

Opportunity Funded Pollution Prevention

Save, Sustain, Share

ENVIRO-STEWARDS
Sustainability Catalysts

Certified



Corporation
bcorporation.net



September 17, 2014

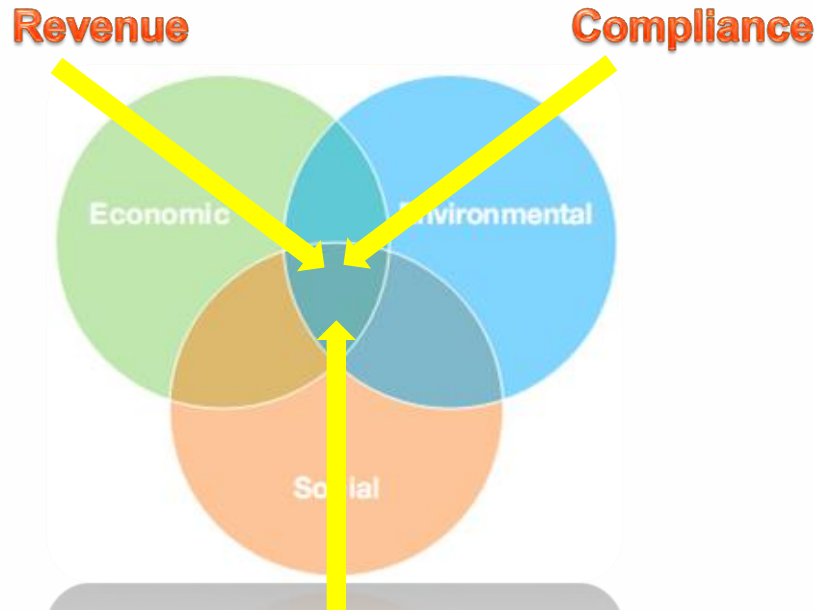
Enviro-Stewards
Engineers & Scientists
2000 - 2010

Agenda

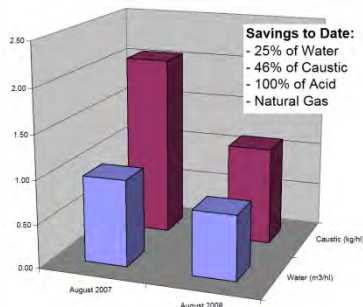
1. Introduction
2. Sustainability of P2 Measures
3. P2 Approach
4. Unsustainability of P2 Providers
5. Experience with a Performance Based Model
6. Discussion



Sustainable Development



As of Aug 2008: **Responsibility**
Savings \$0.064/bottle



Water Conservation

Case Study: Brick Brewing Co Limited

Location: Kitchener, ON
 Potential water savings: 68,300 m³/yr
 Potential dollars saved: \$157,000/yr

Introduction

Brick Brewing Co Limited operates a packaging and distribution centre located in Kitchener, Ontario. Beer from Brick's brewing facility is trucked daily to the distribution centre, where it undergoes further processing and storage prior to packaging. The distribution centre also receives returned bottles which are washed at the facility and refilled.

Under the Regional Municipality of Waterloo's W.E.T. Program, Brick retained the services of Enviro-Stewards to complete a water conservation assessment. The purpose of the assessment was to identify conservation opportunities, quantify savings and approximate their financial returns.



Immediate Conservation Measures Presently Being Implemented

- A reduction of 59,500 m³/yr in water consumption (39%);
- Net savings of \$150,000/yr;
- 0.3 year payback.

Total for Recommended Conservation Measures

- A reduction of 68,300 m³/yr in water consumption (44%);
- Net savings of \$157,000/yr;
- 0.4 year payback.



Enviro-Stewards Inc.

Save, Sustain, Share



Enviro-Stewards Inc. is an engineering firm and Certified B Corporation that helps clients:

- *increase their profits*
- *sustain the environment, and*
- *compellingly benefit society.*



What makes us a better company?

B Impact Report

Certified since: September 2011

Summary:	Company Score	Median Score*
Governance	20	10
Workers	40	22
Community	41	32
Environment	38	9
Overall B Score	138	80

80 out of 200 is eligible for certification
 *Of all businesses that have completed the B Impact Assessment
 *Median scores will not add up to overall



Canada's Sustainability Heroes

2014 **Clean 50**
 Outstanding Contributors to Clean Capitalism

The Clean50 Awards are given annually to 50 individuals or small teams in 16 categories, who have made the greatest contribution to clean capitalism and sustainability in Canada over the prior two years. Clean15 Projects are those considered to be the most impactful initiatives in Canada.

It will take a combination of leadership, collaboration, innovation, energy and, ultimately, political will to move Canada through the obstacles towards cleaner, healthier, sustainable management of our bountiful resources and our uncertain future. Our solutions will require brave new policy, actions, and scientific and economic tools, built with long term vision.

The work of Canada's sustainability tool-smiths is shining the way on our journey towards sustainable, equitable, responsible prosperity.

Congratulations to 2014 Clean50 Project Honorees:



Enviro-Stewards and Fruiti Fruits & Fills

Waste Discharge Reduction

PROJECTS

In-plant measures in Ontario are saving \$490,000/yr with an ROI of 260%, and reducing loading to sewer 80%, landfill 70% and GHG emissions 30%. A portion of the savings sponsored 40 BioSand Filters that purify 800,000 L/yr of drinking water and avoid 120 tonnes/yr of GHG in South Sudan, Africa. Fruiti Fruits & Fills is a subsidiary of Tim Hortons Inc. Enviro-Stewards Inc. is an engineering firm and Certified B Corporation that helps clients increase their profits, sustain the environment, and compellingly benefit society.

www.enviro-stewards.com

www.Clean50.com

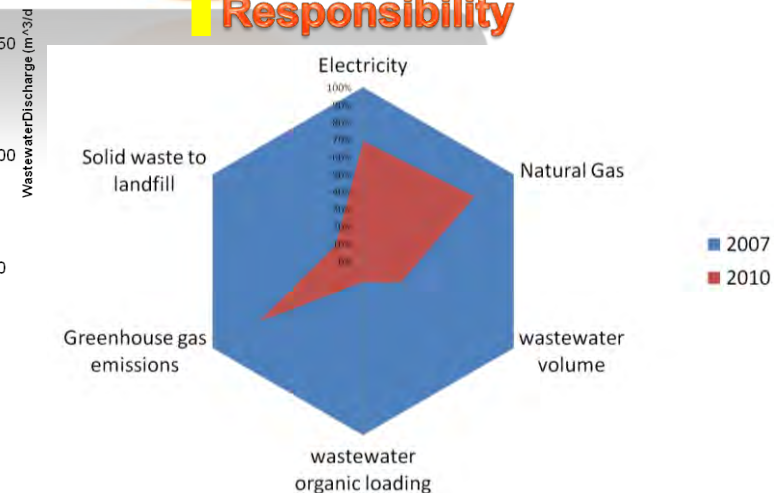
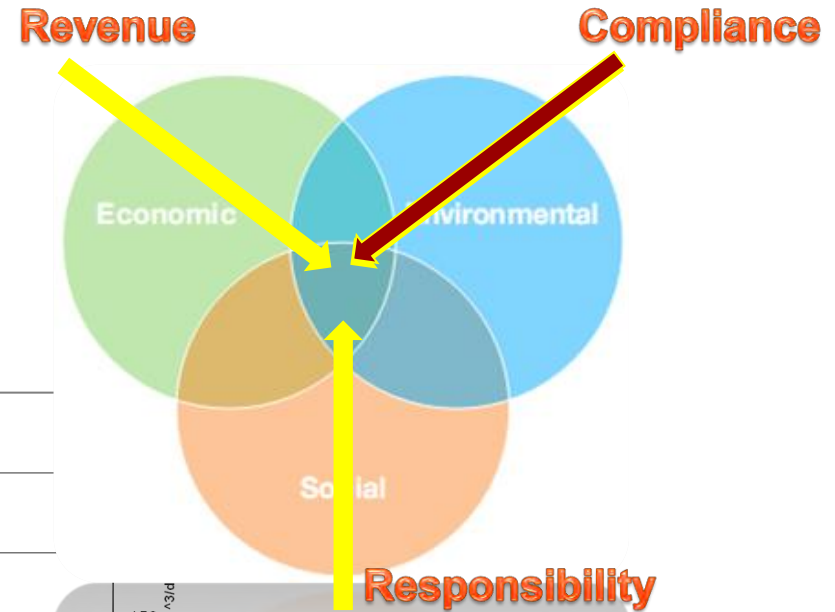
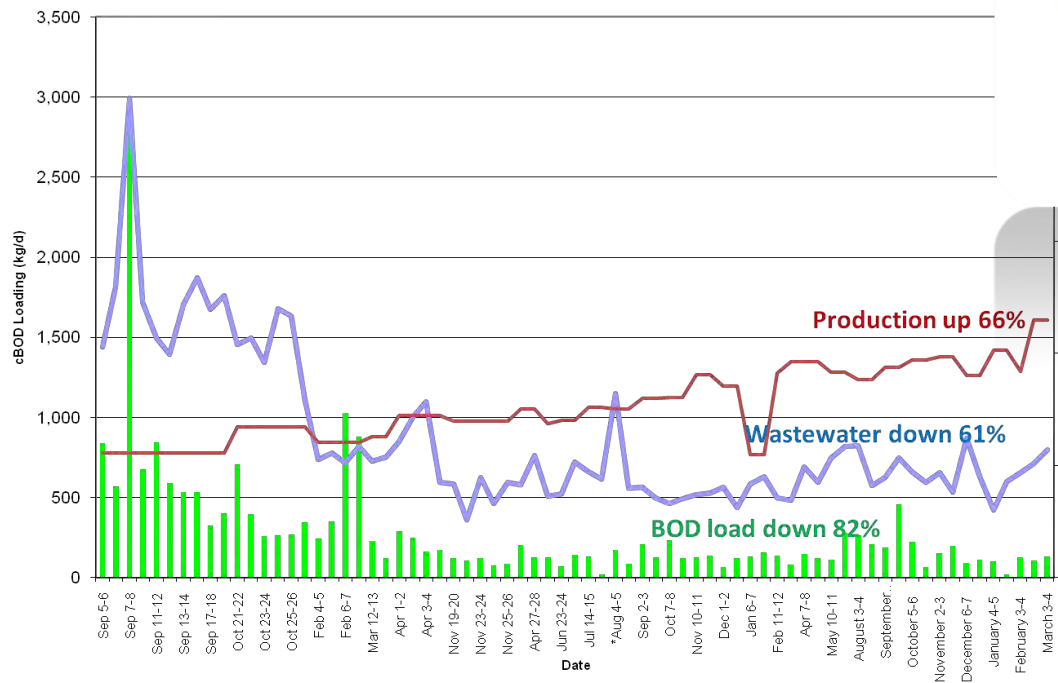






Sustainability Catalysts

Environmental:





Economic (Annual Savings):

Category	Annual Savings		Canadian
	Quantity	Units	Dollars
Electricity	852277	kwh	\$ 85,227.72
Natural Gas	164294	m3	\$ 49,288.32
wastewater volume	36748	m3	\$ 91,869.02
wastewater organic loading	240024	kg	\$ 120,011.93
Greenhouse gas emissions	560	tonnes	N/A (yet)
Solid waste to landfill	510	tonnes	\$ 3,750.00
Sewer Surcharge	140285	\$	<u>\$ 140,285.40</u>

\$ 490,432

Expenditure \$187,500, 260% ROI, 0.4 yrs



SHARE YOUR FEEDBACK WITH US!

 GO

2011 SUSTAINABILITY & RESPONSIBILITY REPORT

OVERVIEW

INDIVIDUALS

COMMUNITIES

THE PLANET

GRI INDEX

DID YOU KNOW ?

Since 2010, our Fruition Fruits and Fills facility has purchased BioSand filters to help offset some of its water use. These filters have provided 800,000 L per year of clean drinking water to the people of South Sudan, which helps prevent water-related illnesses such as

Revival Movement Centre: BSF Construction



See red pin in above map for location of the Revival Movement Centre (zoom into cluster of markers near the bottom of the map view).

on business

Local company earns B Corporation certification

Gail Martin
Independent Editor

An Elmira company is one of only 20 companies in Canada that has been certified as a B Corporation.

If you don't know what that means, you're not alone.

B Corporations are a relatively new concept. It is a certification that tells the world that at your business, maximizing profit is not the only bottom line environmental and social concerns are also at the forefront.

At Enviro-Stewards, however, the B Corporation certification is merely a recognition of the way the business has always run, since day one.

Bruce Taylor, founded Enviro-Stewards in 2001,

not-for-profit, or a for-profit corporation.

He opted to go the for-profit route, in part because that would make it easier for him to work with prospective clients.

"You wouldn't find a company asking Greenpeace to come in and do an environmental audit," said Taylor. "A for-profit has more credibility (in the business field)."

Even so, Taylor incorporated many of the tenets that are hallmarks of an NGO — donating 10 per cent of profits to charitable organizations, providing a living wage to his employees, and providing volunteer and work projects for his employees.

"Because of this, we get incredibly loyalty from our staff," said Taylor.

In the recent economic downturn, instead of

head of Fruition, came with Taylor on a future trip, donating water filtration units, as well as empty pails and a fruit-drying unit, providing a way for families in the area to preserve fruit, something they couldn't do before.

The way he treats his employees combined with the heart of Taylor's work — helping corporations find environmental efficiencies that are not only good for the environment, but also good for the bottom line (and staff morale as well) — made the B Corporation designation an easy fit.

Taylor was encouraged to go through the certification process after attending a recent conference.

He had to go through a rigorous list of questions — including

es in Kajo
nstructed on
(see map on
0 litres
id 3 tonnes
hat would

/yr 120 tonnes/yr
GHGs avoided

stewards.com

How BSFs Work

- Constructed using locally available materials
- Provides local employment
- Improves the health & productivity of the community

Enviro-Stewards Inc.
(819) 378-3160
mail@enviro-stewards.com
Increase, Sustain, Share.



Top 5 Projects in Canada 2014

Canada's Sustainability Heroes

2014
Clean 50
Outstanding Contributors to Clean Capitalism

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Engineers & Scientists

FruitiOn
FRUITS & FILLS

Tim Hortons

Enviro-Stewards and Fruition Fruits & Fills

Waste Discharge Reduction

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In-plant measures in Ontario are saving \$490,000/yr with an ROI of 260%, and reducing loading to sewer 80%, landfill 70% and GHG emissions 30%. A portion of the savings sponsored 40 BioSand Filters that purify 800,000 L/yr of drinking water and avoid 120 tonnes/yr of GHG in South Sudan, Africa. Fruition Fruits & Fills is a subsidiary of Tim Hortons Inc. Enviro-Stewards Inc. is an engineering firm and Certified B Corporation that helps clients increase their profits, sustain the environment, and compellingly benefit society.

www.enviro-stewards.com

www.Clean50.com

Exercise: What would it take to increase profit by \$100,000/yr for 20 years?

Winery has margin of about 14.3%. Therefore, would need to sell \$700,000 to make \$100,000

Option 1: Sell 90,000 L more wine/yr

- 180 ha of production (if 50 hl/ha)
- 126,000 kg of grapes (if 1.4 kg/L)
- 90,000+ L of cellar processing & storage
- 90,000 L of additional bottling
- 90,000 L of additional sales each year

Exercise: What would it take to increase profit by \$100,000/yr for 20 years?

Alternatively, cut resource & waste expenditures by \$100k

Option 2: 10% reduction in utilities & waste

- Electricity
- Natural gas
- Water
- Liquid effluent
- Lost wine
- BOD surcharge

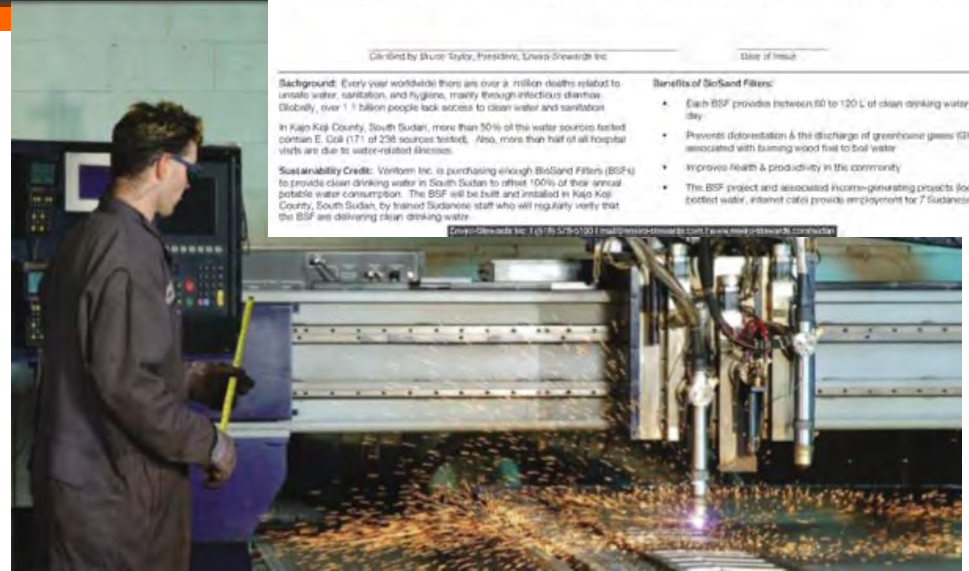


Barrier:

- initially 200% of energy

Resolution:

- cutting and ventilation modifications to reduce energy by 90%



4.3%

profit margin



9.4%

profit margin

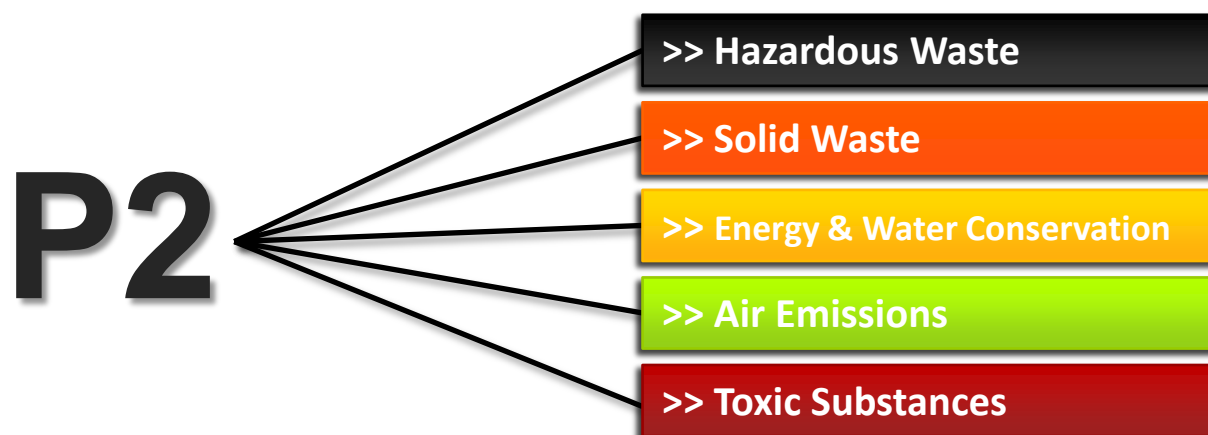
Veriform's implemented measures have doubled profit margin!

P2 Approach Focuses Attention where it will achieve the greatest benefit

“The time and attention of competent managers are among the most valuable and scarce resources in any organization.”

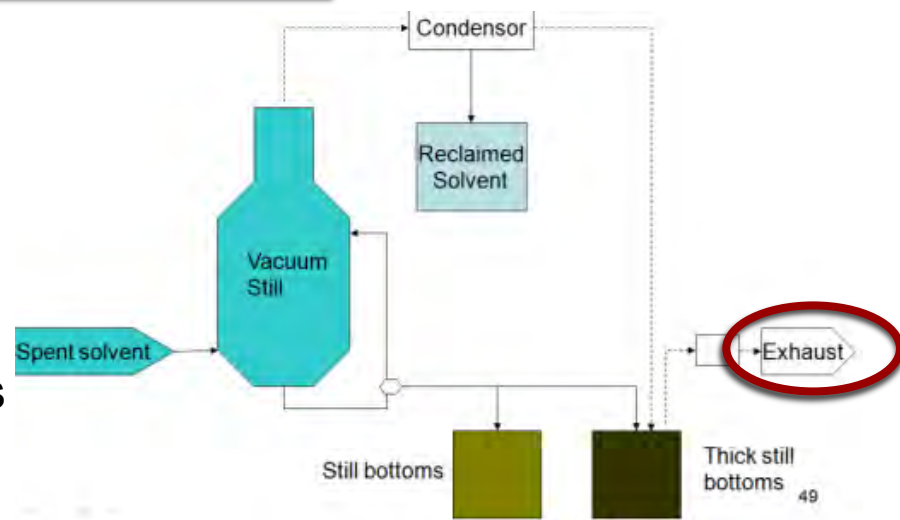
Forest Reinhart, Harvard

P2 Approach (multifaceted)



Advantages:

- Conserve resources
- Increase product yield
- Increase energy efficiency
- Reduce waste handling & disposal costs



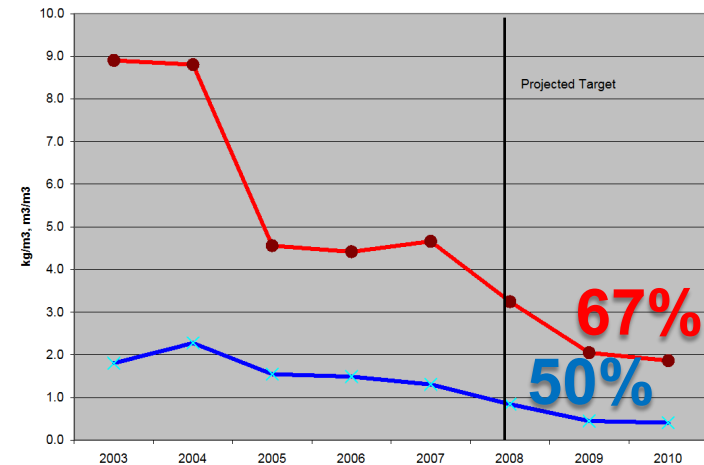
Approach: Who?

1. Who are Your Champions?
2. What are Your Wastes?
3. Why are Your Wastes Generated?
4. Where can they be Improved?
5. When should they be Implemented?

Who? – Gaining Buy-In

- To facilitate change, a multi-disciplinary team participates in kick-off training and progress meetings.

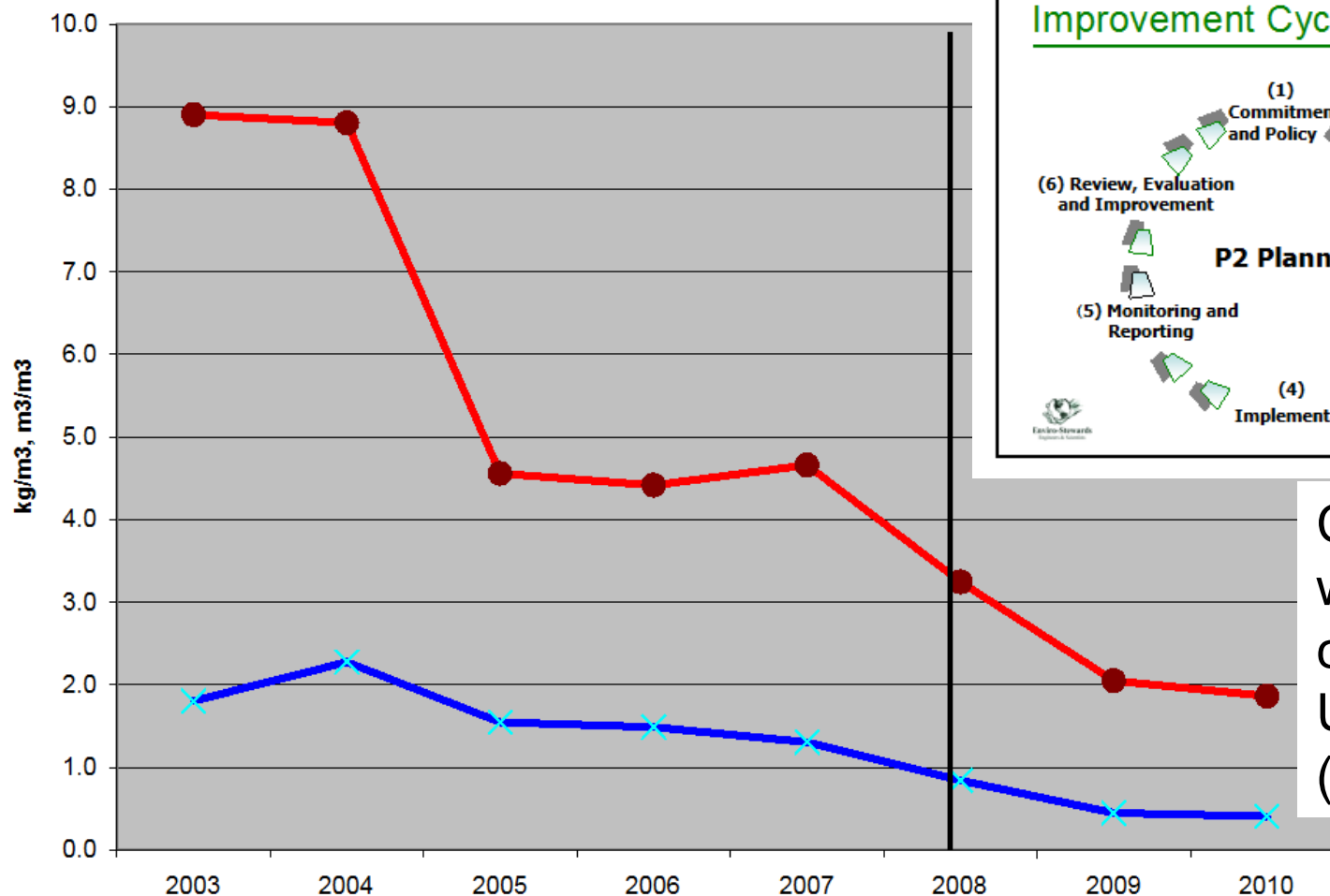
We engage representation from management, engineering, maintenance, operations, QA/QC, etc.



Continuous Improvement at Vincor Oliver

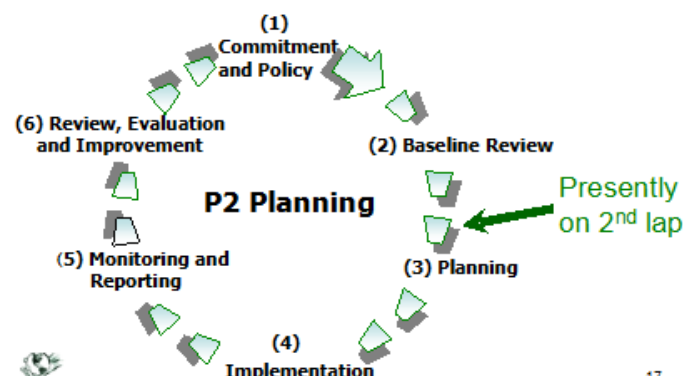


Enviro-Stewards
Engineers & Scientists



Continuous Improvement Cycle:

VINCOR
CANADA
A CONSTELLATION COMPANY



Californian
wineries
consume about 7
USgallons/case
(2.94 L/L of wine)

What?

What? – Collecting Reliable Data:

- A detailed and systematic assessment of consumption and waste generation is conducted.

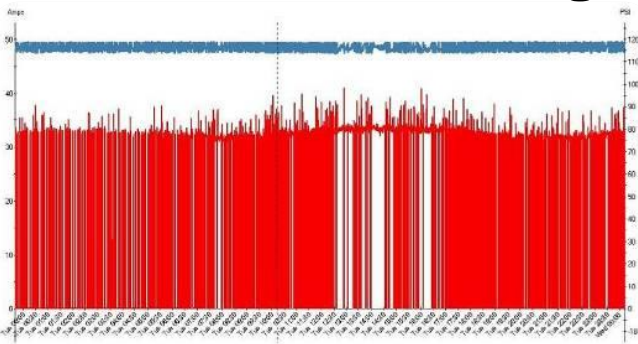


Quantifying Electricity Consumption

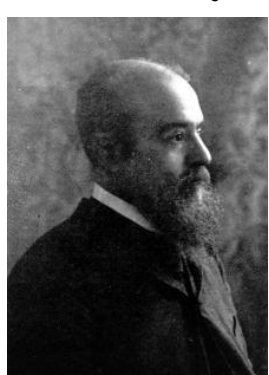
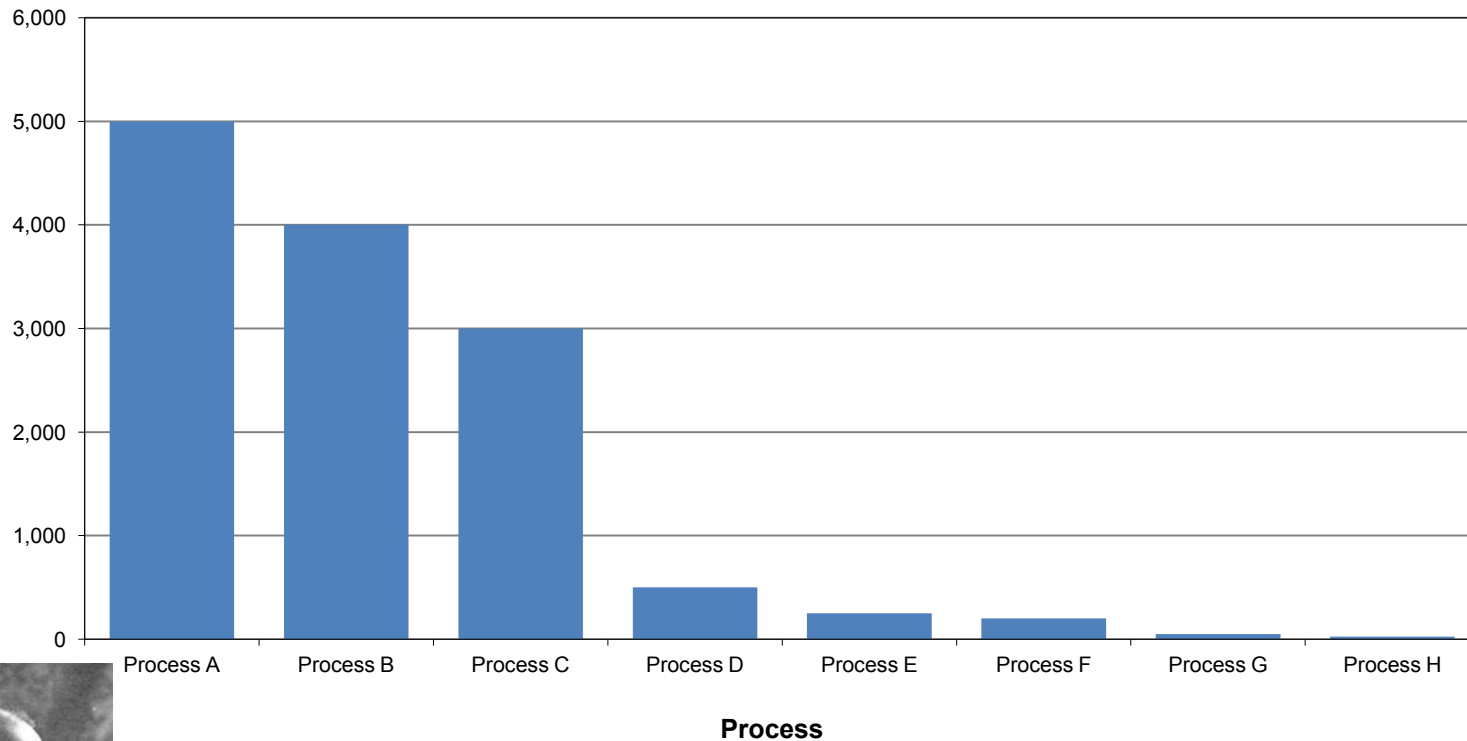
Electrical Consumption:

- amp loggers
- runtime meters
- light & motion loggers

Patterns of Usage

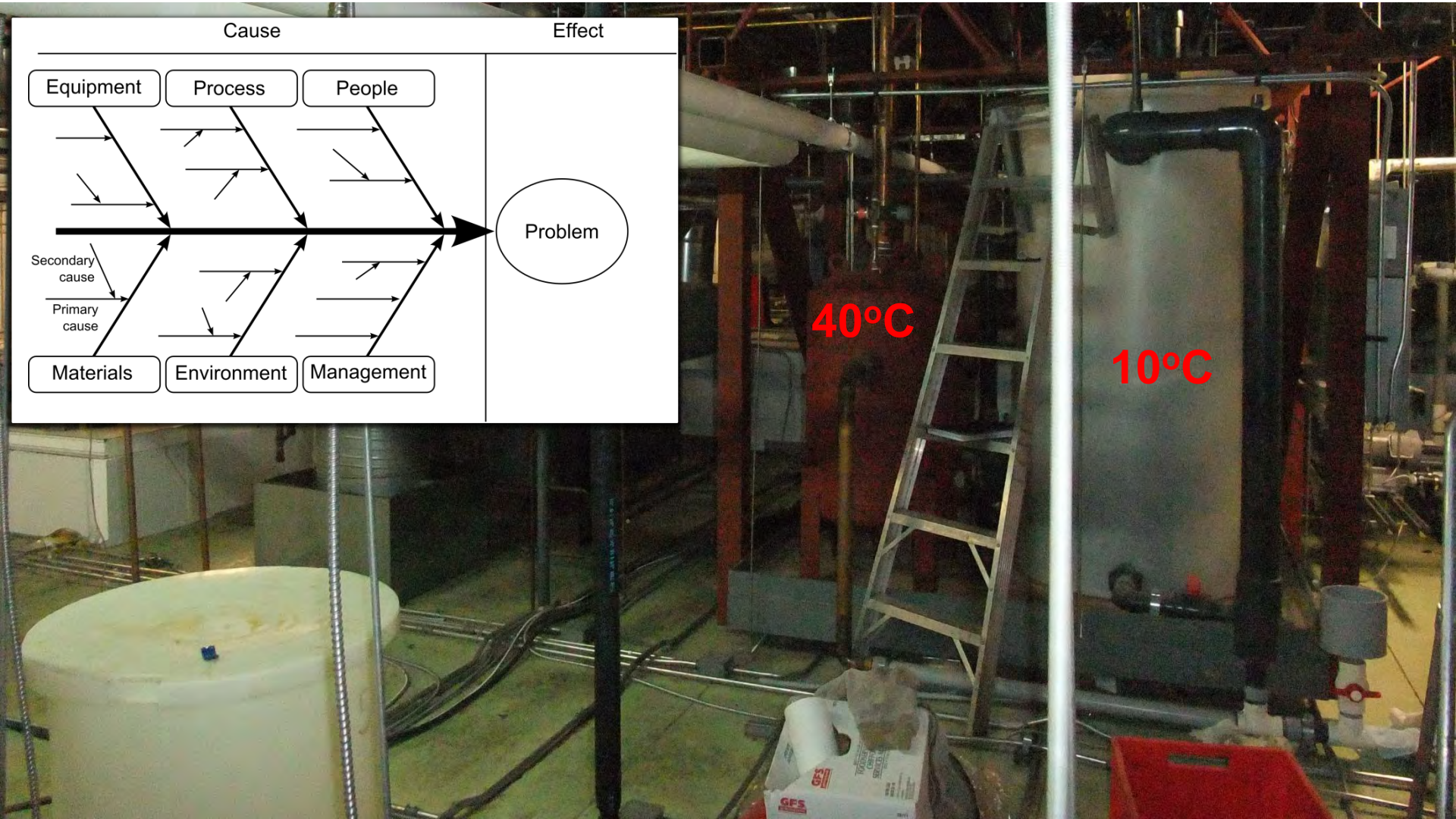
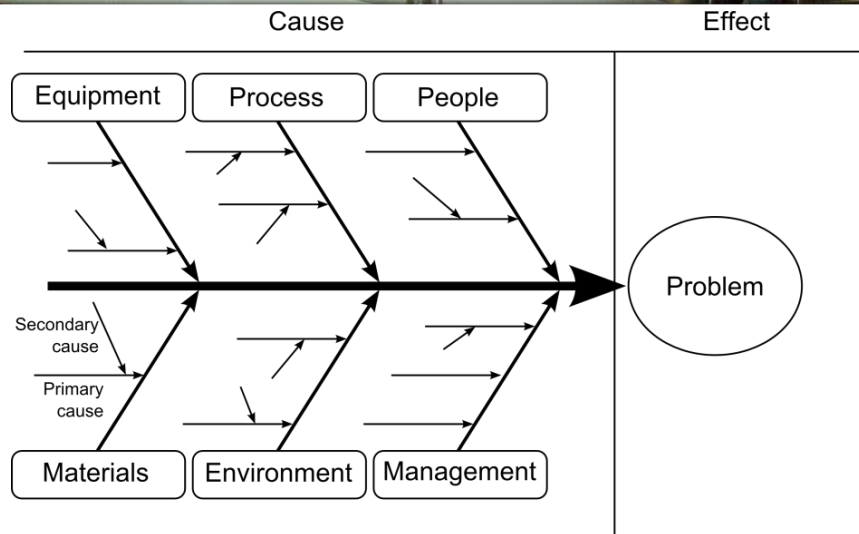


Where (in process to intervene)?



Pareto Principle: 80% of the land in Italy was owned by 20% of the population

Why (identifying root causes)?



What is the why about this picture

Where's the beef?

**Gain 40,000 BTU/hr
from blowers heat**

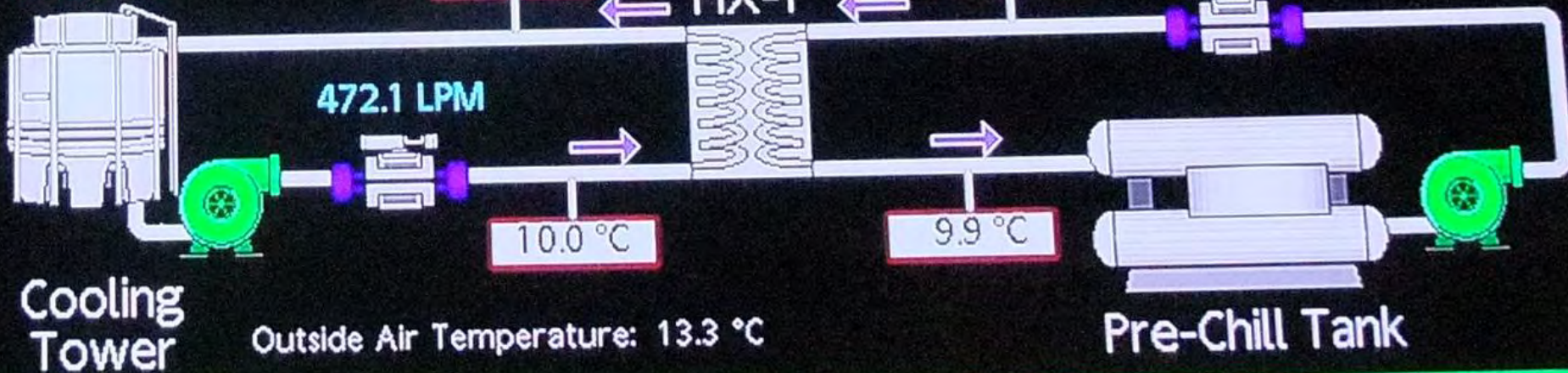
**Gain 31,400 BTU/hr
from condensing water
vapour in room chillers**



Main Boiler Steam Pressure:
10.0 psi

Drive Speed:
0.0%

Cooling Tower
Drive ON



Cooling
Tower

Outside Air Temperature: 13.3 °C

Pre-Chill Tank

SAMSUNG

Gain 30,000 BTU/hr from tower!

When?

TOTAL ESTIMATED CAPITAL COSTS **\$70,000**

TOTAL ESTIMATED ANNUAL O&M COSTS
(RELATIVE TO STATUS QUO) **(\$54,457)**

STRAIGHTLINE PAYBACK PERIOD (yrs) **1.3**

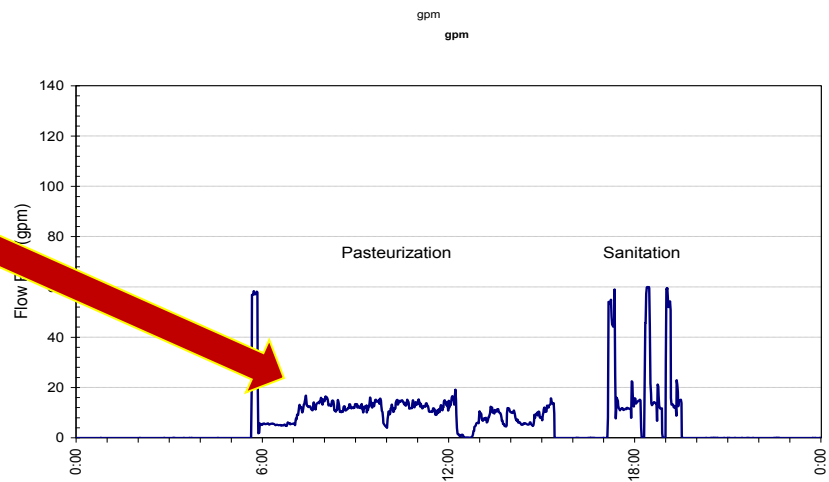
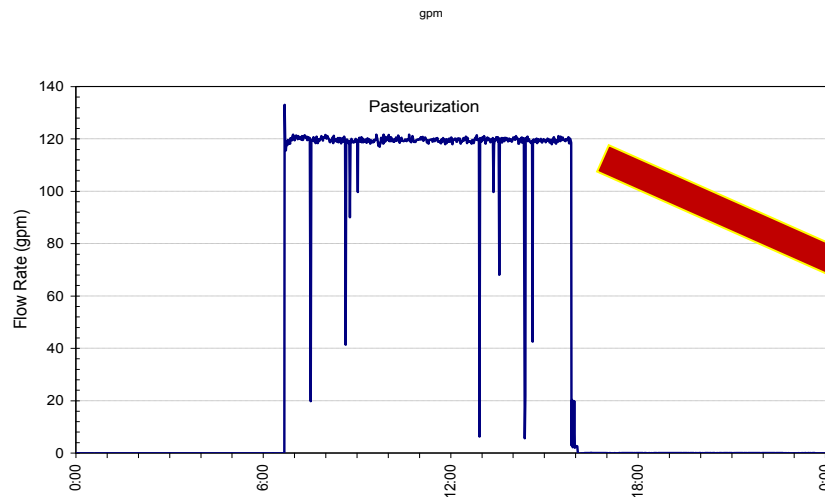
77% ROI

NET PRESENT VALUE BEFORE TAXES
(assuming 20yr project life, 5% interest) **\$748,656**

Monitoring, Tracking and Reporting

Documenting & Retaining Gains:

- Data loggers, email alerts, and quarterly conservation certificates verify and retain economic, environmental and social gains



The Trouble with P2

Although P2 Measures are sustainable for recipients

P2 delivery programs and services providers find it difficult to sustain their operations.

Group Exercise:

What Challenges are you facing in:

- Stably Providing P2 Programs and services
- Securing sufficient Revenue from Projects to expand your impact

P2 Program Providers: Consider Fred Granek's Career



- Managed Ontario Ministry of the Environment P2 department
 - Voluntary P2 partnerships with five manufacturing sectors
- Managed OCETA's On-Site Technical Assistance Program
 - Funded by feds, province, local
 - Program received NPPR Most Valuable Pollution Prevention Award (MVP2)
 - Documented Results



Remembering Fred Granek



Fred had two passions - first was his love of his family. Such love and pride was apparent in all of his conversations. His second passion was Pollution Prevention (P2) apparent in his 30+ year career as a P2 specialist. His many accomplishments include helping to found and ultimately manage the Ontario Environment Ministry's P2 unit, developing and managing the Toronto Region Sustainability Program, teaching many P2 courses, and as a Board Member, Director and then President of the Canadian Centre for Pollution Prevention.

The Toronto Region Sustainability Program's project with Fruition Fruit & Fills (a subsidiary of Tim Hortons Inc.) won a national award on September 26th, 2013.

In-plant Pollution Prevention measures there are saving \$490,000/yr with an annual Return on Investment (ROI) of 260%. They are also reducing loading to sewer 80%, to landfill 70% and GHG emissions 30%.

A portion of the savings sponsored 40 BioSand Filters that purify 800,000 L/yr of drinking water and avoid 120 tonnes/yr of GHG in South Sudan, Africa.



Fred's father Gerry, a respected physician, passed away in 2012. In his honour, a BioSand filter (BSF #439) was installed in the home of a family in South Sudan, Africa who had recently lost their 5 year old grandson. The grandmother's condolences to the Graneks is available on youtube.



Serendipitously, the next biofilter (BSF #440) was available for sponsorship at the time of Fred's passing. This biofilter was purchased by Mary, the owner of a local medical clinic who recognized the health and economic benefits of avoiding illness. As she had purchased the biofilter with her own money, the sponsor's funds were then used to help launch the next biofilter production facility (in Yei, South Sudan).

Toronto's Community Funeral Chapel Records

STEELES

MEMORIAL CHAPEL

Thursday, January 9, 2014 - 8 Shivas, 5774 6:15 PM

SHIVAS

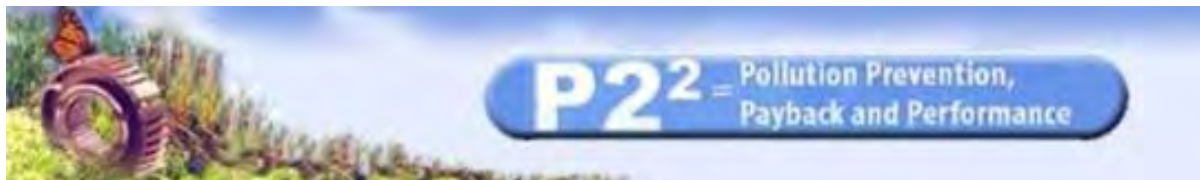
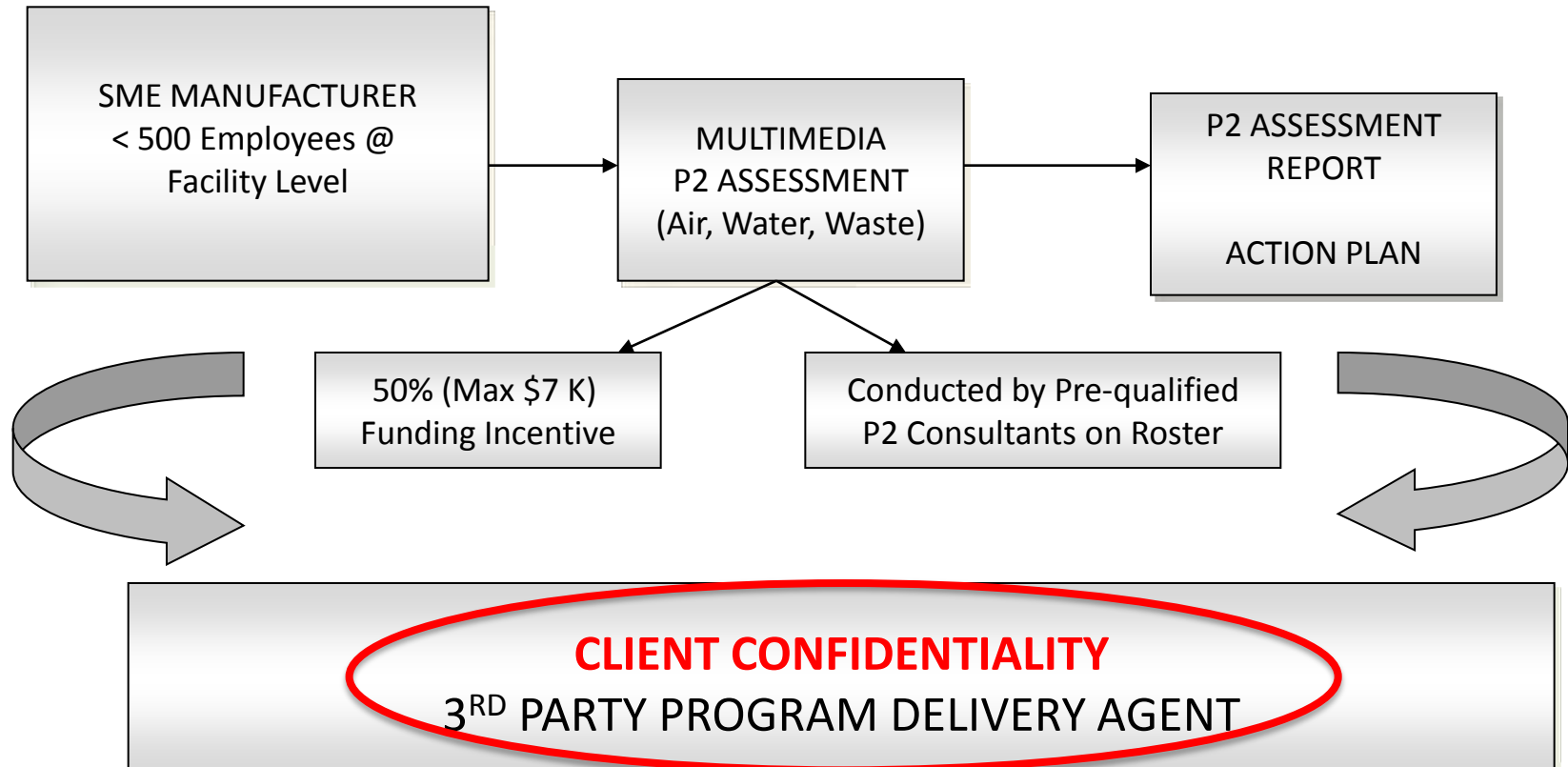
Scholars: Shivas
Tahar Rene Bottner
Andrea Cohen
Michael Demcia
Stephen L. Eichen
Maurice Gertler
Fred Granek
Marian Greenberg
Rutha Szwedman
Julius Klaczynski
Gloria Kozman
Benjamin Brian Samuel Krieger
Arlene Kuntzman
Rex Lipton
Joseph Parker

FRED GRANEK

Fred Granek (75), beloved husband of Debbie Granek, devoted son to Betty and the late Gerry Granek (75), proud father to Miriam & Gail Levy and Joshua & Patricia Granek, dear brother and brother-in-law of Bob & Erna Goldstein and Cindy & Danny Chiswick. Cherished Zaida of Jennifer, Elan and Jodie. Dear Uncle to Adam, David, Tami, Eli & Yehosh. Memorial donations may be made to Jewish National Fund. www.jnf.org or the Canadian Diabetes Association. www.diabetes.ca 1-800-220-9865

Date of Death: Thursday, January 2, 2014
Wake/Viewing days: 1 Shivas, 5774
Date of Funeral: Friday, January 3, 2014
Time of Funeral: 12:30 PM
Location of Funeral: Steeles Memorial Chapel, 350 Steeles Ave. W.
Location of Burial: Ponder Shalom Cemetery, Beth Torah Synagogue section
Shiva Location: 2 Jambouk Clinic, Michener, L4T 5M9
Shiva visits: 2 to 5 p.m., and 8:30 to 9 p.m.
Times of Services:
Morning: Evening services at 7:00 p.m.

Ontario On-site Technical Assistance Program Model



The Business Case

Financials

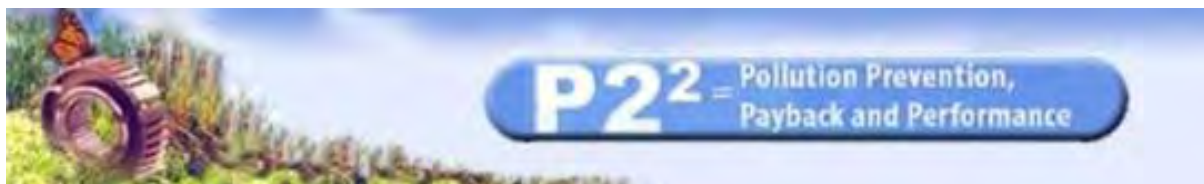
OPPORTUNITIES

RISKS

**Non-financials
/ Reputation**

Company Value

- **Cost Avoidance**
 - Cost savings
 - Payback period
 - Operational Efficiencies
- **Business Risks Reduction**
 - Hidden costs of non-compliance
 - Workers Health & Safety
 - Spills, fines, high remediation costs
 - Changing regulations
- **Competitive Advantage**
 - Green marketing
 - Access to Global markets



Canadian Centre
for Pollution Prevention

Leaders Shaping the Future of Sustainable Production & Consumption

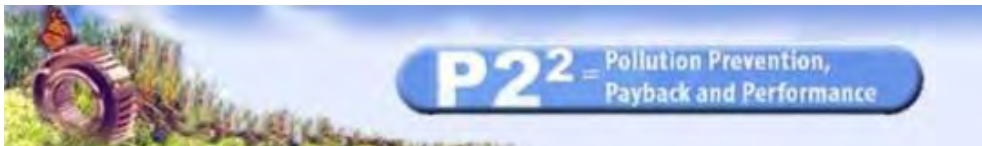
Ontario On-site Technical Assistance: Clientele By **91** sectors

- Aerospace (1)
- Auto Parts (2)
- Chemical (13)
- Circuit Board (3)
- Container/Tanker Cleaning (3)
- Cosmetics (1)
- Courier Service (1)
- Electrical Equipment(1)
- Food Processing (7)
- Foundry (1)
- Furniture (3)
- Heat Exchanger (1)
- Hospitals (4)
- Metal Finishing & Fabrication (9)
- Packaging (3)
- Paint/Coatings (4)
- Petroleum Products (1)
- Pharmaceutical (1)
- Printing – Lithographic (24)
- Printing – Flexographic Plate (2)
- Printing – Plastic (1)
- Printing – Roller (1)
- Rapid Transit (1)
- Plastic Products(2)
- Steel Tubular Products (1)



Ontario On-site Technical Assistance: Reductions

▪Volatile Organic Compounds (VOCs)	865 Tonnes
▪Fine Particulate (PM <10u)	16 Tonnes
▪Metals	326 Tonnes
▪Toxics (CEPA)	4,841 Tonnes
▪Toxics (TRA – from 2010)	639 Tonnes
▪Hazardous Wastes	3,047 Tonnes
▪Process Wastes	8,964 Tonnes
▪Water	1,027 Kilotonnes
▪Energy (Natural Gas)	4,802,418 Metres ³
▪Energy (Electricity)	11,435 MW-hrs
▪Green House Gases (GHGs)	13,617 Tonnes



Key Program Outcomes

- Implementation rate: 90%
- Payback \leq 1 year
- Clients with public case studies: 50%
- Number of P2 projects/client: 7.5



Ontario On-site Technical Assistance: Financial Results

Totals

- Savings (Annualized) **\$9.4 million**
- Capital Investment **\$9.1 million**
- Payback **12 Months**



Ontario On-site Technical Assistance: Tax Implications

- Additional Annual Federal & Provincial Corporate Taxes \$1.5 million
- Additional Future Corporate Taxes – 20 Years \$48.2 million



Canadian Centre
for Pollution Prevention
Leaders Shaping the Future of Sustainable Production & Consumption

Reward

**Program funding terminated
(despite \$100 in additional taxes per \$1
invested in the participating facilities)**

NGO ends the Program & Employment

Fred Re-launches C2P2



P2 Service Providers:

- Conventional RFPs favour incompetent providers
 - If don't measure things and don't find many opportunities to cost out, you can win on low price
“we have 2 quotes how much is yours”
- Engineering companies make much more money building things compared to eliminating the need to build things
- The implementable savings cannot be quantified prior to the P2 assessment work. Therefore, it is difficult to establish a value based price prior to the work.

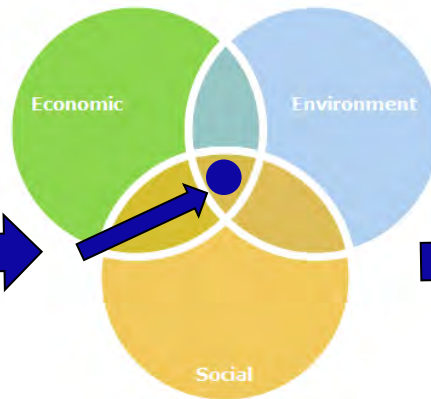
Enviro-Stewards' Experience Providing Performance Based P2 Services

Save



Increase net
profit margin

Sustain



Implement Feasible
Sustainability Measures

Share



Track, Report and
Reinvest

Enviro-Stewards' Experience Providing Performance Based P2 Services

- **Aerospace**
 - outsourcing
- **Food Processor**
 - \$ vs water
- **Confectionary**
 - implementation
- **Restaurant**
 - magnitude of savings
- **Food Co-op**
 - competitive advantage, relationship
- **Winery**
 - corporate contract

Group Exercise:

Performance Based P2 Services

When considering funding P2 services with a portion of the net savings, what are the:

- Strengths,
- Weaknesses,
- Opportunities, and
- Threats

Consider both program provider and service provider perspectives

Contact Us

Questions?

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Or visit us at our website:

www.enviro-stewards.com



Enviro-Stewards
Engineers & Scientists

