

WYOMING AREA SCHOOL DISTRICT
20 Memorial Avenue
Exeter, PA 18644
570-655-3733

FINAL REPORT UPGRADE TO EXISTING SEWAGE TREATMENT FACILITY AT
SARAH J. DYMOND ELEMENTARY SCHOOL

Sarah J. Dymond Elementary
RD#1 Box 304
Sutton Creek Road
Harding, PA 18643
570-388-6527

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1. PROJECT SUMMARY AND OVERVIEW

The District was awarded a \$16,675 grant to upgrade the electro-mechanical control panel of an existing Chromaglass Corporation Model CA-120 packaged sewer plant. A second phase of the project was to install a relatively inexpensive automated pH control system. This system was developed "In house" and built by Concepts for Industry of West Wyoming, PA.

Project Goals were:

1. To increase operational reliability of the plant.
2. To be able to more easily monitor process flow.
3. To track "Hours run" for pumps to aid in preventive maintenance.
4. To eliminate pH spikes caused by the sudden, manual introduction of soda ash.

2. WASTEWATER CHARACTERISTICS AND FLOWS

The Chromaglass model CA-120 plant services a rurally located elementary school in Harding PA. Student and staff occupancy is approximately 350.

Operating parameters are as follows:

Influent pH	4.00 – 8.00
Effluent pH	7.00 – 7.50 permit is 6.00 – 9.00
Fecal Coliforms	usually 0 permit is 200 summer 2000 winter
CBOD	1.0 – 15.0 permit is 25 mg\l
TSS	1.0-12.0 permit is 30 mg\l
Peak flow	1500 gallons per day
Monthly flow Avg.	900 gallons per day 12,000 – 22,000 gallons per month

Connections are typical of an elementary school building. Sinks, lavatories, cafeteria, and art room facilities.

The teaching and support staff does an excellent job at limiting the introduction of undesirable items into the sewage system (grease, excess sugars, cleaning chemicals, etc.).

3. SITE DESCRIPTION

The Model CA-120 plant was installed in 1998 as part of a remodeling project to allow for a larger student population. Prior to this installation, the school utilized a drain field for sewage decomposition.

The Chromaglass system works very well. Winter operation, with lower tank temperatures, presents the normal issues experienced with any small packaged plant. Operating ranges are provided in section 2.

4. INNOVATIVE TECHNOLOGY DESCRIPTION

The primary reason for this upgrade was to allow for increased electro-mechanical reliability of the plant control system. Thus far, there have been NO reliability issues with the equipment that has been installed. Another goal with the installation of the pH control system was to improve on permit requirements. Our goal was to eliminate the “Shock” experienced by the system with the sudden, manual introduction of soda ash. We were completely successful in meeting this goal. I would recommend installation of this affordable control system for ANY small packaged plant.

The Chromaglass upgrade included removal of all electro-mechanical timers and relays, and replacing them with Programmable Logic Control (PLC). The PLC allowed for the installation of an operator interface “Touch” screen. This interface allows for very easy access to any and all operating parameters. To date, there have been no reliability issues with this system. Physical installation of this panel was completed “In house”, in 1 day. Startup was completed the next day with assistance from Chromaglass. The plant was down less than 24 hours. There were no permit violations experienced during this installation.



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