A GUIDE TO DREDGING, DESLUDGING & MECHANICAL DEWATERING OF LAGOONS
Follow Best Practices to Protect Your Investments

Kayden Industries believes in a fair and transparent working relationship with all clients and prospective clients. Kayden is available to assist in mechanical dredging and desludging education, and consultation at no cost. This leaflet gives prospective users of dredging, desludging and dewatering technologies an overview of best practices in the industry — and highlights some of the common pitfalls in the procurement process.
The process of dredging and mechanical desludging and dewatering is relatively simple. However, the reality is that only trained dredging, centrifuge and dewatering personnel have the necessary skills to deliver the service efficiently and safely using state-of-the-art centrifuge technology.

FOUR STEPS TO SUCCESSFUL OPERATION

1. The sludge or other material is dredged and pumped onshore.

2. Next, larger particles are processed so that they do not reduce the efficiency of the centrifuges. Grinders, shakers and shear tanks can be used.

3. Once larger particles are removed or dispersed, the fluid can be dosed with the proper flocculent to ensure that the smallest particles combine to form objects that the centrifuge can remove. Flocculation is application specific and not necessarily always required.

4. After the centrifuge process is complete, the centrifuge will discharge a clean effluent as well as solids. The effluent can be sent back to the lagoon or to holding tanks. The solids are discharged into a solids bin to be removed for disposal, or can be stored on site.

For more information regarding dredging, desludging and mechanical dewatering of lagoons, please visit our website at kaydenindustries.com or our YouTube channel for informative videos and animations.
WHAT TO LOOK FOR IN DREDGE DESIGNS

WHEN CHOOSING AN EFFICIENT DREDGE DESIGN THERE ARE SEVERAL FACTORS TO CONSIDER:

1. Does the dredge pump at a volume high enough to process the pond in the specified project timeline?
   - What percentage of solids can the dredge pump remove and at what rate? Cross reference this to the overall sludge volume to be removed.

2. Does the dredge design ensure that solids are removed completely?
   - The dredge design should have a cutter head like a farm combine. Submersible style pumps have limitations and cannot ensure a proper cleaning of the lagoon bottom.

3. Can the dredge effectively pump heavy sludge and difficult sludge sections?
   - Many designs and/or operators will avoid difficult lagoon sections and focus on easy to remove material, leaving lagoons sludged up and operating at below peak performance.

4. Is the dredge safe for use in lined lagoons?
   - Does the dredge design have a liner protection system?

5. Can the cutter head reach the edge of the lagoon to remove the built-up solids that have migrated to the edges?
   - Many dredge designs, especially submersible pump style dredges, have no ability to clean lagoon edges.

Kayden has multiple dredge styles, from unmanned remote dredges to fully manned dredges. We can accommodate small or large projects. All Kayden dredges come with a liner protection system to protect against costly liner damage. Kayden chooses the right dredge for the job by fully analyzing lagoon size, depth, volumes, type of sludge, and required energy efficiency.
CHOOING THE RIGHT CENTRIFUGE

Centrifuges aren’t all alike. Many centrifuges have been developed for industries that are not applicable to the highly abrasive and high volume nature of dredging. When choosing the appropriate centrifuge, ensure that dredge volume can be adequately handled with as few centrifuges as possible. Only high capacity industrial centrifuges should be considered. Companies requiring many centrifuges to complete a task will pass overheads on to the client, increasing costs and operational risk if centrifuges were to break down.

Kayden is currently the only dredging and desludging company offering centrifuges designed, manufactured and serviced in-house. This competitive advantage ensures that the centrifuges and supplemental equipment associated with the job are always running at optimal levels, reducing downtime and costs for the client.

To ensure solids are removed completely the dredge should have a cutter head like a farm combine.
KNOW FOR SURE WHAT’S IN YOUR LAGOON

By imaging and mapping a lagoon with today’s latest technologies you will discover the amount and depth of sludge in the lagoon, and you can be sure that there are no large obstacles in the lagoon that could cause a safety or operating concern.

A properly scanned lagoon like the image below will also allow the operator of the dredge to ensure that the pond is dredged efficiently, and that solids are removed in all areas.

Kayden currently offers scanning, imaging and mapping services for lagoons. This technically superior method to manual sludge checks is available to all prospective and current clients.

WEST POND SEDIMENT BUILDUP
APPROX. 1,034 CUBIC METRES
HOW DO I KNOW THE PROJECT WAS COMPLETED AS SPECIFIED?

In simple terms, the pond must be scanned and imaged for sludge and debris after completion of the job. This can be done by a dredging company with the technology in house or by a third party for a reasonable cost. Visualization ensures that the job was completed properly and that you will not require the lagoon to be re-dredged soon after investing in the recent desludging project. Kayden offers pre-job and post-job lagoon imaging.

WHAT SHOULD BE OF CONCERN IN THE PROCUREMENT PROCESS?

1. **Avoid service providers who show comparably few workdays compared to other bids.**
   These providers will underbid the process to gain the work, only to leave the lagoon before it is properly cleaned because they have not budgeted properly for the effort required.

2. **Avoid manual analysis.**
   Manual analysis of sludge volumes, depths and location are highly inaccurate and can lead to cost overages or improper cleaning of the lagoon. Ensure proper imaging of the lagoon to truly understand the project scope and to hold service providers to account.

3. **Quick payment options or difficult payment terms.**
   Service providers should offer flexible financing terms that work for your budget.
KAYDEN’S PROMISE TO YOU

Kayden has been designing, manufacturing and operating large capacity decanter centrifuges since 1995.

Kayden’s success over the past 20 years has been built on manufacturing one of the largest, most reliable and most efficient horizontal decanting centrifuges available in the dewatering industry.

These high capacity centrifuges are specifically designed for dewatering, and when combined with the most efficient dredges built in North America they create a mechanical desludging and dewatering package unsurpassed in the industry.

Kayden can assure all clients that our technology will deliver industry leading results in the hands of trained operators who follow best practices in operation and technology deployment.

MORE QUESTIONS?

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