



November 21, 2002

To: Tom Fredrichs

From: Jen Mayer and Don Hammer, ICF Consulting

Subject: Comparison of Waste Volumes used in Cost Estimate for Fansteel Incorporated, Muskogee, Oklahoma

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ICF's independent cost estimate for decommissioning Fansteel Incorporated's (Fansteel) facility in Muskogee, Oklahoma differs significantly from Fansteel's 2002 cost estimate. Specifically, ICF estimates that the cost to decommission will be approximately \$170 million, whereas Fansteel estimates that the cost to decommission will be approximately \$57 million. A central driver in the discrepancy in cost is the amount of soil that will require off-site disposal. A secondary cause for this discrepancy in cost is the amount of soil and pond residue that is considered mixed waste.

Table 1 compares ICF's and Fansteel's estimates of the amount of soil and pond residues that will require excavation and off-site disposal. As can be seen in this table, ICF estimated that significantly more soil would need to be excavated and disposed than Fansteel estimated. In addition, ICF estimate that a portion of this waste was mixed waste. It is unclear whether Fansteel assumed any waste was mixed. Fansteel assumed that the 13,038 tons of Pond 2 and Pond 3 residues would be disposed of at Envirocare at a higher unit price than the rest of the soils and residues, which Fansteel assumed would be disposed of at WCS. However, Fansteel does not explicitly indicate that these Pond 2 and Pond 3 residues are mixed waste. The basis for ICF's soil volume estimates are described in the cost model documentation submitted on November 15, 2002.

**Table 1. Comparison of Fansteel's and ICF's Contaminated Soil and Pond Volumes**

	<b>Fansteel Estimate (tons)</b>	<b>ICF Estimate (ft3)</b>	<b>ICF Estimate<sup>2,3</sup> (tons)</b>	<b>ICF Estimate Mixed Waste (tons)</b>
Pond Residues - Dried	67,201	860,217	67,201 <sup>4</sup>	13,038
Hot Spots under Ponds	25,500 <sup>1</sup>	100,000	5,500	0
Pond Liners		503,001	29,235	0
Other Soils		4,351,400	239,315	10,570
<b>Total</b>	<b>92,701</b>	<b>5,814,618</b>	<b>341,251</b>	<b>23,608</b>

1 - Fansteel did not break out their waste estimate into these three categories

2 - Unless noted, mass estimates were based on assumed densities typical of clay and clayey soil.

3 - These totals include mixed waste

4 - Absent data on the density of dried pond residue, ICF accepted Fansteel's quantity estimate.