EXECUTIVE SUMMARY

Independent Foods is a food processing facility in Sunnyside, Washington. The facility processes canned pears, apples and cherries.

Department of Ecology's Toxic Reduction Engineer Efficiency (TREE) team worked with Independent Foods (Independent) to find ways to decrease their fixed dissolved solids (FDS) discharge, reduce their water use and reduce solid waste generation. Several site visits were made to the Independent facility by members of the TREE team to observe the current process activities and to identify potential water, wastewater and solid waste opportunities.

The team focused primarily on optimization of the water softener units to cut down on FDS discharge, equipment retrofits and repairs to decrease water use, and solid waste generation. This report presents the TREE team's evaluation of Independent Food's best opportunities for FDS, water and solid waste reductions.

The material and water reduction opportunities discussed in this report are divided into two sections, quantifiable and non-quantifiable opportunities. The quantifiable opportunities are listed in Table 1 below. Independent Foods currently uses an average of 137,000 pounds of sodium chloride per year and approximately seven million gallons of water per month. For Independent, implementing the TREE team's suggestions can result in a savings of 3.2 million gallons of water and a $25,000 per year savings in associated costs.

Table 1 – Quantitative Water Reduction Opportunity Summary

	Opportunity	Water Savings (gallons/year)	Cost Savings ($/year)	Pay Back (months)
1.	Fixed Dissolved Solids	1.8 million	$14,000	10 months
2.	Glass Cooler Water Use	761,000	$5,800	-
3.	Conveyor belt nozzle replacement	255,000	$1,900	2 months
4.	Minor Leaks (e.g. dump tank)	106,000	$800	-
5.	Valve Control	366,000	$2,700	3 months

In addition to the opportunities outlined in the table, the TREE team identified the following opportunities where the savings were not quantified.

- Decrease vacuum tank bridging

- Adjust dump tank and other water tank float levels
- Set dump tank and cooling tower reservoir dumping standards
- Automate dented can washing/recovery
- Reduce hose use during cleanup
- Research wet/dry vacuum for cleanup
- Start applesauce dumping recovery
- Reuse hot water rinse from jar cleaner as boiler make-up
- Recycle all cardboard

APPENDIX E

WASTE REDUCTION SUMMARY

Opportunity	Annual salt savings	Annual water savings	Capital Cost	Annual Savings	ROI
	(pounds)	(gallons)			(months)
FDS – flow initiated regeneration	55,000	1.7 million	$8,500	$13,200	8
FDS – brine recycling	24,600	96,600	$3,000	$840	43
Glass cooler – repair tank overflow	--	636,000	--	$4,800	--
Glass cooler – collect exit water	--	125,000	--	$940	--
Conveyer belt nozzle replacement	--	255,000	$220	$1,900	1
Repair apple dump tank leak	--	106,000	--	$800	--
Valve control - #10 can filling machine	--	28,000	$190	$200	12
Valve control – 300 can rinse “box”	--	18,000	$220	$135	20