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Governmental Accounting Standards Series

Statement No. 18 of the
Governmental Accounting
Standards Board

**Accounting for Municipal
Solid Waste Landfill Closure
and Postclosure Care Costs**



Governmental Accounting Standards Board
of the Financial Accounting Foundation

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Summary

This Statement is based on the October 9, 1991, U.S. Environmental Protection Agency (EPA) rule, “Solid Waste Disposal Facility Criteria,” which establishes closure requirements for all municipal solid waste landfills (MSWLFs) that receive solid waste after October 9, 1991. The EPA rule also establishes thirty-year postclosure care requirements for MSWLFs that accept solid waste after October 9, 1993. The effect of the EPA rule and similar state or local laws or regulations is to obligate MSWLF owners and operators to perform certain closing functions and postclosure monitoring and maintenance functions as a condition for the right to operate the MSWLF in the current period.

This Statement applies to state and local governmental entities that are required by federal, state, or local laws or regulations to incur MSWLF closure and postclosure care costs. Certain of these costs, which result in disbursements near or after the date that the MSWLF stops accepting solid waste and during the postclosure period, should be included in the *estimated total current cost of MSWLF closure and postclosure care*, regardless of their capital or operating nature. The estimated total current cost of MSWLF closure and postclosure care should include:

- a. The cost of equipment expected to be installed and facilities expected to be constructed (based on the MSWLF operating plan) near or after the date that the MSWLF stops accepting solid waste and during the postclosure period.
- b. The cost of final cover (capping) expected to be applied near or after the date that the MSWLF stops accepting solid waste.
- c. The cost of monitoring and maintaining the expected usable MSWLF area during the postclosure period.

The cost components included should be based on federal, state, or local laws or regulations concerning closure and postclosure care that have been approved as of the balance sheet date, regardless of their *effective date*. Current cost is defined as the amount that would be paid if all equipment, facilities, and services included in the estimate were acquired during the current period. After the initial calculation of estimated total current cost of MSWLF closure and postclosure care, current cost is required to be adjusted annually for the effects of inflation or deflation and other changes. The effect of any changes in estimates that occur before the MSWLF stops accepting solid waste is required to be reported primarily in the period of change.

For MSWLFs that use proprietary fund accounting and reporting, a portion of the estimated total current cost of MSWLF closure and postclosure care is required to be recognized as an expense and as a liability in each period that the MSWLF accepts solid waste. Recognition should begin on the date the MSWLF begins accepting solid waste, continue in each period that it accepts waste, and be completed by the time it stops accepting waste. Estimated total current cost should be assigned to periods based on MSWLF use rather than on the passage of time, using a formula provided in this Statement. MSWLF capital assets excluded from the calculation of the estimated total cost of MSWLF closure and postclosure care should be fully depreciated by the date that the MSWLF stops accepting solid waste. Capital assets used for a single cell should be fully depreciated by the date that each cell is closed.

For MSWLFs that use governmental fund and account group accounting and reporting, the measurement and recognition of the accrued liability for MSWLF closure and postclosure care should be consistent with that for proprietary funds. The MSWLFs should recognize expenditures and fund liabilities using the modified accrual basis of accounting. The remainder of the liability should be reported in the general long-term debt account group.

State and local governments are required to disclose the nature and source of MSWLF closure and postclosure care requirements, the nature of closure and postclosure care estimates, the reported liability at the balance sheet date, the estimated total closure and postclosure care cost remaining to be recognized, the percentage of MSWLF capacity used to date, and the estimated remaining MSWLF life in years. Entities also are required to disclose how closure and postclosure care financial assurance requirements are being met.

The provisions of this Statement are effective for financial statements for periods beginning after June 15, 1993. Earlier application is encouraged.

Unless otherwise specified, pronouncements of the GASB apply to financial reports of all state and local governmental entities, including public benefit corporations and authorities, public employee retirement systems, governmental utilities, governmental hospitals and other healthcare providers, and governmental colleges and universities. Paragraph 3 discusses the applicability of this Statement.
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Accounting for Municipal
Solid Waste Landfill Closure
and Postclosure Care Costs

August 1993



Governmental Accounting Standards Board
of the Financial Accounting Foundation
401 Merritt 7, PO Box 5116, Norwalk, Connecticut 06856-5116

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August 1993

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Accounting for Municipal Solid Waste Landfill Closure and Postclosure Care Costs

August 1993

SCOPE AND INTRODUCTION

Scope of This Statement

1. This Statement establishes standards of accounting and financial reporting for municipal¹ solid waste landfill (MSWLF) closure and postclosure care costs that are required to be incurred by federal, state, or local laws or regulations.

MSWLF Operating Methods

2. MSWLFs are operated in a variety of ways. MSWLF operating methods are documented in operating, closure, and postclosure care plans filed with regulatory agencies. Many MSWLFs operate on a “cell” basis; that is, only a portion or “cell” of the landfill is used at a time. Certain materials and equipment used to contain the waste and monitor the environmental effect of landfill operations, such as liners and leachate collection systems, are installed before the cell is ready to receive waste in accordance with federal, state, or local requirements. Final cover is applied to each cell once it is filled to capacity. Other MSWLFs operate as one large cell. Monitoring and collection systems might be put into place only when the federal, state, or local law or regulation requiring these systems comes into effect. A final cover might not be applied until the entire landfill stops accepting solid waste.

¹The term *municipal* indicates the primary type of solid waste received by the landfill, not its ownership. The definition of municipal solid waste landfill may vary from state to state. A municipal solid waste landfill is defined by the U.S. Environmental Protection Agency (see paragraph 23) as a landfill unit that is:

a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined in this section. A MSWLF unit also may receive other types of RCRA [Resource Conservation and Recovery Act] Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, and industrial solid waste. (*Federal Register* [October 9, 1991], p. 51016)

The EPA rule applies to both *operators* and *owners* of MSWLFs.

STANDARDS OF GOVERNMENTAL ACCOUNTING AND FINANCIAL REPORTING

Applicability of This Statement

3. The provisions of this Statement apply to all state and local governmental entities, including public benefit corporations and authorities, governmental utilities, governmental hospitals and other healthcare providers, and governmental colleges and universities, that are required by federal, state, or local law or regulations to incur MSWLF closure and postclosure care costs.² The requirements apply regardless of the reporting model or fund type used to report MSWLF closure and postclosure care costs.

Definition of Estimated Total Current Cost of MSWLF Closure and Postclosure Care

4. MSWLF owners and operators are required to incur a variety of costs to provide for protection of the environment both during the period of landfill operation and during the postclosure period. These include the cost of equipment and facilities (such as leachate collection systems and final cover) as well as the cost of services (such as postclosure maintenance and monitoring costs). Certain of these costs, which result in disbursements near or after the date that the MSWLF stops accepting solid waste and during the postclosure period, should be included in the *estimated total current cost*³ of MSWLF closure and postclosure care, regardless of their capital or operating nature. The estimated total current cost of MSWLF closure and postclosure care, based on applicable federal, state, or local laws or regulations, should include:

- a. The cost of equipment expected to be installed and facilities expected to be constructed (based on the MSWLF operating plan) near or after the date that the MSWLF stops accepting solid waste and during the postclosure period. Equipment and facilities considered should be limited to items that, once installed or constructed, will be used exclusively for the MSWLF. This may include gas monitoring and collection systems, stormwater management systems, groundwater monitoring wells, and, in some cases, leachate treatment facilities. Equipment or facilities shared between MSWLFs should be assigned to each MSWLF based on the percentage of use by each.

²The term *costs* as used in this standard is intended to encompass amounts from both an economic and a financial resources perspective.

³Current cost is the amount that would be paid if all equipment, facilities, and services included in the estimate were acquired during the current period.

- b. The cost of final cover (capping) expected to be applied near or after the date that the MSWLF stops accepting solid waste.
 - c. The cost of monitoring and maintaining the expected usable MSWLF area⁴ during the postclosure period. Postclosure care may include maintaining the final cover; monitoring groundwater; monitoring or collecting methane and other gases; collecting, treating, and transporting leachate; repairing or replacing equipment and facilities; and remediating or containing environmental hazards.
5. The estimated total current cost of MSWLF closure and postclosure care should be based on applicable federal, state, or local laws or regulations concerning closure and postclosure care that have been *approved* as of the balance sheet date, regardless of their *effective date*.

Annual Reevaluation

6. After the initial calculation of estimated total current cost of MSWLF closure and postclosure care, current cost should be adjusted each year for the effects of inflation or deflation. In addition, current cost should be adjusted when changes in the closure or postclosure care plan or MSWLF operating conditions increase or decrease estimated costs. These changes may include the type of equipment, facilities, and services that will be used to perform closure and postclosure care, price increases or reductions beyond the general inflation or deflation rate for specific cost elements, changes in technology, changes in the expected usable landfill area, and changes in closure and postclosure legal or regulatory requirements.

⁴*Expected usable landfill area* is the total area expected to receive solid waste during the landfill operating life. In determining MSWLF expected usable area, consideration should be given to estimated total capacity, MSWLF permit periods, and the probability of permit renewals. The owner or operator should also give consideration to environmental factors that may require closure or a reduction of MSWLF space, such as the types of waste accepted at the site and geological factors.

Measurement and Recognition for MSWLFs Reported Using Proprietary Fund Accounting and Reporting

7. For MSWLFs reported using proprietary fund accounting and reporting, a portion of the estimated total current cost of MSWLF closure and postclosure care should be recognized as an expense and as a liability in each period that the MSWLF accepts solid waste. Recognition should begin on the date the MSWLF begins accepting solid waste, continue in each period that it accepts waste, and be completed by the time it stops accepting waste. Estimated total current cost should be assigned to periods based on MSWLF use (cubic yards, airspace, or other measure) rather than on the passage of time. Under this approach, the current-period amount should be based on this formula:

$$\frac{\text{Estimated total current cost} \times \text{Cumulative capacity used}}{\text{Total estimated capacity}} - \text{Amount previously recognized}$$

8. Equipment and facilities included in the estimated total current cost of closure and postclosure care should not be reported as capital assets. Equipment, facilities, services, and final cover included in the estimated total current cost should be reported as a reduction of the accrued liability for MSWLF closure and postclosure care when they are acquired.

9. Capital assets that will be used exclusively for a MSWLF and that are excluded from the calculation of the estimated total current cost of closure and postclosure care should be fully depreciated by the date that the MSWLF stops accepting solid waste. If capitalized, facilities and equipment installed or constructed for a single cell should be depreciated over the estimated useful life of that cell. If these capital assets are shared between MSWLFs, the portion assigned to each MSWLF should be fully depreciated by the date that each stops accepting solid waste.

Measurement and Recognition for MSWLFs Reported Using Governmental Fund and Account Group Accounting and Reporting

10. For MSWLFs reported using governmental fund and account group accounting and reporting, the measurement and recognition of the accrued liability for MSWLF closure and postclosure care should be consistent with paragraph 7 for proprietary funds. The MSWLF should recognize expenditures and fund liabilities using the modified accrual basis of accounting. The remainder of the liability should be reported in the general long-

term debt account group (GLTDAG). MSWLFs should report the total amount determined for the year in accordance with paragraph 7 through disclosure in the notes to financial statements or in parenthetical display on the operating statement as follows:

Expenditures:

Landfill closure and postclosure care [\$XX,XXX (total amount determined for the year under GASB Statement 18) less (plus) \$XXX change in GLTDAG liability]
\$XX,XXX

11. Equipment, facilities, services, and final cover included in the estimated total current cost of closure and postclosure care should be reported as a reduction of the reported liability for closure and postclosure care when they are acquired. In the operating statement, facilities and equipment acquisitions included in estimated total current cost should be reported as closure and postclosure care expenditures.

Measurement and Recognition for MSWLFs Reported by Governmental Colleges and Universities That Use the AICPA College Guide Model

12. MSWLFs owned or operated by governmental colleges and universities that report using the American Institute of Certified Public Accountants (AICPA) College Guide model⁵ should report that activity in an unrestricted current fund. The annual closure and postclosure care expenditure and related liability calculated in accordance with paragraphs 7 and 8 should also be reported in an unrestricted current fund.

Reporting Changes in Estimates

13. Using the formula in paragraph 7, the effect of any changes in the estimated total current cost of closure and postclosure care that occur before the MSWLF stops accepting solid waste is reported primarily in the period of change. However, the cost of changes in closure and postclosure care requirements that affect only horizontal expansions of the waste boundaries of existing MSWLFs should be recognized as capacity in those new areas is used.

14. Changes in the estimated total current cost of MSWLF closure and postclosure care may occur after the date that the landfill stops accepting solid waste. These changes may

⁵The AICPA College Guide model is defined in GASB Statement No. 15, *Governmental College and University Accounting and Financial Reporting Models*.

include increases or decreases in costs due to inflation or deflation, changes in technology, changes in closure and postclosure care requirements, corrections of errors in estimation, and changes in the extent of environmental remediation required. Changes in these estimates should be reported in the period in which the change is probable and reasonably estimable, subject to the modified accrual basis of accounting in governmental funds, as discussed in paragraph 10.

Accounting for Assets Placed in Trust—All Fund Types and Entities

15. MSWLF owners or operators may be required to provide financial assurances for closure, postclosure care, and remediation of each landfill by placing assets with a third-party trustee or in a surety standby trust.⁶ These amounts should be reported in the fund (for example, general, special revenue, or enterprise) used to report landfill operations and be identified by a description such as “amounts held by trustee.” Investment earnings on amounts set aside to finance closure and postclosure care should be reported as revenue, not as reductions of the estimated total current cost of MSWLF closure and postclosure care and related accrued liability.

Responsibility for MSWLF Closure and Postclosure Care Assumed by Another Entity

16. There may be circumstances under which a MSWLF owner or operator may transfer all or part of its responsibility for closure and postclosure care to another entity. For example, a private company may agree to provide closure and postclosure care as a part of its contract to operate a government-owned MSWLF. Owners or operators of MSWLFs should report a liability for closure and postclosure care costs whenever an obligation to bear these costs has been retained. However, because the governmental entity may be contingently liable under applicable federal, state, or local laws or regulations, it should also consider the financial capability or stability of any assuming entity to meet closure and postclosure care obligations when they are due. If it appears that the assuming entity will not be able to meet its obligations and it is probable that the MSWLF owner or operator will be required to pay closure and postclosure care costs, then the amount of the obligation should be reported in accordance with paragraph 7 for MSWLFs reported using

⁶The EPA rule requires owners and operators that use surety bonds to provide financial assurances for closure and postclosure care to establish a surety standby “trust” fund. The owners and operators are required to make deposits directly into this standby “trust” fund.

proprietary fund accounting and reporting, paragraph 10 for MSWLFs reported using governmental fund and account group accounting and reporting, or paragraph 12 for MSWLFs reported using the AICPA College Guide model.

Note Disclosures—All Fund Types and Entities

17. The notes to the financial statements should disclose:
 - a. The nature and source of landfill closure and postclosure care requirements (federal, state, or local laws or regulations).
 - b. That recognition of a liability for closure and postclosure care costs is based on landfill capacity used to date.
 - c. The reported liability for closure and postclosure care at the balance sheet date (if not apparent from the financial statements) and the estimated total current cost of closure and postclosure care remaining to be recognized.
 - d. The percentage of landfill capacity used to date and estimated remaining landfill life in years.
 - e. How closure and postclosure care financial assurance requirements, if any, are being met. Also, any assets restricted for payment of closure and postclosure care costs (if not apparent from the financial statements).
 - f. The nature of the estimates and the potential for changes due to inflation or deflation, technology, or applicable laws or regulations.

Landfills Reported as Component Units

18. Landfills may be reported as component units. The disclosures required by this Statement should distinguish between the primary government and its discretely presented component units, as discussed in GASB Statement No. 14, *The Financial Reporting Entity*, paragraph 63. Determining which landfill component unit disclosures are essential to fair presentation is a matter of professional judgment and should be done on a component unit-by-component unit basis.

EFFECTIVE DATE AND TRANSITION

19. The provisions of this Statement are effective for financial statements for periods beginning after June 15, 1993. Earlier application is encouraged.

Currently Operating MSWLFs

20. Accounting changes adopted to conform to the provisions of this Statement should be applied retroactively to currently operating MSWLFs. In the year that this Statement is first applied, entities with MSWLFs subject to federal, state, or local closure and postclosure care laws or regulations should recognize a liability (either in the fund or in the GLTDAG, depending on the fund type or group used for MSWLF reporting) for each landfill to the extent that the estimated total cost of closure and postclosure care not yet paid or accrued would have been recognized in prior periods based on MSWLF capacity used. That liability should be based on current cost and on applicable federal, state, or local laws or regulations approved as of that date (as discussed in footnote 3 and paragraph 5).

MSWLFs No Longer Accepting Solid Waste

21. Accounting changes adopted to conform to the provisions of this Statement also should be applied retroactively for MSWLFs that are no longer accepting solid waste. In the year that this Statement is first applied, entities with closed MSWLFs subject to federal, state, or local closure and postclosure care laws or regulations should recognize a liability (either in the fund or in the GLTDAG, depending on the fund type or group used for MSWLF reporting) equal to the estimated total current cost of closure and postclosure care that has not been paid or accrued at the balance sheet date for each closed MSWLF. That liability should be based on current cost and on applicable federal, state, or local laws or regulations approved as of that date (as discussed in footnote 3 and paragraph 5).

Restatement of Prior Periods

22. Adjustments resulting from a change to comply with this Statement should be treated as an adjustment of prior periods, and financial statements presented for the periods affected should be restated. If restatement of financial statements for prior periods presented is not practicable, the cumulative effect of applying this Statement, if any, should be reported as a restatement of beginning fund balance or retained earnings, as appropriate, for the earliest period restated. In the period that this Statement is first applied, the financial statements should disclose the nature of any restatement and its effect. Also, the reasons for not restating prior periods presented should be explained.

**The provisions of this Statement need
not be applied to immaterial items.**

*This Statement was adopted by unanimous vote of the five members of the
Governmental Accounting Standards Board:*

James F. Antonio, *Chairman*
Martin Ives, *Vice-Chairman*
Robert J. Freeman
Barbara A. Henderson
Edward M. Klasny

Appendix A

BACKGROUND INFORMATION

23. On October 9, 1991, the U.S. Environmental Protection Agency (EPA) issued its rule, “Solid Waste Disposal Facility Criteria” (40 *Code of Federal Regulations* [C.F.R.] Parts 257 and 258, referred to in this Statement as the “EPA rule”). This EPA rule establishes MSWLF closure requirements for all MSWLFs that accept solid waste after October 9, 1991. Location restrictions, operating criteria, design criteria, groundwater monitoring and corrective action requirements, postclosure care requirements, and financial assurance requirements apply to MSWLFs that receive solid waste after October 9, 1993. The effective dates of certain requirements are phased in.

24. The EPA estimates that there are nearly 6,000 solid waste landfills that accept municipal waste in the United States. Of these, approximately 80 percent are owned by state or local general-purpose or special-purpose governments.⁷ Certain costs of meeting the EPA rule and similar local or state laws or regulations will be paid during the operation of a MSWLF. However, some of the requirements for closure and postclosure care will result in disbursements after the MSWLF stops accepting solid waste. The EPA rule provides that when a MSWLF stops accepting waste, it is required to be covered to keep liquid away from the buried waste. Once the MSWLF is closed, the owners and operators are responsible for maintaining the final cover, monitoring groundwater and methane gas, and managing leachate (the liquid that passes through or emerges from solid waste) for thirty years.

25. State governments are primarily responsible for establishing state legislation and related permit programs to implement and enforce the EPA rule and have been given flexibility to tailor requirements to accommodate the wide variety of local conditions that exist. Many states already have laws or regulations in place that establish one or more operating, closure, postclosure monitoring, or financial assurance requirements. It is possible that individual state requirements will differ from the requirements set forth in the EPA rule. For example, state law may extend or reduce the thirty-year postclosure period because of site-specific conditions unique to that state. However, the EPA retains

⁷U.S. EPA proposed rule, “Solid Waste Disposal Facility Criteria,” 40 *C.F.R.* Parts 257 and 258, cited in *Federal Register* (August 30, 1988), p. 33318.

the authority to enforce its standards in a given state. In states that have not implemented the EPA rule, MSWLF owners and operators are responsible for implementing the rule under Section 4005 of the Federal Resource Conservation and Recovery Act of 1976.

26. Beginning in April 1994,⁸ states that have implemented the EPA rule will require MSWLF owners and operators to provide assurances that financial resources will be available to provide for closure, postclosure care, and remediation or containment of environmental hazards at each MSWLF. Financial assurances may take the form of third-party trusts, surety bonds, letters of credit, insurance, or state-sponsored plans. The EPA rule gives states the ability to institute other methods to provide these assurances. Regardless of the financial assurance method chosen, the EPA requires owners and operators to prepare detailed written estimates, in current dollars, of the “cost of hiring a third party to close the largest area of all MSWLF unit [*sic*] ever requiring a final cover” and of the cost of hiring a third party to conduct postclosure care over the entire postclosure period. The EPA estimates are required to be adjusted annually for the effects of inflation. In addition, MSWLF owners and operators are required to revise either estimate if changes in the closure or postclosure care plan or MSWLF unit conditions increase the maximum costs expected to be incurred. If a MSWLF is operated on a “cell” basis (see paragraph 2), the EPA closure estimate is based on the largest number of cells that the MSWLF expects to have open at one time. If the MSWLF is not operated on a cell basis, the EPA closure estimate is required to cover the area of the MSWLF used and in use that will require final cover. EPA postclosure estimates are based on the total number of cells or total area used and in use.

History of the Project

27. As part of the business-type activities project, the GASB staff prepared a report on solid waste activities owned by state and local governments and presented that report to the Board at its July 1991 meeting. A significant issue noted in that report was that of accounting and reporting for governments’ landfill closure and postclosure care costs. The report identified the current diversity in practice in reporting those costs. It concluded that this diversity may be caused, in part, by the uncertainty in the level of closure and postclosure care required by law, which at that time varied by state. When the EPA issued

⁸In May 1993, the EPA announced its intent to propose a one-year extension of the effective date of its financial assurance requirements from April 4, 1994 to April 4, 1995.

its rule in October 1991 requiring closure and postclosure care, this provided the Board with a clearer sense of the extent to which certain closure and postclosure care would be required. The Board formally added the project to its agenda at its November 1991 meeting, and at that time a fourteen-member task force was appointed to provide input to the Board and staff.

28. In June 1992, the Board issued its Exposure Draft (ED), *Accounting for Municipal Solid Waste Landfill Closure and Postclosure Care Costs*. The GASB received fifty-six comment letters on the ED and, in October 1992, held a public hearing at which representatives of five organizations testified. A majority of the respondents generally agreed with the underlying concept of the ED, that is, that all liabilities associated with a MSWLF's operations, including closure and postclosure care costs, should be recognized while the MSWLF is operating.

Appendix B

BASIS FOR CONCLUSIONS

Introduction

29. This appendix discusses factors considered significant by Board members in reaching the conclusions in this Statement. It includes discussion of the alternatives considered and the Board's reasons for accepting some and rejecting others. Individual Board members gave greater weight to some factors than to others.

Scope of the Project

30. The requirements of this Statement have been established in response to the 1991 EPA rule and similar state and local laws and regulations, which apply to municipal solid waste landfills. Accordingly, the scope of this Statement is limited to municipal solid waste landfills, as that term is defined by the EPA (see footnote 1) and similar state or local laws and regulations. The Board is aware that there are other types of landfills owned by state and local governments (such as sludge monofils or toxic waste landfills) that are covered by similar or more rigorous federal, state, or local laws or regulations. However, the Board's research at this time has been limited to MSWLFs to permit a standard to be issued before the EPA rule becomes effective.

Environmental Liabilities Created as a Result of Operations

31. The effect of the EPA rule and similar state or local laws or regulations is to obligate MSWLF owners and operators to perform certain closing functions and postclosure monitoring and maintenance functions as a condition for the right to *operate* the MSWLF in the current period. The Board believes that failure to recognize closure and postclosure care liabilities in periods of MSWLF operation understates liabilities while the MSWLF is operating.

32. The Board notes that the recognition of environmental liabilities required by this Statement is not without precedent. AICPA Accounting Research Study No. 11, *Financial Reporting in the Extractive Industries*, by Robert E. Field (1969), states:

The undertaking to restore or improve property upon completion of mining operations is an unavoidable cost of producing minerals. If matching is to be obtained, revenue should bear a ratable portion of these costs. . . .

Failure to record substantial accumulations of restoration costs to which the mining company is committed by its operations understates current expense and overstates expense of some future period when restoration must be made. . . . (p. 74)

That report recommends that “the estimated cost of restoring mined properties should be accrued ratably as minerals are produced” (p. 74, italics omitted).

33. A similar situation exists for utilities that operate nuclear power plants. Like MSWLFs, these utilities agree to be responsible for the future cost of decommissioning closed nuclear plants as a condition for receiving an operating permit. Utilities that operate these plants allocate this estimated cost to periods in which the plant is in use, either as a separate decommissioning charge or as a component of utility plant depreciation or amortization rates. Like the EPA, the Nuclear Regulatory Commission (NRC) requires nuclear plant owners to provide assurances that financial resources will be available to provide for decommissioning.⁹

34. FASB Concepts Statement No. 6, *Elements of Financial Statements*, discusses transactions or events that result in liabilities imposed by law or governmental units. Paragraph 210 notes that “. . . restoring the land after strip-mining the mineral deposit is a consequence of removing the ground cover or overburden and ore.” When restoration is required by law, strip-mining a particular property is the event that establishes an entity’s liability to restore the land. Finally, in June 1993 the Securities and Exchange Commission (SEC) recently issued its Staff Accounting Bulletin No. 92, in which the SEC staff noted that it would not object to SEC registrants’ accruing environmental exit costs (such as site restoration, postclosure care, and monitoring costs) over the operating life of an asset if those amounts are expected to be paid at the end of the useful life of the asset. The SEC staff notes that this is an established accounting practice in some industries and that in some circumstances the use of an asset in operations gives rise to growing exit costs that represent a probable liability.

⁹NRC final rule, “General Requirements for Decommissioning Nuclear Facilities,” 10 *C.F.R.* Part 50, cited in *Federal Register* (June 27, 1988), p. 24018.

35. When closure and postclosure care is required by law, the Board believes that operating a MSWLF is the event that establishes an entity's liability to cover and maintain the MSWLF after it stops accepting solid waste. A few ED respondents suggested that the liability for closure and postclosure care should be reported based on the hypothetical cost to close the MSWLF at each balance sheet date, and others suggested that as long as the liability is being funded in accordance with EPA requirements, only disclosure of the liability should be required. However, the majority of respondents agreed with this Statement's provision that a liability for closure and postclosure care costs should be recognized as MSWLF capacity is used. The provisions of this Statement presume that a MSWLF operation is a going concern, and liability recognition should be based on that assumption.

Definition of the Estimated Total Current Cost of Closure and Postclosure Care

36. Because MSWLFs operate in a variety of different ways, the timing of acquisition of underlying systems and application of final cover varies. To ensure that all costs are recognized by the closure date and that costs are reasonably assigned to the use of MSWLF capacity, the ED that preceded this Statement defined closure and postclosure care costs as *the cost of all equipment and facilities necessary to perform postclosure monitoring and care*. It included, in a single cost pool, costs for equipment and facilities acquired before or during operating periods that would normally be reported as capital assets, such as leachate collection equipment and leachate treatment facilities. Other costs, such as a liner for a single cell area, normally would be reported as current-period operating expenditures/expenses. A number of ED respondents disagreed with this proposed definition of closure and postclosure care costs. In general, they commented that certain of these costs are integral parts of the MSWLF's construction and operation, not of its closure and postclosure care.

37. Many respondents commented on the proposal in the ED to treat most MSWLF facilities and equipment acquisitions as reductions of the reported liability for closure and postclosure care costs, sometimes resulting in prepaid landfill closure and postclosure care costs. Some were particularly concerned about the potential for reporting a prepaid asset in the governmental funds, where capital assets are reported in the general fixed assets account group. Other respondents believed that certain costs should be treated as expenditures/expenses rather than being included in the single cost pool for closure and postclosure care. They argued that if cells are regularly opened and used over relatively

short time periods, certain costs, such as liners, leachate collection pipes, and final cover, should not be reported as part of a single cost pool. Still others argued that certain costs, such as initial site grading and stormwater management systems, are required to be incurred to obtain permission to *open* a MSWLF and therefore should not be considered components of closure and postclosure care costs.

38. The Board was persuaded by arguments against such a comprehensive definition of closure and postclosure care costs. Accordingly, it narrowed the definition of the estimated total current cost of closure and postclosure care to include only equipment, facilities, and services expected to result in disbursements near or after the date that the MSWLF stops accepting solid waste. Some respondents and task force members have indicated that all new MSWLFs will, for a variety of reasons, be run on a cell basis. By excluding cell costs and initial opening costs from the definition of closure and postclosure care costs, what remains to be accrued for MSWLFs operating on a cell basis are principally those costs that will result in (a) disbursements that are made near the date that the MSWLF stops accepting waste to close the *entire* MSWLF (versus a single cell) and (b) disbursements that occur after the MSWLF is closed (postclosure care costs). For MSWLFs that are not operated on a cell basis, the Board notes that preparers should be able to identify which cost elements meet the definition of the estimated total current cost of closure and postclosure care based on MSWLF operating, closure, and postclosure care plans filed with state regulatory agencies.

39. The Board is aware that the term *near* in its definition of estimated total closure and postclosure care costs will require the use of professional judgment in its application. However, the Board agreed that it did not wish to set a more precise standard, such as defining closure costs as those that result in disbursements one year before the date that the MSWLF stops accepting solid waste. It notes that a more precise standard would eliminate the MSWLF operator's ability to consider the substance of the MSWLF closure and postclosure care plan. The Board's intention in this standard is to allow preparers to include all costs in the accrual of closure care costs that, if treated differently, would result in significant increases or fluctuations in expenditures/expenses near the end of MSWLF life.

Focus on Liabilities Established by Force of Law or Regulation

40. This Statement requires measurement of the estimated total current cost of closure and postclosure care as required by federal, state, or local laws or regulations that have been approved as of the balance sheet date, regardless of the effective date of the laws or regulations. Closure and postclosure care requirements (and their related costs) have the potential to vary from jurisdiction to jurisdiction. This Statement is written from the standpoint of the EPA rule. However, financial statement preparers will need to consider which, if any, laws or regulations apply. For example, the EPA rule provides that small MSWLFs may be exempt from certain requirements when rainfall at a site is within certain limits. The rule also provides that states may modify (with EPA approval) the requirements in certain circumstances in their permit programs. Because the obligations for closure and postclosure care are established by law or regulation, the Board believes that they should be based on only the laws and regulations that apply in each specific situation.

Measurement Based on Current Cost

41. Inflation and deflation, changes in technology, and changes in applicable laws or regulations clearly are important factors in measuring MSWLF closure and postclosure care costs. For example, for a new MSWLF with an estimated useful life of sixty years, the ultimate amount to be paid for postclosure care includes amounts for procedures that will only begin to be performed at the end of those sixty years and may extend an additional thirty years.

42. Before issuing the ED, the Board considered the use of discounting in determining estimated total cost and concluded that it should not be used. Some ED respondents suggested that discounting should be permitted, although not required. However, Board members confirmed their initial support for the use of current cost rather than discounting. For example, Board members note that, by basing the initial estimate on current cost and increasing each year's estimate for the effect of inflation, the annual charge is effectively being discounted at the inflation rate. Some Board members believe that discounting at a rate greater than the inflation rate, such as the entity's borrowing rate, would result in a disproportionately low allocation to earlier periods of MSWLF life.

43. The Board also considered other alternatives to requiring current cost recognition, such as permitting recognition of an amount that is needed to *fund* the future acquisition of these assets and services or leaving the basis of the estimate unspecified. Again, a few respondents suggested that discounting would be appropriate if closure and postclosure care liabilities are funded. Many owners and operators are or will be required by federal, state, or local laws or regulations to establish some form of financial assurance trust for MSWLF closure and postclosure care. However, the Board notes that how an entity chooses to *finance* its MSWLF obligations does not change the ultimate amount that will be paid to perform postclosure care. The Board recognizes that the current cost estimate at the date a MSWLF stops accepting solid waste is not likely to be the ultimate amount paid, for example, because of inflation during the postclosure period. However, the disclosures required by paragraph 17 are intended to show how resources are being put aside to finance these obligations and to inform financial statement users that the effects of inflation, changes in technology, and other factors may be financed by future MSWLF users and taxpayers.

44. Another consideration in choosing current cost is the fact that the EPA rule also requires closure and postclosure care cost estimates to be based on current cost, adjusted each period for the effects of inflation, for purposes of establishing financial assurances for those costs. However, the EPA estimate is different from the estimate required for purposes of this Statement. For closure cost purposes, the EPA amount is based on the largest number of cells expected to be open at one time. The EPA estimate of postclosure care cost is required to be based on MSWLF area used to date. (The estimates required by this Statement are for the expected *usable* MSWLF area.) In addition, both EPA estimates are based on the current cost of hiring a *third party* to perform the services, which may be different from the plans of the MSWLF owner or operator. Although the EPA current cost amounts will be different from those required by this Statement, owners and operators may choose to use those estimates as a starting point for calculating the estimated total current cost of closure and postclosure care.

Annual Reevaluation Requirements

45. This Statement requires annual reevaluation of the estimated total current cost of closure and postclosure care. Some ED respondents were concerned that the provisions of the ED would have required a complete annual reevaluation and questioned the cost-benefit of such a requirement. They noted that the EPA annual reevaluation requires only

that the initial estimate be updated for the effects of inflation, absent other changes in the closure or postclosure care plan or MSWLF operating conditions that indicate a change. The Board modified the requirements of paragraph 6 of this Statement to make it more consistent with the EPA requirement. However, the Board notes that in either case, the annual reevaluation is not cursory and should give consideration to each of the factors discussed in paragraph 6.

Measurement Method

46. Paragraphs 7, 10, and 12 require MSWLFs to measure the accrued liability for closure and postclosure care using a formula that assigns that liability to periods based on cumulative MSWLF use. The ED provided that *a systematic and rational method* should be used to recognize closure and postclosure care costs over the periods in which the MSWLF accepts solid waste. However, an appendix to the ED illustrated the percentage-of-completion method of recognizing costs. Some ED respondents commented that either the recognition method should be limited to that method or other methods should be illustrated. Others suggested that the number of acceptable methods should be limited to two or three. Still others suggested limiting the method to the percentage-of-completion method only.

47. The approach required by this Statement is the same as the percentage-of-completion method illustrated in the ED. (Because the “percentage-of-completion” label is most often used in generally accepted accounting principles for revenue recognition, this label is not used to identify the approach required by the final Statement.) The approach recognizes the effect of a current change in estimated costs over the entire MSWLF life, with the effect on current and past periods reported as a cumulative amount in the current period. Based on the conclusions reached on reporting the effect of changes in estimates (see paragraphs 52 and 53, below), the Board believes the approach best implements those conclusions.

Reporting Differences Based on Fund Types

48. This Statement requires MSWLF activities reported using proprietary fund accounting and reporting to recognize a portion of the estimated total current cost of closure and postclosure care in each period that the MSWLF accepts solid waste. This requirement is consistent with the economic flows measurement focus and accrual basis of

accounting used in those activities. For this reason, the Board believes that the accounting for MSWLFs is best achieved using proprietary fund accounting and financial reporting. However, the Board recognizes that there may be situations in which MSWLF activities are more appropriately reported in governmental funds and account groups, such as when MSWLF costs are financed through property taxes or other nonexchange revenues.

49. The method of accounting for MSWLF closure and postclosure care costs necessarily depends on the basis of accounting of the fund in which the MSWLF activities are reported. NCGA Statement 1, *Governmental Accounting and Financial Reporting Principles*, paragraph 70, provides that “the measurement focus of governmental fund accounting is upon *expenditures*—decreases in net financial resources—rather than expenses.” Recognition of expenditures, such as claims and judgments, pensions, and compensated absences, is “subject to the accounting and financial reporting distinctions of governmental funds . . .” (NCGA Statement 4, *Accounting and Financial Reporting Principles for Claims and Judgments and Compensated Absences*, paragraph 14). That is, these costs are *measured* on an accrual basis but are *reported* as expenditures only to the extent that they normally would be liquidated with expendable available financial resources (the “current” portion). The noncurrent portion is required to be reported in the GLTDAG. For MSWLFs reported using governmental funds, this Statement also requires measurement using the modified accrual basis of accounting in the same way that other long-term transactions, such as claims and judgments, are presently reported.

Application to Governmental Colleges and Universities

50. GASB Statement No. 15, *Governmental College and University Accounting and Financial Reporting Models*, provides that one of the financial reporting models that may be used by governmental colleges and universities is the AICPA College Guide model. The Board agreed that this Statement should provide guidance for reporting MSWLFs on applying this standard within that model (paragraph 12).

Recognition and Measurement Based on MSWLF Use

51. This Statement requires that liabilities for closure and postclosure care costs be measured based on MSWLF use, and not on the passage of time. The Board notes that in some cases measurement based on the passage of time (for example, recognition that assumes that a MSWLF has a forty-year life) might approximate measurement based on

use. However, the Board believes that this method should not be used because it is not as adaptable to changes in the operating environment—for example, when there is an unexpected increase in population (and therefore increased demand for MSWLF space). In this case, there could be a significant reduction in the number of years a MSWLF will be used, although its capacity will not have changed. When all capacity has been used, the entire liability for closure and postclosure care costs should have been recognized, regardless of whether this happens in ten years or forty years.

Reporting Changes in Estimates

52. Although the ED provided broad guidelines for accounting for changes in estimates by permitting the use of various allocation methods depending on circumstances encountered by each entity, a number of respondents requested specific guidance. Some noted that APB Opinion No. 20, *Accounting Changes*, paragraph 31, requires the effect of a change in accounting estimate to be accounted for in “(a) the period of change if the change affects that period only or (b) the period of change and future periods if the change affects both.” Others noted that in situations in which there is no issue of *whether* future costs are realizable, it is preferable to include changes in estimates in future periods rather than currently so that operators will be able to adjust future revenues (tip fees) accordingly.

53. The Board concluded that because a portion of the changes in estimates, including those resulting from changes in applicable laws, are the result of past operations (capacity used), the cumulative effect of changes related to current and past operations should be reported in the period of the change. Based on the provisions of Opinion 20, the Board concluded that prior periods should not be restated. This reporting is accomplished by the formula set forth in paragraph 7. Although the Board recognizes that MSWLFs may need to provide for changes in costs in *future* rates, it notes that this Statement addresses the accounting for MSWLF closure and postclosure care costs, not their funding.

Other Recognition Requirements

54. Paragraph 9 of this Statement requires that installed or constructed capital assets used exclusively for a MSWLF and reported in proprietary funds should be fully depreciated by the date that the MSWLF stops accepting waste. In addition, capitalized equipment and facilities installed or constructed for a single cell are required to be

depreciated over the life of that cell. The Board believes that these requirements are consistent with the proposed provisions of the ED, which would have required that all closure and postclosure care costs, including the cost of these assets, be recognized by the date that the MSWLF stops accepting solid waste.

Responsibility for Closure and Postclosure Care Costs

55. Several ED respondents asked the Board for guidance on accounting and reporting when a liability for closure and postclosure care is assumed by another entity. This guidance is provided in paragraph 16. As with many liabilities, it is sometimes difficult to determine when risk has been transferred to another entity, and transfer may not be absolute. The EPA rule applies to both MSWLF owners and operators and does not distinguish between either in any of its provisions. The application of paragraph 16 will require the use of professional judgment.

Effective Date and Transition

56. The requirements of this Statement are effective for financial statements for periods beginning after June 15, 1993. The Board believes that this effective date is consistent with, among others, the provisions of paragraph 5, which requires that liabilities for closure and postclosure care costs should be based on laws and regulations approved as of the balance sheet date, regardless of their effective date. The related EPA rule was approved and issued in October 1991. Because many MSWLFs are already undergoing engineering studies to determine compliance and the estimated cost of compliance for the October 1993 EPA date (see paragraph 23), the Board believes that the information needed to estimate the current cost of closure and postclosure care will generally be available for financial statements for periods beginning after June 15, 1993. In addition, the Board notes that, beginning in April 1994, MSWLF owners and operators will be required to make estimates of closure and postclosure care costs for financial assurance purposes. Much of the data needed to meet the requirements of the EPA rule can be used to make the estimates required under this Statement. Although the Board notes that the EPA is considering plans to extend that date by one year (see footnote 8), related state laws requiring that calculation already are in place.

57. This Statement is required to be applied retroactively. One of the primary focuses of this Statement is the recognition of closure and postclosure care liabilities based on

MSWLF use. The Board believes it would be inappropriate to permit forward or future recognition of closure and postclosure care liabilities resulting from MSWLF use in prior periods because it would distort future periods.

Relationship to Funding or Financing

58. This Statement establishes requirements for the *accounting recognition* of the cost of landfill closure and postclosure care. The retroactive transition provisions of this Statement are not intended to require governments to finance this cost during the remaining MSWLF life or during any other period. The Board notes that an entity can recover closure and postclosure care costs in any way it chooses within the dictates of local law and public policy. For this reason, the Board did not provide special provisions in response to ED respondent concerns that would have provided for different accounting and reporting when long-term debt or other financing mechanisms are put in place to finance closure and postclosure care costs.

Appendix C

ILLUSTRATIVE CALCULATION OF ESTIMATED TOTAL CURRENT COST OF MSWLF CLOSURE AND POSTCLOSURE CARE AND CURRENT-PERIOD EXPENSE AND LIABILITY AMOUNTS

59. This appendix illustrates the calculation of estimated total current cost of closure and postclosure care for two sample MSWLFs. A calculation of this type is required by paragraphs 7, 10, and 12 of this Statement. The facts assumed are illustrative only and are not intended to modify or limit the requirements of this Statement or to indicate that the Board endorses the policies or practices shown. Applying this Statement may require consideration of estimated cost components other than those shown here.

Illustration 1—ABC Landfill, a New Landfill

Assumptions Based on Landfill Operating Plan

According to its operating plan filed with the state, ABC Landfill will open in 1994 and will operate on a cell basis, opening one cell at a time and installing liners and leachate collection systems before the cell receives any waste. Construction on new cells will begin before older cells reach capacity. When a cell reaches capacity, gas collection wells will be installed, and final cover, including vegetative cover, will be put in place. Water monitoring wells, erosion control systems, and a leachate treatment plant will be constructed during the first and second years of landfill operations.

Other Assumptions

- Landfill construction begins in 1993; opens January 1, 1994.
- Projected landfill life in years—33.
- The landfill will be operated on a cell basis.
- Total landfill area—150 acres.
- Initial expected usable landfill area—100 acres/33 cells.
- Initial estimated capacity based on expected usable landfill area¹⁰—4.5 million cubic yards (capacity per cell = 136,364 cubic yards).

¹⁰See footnote 4.

- Landfill usage:

<u>Year</u>	<u>Cubic Yards</u>
1994	90,000
1995	120,000
1996	135,000

- The postclosure monitoring period required by current state law is thirty years after the entire landfill receives final cover.
- In 1995, the entity opened an area of the landfill that was determined to be unusable because of its location on unstable sediment. For this reason, estimated capacity and expected usable landfill area were reduced by approximately 5 percent to 4,275,000 cubic yards and 31 cells, as of December 31, 1995. (This reduction also affects expected leachate output from the landfill.)
- Estimates are based on current costs in 1994, adjusted using the state-provided inflation rate of 1.5 percent in 1995 and 1.85 percent in 1996.

Estimated Total Current Cost of Closure and Postclosure Care—1994

1. Equipment and Facilities Cost	
Near date landfill stops accepting waste	\$ 0
During closure/postclosure	
Maintenance and upgrading of on-site leachate treatment facility (costs projected to be paid principally in 2025)	375,000
Expected renewals and replacements of stormwater and erosion control facilities (\$50,000 per year)	1,500,000
Monitoring well replacements (30 at \$25,000 each)	750,000
2. Final Cover Cost	0
(Final cover, including vegetative cover installed as cells are filled)	
3. Postclosure Care Cost	
Inspection and maintenance of final cover (\$75,000 per year)	2,250,000
Groundwater monitoring (\$100,000 per year)	3,000,000
Gas monitoring (\$5,000 per year)	150,000
On-site leachate pretreatment cost and off-site treatment (30,000,000 gallons total × \$.05 per gallon)	1,500,000
Projected remediation cost based on statistical average at similarly sited landfills	<u>250,000</u>
Total estimated current cost of closure and postclosure care	<u>\$9,775,000</u>

Estimated Total Current Cost of Closure and Postclosure Care—1995

1. Equipment and Facilities Cost	
Near date landfill stops accepting waste	\$ 0
During closure/postclosure	
Maintenance and upgrading of on-site leachate treatment facility (costs projected to be paid principally in 2025)	380,625
Expected renewals and replacements of stormwater and erosion control facilities (\$50,750 per year)	1,522,500
Monitoring well replacements (30 at \$25,375 each)	761,250
2. Final Cover Cost	0
(Final cover, including vegetative cover installed as cells are filled)	
3. Postclosure Care Cost	
Inspection and maintenance of final cover (\$76,125 per year)	2,283,750
Groundwater monitoring (\$101,500 per year)	3,045,000
Gas monitoring (\$5,075 per year)	152,250
On-site leachate pretreatment cost and off-site treatment (28,500,000 gallons total × \$.05075 per gallon)	1,446,375
Projected remediation cost based on statistical average at similarly sited landfills	<u>253,750</u>
Total estimated current cost of closure and postclosure care	<u>\$9,845,500</u>

Estimated Total Current Cost of Closure and Postclosure Care—1996

1. Equipment and Facilities Cost	
Near date landfill stops accepting waste	\$ 0
During closure/postclosure	
Maintenance and upgrading of on-site leachate treatment facility (costs projected to be paid principally in 2025)	387,667
Expected renewals and replacements of stormwater and erosion control facilities (\$51,689 per year)	1,550,670
Monitoring well replacements (30 at \$25,844 each)	775,320
2. Final Cover Cost	0
(Final cover, including vegetative cover installed as cells are filled)	

3. Postclosure Care Cost

Inspection and maintenance of final cover (\$77,533 per year)	2,325,990
Groundwater monitoring (\$103,378 per year)	3,101,340
Gas monitoring (\$5,169 per year)	155,070
On-site leachate pretreatment cost and off-site treatment (28,500,000 gallons total × \$.05169 per gallon)	1,473,165
Projected remediation cost based on statistical average at similarly sited landfills	<u>258,444</u>
Total estimated current cost of closure and postclosure care	<u>\$10,027,666</u>

Calculation of Accrued Liability and Annual Expense Amounts

Paragraph 7 of this Statement provides that, for landfills reported using proprietary fund accounting and reporting, a portion of the estimated total current cost of MSWLF closure and postclosure care, as defined in paragraph 4, should be recognized as an expense¹¹ and as a liability in each period that the landfill accepts solid waste. Recognition should be based on the formula provided in paragraph 7:

$$\frac{\text{Estimated total current cost} \times \text{Cumulative capacity used}}{\text{Total estimated capacity}} - \text{Amount previously recognized}$$

1994

ABC Landfill's current-period expense for closure and postclosure care is \$195,500:

$$\frac{\$9,775,000 \times 90,000}{4,500,000} = \$195,500$$

Because this is the first year of landfill operations, no amount has been recognized previously, and the accrued liability for closure and postclosure care costs is \$195,500.

1995

ABC Landfill's current-period expense for closure and postclosure care is \$288,139:

$$\frac{\$9,845,500 \times 210,000}{4,275,000} - \$195,500 = \$288,139$$

¹¹The *expenditure* amount for landfills reported using governmental funds is based on the same annual calculation, subject to the modified accrual basis of accounting, as discussed in paragraph 10.

The accrued liability for landfill closure and postclosure care cost at year-end is \$483,639.

1996

ABC Landfill's current-period expense for closure and postclosure care is \$325,611:

$$\frac{\$10,027,666 \times 345,000}{4,275,000} - \$483,639 = \$325,611$$

The accrued liability for landfill closure and postclosure care cost at year-end is \$809,250.

Illustration 2—XYZ Landfill Authority, an Older Landfill with a Horizontal Expansion

Assumptions Based on Landfill Operating Plan

The XYZ Landfill Authority began operations in 1971. According to its revised operating plan filed with the state, XYZ is required by new state and federal regulations to install liner and leachate systems in landfill cells opened after 1993. An intermediate cover has been applied to cells already filled. All cells, regardless of their age, will be required to receive final cover in conformity with the specifications of the current state law. Leachate collection and treatment will be required for only new cells (horizontal expansions) opened after 1993. Accordingly, XYZ plans to install liners and leachate collection systems as new cells are opened. An on-site leachate treatment plant will be constructed during 1998. Final cover application for the entire landfill will begin during the last year that the landfill is expected to receive solid waste. Gas monitoring and venting systems will be installed during that time as well. XYZ will apply this Statement for the first time in calendar year 1994.

Other Assumptions

- The landfill currently is expected to stop accepting waste in December 2000.
- Projected remaining landfill life in years—seven.
- The remaining landfill area will be filled in three cells, the first of which is opened on January 1, 1994.
- Initial estimated capacity based on expected usable landfill area—4.5 million cubic yards. Remaining capacity at December 31, 1993 is 1.5 million cubic yards.

- Landfill usage:

<u>Year</u>	<u>Cubic Yards</u>
1994	190,000
1995	200,000
1996	212,000

- The postclosure monitoring period required by current state law is thirty years after the entire landfill receives final cover.
- Estimates are based on current costs in 1994. XYZ Landfill adjusts the 1994 amount by using a weighted average of the stage of processing and construction materials U.S. producer price indexes, which resulted in inflation rates of 1.5 percent in 1995 and 1.85 percent in 1996.
- A separate estimate is prepared for closure and postclosure care costs that apply only to cells opened after 1993.
- In 1996, the State Department of Environmental Protection advised XYZ Landfill that the final cover material considered in its closure plan is inadequate. The final cover, including the alternative material, would cost \$3,700,000 if purchased in 1996.

Estimated Total Current Cost of Closure and Postclosure Care Applicable to Entire Landfill—1994

1. Equipment and Facilities Cost

Near date landfill stops accepting waste	
Installation of gas monitoring and venting systems	\$ 825,000
During closure/postclosure	
Expected renewals and replacements of stormwater and erosion control facilities (\$50,000 per year)	1,500,000
Replacements of monitoring wells (10 at \$25,000 each)	250,000

2. Final Cover Cost 3,300,000

(Final cover material and labor, including vegetative cover)

3. Postclosure Care Cost

Inspection and maintenance of final cover (\$75,000 per year)	2,250,000
Groundwater monitoring (\$100,000 per year)	3,000,000
Gas monitoring (\$5,000 per year)	150,000
Projected remediation cost based on statistical average at similarly sited, partially unlined landfills	<u>500,000</u>
Estimated current cost of closure and postclosure care applicable to entire landfill	<u>\$11,775,000</u>

Estimated Total Current Cost of Closure and Postclosure Care Applicable to New Cells—1994

1. Equipment and Facilities Cost	
Near date landfill stops accepting waste	
Construction of on-site leachate treatment facility	\$ 500,000
2. Postclosure Care Cost	
On-site leachate pretreatment cost and off-site treatment (11,250,000 gallons total × \$.05 per gallon)	<u>562,500</u>
Estimated current cost of closure and postclosure care applicable only to new cells	<u>\$1,062,500</u>

Estimated Total Current Cost of Closure and Postclosure Care Applicable to Entire Landfill—1995

1. Equipment and Facilities Cost	
Near date landfill stops accepting waste	
Installation of gas monitoring and venting systems	\$ 837,375
During closure/postclosure	
Expected renewals and replacements of stormwater and erosion control facilities (\$50,750 per year)	1,522,500
Replacements of monitoring wells (10 at \$25,375 each)	253,750
2. Final Cover Cost	3,349,500
(Final cover material and labor, including vegetative cover)	
3. Postclosure Care Cost	
Inspection and maintenance of final cover (\$76,125 per year)	2,283,750
Groundwater monitoring (\$101,500 per year)	3,045,000
Gas monitoring (\$5,075 per year)	152,250
Projected remediation cost based on statistical average at similarly sited, partially unlined landfills	<u>507,500</u>
Estimated current cost of closure and postclosure care applicable to entire landfill	<u>\$11,951,625</u>

Estimated Total Current Cost of Closure and Postclosure Care Applicable to New Cells—1995

1. Equipment and Facilities Cost	
Near date landfill stops accepting waste	
Construction of on-site leachate treatment facility	\$ 507,500
2. Postclosure Care Cost	
On-site leachate pretreatment cost and off-site treatment (11,250,000 gallons total × \$.05075 per gallon)	<u>570,938</u>
Estimated current cost of closure and postclosure care applicable only to new cells	<u>\$1,078,438</u>

Estimated Total Current Cost of Closure and Postclosure Care Applicable to Entire Landfill—1996

1. Equipment and Facilities Cost	
Near date landfill stops accepting waste	
Installation of gas monitoring and venting systems	\$ 852,866
During closure/postclosure	
Expected renewals and replacements of stormwater and erosion control facilities (\$51,689 per year)	1,550,670
Replacements of monitoring wells (10 at \$25,844 each)	258,440
2. Final Cover Cost	3,700,000
(Revised final cover material and labor, including vegetative cover)	
3. Postclosure Care Cost	
Inspection and maintenance of final cover (\$77,533 per year)	2,325,990
Groundwater monitoring (\$103,378 per year)	3,101,340
Gas monitoring (\$5,169 per year)	155,070
Projected remediation cost based on statistical average at similarly sited partially unlined landfills	<u>516,889</u>
Estimated current cost of closure and postclosure care applicable to entire landfill	<u>\$12,461,265</u>

Estimated Total Current Cost of Closure and Postclosure Care Applicable to New Cells—1996

1. Equipment and Facilities Cost	
Near date landfill stops accepting waste:	
Construction of on-site leachate treatment facility	\$ 516,889
2. Postclosure Care Cost	
On-site leachate pretreatment cost and off-site treatment (11,250,000 gallons total × \$.05169 per gallon)	<u>581,513</u>
Estimated current cost of closure and postclosure care applicable only to new cells	<u>\$1,098,402</u>

Calculation of Accrued Liability and Annual Expense Amounts

Paragraph 7 of this Statement provides that, for landfills reported using proprietary fund accounting and reporting, a portion of the estimated total current cost of MSWLF closure and postclosure care, as defined in paragraph 4, should be recognized as an expense¹² and as a liability in each period that the landfill accepts solid waste. Recognition should be based on the formula provided in paragraph 7:

$$\frac{\text{Estimated total current cost} \times \text{Cumulative capacity used}}{\text{Total estimated capacity}} - \text{Amount previously recognized}$$

Paragraph 13 provides that the cost of changes in closure and postclosure care requirements that affect only horizontal (lateral) expansions of waste boundaries of an existing MSWLF should be recognized as capacity in new cells is used.

1994

XYZ Landfill Authority's accrued liability for closure and postclosure care cost at December 31, 1994 is \$8,481,750, consisting of two components.

Costs applicable to the entire MSWLF site:

$$\frac{\$11,775,000 \times 3,190,000}{4,500,000} = \$8,347,167$$

Costs applicable to new cells:

$$\frac{\$1,062,500 \times 190,000}{1,500,000} = \$134,583$$

The amount resulting from prior-period operations is \$7,850,000 based on 3 million cubic yards of capacity used before January 1, 1994. Because this is the first year that XYZ Landfill reports a liability for closure and postclosure care costs, this amount is reported as a change in accounting principle as an adjustment of beginning retained earnings for landfill operations reported using proprietary fund accounting and reporting. (None of the costs included in the estimated total cost of closure and postclosure care had

¹²The *expenditure* amount for landfills reported using governmental funds is based on the same annual calculation, subject to the modified accrual basis of accounting, as discussed in paragraph 10.

been paid or accrued at the transition date.) The current-period expense amount, based on 190,000 cubic yards current-year usage, is \$631,750.

1995

XYZ Landfill Authority's current-period expense for closure and postclosure care is \$802,202, consisting of two components.

Costs applicable to the entire MSWLF site:

$$\frac{\$11,951,625 \times 3,390,000}{4,500,000} - \$8,347,167 = \$656,391$$

Costs applicable to new cells:

$$\frac{\$1,078,438 \times 390,000}{1,500,000} - \$134,583 = \$145,811$$

The accrued liability for landfill closure and postclosure care costs at year-end is \$9,283,952.

1996

XYZ Landfill Authority's current-period expense for closure and postclosure care is \$1,131,423, consisting of two components.

Costs applicable to the entire MSWLF site:

$$\frac{\$12,461,265 \times 3,602,000}{4,500,000} - \$9,003,558 = \$970,992$$

Costs applicable to new cells:

$$\frac{\$1,098,402 \times 602,000}{1,500,000} - \$280,394 = \$160,431$$

The accrued liability for landfill closure and postclosure care cost at year-end is \$10,415,375.

Appendix D

ILLUSTRATIVE NOTE DISCLOSURE

60. This appendix illustrates the note disclosures required by paragraph 17 of this Statement. The illustration is based on the amounts calculated in Appendix C, Illustration 2. The facts assumed are illustrative only and are not intended to modify or limit the requirements of this Statement or to indicate that the Board endorses the policies or practices shown. Applying the provisions of this Statement may require disclosures and formats other than those shown here.

Illustration

Based on Appendix C, Illustration 2, the XYZ Landfill Authority (reported in an enterprise fund) would make this disclosure in the notes to its December 31, 1996 financial statements:

Note X: Closure and Postclosure Care Cost

State and federal laws and regulations require the Authority to place a final cover on its Mill Street landfill site when it stops accepting waste and to perform certain maintenance and monitoring functions at the site for thirty years after closure. Although closure and postclosure care costs will be paid only near or after the date that the landfill stops accepting waste, the Authority reports a portion of these closure and postclosure care costs as an operating expense in each period based on landfill capacity used as of each balance sheet date. The \$10.4 million reported as landfill closure and postclosure care liability at December 31, 1996, represents the cumulative amount reported to date based on the use of 80 percent of the estimated capacity of the landfill. The Authority will recognize the remaining estimated cost of closure and postclosure care of \$3.1 million as the remaining estimated capacity is filled. These amounts are based on what it would cost to perform all closure and postclosure care in 1996. The Authority expects to close the landfill in the year 2000. Actual cost may be higher due to inflation, changes in technology, or changes in regulations.

The Authority is required by state and federal laws and regulations to make annual contributions to a trust to finance closure and postclosure care. The Authority is in compliance with these requirements, and, at December 31, 1996, investments of

\$7,800,000 (\$7,900,000 market value) are held for these purposes. These are reported as restricted assets on the balance sheet. The Authority expects that future inflation costs will be paid from interest earnings on these annual contributions. However, if interest earnings are inadequate or additional postclosure care requirements are determined (due to changes in technology or applicable laws or regulations, for example), these costs may need to be covered by charges to future landfill users or from future tax revenue.

Appendix E

CODIFICATION INSTRUCTIONS

61. The sections that follow update the June 30, 1993 *Codification of Governmental Accounting and Financial Reporting Standards* for the effects of this Statement. Only the paragraph number of this Statement is listed if the paragraph will be cited in full in the Codification.

* * *

LONG-TERM LIABILITIES

SECTION 1500

.102 [Revise first sentence as follows:] Bonds, notes, and other long-term liabilities (for example, for capital and operating leases, pensions, claims and judgments, compensated absences, special termination benefits, landfill closure and postclosure care, and similar commitments) directly related to and expected to be paid from proprietary funds and similar trust funds should be included in the accounts of such funds. [Footnote reference omitted.] [NCGAS 1, ¶42, as amended by NCGAS 4, ¶17 and ¶26, NCGAI 8, ¶9 and ¶11, GASBS 6, ¶23, GASBS 13, ¶17, and GASBS 18, ¶7]

.103 [Revise last sentence as follows:] General long-term debt is not limited to liabilities arising from debt issuances *per se*, but may also include noncurrent liabilities on capital and operating leases, compensated absences, claims and judgments, pensions, special termination benefits, landfill closure and postclosure care, and similar commitments that are not current liabilities properly recorded in governmental funds. [NCGAS 1, ¶43, as amended by NCGAS 4, ¶17 and ¶26, NCGAI 8, ¶9 and ¶11, GASBS 6, ¶17, GASBS 13, ¶9, GASBS 18, ¶10, and GASBI 1, ¶10]

[Add a new paragraph .124 as follows:]

Landfill Closure and Postclosure Care Liabilities

.124 Section L10, “Landfill Closure and Postclosure Care Costs,” discusses accounting and financial reporting for municipal solid waste landfill closure and postclosure care costs and related liabilities.

* * *

BASIS OF ACCOUNTING

SECTION 1600

[Add a new paragraph .121 as follows, renumbering the remaining paragraphs:]

.121 *Landfill Closure and Postclosure Care.* Accounting and financial reporting for municipal solid waste landfill closure and postclosure care costs is discussed in Section L10, “Landfill Closure and Postclosure Care Costs.”

* * *

NOTES TO FINANCIAL STATEMENTS

SECTION 2300

[Revise current Codification paragraph .107 by adding a new subparagraph z at the end of the paragraph:]

z. Landfill closure and postclosure care. (See Section L10, “Landfill Closure and Postclosure Care Costs,” paragraphs .116-.117.)

* * *

[Add a new section as follows:]

LANDFILL CLOSURE AND POSTCLOSURE CARE COSTS

SECTION L10

Source: GASB Statement 18

Scope of This Section

.101 This section establishes standards of accounting and financial reporting for municipal¹ solid waste landfill (MSWLF) closure and postclosure care costs² that are

¹[GASBS 18, fn1]

²[GASBS 18, fn2]

required to be incurred by federal, state, or local laws or regulations. The provisions of this section apply to all state and local governmental entities, including public benefit corporations and authorities, governmental utilities, governmental hospitals and other healthcare providers, and governmental colleges and universities. The requirements apply regardless of the reporting model or fund type used to report MSWLF closure and postclosure care costs. [GASBS 18, ¶1 and ¶3]

MSWLF Operating Methods

.102 [GASBS 18, ¶2]

Accounting and Financial Reporting Requirements

Definition of Estimated Total Current Cost of MSWLF Closure and Postclosure Care

.103–.105 [GASBS 18, ¶4–¶6]

Measurement and Recognition for MSWLFs Reported Using Proprietary Fund Accounting and Reporting

.106–.108 [GASBS 18, ¶7–¶9] [Change cross-reference.]

Measurement and Recognition for MSWLFs Reported Using Governmental Fund and Account Group Accounting and Reporting

.109–.110 [GASBS 18, ¶10–¶11] [Change cross-reference.]

Measurement and Recognition for MSWLFs Reported by Governmental Colleges and Universities That Use the AICPA College Guide Model

.111 [GASBS 18, ¶12] [Change cross-references.]

Reporting Changes in Estimates

.112–.113 [GASBS 18, ¶13–¶14] [Change cross-references.]

Accounting for Assets Placed in Trust—All Fund Types and Entities

.114 [GASBS 18, ¶15]

Responsibility for MSWLF Closure and Postclosure Care Assumed by Another Entity

.115 [GASBS 18, ¶16] [Change cross-references.]

Note Disclosures—All Fund Types and Entities

.116–.117 [GASBS 18, ¶17–¶18] [Change cross-reference.]

NONAUTHORITATIVE DISCUSSION

Illustrative Calculation of Estimated Current Cost of MSWLF Closure and Postclosure Care and Current-Period Expense and Liability Amounts

.901 [GASBS 18, Appendix C] [Change “Statement” to “section” and change cross-references.]

Illustrative Note Disclosure

.902 [GASBS 18, Appendix D] [Change “Statement” to “section” and change cross-references.]

* * *

COLLEGES AND UNIVERSITIES

SECTION Co5

Sources: [Add the following:] GASB Statement 18

.102 [Add the following:]

L10, “Landfill Closure and Postclosure Care Costs”

[GASBS 2–9, 12–16, and 18; GASBI 1]

* * *

HOSPITALS

SECTION Ho5

Sources: [Add the following:] GASB Statement 18

.103 [Add the following:]

L10, “Landfill Closure and Postclosure Care Costs”

[GASBS 2–7, 9, 12–14, 16, and 18; GASBI 1]

* * *

**PUBLIC BENEFIT CORPORATIONS
AND AUTHORITIES**

SECTION Pu5

Sources: [Add the following:] GASB Statement 18

.101 [Add the following to the list in footnote 1:]

L10, “Landfill Closure and Postclosure Care Costs”

[GASBS 2–10, 12–14, 16, and 18; GASBI 1]

* * *

UTILITIES

SECTION Ut5

Sources: [Add the following:] GASB Statement 18

.102 [Add the following:]

L10, “Landfill Closure and Postclosure Care Costs”

[GASBS 2–7, 9, 12–14, 16, and 18; GASBI 1]