Western Canada
Crude Oil Recovery Industry

February 10, 2010
1. Enforcement & Regulations 1996
2. Strong Enforcement Guidelines & Consequences
3. Stringent Construction and Design Specifications
4. Detailed Application Process
<table>
<thead>
<tr>
<th>CANADA</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oilfield waste exempt from the hazardous waste regulations</td>
<td></td>
</tr>
<tr>
<td>Delegate authority to States/Provinces to manage oilfield waste</td>
<td></td>
</tr>
<tr>
<td>Similar requirements to hazardous waste regulations</td>
<td></td>
</tr>
<tr>
<td>Similar construction requirements for facilities</td>
<td>Varies</td>
</tr>
<tr>
<td>Western Provinces’ guidelines are similar</td>
<td></td>
</tr>
</tbody>
</table>
## Regulatory Environment

<table>
<thead>
<tr>
<th>Alberta (2007)</th>
<th>Total</th>
<th>Inspections</th>
<th>In Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Processing Facilities</td>
<td>77</td>
<td>75</td>
<td>99%</td>
</tr>
<tr>
<td>Wells Drilled</td>
<td>16,500</td>
<td>389</td>
<td>92%</td>
</tr>
<tr>
<td>Production Facilities</td>
<td>50,000</td>
<td>6800</td>
<td>97%</td>
</tr>
</tbody>
</table>
Western Canada

- **5000 Employees**
  - 100 Facilities
  - Onsite Services
  - $750M Revenue

- **Recovering**
  - 2.0M bbl crude to pipe/month
  - <10% from crude recovered from waste

- **Capital Intensive**
  - $20 - $25M new facility cost
Crude Oil Recovery Industry
Crude Oil Recovery Industry
<table>
<thead>
<tr>
<th>State/Province</th>
<th>Producing Wells</th>
<th>Total Wells Drilled</th>
<th># of Waste Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oil</td>
<td>Gas</td>
<td>Total</td>
</tr>
<tr>
<td>Texas</td>
<td>157,000</td>
<td>76,000</td>
<td>233,000</td>
</tr>
<tr>
<td>Wyoming</td>
<td>22,500</td>
<td>27,000</td>
<td>49,500</td>
</tr>
<tr>
<td>Colorado</td>
<td>4,700</td>
<td>23,000</td>
<td>27,700</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>31,000</td>
<td>38,000</td>
<td>69,000</td>
</tr>
<tr>
<td>Louisiana</td>
<td>19,000</td>
<td>41,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Western Canada</td>
<td>150,000</td>
<td>80,000</td>
<td>230,000</td>
</tr>
</tbody>
</table>
Crude Oil Recovery Industry

Western Canada, Texas, Other States

Wells

Waste Facilities

Producing

Drilled

Waste Facilities

CCS

NEWALTA
Crude oil recovery facilities provide many benefits to help protect the quality and the integrity of the stream:

- Consolidate waste streams
- Simplify regulatory enforcement
- Interface with producers
- Require E&P to disclose
By being compliant with the regulatory requirements, crude oil recovery facilities consolidate the waste stream and allow for proper screening of contaminants, and for bulk processing should it be required.

Also ease regulatory enforcement by reducing the number of control points the regulators need to monitor.
**Issues**

- Tan
- Organic Halides
- Phosphorus
- Salt
- Heavy Metals
- RVP
- Lubricating Oil
Protecting Stream Integrity
Refiners have identified phosphorus additives as having negative downstream effects. They have made the following requests:

- The generators of this additive reduce or eliminate the introduction of the additive into crude streams
- The crude oil recovery facilities remove the additive through treatment
- The regulators audit the generators and handlers to ensure compliance
Crude oil recovery companies have been aware of the issue and have implemented the following:

- Letters requiring analysis
- Sample retention and analysis
- R&D treating processes
- Stream Segregation
- Alternative Markets
- Client Education & Awareness
- Working with the CCQTA and industry
Conclusion

Canadian Crude Quality is Core to our Business
Discussion

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