Addendum to the Pre-Remediation Human Health Risk Assessment

for

PG&E
ENCON-GAS Transmission and Distribution Construction Yard
Former Gas Holder Tank Area
4930 Coliseum Way
Oakland, California

Submitted to:

Alameda County Health Care Services Agency
Department of Environmental Health
Division of Hazardous Materials

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Two changes were made to the exposure criteria in the EPA LEAD 0.40 uptake/biokinetic (UBK) model used to evaluate the exposure scenario of resident children at the 4930 Coliseum Way site in Oakland. The first change involved considering that the drinking water contains 15 ppb of lead instead of the model's default value of 4 ppb. The second change was to estimate the cutoff soil lead concentration, and associated air lead concentration, which ensures that 99% of the resident children aged 0 to 7 years will experience resultant blood lead concentrations of less than 10 μg/dl. Previously a 95% confidence value was used. As a result of these changes a new estimate of slightly more than 250 mg/kg of lead in soil was found as the maximum concentration which satisfies these criteria. The previous result was a lead concentration of slightly less than 500 mg/kg.

Attached are revised copies of Figures 4.2 through 4.4 to replace their counterparts in the HRA. Figure 4.2 shows the results of a series of model runs in which the lead concentration in soil and air were varied to determine the soil concentration which is estimated to ensure that 99% of the resident children will have blood lead levels below the cutoff of 10 μg/dl. Figure 4.3 shows the probability density function (PDF) of children's blood lead if site soil lead concentrations are mitigated to 250 mg/kg. Under these conditions, 99.15% of the resident children could be expected to have blood lead concentrations below the cutoff. Figure 4.4 shows the PDF for resident children's blood lead resulting from the current mean concentration of soil lead presently at the site.

Figure 4.2

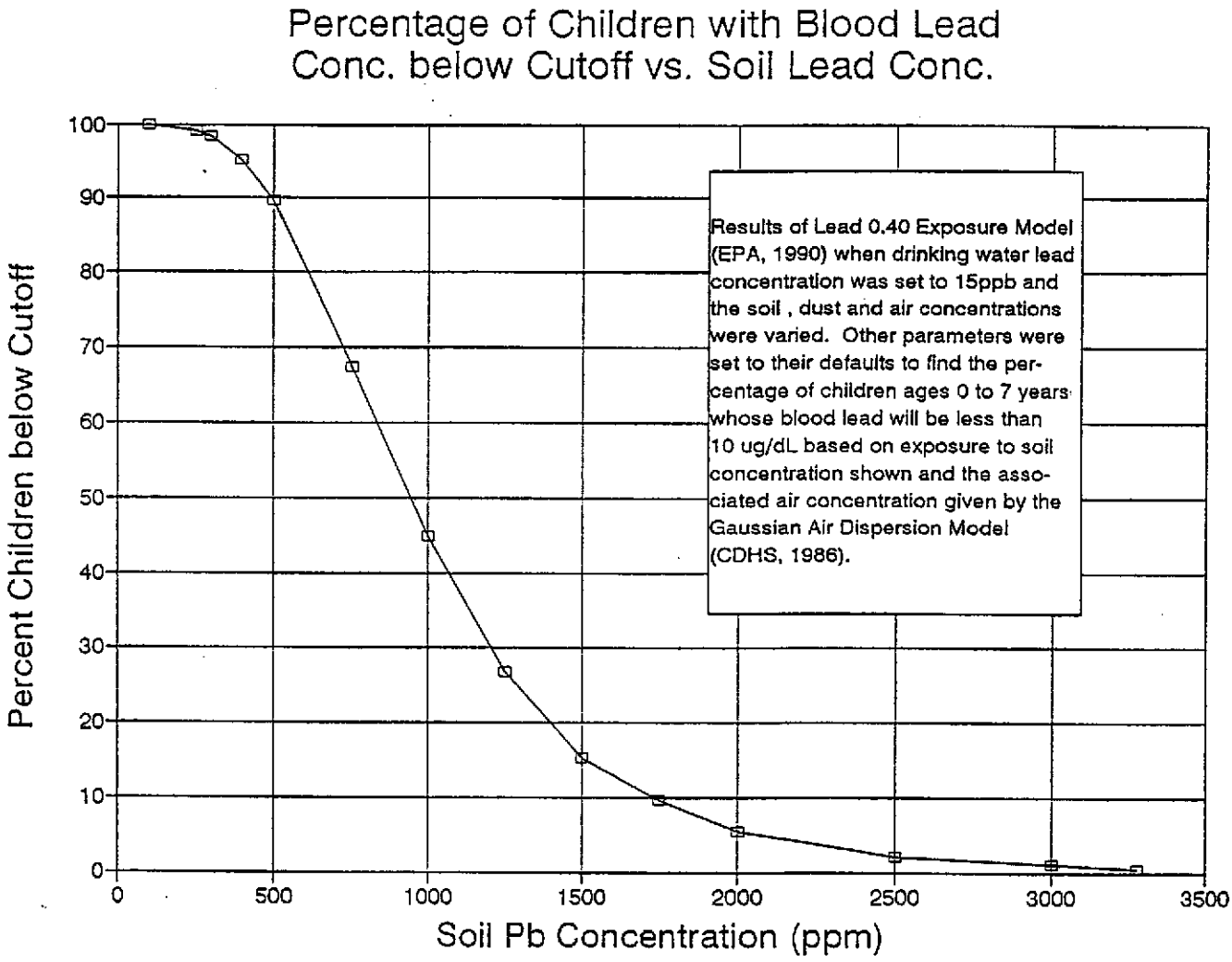
Percentage of Children with Blood Lead Conc. below Cutoff vs. Soil Lead Conc.
Percent Children below Cutoff
100
90
80
70
60
50
40
30
20
10
0
0
500
1000
1500
2000
2500
3000
3500
Soil Pb Concentration (ppm)
Results of Lead 0.40 Exposure Model (EPA, 1990) when drinking water lead concentration was set to 15ppb and the soil , dust and air concentrations were varied. Other parameters were set to their defaults to find the percentage of children ages 0 to 7 years whose blood lead will be less than 10 ug/dL based on exposure to soil concentration shown and the associated air concentration given by the Gaussian Air Dispersion Model (CDHS, 1986).

Figure 4.3 Probability Density Function of Children's Blood Lead Resulting from Residential Exposure to the Site Once Lead is Mitigated to Below 250 mg/kg in Soil

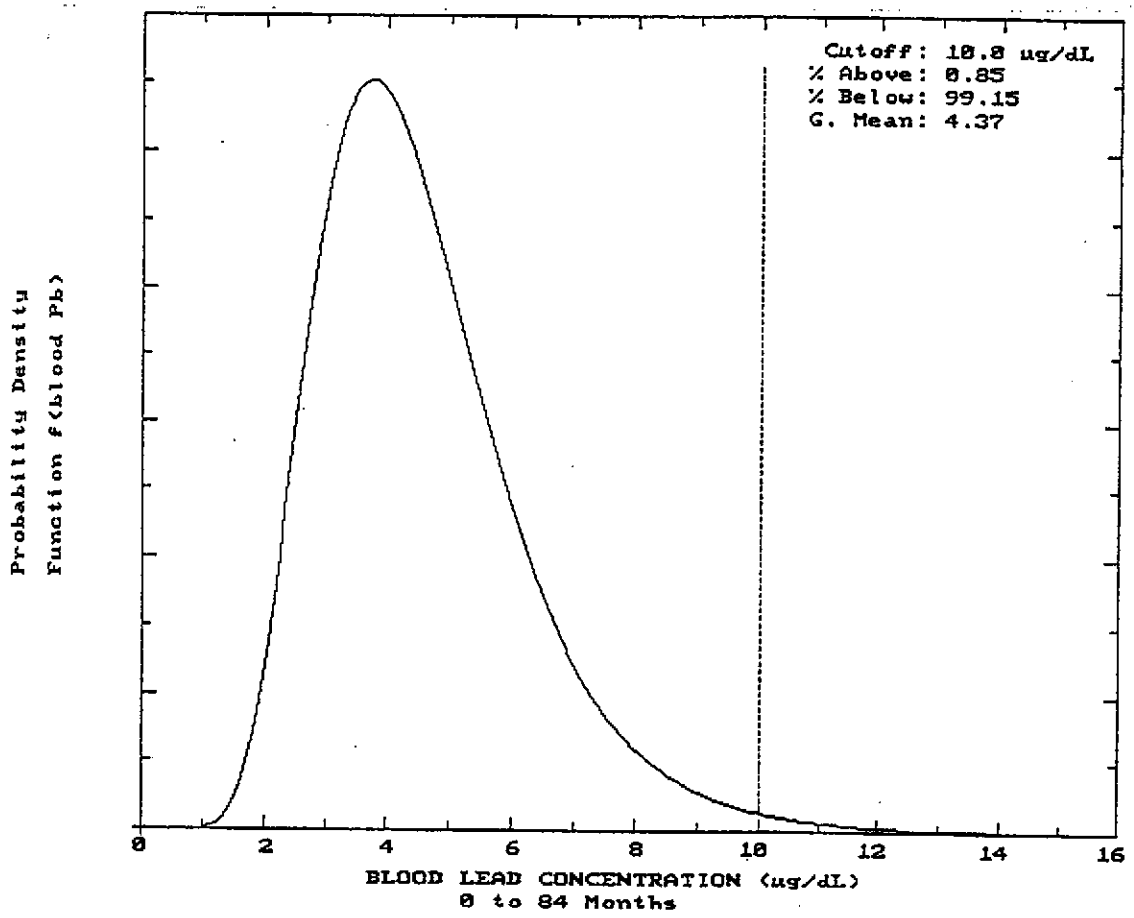

Figure 4.4 Probability Density Function of Children's Blood Lead Resulting from Residential Exposure to the Site at its Current Lead Concentration