COLORADO WATER QUALITY CONTROL COMMISSION

Policy on Land Treatment of Municipal Wastewater

POLICY

It is the policy of the Colorado Water Quality Control Commission to press vigorously for publicly owned treatment works to utilize land treatment processes to reclaim and recycle municipal wastewater.

RATIONALE

1. The construction grants program for treatment works established by the Federal Water Pollution Control Act is a joint EPA/State activity requiring Commission approval of grants. Pursuant to the 1977 amendments, the State may take over management of the program. It is therefore incumbent upon the State to adhere to the goals, objectives, and policies of the federal act.

2. Section 201 of the Act states that the Administrator shall encourage waste treatment management which results in the construction of revenue producing facilities providing for the recycling of potential sewage pollutants through the production of agriculture, silviculture and aquaculture products. Land treatment by irrigation satisfies these criteria. In addition, the 1977 amendments to the Act list land treatment as one of the innovative processes which provide for the reclaiming and reuse of water for which an 85 percent rather than a 75 percent grant may be given (Sec 202(a)(2)). The amendments also earmark 2 percent (FY 1979, 1980) and 3 percent (FY 1981) of the funds allocated to the states for construction grants for the 10 percent increase. Since the 2 percent (and then 3 percent) is for the increase only, the total amount granted for construction of this type of facility would have to be much greater. For example, if Colorado received $50,000,000 in a fiscal year, about $8,500,000 would have to be allocated to projects using this type of treatment. At 3 percent, the amount becomes $12,750,000.

3. Land treatment systems involve the use of plants and the soil to remove previously unwanted contaminants from wastewaters. Land treatment is capable of achieving removal levels comparable to the best available advanced wastewater treatment technologies while achieving additional benefits. The recovery and beneficial reuse of wastewater and its nutrient resources through crop production, as well as wastewater treatment and reclamation, allow land treatment systems to accomplish far more than most conventional treatment and discharge alternatives.

4. Reliable wastewater treatment processes that utilize land treatment concepts to recycle resources through agriculture, silviculture and aquaculture practices are available. The technology for planning, designing, constructing and operating land treatment facilities is adequate to meet both 1983 and 1985 requirements and goals of P.L. 92-500.

5. Wastewater treatment utilizing the living filter conserves total energy because micro and macro nutrients are utilized rather than destroyed. The nitrogen and phosphorous content of municipal wastewater and sludges applied as fertilizer to soils would result in a saving of non-renewable energy resource materials required to produce an equivalent amount of commercial fertilizer. It has been estimated that it takes an equivalent of 2.25 billian gallons of crude oil per year to replace nitrogen fertilizer discharged to the nation's waterways per year.

6. It is State policy to preserve a viable agricultural economy. Land treatment assists in achieving this goal.

7. Technology for operation and maintenance of land application systems is significantly less than that required for complex advanced waste treatment plants. It is anticipated that both operational time and level of training will be reduced for land application systems as opposed to physical/chemical systems.

8. Production of crops brings revenues which can be used to reduce the cost of operation and maintenance of the facility to the local entity.

9. Land treatment can assist in creating a better and more harmonious urban/rural linkage by considerably reducing competition for the same water. In the past as communities needed more water for a growing population, they purchased or attempted to condemn irrigation water rights, drying up agricultural land. Through a land treatment system, cities can use the farmers' water first, treat it, and then discharge it to the farmers' ditches for irrigation/fertilization. Or it can be applied to the farmland directly.

10. Recycling wastewater is a stimulus to basic employment because the workers are engaged in food and fiber production which contributes to the regional economy.

11. Sludge production is minimized by integrated land treatment systems using aerated lagoons for preapplication treatment. Thus, costly sludge handling and treatment facilities are reduced in scope and complexity.

12. A land treatment system can help to preserve open space near our urban areas and be integrated in a flood plain management strategy, thereby stretching the public dollar further than with single purpose projects.

13. Land treatment systems can aid in controlling the flow of viruses to the waters of the State.

IMPLEMENTATION

1. All Step 1 reports of the 201 construction grants program shall include at least one land treatment alternative which would reclaim and recycle the wastewater. The alternative must be fully studied, evaluated and presented for costs, revenues, crops, land requirement, winter storage requirements, application rates, water rights impacts, total energy impacts (including fertilizer), open space and recreational opportunities, and other relevant information. The other conventional alternatives should also be evaluated for these factors so that a comparison can be made.

2. Where it can be demonstrated that land treatment is the most cost effective alternative and satisfies the other Section 201 criteria, the Commission will insist that land treatment be used and will refuse to fund alternatives using other systems of waste treatment. This is an affirmation of EPA policy in the memorandum from the Deputy Administrator dated November 1, 1974.

3. If the Commission determines that the land treatment is in the public interest, and if in the cost effectiveness study the life cycle cost of the land treatment alternative does not exceed the life cycle cost of the most cost effective alternative by more than 15 percent, the Commission may authorize the grant for the land treatment alternative (see Sec 201(j)).

4. The amount of any grant made after September 30, 1978 and before October 1, 1981. for any eligible treatment works utilizing land treatment shall be 85 percent instead of 75 percent. Whether or not an alternative is a land treatment alternative under Section 202(a)(2) will be determined by the EPA and the Commission in accordance with regulations promulgated thereunder.

5. If the Step 1 report recommends an alternative which does not provide for wastewater reclamation and reuse, the applicant should provide complete justification for the rejection of land treatment. (See memo from EPA Administrator Douglas Costle, dated October 3, 1977).

6. The Water Quality Control Division, during the consultation and review process of Step 1 reports, should press vigorously for publicly owned treatment works to utilize land treatment processes to reclaim and recycle municipal wastewater. (October 3, 1977, Costle memo).