Situation

- Declining Domestic Markets
- International Growth Potential
- Product Diversification
Troubled Domestic Market

- Limited Domestic PCB
- Competitive American Market
- Bennet Environmental Market Dominance
Market Share
Geographic Diversification
Equity Stake Vs. Licensing

- First-Mover Advantage
- Direct Oversight
- Maximize Profits
- Greater Growth

- No Expenditures
- Status-Quo
- Risk Aversion

First-Mover Advantage

Maximize Profits

Greater Growth

Direct Oversight

No Expenditures

Status-Quo

Risk Aversion

PHASE SEPERATION SOLUTIONS INC.
International Growth Potential
GDP Comparison

China vs Canada Real GDP Growth

Real GDP Growth %

China
Canada

PHASE SEPERATION SOLUTIONS INC.
Joint Venture Options

Nanjing Institute of Environmental Sciences (NIES)

Zhoushan Nahai Solid Waste Central Disposal Co. Ltd. (Nahai)
Product Diversification Options

• Soil Remediation
  - Persistent Organic Pollutants (POP)

• Oil Recovery
  - Industrial Sludge
Solution

- Domestic
- International
Domestic Course of Action

1. License out TPS Technology to American Firm
   - Effective Immediately

2. Maintain Soil Remediation
   - Exit Domestic POP Market At End of 2011

3. Switch Canadian Operations
   - Oil Recovery Starting Beginning of 2012
## China vs. Canada PCB

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Sites</strong></td>
<td>Over 800</td>
<td>Less than 125</td>
</tr>
<tr>
<td><strong>PCB Contaminated Soil</strong></td>
<td>550,000 tons</td>
<td>200,000 tons</td>
</tr>
<tr>
<td><strong>$ Revenue / Ton</strong></td>
<td>$463</td>
<td>$367.5</td>
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<tr>
<td><strong>PCB Market Size</strong></td>
<td>$255 million US</td>
<td>$73.5 million US</td>
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</table>
Chinese Market Statistics

**POP**
- 500,000 tons PCB
- 1 Mil additional POPs
- $14,100,000 Yearly Rev/TPS machine

**Sludge**
- 5.67 Mil tons generated a year
- 6.1 Mil tons imported year
- $4,700,000 Yearly Rev/TPS machine
Advantages of Joint Venture With NIES

- Decreased Risk With Government Agency
- High Barriers of Entry
- Experience
- Competitive Advantage
- Large Market
Implementation

- Short-Term
- Long-Term
- Administrative
Initial Market Entry

Year 1
Demonstrate 2,000 – 3,000 tons

Year 2
1 TPS/ 80% capacity 24,000 tons

Year 3
2 TPS/ 80% capacity 48,000 tons
Long Term

1. Revaluate NPV of Projects in 5 Years

2. Positive NPV From Soil Remediation

3. Positive NPV From Oil Recovery
Ownership Levels

Equity

- NIES
- PS2
Staffing Chinese Operations

- Managing Engineer to China
- NIES Provide Staff for Operations
- Staff Trained Locally
Project NPV (PCB) = $15,163,943
**Financial Analysis**

### Phase Separation Solutions Balance Sheets

**In Canadian Dollars**

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010E</th>
<th>2011E</th>
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<tr>
<td><strong>Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Cash and cash equivalents</td>
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<td>155,344</td>
<td>681,075</td>
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<td>Income tax receivable</td>
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<td>177,861</td>
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<tr>
<td>Assets related to discontinued operations</td>
<td>–</td>
<td>141,988</td>
<td>–</td>
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<tr>
<td>Prepaid expenses and deposits</td>
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<td>12,094</td>
<td>9,144</td>
<td>8,843</td>
<td>13,053</td>
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<tr>
<td><strong>Current assets</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>1,373,921</td>
<td>1,271,280</td>
<td>3,945,222</td>
<td>5,777,592</td>
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<td>2,716,322</td>
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<td>Other assets</td>
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<td>46,096</td>
<td>41,904</td>
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<td><strong>Total assets</strong></td>
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<td>4,467,696</td>
<td>6,920,842</td>
<td>8,445,763</td>
<td>10,880,146</td>
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**Phase Separation Solutions Inc.**
Sensitivity Analysis

<table>
<thead>
<tr>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<tr>
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<td>$6,000,000.00</td>
<td>$4,000,000.00</td>
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<td>$4,000,000.00</td>
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<td>$2,000,000.00</td>
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</table>

Sensitivity Analysis

- 8%
- 10%
- 12%
Conclusion
Questions
Appendix

- **Assumptions**
- **Why not**
  - PCB in Canada
  - Pharmaceutical Waste
  - Sludge in China
  - Do Both JVs
- **SWOT Analysis**
- **TPS Advantages**
- **PCB NPV Table**
- **Sludge NPV Table**
- **Sludge in Future**

- **Barriers of Entry**
- **Future Opportunities**
- **Chinese Business Culture**
- **Chinese Regulation**
- **Canadian Regulation**
- **REV/COST/CASHFLOW**
- **Sources**
Financial Assumptions

- $25,000 Revenue From Licensing TPS Technology to American Firm
- $150,000 Revenues From TPS Royalties
- $25,000 Salaries per machine per year
- $2.5 Million Cost per TPS Machine
- 10% Operating Capacity for Year 1 in China
- All Facilities Operate at 80% Capacity
- 2009 Operating Expenses used for Projections
- 25% Chinese Corporate Tax Rate
- 10% Canadian Corporate Tax Rate
- $463.63 Revenue per ton of Sludge---Based of PCB Revenue per ton
- Expansion of Option 1 Doubles Capacity to 60,000 tons
- Expansion of Option 2 Doubles Capacity to 20,000 tons
- *Joint Venture Revenues & Costs are Split 50/50
PCB in Canada

• Only 200,000 tons of known PCB left in Canada

• Market dominated by Bennett Environmental

• One of three facilities

• Government regulations require PCB eliminated by end of 2011

• Market for PCB soil remediation will be depleted in a little over 2 years*

*Assuming total capacity of all three facilities in Canada is 110,000 tons/year; facilities working at 80% capacity
Pharmaceutical Waste

Canada
- Slow growth rates
- High transportation costs

China
- Market expected to increase with aging Chinese population
- Potential for large profits and diversification of industry
- Low barriers to entry
- No current relationships in China
Industrial Sludge Treatment in China

- 10,000 tons able to be processed per year
- Lower NPV in comparison to PCB earnings potential
- Fixed location
- 100,000 future maximum capacity of facility
- Viable future option considering absolute amount of POPs in China
PCB vs Sludge NPV Analysis

China PCB vs Sludge

Year 0 Year 1 Year 2 Year 3 Year 4 Year 5

PCB vs Sludge NPV Analysis

PHASE SEPERATION SOLUTIONS INC.
SWOT Analysis

**S**
- Large Market
- Niche Market
- High Barriers of Entry
- Government Assistance
- Free Ad Campaign

**W**
- Emerging Market
- First-Mover
- International Relations

**O**
- Multinational Labor
- Cultural Differences
- Large Investment

**T**
- Patent Expiration
- Incineration
- Policy Uncertainty
- Economic Uncertainty
TPS Advantages

- Recovery and Recycling
- Requires no Pretreatment
- Non-Incineration
- On-site Option (Mobile)
- Permitted for all Types of Hydrocarbon Impacted Soil
- Meets all air Emission Standards
# PCB NPV Projections

<table>
<thead>
<tr>
<th></th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
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<td>$250,000.00</td>
<td>$500,000.00</td>
<td>$500,000.00</td>
<td>$500,000.00</td>
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<td>$7,696,500.00</td>
<td>$15,205,500.00</td>
<td>$15,205,500.00</td>
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<td>$250,000.00</td>
<td>$500,000.00</td>
<td>$500,000.00</td>
<td>$500,000.00</td>
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<tr>
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<td>$3,000,000.00</td>
<td>$-</td>
<td>$2,500,000.00</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
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<tr>
<td>WFC</td>
<td>$2,500,000.00</td>
<td>$(500,000.00)</td>
<td>$2,000,000.00</td>
<td>$(1,000,000.00)</td>
<td>$(1,000,000.00)</td>
<td>$(1,000,000.00)</td>
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<tr>
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<td>$1,477,409.12</td>
<td>$6,630,682.25</td>
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<td>10%</td>
<td>$(4,250,000.00)</td>
<td>$822,784.09</td>
<td>$1,424,173.55</td>
<td>$6,275,544.70</td>
<td>$5,705,040.64</td>
<td>$5,186,400.58</td>
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<td>12%</td>
<td>$(4,250,000.00)</td>
<td>$808,091.52</td>
<td>$1,373,764.35</td>
<td>$5,945,322.46</td>
<td>$5,308,323.63</td>
<td>$4,739,574.67</td>
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<td>NPV(8%)</td>
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<td>$16,520,374.11</td>
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<tr>
<td>NPV(10%)</td>
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<td>$15,163,943.57</td>
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<tr>
<td>NPV(12%)</td>
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<td>$13,925,076.63</td>
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*PHASE SEPERATION SOLUTIONS INC.*
# Sludge NPV Projections

<table>
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<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>REV</td>
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<td>$3,704,000.00</td>
<td>$3,704,000.00</td>
<td>$7,408,000.00</td>
<td>$7,408,000.00</td>
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<tr>
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<td>$1,625,000.00</td>
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<tr>
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<td>$500,000.00</td>
<td>$500,000.00</td>
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<td>$5,283,000.00</td>
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<td>$500,000.00</td>
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<tr>
<td>CAPEX</td>
<td>$3,000,000.00</td>
<td>$-</td>
<td>$2,500,000.00</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
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<tr>
<td>WFC</td>
<td>$1,500,000.00</td>
<td>$(300,000.00)</td>
<td>$2,200,000.00</td>
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<td>$(600,000.00)</td>
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<td>FCF base</td>
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<table>
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<tr>
<th></th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<tbody>
<tr>
<td>8%</td>
<td>$(3,750,000.00)</td>
<td>$1,007,750.00</td>
<td>$(392,250.00)</td>
<td>$2,531,125.00</td>
<td>$2,531,125.00</td>
<td>$2,531,125.00</td>
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<tr>
<td>10%</td>
<td>$(3,750,000.00)</td>
<td>$933,101.85</td>
<td>$(336,291.15)</td>
<td>$2,009,288.63</td>
<td>$1,860,452.44</td>
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<td>12%</td>
<td>$(3,750,000.00)</td>
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<td>$1,901,671.68</td>
<td>$1,728,792.43</td>
<td>$1,571,629.48</td>
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</table>

NPV(8%) = $2,439,192.91
NPV(10%) = $2,044,056.40
NPV(12%) = $1,683,486.26

**Phase Separation Solutions Inc.**
Sludge Potential in Future Experience from Canadian Operations

Increased Cash (Equivalent) for Investments

NPV of China Sludge JV

<table>
<thead>
<tr>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$(5,000,000.00)</td>
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<td>$(3,000,000.00)</td>
<td>$(2,000,000.00)</td>
<td>$(1,000,000.00)</td>
<td>$-</td>
</tr>
</tbody>
</table>
Barriers of Entry

- Start-up Costs
- Difficulty in Sourcing
- Securing Friendly Locations for Operations
- 2-3 Years of Regulatory Evaluation
Future Opportunities

- 2001-75% of Food Samples had detectable POP
- 10-15% Exceeded Levels Prescribed by World Health Organization
- Clean-up Efforts are Still in Early Stages
Chinese Business Culture

• Government Connections

• Chinese Companies Favorable Over Foreign Companies

• Relationships
Chinese Regulation

• $162.5 billion towards environmental protections (2005)

• Stockholm Convention on Persistent Organic Pollutants

• Difficult for Chinese government to eliminate the use of POP
Canadian Regulation

• Government pledged $3.5 billion towards environment over 10 years (2004)

• Deadline for the ending of storage of PCB ends 2011

• Soil Remediation and Industrial Sludge Standards

• Ontario government initiated Land Disposal Restrictions in 2008

• TPS meets Canadian environmental regulations
Sources

• http://www.phaseparation.com/
• http://www.economist.com/blogs/banyan/2012/11/air-pollution-india
• http://tabemono.info/report/former/pcd/2003/china/e_1.html
• http://www.forbes.com/fdc/welcome_mjx.shtml
• http://www.ec.gc.ca/bpc-pcb/default.asp?lang=En&n=663E7488-1
• http://www.foxriverwatch.com/monsanto2a_pcb_pcbs.html
• http://www.ehs.utoronto.ca/services/environmental/pcb.htm
• http://www.pops.int/documents/implementation/nips/submissions/china_NIP_En.pdf