

Waste Water Collection and Treatment Solutions  
Presentation to Council Grove Lake Association  
Board of Directors

May 23, 2009

Enviro-Line Company  
Mark Mayer & Rick Owens

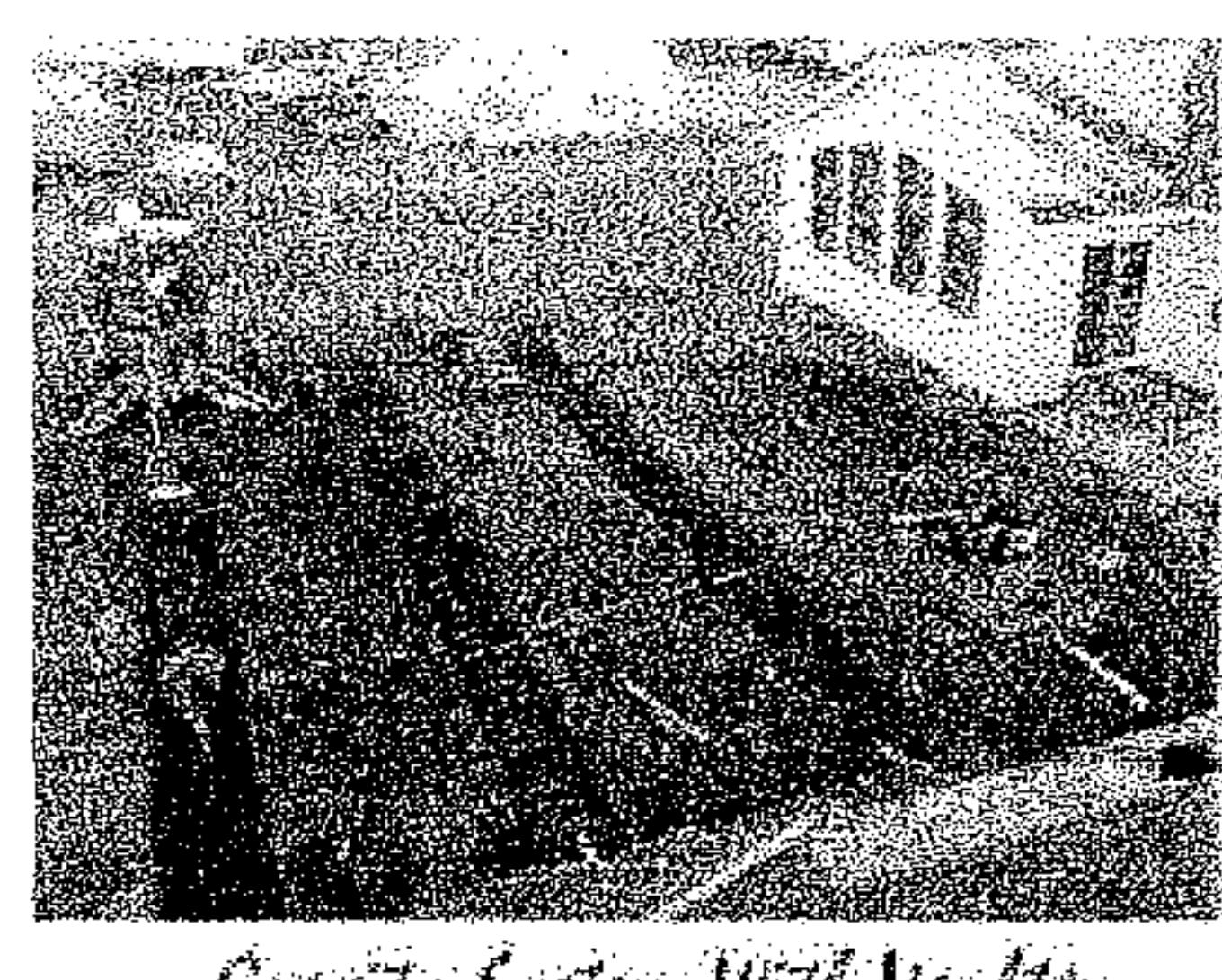
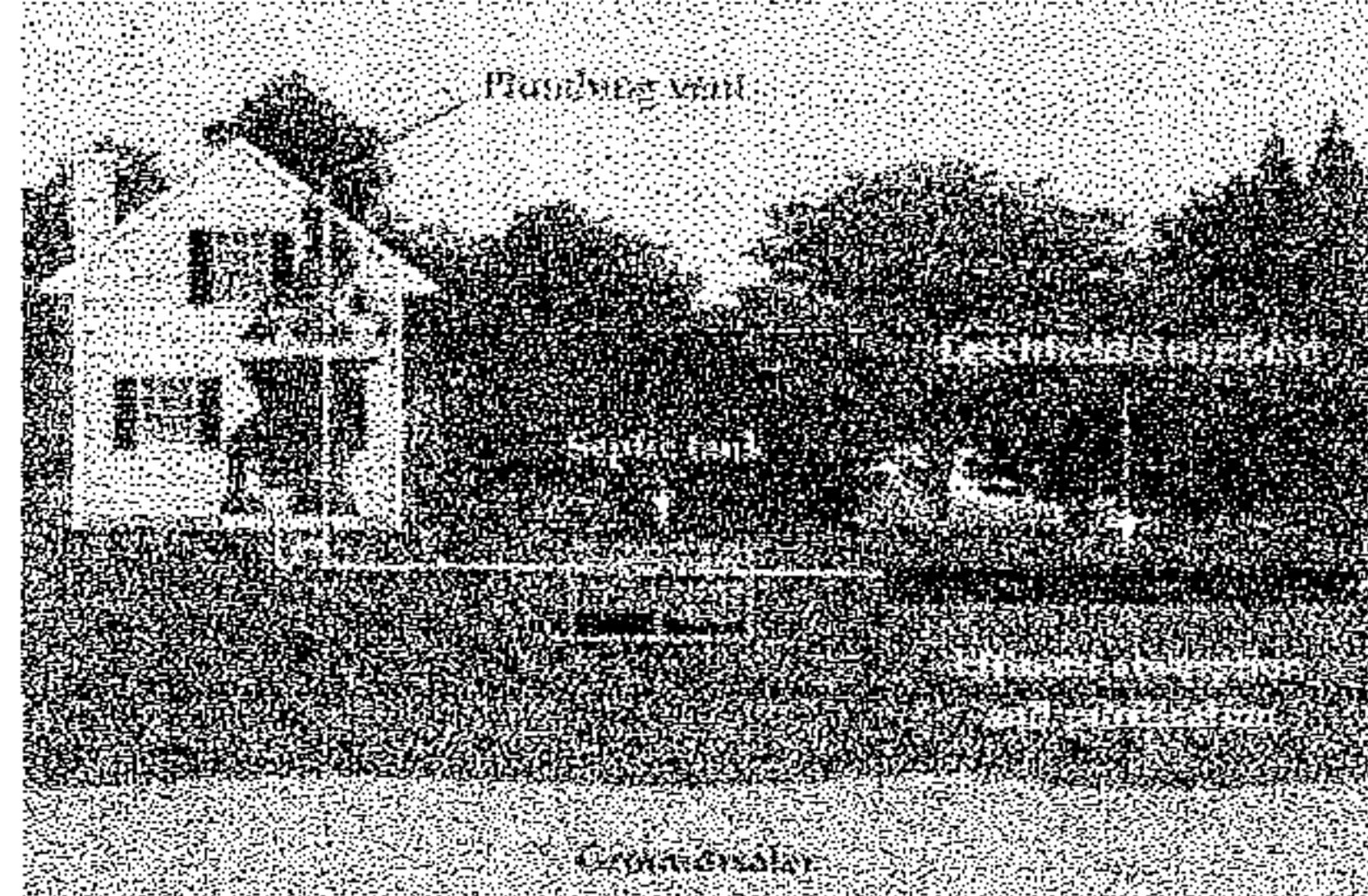


## Introduction to Sewage Treatment Options and technologies

- Single Family Home Treatment System
  - Two Options
- Multiple Family Cluster Treatment System
  - Two Options
- Low Pressure Pumped Sewer System
  - Two Options

### Single Family Home On Site System Option 1

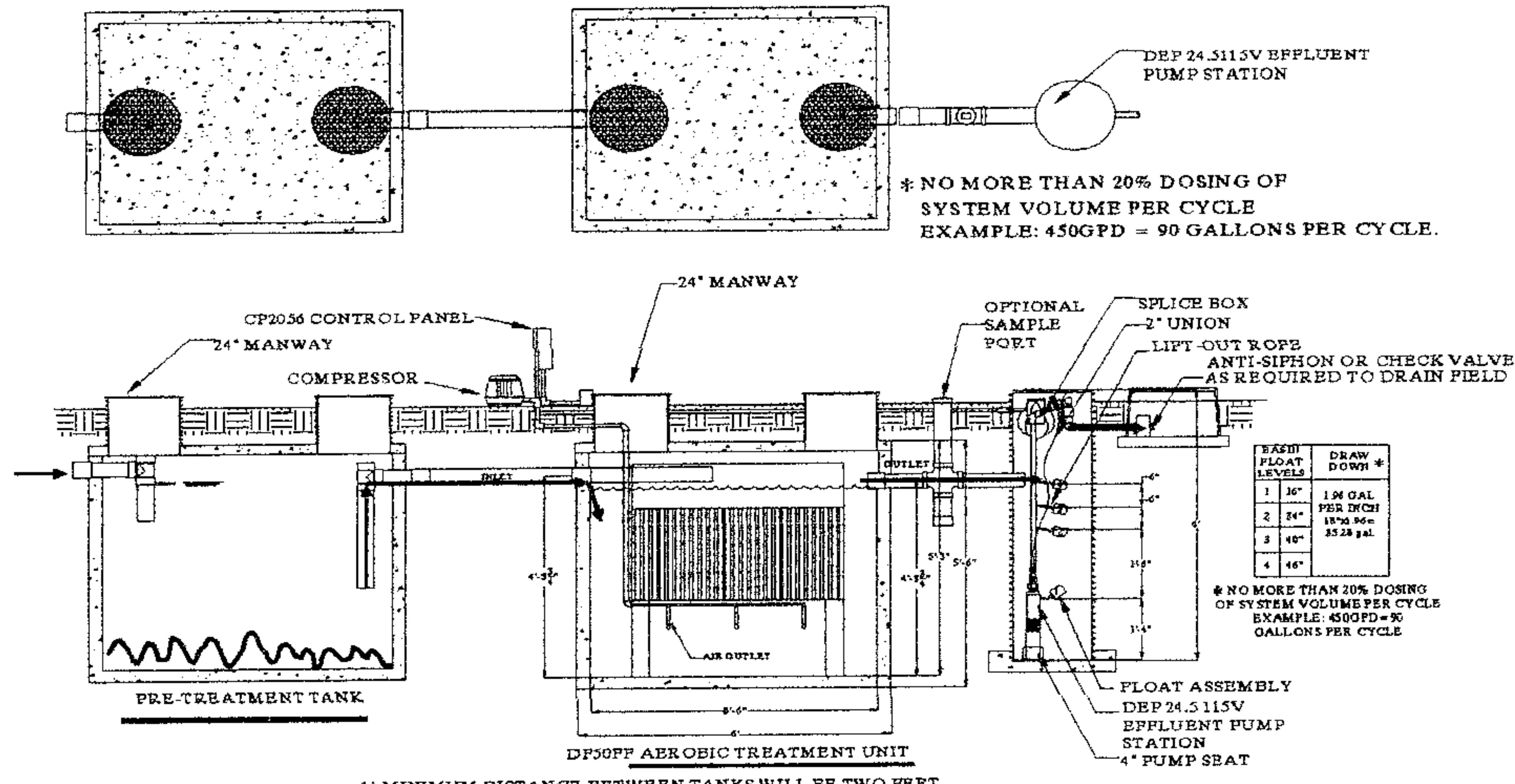
- Septic Tank Treatment Tank
- Disposal of water in “lateral field”



## Single Family Home On Site System Option 2

- Pretreatment Tank (septic tank)
- Treatment Tank (Advanced Treatment Unit)
- Effluent Pumping System
  - aka -- Dosing Tank
- Disposal of water in “lateral field”

## Single Family Home On Site System – Option 2

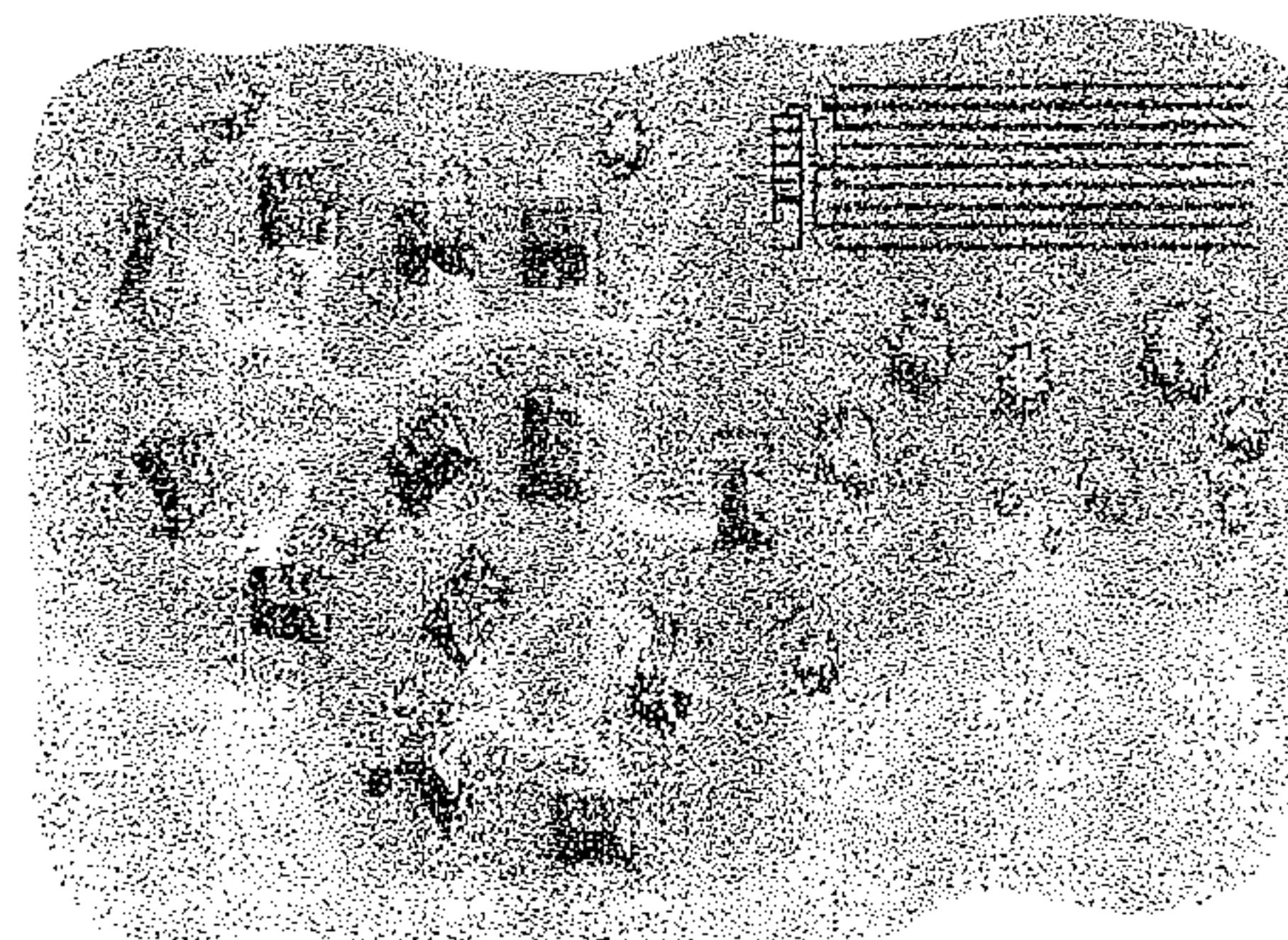


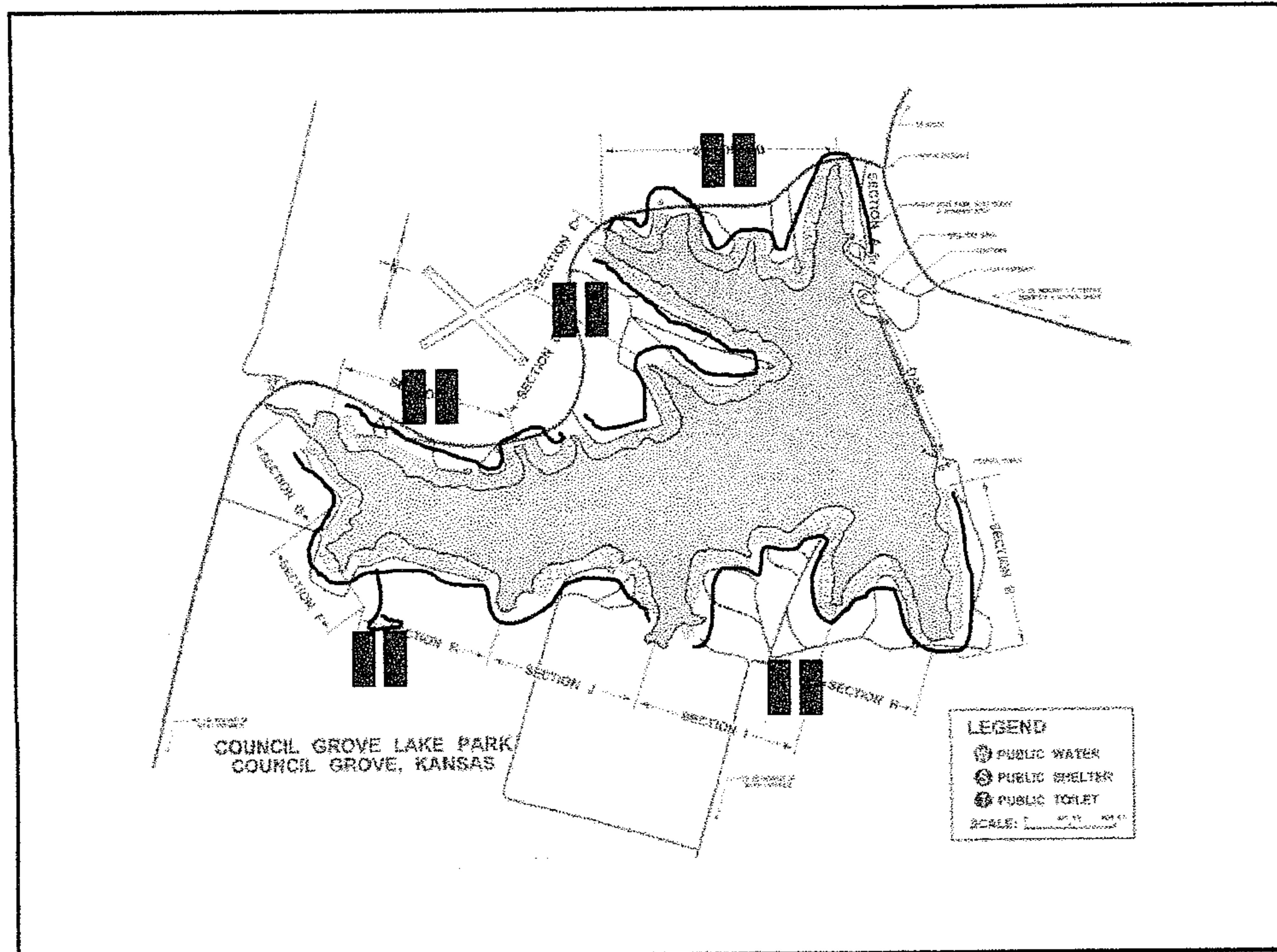
## Multiple Family Cluster System Option 1

- Located At Each Home
  - Septic Tank Effluent Pump (STEP) Tank
- Located at a Central Location for Treatment
  - Primary Treatment tank
  - Larger Advanced Treatment Unit
  - Effluent Distribution

## Distribution absorption laterals

- Larger version of traditional on-site drain field
- Need location for soil absorption - Perc Test
- Property requirements
  - Large lot
  - Relatively level
  - Well-drained
  - Deep, moderately permeable soil

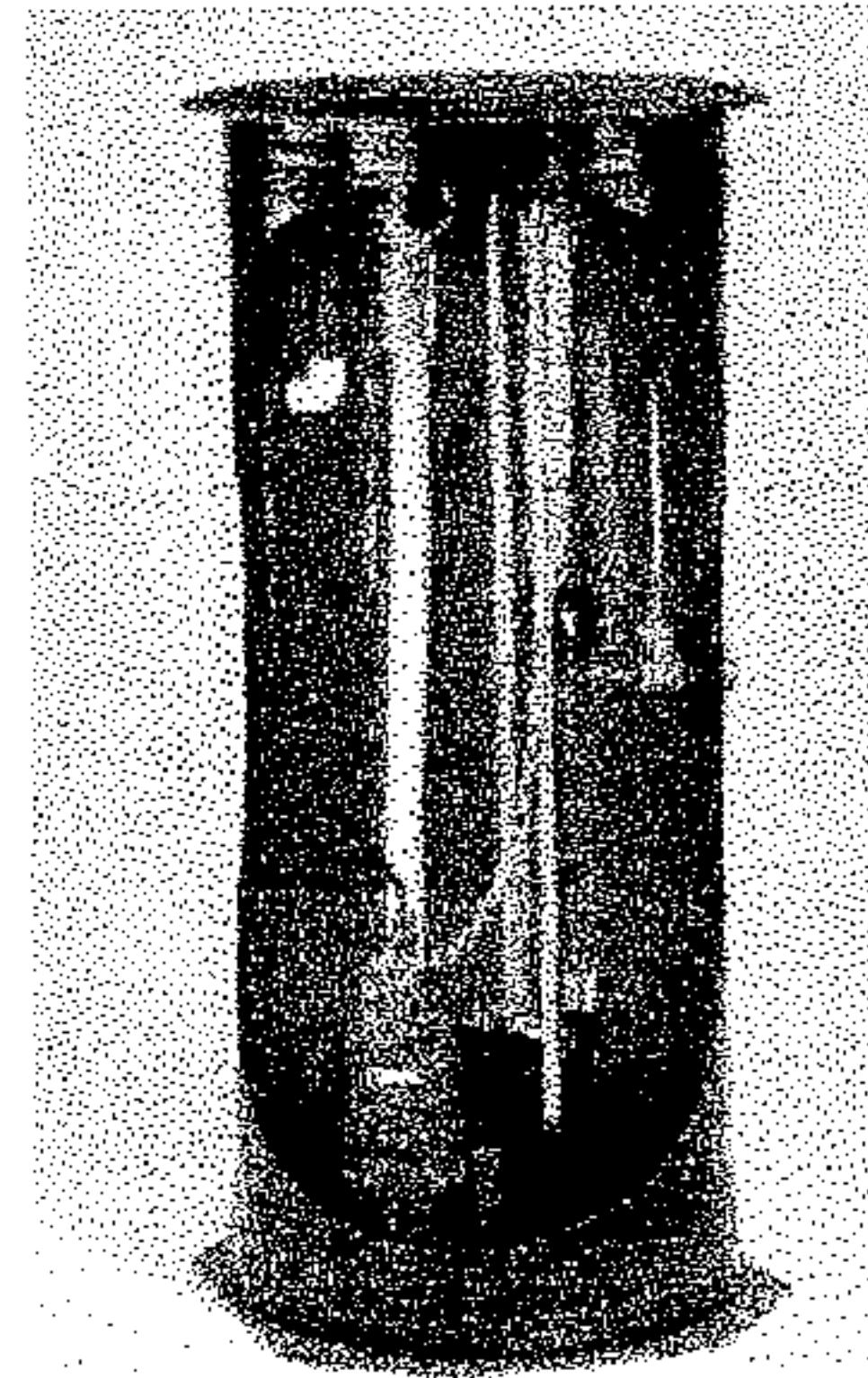




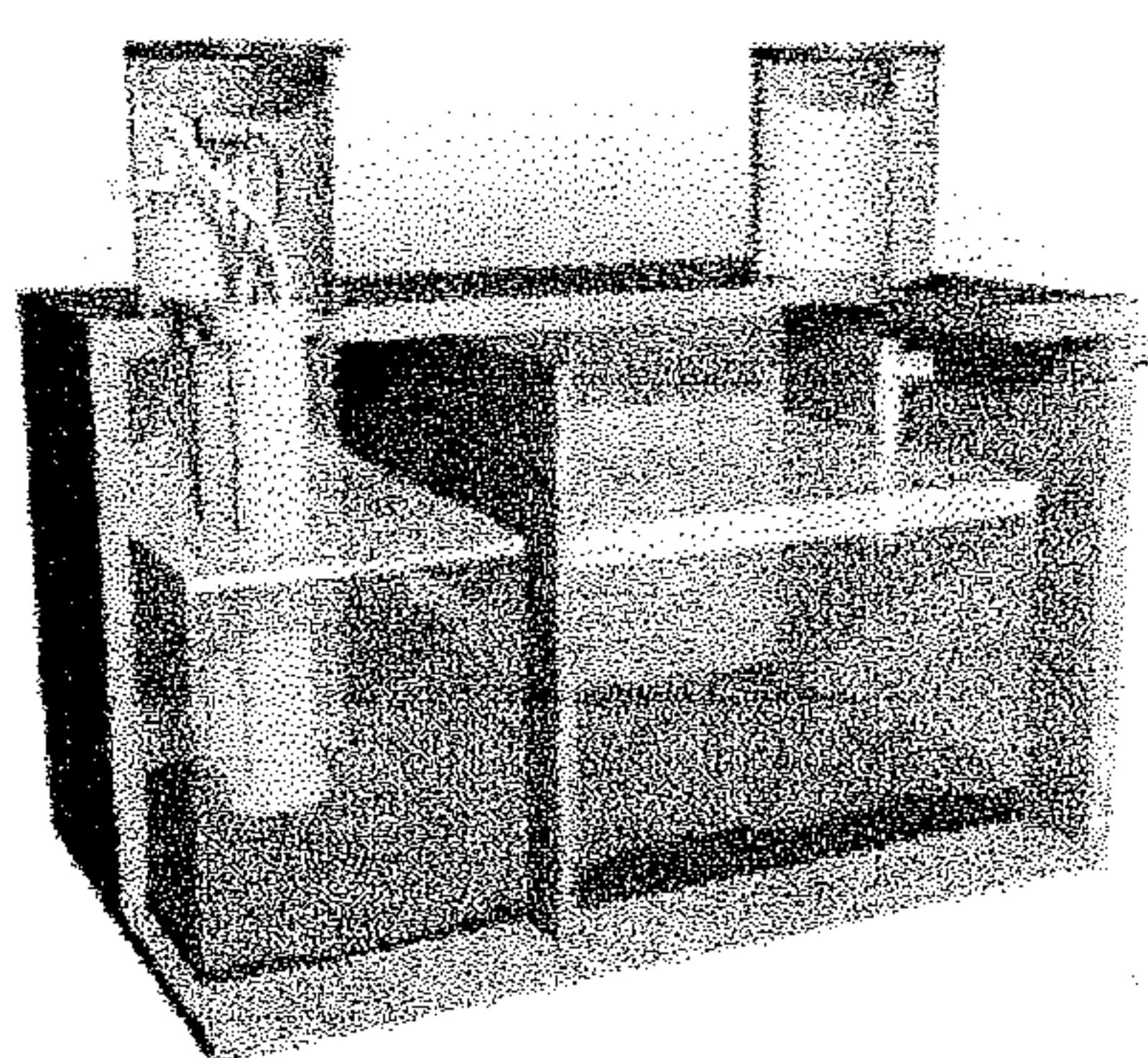
## Cluster Sizing

- Each Unit is 9,000 gpd treatment capacity
- Each Home – 250 gpd/home
- Each Cluster Unit – 36 homes
  
- 350 homes on lake – 10 units required

## Cluster System from Home



Grinder Pump System



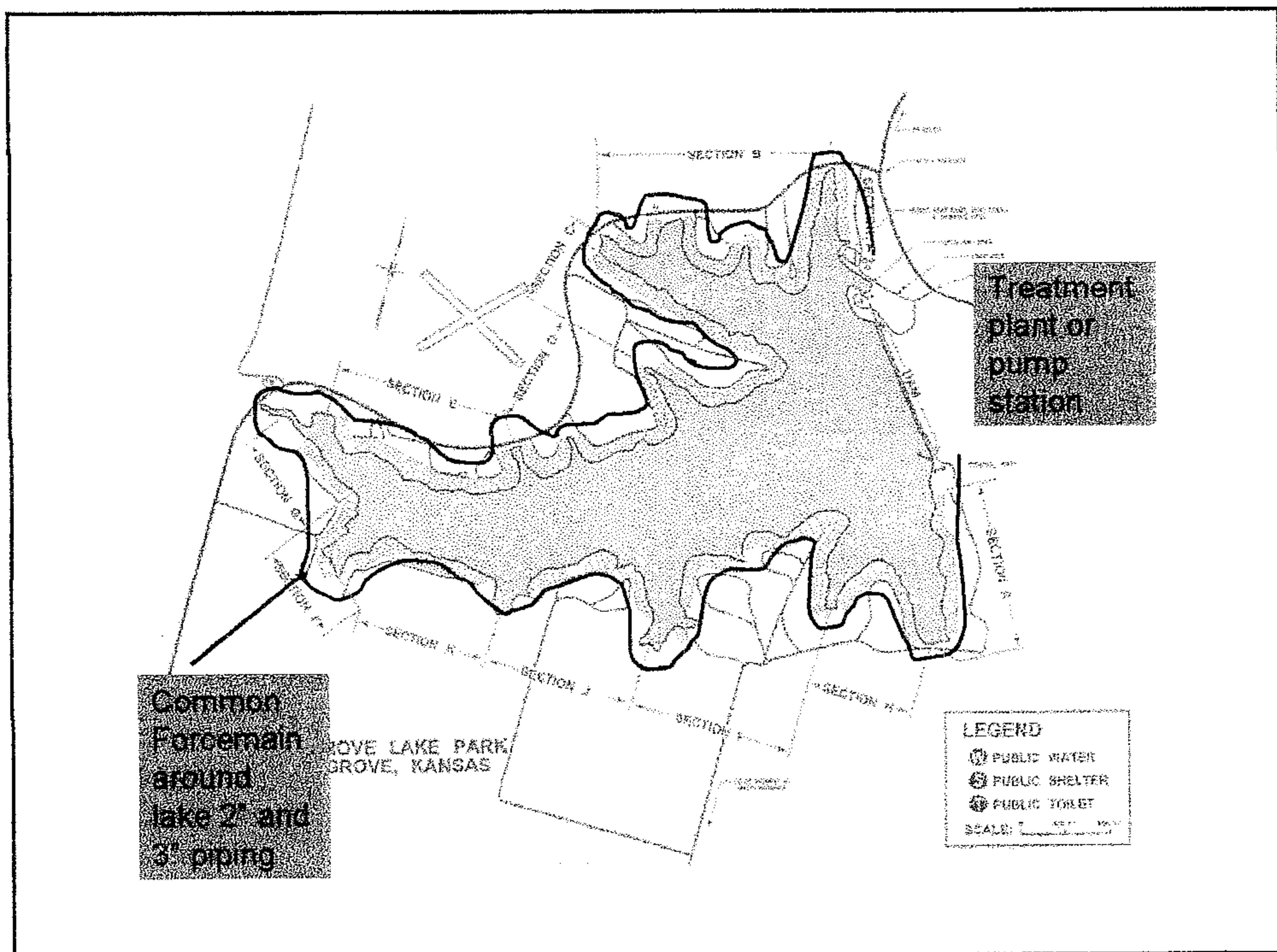
Septic Tank Effluent Pump System

Determine Where You Want to Have Solids Remain –

If new septic tank - then STEP – If not then Grinder Pump

## Low Pressure Sewer (LPS) System

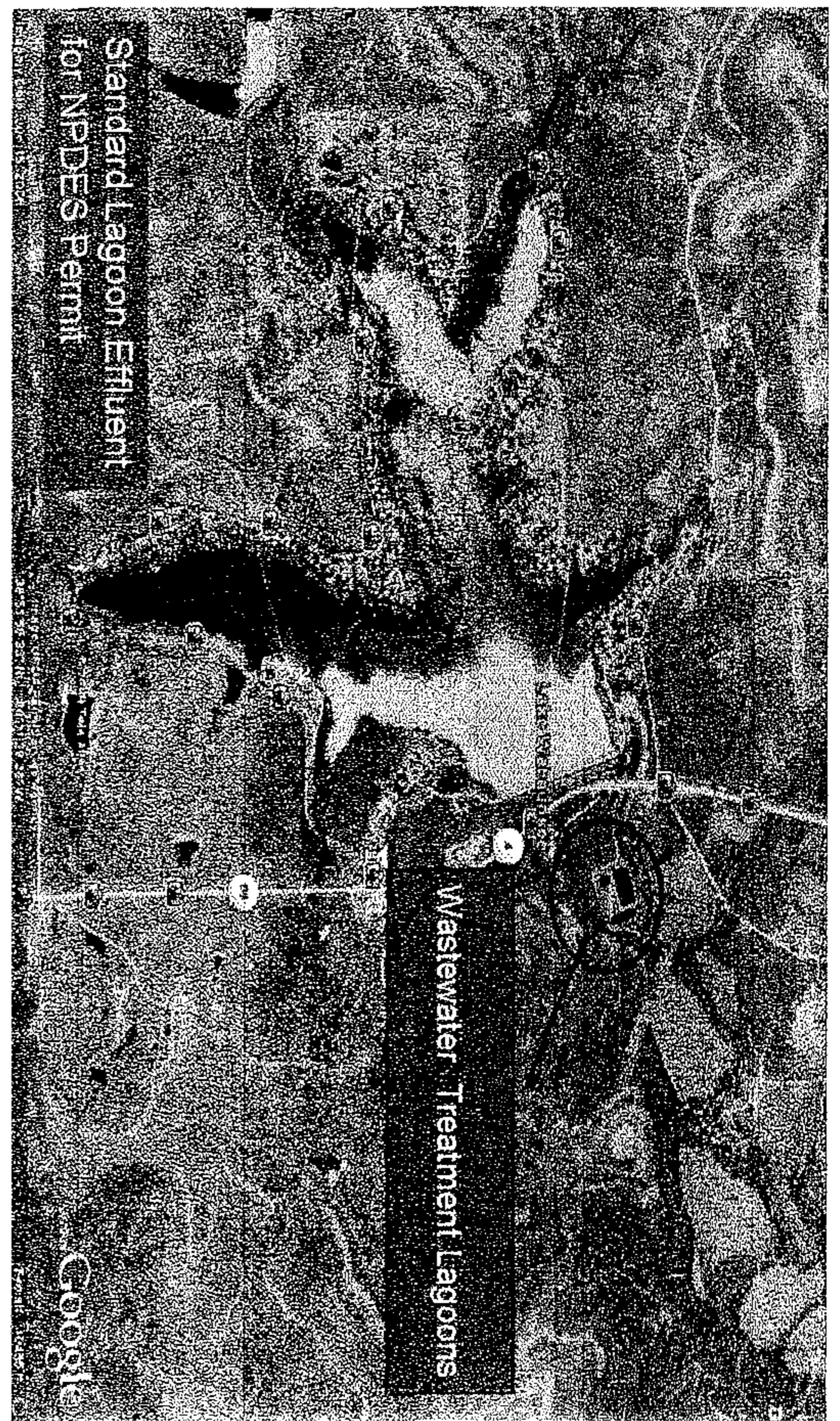
- Grinder Pump Station Located Outside the Home
- Force Main Installed Adjacent The Parameter Lake Road
- Waste pumped to treatment plant or lagoon



## Council Grove City Lake and Council Grove WWTP Lagoons



Low Pressure Sewer (LPS) System with lagoon downstream of dam



## Mechanical Treatment Plant Option



Permit to include Total Nitrogen and Phosphorus for NPDES  
discharge

## Estimated unit Pricing

Item Description	Unit Price installed	Estimated Quantity	
2" and 3" pipe	\$30/ ft installed		
Grinder Pump Package	\$6500 installed		
STEP Effluent Pump System	\$1,500 installed		
9000 GPD Cluster System	\$65,000 installed each	Ten	
Lagoon System	\$500-750,000	One	
Mechanical Package Treatment Plant	\$500,000	One	

## Price Summary - \$65-80/month/home for 20 years

Single Family Home Option 1 or Option 2	\$8.5-9.5 million \$20,000 - \$25,000
Cluster System STEP Grinder Pump Treatment Systems Lateral System Pipe (8 miles)	\$4.5-5.5 million \$ 150,000 (estimated 100) \$1,500,000 (estimated 250) \$ 850,000 \$ 250,000 \$1,500,000
Low Pressure Sewer Pump System All Grinder Pumps Pipe Lagoon	\$4.5-5.5 million \$2,100,000 \$1,500,000 \$ 750,000
Pump To Town All Grinder Pumps Pipe around Lake Pump Station to pump to town Pipe town (\$75/foot for larger pipe)	\$6.5-7.5 milioin \$2,100,000 \$1,500,000 \$ 100,000 \$2,5000,000

Print

**From:** David R. Fritch (dfritch@ksu.edu)  
**To:** 'Cynthia Engle'; polvern@tctelco.net  
**Date:** Thursday, July 9, 2009 1:41:03 PM  
**Cc:** 'Ken Mulanax'; 'Joyce Hutter'; 'Fred Vance'; cbrungar@fhsu.edu; 'Andrew Hutter'  
**Subject:** Possible funding of water/sewer for CG City Lake or Community.

Mayor Engle and Commissioner Hay-

Here is some good info on funding prospects for County, City and/or City Lake for water/waste-water infrastructure. It looks like there will be a bunch of \$\$ put into State Revolving Funds (SRF) with several million in out-right Grants. I don't know what the City or County have on the project planning horizon, but this would be an "opportunity missed" if we didn't try to get about \$10.0 M for water and sewer at the City Lake. If we leverage your political resources and our (CGLA) political resources we may be able to secure some grant \$\$ for design and construction for 2011. Let me know how I or CGLA can help.

Thanks

Dave

## House and Senate Appropriations Committees Approve Significant SRF Increases

On June 18, 2009, the House Appropriations Committee approved its Interior & Environment FY 2010 bill, which provides funding for the Department of the Interior and other agencies, including the U.S. Environmental Protection Agency. This bill delivers on the President's requested budget of \$3.9 billion for EPA's Drinking Water and Clean Water State Revolving Fund (SRF) programs with an increase of approximately 250% from FY09 appropriations (excluding the \$6 billion in ARRA stimulus funding). The bill provides \$2.3 billion for the Clean Water and \$1.5 billion for Drinking Water SRF programs with additional funding allocated to specific earmarked projects. The bill also provides \$667 million for the President's request for the Great Lakes Restoration Initiative exceeding the request for \$475 million) and various other programs. The bill includes language that applies Davis-Bacon prevailing wage requirements to the Clean Water and Drinking Water State Revolving Funds. For a summary of the complete bill [click here](#).

On June 26, 2009, the Senate Appropriations Committee approved its companion Interior & Environment FY 2010 bill. This version of the bill provides \$2.1 billion for the Clean Water and \$1.39 billion for Drinking Water SRF programs. For a summary of the complete bill [click here](#).  
 (Note: there are about 40 pages of earmarked projects in the bill see at

[http://appropriations.house.gov/pdf/2010\\_IN\\_Sub\\_Disclosure.pdf](http://appropriations.house.gov/pdf/2010_IN_Sub_Disclosure.pdf) )

Here is a key excerpt from the Appropriations summary which could be useful to the City and Lake regarding Grants and subsidized loans.

## COMMITTEE ON APPROPRIATIONS

Contact: Ellis Brachman, Full Committee, 202-225-2771

George Behan, Chairman Dicks, 202-225-5916

## SUMMARY: 2010 INTERIOR AND THE ENVIRONMENT APPROPRIATIONS

AS AMENDED BY THE FULL COMMITTEE

### Bill Total

**2009 enacted: \$27.6 billion**

**President's request: \$32.3 billion**

**Committee mark: \$32.3 billion**

### KEY INVESTMENTS

**Environmental Protection Agency:** \$10.46 billion, \$23 million below the President's request and \$2.83 billion above 2009, to protect our nation's air, clean its waters and restore its lands.

- Clean Drinking Water & Wastewater:** \$3.9 billion to help over 1500 communities improve their

drinking water and wastewater systems. This includes: \$2.3 billion for the Clean Water State Revolving Fund to ensure our nation's waters meet the goals of the Clean Water Act; \$1.4 billion for the Drinking Water State Revolving Fund to protect public health by improving drinking water systems; and ~~\$160 million for direct grants to communities for water infrastructure. A portion of the~~

[http://appropriations.house.gov/pdf/2010\\_IN\\_Sub\\_Disclosure.pdf](http://appropriations.house.gov/pdf/2010_IN_Sub_Disclosure.pdf) to view earmarks. This is an interesting list. I didn't see much for KS except for \$500K for DeSota, KS. I wonder where our elected representatives in Wash D.C. were when they were earmarking projects??

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