm breached by culverts allowing water to pass freely, in or out, could not be recommended.

The three sided berm (open to the east and Amtrack) could actually allow floodwaters into the bermed area if the tracks were overtopped, or just the rainfall could cause an impoundment necessitating pumpage activities.

Comment 5: The proponents argue that, if a berm is built, is will slow down flood waters down to a point where sediments will be deposited on the cap surface, perhaps interfering with vegetative growth. This argument should carry no weight in the consideration to close the landfill without a berm.

First, this argument is based on an assumption that flood waters will enter the landfill through culverts which pierce the berm and allow for water to come and go through the landfill. This assumption is flawed, however, as with positive drainage, the berm would only need to be pierced on one or two points, probably in the southeast of the berm.

Second, the flood waters that may affect the landfill without a berm will be insufficiently low enough velocity to deposit sediments on the cap.

Third, the concern over the vegetative cap during flood events is hugely secondary to the main concern, which is to keep water from infiltrating the waste mass.

Given that, we believe that the installation of a berm to deflect floodwaters from infiltrating the Sterling Site #3 is far more effective in protecting the environment and public health than the vegetative cap which will only be marginally impacted from the effects of sedimentation.

Response 5: The cap to be installed is a RCRA complaint synthetic/soil cap consisting of a synthetic liner, a drainage layer, a protective soil layer, and a top soil layer to be vegetated. It is not simply a vegetative cover.

Comment 6: In closing, the Papscanee Island Nature Preserve, which lies just south of the site, experiences regular annual flooding. In the preserve, there are a number of berms which were built in the 1950's, when the site was mined for sand.

These berms are very effective in protecting the internal areas of the preserve from flooding, and after experiencing the effectiveness of these berms, we fully support such berms around the Sterling Site #3 hazardous waste site, especially a berm on the west side of the landfill to separate the waste mass from the Papscanee Creek.

Response 6: Refer to response four.

After the Availability Session, a letter was sent to the NYSDEC from Ken Dufty on May 26, 1999. The comments, along with the NYSDEC responses, are as follows:

Comment 7: It was suggested that Eastman Kodak or NPEC post a bond, or a certified letter of commitment that will ensure and cover the estimated cost to repair any damage that may be caused by a flood, not to be less than $500,000. This added amount, which exceeds the estimated $370,000 cost to repair the cap damage, will enable the company to mitigate any hazardous material release caused by a flood, in the event of a major flood event.

Response 7: Department legal staff have determined an alternative to the bond proposal exists; the Order on Consent has been modified to add 360 North Pastoria Environmental Management as a respondent for the Sterling 3 site. Therefore, if a situation arises where the Department determines that additional actions are warranted (eg., cap repair) both the purchaser of Sterling and 360 NPEC are responsible to do so.