

Lead Sampling in the Oncary Lab

February 1996

① Lunch Room

Length of Exposure = 5 hours

Flow Rate = 1.5 L/min

weight of sample = 0.11 g

From Chemist Pb = 68 $\mu\text{g/g}$

Total Pb in sample = $68 \times 0.11 = 7.48 \mu\text{g} = .007 \text{ mg}$

Resp Pb = $\frac{.007 \text{ mg}}{\left(\frac{300 \times 1.5}{1000}\right) \text{ m}^3} = .02 \text{ mg/m}^3$

② Furnace Room

Length of Exposure = 5 hours

Flow Rate = 1.5 L/min

weight of sample = 0.20 g

From Chemist Pb = 353 $\mu\text{g/g}$

Total Pb in sample = $353 \times 0.20 = 70.6 \mu\text{g} = .0706 \text{ mg}$

Resp Pb = $\frac{.071 \text{ mg}}{.450 \text{ m}^3} = 0.158 \text{ mg/m}^3$

③ Rough Balance

Length of Exposure = 4 hours

Flow Rate = 1.5 L/min

sample wt = 0.18 g

From Chemist Pb = 15.9 $\mu\text{g/g}$

Total Pb in sample = $15.9 \times 0.18 = 2.86 \mu\text{g} = .00286 \text{ mg}$

Resp Pb = $\frac{.0029 \text{ mg}}{.360 \text{ m}^3} = .008 \text{ mg/m}^3$

④ Wet Lab

Length of Exposure = 4 hours

Flow Rate = 1.5 L/min

sample weight = .23 g

From Chemist Pb = 6.5 $\mu\text{g/g}$

Total Pb in 0.23 g sample = $6.5 \times 0.23 = 1.50 \mu\text{g} = .0015 \text{ mg}$

Resp Pb = $\frac{.0015 \text{ mg}}{.360 \text{ m}^3} = .004 \text{ mg/m}^3$

Pb in the Assay Lab
Feb/96

$$\frac{68 \mu\text{g}}{19} = \frac{2 \mu\text{g}}{.11 \text{ g}} \quad / \text{X} \mu\text{g} = \frac{68 \times .11 \text{ g}}{19} = 7.48 \mu\text{g}$$

(1) Lunch Room

From Chem Pb = 68 $\mu\text{g/g}$

5 hrs / 1.5 R
0.450 m^3

$$(.11 \text{ g wt sample}) = 68 \times .11 = 7.48 \mu\text{g} \text{ (in .11 g sample)} = .007 \mu\text{g}$$

$$\text{Resp Pb} = \frac{.007}{.450} = .02 \text{ mg/m}^3$$

(2) Furnace Room

From Chem Pb = 353 $\mu\text{g/g}$

5 hrs / 1.5 R
0.450 m^3

$$\text{sample wt} = .20 \text{ g}$$

$$\text{Total Pb in .20 g sample} = 353 \times .20 = 70.6 \mu\text{g} = .071 \text{ mg}$$

$$\text{Resp Pb} = \frac{.071}{.450} = .158 \text{ mg/m}^3$$

(3) Rough Balance

From Chem Pb = 15.9 $\mu\text{g/g}$

4 hrs / 1.5
.360 m^3

$$\text{sample wt} = .18 \text{ g}$$

$$\text{Total Pb in .18 g sample} = 15.9 \times .18 = 2.86 \mu\text{g} = .00286 \text{ mg}$$

$$\text{Resp Pb} = \frac{.0029}{.360} = .008 \text{ mg/m}^3$$

(4) Wet Lab

From Chem Pb = 6.5 $\mu\text{g/g}$

4 hrs / 1.5
.360 m^3

$$\text{sample wt} = .23 \text{ g}$$

$$\text{Total Pb in .23 g sample} = 6.5 \times .23 = 1.50 \mu\text{g} = .0015 \text{ mg}$$

$$\text{Resp Pb} = .004 \text{ mg/m}^3$$