

**LPS SEWER SYSTEM  
OPERATION & MAINTENANCE MANUAL  
December 1990**

SYSTEM DESCRIPTION

A community pressure sewer and drain fields have been installed by LPS, Inc. to serve up to fourteen (14) dwellings. Sewage treatment is by individually owned septic tanks. The newly installed tanks are each fitted with Orenco pump inserts with float controls, an alarm float, and control panels are mounted on the dwellings. The Cooke system was existing and the equipment differs. The effluent is discharged through 1-1/4 inch service lines to the common 2-inch pressure sewer. This service line is also owned and maintained by the respective lot owner. A PVC check valve and shut-off ball valve are at each service connection to the pressure sewer. Stub-outs with these valves are provided for undeveloped lots. There are seven (7) active connections and five (5) stub-outs.

The common pressure sewer discharges to a 1,000 gallon concrete dosing tank located up-slope of Drainfield "A", the northern field. Two Orenco dosing siphons Model OSI 348 installed in the tank alternate automatically. Each siphon cycle discharges approximately 1,000 gallons to one-half of the operating drain field. The selector or diverter valves for each siphon discharge are located approximately 25 feet from the dosing tank. The discharge from the diverter valves is split uniformly by a distribution manifold to 200 linear foot drain field modules.

There are two diverter valves with PVC risers and caps. There are four manifolds which can be located by their 1-inch PVC vents. Each manifold in Drainfield "A" loads six (6) modules and each manifold in Drainfield "B" loads five (5) modules. The modules are constructed of 10-inch diameter gravel-less drain tubing with 200 feet connected in series so as to fill the upper trench slightly more than half the depth before overflowing to the next lower segment.

OPERATION AND MAINTENANCE

Septic Tank/Pump basins

The septic tanks should be inspected at two year intervals to evaluate the rate of sludge and scum accumulation. If inspections are not made, the tanks should be cleaned by a licensed septic tank pumper at 3 to 5 year intervals. Records of this maintenance can be kept in the pump control box. At that time the screen in the pump insert can be cleaned by a stream from a garden hose.

The pump should be checked for operation annually preferably at the beginning of the season. Remove the cover from the pump riser and set the selector switch in the pump control box to manual momentarily to look and listen for pump operation. Reset it to auto. Hose off the float switches. Each float can be lifted or tipped by an insulated hook to check the pump and the alarm circuits for operation. If the pump operates on manual, but not on auto when the float is lifted, the float switch is faulty and must be replaced. Such service as switch replacement or pump repairs should be done by a qualified electrician.

Pressure Sewer and Air Release Valve

It is recommended to operate the ball valves at the service line connections to the main pressure sewer annually. These are quarter-turn valves. When the valve handle is in line with the valve body it is open and this is the normal position. When the handle is at right angles to the valve body it is closed.

The air release valve is mounted on a shut—off valve which can be closed for valve removal and cleaning. This may be required annually. With the valve removed, an assembly with a pressure gauge can be installed temporarily to check the pressure sewer for leakage. During testing of the new installation, the normal line pressure at the air release valve location was noted as 25 psi. The pressure may increase during a pump operating cycle but if a lower pressure is observed the line should be inspected throughout its length. A wet area at the ground surface or the sound of escaping water will indicate the location of a leak which must be repaired.

### Dosing Tank and Siphons

Remove a cover to inspect siphon operation each month for several months after operation begins and every six months thereafter. A water level greater than 31 inches over the top of the siphon bell indicates that the siphon has lost prime and the tank is trickling through the overflow. This condition may also be detected by the sound of the trickling by listening at the vent. It is necessary to blow air under the skirt of the siphon bell to re-prime the automatic operation. An ell shaped assembly of small diameter plastic pipe and lung power or a source of compressed air will accomplish this.

### Diverter Valves and Drainfields

These valves located on the downhill side of the access road from the dosing tank direct the flow to Drainfield “A” on the north or Drainfield “B” to the south. The open position is downhill for “A” and south for “B”. Place Drainfield “A” in service during the high use period such as April through October and use Drainfield “B” during the remainder of the year. In the event that effluent surfaces during the period of use for either field, the valves should be reset to rest the field for a six-week period. This should only occur due to a hydraulic overload which could be the result of a homeowner inadvertently leaving water running or some unforeseen flooding of a pump basin by surface runoff or groundwater.

### Monitoring Wells

The perforated pipe observation wells installed down-slope of Drainfield “B” afford a check of the groundwater elevation at each location. A system of observing and recording the depth to water from the ground surface or top of each casing will be a valuable management tool. Readings could be taken at regular monthly intervals with supplemental observations made more frequently during periods of significant change. After a two year period, a trend may be discerned and less frequent checking would be required.

An understanding of the affect of Drainfield “B” on the normal groundwater fluctuations is desired. If the depth to water from the ground surface is six feet or less in each of the wells, it is advised to use Drainfield “A”. Water quality sampling from the Leaning Pine well is recommended by the Idaho Division of Environmental Quality. These should be checked for bacteriological contaminants and nitrates periodically. The recommended frequency is each six months or quarterly during periods of water delivery. A failing coliform test requires notification of the users and immediate re-testing until the condition is corrected.