REMEDIAL ACTION DESIGN

at the

LOCKPORT CITY LANDFILL

LOCKPORT (C), NIAGARA (C), NEW YORK
NYSDEC SITE No. 9-32-010

CITY OF LOCKPORT, NEW YORK

- ***Operation and Maintenance Plan***
- ***Contingency Plan***

MARCH 1994

prepared by:

URS Consultants, Inc.
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OPERATIONS AND MAINTENANCE PLAN
AND
CONTINGENCY PLAN

CLOSURE OF LOCKPORT CITY LANDFILL
LOCKPORT, NEW YORK
NYSDEC SITE NO. 9-32-010

SUBMITTED TO:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD
ALBANY, NEW YORK 12233

MARCH 1994

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ATTACHMENTS

1.0 GENERAL

The components of the site closure which will require a regular long-term maintenance program are the final cover, surface water control features, and the fence. These components will not require operation. The routine (scheduled) maintenance plans for these features are described in Section 2. Regular site inspection as described in Section 3 will also be performed to identify the need for additional (non-scheduled) maintenance tasks. Such tasks are identified in Section 4.

2.0 SCHEDULED MAINTENANCE

The following scheduled maintenance activities should be adequate to maintain the Remedial System in proper operating condition.

The City of Lockport Department of Public Works or a contracted firm(s) will perform the required routine maintenance activities. This will include:

- Cutting of the vegetation on the final cover and grass-lined ditches and swales three times a year (late Spring, mid-Summer and late Autumn). The seed mix specified for the final cover is designed for the infrequent mowings which are necessary to prevent the invasion of weeds and brush.

- Fertilization, liming, and other vegetation-maintenance chores annually in the spring. The level of fertilization and liming shall be chosen for the species and situation.

- Cleaning the swales, ditches and downchute of accumulated leaves, twigs and other debris concurrently with mowing of the vegetation. Failure to remove debris from the drainage features could result in scour or breaching of the channel.

- Air monitoring around the perimeter of the landfill performed annually. The

monitoring will be done to ensure that gases from the gas vents are not collected near the landfill.

3.0 INSPECTION

Tri-annual inspections of the cap will be performed in late spring, mid-summer, and late autumn of the year, immediately after scheduled maintenance tasks, by a qualified civil or environmental engineer (Engineer). The purpose of this inspection will be to identify any potential problems to the Remedial System, that are not being adequately addressed by routine maintenance, and to document the current condition of the system. The Engineer will prepare a report for submission to the NYSDEC which will document the current condition of the system. Attached is an Inspection Log Sheet which the Engineer will complete after each tri-annual inspection. The Engineer will evaluate the following items and will estimate the nature and extent of corrective action required (if any). Any requested corrective action will also be noted in the Engineer's report submitted to the DEC.:

- Surface Water Control Features - Channel cross-sections must be inspected to insure that side slopes are stable. Check will be made for scour, sediment deposition, breaches, rodent holes and other damage. The riprap-lined downchute will also be checked for undermining and damage to geotextile.

- Landscaping - The vigor and density of the vegetative cover on the cap, ditches and swales will be assessed. The location and extent of bare, sparse and undernourished areas will be noted. Areas of significant weeds, or areas of any woody brush will be noted.

- Erosion - The presence and extent of any rills or other signs of erosion of the final cover, the steep embankment, ditches, swales, or downchutes will be noted.

- Gas Vents - The condition of gas vents will be inspected and noted. Checks will be made for clogging of the vent opening by birds or insects, and for the integrity of the seal to the low permeability soil layer.

- Settlement - Visual evidence of differential settlement of the final cover (i.e., ponding water) will be noted and its impact on the integrity of the final cover, swales or required drainage patterns will be assessed.

- Fence - The fence along the landfill perimeter will be inspected for signs of vandalism and other damage.

4.0 ADDITIONAL MAINTENANCE

In the event that damage to any of the above items is observed during the tri-annual inspections, corrective action to repair the damaged area will be promptly performed in accordance with the following sections. The NYSDEC will be notified of the damage and the date of the corrective action.

4.1 Significant Bare or Sparse Areas

Any significant areas of no, or sparse, vegetation on the final cover and the surface water drainage features will be prepared, reseeded, mulched, and maintained.

4.2 Rill Erosion of Cap

Rill erosion of the cap can be caused by insufficient vegetative cover and if it is not corrected properly, the rills will deepen and compromise the integrity of the final cover. The eroded topsoil must be scarified, regraded, and/or replaced as necessary. The topsoil must then be seeded and mulched as in the preceding section.

4.3 Differential Settlement of Cap

Areas of differential settlement of the cap will be repaired where the settlement would cause ponding of precipitation, or concentrated flows that could erode the cover. As stated above, in Section 3.0, the areas of differential settlement will be identified through the scheduled tri-annual visual inspection of the final cover. Repair will consist of stripping the existing vegetation

topsoiled, seeded and mulched to restore the vegetative cover.

4.4 Damaged Gas Vents

Based upon the results of RI studies, methane and other landfill gas generation is expected to be minimal in the post-closure period. However, in accordance with the Record of Decision, a gas venting layer with gas vent risers is included in the Remedial Design. The gas vent risers will be included in the tri-annual inspection of the facility. They will be checked for signs of vandalism and for obstruction by birds or insects of the outlet. Repairs shall include clearing of any obstructions, and, if necessary, replacement of the vent riser.

4.5 Fence

Repairs to this item will be performed as necessary by qualified personnel in accordance with standard practice.

5.0 IMPLEMENTATION OF THE CONTINGENCY PLAN

In the event that the additional maintenance procedures identified in the preceding section are inadequate to address a problem, the Contingency Plan for the project should be implemented.

ATTACHMENTS

LOCKPORT CITY LANDFILL - POST CLOSURE
NYSDEC SITE NO. 932010

INSPECTION LOG SHEET

Date:_____ Inspector:_____

Weather:_____ Signature:_____

Temperature:_____ Company:_____

Type: Spring Summer Fall
(circle one)

Item Inspected	Maintenance Needed?(Y/N)	Comments	Inspectors Initials
Perimeter Ditch A			
Perimeter Ditch B			
Perimeter Ditch C			
Swale A			
Swale B			
Downchute and Apron			
Vegetative Cover			
Final Cover Layers (settlement etc.)			
Steep Slope Areas (west of final cover)			
Gas Vents			
Fence			
Other Items: (specify)			

Contingency Plan

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1.0 INTRODUCTION

This Contingency Plan will provide guidance in the event that a problem occurs with the Remedial Program which cannot be addressed under the steps outlined in the Operations and Maintenance Plan. The scope of this Contingency Plan is also limited by the following considerations:

- This is not an operating landfill, so there are no operational contingencies (hot loads, fires, etc.) to consider; and

- There are no gas or leachate collection systems to foul or breakdown.

To identify potential problems, tri-annual inspections of the closed landfill will be performed by a qualified civil/environmental engineer, as outlined in the Operation and Maintenance Plan. In the event that a problem is detected, the steps outlined in Section 3 of this Plan must be followed.

2.0 SCOPE

Problems which would trigger this contingency plan include any event which could cause an element of the Remedial Program to fail to operate in accordance with the Remedial Design during the thirty-year post-closure monitoring period. As stated above, steps to address anticipated problems are included in the Operations and Maintenance Plan. Such problems include minor erosion of the final cover, the steep embankment, and drainage ways, differential settlement of the final cover, and damaged gas vents.

It is possible however, that problems beyond the scope of those addressed in the Operations and Maintenance Plan may occur. Such problems include:

- Damage to low permeability soil layer
- Significant or repeated erosion of the drainage channels or final cover;
- Slope failure of the material remaining on the banks of the Gulf below the toe of landfill final cover.
- Voids in the final cover from the removal of utility poles located within the final cover

Steps required to remediate a damaged low permeability layer are identified in the following section. In general, however, such problems require event-specific remediations: the causes of such problems are too complex to enable solutions to be specified in a report format. A qualified civil/environmental engineer must be included in the remediation design process immediately.

3.0 CONTINGENCY PLANS

3.1 Damaged Low Permeability Soil Layer

In the event that erosion of the final cover is so significant such that the low permeability soil layer is damaged, the following tasks must be performed:

- Strip topsoil and barrier protective soil surrounding the damaged area;
- remove damaged low permeability soil to form a uniform surface for the placement of the new low permeability soil;
- place and compact new low permeability soil;
- perform all required QA/QC testing, as outlined in the Contract Documents, to provide certification that the final cover has been adequately repaired,
- replace barrier protection soil, topsoil and restore vegetative cover.

3.2 Voids From Removal of Utility Poles

In the event that New York State Electric and Gas would remove the existing utility poles, located in the final cover the voids would then have to be repaired immediately. The following steps must be performed in accordance with the Contract Documents.

- Strip topsoil, general fill (barrier protection), and low permeability soil surrounding the void;

- Fill the void below final cover subgrade with general fill and patch the geocomposite;

- Place and compact low permeability soil and general fill layers

- Place topsoil and restore vegetation cover.

3.3 Other Problems

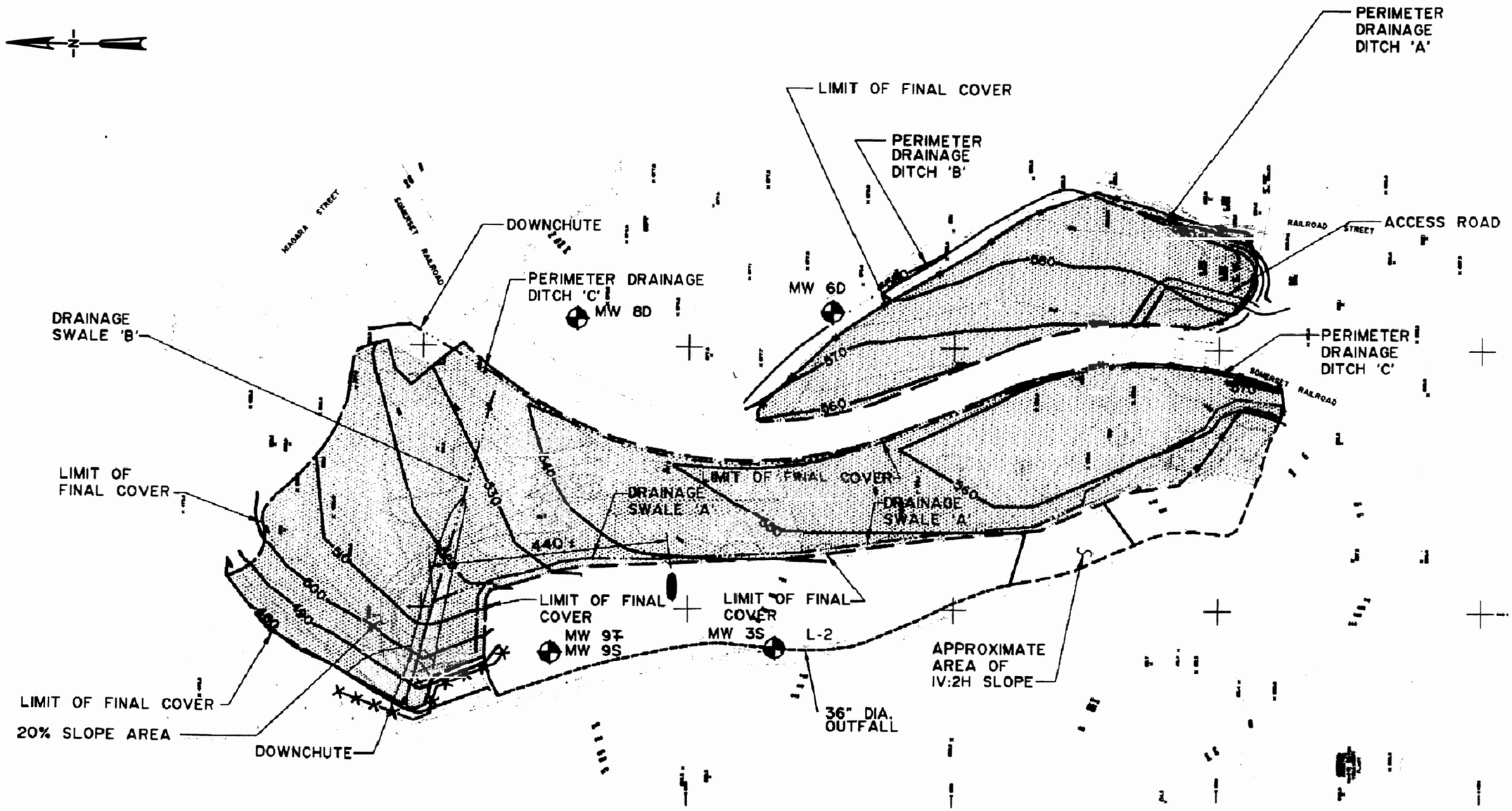
Significant problems other than that specified in the preceding section, require an event-specific solution. A qualified civil/environmental engineer is, therefore, required to perform the following tasks:

- determine the cause of the problem
- identify the steps required to prevent the problem from recurring; and
- determine how to repair the failed area to meet the original intent of the remedial design.

This process should begin immediately upon discovery of the problem. The following additional steps must also be taken concurrently:

- Notification of the NYSDEC of the nature and extent of the problem upon its discovery; and

- Inclusion of NYSDEC input into the remedial design of the problem area.



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AMHERST, NEW YORK

DATE:12/07 JOB No.:71136

LOCKPORT CITY LANDFILL

FIGURE 1
SITE PLAN