

**An Outbreak of GI Illness
Associated with a Recreational
Interactive Water Fountain,
New York, July-August 2005**

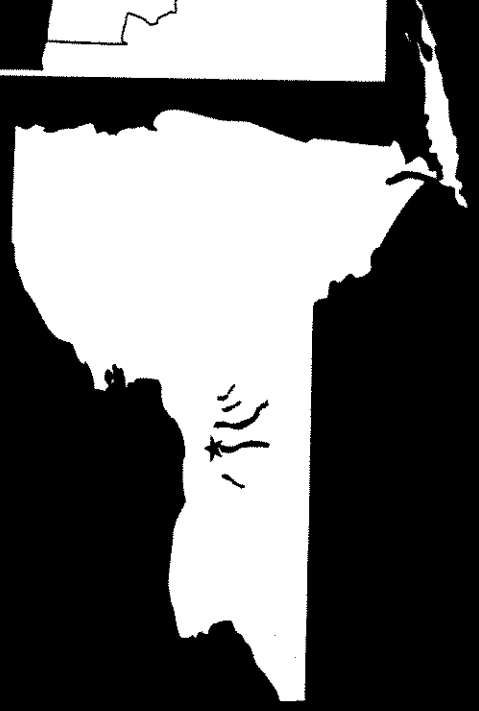
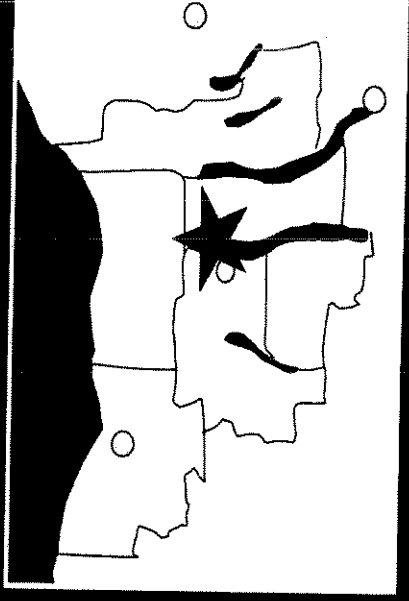
**Joshua K. Schaffzin, MD, PhD
New York State Department of Health**



Background

Seneca Lake State Park

- Central NY – Finger Lakes Region
- Sprayground attraction with many visitors
- No current regulations – no standing water



Background

Seneca Lake State Park



Timeline

August 12-14

- Diarrheal illness in visitors to Park Sprayground
- Three daycares in two counties
- Complaint to NYSDOH after hours duty officer

August 15

- Conference call with state and local HDs
- Epidemiology, Environmental Health
- 47 cases of GI illness, all attended State Park
- Sprayground closed voluntarily

Timeline

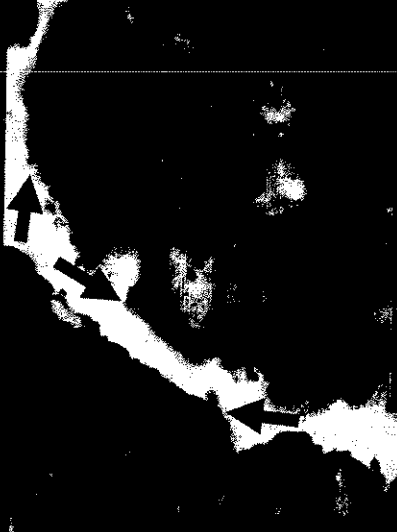
August 16 – September 1

- First confirmed cases of cryptosporidiosis
- Interviews conducted by local health departments
- Alerts distributed:

Healthcare providers	Aug 16 & 19, Sep 14
Day Care Centers	Aug 19
Summer Camps	Aug 19
Pool Managers	Aug 19
HIV/AIDS providers	Aug 19
Food Service Managers	Aug 19
Schools	Sep 1

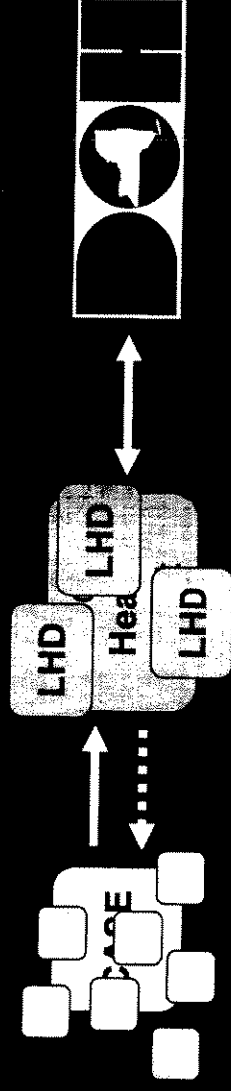
Cryptosporidiosis

- Gastrointestinal Illness
 - Generally self-limited
 - Highly contagious oocysts
- Resistant to standard filtration & chlorine disinfection
- Known to cause water- & foodborne disease
 - Average 200 cases per year (outside NYC)



Cryptosporidiosis

- Reportable Communicable Disease
 - Added to Sanitary Code communicable disease list in February, 1994
- Case Reporting
 - Reported to local health department
 - Investigation initiated locally
 - Regional/central NYSDOH assist & coordinate



Objectives

- **Epidemiologic**
 - Assess extent of outbreak/illness
 - Evaluate risk factors for illness
- **Laboratory**
 - Identify etiologic agent(s)
 - Characterize homogeneity of etiologic agent(s)

Case Criteria

Confirmed

- Clinical - At least one GI symptom
- Epidemiologic - Within 14 days of illness, visited State Park OR
had contact with an ill person who visited State Park
- Laboratory - Positive result for *Cryptosporidium* or other enteric pathogen

Suspected

- Clinical & epidemiologic criteria as above
- No laboratory-confirmed result

Methods

- Epidemiologic

1. Case interviews

All reporting illness interviewed, data entered electronically on Health Information Network (HIN)

2. Case-Control Study

Lab-confirmed Crypto identified on electronic reporting system

Companions recruited as controls

- Visited park same time as case
- Did not become ill within 14 days of park visit

Case Interview Results

- Epidemiologic
- Estimated numbers (as of 9/30/05)
 - 4,060 ill in 37 counties
 - 743 Crypto positive, 30 co-infections
 - 27 hospitalizations
 - No deaths

Case-Control Study

• Risk Factors for Illness

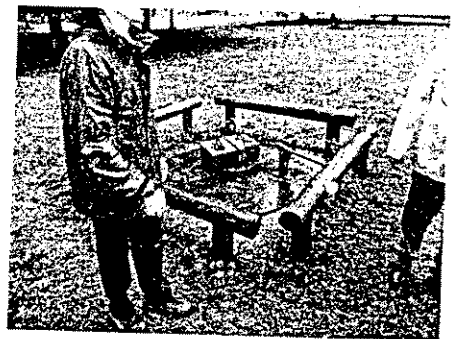
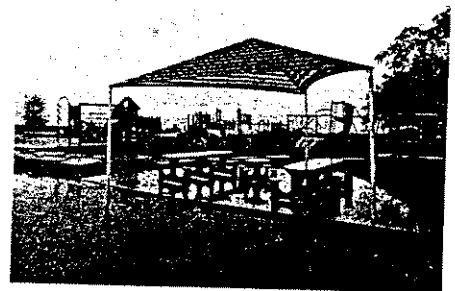
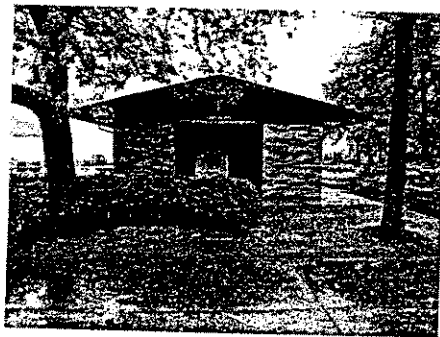
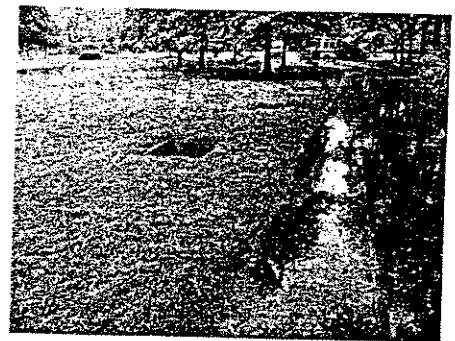
<u>Exposure</u>	<u>Case</u>	<u>Control</u>	<u>OR</u>	<u>95% CI</u>
Sprayground (SG)	100%	100%	N/A	N/A
Face in SG Water	98%	67%	9.5	1.6-56
Swallow SG Water	91%	39%	16.5	3.2-84

p<0.02 for all calculations

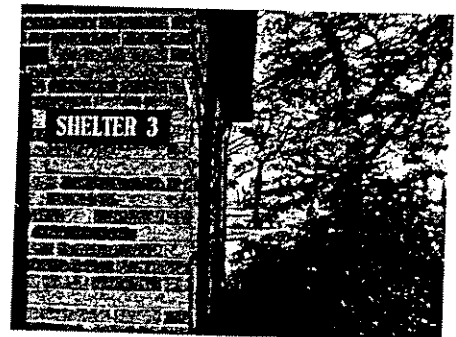
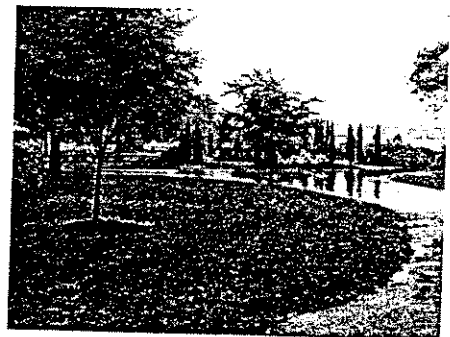
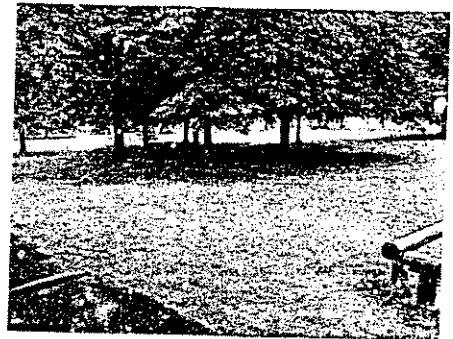
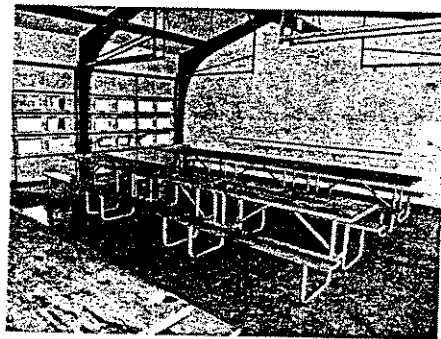
Laboratory Methods

- Laboratory
 - Samples tested for multiple pathogens
 - Bacteria
 - Parasites
 - Viruses
 - *Cryptosporidium* genotyped

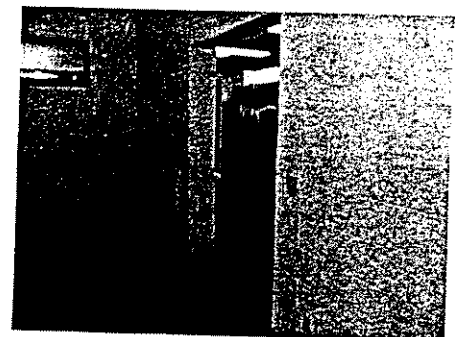
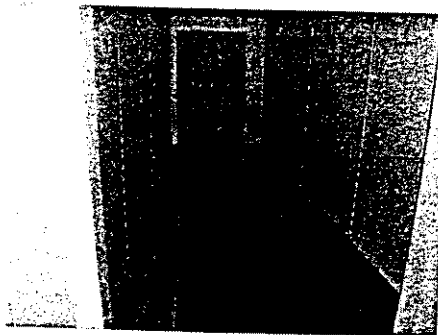
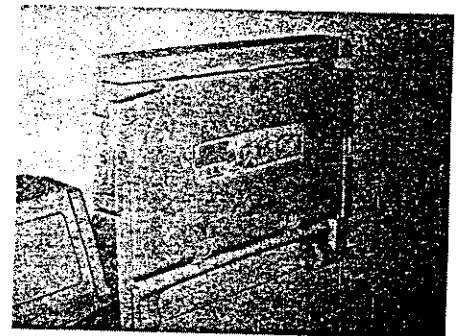
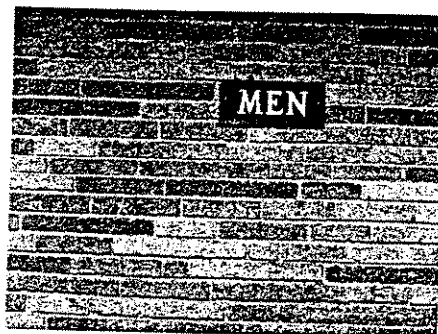
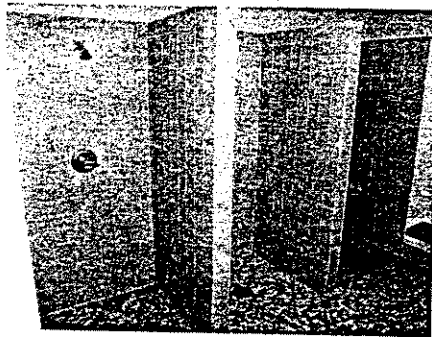
CEH/BCDC ^{Epi} site visit
Seneca Lake State Park, August 31, 2005



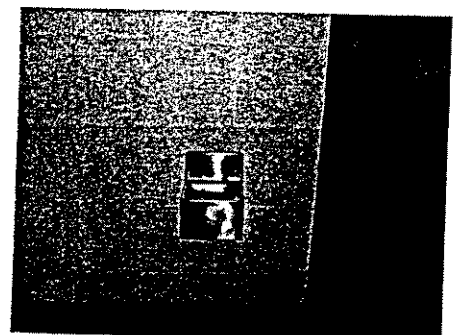
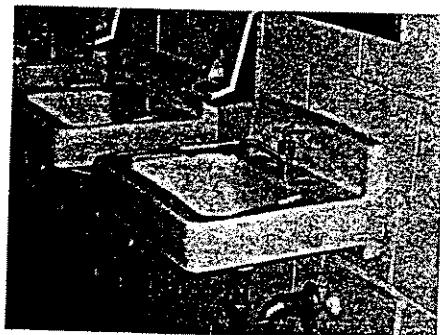
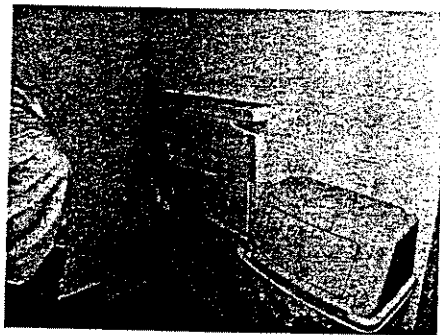
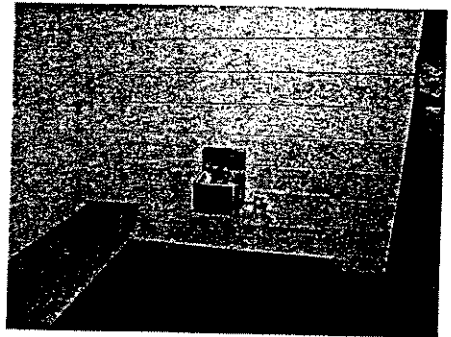
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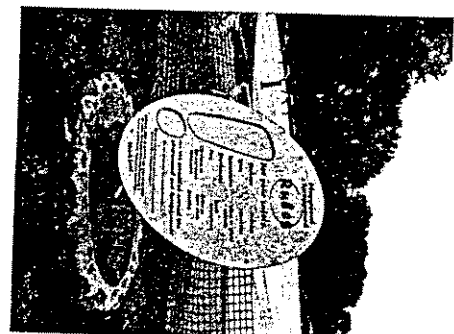
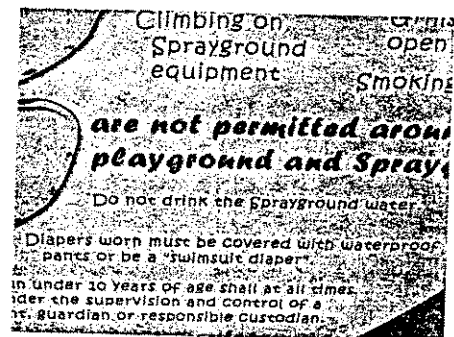
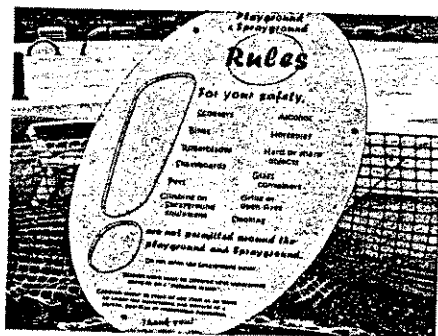
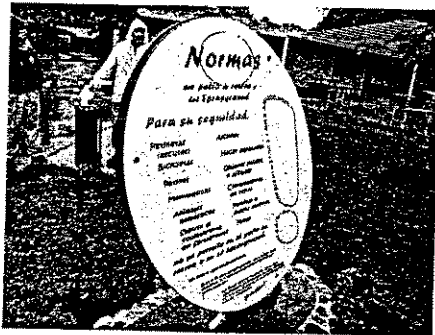
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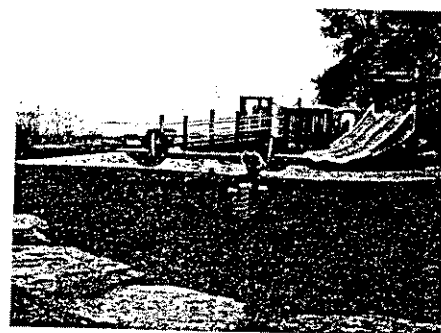
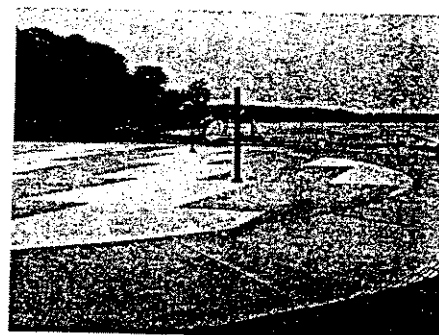
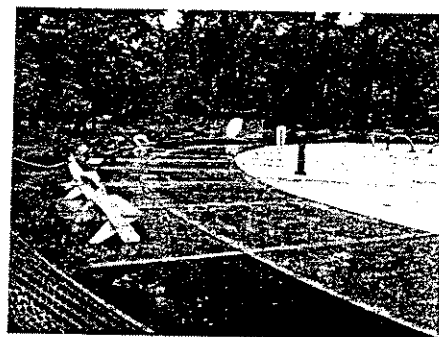
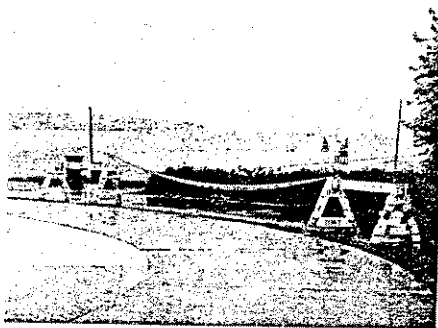
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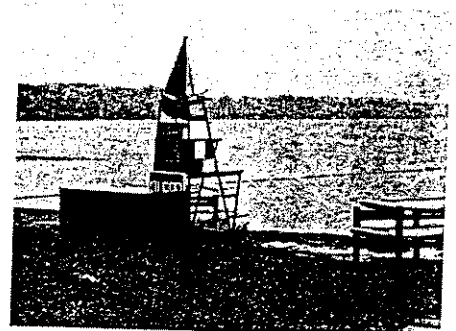
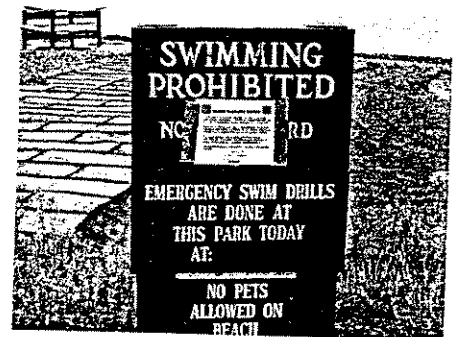
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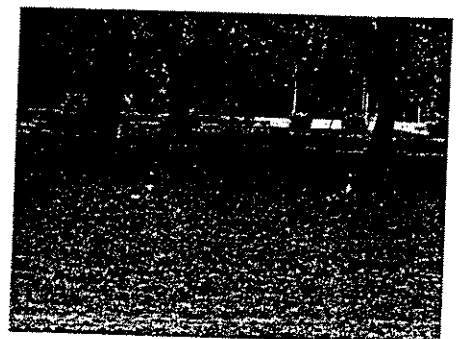
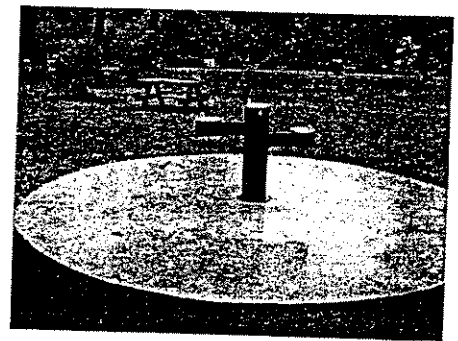
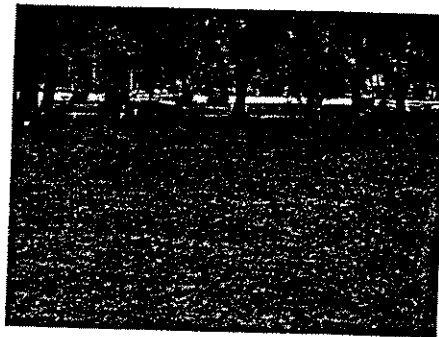
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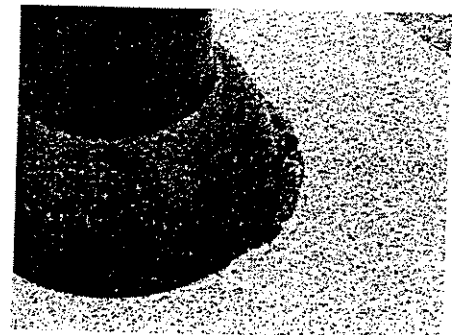
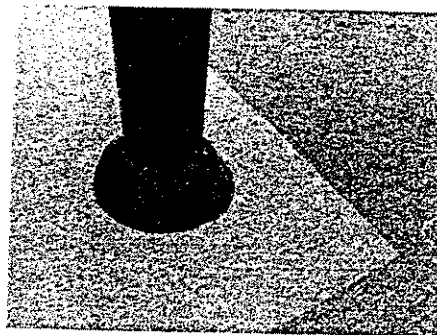
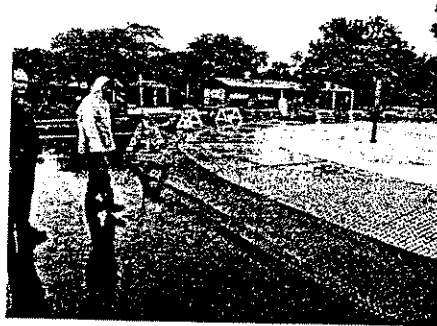
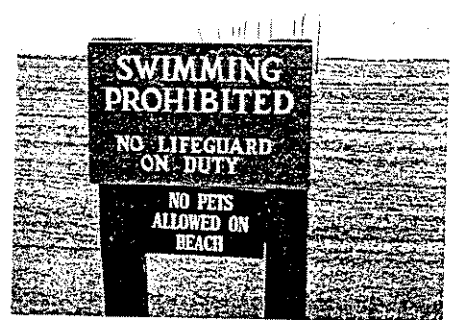
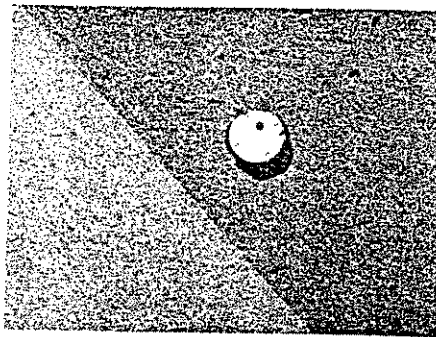
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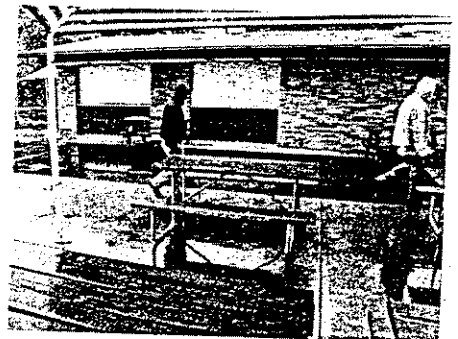
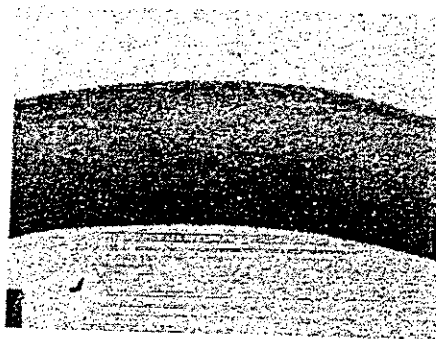
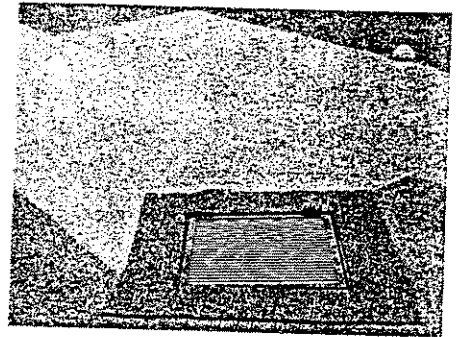
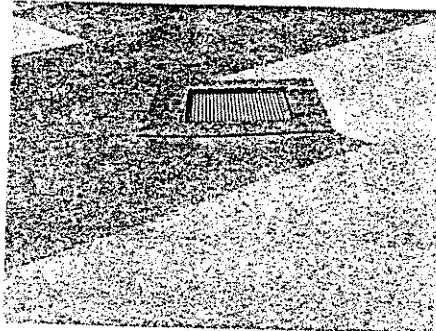
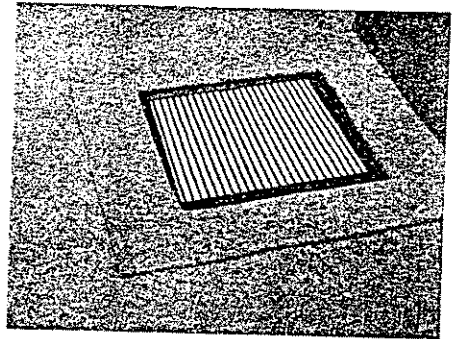
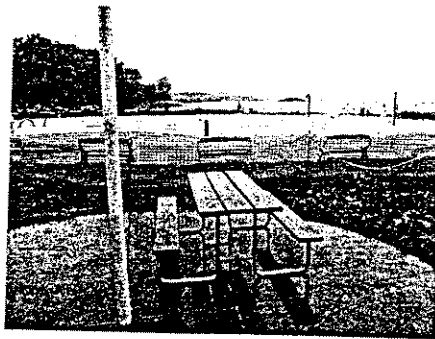
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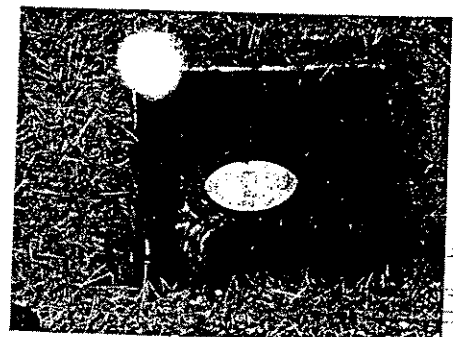
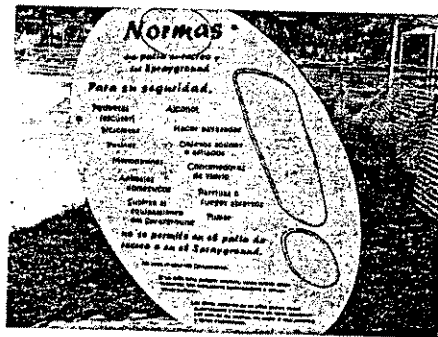
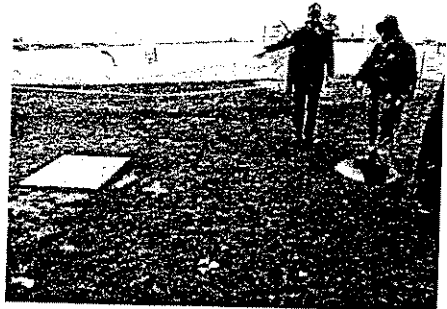
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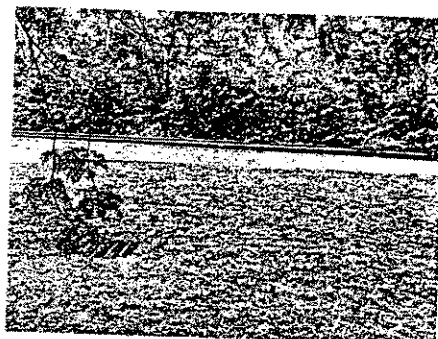
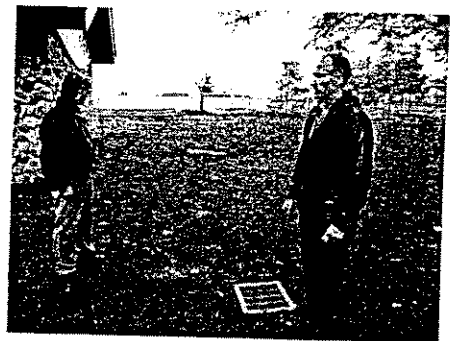
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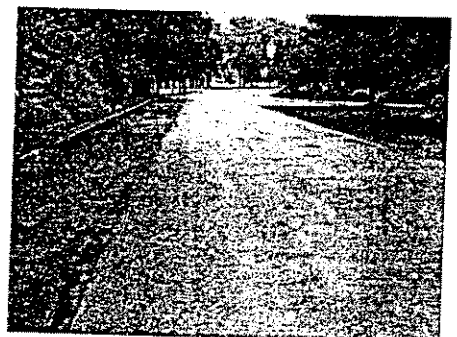
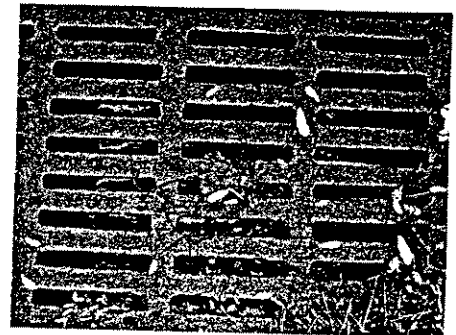
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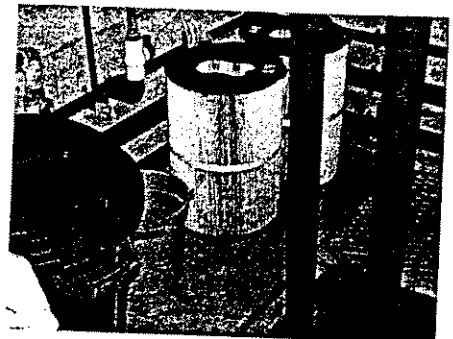
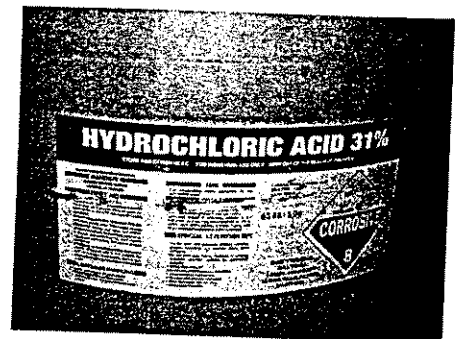
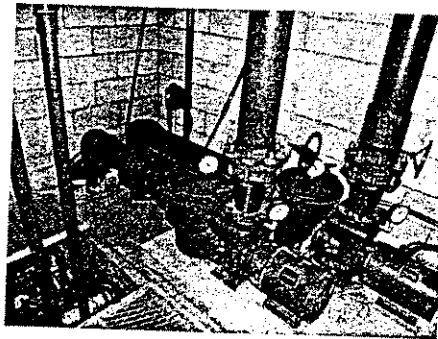
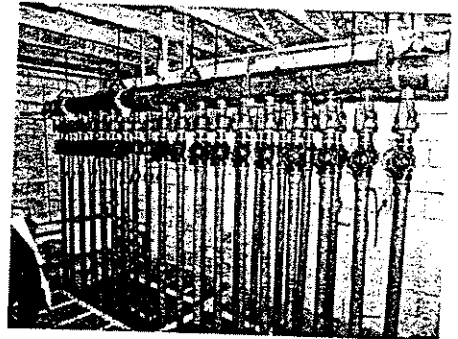
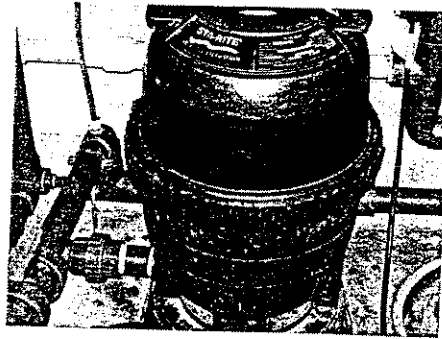
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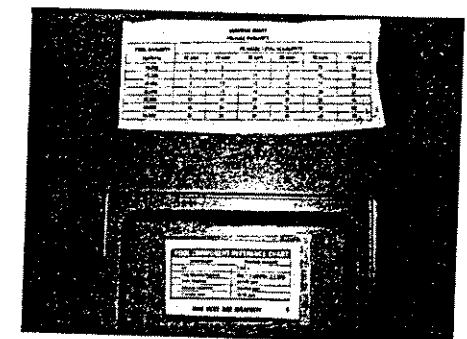
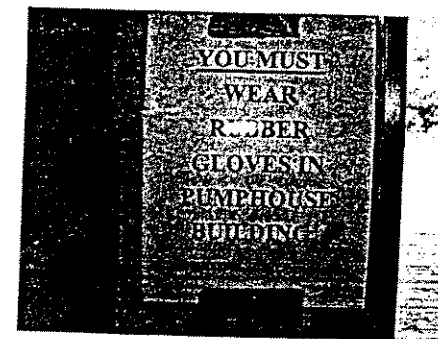
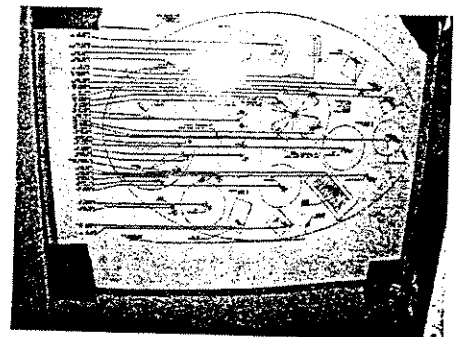
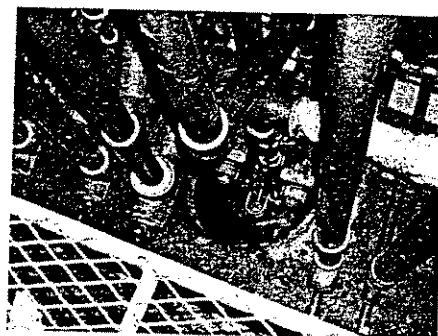
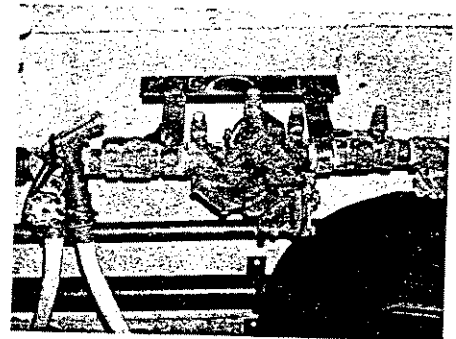
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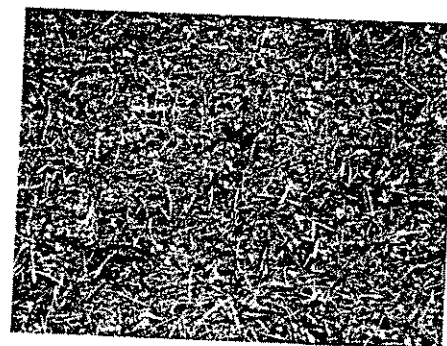
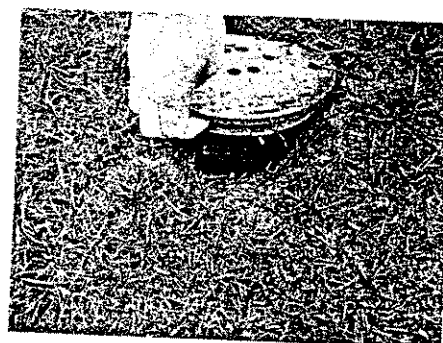
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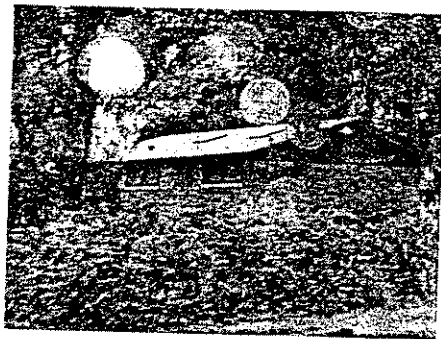
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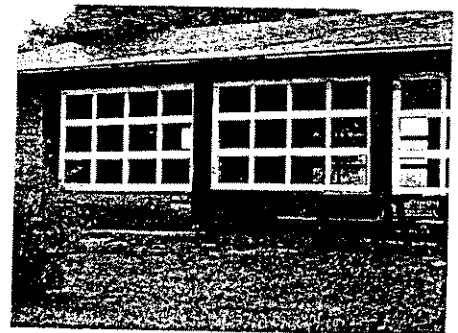
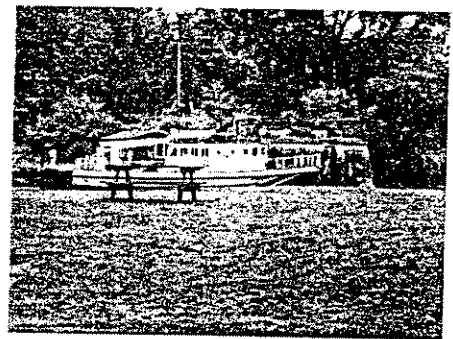
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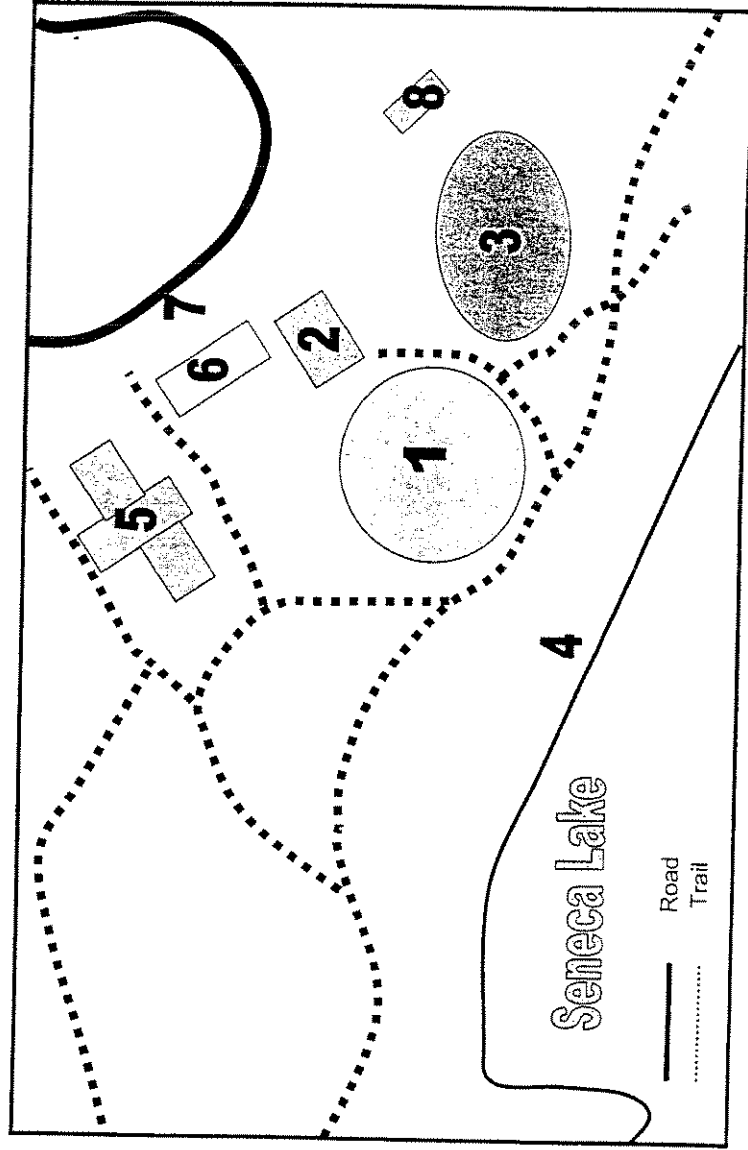
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Seneca Lake State Park, August 31, 2005



Seneca Lake State Park



- | | |
|---------------|--------------|
| 1 Playground | 5 Bath House |
| 2 Concession | 6 Office |
| 3 Sprayground | 7 Parking |
| 4 Beach | 8 Pump House |