Company in NAPP Region

Prep Plant

A Risk Free Opportunity to Harness New Revenue

6/1/15
Summary Results from trial of Sub325™ Fine Coal Recovery System
May 18 – 27, 2015

- Tuesday, May 19 - startup/shakedown activities were completed on the Sub325 unit. Intermittent operational tests were conducted to demonstrate the technology to company personnel. Centrisys (centrifuge mfg) was on-site to participate/support.

- Wednesday, May 20 & Thursday May 21 – various combinations of the plant’s Decanter screen drain and bowl effluent were fed to the SCI unit with significant capture results. Volumetric proportions tested ranged from 100% drain to approximately 65% drain–35% effluent. SCI product moistures ranged from 14.6% total to 26.9% total, respectively.

- Friday, May 22 - Company and SCI personnel installed a Thermo-Ramsey belt scale just AFTER the plant’s Decanter on the clean coal collecting conveyor. The weight reported by this belt scale was added to the weight reported from the SCI belt scale to determine the TOTAL tons captured by BOTH dewatering/capture units. This summation was then contrasted to the weight measured by the newly installed belt scale when screen drain was being re-cycled (normal operation) rather than being delivered to the SCI unit. Thus, the difference in the scale weights is the amount of “new tons captured” due to the use of the Sub325 system.

- Tuesday May 26 to Wednesday, May 27 – testing resumes focusing on a definitive determination of ‘New Tons Captured’. Results show an additional 10.1 tph was captured when the Sub325 system was utilized (see the following table). With moisture from the SCI technology ranging from about 16% to 20% over the various days of testing with screen drain only (see the following graphic), the effective increase in total plant clean coal moisture will be less than 0.50% on an absolute basis.

- Conclusion: Commercial-scale testing with the Sub325 technology successfully demonstrated that the machine can recover an additional 10.1 t/h of clean coal in this plant and do so at acceptable moistures.

- Next Steps: SCI and Company should diligently pursue arrangements for an in-plant installation and full-time operation of the SCI Sub325 Fine Coal Recovery System. A combination of the plant’s Decanter screen drain and bowl effluent should be plumbed as feed to the Sub325 where it is expected that 10 to 13 tph of ‘New Tons Captured’ will be realized.
Weighed Material Testing
Screenbowl Screen Drain as Feed Source
27-May-15

<table>
<thead>
<tr>
<th>Time</th>
<th>Tons of Cake</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCI-installed Belt Scale</td>
<td>SCI Trailer Belt Scale</td>
</tr>
<tr>
<td>6:30:00 AM</td>
<td>4403</td>
</tr>
<tr>
<td>6:45:00 AM</td>
<td>4426</td>
</tr>
<tr>
<td>7:00:00 AM</td>
<td>4453</td>
</tr>
<tr>
<td>7:15:00 AM</td>
<td>4479</td>
</tr>
<tr>
<td>7:30:00 AM</td>
<td>4506</td>
</tr>
<tr>
<td>TPH =</td>
<td>103</td>
</tr>
<tr>
<td>7:53:00 AM</td>
<td>4545</td>
</tr>
<tr>
<td>8:08:00 AM</td>
<td>4569</td>
</tr>
<tr>
<td>8:23:00 AM</td>
<td>4594</td>
</tr>
<tr>
<td>8:38:00 AM</td>
<td>4618</td>
</tr>
<tr>
<td>8:53:00 AM</td>
<td>4643</td>
</tr>
<tr>
<td>9:08:00 AM</td>
<td>4667</td>
</tr>
<tr>
<td>9:23:00 AM</td>
<td>4692</td>
</tr>
<tr>
<td>9:38:00 AM</td>
<td>4718</td>
</tr>
<tr>
<td>9:53:00 AM</td>
<td>4744</td>
</tr>
<tr>
<td>10:08:00 AM</td>
<td>4772</td>
</tr>
<tr>
<td>10:23:00 AM</td>
<td>4798</td>
</tr>
<tr>
<td>TPH =</td>
<td>101</td>
</tr>
<tr>
<td>Total Differential (&quot;New&quot;) TPH =</td>
<td>10.1</td>
</tr>
</tbody>
</table>
SCI Solid Bowl Unit Product Cake Moisture for Different Mixtures of Decanter Screen Drain and Main Effluent

- Screen Drain as Feed
- 90% Drain - 10% Effluent
- 80% Drain - 20% Effluent
- 65% Drain - 35% Effluent

Slurry Flow Rate (gpm)

Total Moisture of Cake (wt%)
Economic Proposal to Company

- No upfront Capex, SCI supplies capex intensive machine
- No installation cost, SCI will install machine up to $250K at their risk
- No maintenance cost, SCI does all maintenance & service, including expensive rotating unit replacement
- 20%/80% to Company for 7 months, 80%/20% to Company for 77 months
  - % split x actual spot coal sales price x tons per month; (see appendix)
- **$5.0MM NPV* to Company for life of project**
  (assumes only 1 shift/day, 5 days/week; excluding secondary benefits)
- Secondary Benefits possible to Company (up to $260k annually)
  - Chemical cost drop at thickener (up to 33%)
  - Potential Torque and Moisture drop in Screen Bowl
    - Opportunity to stretch the life of screen bowl rotating unit
    - Opportunity to increase output from floatation cells
    - Opportunity to increase plant feed rate or reduce run hours
  - Reduce volume going to refuse
    - Increases slurry pond life or refuse footprint

- **Total Annual Economic Value to Company > $1.5MM**

  * with given assumptions

You could see a plant yield increase up to 2.5% !!
### Appendix

#### TO CUSTOMER'S ACCOUNT
- No Capex
- No Maintenance Cost
- No Parts Replacement Cost
- No Installation Cost
- Power Cost
  - Assume: 300 tph plant
  - 9.5 hrs/day
  - 250 days/yr
  - 20% x tons/mo x Avg Sales Price - first X months
  - 80% x tons/mo x Avg Sales Price - 84 - X months
  - $ 0.50 chemical cost/ton (clean basis)
- Increase Plant Yield up to 3%
  - 10,688 extra tons produced per year = $ 761,484 new revenue straight to bottom line
- - Potentially increase Plant feed rate and/or decrease plant run hours
  - 0.5 hour per day reduced overtime = $ 70,313 per year in overtime savings
- - Potentially up gravity and yield on coarse circuit, depending on ~325M ash
  - 0.35 new chemical cost/ton (CC basis) = $ 53,438 annual savings in chemical cost at thickener
  - Decrease Screwbowl Feed, Torque, Wear, and Moisture
    - $ 90,000 annual cost of rotating unit = $ 10,446 annual savings pushing cost out for reduced throughput to screwbowl cost to build pond
  - Increase pond life / Decrease volume of solids to Refuse
    - 4,800,000 cubic feet in pond 400’x400’x30’
    - 345,455 cubic feet per year to pond (c + r)
    - 13.9 pond life before SCI
    - 27.8 pond life after SCI
    - $ 126,190

### GENERAL ILLUSTRATION of SECONDARY BENEFITS

**Annual value of secondary benefits to customer:** $ 260,387