

IN THE COURT OF COMMON PLEAS  
PAULDING COUNTY, OHIO

STATE OF OHIO, ex rel.,  
ANTHONY J. CELEBREZZE, JR.,  
ATTORNEY GENERAL OF OHIO,

Plaintiff,

v.

PAULDING DISPOSAL COMPANY,  
et al.,

Defendants.

CASE NO. CI-87-220

JUDGE J. David Webb

CONSENT DECREE

The Plaintiff, State of Ohio, ex rel. Anthony J. Celebrezze, Jr., Attorney General of Ohio ("State" or "Plaintiff"), having filed this action against the Defendants, Paulding Disposal Company, Thomas Williams and Bruce Williams (the above stated Defendants will hereinafter be referred to as "Defendants"), to enforce the State of Ohio's solid waste statutes and rules and regulations at the Defendants' solid waste facility located in Paulding, Paulding County, Ohio (hereinafter the "Facility"), and Plaintiff and Defendants having consented to entry of this Consent Decree;

THEREFORE, before the taking of any testimony, upon the pleadings, upon the consent of the parties hereto and pursuant to order of the Court, it is hereby ORDERED, ADJUDGED and DECREED as follows:

PAULDING COUNTY, OHIO  
JUDGE J. DAVID WEBB

1. JURISDICTION AND VENUE

The Court has jurisdiction over the parties and the subject matter of this case. The Complaint states a claim upon which relief can be granted against Defendants under Chapter 3734 of the Ohio Revised Code and the rules and regulations promulgated thereunder. Venue is proper in this Court.

II. CONTINUING JURISDICTION

This Court shall retain jurisdiction of this action for the purpose of making any order or decree which it may deem necessary to carry out the Consent Decree.

III. SATISFACTION OF CLAIMS AND EFFECT UPON OTHER ACTIONS

Compliance with the terms of this Consent Decree shall constitute full satisfaction of any civil or administrative liability by Defendants and their officers, employees, and former officers and employees to the State of Ohio for all matters alleged in the Complaint. For matters beyond the terms and scope of this Consent Decree, the Plaintiff reserves the right to take any enforcement action pursuant to any available legal authority, including the right to seek injunctive relief and monetary penalties. This Consent Decree shall not be construed to preclude the State of Ohio or its agencies from seeking any form of relief against Defendants as a result of its operation of facilities other than this Facility.

regardless of when the violations occurred, nor shall this Consent Decree bar the State of Ohio from bringing any action against the Defendants, whether at this Facility or at another facility, for violations other than the violations that occurred at the Defendant's facility as alleged in the State's Complaint, regardless of when the violations occurred. Nothing herein shall be construed to limit the authority of the State of Ohio to undertake any action against any person, including the Defendants, to eliminate or mitigate conditions arising after the date hereof which may present an endangerment to the public health, welfare or the environment.

Nothing in this Consent Decree shall be construed to relieve Defendants of their obligations to comply with applicable federal, state or local statutes, regulations or ordinances or shall constitute a waiver or release of any right, remedy, defense or claim against Defendants with regard to any person not a party to this Consent Decree.

#### IV. RIGHT OF ENTRY

During the effective time of this Consent Decree, the Defendants consent that the Plaintiff and its agents and employees shall have authority to enter, without a search warrant, at a reasonable time, into and onto the Defendants' Facility to inspect, to take water, soil and any other samples, or to observe Defendants conducting their work as required by

this Consent Decree. This provision in no way limits the Plaintiff's statutory or permit authority to conduct inspections and/or to take samples.

V. CIVIL PENALTY

The Defendants shall pay a civil penalty of seven thousand five hundred dollars (\$7,500.00). This civil penalty shall be paid by check made payable to "Treasurer, State of Ohio," which check shall be delivered by mail, or otherwise, to Paul D. Hancock, at his office at the Ohio Attorney General's Office, Environmental Enforcement Section, 30 East Broad Street, 17th Floor, Columbus, Ohio 43266-0410, within thirty (30) days of the Court's journalization of this Consent Decree, for payment into the state treasury to the credit of the cleanup fund created by R.C. 3734.28.

VI. TERMS OF THE DECREE AND PERSONS TO WHOM  
CONSENT DECREE APPLICABLE

All provisions of this Consent Decree shall apply to and be binding upon the parties to this action, their assigns and successors in interest, the parties' officers, directors, agents, servants, employees, contractors, consultants, and/or to any parent companies or subsidiaries of the Defendants, and all persons, firms or corporations having notice of the Consent Decree and who are or will be acting in concert or privity with the Defendants in this action and their officers, directors,

agents, servants, employees and successors and assigns. Defendants shall provide copies of this Decree to all contractors or consultants performing any work called for by this Decree.

#### VII. PERMANENT INJUNCTION

The Defendants are immediately and permanently enjoined as follows:

A. The Defendants are immediately and permanently enjoined to prohibit the conducting, permitting or allowing of open dumping at their Facility, in violation of O.A.C. 3745-27-05(C) or R.C. 3734.03.

B. When and if Defendants' application and detail plans and specifications for a permit to install (PTI) are approved by OEPA as provided for in subpart F, Defendants are immediately and permanently enjoined to comply with O.A.C. 3745-27-08(A) in that they shall conduct all operations at their Facility in strict compliance with said approved detail plans and specifications.

C. The Defendants are permanently enjoined to operate the Facility in such a manner as to apply daily, intermediate and final cover as required by O.A.C. 3745-27-09(F)(1), (2), (3), and (4). The specific cover requirements the Defendants must follow include, by way of illustration and not limitation, that:

(1) The Defendants shall apply a well compacted layer of cover material not less than six inches thick with a permeability coefficient of  $1 \times 10^{-7}$  over all exposed waste materials by the end of each working day (Daily cover). In no event shall solid wastes be exposed for more than 24 hours after the unloading of said wastes;

(2) The Defendants shall apply a well-compacted layer of cover material of at least one foot thick with a permeability coefficient of  $1 \times 10^{-7}$  and shall apply it by the end of each working day to all exposed surfaces of a cell where additional waste materials may be deposited thirty (30) days or more after completion of the cell. (Intermediate cover);

(3) The Defendants shall apply a well compacted layer of cover material with a permeability coefficient of  $1 \times 10^{-7}$  and shall apply it to all exposed surfaces of a cell upon reaching final elevation. Final elevation will be determined either in the approved detail plans and specifications for a PTI or in Defendants' approved plans for closure (see subpart F). All waste materials are to be covered with final cover by a depth of at least two feet to meet the final cover requirements. Areas which have final cover shall be seeded with such grasses or other vegetation as will form a complete and dense cover. (Final Cover).

D. The Defendants are immediately and permanently enjoined to operate their Facility so that any and all waste

materials that are admitted to the Defendants' Facility are deposited at the working face, spread and well compacted in layers not more than two feet in depth as required by O.A.C. 3745-27-09(D). Any receipt of waste by the Defendants and/or their Facility shall not exceed twenty (20) tons per day.

E. The Defendants are immediately and permanently enjoined to operate their Facility so that unloading of waste materials is confined to the smallest practical area as required by O.A.C. 3745-27-08(E).

F. The Defendants are permanently enjoined to submit either an:

- 1) approvable application for a PTI with detailed engineering plans for any area of the Defendants' facility in or on which the Defendants plan to operate as a solid waste facility at any time in the future. This submittal shall be made within thirty (30) days of the Court's journalization of this Consent Decree and shall be delivered to the Ohio Environmental Protection Agency, Northwest District Office, 1035 Devlac Grove Road, Bowling Green, Ohio 43402, Attn: Loren Shaffer and said submittal shall at a minimum follow the requirements contained in R.C. Chapter 3734 and O.A.C. Chapters 3745-27 (and specifically O.A.C. 3745-27-06) and 3745-31. Said submittal shall also include an application fee as required by R.C. Chapter 3734 or regulations adopted thereunder.

This submittal is subject to the approval of the Ohio EPA. Should the submittal not meet with the approval of the Ohio Environmental Protection Agency, the Defendants shall submit a revised submittal, within twenty (20) days of their receipt of notice from the Ohio EPA advising them of needed revisions, to the Ohio Environmental Protection Agency at the address listed above, which revised submittal shall address the comments raised by the Ohio Environmental Protection Agency, or:

2) an approvable closure plan for all areas of Defendants' facility. Said closure plan shall at a minimum be in conformity with the requirements contained in O.A.C. Chapter 3745-27 (and specifically O.A.C. 3745-27-10) and shall be delivered to Ohio EPA at the above address within 30 days of the Court's journalization of this Consent Decree. This submittal is subject to the approval of the Ohio EPA. Should the submittal not meet with the approval of the Ohio Environmental Protection Agency, the Defendants shall submit a revised submittal, within twenty (20) days of their receipt of notice from the Ohio EPA advising them of needed revisions, to the Ohio Environmental Protection Agency at the address listed above, which revised submittal shall address the comments raised by the Ohio Environmental Protection Agency.

When and if Defendants' plans and specifications for a PTI or in the alternative, plans for closure, are approved by Ohio EPA, then, Defendants shall be immediately and permanently be



enjoined to operate their facility in conformity with their approved PTI and detailed engineering plans or if they apply for and receive approval of their closure plan, they are enjoined to implement the closure plan as approved.

G. The Defendants are immediately and permanently enjoined to prohibit any open burning at the Facility.

H. If Defendants' plans and specifications are approved by Ohio EPA pursuant to paragraph VIIB and VIIF 1, supra, then, within 10 days of said approval, Defendants are immediately and permanently enjoined to maintain, at all times, a stockpile of cover dirt to meet the daily, intermediate and final cover requirements of section C, supra. The cover dirt shall consist of non-putrescible materials having low permeability to water, good compactability, cohesiveness, and uniform texture. The cover material shall not contain stones, cobbles, boulders, or any large objects in such quantities as may interfere with the application of the cover or interfere with the intended purposes of the cover. See O.A.C. 3745-27-09.

I. If Defendants submit an application, plans and specifications, pursuant to paragraph VIIF 1 above, then Defendants are immediately and permanently enjoined to demonstrate to Ohio EPA's approval that they have at least two (2) full-time employees that are both competent and qualified to operate the Defendants' facility.

J. Defendants are immediately and permanently enjoined to remove, subject to the approval of the Ohio EPA, any and all waste and/or waste fill in the Old Ox Bow Channel of Blue Creek. Any and all waste and/or waste fill removed from said Creek shall be properly disposed of at Defendants' facility in accordance with O.A.C. Chapter 3745-27 and after said waste is removed, Defendants shall apply a well-compacted layer of cover material of at least one foot thick with a permeability coefficient of  $1 \times 10^{-7}$  in the area of Old Ox Bow Channel of Blue Creek where Defendants removed the waste or waste fill. Defendants shall provide at least three work days notice to the OEPA at the address listed above of when they will commence removal of such waste or waste fill material.

K. The Defendants are immediately and permanently enjoined to comply with all other requirements of O.A.C. Chapter 3745-27 not specifically stated above.

#### VIII. STIPULATED PENALTIES

In the event that any of the Defendants violate any of the requirements of the permanent injunction contained in paragraphs A through J of Section VII, the Defendants shall pay to Plaintiff a stipulated civil penalty. All payments shall be made by delivering a check made payable to "Treasurer, State of Ohio", to Plaintiff's counsel, at the address listed above, within twenty (20) days of the violation.

A. For violations of any of the requirements contained in Sections VII A (open dumping); or VII G (open burning), Defendants shall pay a stipulated civil penalty of \$750.00 per day for each day of each violation.

B. For violations of any of the requirements contained in Sections VII B (dumping not in accordance with approved detail plans); or VII C(1) (daily cover); or VII C(2) intermediate cover); or VII C(3) (final cover); or VII H (cover stockpile), Defendants shall pay a stipulated penalty of \$500.00 per day for each day of each violation.

C. For violations of any of the requirements contained in Sections VII D (depositing wastes in the working face in layers of more than two feet in depth); or VII E (confining wastes to the smallest practical area); or VII F(1) (not submitting an approvable application for a PTI with detailed engineering plans); or VII (F)(2) (not submitting an approvable closure plan); or VII I (adequate personnel); or VII J (removal of wastes from Ox Bow Creek); or VII K (compliance with O.A.C. Chapter 3745-27); Defendants shall pay a stipulated penalty of \$400.00 per day for each day of each violation.

D. The Court shall not suspend the stipulated penalties contained in paragraphs A, B and C of Section VIII above in whole or in part.

IX. CLOSURE

In the event that closure does not occur under Section VII, supra, Defendants shall immediately and permanently close their facility in accordance with the requirements in O.A.C. Chapter 3745-27 when the later in time of the following occur:

(A) The Facility is in violation of any of the requirements contained in paragraphs A-K of Section VII, supra, for ten (10) consecutive working days, (which shall be defined for purposes of this Consent Decree as excluding weekends and "legal holidays" as that term is defined in R.C. 1.14), or:


(B) The Facility is in violation of any of the requirements contained in paragraphs A through K of Section VII, supra, during four (4) consecutive site inspections conducted by Ohio EPA.

X. COURT COSTS

Defendants shall pay the court costs of this action.

  
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JUDGE, COURT OF COMMON PLEAS


PAULDING DISPOSAL COMPANY

By:   
Name: BRUCE E. WILLIAMS  
Title: PRESIDENT

(LEGALLY INCOMPETENT)  
\_\_\_\_\_  
THOMAS WILLIAMS

  
\_\_\_\_\_  
BRUCE WILLIAMS

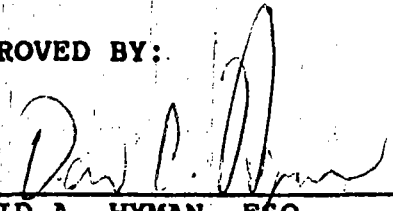
ANTHONY J. CELEBREZZE, JR.  
ATTORNEY GENERAL OF OHIO

  
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PAUL D. HANCOCK  
LAUREN PALIK ALTERMAN  
Assistant Attorneys General  
Environmental Enforcement  
Section

30 East Broad Street, 17th Fl.  
Columbus, Ohio 43266-0410  
(614) 466-2766  
4260E

4260E

APPROVED BY:

  
\_\_\_\_\_  
DAVID A. HYMAN, ESQ.  
123 North Main Street  
Paulding, Ohio 45879

Counsel for Defendants

IN THE COURT OF COMMON PLEAS  
PAULDING COUNTY, OHIO

STATE OF OHIO, ex rel.  
BETTY D. MONTGOMERY  
ATTORNEY GENERAL OF OHIO

Plaintiff,

vs.

PAULDING DISPOSAL  
COMPANY, et al.

Defendant.

CASE NO. CI-87-220

JUDGE **J. DAVID WEBB**

FILED IN  
COMMON PLEAS COURT  
PAULDING COUNTY, OHIO  
TIME \_\_\_\_\_ M

JUN - 5 1995

*Falecia R. Edwards*  
CLERK

JOINT MOTION TO AMEND THE OCTOBER 4, 1988  
CONSENT ORDER

On October 4, 1988, the Court entered a Consent Order in this case between Plaintiff, State of Ohio (hereinafter "Plaintiff") and Defendants, Paulding Disposal Company, Thomas Williams and Bruce Williams (hereinafter "Defendants"). Plaintiff and Defendants hereby jointly move the Court to amend the October 4, 1988 Consent Order entered in this case by approving and entering the Amended Consent Order accompanying this Joint Motion to Amend the Consent Order.

1. On October 4, 1988, Plaintiff and Defendants agreed to a Consent Order which was entered by this Court, in order to resolve the Defendant's violations of Ohio's Solid Waste Laws, Ohio Revised Code (hereinafter "ORC") Chapter 3734, and the rules of promulgated thereunder at the Paulding Disposal Company facilities as alleged in Plaintiff's Complaint filed October 4, 1988.

2. Section VII, paragraph F of the October 4, 1988 Consent Order required the Defendant to submit either an approvable application for a PTI or an approvable closure plan for all areas of Defendants' facility.

3. Subsequent to the entry of the October 4, 1988 Consent Order, the Defendants violated the requirement to submit either an approvable application for a PTI or an approvable closure plan for all areas of Defendants' facility.

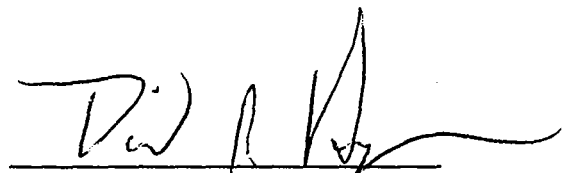
4. As a result of Defendants' violations of this Court's October 4, 1988 Consent Order, described in paragraph 3, above, Defendants are in contempt.

5. The October 4, 1988 Consent Order requires that Defendants pay specific stipulated penalties to the State of Ohio for these violations.

6. Plaintiff and Defendants have negotiated a resolution for Defendants' contempt, as described in paragraph 3, above, including a resolution of the Defendants' stipulated penalty liability. This resolution, which requires the Defendant to close the Paulding Disposal Company facility in accordance with Ohio Administrative Code ("OAC") Rule 3745-27-11, is set forth in the Amended Consent Order which accompanies this Joint Motion.


7. Plaintiff and Defendants jointly request that this Court approve and file the accompanying Amended Consent Order, pursuant to this Court's continuing jurisdiction over the Consent Order, as provided by Section II of the October 4, 1988 Consent Order, as well as this Court's inherent powers.

STATE OF OHIO, ex rel.  
BETTY D. MONTGOMERY  
ATTORNEY GENERAL OF OHIO



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123 North Main Street  
Paulding, Ohio 45879  
Telephone: (419) 399-4916

Attorney for Defendants  
Paulding Disposal Company  
Thomas Williams  
Bruce Williams



VICKI LEE DEISNER (0060026)  
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30 East Broad Street  
Columbus, Ohio 43266-0410  
Telephone: (614) 466-2766

Attorney for Plaintiff  
State of Ohio



5/26/95 DRAFT FOR SETTLEMENT DISCUSSIONS ONLY

- NOT ADMISSIBLE -

IN THE COURT OF COMMON PLEAS  
PAULDING COUNTY, OHIO

STATE OF OHIO, ex rel.  
BETTY D. MONTGOMERY  
ATTORNEY GENERAL OF OHIO,

Plaintiff,

vs.

PAULDING DISPOSAL COMPANY,  
et al.,

Defendants.

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CASE NO. CI-87-220  
JUDGE

FILED IN  
COMMON PLEAS COURT  
PAULDING COUNTY, OHIO  
TIME \_\_\_\_\_ M

JUN - 5 1995

*Talena Edwards*  
CLERK

AMENDED CONSENT ORDER

WHEREAS, Plaintiff, the State of Ohio, has filed a Complaint under Chapter 3734. of the Ohio Revised Code (hereinafter "ORC"), to enforce Ohio's laws concerning solid waste disposal; and

WHEREAS, Defendants, Paulding Disposal Company, Thomas Williams and Bruce Williams (hereinafter "Defendants") are the owners and operators of the Paulding Disposal Company, Inc., located at Rural Route 1, P.O. Box 737, Paulding, Ohio 45879 (hereinafter "Landfill") in Paulding County, Ohio; and

*WHEREAS*, Plaintiff and Defendants by themselves, their respective attorneys and/or their respective authorized representatives consented to the entry of the initial Consent Order on October 4, 1988;

*WHEREAS*, Defendants have failed to comply with, and are in contempt of, the October 4, 1988 Consent Order, and in order to purge this contempt, Defendants shall comply with the terms of this Amended Consent Order;

*WHEREAS*, Plaintiff and Defendants by themselves, their respective attorneys and/or their authorized representatives have consented to the entry of this Amended Consent Order and agree that this Amended Consent Order amends, rather than supersedes, that Consent Order filed on October 4, 1988 as set forth in Section I below.

Therefore, before the taking of any testimony, or the receipt of any evidence, without the admission by Defendants of the allegations in the Complaint, upon the pleadings and without the making of any findings of fact or law other than those set forth herein and upon the consent of the parties hereto, it is hereby *ORDERED, ADJUDGED* and *DECREED as* follows:

## I. CONTINUING EFFECT OF FORMER ORDER

The Consent Order entered into by all parties and approved by the Court on October 4, 1988, continues to be in effect and is amended by this Amended Consent Order, except for Section VII, paragraph F, which is amended by this order.

## II. PERMANENT INJUNCTION

The Defendants are immediately and permanently ordered and enjoined as follows:

A. Defendants ceased accepting and/or disposing, at the Landfill, of any solid waste, commencing September 13, 1989. Defendants are hereinafter permanently enjoined from accepting and/or disposing of solid waste at the Landfill.

B. Defendants are permanently ordered and enjoined to achieve compliance at the Landfill, adjacent property to the south of the Landfill and the Old Oxbow Channel of Blue Creek, in accordance with the closure provisions in the Ohio Administrative Code (hereinafter "OAC") 3745-27-11 by completing but not limited to the following activities at the Landfill, adjacent property to the south of the Landfill and the Old Oxbow Channel of Blue Creek, in accordance with the schedule listed below:

1. Not later than October 15, 1995, the Defendants will hire an environmental consultant with the minimum experience of at least two closure plans approved by OEPA in the last five

years. OEPA must be notified no later than October 15, 1995, of the consulting firm under contract.

2. Not later than December 15, 1995, Defendants will complete a Phase I Site Investigation by conducting a search to obtain and review soil and hydrogeologic data, as well as site development history, as part of this investigation. A site walkover will be done to determine general condition of the site and whether a wetland delineation is necessary including the Old Oxbow Channel of Blue Creek and adjacent property to the south of the Landfill where solid waste has extended beyond the boundaries of the Landfill, identify problem areas, evaluate potential borrow soils, locate stockpile or staging areas, check for leachate seeps, determine site drainage patterns. The Defendants will determine current topographical elevations by either flyover or detailed survey.

3. Not later than January 15, 1996, Defendants will complete a Phase II Site Investigation by delineating areas where borrow soils will be obtained, arranging for the inspection of the borrow soils by the Ohio Environmental Protection Agency (hereinafter "OEPA") including the digging of test pits, and submitting new or existing analytic data demonstrating the borrow soil at 95% standard compaction has a permeability no greater than  $1 \times 10^{-5}$

centimeters per second. The soil material for the cap to be constructed during closure shall be inspected every 3000 cubic yards by digging test pits and shall have the particle size distribution specified in Section III, B, 9, a, ii.

4. , Not later than February 1, 1996, Defendants will submit a written report to OEPA regarding the results of the Phase I and Phase II Site Investigations.

5. Not later than March 1, 1996, Defendants and their consultant will communicate with the OEPA to regarding the written report pertaining to the results of Phase I and Phase II Site Investigations and requirements of the closure plan.

6. Not later than March 15, 1996, the Defendants will submit to OEPA a ground water monitoring plan for the Landfill which meets all the requirements of OAC Rule 3745-27-10, as effective June 1, 1994. The Defendants shall implement the approved ground water monitoring program plan within fifteen (15) days after receipt of written approval from OEPA in accordance with schedules of compliance contained therein.

7. If it is determined a wetland delineation is necessary, the Defendants will submit to OEPA no later than June 15, 1996 the results of the completed wetland delineation of the Landfill, adjacent property to the south of the Landfill and the Old Oxbow

Channel of Blue Creek.

8. Not later than June 15, 1996, the Defendants will submit to OEPA an explosive gas monitoring plan with a schedule of implementation that meets all the requirements in OAC Rule 3745-27-12 as that rule was effective June 12, 1989, unless the Defendants can demonstrate that no residence or other occupied structure is located within one thousand (1000) feet horizontal distance from emplaced solid wastes. The Defendants shall implement the explosive gas monitoring plan within fifteen (15) days after receipt of written approval from OEPA in accordance with the schedule of implementation contained therein.

9. Not later than June 15, 1996, Defendants will submit a closure plan to OEPA including but not limited to the following requirements:

a. All vegetation will be removed and the soil properly graded, in addition to otherwise preparing the Landfill and area used for waste on adjacent property for the installation of the cap, except in areas where the Defendants can demonstrate the current cap is acceptable, by submitting test results, in accordance with the April 13, 1993, Guidance Document "Measurable Criteria for Questionable Pre-1990 Landfill Caps," attached hereto and

incorporated by reference herein as Attachment No. 1, that the requirements of OAC 3745-27-10, as effective July 29, 1976 have been met. The demonstration shall require the Defendants to:

i. Measure the thickness of the existing cap on a maximum 100' grid sampling pattern (hand augering is acceptable) to verify the thickness of material used for the existing cap.

ii. Provide data that indicates the existing soil cover has the following particle size distribution:

- 100% of the material must pass a 10" screen with no more than two particles from a 50 cubic foot sample retained on a 6" screen.
- 95% of the material must pass a 3" sieve.
- 70% of the material must pass the #10 sieve.
- The material that passes the #10 sieve must be classified using the USDA

classification chart and be a soil type listed in OAC Rule 3745-27-09 (F) (4), as effective July 29, 1976.

iii. Data referenced in ii above shall be collected at the following frequency per acre of cap:

- Excavate one test pit ( 5' x 5' x cap depth) to test for maximum cobble and gravel requirements.
- Excavate three additional samples at least one cubic foot in volume from random locations with the acre area of cap. Composite these samples with another cubic foot sample from the test pit, and sieve out the material above the #10 sieve to determine for USDA soil classification.

b. Plan sheets will be submitted regarding all final slopes of the Landfill and area used for waste on adjacent property showing soil will be properly graded to no less than one (1) percent and no greater than (25) percent to achieve compliance with OAC Rule 3745-27-10 (C) (3) as effective July 29, 1976. All land surfaces will be graded and



drainage facilities will be provided so as to direct surface water off the site and not allow ponding of water. The plan sheets shall include current elevations, site conditions, proposed final grades and surface drainage.

c. The cap at the Landfill and area used for waste on adjacent property will be installed in those areas where the cap does not meet the requirements of OAC 3745-27-10, as effective July 29, 1976, in accordance with the June 9, 1993, Guidance Document "Standards for Construction of a 1976 Cap System" attached hereto and incorporated by reference herein as Attachment II. The cap shall have the following specifications:

i. Soils used to construct the cap system shall have the specifications listed in Section III, B, 9, a, ii above and shall be tested once every 3000 cubic yards of soil used for the following:

- Sieve and hydrometer testing (ASTM D-422) for particle size gradation.
- Moisture/density relationship using either the Standard Proctor (ASTM D-698) or Modified Proctor (ASTM D-

1557) methods.

- ii. The soil will have a permeability of no greater than  $1 \times 10^{-5}$  centimeters per second at 95 % standard compaction. Permeability shall be verified during and after construction in accordance with the June 9, 1993, Guidance Document "Standards for Construction of a 1976 Cap System."
  - iii. A plan sheet will be submitted for all waste materials deposited at the Landfill and area used for waste on adjacent property showing soil will be covered with at least two feet of well compacted cover material that meets the requirements set forth in Regulation 3745-27-09 (F) and OAC Rule 3745-27-10 (C) (1) as effective July 29, 1976.
  - iv. Soil will be installed in loose lifts not to exceed 8 inches in thickness to achieve uniform compaction. The lifts shall be well compacted by using at least 6 passes of a sheep's foot compactor at least 10 tons in weight. In the alternative, Defendants may submit a plan to utilize other equipment for this purpose.
- d. The Landfill site will be seeded with grasses or other vegetation as many times as is required to form a dense

vegetative cover to achieve compliance with OAC Rule 3745-27-10 (C) (2) as effective July 29, 1976. A description of grasses to be used and seeding method will be submitted to OEPA.

e. Signs will be posted at all entrances to the Landfill stating in letters not less than three inches high that the Landfill is permanently closed, to achieve compliance with OAC Rule 3745-27-10 (C) (7) as effective July 29, 1976.

f. All entrances and access roads will be blocked with locked gates, fencing, or other sturdy obstacles to prevent unauthorized access to the Landfill to achieve compliance with OAC Rule 3745-27-10 (C) (9) as effective July 29, 1976.

g. Either leachate will be contained and properly treated on-site or collected and transported offsite for proper treatment to achieve compliance with OAC Rule 3745-27-10 (H) as effective July 29, 1976, and OAC Rule 3745-27-11 (O) as effective June 1, 1994.

h. The Landfill will be baited for rodents and treated for other vectors.

i. Solid wastes located in or adjacent to the Old Oxbow Channel of Blue Creek will be removed and appropriate erosion control devices will be installed to prevent solid wastes disposed of at the Landfill from entering the Old Oxbow Channel or Blue

Creek in the future. In the alternative, Defendants may submit a plan, subject to OEPA's approval, providing that the waste material remain and for the oxbow to be dewatered, sealed and covered. If the approved work plan for the oxbow necessitates the procurement of a NPDES permit, then the Defendants are immediately ordered and enjoined to submit an approvable NPDES application for any discharges of "industrial waste" or "other waste" to "waters of the State", as those terms are defined in ORC 6111.01, which will continue to occur from the Landfill after the Court's approval of this Amended Consent Order. This application shall be submitted to OEPA, Division of Water Pollution Control, 347 N. Dunbridge Road, Bowling Green, Ohio 43402-0466. Upon approval of the NPDES application by the OEPA, the Defendants are enjoined to comply with the requirements of that permit specifically including, but not limited to, the sampling requirements and discharge limitations of that permit.

- j. The closure plan shall contain cost estimates for closure and post-closure activities.
- k. The closure plan shall contain a work schedule for all aforementioned activities.

10. In the event OEPA notifies the Defendants that the closure plan (paragraph 10), the groundwater monitoring program plan (paragraph 6), the plat (paragraph 13), the certification and the quality assurance/quality control report (paragraph 14), or the gas monitoring plan (paragraph 9) submitted to pursuant to this Consent Order are deficient in whole or in part, within thirty (30) days after receipt of such notification, the Defendants shall amend and submit to OEPA a revised document or documents. OEPA has the authority to approve the closure plan (paragraph 10), the groundwater monitoring program plan (paragraph 6), the plat (paragraph 13), the certification and the quality assurance/quality control report (paragraph 14), and the gas monitoring plan (paragraph 9) with necessary terms and conditions. The Defendants are ordered and enjoined to comply with such final documents as approved by OEPA. The Defendants are ordered and enjoined to implement the revised groundwater monitoring program plan and/or the revised explosive gas monitoring plan within fifteen (15) days after receiving written approval from OEPA.
11. Beginning thirty days (30) after the final approval of the closure plan by OEPA, and weather permitting, Defendants shall initiate the approved closure plan.

12. No later than six (6) months after the final approval of the closure plan by OEPA, and weather permitting, Defendants are ordered and enjoined to complete closure of the Landfill, the area used for waste on adjacent property and the oxbow area. The Defendants must also submit, no later than six (6) months after the final approval of the closure plan by OEPA, a plat of the site to the Paulding County Board of Health, Paulding County Recorder and Director of OEPA which shall accurately locate and describe the complete site, and include information relating to the area, depth, volume, and nature of wastes disposed in the Landfill to achieve compliance with OAC Rule 3745-27-10 (C) (8) as effective July 29, 1976.

13. Not later than sixty (60) days after closure activities are completed, Defendants are ordered and enjoined to submit a certification and a quality assurance/quality control report, prepared by a registered professional engineer, stating that the closure activities specified in Section II, Paragraph B to achieve compliance with OAC Rule 3745-27-10, as effective July 29, 1976, are completed.

14. The Defendants are permanently ordered and enjoined to conduct post-closure monitoring at the Landfill for thirty years upon completion of proper closure of the Landfill as determined by submission of the certification and a quality assurance/quality control report, in accordance with OAC Rule 3745-27-14.

15. Beginning thirty (30) days after the effective date of this Consent Order, the Defendants are ordered and enjoined to submit monthly status reports to OEPA, due on the 15th day of each month, which shall describe the closure activities completed during the previous month. The Defendants shall continue submitting status reports until the activities outlined in Section II, other than post-closure care, are completed.

16. On December 15, 1994, the Defendants established a closure/post closure trust fund which is worded identical in substance to the trust fund set forth in OAC 3745-27-15. This trust fund document also provides that any monies remaining in the trust fund after the completion of the closure of the Landfill shall be released to the Director for deposit into the hazardous waste cleanup fund established under ORC § 3734.13. The State of Ohio partially funded this trust fund with monies in the amount of \$120,000.00 obtained from the settlement of State of Ohio v. Laidlaw Waste Systems, Inc., Case No. 94-CIV-097. The Director, in his non-reviewable discretion, reserves the right to add more monies to this closure/post closure trust fund from future settlements.

### III. RIGHT OF ENTRY

During the effective time of this Amended Consent Order, the Defendants consent that the Plaintiff and its agents and employees shall have

authority to enter, without a search warrant, at any reasonable time, into and onto the Defendants' Facility to inspect, to take water, soil and any other samples, or to observe Defendants conducting their work as required by this Amended Consent Order. This provision in no way limits the Plaintiff's statutory or permit authority to conduct inspections and/or to take samples.

#### IV. STIPULATED PENALTIES

In the event that any of the Defendants violate any of the requirements of the permanent injunction contained in Section II or the Status Report requirements of Section III, the Defendants shall pay to Plaintiff a stipulated civil penalty as provided in this section. All payments shall be made by delivering a check made payable to "Treasurer, State of Ohio," c/o Matt Sanders, Administrative Assistant, or his successor, Environmental Enforcement Section, 30 East Broad Street, 25th Floor, Columbus, Ohio 43215-3428, within twenty (20) days of the violation.

A. For violations of any of the requirements contained in Section II (A) regarding ceasing operations, Defendants shall pay a stipulated civil penalty of \$2,000.00 per day for each day of each violation.

B. For violations of any of the requirements contained in Section II (B) regarding the closure plan and cover, work plan for a hydrogeologic study, ground water monitoring plan, maintenance, monitoring and reporting for ground water monitoring, or repair of the Oxbow Channel, Defendants shall pay a stipulated penalty of \$500.00 per day for each day of each violation.



C. For violations of any of the requirements contained in Section II (B) (16) regarding status reports, Defendants shall pay a stipulated penalty of \$200.00 per day for each day the report is late.

D. The Court shall not suspend the stipulated penalties contained in this Section in whole or in part.

V. PRIOR STIPULATED PENALTIES

Plaintiff will waive the right to collect prior stipulated penalties in the amount of \$203,600.00 as set forth in the original October 4, 1988 Consent Order for violations of that decree not identified in Paragraph 2 of the Joint Motion to Amend the Consent Order if the following conditions are met:

A. Defendants shall correct their account ledger regarding the \$203,600.00 stipulated penalty, and

B. Defendants will pay \$50.00 per month into the Paulding Disposal Trust Fund, with this obligation ceasing only upon the death of Bruce Williams or the termination of the Paulding Disposal Company, with the first installment payment due thirty (30) days from the date of entry of this Amended Consent Order. Defendants' personal financial obligation will be limited to the \$50.00 per month contribution unless the Defendants are in contempt of this Amended Consent Order. This financial limitation does not effect Defendants' non-financial obligation to carry out all aspects of this Amended Consent Order.

## VI. CONTINUING JURISDICTION

The Court will retain jurisdiction of this case and over the parties hereto so that this Amended Consent Order may be entered and the Court may oversee Defendants' compliance with this Consent Order.

## VII. COURT COSTS

Defendants are hereby ordered to pay the costs of this action.

## VIII. SATISFACTION OF CLAIMS AND EFFECT

### UPON OTHER ACTIONS

Except as otherwise provided for by this Amended Consent Order and/or by law, compliance with the terms of this Amended Consent Order shall constitute full and complete satisfaction of Defendants' civil liability to Plaintiff for all violations alleged in Paragraph 2 of the Joint Motion to Amend the Consent Order.

## IX. RESERVATION OF RIGHTS

A. Nothing in this Amended Consent Order shall be construed to limit the authority of the State of Ohio to seek relief for claims or conditions not alleged in the Joint Motion to Amend the Consent Order, including, but not limited to, any violations which occur after the filing of the Amended Consent Order.

B. This Amended Consent Order does not prevent the State of Ohio from seeking further relief for groundwater contamination or other

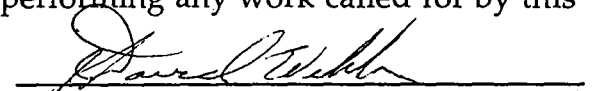
contamination caused by Defendants that may be discovered after the entry of this Amended Consent Order. In addition, nothing in this Amended Consent Order shall be construed to release Defendants from any liability Defendants may have pursuant to ORC §§ 3734.20 through 3734.27, ORC §§6111.04 through 6111.042, or the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 et seq., including any liability of Defendants for future response or oversight costs incurred by the State.

Nothing in this Amended Consent Order, or the October 4, 1988 Consent Order, limits the authority of the State of Ohio to enforce this Amended Consent Order, or the October 4, 1988 Consent Order.

X. TERMS OF THE DECREE AND PERSONS TO WHOM  
CONSENT ORDER APPLICABLE

All provisions of this Amended Consent Order shall apply to and be binding upon the Defendants, their assigns and successors in interest, the parties' officers, directors, agents, servants, employees, contractors, consultants, and/or to any parent companies or subsidiaries of the Defendants, and all persons, firms or corporations having notice of the Amended Consent Order and who are or will be acting in concert or Privity with the Defendant action and their officers, directors, agents, servants,

employees and successors and assigns. Defendants shall provide copies of this  
Order to all contractors or consultants performing any work called for by this  
Order.

  
\_\_\_\_\_  
JUDGE, COURT OF COMMON PLEAS

APPROVED BY:

ON BEHALF OF PLAINTIFF  
STATE OF OHIO, *ex rel.*  
ATTORNEY GENERAL OF OHIO:

BETTY D. MONTGOMERY


By:

  
VICKI LEE DEISNER (0060026)  
Assistant Attorney General  
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Attorney for Plaintiff  
State of Ohio

ON BEHALF OF DEFENDANTS  
PAULDING DISPOSAL COMPANY:

By:

  
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Counsel for Defendants



State of Ohio Environmental Protection Agency

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George V. Voinovich  
Governor  
Donald R. Schregardus  
Director

INTEROFFICE COMMUNIQUE

TO: All Solid Waste Engineers & Supervisors  
FROM: Barb Bonds, Chief, DSIWM  
SUBJECT: Measurable Criteria for Questionable Pre-1990 Landfill Caps  
DATE: April 13, 1993

GENERAL BACKGROUND

The old solid waste rules [OAC 3745-27-09(F) effective 7/29/76] contain descriptive criteria for landfill cover material, but lack specific, measurable criteria for properties such as grain size, permeability, density, etc. The descriptive criteria make it difficult to objectively evaluate the quality of landfill caps constructed under the old rule.

PURPOSE

The purpose of this memo is to interpret the old rule to establish measurable criteria in the area of grain size for old cap material. It is necessary for OEPA to be consistent statewide when we require testing of old caps, and also be within the language of the old rule. We are limited to interpreting and elaborating on the language of the old rule. It would be unreasonable and unlawful for OEPA to establish criteria through this memo that could be construed to increase or decrease the standard of the old rule.

USAGE

The criteria in this memo should be used when the quality of an old cap [pre-4/1/90] is clearly questionable, and testing is necessary to determine if it satisfies the old rule. It should not be used as a document which initiates testing of all old caps at existing landfills.

DETAILED BACKGROUND & CRITERIA

OAC 3745-27-09(F)(3) [eff. 7/29/76] states:

A well compacted layer of final cover material shall be applied to all exposed surfaces of a cell upon reaching final elevation. The final cover material shall be applied in such amounts that all waste materials are covered to a depth of at least two feet. The completed area shall be seeded with such grasses or other vegetation as will form a complete and dense cover ...

(F)(4) continues:

All cover material required by paragraphs (1) through (3) above shall consist of non-putrescible materials having low permeability to water, good compactibility, cohesiveness, and relatively uniform texture. Such cover material shall not contain stones, cobbles, boulders, or other large objects in such quantities as may interfere with its application and intended purposes. Suitable cover materials include, but may not be limited to, loam, sandy loam, silty loam, clay loam, silty clay, and sandy clay.

It is important to note the following points about the language:

1. (F)(3) requires two feet of final cover, but that two feet is also the vegetative layer. There is no separation of the barrier layer and the vegetative layer as we have in the current rules.
2. (F)(3) requires final cover to be well compacted, and (F)(4) states that the material have low permeability to water, good compactibility, and cohesiveness. These requirements clearly indicate compaction and low permeability.
3. (F)(4) contains the most objective criteria by listing suitable soil types from the USDA textural classification chart.
4. (F)(4) also states that cover material not contain stones, cobbles, and boulders in quantities that may interfere with its application and intended purpose. In modern liner construction, particles of these sizes are not acceptable, but the "quantity" phrase suggests that some amount of these particles is acceptable. If the rule writers had intended for no amount of these particles to be acceptable, they could have simply omitted the qualifying phrase.

The suitable USDA soil types provide the basis for interpreting the rule. The attached USDA chart shows that the soil types listed in the rule dictate the acceptable portions of sand, silt, and clay in each soil type. The sand, silt, and clay portions add up to 100% in the chart. Particles larger than sand are not accounted for in the chart - we will account for them below. When comparing grain size data of soil samples from an old cap, to use the chart, one must consider the material below the #10 sieve (gravel/sand cutoff) as 100% of the sample, and calculate the percentages of sand, silt, and clay based on the sieve and hydrometer data that is submitted, and the USDA scale.

Before we consider particles larger than sand, it is significant to note that although low permeability is desired, two things suggest that we cannot interpret the old rule language to require a cap that compares to today's standards:

- Because the cap is a dual-purpose barrier/vegetative layer, the soil must have adequate void spaces and acceptable particle sizes to support the required dense vegetation.

- The list of acceptable soil types does not include CLAY, but it does include SANDY LOAM. A soil composed of 45% clay, 25% silt, and 30% sand is classified as a CLAY and would be ideal by today's cap barrier layer standards. But it doesn't make the old rule list. On the other hand, a soil composed of 5% clay, 30% silt, and 65% sand is classified as a SANDY LOAM, and it would not meet today's liner standards. However, it does make the old rule list. The logical conclusion is that while low permeability is desired, it is not as important in the old standards as it is today because the cap must also be capable of growing dense vegetation.

To interpret the acceptable amount of particles larger than sand, we must use the ideas in items 2 and 4 above. We must also consider that the current cap standards have grain size criteria for the larger particles, and since those criteria are specifically for a low permeability barrier layer, we can't specify criteria for the old rules that could be more restrictive than the current rules.

#### % Passing #10 sieve

The first key criteria is the acceptable minimum percentage of soil that must pass the #10 sieve for classification by the USDA chart. Considering the factors in the previous paragraph, that will be 70%. Less may result in a soil that would not meet the subjective criteria of item 2 above. More may result in a soil that could meet the new rule gradation requirements (see "1990 BAT" scale) with more than 90% passing the 3/4" sieve and 50% passing the #200 sieve, but not meet the newly created standard for the #10 sieve.

#### % Passing larger sieves/screens

Based on the subjective criteria in item 4, we'll establish a % passing criteria of 95% for the 3" seive, which is the gravel/cobble cutoff. This allows for a small amount of larger particles, consistent with the old rule, and it is not more stringent than the current rule.

For the 5% of material not passing the 3" seive, the phrase "interfere with its application" becomes the key factor. Today's standards require compaction in lifts, and the requirements for density, moisture content, and permeability testing necessitate careful compaction. Although the old rules don't require any of this, they do have the subjective standard of "well-compacted". It's reasonable to interpret that requirement to mean application in a minimum of 2 or 3 lifts (8" to 12" each). Consequently, particles in the stone and boulder size ranges (10" to 24", and > 24", respectively) can be prohibited because they would interfere with the material's application. That translates to 100% of the material passing a 10" screen. For cobbles (3" to 10"), we'll establish that only two large cobbles (>6") may exist in fifty cubic feet of sample material from an old cap (based on a test pit 5'x 5'x 2', see below).

#### Testing Requirements

If it is questionable that the material in an old cap (or portions of an old cap) will meet the above requirements, the following sampling frequencies should be used for testing.



Per acre of cap:

- Excavate one test pit 5'x 5'x cap depth to test for maximum cobble and gravel requirements.
- Excavate three additional samples at least one cubic foot in volume from random areas. Composite these samples with another one cubic foot sample from the test pit, and sieve out the material above the #10 sieve. Sieve the remaining material to classify it using the USDA textural classification chart.

Summary of Particle Size Interpretation

The following summarizes the particle size criteria explained above and shown on the "1976 Caps" scale:

- 100% of the material must pass a 10" screen, with no more than two particles from a 50 cubic foot sample retained on a 6" screen.
- 95% of the material must pass a 3" sieve.
- 70% of the material must pass the #10 sieve.
- The material that passes the #10 sieve must be classified using the USDA textural classification chart (determine percentage of USDA sand, silt and clay and corresponding USDA soil type), and be a soil type listed in OAC Rule 3745-27-09(F)(4) [eff. 7/29/76], or an alternate acceptable soil type as allowed by that rule .

An example of an acceptable alternate soil type would be clay that grows acceptable vegetative cover. If the clay could not establish vegetation, the best remedy would be to add topsoil and leave the clay layer intact (provided that the lack of vegetation wasn't due to a methane problem). Of course, going back to the purpose and usage of this memo, I hope that we would not require testing of a cap that consisted of a true clay soil in the first place!

BB/clk





State of Ohio Environmental Protection Agency

ATTACHMENT NO. 1

P.O. Box 1049, 1800 WaterMark Dr.  
Columbus, Ohio 43266-0149  
(614) 644-3020  
AX (614) 644-2329

George V. Voinovich  
Governor

Donald R. Schregardus  
Director

INTEROFFICE COMMUNICATION

TO: Distribution  
FROM: Barb *Budicka* Budicka, Chief, DSIWM  
DATE: June 9, 1993  
SUBJECT: Standards for Current Construction of a 1976 Cap System

General Background:

It is DSIWM's position that facilities which have failed to initiate or complete closure or which closed improperly are liable for compliance with current closure and post-closure regulations. However, settlement negotiations for specific enforcement cases have resulted in orders requiring the owner/operator of a previously, but improperly, closed solid waste landfill to complete installation of a final cap system meeting the requirements of OAC 3745-27-10 (or a modified version), as that rule was effective July 29, 1976 (1976 cap). Material specifications and construction and testing criteria for a 1976 cap are not nearly as detailed as those set forth in the 1990 best available technology (BAT) regulations [OAC 3745-27-11(G)].

A guidance document titled "Measurable Criteria for Questionable Pre-1990 Landfill Caps", dated April 13, 1993, establishes criteria to be used in testing a previously installed 1976 cap for compliance with applicable standards. However, the April 13, 1993 document does not address material, construction, and testing specifications for installation of a 1976 cap (or modified version) today. This document supplements the April 13, 1993 guidance to establish these installation criteria.

Material Specifications:

The soil material specifications for a 1976 cap are not dependent upon whether the cap is currently being constructed or is already existing and undergoing testing for compliance with the 1976 rules. Therefore, the same material specifications established in the April 13, 1993 guidance on testing a questionable cap will be used to determine the suitability of material for construction of a 1976 cap today. These specifications are:

- 100% of the material particles must pass a 10" screen, with no more than two (2) particles from a 50 cubic foot sample retained on a 5" screen;

- 95% of the material particles must pass a 3" screen;
- 70% of the material particles must pass the #10 sieve;
- The material that passes the #10 sieve (sand, silt, and clay fractions) must be classified using the USDA textural classification chart, and be a soil type listed in OAC 3745-27-09(F)(4), as effective July 29, 1976, or an acceptable alternative soil type as allowed by that rule.

NOTE: The testing frequency established in the April 13, 1993 guidance for an existing cap (i.e., one test pit per acre) corresponds to one "sampling" for every approximately 3000 cubic yards of material. Therefore, a representative sample of the material intended for use in construction should be evaluated at a frequency not less than once for every 3000 cubic yards.

Evaluation of the representative samples should include all particle size determinations except those utilizing the 10" and 6" screens. Use of these larger screens is not necessary unless visual observation of the material results in concerns that the 10" and/or 6" particle size criteria will not be met. If screening for 10" and 6" particle sizes is deemed necessary, one representative sample of at least 50 cubic feet should be tested for each 3000 cubic yards of material intended for use to verify that the large particle size criteria are met.

#### Construction Specifications:

The 1976 rules specify that the final cover layer must be well compacted and have low permeability to water, good compactability, and cohesiveness. Although these terms are not quantified in the 1976 rules, with this document we will establish compaction and permeability criteria for a newly constructed 1976 cap.

Common construction practice, whether for roadways, earthen dams, subgrades, etc., requires that earthen construction materials be well compacted to minimize the potential for failure due to settlement, loading, etc. Construction specifications typically include the requirement to compact the materials to at least 95% of the maximum Standard Proctor Density (ASTM D-698) or 90% of the maximum Modified Proctor Density (ASTM D-1557). These same compaction criteria are included in Ohio's BAT regulations for the recompacted soil liner and cap barrier layer and will be adopted as the compaction standard for construction of a 1976 cap. To achieve the required compaction rate, the material should be compacted using loose lifts, no greater than 8 inches thick prior to compaction.

In order to quantify the term "low permeability to water", it is important to consider the dual purpose of the 1976 cap as both a barrier layer to infiltration and to provide nourishment and support for a healthy and dense vegetative cover. As noted on Page 3 of the April 13, 1993 guidance, it would not be reasonable to expect the 1976 cap, with its dual purpose role, to have permeability criteria equivalent to the recompacted soil barrier layer in the 1990 BAT cap. The Subtitle D closure requirements (40 CFR Part 258.60), which became effective October 9, 1991, require the installation of an "infiltration layer" which has permeability no greater than  $1 \times 10^{-5}$  cm/sec. When consideration is given to the lack of any substantive or detailed construction or testing requirements in the 1976 regulations, it is unreasonable to believe that many, if any, pre-1990 final covers (1976 caps) obtained field permeabilities in the range of  $1 \times 10^{-7}$  cm/sec. Most 1976 caps were likely much more permeable than  $1 \times 10^{-7}$  cm/sec. For these reasons, Ohio EPA will adopt  $1 \times 10^{-5}$  cm/sec as the maximum allowable field permeability for newly-constructed 1976 caps. This permeability criteria should not be applied to the testing of existing, but questionable, 1976 caps. Their compliance with the 1976 regulations should be judged solely on the testing protocol and criteria outlined in the April 13, 1993 guidance document.

Testing Specifications:

The criteria to judge the suitability of soils for use in constructing a 1976 cap are listed in the "Material Specifications" section, above. The suitability of the soils should be determined prior to their intended use in cap construction. The following tests should be performed on representative soil samples at least once for every 3000 cubic yards of material intended for use.

- The sample should be screened to remove any particles larger than 3 inches;
- sieve and hydrometer testing (ASTM D-422) for particle size gradation;
- moisture/density relationship using either Standard Proctor (ASTM D-698) or Modified Proctor (ASTM D-1557) method.

Results of this testing should be made available to the local Ohio EPA District Office at least seven days prior to its intended use in cap construction.



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During construction of the cap, compaction must be monitored to ensure that the proper specifications are met. This can be accomplished by a number of methods, including nuclear densiometer (ASTM D-2922), sand cone (ASTM D-1556), and rubber balloon (ASTM D-2167). The nuclear densiometer test, if used, should be performed at least five times per acre per lift. The sand cone or rubber balloon methods should be performed at least three times per acre per lift. The sampling rate for other methods must be determined on an individual basis.

Upon completion of construction, the permeability of the cap must be determined. This can be accomplished through either field permeability testing (Boutwell two-stage permeameter, SDRI) or through laboratory testing of cap samples brought to the lab for analysis (Shelby tubes, soil blocks). The permeability requirements for each type of permeability determination are as follows:

- For field permeability tests (Boutwell, SDRI), the required permeability of the cap is  $1 \times 10^{-5}$  cm/sec.
- For laboratory permeability tests (Shelby tubes, soil blocks), the required permeability of the cap is  $1 \times 10^{-6}$  cm/sec.

Any penetrations into the cap layer resulting from either compaction or permeability testing should be repaired using bentonite or a bentonite/soil mixture.

BB/SH/clk

Distribution:

All DSIWM Engineers  
All DSIWM Management

cc: Nancy Moore, DSIWM (for inclusion in guidance book)