



syntekenvironmental
industrial wastewater treatment and reuse

CASE STUDY

Car Manufacturer Waste

Syntek Environmental

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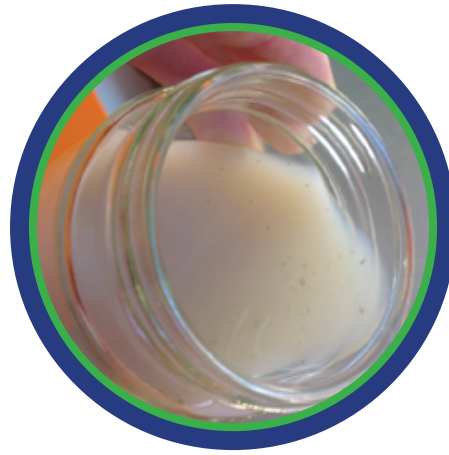
Car Manufacturer Waste

Toyota Australia operates a vehicle assembly plant at Altona, Victoria. Prior to application of Ecosynergy® and Ultraverte® biotreatment, Toyota's Altona site produced approximately 325 tonnes of hazardous solid waste per year, mainly from paint and trade waste sludge. During the wastewater treatment process the tank/pond solids accumulated, are periodically removed, usually at 2-3 months intervals and the amount of slurry waste removed is estimated at 800-1000 tonnes per year.

Toyota's aim is to reduce the amount of waste going to landfill to zero. Eventually the aim is to reduce the need to send any waste to disposal in landfill. Now, with the help of Syntek Environmental and Victoria's Environmental Protection Authority (EPA), the waste is being transformed.

Syntek Environmental has implemented a biological treatment process using synergistically linked strains, Ecosynergy® bacteria, to digest the waste in the waste water receiving tanks. The sludge formed in the treatment tanks are reduced by 50% through the biotreatment. The remaining solids collected is dewatered then treated by a Ultraverte® bio-conversion process, where solids are further digested and converted to powder form waste, with further solid reduction of 60-80%. The end product from the bioconversion treatment also contains less petroleum organics, detectable metals and other hazardous organics.

The implemented Ultraverte® bio-conversion plant has also been used to treat oily rags, gloves, kitchen waste and hazardous solid waste from other sources. The treatment process has delivered waste reduction from 29 tonnes per month down to 1.5 tonnes per month. Toyota Altona has achieved a total combined prescribed waste disposal volume and cost reduction by 90%.



(a) Liquid waste before treatment



(b) Liquid waste after treatment



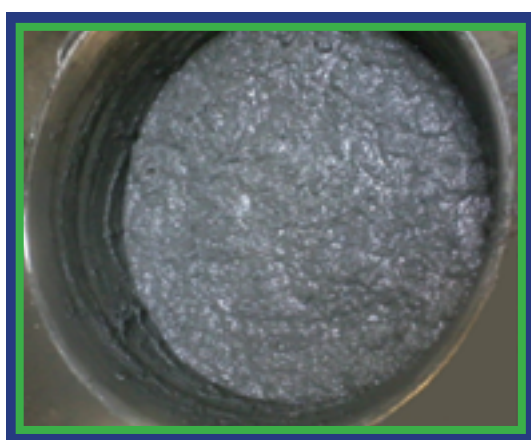
(c) Waste tank biological control, without hazardous chemical



(d) Water visual quality

Wastewater tank water quality (meeting controlled standards)

	pH	SS (mg/L)	Turbidity	TDS (mg/L)	Chloride (mg/L)	Legionella
Top Coat A	6.3	2100	<4000	1800	480	<10
Top Coat B	6.9	2400	<4000	2000	570	<10
Primer	5.7	2700	<4000	1700	550	<10
Clear Coat	5.4	2200	<4000	1300	470	<10
Resin	6.9	460	890	260	51	<10



(a) Waste before treatment TPHs 35-40%



(b) 24hr conversion <4% TPHs

Reaction	Moisture (%)	Nickel (mg/kg)	TPHs (C10+) (mg/kg)	TPHs (C15+) (mg/kg)	TPHs (C29+) (mg/kg)
Before treatment	76	15000	91000	170000	24000
After 24 hour bioconversion	5	760	3900	35000	4000

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