

ZERODAY®

Zeroday InteSys Scaled Process Systems

Zeroday's complementary water and wastewater treatment product lines are combined and integrated into highly economic, effective treatment system packages. Combinations of our polymers/coagulants/chemicals, makedown and feeding equipment, pumps and pump systems, process controls and strategies, and solids-liquid separation products such as our Sludge Sacks, allows Zeroday to design and install complete treatment process systems designed for specific projects and ongoing use.

Zeroday's **InteSys (Integrated Systems)** processes have many benefits for small to medium sized applications:

- **Size:** Flexible, scalable for very small to medium sized operations that are normally economically challenging.
- **Rapid Setup:** Quick set up and short time to operation; typically do not require "concrete and iron" construction, making installation relatively much easier and faster.
- **Cost Effective:** Far lower capital cost.
- **Flowsheets:** Effective flowsheets for continuous duty processes and ongoing treatment requirements.
- **Projects:** Ideally suited for short duration projects, such as pond emptying and dewatering.



When developing an InteSys system proposal, the Zeroday process experts collect the necessary design data: treatment and process requirements, waste information and data, process response evaluation via lab and pilot testing as required. This information provides the bases for development of an effective process design, installation costs, and operating cost estimates for customer consideration and assessment.

Examples of InteSys systems Zeroday has successfully installed:

Mineral process reagent system:

Zeroday was contracted and installed a 24 LMI pump reagent system entailing the construction of three (3) pump stations, installation of 860 feet of ½" stainless steel reagent distribution tubing and 1300 feet Tygon feed lines throughout a mill. Included were automatic mixing systems for two of the reagents (each consumption level of 1-4 drums a month), installation of two (2) additional reagent head tanks with continuous recycle, in line reagent filtering to prevent precipitated chemicals from plugging the system and 4 chemical remote controllers to allow reagent addition changes away from the actual pump location.

Municipal digested sludge dewatering system:

Small municipalities (particularly those with 750 and fewer connections) who digest their sludges, store and then seasonally liquid apply the sludges often find that using a simple InteSys process incorporating polymer, polymer mix-feed equipment and Sludge/Dump Sacks is particularly cost effective and easy to setup and use. These systems are typically operated only 2-6 times a year



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to empty their digesters using a single Sack system. Typical annual operating costs, excluding dewatered solids haulage, are often below \$10,000 for 30-70 dry tons sludge per year. Often this is a far more economic alternative to building larger tanks or installing a much more costly treatment system.

Winery pH adjust and dewatering system:

In winery situations involving low wastewater volumes that have high starch, sugar and alcohol loadings, often the discharge pH and COD/BOD must be controlled before discharge to a municipal sewer system or pond. In these circumstances, Zeroday installs an auto pH control loop with caustic/base for pH adjustment, coagulant and polymer mix-feed systems to control flocculation and dewatering response, and a Dump Sack for removal of waste stream solids which can be easily taken to a dump for disposal. Utilizing this system has provided target discharge pH levels and dramatic COD reductions from as high as 13,000 ppm down to 1,000 ppm and lower.

Pond dewatering projects:

When a pond (mineral, digested organic sludge, alum sludges) requires clean out, the typical approach is to contract a dredger to pump out the slurry/sludge which is fed to a belt press or centrifuge for dewatering and haulage to disposal ... a very expensive proposition. A much more cost efficient solution is installation of an InteSys process incorporating polymer, polymer mix-feed system and Sludge Sacks. The sludge is flocculated while being pumped to the Sludge Sack. In these situations, Zeroday can supply in line flocculation performance monitoring devices that speed controls the polymer feed pump to ensure optimum flocculation which in turn results in maximum Sack drainage and dewatering performance. While dependent on the project size, even incorporating the dredging costs, a pond dewatering with an InteSys dewatering process is often 33-50% of a typical dredge-belt press/centrifuge operation.



Zeroday continually develops and adds product lines that enhances our InteSys process capabilities and economics. Our goal is to creatively and innovatively enhance our treatment packages to offer ever increasing value to our customers.

To assess whether a InteSys process is an economic and viable option for you, please contact Zeroday for a project review and system design, including a cost analysis, by calling our office +1 (503) 582-9067 (877-582-9067) or by emailing Support@ZerodayLLC.com.