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WHC-SD-WM-DP-106, Rev. 0, "45-Day Safety Screen Results for Tank 241-C-107, Push Mode, Cores 68 and 69"

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**Purchase Order No.:** N/A

**Equip./Component No.:** N/A

**System/Blg./Facility:** N/A

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ANALYTICAL SERVICES

45-DAY SAFETY SCREEN RESULTS FOR TANK 241-C-107, PUSH MODE, CORES 68 AND 69

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45-DAY SAFETY SCREEN RESULTS FOR TANK 241-C-107
PUSH-MODE CORE SAMPLES 68 AND 69

This is the 45-Day report for the fiscal year 1995 tank 241-C-107 (C-107) push-mode characterization effort. Reported below are the safety-screening analytes required by the C-107 tank characterization plan (TCP), or Reference 1. Also included are copies of the differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA) scans as requested in the Reference.

Summary

Two core samples from tank C-107, obtained by the push-mode core sampling method, were received, extruded, and analyzed by the 222-S Laboratories in accordance with Reference 1. Drainable liquid was analyzed at the segment level for a separable organic layer, energetics by DSC, and percent water by TGA. Sludge samples were analyzed at the half-segment level by DSC, TGA, and for total alpha activity. No safety-screening notification limits were exceeded on any samples.

Sample Receipt and Extrusion

Core 68 was taken from riser 7 of tank C-107. Sample removal, receipt, and extrusion data are summarized for core 68 in Table 1. A second core sample was removed from riser 3 of tank C-107. Sample removal, receipt, and extrusion data for core 69 are summarized in Table 2. All segments were expected to contain the full 19 in. of sample, except the first segment in each core, which was expected to contain 14 in. and 13 in., respectively.

Analytical Results

The safety screening analytical results are presented in Table 3, which includes the LabCore sample number. Column 2 of the table indicates the sample preparation used, if any. As shown, analyses on fused samples are marked with “F”.

DSC (Energetics Content)

Analyses by DSC were performed under a nitrogen atmosphere using procedure LA-514-113, Rev B-1. Note that analyses were performed on two different instruments. On one instrument, plotted results show exothermic peaks in an upward direction. Exothermic peaks point in the opposite direction when plotted on the other instrument. No exotherms were observed in all but three samples, including the only drainable liquid sample collected from both cores, segment 3 of core 69. The highest exotherm, measuring 102.7 J/g on the sample, is found on the lower half sludge from segment 3, core 68. This result becomes 209.5 J/g when calculated on a dry-weight basis. No exotherm was observed on the duplicate or a third sample that was run. For the remaining two samples showing exotherms, only the sample or duplicate showed exothermic behavior, consequently the relative percent difference between the two runs was very high. Re-runs were not performed because the exotherms were small and because of the high dose rates associated with these samples. Re-runs will be performed at the customer's request.
Table 1. Sample Receipt and Extrusion information for C-107, Core 68.

<table>
<thead>
<tr>
<th>Segment</th>
<th>Date Sampled</th>
<th>Date Received</th>
<th>Date Extruded</th>
<th>Liner Liq. (g)</th>
<th>Drain. Liq. Recovered (g)</th>
<th>Solids Recovered (g)</th>
<th>Sample Description</th>
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<td>3/3/95</td>
<td>3/14/95</td>
<td>1.06</td>
<td>0.0</td>
<td>190.49 (lower half) 108.18 (upper half)</td>
<td>Extruded approximately 14 in. of shiny, dark brown sludge that maintained its shape in the sample tray. The lower 9 in. was removed as the lower half; remainder was taken as the upper half.</td>
</tr>
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<td>2</td>
<td>3/2/95</td>
<td>3/3/95</td>
<td>3/15/95</td>
<td>9.24</td>
<td>0.0</td>
<td>203.43 (lower half) 206.04 (upper half)</td>
<td>Extruded 19 in. of shiny, dark brown sludge that maintained its shape in the sample tray. The lower 4 in. of material was less dark and less damp than the remaining sludge and contained a small amount of white, creamy material inside the sample. The sample was divided equally into upper and lower half subsamples.</td>
</tr>
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<td>3</td>
<td>3/2/95</td>
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<td>8.31</td>
<td>0.0</td>
<td>206.98 (lower half) 234.11 (upper half)</td>
<td>Recovered 19 in. of sludge with a similar description as the bottom 4 in. of segment 2. The sample was divided equally into upper and lower half subsamples.</td>
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<td>0.0</td>
<td>195.41 (lower half) 194.80 (upper half)</td>
<td>Two types of material were recovered. The upper 6 in. was similar to the segment 3 sample without the white material. The lower 13 in. was light yellow-brown in color and wetter than the darker material. The sample was divided equally into upper and lower half subsamples.</td>
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<td>195.26 (lower half) 198.65 (upper half)</td>
<td>Collected 19 in. of shiny, smooth sample similar in color to the lower 13 in. of segment 4. The sample was divided equally into upper and lower half subsamples.</td>
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### Table 2. Sample Receipt and Extrusion Information for C-107, Core 69.

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<th>Date Received</th>
<th>Date Extruded</th>
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<th>Drain. Liq. Recovered (g)</th>
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<th>Sample Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>3/7/95</td>
<td>3/8/95</td>
<td>3/17/95</td>
<td>0.0</td>
<td>0.0</td>
<td>173.27 (lower half)</td>
<td>Collected approximately 13 in. of shiny, dark brown sludge that maintained its shape on the sample tray. The lower 9 in. was removed as the lower half subsample; the remainder was taken as the upper half subsample.</td>
</tr>
<tr>
<td>2</td>
<td>3/7/95</td>
<td>3/8/95</td>
<td>3/20/95</td>
<td>&lt;5 mL*</td>
<td>0.0</td>
<td>209.67 (lower half)</td>
<td>The first 1 in. of material extruded was light brown sludge. Distributed inside this sample was soft, white material. The remaining 18 in. extruded was dark brown. The lower 8 in. of sample was more firm that the remainder of sample, which did not maintain its shape on the extrusion tray. The sample was divided equally into upper and lower half subsamples.</td>
</tr>
<tr>
<td>3</td>
<td>3/7/95</td>
<td>3/8/95</td>
<td>3/21/95</td>
<td>&lt;5 mL*</td>
<td>27.81</td>
<td>175.60 (lower half)</td>
<td>Extruded roughly 7 in. of light brown sludge, followed by a 3.5 in. gap in which light brown drainable liquids were collected, then a final 8 in. of light brown solids. Soft, white material was visible on the surface of all solids. Upon subsampling, the amount of the white material was estimated as 50% of the sample volume. The lower 7 in. of sludge was collected as the lower half subsample while the remaining solids were collected as the upper half subsample.</td>
</tr>
<tr>
<td>4</td>
<td>3/7/95</td>
<td>3/9/95</td>
<td>3/21/95</td>
<td>16.23</td>
<td>0.0</td>
<td>165.00 (lower half)</td>
<td>Extruded roughly 14 in. of light to medium brown sludge followed by a 3 in. gap when a small amount of liquid emerged, then a final 1.5 in. of medium to dark brown sludge. The lower 8 in. of lighter colored sludge was collected as the lower half subsample. None of the white material was observed. The amount of liquid was too small to collect as drainable liquid.</td>
</tr>
<tr>
<td>5</td>
<td>3/8/95</td>
<td>3/13/95</td>
<td>3/21/95</td>
<td>0.0</td>
<td>0.0</td>
<td>203.66 (lower half)</td>
<td>Collected were 18 in. of light brown to tan sludge. The surface of the lower 9 showed some pitting and retained the shape of the sampler. This material was collected as the lower half subsample. The upper 9 in. was noticeably wetter, did not retain its shape, and contained some firm, white chunks of material. A small amount of liquid accompanied the upper half sludge, but it was not collected separately.</td>
</tr>
<tr>
<td>Field Blank</td>
<td>3/10/95</td>
<td>3/13/95</td>
<td>3/20/95</td>
<td>0.0</td>
<td>297.93</td>
<td>0.0</td>
<td>Collected clear, colorless liquid in two sample jars.</td>
</tr>
</tbody>
</table>

* Liquid was not retained

FB = field blank
TGA (Moisture Content)

Weight percent water by TGA was performed under a nitrogen atmosphere using procedure LA-560-112, Rev. A-2. Results on the only drainable liquid sample collected from both cores, segment 3 of core 69, are 79.04 and 78.71% water for the sample and duplicate, respectively. Results on the sludge samples are also significantly above the <17% notification limit, generally appearing in the 50-70% range. The exceptions are segment 3, core 69 and the upper half of segment 3, core 68, which are significantly drier, appearing in the 32-38% range. A third run was made on sample S95T000376 (Table 3) due to the high relative percent difference (RPD) between the sample and duplicate. The result on the third run is 48.66, in good agreement with the duplicate result.

Total Alpha

Total alpha analyses were performed on fusion digestions of all sludge subsamples using procedure LA-508-101, Rev D-2. Results range from 0.0769 to 15.1 uCi/g. The total alpha activity is the highest in the first two segments of each core, but all results are well below the TCP notification limit of 41 uCi/g. A RPD of greater than 10% exists on about half of the samples, with the highest being 42.3%. In addition, the spike recovery results on samples S95T000439 and S95T000444 (Table 3) were out of the ±10% TCP limit. Reruns of these samples were not requested due to the very high beta to alpha activity ratio in these samples. Large dilutions are necessary to reduce the beta activity to acceptable levels and, consequently, detection limits are high such that the alpha activity is only on the order of ten times the detection limit.

## Table 3. C-107 Analytical Summary - Cores 68 and 69

### C-107

**CORE NUMBER:** 68  
**SEGMENT #:** 1

**SEGMENT PORTION: U** Upper Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count Err %</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000256</td>
<td></td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>96.28</td>
<td>n/a</td>
<td>62.88</td>
<td>64.05</td>
<td>63.47</td>
<td>1.84</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000256</td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>98.77</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000414</td>
<td>F</td>
<td>Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>85.14</td>
<td>&lt;5.56e-01</td>
<td>6.75e0</td>
<td>6.22</td>
<td>6.48e+00</td>
<td>8.17</td>
<td>90.30</td>
<td>1.250</td>
<td>20.3</td>
</tr>
</tbody>
</table>

**SEGMENT PORTION: L** Lower Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count Err %</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000374</td>
<td></td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>99.51</td>
<td>n/a</td>
<td>62.75</td>
<td>61.84</td>
<td>62.30</td>
<td>1.46</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000374</td>
<td></td>
<td>DSC Exotherm Dry Calculated</td>
<td>Joules/g Dry</td>
<td>n/a</td>
<td>n/a</td>
<td>4.5</td>
<td>0</td>
<td>2.250</td>
<td>200</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000374</td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>104.0</td>
<td>n/a</td>
<td>1.7</td>
<td>0</td>
<td>0.850</td>
<td>200</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000419</td>
<td>F</td>
<td>Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>92.57</td>
<td>&lt;2.22e-01</td>
<td>7.46e0</td>
<td>6.47e0</td>
<td>6.96e+00</td>
<td>14.2</td>
<td>92.60</td>
<td>5.18e-01</td>
<td>12.5</td>
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</tbody>
</table>
Table 3. C-107 Analytical Summary - Cores 68 and 69

<table>
<thead>
<tr>
<th>Sample#</th>
<th>A#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err%</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000370</td>
<td></td>
<td>% Water by TGA on Perkin Elmer</td>
<td>%</td>
<td>97.84</td>
<td>n/a</td>
<td>57.98</td>
<td>57.67</td>
<td>57.83</td>
<td>0.54</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>S95T000370</td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>108.6</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>S95T000455</td>
<td>F</td>
<td>Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>85.14</td>
<td>&lt;5.56e-01</td>
<td>8.25e0</td>
<td>1.08e+1</td>
<td>9.53e+00</td>
<td>26.8</td>
<td>n/a</td>
<td>1.080</td>
<td>16.6</td>
<td></td>
</tr>
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</table>

SEGMENT PORTION: L Lower Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>A#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err%</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000375</td>
<td></td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>99.51</td>
<td>n/a</td>
<td>41.26</td>
<td>41.66</td>
<td>41.36</td>
<td>0.48</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>S95T000375</td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>104.0</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>S95T000420</td>
<td>F</td>
<td>Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>97.97</td>
<td>&lt;5.62e-01</td>
<td>8.83e0</td>
<td>9.13e+0</td>
<td>8.98e+00</td>
<td>3.34</td>
<td>n/a</td>
<td>1.290</td>
<td>19.2</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3. C-107 Analytical Summary - Cores 68 and 69

**C-107**

**CORE NUMBER:** 68  
**SEGMENT #:** 3

**SEGMENT PORTION:** U Upper Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R A#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err%</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95000371</td>
<td></td>
<td>% Water by TGA on Perkin Elmer</td>
<td>%</td>
<td>97.84</td>
<td>n/a</td>
<td>31.87</td>
<td>31.98</td>
<td>31.95</td>
<td>0.34</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95000371</td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>108.6</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95000416</td>
<td>F</td>
<td>Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>106.1</td>
<td>&lt;3.2e-01</td>
<td>1.51e+0</td>
<td>2.32e+0</td>
<td>1.92e+0</td>
<td>42.3</td>
<td>n/a</td>
<td>7.49e-01</td>
<td>43.9</td>
<td></td>
</tr>
</tbody>
</table>

**SEGMENT PORTION:** L Lower Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R A#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err%</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95000376</td>
<td></td>
<td>% Water by TGA on Perkin Elmer</td>
<td>%</td>
<td>97.50</td>
<td>n/a</td>
<td>56.15</td>
<td>48.10</td>
<td>52.12</td>
<td>15.4</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95000376</td>
<td></td>
<td>DSC Exotherm on Perkin Elmer</td>
<td>Joules/g</td>
<td>99.40</td>
<td>n/a</td>
<td>102.7</td>
<td>0</td>
<td>51.35</td>
<td>200</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95000376</td>
<td></td>
<td>DSC Exotherm Dry Calculated</td>
<td>Joules/g Dry</td>
<td>104.5</td>
<td>200.0</td>
<td>0</td>
<td>0</td>
<td>104.8</td>
<td>200</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95000421</td>
<td>F</td>
<td>Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>97.97</td>
<td>&lt;5.62e-01</td>
<td>4.34e-1</td>
<td>4.01e-1</td>
<td>4.17e-01</td>
<td>7.90</td>
<td>n/a</td>
<td>6.20e-02</td>
<td>18.6</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3. C-107 Analytical Summary - Cores 68 and 69  
**C-107**

**CORE NUMBER:** 68  
**SEGMENT #:** 4  
**SEGMENT PORTION:** U Upper Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R</th>
<th>A#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count Err %</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000372</td>
<td></td>
<td></td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>98.73</td>
<td>n/a</td>
<td>50.76</td>
<td>49.74</td>
<td>50.25</td>
<td>2.03</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000372</td>
<td></td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>108.6</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000417</td>
<td>F</td>
<td></td>
<td>Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>106.1</td>
<td>&lt;3.21e-01</td>
<td>4.76e-1</td>
<td>&lt;5.95e-1</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>7.82e-01</td>
<td>114.3</td>
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</table>

**SEGMENT PORTION:** L Lower Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R</th>
<th>A#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count Err %</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000377</td>
<td></td>
<td></td>
<td>% Water by TGA on Perkin Elmer</td>
<td>%</td>
<td>97.50</td>
<td>n/a</td>
<td>62.58</td>
<td>63.87</td>
<td>63.22</td>
<td>2.04</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000377</td>
<td></td>
<td></td>
<td>DSC Exotherm on Perkin Elmer</td>
<td>Joules/g</td>
<td>99.40</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000422</td>
<td>F</td>
<td></td>
<td>Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>106.4</td>
<td>&lt;1.30e-02</td>
<td>1.63e-1</td>
<td>1.26e-1</td>
<td>1.45e-01</td>
<td>25.6</td>
<td>n/a</td>
<td>3.00e-02</td>
<td>21.3</td>
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</table>
Table 3. C-107 Analytical Summary - Cores 68 and 69
C-107

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err%</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000373</td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>98.73</td>
<td>n/a</td>
<td>66.58</td>
<td>66.90</td>
<td>66.74</td>
<td>0.48</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>S95T000373</td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>108.6</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>n/a</td>
<td>n/a</td>
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<td>n/a</td>
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<td></td>
</tr>
<tr>
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<td>F Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>78.38</td>
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<td>&lt;1.80e-1</td>
<td>&lt;2.00e-1</td>
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<td>n/a</td>
<td>4.21e-01</td>
<td>500.0</td>
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SEGMENT PORTION: L Lower Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
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<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err%</th>
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<tbody>
<tr>
<td>S95T000378</td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>98.58</td>
<td>n/a</td>
<td>70.64</td>
<td>68.69</td>
<td>69.66</td>
<td>2.80</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>S95T000378</td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>95.61</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>n/a</td>
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<td>n/a</td>
<td>n/a</td>
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</tr>
<tr>
<td>S95T000423</td>
<td>F Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>106.4</td>
<td>&lt;1.30e-02</td>
<td>2.44e+0</td>
<td>2.52e+0</td>
<td>2.48e+00</td>
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Table 3. C-107 Analytical Summary - Cores 68 and 69

CORE NUMBER: 69
SEGMENT #: field blank

SEGMENT PORTION: Drainable Liquid

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R A#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
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<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec. %</th>
<th>Det Limit</th>
<th>Count Err%</th>
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</thead>
<tbody>
<tr>
<td>S951000436</td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>99.54</td>
<td>n/a</td>
<td>100.1</td>
<td>99.9</td>
<td>100.0</td>
<td>0.20</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S951000436</td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>103.0</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>n/a</td>
<td>n/a</td>
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## Table 3. C-107 Analytical Summary - Cores 68 and 69

### C-107

**CORE NUMBER:** 69  
**SEGMENT #:** 1

#### SEGMENT PORTION: U Upper Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R#</th>
<th>A#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err %</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000424</td>
<td>%</td>
<td></td>
<td>Water by TGA using Mettler</td>
<td>%</td>
<td>99.00</td>
<td>n/a</td>
<td>70.23</td>
<td>70.28</td>
<td>70.25</td>
<td>0.07</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000424</td>
<td>DSC</td>
<td></td>
<td>Exotherm using Mettler</td>
<td>Joules/g</td>
<td>104.0</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000439</td>
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<td></td>
<td>Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>106.1</td>
<td>&lt;8.94e-01</td>
<td>1.01e+1</td>
<td>9.76e+0</td>
<td>9.93e+0</td>
<td>3.42</td>
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#### SEGMENT PORTION: L Lower Half of Segment

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<th>Analyte</th>
<th>Unit</th>
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<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err %</th>
</tr>
</thead>
<tbody>
<tr>
<td>S95T000429</td>
<td>%</td>
<td></td>
<td>Water by TGA using Mettler</td>
<td>%</td>
<td>98.94</td>
<td>n/a</td>
<td>51.15</td>
<td>50.66</td>
<td>50.91</td>
<td>0.96</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000429</td>
<td>DSC</td>
<td></td>
<td>Exotherm using Mettler</td>
<td>Joules/g</td>
<td>107.2</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>S95T000444</td>
<td>F</td>
<td></td>
<td>Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>77.36</td>
<td>&lt;2.64e-03</td>
<td>7.65E+0</td>
<td>6.19e+0</td>
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<td>76.20</td>
<td>7.81e-01</td>
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### Table 3. C-107 Analytical Summary - Cores 68 and 69

**C-107**

#### SEGMENT PORTION: U Upper Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
<th>R A#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
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<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err %</th>
</tr>
</thead>
<tbody>
<tr>
<td>S951000425</td>
<td>5</td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>99.00</td>
<td>n/a</td>
<td>59.50</td>
<td>58.80</td>
<td>59.20</td>
<td>1.03</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<td>S951000425</td>
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<td>DSC Exotherm Dry Calculated</td>
<td>Joules/g Dry</td>
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<td>n/a</td>
<td>65.4</td>
<td>62.8</td>
<td>65.10</td>
<td>2.07</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S951000425</td>
<td>5</td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>104.0</td>
<td>n/a</td>
<td>27.5</td>
<td>25.6</td>
<td>26.55</td>
<td>7.16</td>
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<td>n/a</td>
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<tr>
<td>S951000440</td>
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<td>F Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>106.1</td>
<td>&lt;8.94e-01</td>
<td>7.74e+0</td>
<td>6.20e+0</td>
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<td>22.1</td>
<td>n/a</td>
<td>3.400</td>
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#### SEGMENT PORTION: L Lower Half of Segment

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<th>Unit</th>
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<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err %</th>
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<tbody>
<tr>
<td>S951000430</td>
<td>5</td>
<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>99.51</td>
<td>n/a</td>
<td>49.35</td>
<td>48.76</td>
<td>49.05</td>
<td>1.20</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>S951000430</td>
<td>5</td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>96.31</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S951000445</td>
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<td>F Alpha of Digested Solid</td>
<td>uCi/g</td>
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Table 3. C-107 Analytical Summary - Cores 68 and 69

CORE NUMBER: 69
SEGMENT #: 3

SEGMENT PORTION: U Upper Half of Segment

<table>
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<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
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<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD</th>
<th>Spk Rec</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err %</th>
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</thead>
<tbody>
<tr>
<td>S95T000426</td>
<td></td>
<td></td>
<td>% Water by TGA on Perkin Elmer</td>
<td>%</td>
<td>98.70</td>
<td>n/a</td>
<td>36.86</td>
<td>38.52</td>
<td>37.69</td>
<td>4.40</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000426</td>
<td></td>
<td></td>
<td>DSC Exotherm on Perkin Elmer</td>
<td>Joules/g</td>
<td>99.54</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
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<td>n/a</td>
<td>n/a</td>
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<tr>
<td>S95T000441</td>
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<td>uCi/g</td>
<td>79.39</td>
<td>&lt;1.39e-02</td>
<td>1.36e-1</td>
<td>1.04e-1</td>
<td>1.20e-01</td>
<td>26.7</td>
<td>n/a</td>
<td>3.10e-02</td>
<td>25.0</td>
<td>n/a</td>
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SEGMENT PORTION: L Lower Half of Segment

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<th>Analyte</th>
<th>Unit</th>
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<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD</th>
<th>Spk Rec</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err %</th>
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<tbody>
<tr>
<td>S95T000431</td>
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<td>% Water by TGA using Mettler</td>
<td>%</td>
<td>99.53</td>
<td>n/a</td>
<td>34.84</td>
<td>35.84</td>
<td>35.34</td>
<td>2.83</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000431</td>
<td></td>
<td></td>
<td>DSC Exotherm using Mettler</td>
<td>Joules/g</td>
<td>96.31</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0.000</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000446</td>
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<td>F Alpha of Digested Solid</td>
<td>uCi/g</td>
<td>107.8</td>
<td>&lt;1.04e00</td>
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SEGMENT PORTION: Drainable Liquid

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<th>A#</th>
<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
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<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD</th>
<th>Spk Rec</th>
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<th>Err %</th>
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<td>% Water by TGA using Mettler</td>
<td>%</td>
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<td>79.06</td>
<td>78.71</td>
<td>78.88</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>S95T000435</td>
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<td>Joules/g</td>
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<td>0</td>
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### C-107 Analytical Summary - Cores 68 and 69

**CORE NUMBER:** 69  
**SEGMENT #:** 4

**SEGMENT PORTION:** U Upper Half of Segment

<table>
<thead>
<tr>
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<th>Unit</th>
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<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err%</th>
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<tr>
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<td>51.76</td>
<td>51.83</td>
<td>0.27</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000427</td>
<td></td>
<td>DSC Exotherm on Perkin Elmer</td>
<td>Joules/g</td>
<td>99.54</td>
<td>n/a</td>
<td>0</td>
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<td>Alpha of Digested Solid</td>
<td>ucI/g</td>
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<td>&lt;1.39e-02</td>
<td>1.17e+00</td>
<td>9.01e+00</td>
<td>1.04e+00</td>
<td>26.0</td>
<td>3.60e-02</td>
<td>7.3</td>
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**SEGMENT PORTION:** L Lower Half of Segment

<table>
<thead>
<tr>
<th>Sample#</th>
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<th>Analyte</th>
<th>Unit</th>
<th>Standard %</th>
<th>Blank</th>
<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
<th>Det Limit</th>
<th>Count</th>
<th>Err%</th>
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</thead>
<tbody>
<tr>
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<td>%</td>
<td>98.26</td>
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<td>62.89</td>
<td>63.54</td>
<td>2.03</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>S95T000432</td>
<td></td>
<td>DSC Exotherm on Perkin Elmer</td>
<td>Joules/g</td>
<td>98.98</td>
<td>n/a</td>
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<td>0</td>
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<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<td>F</td>
<td>Alpha of Digested Solid</td>
<td>ucI/g</td>
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<td>7.36e-2</td>
<td>8.17e-2</td>
<td>7.76e-2</td>
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<td>5.00e-03</td>
<td>12.7</td>
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### Table 3. C-107 Analytical Summary - Cores 68 and 69

**C-107**

**CORE NUMBER:** 69  
**SEGMENT #:** 5

**SEGMENT PORTION:** U Upper Half of Segment

<table>
<thead>
<tr>
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<th>Unit</th>
<th>Standard %</th>
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<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
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<th>Count Err%</th>
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<tbody>
<tr>
<td>S951000428</td>
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<td>% Water by TGA using Mettler</td>
<td>%</td>
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<td>49.77</td>
<td>54.92</td>
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<td>uCi/g</td>
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**SEGMENT PORTION:** L Lower Half of Segment

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<th>A#</th>
<th>Analyte</th>
<th>Unit</th>
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<th>Result</th>
<th>Duplicate</th>
<th>Average</th>
<th>RPD %</th>
<th>Spk Rec %</th>
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<th>Count Err%</th>
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UNDIGESTED SAMPLE ANALYSES - DIRECT
LABCORE Data Entry Template for Worklist# 807

Analyst: SMF  Instrument: DSC01  Book # 12 N14 - A
Method: LA-514-113 Rev/Mod  B-1

Worklist Comment: Please run C-107 DSC under N2, bdv

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Final page for worklist # 807

Analyst Signature: Susie M. Juter 4-13-95  Analyst Signature: D. Hamilton 4-13-95
Date: 4/13/95  Date: 4/13/95
Verified: J. M. Faye 4/18/95

Data Entry Comments:
S95T000374 has one endotherm 148.2, 4.6g at 103°C, the small exotherm may be an artifact. Duplicate has 135.1, 9.4g at 103°C. S95T000375 has two endotherms 77.6, 1.4g at 102°C and 281.3, 9.6g at 230°C. Duplicate has 94.1, 6.9g at 109 and 377.5g.

Units shown for QC (SPK & STM) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
DSC STD 12N14-A
File: 00124.001
DSC METTLER 13-Apr-95
6.340 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

Integration
Delta H 188 mJ
29.6 J/g
Peak 158.9°C
-12.1 mW

Signature below represents chemical technologist/chemist that completed/verified the calibration/analysis on pages 20 to 31.
S95T000374 (DUP) N2
13.866 mg
Rate: 10.0 °C/min

Integration
Delta H18235 mJ
1315.1 J/g
Peak 103.3°C
-82.8 mW

File: 00128.001 DSC METTLER 13-Apr-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 4314 mJ
297.1 J/g
Peak 291.7°C
-22.0 mW

Integration
Delta H 13659 mJ
940.6 J/g
Peak 109.3°C
-83.4 mW
LABCORE Data Entry Template for Worklist# 808

Analyst: SMF  Instrument: DSC01  Book #: 12NH-A

Method: LA-514-114 Rev/Mod

Worklist Comment: Please run C-107 DSC under N2. bdv

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</table>

Final page for worklist # 808

See attached for signatures

Verified by Blandina Valencia

Data Entry Comments:

Sample S95T000376 produced one endotherm at 81.69°C with a delta H of 114.13 J/g. Sample S95T000377 produced one endotherm at 109.42°C with a delta H of 145.72 J/g.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
LABCORE Data Entry Template for Worklist# 808

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<td>Joules/g</td>
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Final page for worklist # 808

Analyst Signature Date

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Curve 1: DSC

File info: IND041301 Thu Apr 13 07:51:25 1995
Sample Weight: 6.687 mg
Indium at 10C/min

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 37 TO 38.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<td>156.966 °C</td>
</tr>
<tr>
<td>X2</td>
<td>162.833 °C</td>
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<tr>
<td>Peak</td>
<td>159.907 °C</td>
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<tr>
<td>Area</td>
<td>189.126 mJ</td>
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<tr>
<td>ΔH</td>
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<tr>
<td>Height</td>
<td>16.559 mW</td>
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<tr>
<td>Onset</td>
<td>157.139 °C</td>
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N2 exotherm down

Temperature (°C)  SM FULTON

Westinghouse Hanford Co.
222-S Lab
Thu Apr 13 07:52:27 1995
Curve 1: DSC
File info: SAM041301 Thu Apr 13 09:31:27 1995
Sample Weight: 10.070 mg
S95T000376, 10C/min

Peak 119.11 °C
AH 114.13 J/g

Onset 81.69 °C

Peak 313.13 °C
AH -102.72 J/g

exotherm down, nitrogen purge gas

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Thu Apr 13 09:37:10 1995
Curve 1: DSC

File info: SAM041303 Thu Apr 13 10:54:44 1995
Sample Weight: 11.550 mg
S95T000376 (dup), 10C/min

- X1: 39.666 °C
- X2: 154.000 °C
- Peak: 112.857 °C
- Area: 12915.095 mJ
- ΔH: 1118.190 J/g
- Height: 45.914 mW
- Onset: 70.900 °C

Temperature (°C)  |  |  |  |  |  |  |  |  
| 60.0 | 70.0 | 80.0 | 90.0 | 100.0 | 110.0 | 120.0 |
| 50.0 | 60.0 | 70.0 | 80.0 | 90.0 | 100.0 | 110.0 |

Heat Flow (mW)

exotherm down, nitrogen purge gas

SM Fulton
Westinghouse Hanford Co.
222-5 Lab
Thu Apr 13 11:17:00 1995
Curve 1: DSC

Sample Weight: 26.880 mg

X1: 44.800 °C
X2: 169.466 °C
Peak: 121.106 °C
Area: 3177.326 mJ
ΔH: 1162.192 J/g
Height: 105.734 mW
Onset: 163.037 °C

exotherm down, nitrogen purge gas

Temperature (°C)  SW Fulton
Westinghouse Hanford Co.
222-S Lab
Thu Apr 13 12:27:52 1995
Curve 1: DSC

Sample Weight: 25.010 mg

Sample Height: 254.163 mW

Onset: 109.418 °C

Peak: 121.034 °C

Area: 36446.636 mJ

ΔH: 1457.203 J/g

Temperature (°C)

Heat Flow (mW)

exotherm down, nitrogen purge gas

Temperature (°C)  SM Fulton
Westinghouse Hanford Co.
222-S Lab
Thu Apr 13 13:34:51 1995


Sample Weight: 25.010 mg

Sample Height: 254.163 mW

Onset: 109.418 °C

Peak: 121.034 °C

Area: 36446.636 mJ

ΔH: 1457.203 J/g

Temperature (°C)

Heat Flow (mW)

exotherm down, nitrogen purge gas

Temperature (°C)  SM Fulton
Westinghouse Hanford Co.
222-S Lab
Thu Apr 13 13:34:51 1995
Curve 1: DSC

File info: SAMO41306 Thu Apr 13 14:30:36 1995
Sample Weight: 28.780  mg
S95T000377 (DUP), 10C/min

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<td>X2</td>
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<tr>
<td>Height</td>
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<tr>
<td>Onset</td>
<td>112.490 °C</td>
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</table>

Temperature (°C)  SM Fulton
Westinghouse Hanford Co.
222-S Lab
Thu Apr 13 14:47:46 1995

exotherm down, nitrogen purge gas

TEMP: 25.0 °C  TIME: 0.0 min RATE: 10.0 g/min
LABCORE Data Entry Template for Worklist# 809

**Analyst:** KRM  
**Instrument:** DSC01  
**Book #:** L2N14A

**Method:** LA-514-113 Rev/Mod

**Worklist Comment:** Please run C-107 DSC under N2. bdv

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<td>Joules/g</td>
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</table>

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**Final page for worklist # 809**

**Analyst Signature:**  
**Date:** 4-12-95

**Verified:** 4/18/95 J. M. Ouy

---

**Data Entry Comments:**

S95T000378 has an endotherm at 164.9 °C, Duplicate

158.6 °C at 113 °C  J. M. Ouy  4/12/95

---

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
DSC STD 12N14-A

6.340 mg  Rate: 10.0 °C/min

Integration
Delta H 173 mJ
Peak 162.3°C
-7.0 mW

File: 00119.001  DSC METTLER 13-Apr-95

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 34 TO 36.

222-S Laboratory
Integration
Delta H: 15647 mJ
1649.8 J/g
Peak: 113.9°C
-74.9 mW
S95T000378 (DUP) N2
13.763 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

Integration
Delta H 21856 mJ
1588.0 J/g
Peak 113.3°C
-85.8 mW
LABCORE Data Entry Template for Worklist# 810

Analyst: [Signature] Instrument: DSC01 Book # [Signature]

Method: LA-514-113 Rev/Mod [Signature]

Worklist Comment: Please run C-107 DSC under N2.

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Final page for worklist # 810

Entered + reviewed 4/12/95 Jan M Frye

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Integration
Delta H 196 mJ
30.9 J/g
Peak 158.6°C
-13.2 mW

DSC STD
6.340 mg
Rate: 10.0 °C/min
Ident: 0.0

File: 00080.001 DSC METTLER 07-Apr-95
222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 38 TO 44.
Integration
Delta H 108 mJ
8.9 J/g
Peak 217.1°C
-1.9 mW
S95T000370 (DUP) N2
12.807 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

Integration
Delta H20646 mJ
1612.1 J/g
Peak 105.3°C
-89.3 mW
Integration
Delta H 88 mJ
6.8 J/g
Peak 217.2°C
-1.7 mW
S95T000371 N2

32.866 mg

Rate: 10.0 °C/min

Integration
Delta H21913 mJ
666.7 J/g
Peak 109.3°C
-84.5 mW

Integration
Delta H12777 mJ
388.8 J/g
Peak 285.6°C
-52.4 mW
S95T000371 (DUP) N2

44.889 mg

Rate: 10.0 °C/min

Ident: 0.0

Integration
Delta H24655 mJ
549.3 J/g
Peak 107.4 °C
-84.3 mW

Integration
Delta H15576 mJ
347.0 J/g
Peak 279.4 °C
-56.1 mW
LABCORE Data Entry Template for Worklist# 811

Analyst: SMF  Instrument: DSC01  Book # 12N14-A

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-107 DSC under N2. bdv

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Final page for worklist # 811

\[\text{Signature: Susie M. Oulton, Date: 4-12-95\]}

\[\text{Signature: Analyst Signature, Date: 4-12-95\]}

Verified 4/14/95 J. M. Tye

Data Entry Comments:

- 957000372 is a thick dark brown sludge
- 957000373 is a thin red brown sludge

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Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
DSC STD 12N14-A

7.077 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

Integration
Delta H 219 mJ
30.9 J/g
Peak 158.5°C
-15.1 mW

Signature below represents chemical technologist/chemist that completed/verified the calibration/analysis on pages 46 to 50.

Susie M. Dalton 4-12-95
Integration
Delta H 1283 mJ
56.8 J/g
Peak 286.7°C
-7.0 mW

Integration
Delta H 24470 mJ
1084.4 J/g
Peak 109.3°C
-85.1 mW
S95T000372 (DUP) N2
10.137 mg
Rate: 10.0 °C/min
Ident: 0.0

Integration
Delta H 516 mJ
51.0 J/g
Peak 287.2°C
-3.0 mW

Integration
Delta H 11392 mJ
1123.8 J/g
Peak 113.6°C
-37.6 mW
Integration
Delta H 61 mJ

Integration
Delta H24032 mJ
1192.0 J/g
Peak 105.4°C
-82.6 mW

Peak 329.3°C
-1.3 mW

Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory
worklistrpt Version 2.0 02/21/95
03/23/95 16:32

WHC-SD-WM-DP-106. REV. 0
LABCORE Data Entry Template for Worklist# 812

Analyst: KRM Instrument: DSC01 Book # 12N14-A
Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-107 DSC under N2. bdv

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Final page for worklist # 812

Analyst Signature Date: 4-9-95
Analyst Signature Date: 4-9-95

Verifed 4/14/95 J. Mayer

Data Entry Comments:
S95T000256 has one endotherm, 183-2.3J/g at 103°C
and 1019.8J/g at 103°C. J. Mayer

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Integration
Delta H 178 mJ
 28.1 J/g
Peak 159.0°C
-11.4 mW
S95T000256 (DUP) N2
20.051 mg
Rate: 10.0 °C/min
Ident: 0.0

Integration
Delta H20448 mJ
1019.8 J/g
Peak 103.4°C
-87.2 mW
LABCORE Data Entry Template for Worklist# 923

**Analyst:**

**Instrument:** DSC01

**Book #:** 12N14-A

**Method:** LA-514-113 Rev/Mod

**Worklist Comment:** Please run C-107 DSC under N2, bdv

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**Final page for worklist # 923**

**Analyst Signature:**

**Date:** 4/14/95

**Verified:**

4/18/95 J. M. Joyce

**Data Entry Comments:**

S95T000424 has one endotherm of 1352.7 J/g at 103°; duplicate has

1170.9 J/g at 103°. S95T000425 has one endotherm of 1345.8 J/g at 111°

duplicate has 923.6 J/g at 107°. J. M. Joyce 4/18/95

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Integration
Delta H  188 mJ
        29.6 J/g
Peak    158.8°C
       -12.7 mW
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Integration

Delta H15317 mJ
1382.7 J/g

Peak 103.3°C
-86.8 mW
Integration
Delta H13467 mJ
1170.9 J/g
Peak 103.3°C
-83.8 mW
S95T000425 N2
20.056 mg
Rate: 10.0 °C/min

Integration
Delta H 552 mJ
27.5 J/g
Peak 381.3°C
1.5 mW

Integration
Delta H 24985 mJ
1245.8 J/g
Peak 111.3°C
-82.0 mW
**LABCORE Data Entry Template for Worklist# 924**

**Analyst:** SMF  
**Instrument:** DSC01  
**Method:** LA-514-114 Rev/Mod \[B\]  
**Worklist Comment:** Please run C-107 DSC under N2. bdv

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Final page for worklist # 924

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**Data Entry Comments:**
Sample $951000426$ produced two endotherms one at $111.3\,^\circ\text{C}$ and with a delta $H$ of $927.87\,\text{J/g}$ and the second at $266.89\,^\circ\text{C}$ with a delta $H$ of $376.84\,\text{J/g}$. Sample $951000427$ produced two endotherms one at $103.24\,^\circ\text{C}$ with a delta $H$ of $60.3\,\text{J/g}$.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
LABCORE Data Entry Template for Worklist# 924

Analyst: SMF  Instrument: DSC01  Book #: 12 N14-A

Method: LA-514-113 Rev/Mod

Worklist Comment: Please run C-107 DSC under N2. bdv

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Final page for worklist # 924

Analyst Signature/ Date: 4-1-95

Analyst Signature/ Date:

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Indium at 10°C/min

**N2 exotherm down**

**TIME: 0.0 min RATE: 10.0 °C/min**

Heat Flow (mW) vs. Temperature (°C)

**Signature Below Represents Chemical Technologist/Chemist That Completed/verified the Calibration/Analysis on Pages 63 to 67.**

- X1: 156.266 °C
- X2: 161.966 °C
- Peak: 159.396 °C
- Area: 188.312 mJ
- ΔH: 26.318 J/g
- Height: 16.013 mW
- Onset: 156.840 °C
Curve 1: DSC
File info: SAM041401 Fri Apr 14 09:45:57 1995
Sample Weight: 29.030 mg
S95T000426, 10C/min

Heat Flow (mW)

Temperature (°C)

Onset 111.3 °C

AH 327.87 J/g
Peak 121.49 °C

AH 376.84 J/g
Peak 290.49 °C

Onset 265.55 °C

exotherm down, nitrogen purge gas

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Fri Apr 14 10:24:09 1995
Curve 1: DSC
Sample Weight: 14.360 mg
S95T000426 (DUP), 10C/min

**BEST AVAILABLE COPY**

- **AH**: 882.96 J/g
- **Peak**: 115.87 °C
- **AH**: 438.71 J/g
- **Peak**: 288.4 °C
- **Onset**: 60.52 °C
- **Onset**: 267.5 °C

---

**exotherm down, nitrogen purge gas**

**Temperature (°C)**

SM Fulton
Westinghouse Hanford Co.
222-5 Lab
Fri Apr 14 11:29:40 1995
Curve 1: DSC

Sample Weight: 21.930 mg

Peak 123.79 °C

ΔH 1228.44 J/g

Onset 103.24 °C

ΔH 50.3 J/g

Peak 281.32 °C

exotherm down, nitrogen purge gas

Temperature (°C)
LABCORE Data Entry Template for Worklist# 925

**Analyst:**

**Instrument:**

**Book #:**

**Method:** LA-514-113 Rev/Mod 0

**Worklist Comment:** Please run C-107 DSC under N2. bdv

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**Final page for worklist # 925**

**Analyst Signature** 4-15-95  
**Date**

**Verified** 4/18/95 J.M. Fye

---

Data Entry Comments:

- S95T000428 has one endotherm of 118.3 J/g at 102°C; duplicate has 118.0 J/g at 102°C.
- S95T000429 has one endotherm of 804.6 J/g at 105°C; duplicate has 868.8 J/g at 105°C. J.M. Fye 4/17/95

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Integration
Delta H 194 mJ
30.5 J/g
Peak 158.6 °C
-13.5 mW
Integration
Delta H29466 mJ
804.6 J/g
Peak 105.3°C
-85.6 mW
Integration

$\Delta H = 868.8 \text{ J/g}$

$T_{peak} = 105.3^\circ C$

$Q = -85.3 \text{ mW}$
LABCORE Data Entry Template for Worklist# 926

**Analyst:** SF  
**Instrument:** DSC01  
**Book #** 12N14-17

**Method:** LA-514-113 Rev/Mod B-1

**Worklist Comment:** Please run C-107 DSC under N2. bdv

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</tbody>
</table>

Final page for worklist # 926

Analyst Signature: 4-17-95  
Date: 4/18/95

Verified

Data Entry Comments:

95T 000430 has two endotherms. 953.89/4 at 108°C, 6.39/4 at 528
103.49/4 at 290°C. Duplicate has 146.79/4 at 118°C, 7.39/4 at 143°C, 11.94/4 at 254
95T 000431 has two endotherms. 842.49/4 at 118°C, 534.29/4 at 254°C. Duplicate has
826.69/4 at 107°C, 534.09/4 at 253°C. 9/17/95

Units shown for 00 (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
R = Replicate Number, A = Aliquot Code.
Integration
Delta H 110 mJ
6.3 J/g
Peak 157.0°C
-2.1 mW

Integration
Delta H 1798 mJ
103.4 J/g
Peak 290.8°C
-6.7 mW

Integration
Delta H 16591 mJ
953.8 J/g
Peak 109.3°C
-83.8 mW
S95T000430 (DUP) N2
9.059 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

Integration
Delta H 66 mJ
7.3 J/g
Peak 143.1°C
-1.4 mW

Integration
Delta H 1009 mJ
111.4 J/g
Peak 291.0°C
-4.1 mW

Integration
Delta H 10379 mJ
1145.7 J/g
Peak 106.9°C
-49.9 mW
S95T000431 N2 13.306 mg
Rate: 10.0 °C/min
Ident: 0.0 222-S Laboratory

Integration
Delta H 11475 mJ
862.4 J/g
Peak 112.7 °C
-55.5 mW

Integration
Delta H 7214 mJ
542.2 J/g
Peak 284.8 °C
-37.1 mW
LABCORE Data Entry Template for Worklist# 927

Analyst: SMF  
Instrument: DSC01  
Book #: 12N14-A

Method: LA-514-114 Rev/Mod

Worklist Comment: Please run C-107 DSC under N2. bdv

<table>
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<tr>
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<td>Ø</td>
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<td>Joules/g</td>
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<td>Ø</td>
<td>Joules/g</td>
</tr>
<tr>
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<td>Ø</td>
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<td>Joules/g</td>
</tr>
</tbody>
</table>

Final page for worklist # 927

See attached for signatures

Analyst Signature:  
Date:  

Data entered and verified by: Blandina Valenzuela

Data Entry Comments:
Sample S95T000432 produced one endotherm at 107.0°C with a delta H of 1502.55 J/g. Sample S95T000433 produced one endotherm at 110.0°C with a delta H of 1349.67 J/g.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
LABCORE Data Entry Template for Worklist# 927

**Analyst:** SWF  
**Instrument:** DSC01  
**Method:** LA-514-113 Rev/Mod LA-514-114/0-01

**Worklist Comment:** Please run C-107 DSC under N2. bdv.

<table>
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<tr>
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<td>Joules/g</td>
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<td></td>
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<tr>
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<td>SOLID</td>
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<td>Joules/g</td>
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<td></td>
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<tr>
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<tr>
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<td>SOLID</td>
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<td>Joules/g</td>
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**Final page for worklist # 927**

**Analyst Signature**  
**Date** 4-17-95

---

**Data Entry Comments:**

---

*Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.*
Indium at 10°C/min

Signature below represents chemical technologist/chemist that completed/verified the calibration/analysis on pages 83 to 86.

| X1 | 157.300 °C |
| X2 | 164.833 °C |
| Peak | 160.867 °C |
| Area | 187.244 mJ |
| ΔH | 28.157 J/g |
| Height | 12.974 mW |
| Onset | 157.867 °C |

N2 exotherm down

Temperature (°C)  SM FULTON
               Westinghouse Hanford Co.
               222-S Lab
               Mon Apr 17 07:55:28 1995

Susie M. Fulton 4/17/95
Curve 1: DSC

File info: SAM041701 Mon Apr 17 09:23:20 1995
Sample Weight: 16.330 mg
S95T000432, 10C/min

---

Exotherm down, nitrogen purge gas

Sample: 1

Heat Flow (mW)

Temperature (°C)

X1  39.666 °C
X2  169.866 °C
Peak  123.966 °C
Area  24536.608 mJ
ΔH  1502.548 J/g
Height  120.226 mW
Onset  107.014 °C

---

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Mon Apr 17 10:21:13 1995
Curve 1: DSC

File info: SAM041703 Mon Apr 17 11:55:02 1995
Sample Weight: 19.370 mg
S95T000432 (DUP), 10C/min

X1  39.666 °C
X2  173.133 °C
Peak  121.072 °C
Area  29894.056 mJ
ΔH  1543.317 J/g
Height  213.190 mW
Onset  107.346 °C

exotherm down, nitrogen purge gas

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Mon Apr 17 12:53:36 1995
**Best Available Copy**

- **Sample Height**: 18.120 mg
- **Sample duration**: 43.100 min

**Exotherm down, nitrogen purge gas**

- **Temperature (°C)**: 39.666°C
- **Peak**: 48.582°C
- **Area**: 25362.996 mJ
- **∆H**: 1399.669 J/g
- **Height**: 207.335 mJ
- **Onset**: 110.071°C

*SM Fulton*

Westinghouse Hanford Co.

232-S lab

Mon Apr 17 15:19:00 1995
LABCORE Data Entry Template for Worklist# 928

**Analyst:** SMF  | **Instrument:** DSC01 | **Book #:** 12N14-A

**Method:** LA-514-113 Rev/Mod B-1

**Worklist Comment:** Please run C-107 DSC under N2. bdv

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<th>SAMPLE#</th>
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<th>DL</th>
<th>UNIT</th>
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<td>DSC-01</td>
<td>LIQUID</td>
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<td>Joules/g</td>
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<td></td>
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<td>DSC-01</td>
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<td>Joules/g</td>
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<td>Joules/g</td>
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Final page for worklist # 928

**Analyst Signature** 4-7-85  | **Date** 4-12-95

Verified 4/14/95. JM Seye

**Data Entry Comments:**
S95T000435 a bright yellow liquid
S95T000435 two exothermic 156.3 J/g at 107°C; 3.8 J/g at 173°C; 11.9 J/g at 215°C. Its duplicate has 841 J/g at 105°C; 10.9 J/g at 173°C; 11.3 J/g at 215°C.
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
S95T000436 has one endotherm 161.7 J/g at 99°C and its duplicate has 165.7 J/g at 99°C. JM Seye
S95T000435 N2
11.834 mg

Rate: 10.0 °C/min

Integration
Delta H 141 mJ

Integration
Delta H 45 mJ
Peak 215.0°C
3.8 J/g
-2.5 mW

Peak 173.1°C
-0.8 mW

Integration
Delta H 18502 mJ
1636.4 J/g
Peak 107.3°C
-84.6 mW

File: 00087.001
DSC METTLER 07-Apr-95
Ident: 0.0
222-S Laboratory
S95T000435 (DUP)  N2
12.991 mg  Rate: 10.0 °C/min
Integration
Delta H 13 mJ
1.0 J/g
Peak 173.2°C
-0.4 mW

Integration
Delta H 149 mJ
11.5 J/g
Peak 215.1°C
-2.8 mW

Integration
Delta H 17423 mJ
1341.1 J/g
Peak 105.3°C
-84.9 mW
Integration
Delta H16191 mJ
1619.7 J/g
Peak  97.4°C
-88.4 mW
LABCORE Data Entry Template for Worklist# 1205

Analyst:       Instrument: DSC01       Book #       

Method: LA-514-113 Rev/Mod

Worklist Comment: Calculated dry DSC for C-107. bdv

<table>
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<th>GROUP</th>
<th>PROJECT</th>
<th>S TYPE</th>
<th>SAMPLE#</th>
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<td>Joules/g Dry</td>
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<td>S95T000374</td>
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Data entered + verified by

Final page for worklist # 1205

Analyst Signature Date

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
<table>
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<th>DSC RESULT (J/g)</th>
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LABCORE Data Entry Template for Worklist# 814

**Analyst:** SFYF  
**Instrument:** TGA01  
**Method:** LA-514-114 Rev/Mod  
**Worklist Comment:** Please run C-107 TGA under N2. bdv

<table>
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<td>TGA-03</td>
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</tbody>
</table>

**Final page for worklist # 814**

Data Entry Comments: S95T000371 produced a second weight loss step of 13.95% at approximately 300°C.

Units shown for QC (SPK & STD) may not reflect the actual units. **D** = Detection Limit, **S** = Worklist Slot Number, **R** = Replicate Number, **A** = Aliquot Code.
**LABCORE Data Entry Template for Worklist # 814**

**Analyst:** SGE  
**Instrument:** TGA01  
**Book #:** 42N8A

**Method:** LA-560-112 Rev/Mod

**Worklist Comment:** Please run C-107 TGA under N2. bdv

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<td></td>
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</tr>
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<td>%</td>
<td></td>
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<tr>
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<td>%</td>
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</tr>
</tbody>
</table>

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**Final page for worklist # 814**

Susie M. Fulton 4-19-95  
Analyst Signature  
Date

---

**Data Entry Comments:**

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Curve 1: TGA

File info: SAM041803 Tue Apr 18 13:03:17 1995
Sample Weight: 16.850 mg
S9ST000370 (DUP), 10°C/min

Signature below represents chemical technologist/chemist that completed/verified the calibration/analysis on pages 87 to 101.

<table>
<thead>
<tr>
<th>X1</th>
<th>28.718 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>X2</td>
<td>139.327 °C</td>
</tr>
<tr>
<td>Y1</td>
<td>16.821 mg</td>
</tr>
<tr>
<td>Y2</td>
<td>7.050 mg</td>
</tr>
<tr>
<td>ΔY</td>
<td>-9.771 mg</td>
</tr>
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</table>

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Apr 18 13:12:02 1995
Curve 1: TGA
Sample Weight: 14.691 mg
42N8A Terliq

Sample Weight: 14.691 mg

Temperature (°C)

% Weight Change

Susie M. Fulton 4-19-95

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Apr 19 09:12:30 1995
Curve 1: TGA

Sample Weight: 24.784 mg

Temperature (°C) vs Weight (%)

AY = 31.98 Wt. %
AY = 13.42 Wt. %
LABCORE Data Entry Template for Worklist# 815

**Analyst:** SHF  **Instrument:** TGA01  **Book #** 42N8-A

**Method:** LA-560-112 Rev/Mod A-2

**Worklist Comment:** Please run C-107 TGA under N2. bdv

<table>
<thead>
<tr>
<th>GROUP</th>
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<th>S TYPE</th>
<th>SAMPLE#</th>
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**Final page for worklist # 815**

**Analyst Signature**

Susie M.  
Fulton  4-12-95

**Date**

4-12-95

**Analyst Signature**

Date

**Verified**

4/14/95  J.M. Tye

Data Entry Comments:

- S95T000372 is a thick dark brown sludge
- S95T000373 is a thin med. brown sludge

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Step Analysis
Height: 11.00 mg
-58.44%
ResiC: 7.82 mg
41.56%
Dpeak: 87.0°C

18.819 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory

Signature below represents chemical technologist/chemist that completed/verified the calibration/analysis on pages 103 to 107.

Susan M. Felten 4-12-95
S95T000372 N2
23.323 mg

Rate: 10.0 °C/min
Ident: 0.0

File: 00109.001 TG METTLER 12-Apr-95
222-S Laboratory

Step Analysis
Height - 11.84 mg
-50.76 %
ResiC. 11.48 mg
49.24 %
Dpeak 95.0 °C
Step Analysis
Height -6.62 mg
-49.74 %
Residual 6.69 mg
50.26 %
Dpeak 73.0 °C
Step Analysis
Height: -7.94 mg
-66.58 %
Residual: 3.98 mg
33.42 %
Dpeak: 73.0°C

File: 00113.001 TG METTLER 12-Apr-95
Ident: 0.0 222-S Laboratory
Step Analysis

Height: 16.15 mg
-66.90%
ResiC: 7.99 mg
33.10%
Dpeak: 115.0°C
LABCORE Data Entry Template for Worklist# 816

Analyst:  KRN  Instrument:  TGA01  Book #: 42N8A

Method: LA-560-112 Rev/Mod  A-2  

Worklist Comment: Please run C-107 TGA under N2. bdv

<table>
<thead>
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<td></td>
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<td>SOLID</td>
<td>59.19</td>
<td>54.99</td>
<td>N/A</td>
<td>%</td>
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<tr>
<td>95000020</td>
<td>C-107</td>
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<td>TGA-01</td>
<td>SOLID</td>
<td>N/A</td>
<td>62.8%</td>
<td>%</td>
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<td>95000020</td>
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Final page for worklist # 816

Analyst Signature: 4-9-95  
Date: 4-9-95  

Verified 4/14/95  J. M. Eyre

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Step Analysis
Height  -9.32 mg  
-56.99 %
ResiC.  7.04 mg  
43.01 %
Dpeak  81.7°C
S95T000256 N2
16.833 mg
Rate: 10.0 °C/min

Step Analysis
Height-10.58 mg
-62.88 %
ResiC. 6.25 mg
37.12 %
Dpeak 79.0°C
LABCORE Data Entry Template for Worklist# 817

**Analyst:** GMF  
**Instrument:** TGA01  
**Book #:** 42N8-17  

**Method:** LA-560-112 Rev/Mod A-2

**Worklist Comment:** Please run C-107 TGA under N2. bdv

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<td></td>
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<td>%</td>
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**Final page for worklist # 817**

**Analyst Signature**  
**Date:** 4-13-95

**Verified**  
**Date:** 4/18/95 GMF  

---

**Data Entry Comments:**  
S95T000374 has a second weight loss chart of 10.86% at 283°C, duplicate has 9.87% at 285°C. GMF 4/18/95

---

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
TGA STD 42NB-A

15.120 mg  Rate: 10.0 °C/min  Ident: 0.0

222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 113 TO 117.

Step Analysis
Height: -8.91 mg
-58.90%
ResiC.: 6.21 mg
41.10%
Dpeak: 82.5°C

File: 00125.001  TG METTLER  13-Apr-95
S95T000374 (DUP) N2

10.157 mg  Rate: 10.0 °C/min

Ident: 0.0  222-S Laboratory

Step Analysis
Height -6.28 mg
-61.84 %
ResiC. 3.88 mg
38.16 %
Dpeak 65.0 °C
Step Analysis
Height -8.58 mg
-41.26 %
ResiC. 12.22 mg
58.74 %

Step Analysis
Height -2.26 mg
-10.86 %
ResiC. 9.61 mg
46.21 %
Dpeak 283.0°C
Step Analysis
Height -12.71 mg
-41.46 %
ResiC. 17.95 mg
58.54 %
Dpeak 87.0°C

Step Analysis
Height -3.03 mg
-9.87 %
ResiC. 14.51 mg
47.33 %
Dpeak 285.0°C
LABCORE Data Entry Template for Worklist# 818

**Analyst:** SME  
**Instrument:** TGA01  
**Book #** 42N8-A

**Method:** LA-514-114 Rev/Mod  
**Worklist Comment:** Please run C-107 TGA under N2. bdv

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<td>56.15</td>
<td>48.10</td>
<td>%</td>
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<td>%</td>
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Final page for worklist # 818

See attached for signatures

[Signature] 4/20/95

Analyst Signature  Date

Verified by Blandina Valenzuela  4/24/95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
LABCORE Data Entry Template for Worklist# 818

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Final page for worklist # 818

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Curve: TGA
File info: TER041301 Thu Apr 13 08:07:21 1995
Sample Weight: 15.017 mg

Sample Height: 15.017 mg
21.702 °C

I x
246.884 °C

c 100.0

70.0

Or

60.0

50.0

40.0

Weight (Mt. %)

Temperature (°C)

X1 21.702 °C
X2 246.884 °C
Y1 98.904 Mt. %
Y2 42.196 Mt. %
AY -57.706 Mt. %

Signature below represents chemical technologist/chemist that completed/verified the calibration/analysis on pages 120 to 125.

SM Fulton
7 Series Thermal Analysis System
Thu Apr 13 08:17:24 1995

Susie M. Fulton 4-13-95
Curve i: TBA
File info: SAM041301 Thu Apr 13 09:37:29 1995
Sample Weight: 11.739 mg
S95T000376, 10C/min

X1 = 21.477 °C
X2 = 208.607 °C
Y1 = 99.849 Wt. %
Y2 = 43.704 Wt. %
ΔY = -56.145 Wt. %

Temperature (°C) vs. Height (Wt. %)
Curve 1: TGA

Sample Weight: 12.324 mg

File Info: SAM041302 Thu Apr 13 10:38:06 1995

Sample Height: 12.324 mg

Temperature (°C):
- X1: 48.832 °C
- X2: 141.833 °C
- Y1: 12.046 mg
- Y2: 6.251 mg
- Y3: -5.795 mg

Total Loss: 48.1%
Curve 1: TGA

File info: SAM041303 Thu Apr 13 12:33:57 1995
Sample Weight: 13.123 mg
S95T000376 (DUP2) 10C/min

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<th>25.125 °C</th>
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<td>X2</td>
<td>159.221 °C</td>
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<tr>
<td>Y1</td>
<td>99.656 Wt. %</td>
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<tr>
<td>Y2</td>
<td>50.999 Wt. %</td>
</tr>
<tr>
<td>ΔY</td>
<td>-48.658 Wt. %</td>
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</tbody>
</table>
Curve 1: TGA

Sample Weight: 10.480 mg

Sample Weight: 10.480 mg

N2 Temperature (°C) THRU: 500.0 °C TIME: 0.0 min RATE: 10.0 °C/min

File info: SAM0413004 Thu Apr 13 13:41:15 1995

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Apr 13 13:43:50 1995
Curve 1: TGA
File info: Sam041305 Thu Apr 13 14:50:36 1995
Sample Weight: 16.606 mg
S9ST000377 (DUP), 10C/min

X1: 27.859 °C
X2: 162.558 °C
Y1: 99.535 wt. %
Y2: 35.663 wt. %
ΔY: -63.872 wt. %

Temperature (°C) vs. Weight (wt. %)

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Apr 13 14:53:55 1995
LABCORE Data Entry Template for Worklist# 819

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Final page for worklist # 819

Analyst Signature: [Signature] 4-12-95
Date: 4-12-95

Verified: 4/18/95 J. M. Tye

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Step Analysis

Height -9.84 mg
-58.35%

Residual 7.02 mg
41.65%

DPeak 89.8°C
Step Analysis
Height -6.95 mg
-70.64 %
Resid. 2.89 mg
29.36 %
Dpeak 69.0 °C
LABCORE Data Entry Template for Worklist# 931

Analyst: [Signature]
Instrument: TGA01
Book #: 42N8-A

Method: LA-560-112 Rev/Mod A - 2

Worklist Comment: Please run C-107 TGA under N2. bdv

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<td>S95T000424</td>
<td>0</td>
<td>TGA-01</td>
<td>SOLID</td>
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<td>%</td>
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<tr>
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<td>N/A</td>
<td>%</td>
</tr>
</tbody>
</table>

Final page for worklist # 931

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

130
Step Analysis
Height -9.20 mg
-58.60 %
ResiC.  6.50 mg
  41.40 %
Dpeak  78.0°C

Signature below represents chemical technologist/chemist that completed/verified the calibration/analysis on pages 137 to 138.
Step Analysis
Height -6.56 mg
-70.23 %
ResiC. 2.78 mg
29.77 %
Dpeak 65.0°C
Step Analysis
Height -9.36 mg
-58.89 %
ResiC. 6.53 mg
41.11 %
Dpeak 79.0°C
LABCORE Data Entry Template for Worklist# 932

Analyst: SMF
Instrument: TGA01
Method: LA-514-114 Rev/Mod

Worklist Comment: Please run C-107 TGA under N2 bdv

<table>
<thead>
<tr>
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<th>SAMPLE#</th>
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<td>51.76</td>
<td>N/A%</td>
<td></td>
</tr>
</tbody>
</table>

Final page for worklist # 932

Data Entry Comments: Sample S95T0000426 produced a second weight loss step of 13.99 wt %.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
LABCORE Data Entry Template for Worklist# 932

**Analyst:** SWF  
**Instrument:** TGA01  
**Book #:** 4ZN8-A

**Method:** LA-560-112 Rev/Mod  
**Worklist Comment:** Please run C-107 TGA under N2. bdv

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<td></td>
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<td>C-107</td>
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<td>SOLID</td>
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<td>%</td>
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<td></td>
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<td>%</td>
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<td>SOLID</td>
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<td>%</td>
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<td></td>
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<td>5 DUP</td>
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<td>N/A</td>
<td>%</td>
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</tr>
</tbody>
</table>

Final page for worklist # 932

![Signature]

**Data Entry Comments:**

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Curve 1: TGA
File info: TER041401 Fri Apr 14 08:07:33 1995
Sample Weight: 16.373 mg

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 138 TO 142.

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Apr 14 08:20:19 1995

Susie M. Fulton 4-14-95
Curve 1: TGA
File info: SAM041401 Fri Apr 14 09:42:19 1995
Sample Weight: 19.028 mg
S95T000426, 10C/min

Temperature [°C]   SU
Fulton
fTRKIN-EL&R
7 Series Therm1 Analysis System
Fri Apr 14 13:45:26 1995

BEST AVAILABLE COPY
Curve 1: TGA
Sample Weight: 17.554 mg
S95T000426 (DUP), 10C/min

BEST AVAILABLE COPY

T2
300.0
200.0
100.0
0.0

AY = 38.52 Wt. %

AY = 13.33 Wt. %

Weight (Wt. %)

Temperature (°C)

PERKIN-ELMER
7 Series Thermal Analysis System
Fri Apr 14 11:41:51 1995
Curve 1: TGA

File info: SAM041404 Fri Apr 14 14:24:03 1995
Sample Weight: 14.863 mg
S95T000427, 10C/min

Sample Height 54.863 ng

S95T000427, 10C/min

X1  25.070 °C
X2  128.790 °C
Y1  14.832 mg
Y2  7.155 mg
ΔY  -7.677 mg

51.76% water

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Apr 14 14:32:44 1995
LABCORE Data Entry Template for Worklist# 933

Analyst: 1WS  
Instrument: TGA01  
Book #: 42w8-4

Method: LA-560-112 Rev/Mod 1/2

Worklist Comment: Please run C-107 TGA under N2. bdv

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</table>

Final page for worklist # 933

[Signature]

Analyst Signature   Date: 4/15/95

Verified 4/18/95 J. M. Lee

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
TGA STD 42N8-A

Rate: 10.0 °C/min

Ident: 0.0
222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 144 TO 148.

Step Analysis
Height - 10.81 mg
-58.56 %
Residual 7.64 mg
41.44 %
Dpeak 87.5°C

144

50. 100. 150. 200. °C
Step Analysis
Height-19.04 mg
-49.77 %
Resid. 19.21 mg
50.23 %
Peak 103.0°C
Step analysis
Height 20.70 mg
% loss 44.08 %
Initial 46.62 mg
Decay 14.55 mg
Speaks 345.0 °C
Step Analysis
Height: 19.16 mg
-51.15 %
Heve C: 18.32 mg
48.85 %
Dpeak: 101.0 °C
LABCORE Data Entry Template for Worklist# 934

**Analyst:** SMF  **Instrument:** TGA01  **Book #** 4/3N8-1

**Method:** LA-560-112 Rev/Mod A-2

**Worklist Comment:** Please run C-107 TGA under N2. bdv

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<td>TGA-01</td>
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<td>%</td>
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<td>%</td>
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</table>

**Final page for worklist # 934**

**Analyst Signature** 4/17/95  **Date** 4/17/95

**Analyst Signature** 4/18/95  **Date** 4/18/95

**Verified 4/18/95 J. M. Frye**

---

**Data Entry Comments:**

- **S95T000430** has a second weight loss step of 5.2% at 280°C, duplicate has 5.04% at 280°C.
- **S95T000431** has a second weight loss step of 15.22% at 378°C, duplicate has 15.18% at 283°C.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
TGA STD 42NB-A

12.769 mg
Rate: 10.0 °C/min
Ident: 0.0

222-S Laboratory

Step Analysis
Height -7.52 mg
-58.91 %
ResiC. 5.25 mg
41.09 %
Dpeak 69.2 °C

BEST AVAILABLE COPY

BEST AVAILABLE COPY

File: 00166.001 TG METTLER 17-Apr-95

Suzi M. Fulton 4-17-95
Step Analysis
Height -8.68 mg
-49.35 %
ResiC. 8.90 mg
50.65 %
Dpeak 75.0°C

Step Analysis
Height -0.91 mg
-5.20 %
ResiC. 7.74 mg
44.00 %
Step Analysis
Height -11.95 mg
-48.76 %
ResiC. 12.56 mg
51.24 %
Dpeak  83.0°C

Step Analysis
Height -1.24 mg
-5.04 %
ResiC. 10.93 mg
44.62 %
Step Analysis
Height -3.06 mg
-34.84 %
ResiC. 5.72 mg
65.16 %
Dpeak 51.0°C

Step Analysis
Height -1.38 mg
-15.72 %
ResiC. 4.20 mg
47.86 %
Dpeak 277.0°C
LABCORE Data Entry Template for Worklist# 935

Analyst: SMls Instrument: TGA01 Book #: 42X8-A

Method: LA-514-114 Rev/Mod B=97 G MF 4/26/95

Worklist Comment: Please run C-107 TGA under N2, bdv

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<td>TGA-03</td>
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</table>

Final page for worklist # 935

Data entered and verified by Blandina Valenzuela 4/24/95

Data Entry Comments: Sample S95T000433 (DUP) was analyzed the day after the previous samples. The technician did not have time to complete the worklist. The data found in the lower right hand corner of the graph is when the graph was printed.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
### LABCORE Data Entry Template for Worklist# 935

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<td>SOLID</td>
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</table>

**Final page for worklist # 935**

**Data Entry Comments:**

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.
Curve 1: TGA

File info: TER041701 Mon Apr 17 08:13:46 1995
Sample Weight: 12.092 mg

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 157 TO 162.

X1  26.738 °C
X2  246.834 °C
Y1  99.871 Wt. %
Y2  41.709 Wt. %
ΔY  -58.162 Wt. %

Temperature (°C)  Weight (Wt. %)

N2  TIME: 0.0 min RATE: 10.0 °C/min

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Apr 17 08:25:13 1995

```
Jennie M. Fulton  4-17-95
```
Curve 1: TGA
Sample Weight: 20.614 mg
S95T000432 (DUP), 10C/min

| X1  | 22.645 °C |
| X2  | 156.960 °C |
| Y1  | 99.918 Wt. % |
| Y2  | 37.029 Wt. % |
| ΔY  | -62.889 Wt. % |

N2

Temperature (°C)  SM Fulton
TIMEq  0.0 min  PERKIN-ELMER
RATEq  10.0 °C/min

7 Series Thermal Analysis System
Tue Apr 18 11:17:44 1995
Curve 1: TGA
File info: SAM041703 Mon Apr 17 13:51:02 1995
Sample Weight: 19.133 mg
S95T000433, 10C/min

X1: 23.839 °C
X2: 157.977 °C

Y1: 99.821 Wt. %
Y2: 42.346 Wt. %
ΔY: -57.474 Wt. %

Temperature (°C)
Curve 1: TGA

File info: TER041801 Tue Apr 18 09:29:47 1995
Sample Weight: 9.813 mg
42NBA Terliq

X1  20.967 °C
X2  246.511 °C
Y1  99.931 Wt. %
Y2  42.022 Wt. %
ΔY  -57.908 Wt. %

Temperature (°C) SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Apr 18 10:51:14 1995

Lucie M. Fulton 4-18-95
Curve 1: TGA
File info: SAM041801 Tue Apr 18 10:34:05 1995
Sample Weight: 21.057 mg
S95T000433 (DUP), 10°C/min

Sample Weight: 21.057 mg

X1: 29.723 °C
X2: 170.177 °C

Y1: 99.882 Wt. %
Y2: 42.042 Wt. %

ΔY: -57.839 Wt. %

Temperature (°C) vs. Weight (Wt. %)
LABCORE Data Entry Template for Worklist# 936

**Analyst:** S.M.F  **Instrument:** TGA01  **Book #:** 42N8-A

**Method:** LA-560-112 Rev/Mod A-2

**Worklist Comment:** Please run C-107 TGA under N2. bdv

<table>
<thead>
<tr>
<th>GROUP</th>
<th>PROJECT</th>
<th>S TYPE</th>
<th>SAMPLE#</th>
<th>R</th>
<th>A</th>
<th>MATRIX</th>
<th>ACTUAL</th>
<th>FOUND</th>
<th>DL</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 STD</td>
<td></td>
<td></td>
<td>TGA-01</td>
<td></td>
<td></td>
<td>LIQUID</td>
<td>59.19</td>
<td>58.92</td>
<td>N/A</td>
<td>%</td>
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<tr>
<td>9500023 C-107</td>
<td>2 SAMPLE</td>
<td>S95T000435</td>
<td>0</td>
<td></td>
<td>TGA-01</td>
<td>LIQUID</td>
<td>N/A</td>
<td>79.04</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>9500023 C-107</td>
<td>3 DUP</td>
<td>S95T000435</td>
<td>0</td>
<td></td>
<td>TGA-01</td>
<td>LIQUID</td>
<td>79.04</td>
<td>78.71</td>
<td>N/A</td>
<td>%</td>
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<tr>
<td>9500023 C-107</td>
<td>4 SAMPLE</td>
<td>S95T000436</td>
<td>0</td>
<td></td>
<td>TGA-01</td>
<td>LIQUID</td>
<td>N/A</td>
<td>100.06</td>
<td>%</td>
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<tr>
<td>9500023 C-107</td>
<td>5 DUP</td>
<td>S95T000436</td>
<td>0</td>
<td></td>
<td>TGA-01</td>
<td>LIQUID</td>
<td>100.06</td>
<td>99.96</td>
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<td>%</td>
</tr>
</tbody>
</table>

**Final page for worklist # 936**

**Analyst Signature:** Susie M. Ozinon 4-7-95  **Date:** 4-12-95

**Analyst Signature:**  **Date:**

**Verified:** 4/14/95 J.M. Sunny

**Data Entry Comments:** S95T000435 a bright yellow liquid

---

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, 
R = Replicate Number, A = Aliquot Code.
16.600 mg

Rate: 10.0 °C/min

Ident: 0.0

5.0 mg

Step Analysis
Height -9.78 mg
-58.92 %
ResiC. 6.82 mg
41.08 %
D peak 83.3°C

File: 00080.001
TG METTLER 07-Apr-95
222-S Laboratory

Signature below represents chemical technologist/chemist that completed/verified the calibration/analysis on pages 64 to 68.

TGA STD 42NB-A

50.  100.  150.  200.°C

2/7/1995

Signed: M. Fulton
Step Analysis
Height -9.13 mg
-79.04 %
ResiC. 2.42 mg
20.96 %
Dpeak 79.0°C
Step Analysis
Height-10.17 mg
-78.71 %
ResiC. 2.75 mg
21.29 %
Dpeak 81.0°C
Step Analysis
Height-10.03 mg
-100.06 %
ResiC. -0.01 mg
-0.06 %