

Prevention

Prevention is the best way to prevent spills and other emergencies from occurring in the first place; have low-pressure, low-flow, or other automatic shut-off switches installed on pumping equipment for liquid irrigation systems. If that is not possible, keep radio or cellular communications with someone who will remain close to the pump. Check all irrigation lines prior to pumping, and look for defects and insecure or worn connections. Place solid pipes over any watercourses, wetlands, ditches, or containment areas.

Be extremely cautious about spreading manure on areas with steep slopes. These areas may require larger buffers than those stipulated by your state or local regulations to avoid runoff of applied manure.

Manure applications on fields with tile drainage may require some cultivation before application. Manure should be applied at rates that avoid surface runoff. Monitor tile outlets immediately prior to, during, and for two days after application for any visible sign of manure leachate. A change in color or odor may indicate a possible spill. If you notice or suspect any manure in the drainage water, plug the outlet.

Conduct inspections of your manure storage or lagoon on a regular basis. Embankment areas should be kept mowed, and if possible, free of trees and shrubs, allowing you to visually inspect the embankment for any seepage or cracks. For more information on regular inspections, please consult Lesson 24, *Operation and Maintenance of Manure Storage Facilities*. If you notice any seepage, consult the Natural Resources Conservation Service (NRCS) or the engineer who designed the facility to discuss the extent of seepage or cracking and what measures can be taken to further investigate or repair the situation. Consult NRCS, a professional engineer, or tank manufacturer before making any modifications or repairs to your storage structure or lagoon. In many instances, specific procedures must be taken to ensure that the structural integrity of the unit or embankment is not compromised in the process of making modifications or repairs. When these procedures were not followed, they have caused major spills and lagoon breaches.

Several animal producers across the country are using electronic monitoring devices to assist them in managing their lagoon or storage basin levels. These monitors (Figure 50-1) consist of a liquid level sensor, microcomputer, rain gauge, and phone connection (typically cellular). Lagoon levels and rainfall values are recorded twice a day and transmitted to a service provider who prepares weekly records. The monitors can also warn producers, by either phone or pager, of potential environmental or operating hazards such as maximum storage levels or regulatory freeboards being approached or reached. Breach alarms that contact producers in the event of a tank rupture or lagoon spill can also be set on the monitors. Some lagoon monitors can be modified to monitor livestock buildings in case of power outages. Similar power- and liquid-level monitoring devices can be used on other areas of the manure handling system such as pump/lift stations (Figure 50-2).

Managers of animal facilities should also consider secondary containment around existing storage facilities, pump/lift stations, recycle pumps, or production houses. These structures should be designed to collect the spilled manure and excess rainfall that may collect in an area. The collected liquid can then be transported and applied to cropland at agronomic rates. In several states, if the concentration of several nutrients is below

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Figure 50-1. Remote lagoon monitor.

regulatory levels, the collected liquid can infiltrate into the ground or be released into natural drainage ways. Check with your state regulatory agency for design and operating guidelines for secondary containment structures.

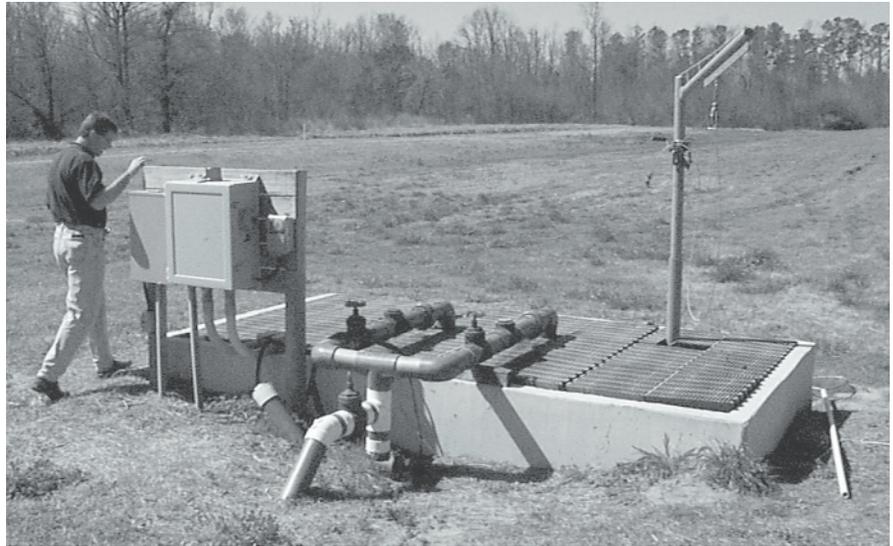


Figure 50-2. Pump/lift station with automated alarm system.