

CASE STUDY

FINE COAL SEPARATION AND DRYING

Project Story

Allied partnered with a global mining company to tackle a pressing challenge: efficiently separate and dry fine coal tailings without relying on traditional fuel-based energy sources. The mining company sought an innovative solution to eliminate the environmental and financial costs associated with conventional drying methods. This sustainable drying process represented a transformative shift in tailings management, aligning with the mining company's goals of enhancing efficiency and advancing their environmental stewardship.

Approach

Allied setup a full-scale pilot within the client's facility to run this test in collaboration with operations and engineering. Integrating advanced mechanical dewatering technologies and leveraging decades of experience, our centrifuge went to work. Pulling a slip stream of fines from the underflow and using a PC pump, our engineer tested a variety of flows, G-force and differentials.

Results

Without the use of polymers we were able to remove 100% of the fine coal from the slurry and average a cake dryness up to 70%. Proving that solid bowl decanters from Allied can divert coal fines from process and provide a certain dryness of solids

At A Glance

Challenges

- Costs of burning hydrocarbons to dry fine coal
- Cost of managing tailings ponds and company image

Benefits

- Removed fines without using lagoons or dredges
- Create a stackable solid with no free-water remaining
- 70% cake-dryness
- Reduced loading on clarifiers



Solution for coal fines

Moving into a commercial project, Allied would recommend the use of the G Series Centrifuge. With Bowl diameters up to 40", these machines have the experience of running harsh and aggressive processes like drilling, tunneling and sand.



Allied Centrifuge Technologies G7 (22") as shown

Allied Industrial Dynamics is a processing solutions company. Helping businesses tackle unique slurry processing applications. Providing high quality manufactured separation equipment and rotating equipment.

For more information about Allied Industrial Dynamics, visit www.alliedindyn.com, or email sales@alliedindyn.com



Unit	Hydraulic Feed Capacity	Phase	Empty Decanter Weight	Beach Angle	Total Installed Power	Bowl Diameter
GX3	1-10 M3/h (3-44 gpm)	2	900 kg (19841 lbs)	6°	15hp	254 mm (10")
GX4	60 M3/h (264 gpm)	2	3373 kg (7437 lbs)	6°	75hp	356 mm (14")
GX6	120 M3/h (528 gpm)	2	4536 kg (10000 lbs)	7°	120hp	457 mm (18")
G7	156 M3/h (686 gpm)	2	7552 kg (16650 lbs)	6°	180hp	559 mm (22")
GX8	180 M3/h (793 gpm)	2	8460 kg (18650 lbs)	7°	200hp	660 mm (26")
GX9	240 M3/h (1056 gpm)	2	10886 kg (24000 lbs)	7°	260hp	762 mm (30")
GX10	545 M3/h (2400 gpm)	2	18143 kg (40000 lbs)	7°	400hp	1016 mm (40")