Appendix A

Survey of State Regulations - Leachate Recirculation

ALABAMA

Contact: Solid Waste Branch, Department of Environmental Management
(205) 271-7771

State regulations do not prohibit recirculation, however no landfills are practicing recirculation in the state at present. The State would entertain the concept if an application is presented.

ALASKA

Contact: Department of Environmental Quality, Solid and Hazardous Waste Section
(907) 465-5150

Alaska is currently (Fall 1992) in the process of revising solid waste regulations to comply with the RCRA Subtitle D requirements. Leachate recirculation is not specifically addressed in existing regulations, however, it is allowable under either the existing or proposed regulations. No one in the State has tried leachate recirculation.

ARIZONA

Contact: Office of Waste Programs, Arizona Department of Environmental Quality
(602) 207-2300

No State regulations currently address recirculation of leachate. Landfills in the state do not report any leachate production. If proposed, recirculation would be possible, if a leachate collection system is available. Aquifer monitoring has not detected problems with leachate contamination.

ARKANSAS

Contact: Solid Waste Division
(501) 562-6533

Leachate recirculation is permitted although regulations do not specifically address it. Facilities would be required to meet Subtitle D requirements as a minimum. They are planning to rewrite regulations soon (per March 16, 1993 conversation). One system has been designed to pump leachate back through the landfill using a system of horizontal perforated pipes.

CALIFORNIA

Contact: Yolo County
(916) 666-8775

Regulations addressing leachate recirculation are regionally specific. State Regulatory Water Quality Control boards issue waste discharge permits to landfills. The Integrated Waste Management Board regulates through Title 14 (CA) and Subtitle D closure and design of landfills.

COLORADO

Contact: Hazardous Materials and Waste Management Division
(303) 692-3447

The state has a dry climate, therefore, leachate generation indicates a design problem. No leachate production is the objective. The state added RCRA Subtitle D regulations to draft regulations for leachate recirculation, so, if desired, it can implement but the design must be appropriate. The present two ft clay liner cannot accept leachate recirculation. Leachate at one landfill is carbon treated and irrigated for top growth, but an impermeable cover provided.

CONNECTICUT

Contact: Waste Management Bureau
(203) 566-5847

No official policy regarding recirculation exists. No one is practicing it, particularly considering there are no lined landfill operating in the state. The trend in Connecticut is to eliminate landfills, to recover 2/3 of the MSW, and burn the rest. They are exporting a small amount of MSW and C/D at present. Small C/D and ash landfills will be used. Ash monofills will be lined.

DELAWARE

Contact: Delaware Department of Natural Resources and Environmental Control, Hazardous Waste Management Branch
(302) 739-8320

Leachate recirculation is permitted on a case by case basis. There are no specific requirements for recirculation in the regulations. One facility (DSWA) is recirculating at present.

FLORIDA

Contact: Solid Waste Management, Department of Environmental Regulation
(904) 922-6104

Leachate recirculation is permitted if leachate was derived from the landfill and the landfill is designed in accordance with provisions in the FAC which generally require a composite or double liner. Recirculation is practiced at many sites around the state.

GEORGIA

Contact: Georgia Environmental Protection Division
(404) 362-2692

Leachate recirculation is regulated under Chapter 391-3-4 and the Municipal Solid Waste Landfill Liner Design Criteria. Recirculation is allowed on a case by case basis. Criteria include: the area must have been previously filled with solid waste, sufficient waste capacity to absorb the leachate must be present, an approved piping system located under an intermediate cover layer, no odors, runoff or ponding. No spraying of untreated leachate is permitted.

IDAHO

Contact: Department of Health & Welfare, Division of Environmental Quality
(208) 334-5860

Idaho does not have specific regulations addressing recirculation, but Subtitle D is followed, so the state will permit recirculation. One landfill (Eastside) has applied for permitting with recirculation, but has not been constructed yet. A second site (Fighting Creek Landfill) designed by Parametrics will start up in May 1993.

ILLINOIS

Contact: Illinois EPA
(217) 782-6760

Leachate recirculation is permitted, design requirements include provision for clean out of recirculation pipes. Several landfills have attempted recirculation but discontinued the practice because of clogging.

INDIANA

Contact: Office of Solid and Hazardous Waste
(317) 232-8840

Regulations state that if approved by the commissioner, recirculation is possible. The site must have adequate controls. No sites are presently recirculating. Several demonstration projects attempted recirculation but were discontinued due to improper design. Guidance exists to permit recirculation if a good liner is provided.

IOWA

Contact: Iowa Department of Natural Resources
(515) 281-5145

Iowa permits leachate recirculation if a state-of-the-art leachate collection system is provided beneath the recirculation area, including 4 ft of clay. Two sites are recirculating at present. Four to six ash monofills use co-combustion leachate to wet fly ash to control dust.

KANSAS

Contact: Bureau of Waste Management
(912) 296-1596

Leachate recirculation is not address specifically in regulations, however the regulations are being rewritten to conform with Subtitle D (1/93). If asked, the state will view leachate recirculation favorably. It appears to be a good approach.

KENTUCKY

Contact: Division of Waste Management, Kentucky Natural Resource and Environmental Protection
(502) 564-6716

Leachate recirculation is not presently addressed in regulations, but regulations are being rewritten to incorporate Subtitle D. More stringent liner requirements will be in effect at that point. At present no liner requirement is in force. The state will negotiate with US EPA in October of 1993 for solid waste program authorization.

LOUISIANA

Contact: Louisiana Department of Environmental Quality
(504) 765-0261

Existing regulations do not address leachate recirculation, however, permits can be issued with leachate recirculation. Proposed regulation (2/93) will not permit leachate recirculation. "Leachate shall not be managed by allowing it to be absorbed by waste." Subsection 7.11 B4 SW05. The state is concerned about the safety of leachate recirculation considering the geology and climate of the state.

MAINE

Contact: Bureau Hazardous Materials and Solid Waste Control, Statehouse, Station 17, Augusta, Maine
(207) 289-2651

No one has tried leachate recirculation in the state. Regulations would allow recirculation if justified and design meets requirements. Leachate recirculation is not specifically addressed in regulations.

MARYLAND

Contact: Hazard and Solid Waste Management Administration
(410) 631-3364

State regulations are more flexible than Subtitle D regulations. Where leachate recirculation is practiced, the landfill must meet Subtitle D Regulations. Two landfills are recirculating, the Central Landfill at the Eastern Shore and the Mid Shore Landfill . They practice a case by case analysis policy.

MASSACHUSETTS

Contact: Department of Environmental Protection, Bureau of Waste Prevention
(617) 292-5974

Leachate recirculation is permitted, regulations do not preclude it. Nothing specifically addressing recirculation is in the regulations. The issue has not come up to date. There was a limited request years ago but it did not go anywhere. A lined facility would be required.

MICHIGAN

Contact: Waste Management Division, Department of Natural Resources
(517) 373-9523

Leachate recirculation is allowed according to regulations. Proof of no contamination at the site and a "good" liner/leachate collection system must be provided. Concern was expressed over liner leakage resulting in groundwater contamination. Recirculation may increase head on liner, but in the long run, recirculation should result in less pollution. New liner standards are under development which are more restrictive than RCRA Subtitle D. The state is starting to look at recirculation in designs as well as gas collection during active phases for odor control.

MINNESOTA

Contact: Minnesota Pollution Control Agency
(612) 296-7300

Regulations prohibit leachate recirculation. There is n interest in the state at present. Recirculation would not work in the winter in Minnesota due to freezing problems.

MISSISSIPPI

Contact: Mississippi Department of Environmental Quality
(601) 961-5171

Regulations do not address leachate recirculation. The present regulations will change considerably in early 1993, primarily adopting Subtitle D requirements. Recirculation would be permitted as a backup to on-site treatment. No landfill is presently practicing leachate recirculation in the state.

MISSOURI

Contact: MSW Program, Division of Environmental Quality, Missouri Department of Natural Resources
(314) 751-3176

Leachate recirculation will be permitted using beefed up criteria (liner and leachate collection system above minimum standards). The first landfill using recirculation by injection manholes went into operation in 1993.

Regulations prohibit recirculation at present. New Jersey is trying to develop a test site to explore recirculation. Primitive attempts at spraying with agricultural sprinkler systems have had odor and aerosol problems.

NEW MEXICO

Contact: (505) 827-0197

Leachate recirculation is not addressed, nor is it precluded. The state might have some concerns with liquids introduced to the landfill. A couple of facilities are using ponds for evaporation but no one is recirculating leachate.

NEW YORK

Contact: NY Department of Environmental Conservation
(518) 457-2051

Regulations 360-2, promulgated in November 1992 address leachate recirculation. Leachate recirculation is prohibited unless the landfill meets the following requirements: permitted, groundwater monitoring data verifies no landfill induced contamination, double liner, demonstration of six months of acceptable primary liner performance, no recirculation where soil cover applied unless provisions for runoff collection and containment provided, and does not increase primary liner systems leakage beyond 20 gal/acre-day.

NORTH CAROLINA

Contact: Division of Solid Waste Management
(919) 733-0692

North Carolina is receptive to the idea of leachate recirculation and is participating in several projects investigating the process.

NORTH DAKOTA

Contact: (701) 221-5166

Regulations specify that the facility must have a composite liner and leachate collection system if recirculation is practiced. No facilities recirculate at present.

OHIO

Contact: (614) 644-3020

Regulations do not permit leachate recirculation.

OKLAHOMA

Contact: (405) 271-8135

Few landfills are operating in the state with liners and leachate collection systems due to low precipitation. Regulations do not address recirculation. New landfills will be regulated on a case by case basis.

OREGON

Contact: (503) 229-5913

Regulations do not specifically address recirculation, however, for all practical purposes, recirculation is not permitted. Entombment seems to be the intention of the state at present.

PENNSYLVANIA

Leachate recirculation has been allowed since 1988. Four requirements exist: double liner system, the recirculation system constructed under an interim cover with piping system, odor production prevented, and leachate outbreak or runoff controlled. Recirculation is used at Lycoming County and other sites as a backup leachate management system.

RHODE ISLAND

Contact: Division of Air & Hazardous Material
(401) 277-2797

Regulations do not address leachate recirculation. A variance is required as well as a leachate collection system. There is room for variance; they are not opposed to using leachate recirculation. No landfill has applied for a variance.

SOUTH CAROLINA

Contact: So. Carolina Bureau of Solid and Hazardous Waste Management
(803) 734-5200

New regulations have been proposed which should be in force by 1994. Recirculation can occur in special cases where an emergency situation exists (such as an inability to take leachate off site) for a maximum of 30 days. The opinion is that conditions in this area are not conducive to leachate recirculation. No design requirements are in effect. One or two facilities have proposed leachate recirculation but no one has attempted it.

SOUTH DAKOTA

Contact: Department of Environmental and Natural Resources
(605) 773-3153

Regulations do not presently address leachate recirculation. Because of low precipitation rates, leachate management is not an issue. No MSW leachate collection system is in place in the state. If requested, an amendment to the permit could be provided to accommodate recirculation.

TENNESSEE

Contact: Division of Solid Waste Management
(615) 532-0804

The regulations briefly address leachate recirculation, permitting it with special approval, but only where a synthetic liner is provided. Recirculation is not presently practiced at a sanitary landfill. Several industrial sites have sprayed leachate on the landfill as well as adjacent land with mixed results. The state would consider permitting recirculation.

TEXAS

Contact: MSW Division, Texas Water Commission
(512) 908-6787

Presently (2/93) the state is in the process of rewriting regulations, to be published within the next few weeks. Regulations will implement Subtitle D. Leachate recirculation is permitted at present. Several landfills are recirculating via spraying on the working face to facilitate evaporation.

UTAH

Contact: Division of Solid and Hazardous Waste, Department of Environmental Quality
(801) 538-6170

Utah is in the process of revising regulations to incorporate Subtitle D. Regulations should take effect on April or May 1993. Regulations will permit return of leachate only to areas where a composite liner is provided. No one has proposed leachate recirculation. No leachate production to speak of in

Utah since precipitation is low except in mountains where landfills are not sited.

VERMONT

Contact: Solid Waste Division, Vermont Department of Environmental Conservation
(802) 244-7831

There is no specific reference in regulations to leachate recirculation. Design guidance is available which allows recirculation. No landfill is currently recirculating although several conceptual designs are considering it.

VIRGINIA

Draft regulations identify leachate disposal preferences, including leachate recirculation"... provided that the irrigated area is underlain by a composite liner and that the operation causes no odors, runoff or ponding..."

WASHINGTON

Contact: Washington State Department of Ecology, Solid and Hazardous Waste Program
(206) 459-6316

Leachate recirculation is not allowed at present. A liquid ban in place (except for condensate). As a result of EPA rule making they will allow recirculation with EPA conditions plus additional restrictions. Design must address clogging, settlement, and other quality factors. They are developing an issue paper available May 1993.

WEST VIRGINIA

Contact: Department of Commerce, Labor and Environmental Resources, Division of Natural Resources
(304) 558-6350

Regulations permit recirculation, but the state does not like it. A few landfills are recirculating via spraying using perforated hoses. The opinion was expressed that recirculation does not accomplish much in the way of evaporation. A composite liner with a leachate detection zone required. Plans are to outlaw recirculation when regulations are rewritten to adopt Subtitle D.

WISCONSIN

Contact: Solid Waste Management, Wisconsin DNR
(608) 266-0833

Leachate recirculation has not been permitted for some time. The state does not accept the concept that leachate treatment is accomplished via recirculation. When done in the 70's and 80's operators were only trying to avoid treatment and many problems ensued with leachate seepage. The absorptive capacity predicted does not seem to exist. Concerns exist over penetration and seepage of leachate through liner as well as consequences of gas production during accelerated decomposition. Weather conditions are a minor concern.

WYOMING

Contact: Solid Waste Management Program
(307) 777-7752

The regulations do not address recirculation since leachate is not produced.