



## PROPER MAINTENANCE OF LIFT STATIONS

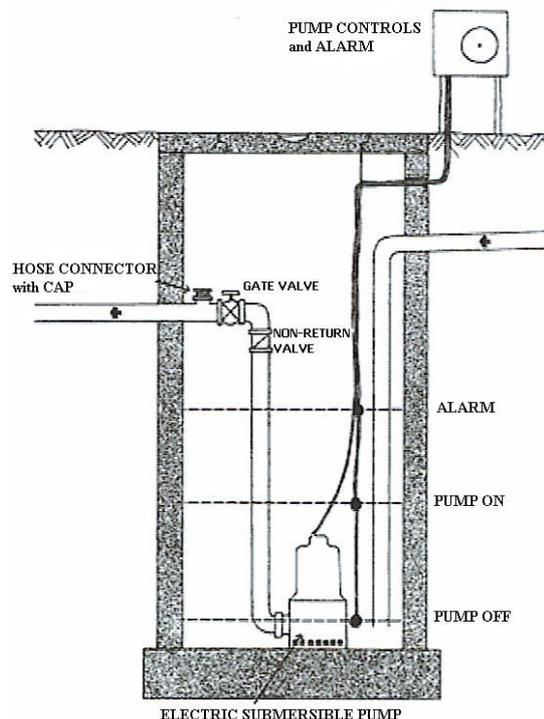
In the construction of sewer systems, flat topography and the various grades of the landscapes lend the need to raise sewage inlets to higher excavation outlets. Sometimes it becomes less expensive to raise sewage by the use of a lift station or pump station. Although there are various types of lift stations, the controls and concepts are basically the same.

Lift stations typically are available in round, square, and rectangular shapes and a variety of sizes. It is important to observe the shape, the size, and the flow of the lift station before recommending a particular treatment.

Most lift stations are equipped with fully automated controls and pumps that are activated by high and low liquid levels. These controls activate the pumps in order to move the sewage from a lower inlet to a higher outlet.

Some lift stations are equipped with an airlift pump; this device consists of a vertical riser pipe submerged in the wastewater or sludge to be pumped. Compressed air is injected into a tailpiece at the bottom of the pipe where as to release small air bubbles into the sewage. The mixture rises in the discharge pipe to an outlet point.

The overall efficiency of the lift station is directly dependent on the automated equipment and the pumps functioning properly. Proper maintenance of this equipment and the use of a chemical or biological product to lower the viscosity of the incoming sewage (influent) is the key to maintaining maximum efficiency.



### Chemical Treatment

The treatment of a lift station chemically, benefits the efficiency of the system by providing the ability to quickly dissolve grease and sludge and to control odour. The chemical treatment allows pumps and control equipment to run freely without clogging.

## **Recommended Chemical Treatment**

**Odour Cap:** This floating degreaser is suspended on the surface of the sewage. The floating cap functions to contain the odour and to dissolve the viscous sludge into the wastewater, keeping pumps running free of clogs. A 3 to 10 cm cap is generally recommended depending on the flow of the system, the size of the lift station, and the amount of sludge coming into the system. Odour Cap has a pleasant orange/citrus fragrance.

### **Dosage Instructions**

In order to determine the proper dosage of the chemical treatment, the following formulations should be used:

#### **For round lift stations:**

Radius (in centimetres) squared  $\times$  0.00314  $\times$  the desired cap thickness (in cms) = the number of litres Odour Cap needed.

#### **For square or rectangular lift stations:**

Length (in centimetres)  $\times$  width (in cms)  $\times$  cap thickness (in cms)  $\div$  1000 = the number of litres Odour Cap needed.

## **Biological Treatment**

The process of biological treatment will often take longer to see noticeable results than chemical processes because the sewage is not dissolved into the wastewater but is consumed through a digestion process. The advantage of the biological process is that the effluent (outbound sludge) is lower in BOD (Biological Oxygen Demand) and COD (Chemical Oxygen Demand) levels. Because these levels are lowered at the lift station, the treatment of the sewage is easier at the treatment plant.

## **Recommended Biological Treatment**

**8 ALIVE:** This liquid product contains live bacteria cultures of up to 30 billion cfu's (colony forming units) per litre to quickly digest and liquify organic waste, eliminating them and the problems they cause. The bacteria are non-pathogenic (i.e. they cannot cause disease), and the product itself, is non-acid and non-alkali, making it environmentally safe in any and all systems. Regular use of 8-ALIVE will establish thriving colonies of waste-digesting bacteria to provide a continuous cleaning action in the system. **The organic waste is converted into harmless water and carbon dioxide.** 8-ALIVE may be added into the Lift Station at the rate of 1 litre per 3000 litres of water.

**BEC 201 Bacterial Enzyme Powder Concentrate:** This is a high potency, bacteria-laden formulation (6.2 billion micro organisms per gm) for use in degrading many types of organic waste. **BEC-201** contains a specially formulated blend of microorganisms, micro/macronutrients and surface tension suppressants/penetrants, developed for use in bioaugmentation. Because of the diversity of the microorganisms and enzyme systems, incorporated in this product, it is excellent for use in Municipal Wastewater applications. The dry bacteria cultures and enzymes in the formula need to be activated first, by mixing with 8 - 10 parts warm water (about 100 gm per litre), at 25 - 35°C. Do not use hot water. Allow to stand for 1 - 4 hours. Pour this mixed slurry into the Lift Station. Application rates vary depending on flow rates and the amount of organic matter. The general rule of thumb is, 1kg for every 500000 litres of volume passing through.

## **Other Recommended Products for Lift Stations**

**Deo 99 Concentrated Industrial Deodorizer:** Many lift stations function without any clogging of the pumps or equipment, yet still retain odour problems. The use of DEO 99 eliminates the source of the odour. Because DEO is highly diluteable, at 1 to 100, it can be applied directly into the lift station or can be diluted and applied through a sprayer and misted into the lift station.