

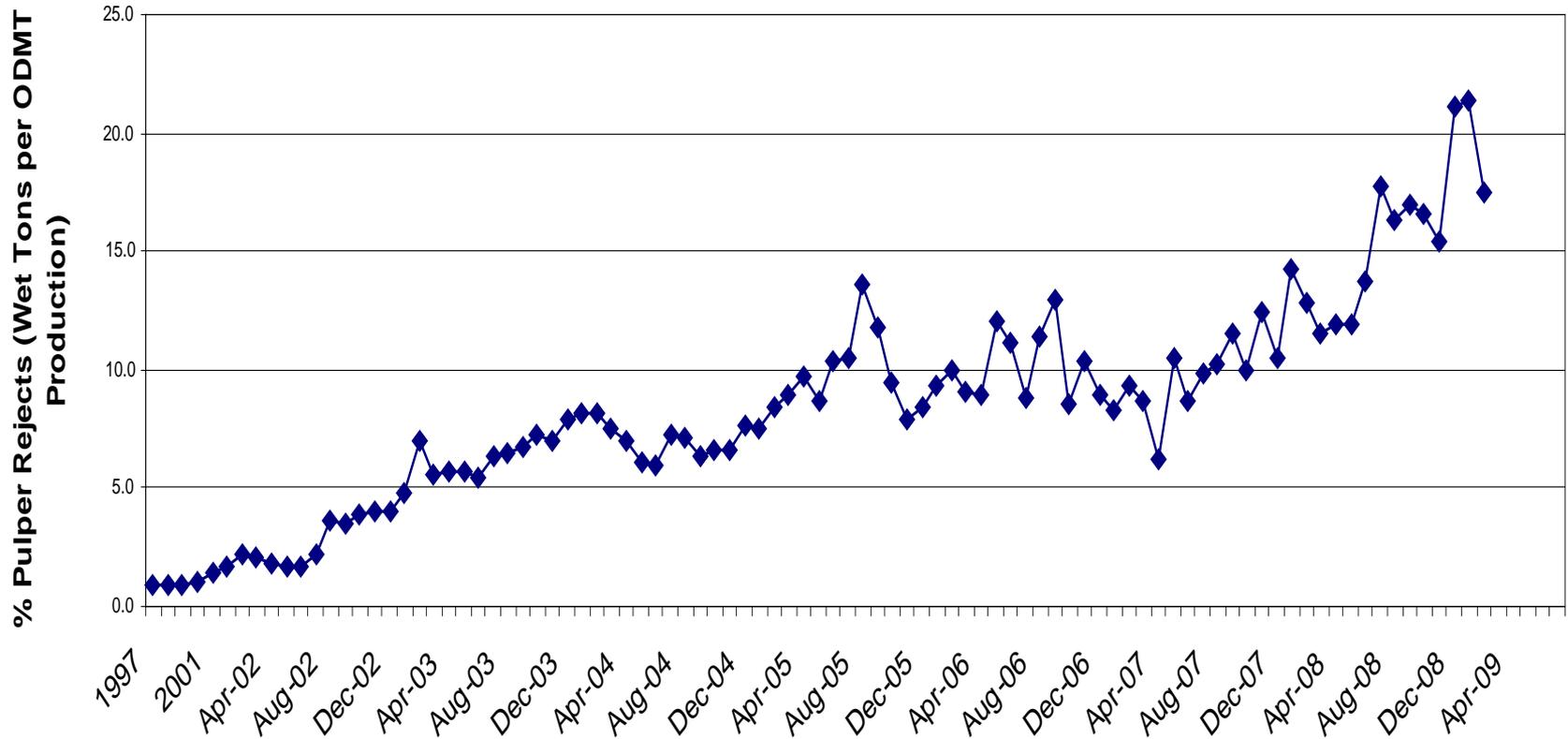
ONP Contaminant Impacts

Mill Experiences

ONP Contamination Magnitude

% Pulper Rejects

Vertical Lines Indicate Supplier Conversion to Co-Mingled Collections



Outthrows	Issue	Operating Impact	Relative Cost
OCC	Brightness Impact	Increase Bleach Cost	\$\$\$
Carrier Board	100% Yield Loss	Fiber Replacement	\$\$\$\$
Junk Mail	Contaminants	Chemical Cost	\$\$
White Food Boxes	Yield Loss	Fiber Replacement	\$\$\$\$
White Ledger	xx% Yield Loss	Fiber Replacement	\$\$
Phone Book	Brightness Impact	Brightness Impact	\$\$

Outthrows	Percentage	Prohibitives	Percentage
OCC	11.1	Glass	0.3
Carrier Board	2.4	Aluminum	2.4
Junk Mail	1.8	Tin	1.6
White Ledger	8.1	Rigid Plastic	2.0
Bleached White Food	1.2	Film Plastic	0.1
Phone Book	4.5	Other	2.6
TOTAL	29.1 ~25%		9.0 ~5-6%

Cost of Yield Loss - Exercise

(Fiber Cost * 9% Yield Loss) = Cost of Straight Yield Loss

(\$100/ton * 0.09) = \$9.00 per ton

(Replacement Fiber * % Yield Loss) = Additional Cost

(\$125/ton * 0.09 tons) = \$11.00

Base Case = 150,000 tons/year @ \$100/ton = \$15,000,000

New Case -

150,00 tons/year @ \$9/ton Yield Loss = \$1,350,000

13,500 replacement tons @ \$125/ton = \$1,687,500

Annual Cost impact =

\$1,350,000 + \$1,687,500 = \$3,037,500

Additional Process Costs

- OCC Fiber – Bleach Costs

Can negatively impact brightness by 3-4 pts. Estimated at \$\$\$/point of brightness.

- Carrier Board – 100% Yield Loss

Same cost impact as Prohibitives

- Phone Book – Bleach Costs

Can negatively impact brightness by 2-3 pts. Estimated at \$\$/point of brightness.

- White Ledger – 50% Yield Impact

Same cost impact as Prohibitives

- Junk Mail – Paper Machine Chemical Costs

Estimated at \$\$/ton paper produced

- Bleached White Food Containers – 100% Yield Loss

Same cost impact as Prohibitives

Process Impacts

Equipment Damage

Conveyors

Pulper

Pumps

Valves

Quality

Brightness variability

Fiber types

Brown Kraft, Ash Content, Phone Book, Bleached Kraft

Fiber Strength

Brown Kraft, Bleached Kraft, Phone Book

Glues/Stickies

Ink Particle Sizes

Process Impacts

Non-Program items continue to expand and be hazardous to employees;

- Diapers

- Other Hygiene products

- Medical Waste (needles, IV bags, syringes, tubing)

- Soiled Clothing

Non-Program items that are problems;

- Plants & planters

- Toys

- Shoes/Clothing

- Aerosol cans

Process Impacts

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Business Impacts

For many mills in the PNW the manufacture of virgin fiber, through a mechanical pulping process, has historically been cheaper than manufacturing recycle fiber

Changing the collection and processing system to generate more tons from the household has created a higher contaminant level of raw material to the mills

This continues to expand the gap in costs between recycle and virgin fiber

Declining newsprint consumption drives product prices lower thus decreasing earnings for newsprint mills

Negative earnings force cost cutting decisions which favor lowest cost fiber

Negative earnings accelerate the move to higher quality and higher margin paper products

Higher quality paper products need higher quality raw material