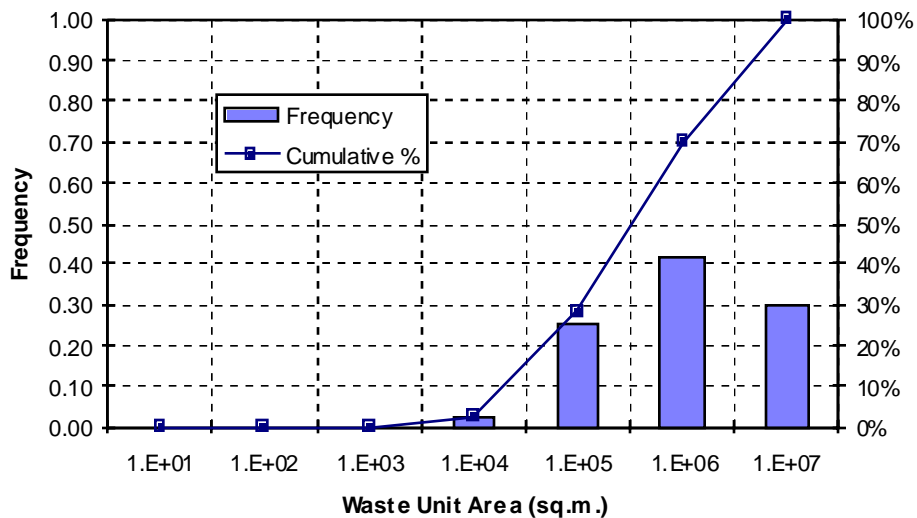


US EPA ARCHIVE DOCUMENT

## **Appendix A**

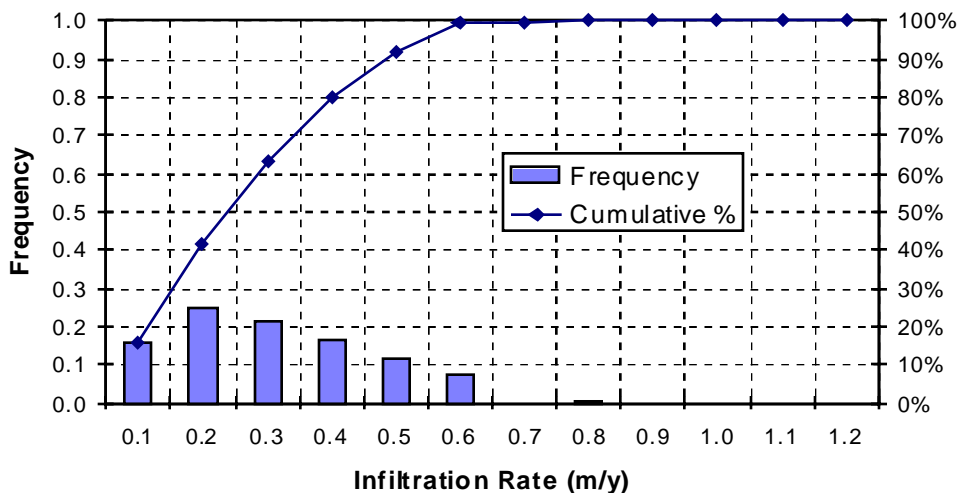
**Frequency Distribution and BOX Plots of Key EPACMTP Monte Carlo Input Parameters Combinations Which Generated Receptor Well Concentration that Exceeded Groundwater Action Level**



Bin	Frequency	Cumulative %
1.00E+01	0.00	.00%
1.00E+02	0.00	.00%
1.00E+03	0.00	.00%
1.00E+04	0.03	2.75%
1.00E+05	0.25	28.24%
1.00E+06	0.42	69.80%
1.00E+07	0.30	100.00%

Figure A.1 Municipal Landfill Scenario - Distribution of Waste Unit Areas which generated

receptor well concentrations exceeding the groundwater action level.

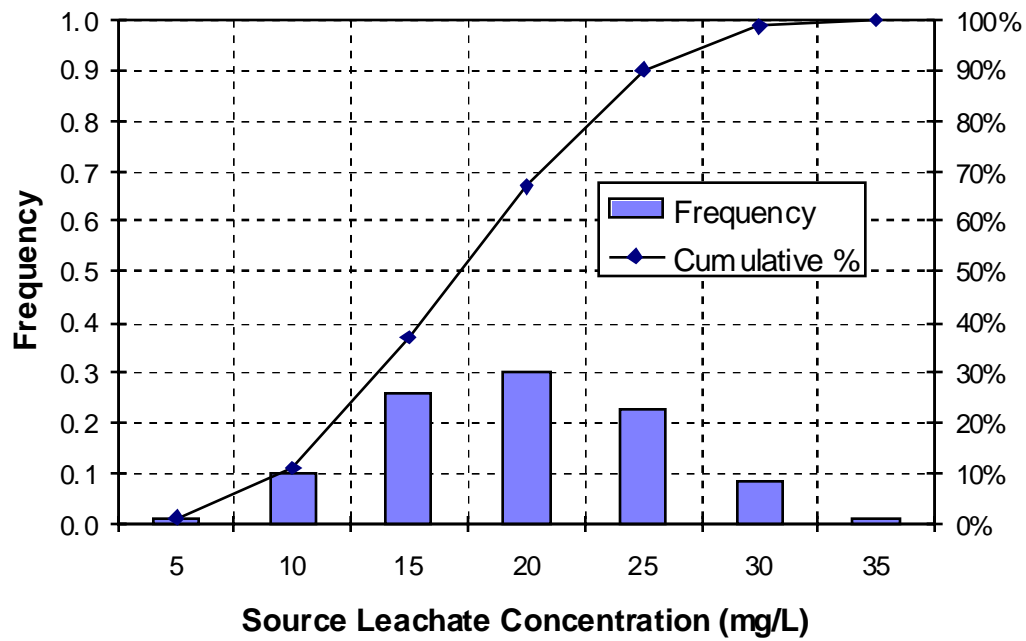


Infiltration Rate (m/y)	Frequency	Cumulative %
0.1	0.16	16.08%
0.2	0.25	41.37%
0.3	0.22	62.94%
0.4	0.17	79.80%
0.5	0.12	91.76%
0.6	0.08	99.41%
0.7	0.00	99.41%
0.8	0.00	99.80%
0.9	0.00	99.80%
1.0	0.00	99.80%
1.1	0.00	100.00%
1.2	0.00	100.00%

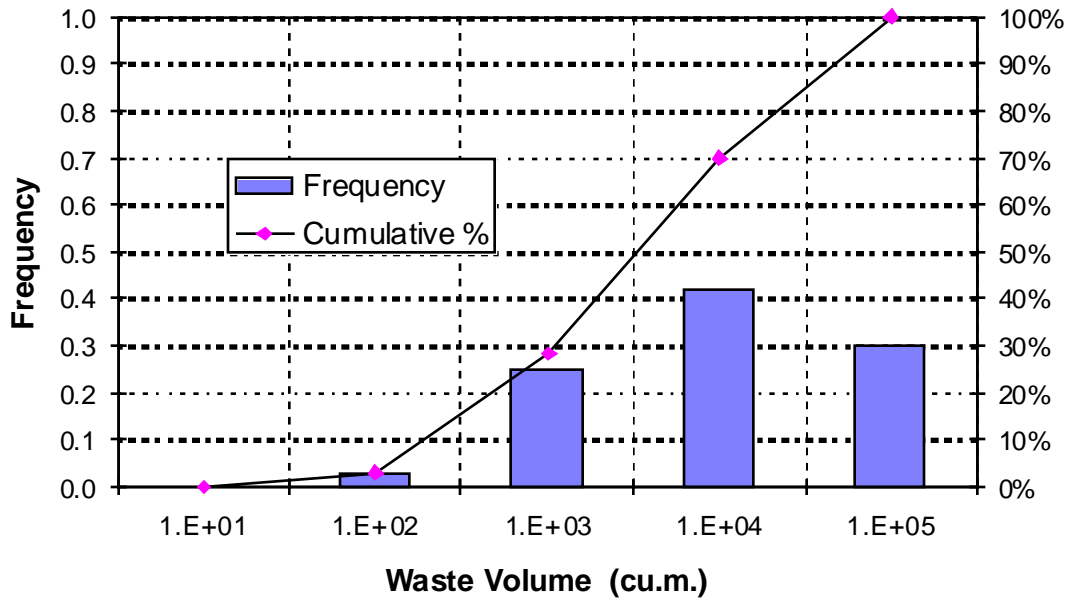
Figure A.2 Municipal Landfill Scenario - Distribution of Infiltration Rates which generated receptor well concentrations exceeding the groundwater action

level.

**Figure A.3 Municipal Landfill Scenario - Distribution of Source Leachate Concentrations which generated receptor well concentrations exceeding the groundwater action level.**

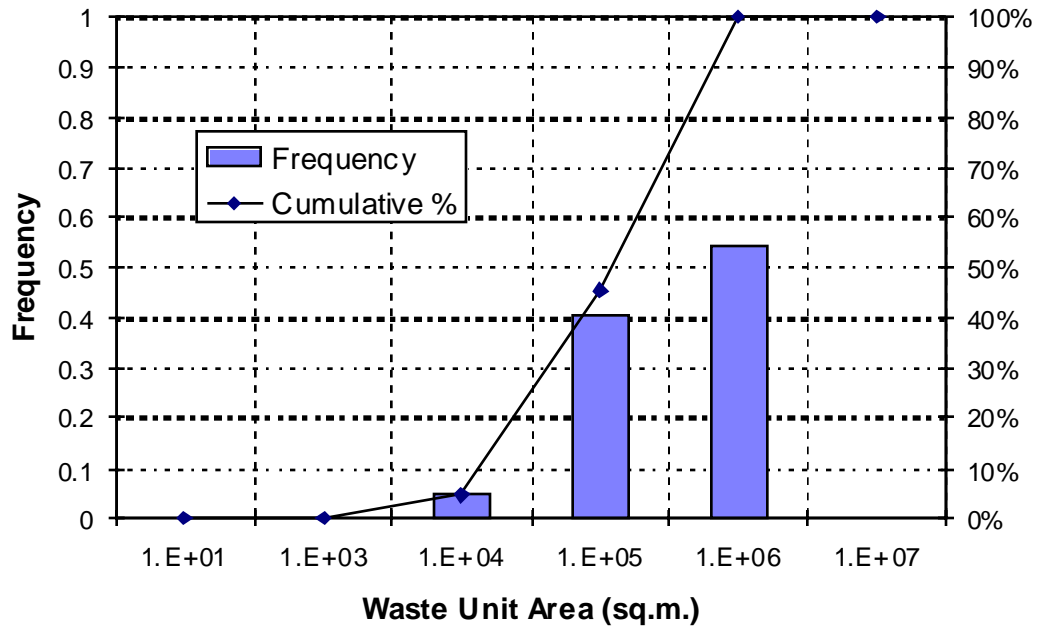


Leachate Conc. (mg/L)	Frequency	Cumulative %
5.00	0.01	1.18%
10.00	0.10	10.98%
15.00	0.26	37.06%
20.00	0.30	67.25%
25.00	0.23	90.00%
30.00	0.09	98.82%
35.00	0.01	100.00%



Waste Volume (cu.m.)	Frequency	Cumulative %
10	0.00	.00%
100	0.03	2.94%
1000	0.25	28.24%
10000	0.42	70.00%
100000	0.30	100.00%

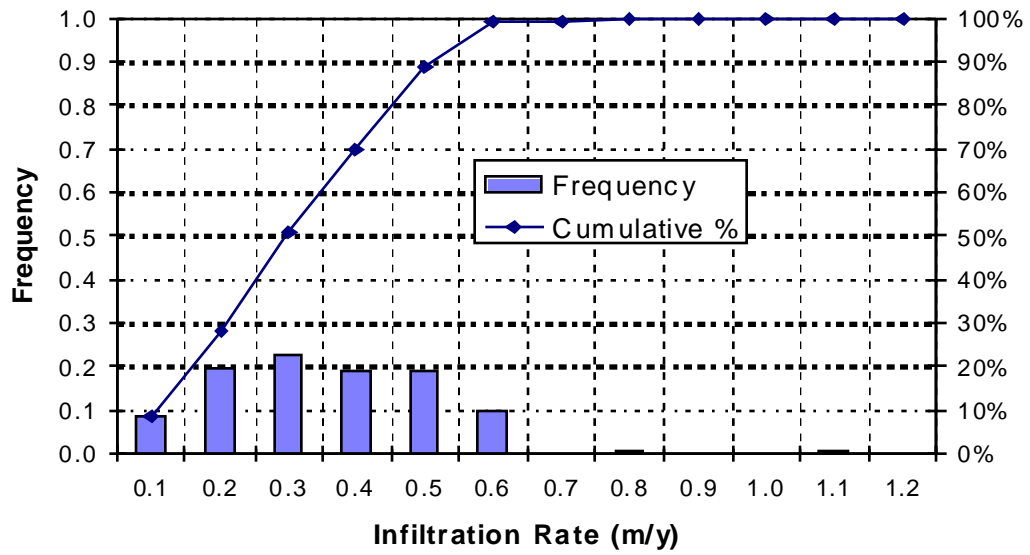
**Figure A.4** Municipal Landfill Scenario - Distribution of Waste Volumes which generated receptor well concentrations exceeding the groundwater action level.



<i>Area (sq.m.)</i>	<i>Frequency</i>	<i>Cumulative %</i>
1.00E+01	0.00	.00%
1.00E+03	0.00	.09%
1.00E+04	0.05	4.79%
1.00E+05	0.41	45.47%
1.00E+06	0.54	99.83%
1.00E+07	0.00	100.00%

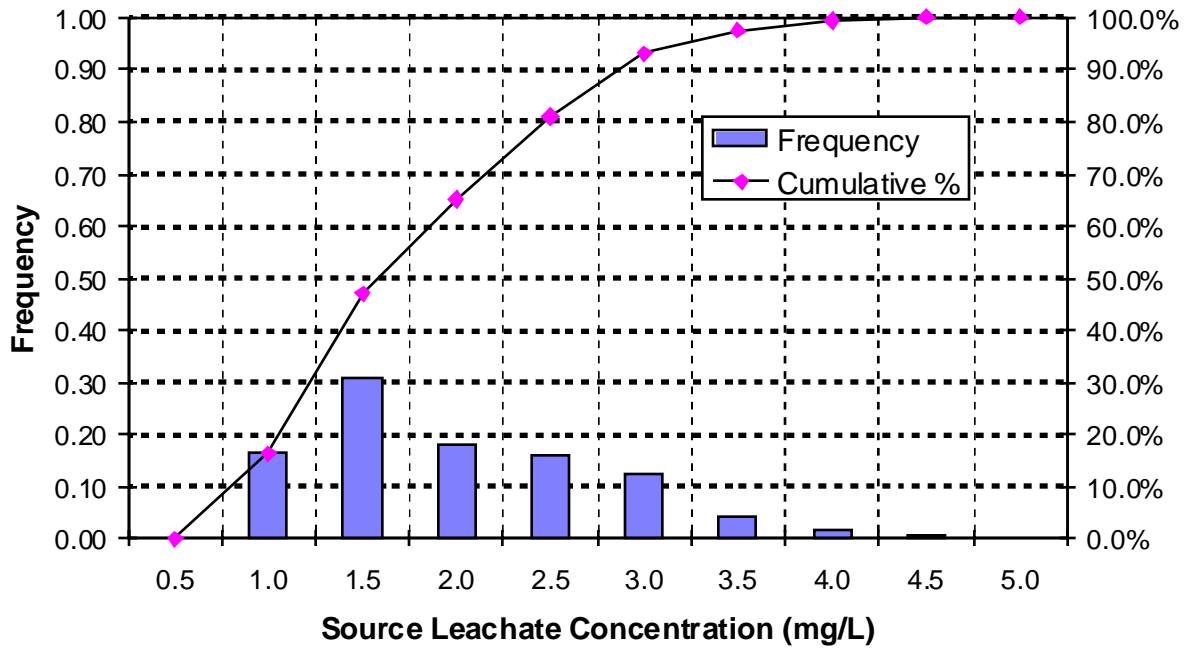
**Figure A.5 Construction and Demolition Landfill Scenario - Distribution of Waste Unit Areas which generated receptor well concentrations exceeding the groundwater action level.**





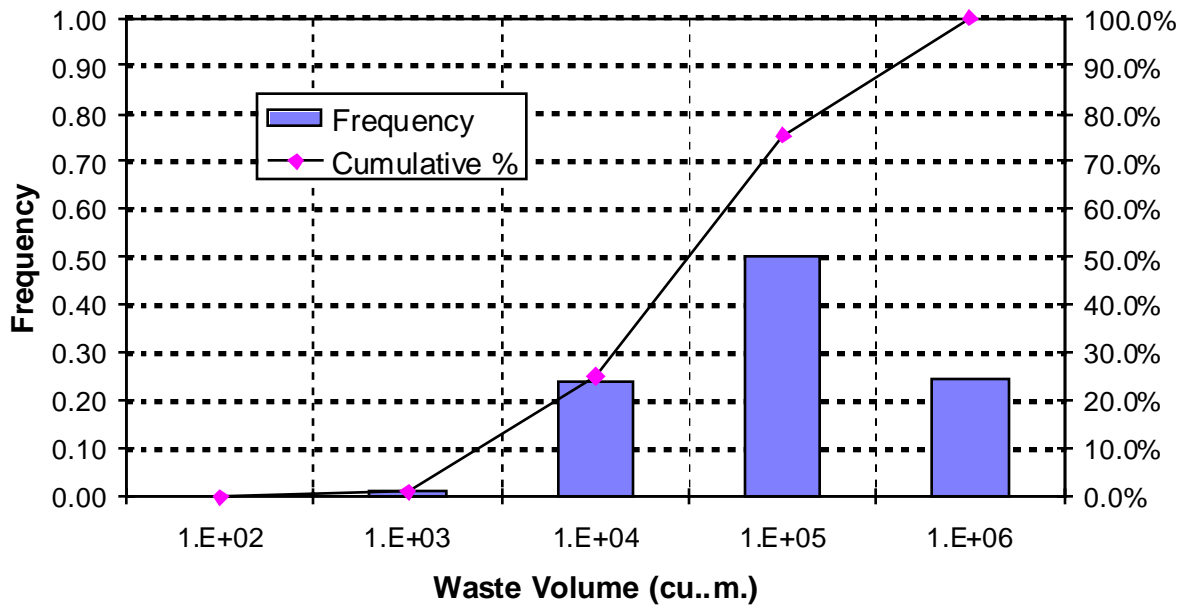
Infiltration Rate (m/y)	Frequency	Cumulative %
0.1	0.09	8.62%
0.2	0.20	28.40%
0.3	0.22	50.78%
0.4	0.19	69.51%
0.5	0.19	88.85%
0.6	0.10	99.04%
0.7	0.00	99.04%
0.8	0.01	99.56%
0.9	0.00	99.56%
1	0.00	99.65%
1.1	0.00	100.00%
1.2	0.00	100.00%

**Figure A.6 Construction and Demolition Landfill Scenario - Distribution of Infiltration Rates which generated receptor well concentrations exceeding the groundwater action level.**



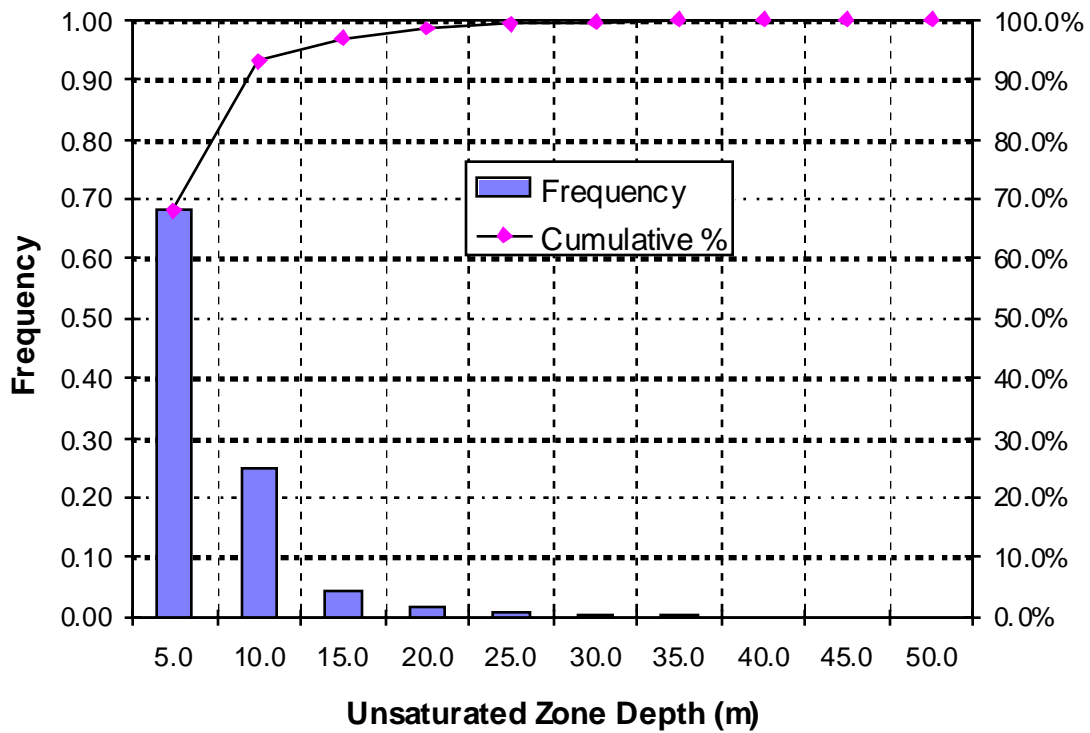
TCLP (mg/L)	Frequency	Cumulative %
0.50	0.00	.00%
1.00	0.16	16.29%
1.50	0.31	47.04%
2.00	0.18	65.16%
2.50	0.16	81.01%
3.00	0.12	93.21%
3.50	0.04	97.47%
4.00	0.02	99.39%
4.50	0.01	100.00%
5.00	0.00	100.00%

**Figure A.7 Construction and Demolition Landfill Scenario - Distribution of Source Leachate Concentrations which generated receptor well concentrations exceeding the groundwater action level.**



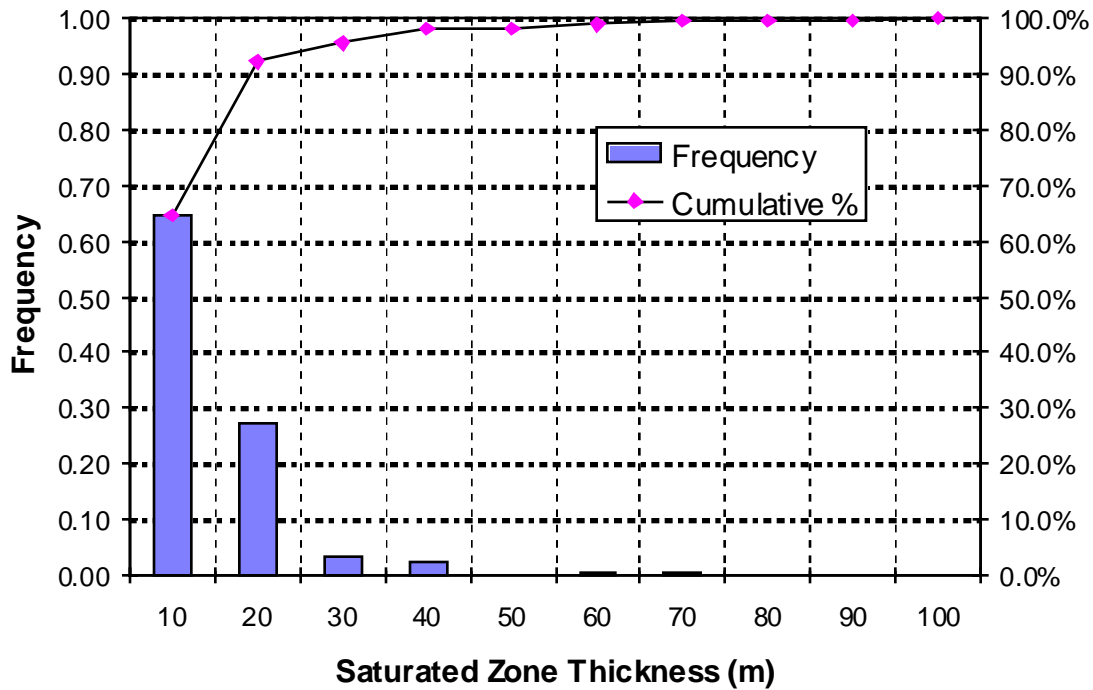
Waste Volume (cu.m.)	Frequency	Cumulative %
1.0E+02	0.00	.00%
1.0E+03	0.01	1.05%
1.0E+04	0.24	25.17%
1.0E+05	0.50	75.52%
1.0E+06	0.24	100.00%

**Figure A.8 Construction and Demolition Landfill Scenario - Distribution of Waste Volumes which generated receptor well concentrations exceeding the groundwater action level.**



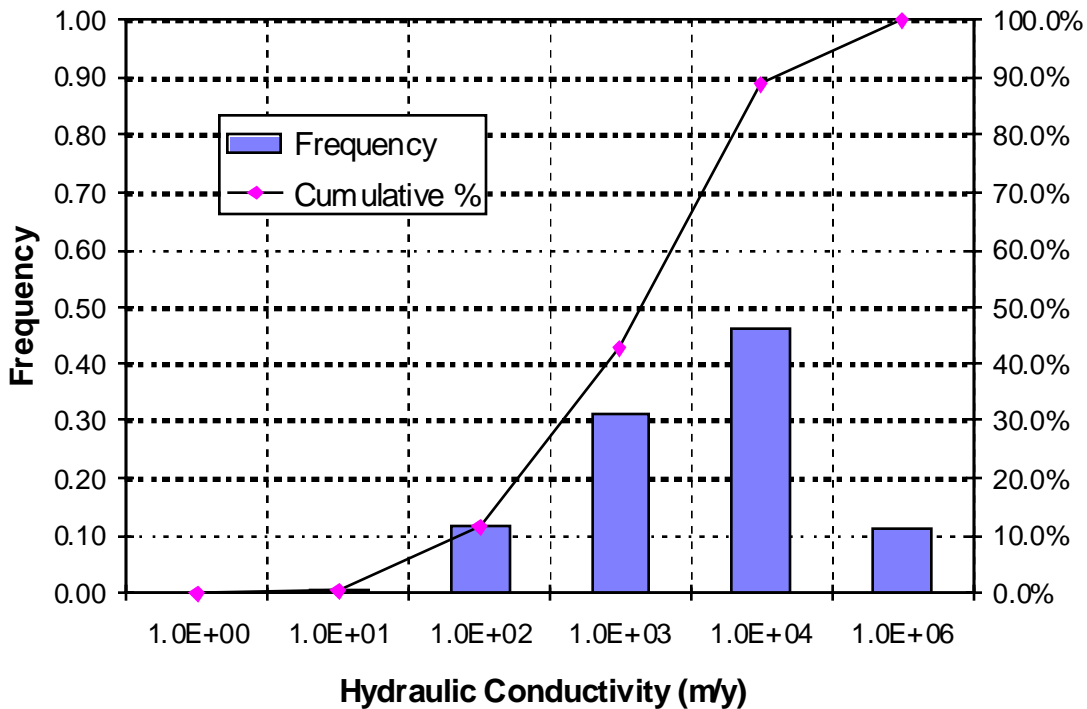
Unsaturated Zone Depth (m)	Frequency	Cumulative %
5	0.679	67.94%
10	0.250	92.94%
15	0.041	97.04%
20	0.017	98.69%
25	0.006	99.30%
30	0.003	99.65%
35	0.003	99.91%
40	0.000	99.91%
45	0.000	99.91%
50	0.001	100.00%

**Figure A.9** Municipal and Construction and Demolition Landfill Scenarios - Distribution of Unsaturated Zone Depths which generated receptor well concentrations exceeding the groundwater action level.



Sat. Zone Thickness (m)	Frequency	Cumulative %
10	0.65	64.51%
20	0.28	92.16%
30	0.03	95.49%
40	0.03	98.24%
50	0.00	98.24%
60	0.01	98.82%
70	0.01	99.61%
80	0.00	99.61%
90	0.00	99.80%
100	0.00	100.00%

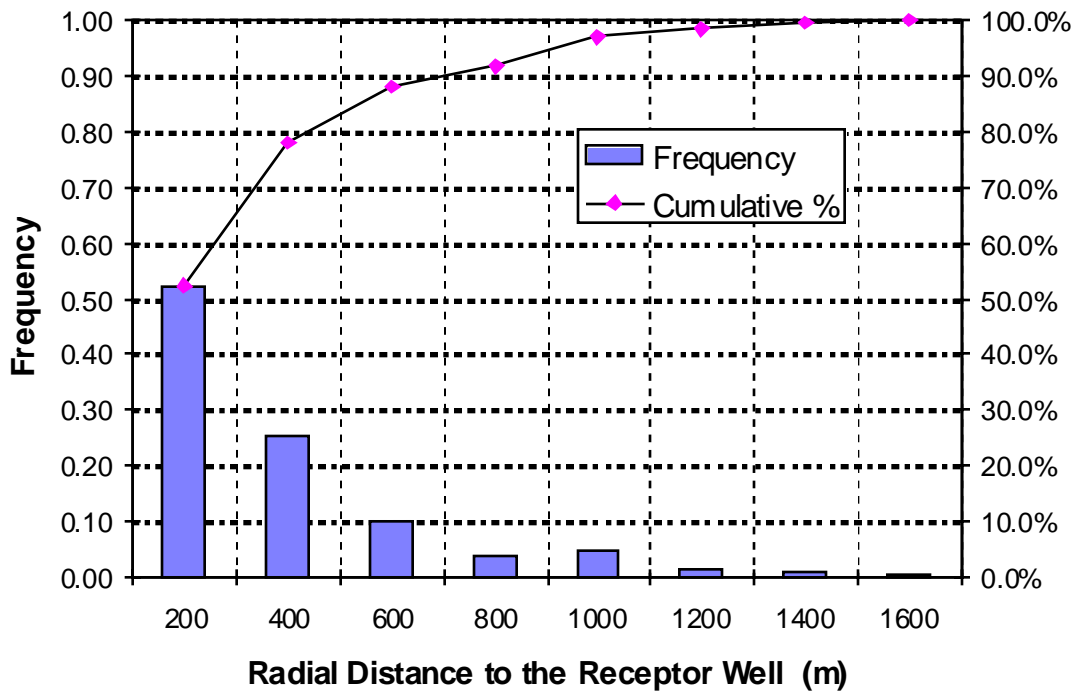
**Figure A.10** Municipal and Construction and Demolition Landfill Scenarios - Distribution of Saturated Zone Thickness which generated receptor well concentrations exceeding



Hydraulic Conductivity (m/y)	Frequency	Cumulative %
1.0E+00	0.00	.00%
1.0E+01	0.00	.20%
1.0E+02	0.11	11.57%
1.0E+03	0.31	42.75%
1.0E+04	0.46	88.82%
1.0E+06	0.11	100.00%

the groundwater action level.

**Figure A.11** Municipal and Construction and Demolition Landfill Scenarios - Distribution of Aquifer hydraulic conductivity which generated receptor well concentrations exceeding the groundwater action level.

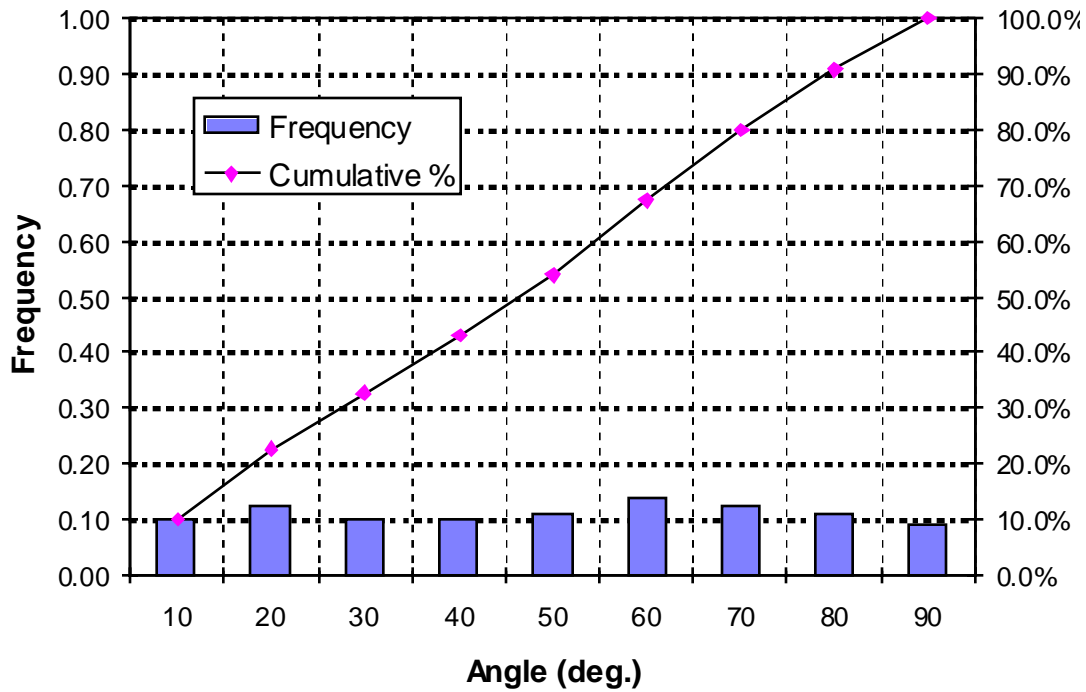


Radial Dist. to Receptor Well (m)	Frequency	Cumulative %
200	0.53	52.55%
400	0.25	78.04%
600	0.10	88.24%
800	0.04	91.96%
1000	0.05	96.86%
1200	0.02	98.43%
1400	0.01	99.61%
1600	0.00	100.00%

**Figure A.12** Municipal and Construction and Demolition Landfill Scenarios - Distribution of Receptor well distance which generated receptor well concentrations exceeding the groundwater action level.







Angle	Frequency	Cumulative %
10	0.10	10.20%
20	0.13	22.75%
30	0.10	32.75%
40	0.10	42.94%
50	0.11	53.73%
60	0.14	67.45%
70	0.12	79.80%
80	0.11	90.78%
90	0.09	100.00%

**Figure A.13** Municipal and Construction and Demolition Landfill Scenarios - Distribution of Receptor Well Angle which generated receptor well concentrations exceeding the groundwater action level.

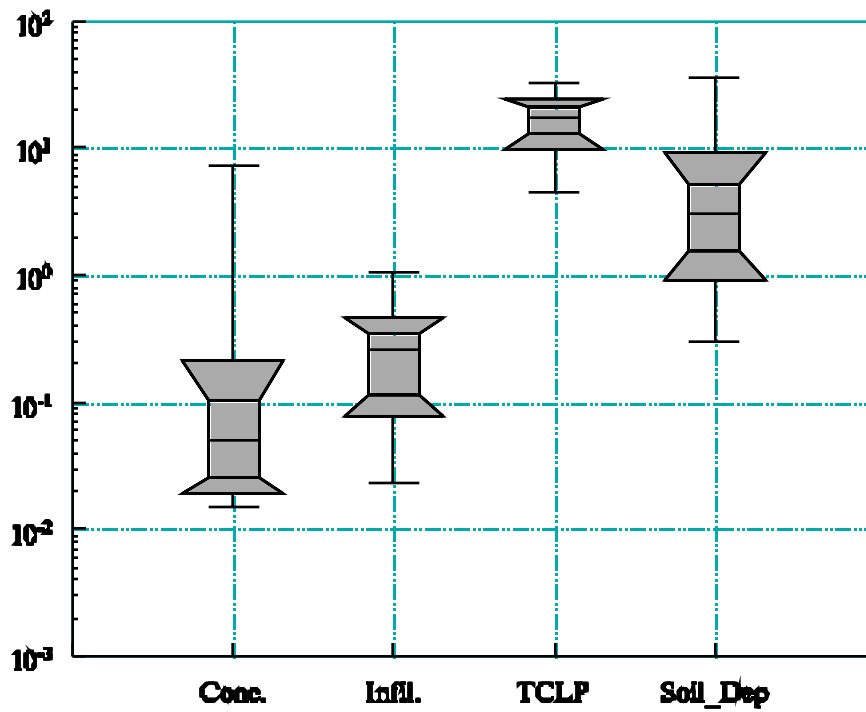


Figure A.14 Box plots for peak receptor well concentration (mg/L), infiltration rate (m/y), TCLP (mg/L) and soil depth (m) for receptor well concentrations that exceeded lead action level for Municipal landfill scenario.

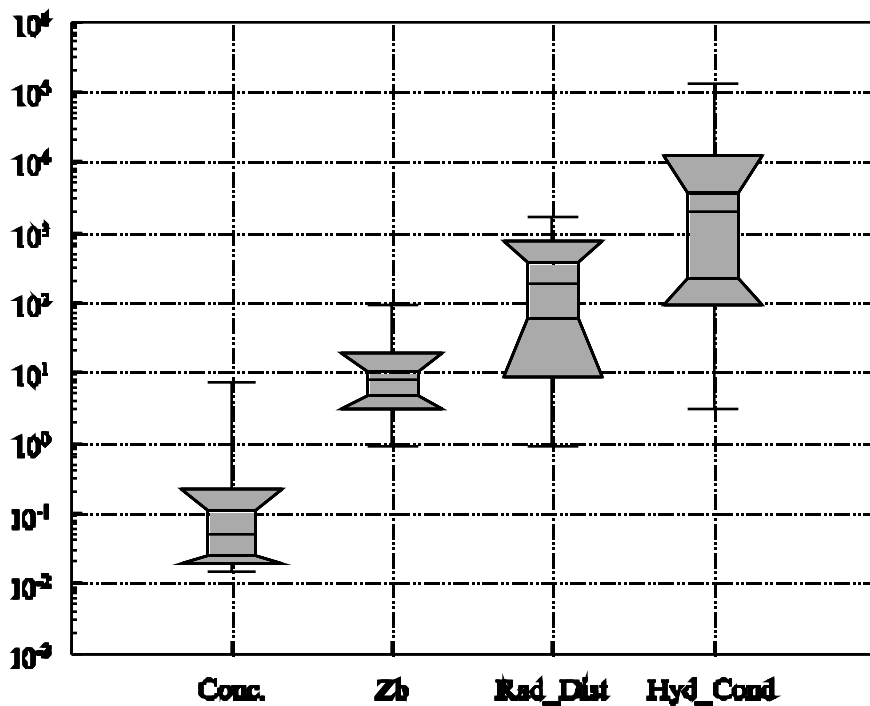


Figure A.15 Box plots for peak receptor well concentration (mg/L), saturated zone thickness, Zb, (m), radial well distance (m) and saturated zone hydraulic conductivity (m/y) for receptor well concentrations that exceeded lead action level for Municipal landfill scenario.

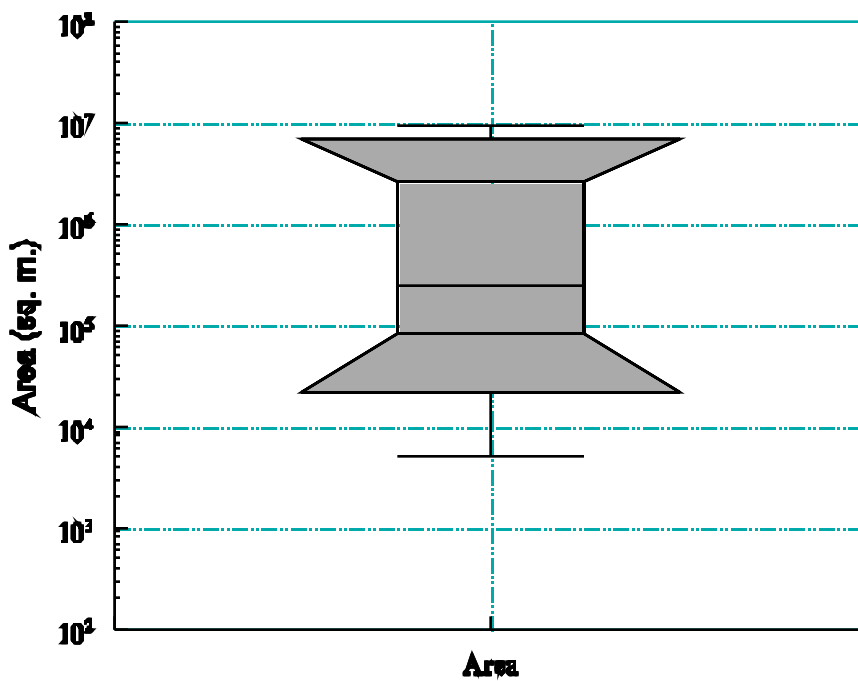


Figure A.16 Box plot of landfill areas (m<sup>2</sup>) for receptor well concentrations that exceeded lead action level for Municipal landfill scenario.

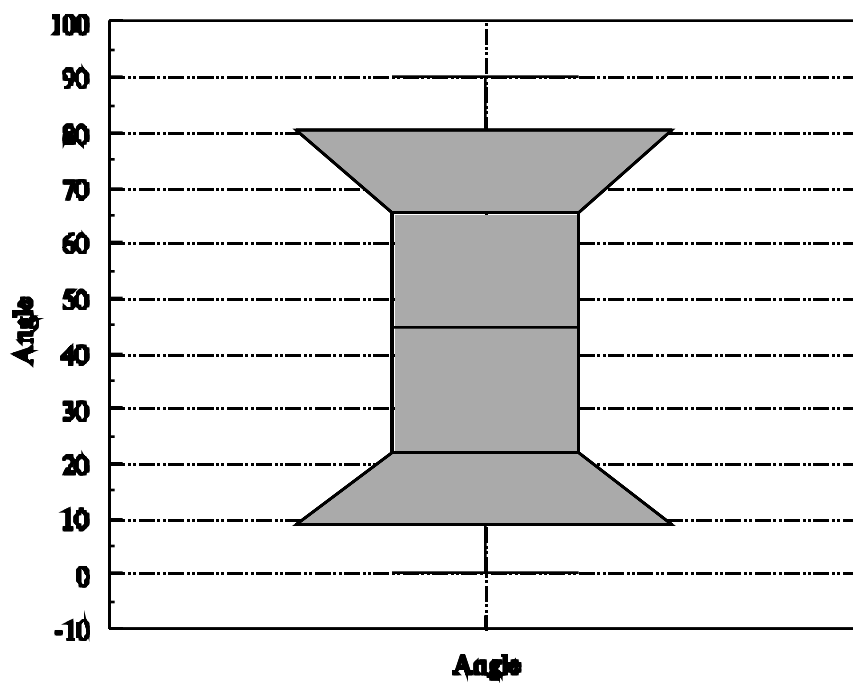


Figure A.17 Box plot of receptor well angle for receptor well concentrations that exceeded lead action level for Municipal landfill scenario.

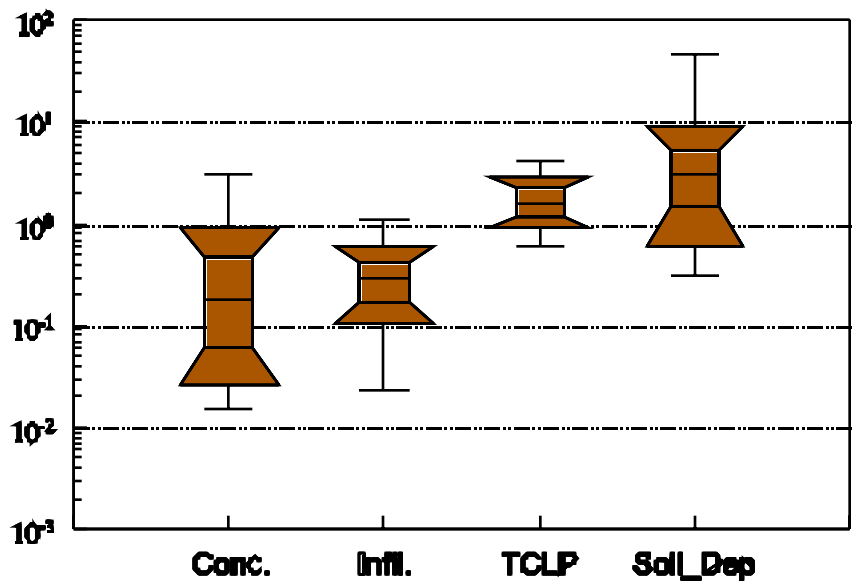


Figure A.18 Box plots for peak receptor well concentration (mg/L), infiltration rate (m/y), TCLP (mg/L) and soil depth (m) for receptor well concentrations that exceeded lead action level for Construction and Demolition landfill scenario.

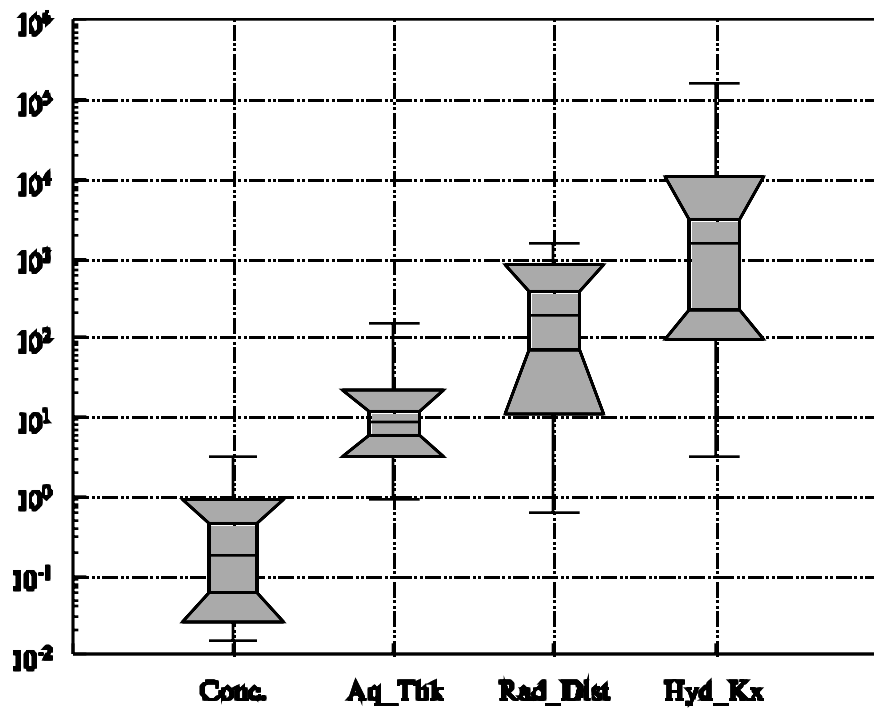


Figure A.19 Box plots for peak receptor well concentration (mg/L), saturated zone thickness, Zb, (m), radial well distance (m) and saturated zone hydraulic conductivity (m/y) for receptor well concentrations that exceeded lead action level for Construction and Demolition landfill scenario.

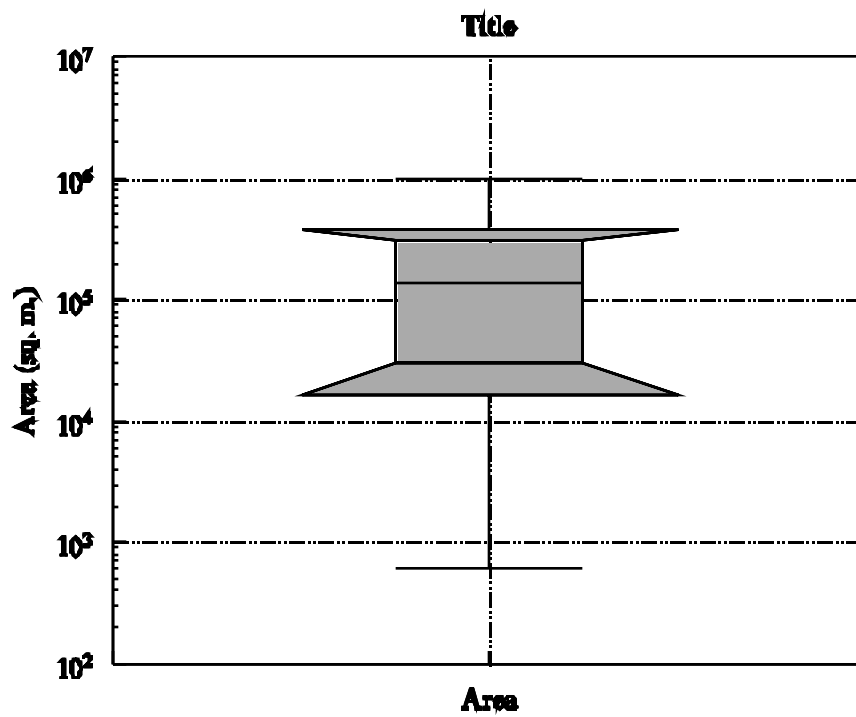


Figure A.20 Box plot of landfill areas ( $m^2$ ) for receptor well concentrations that exceeded lead action level for Construction and Demolition landfill scenario.



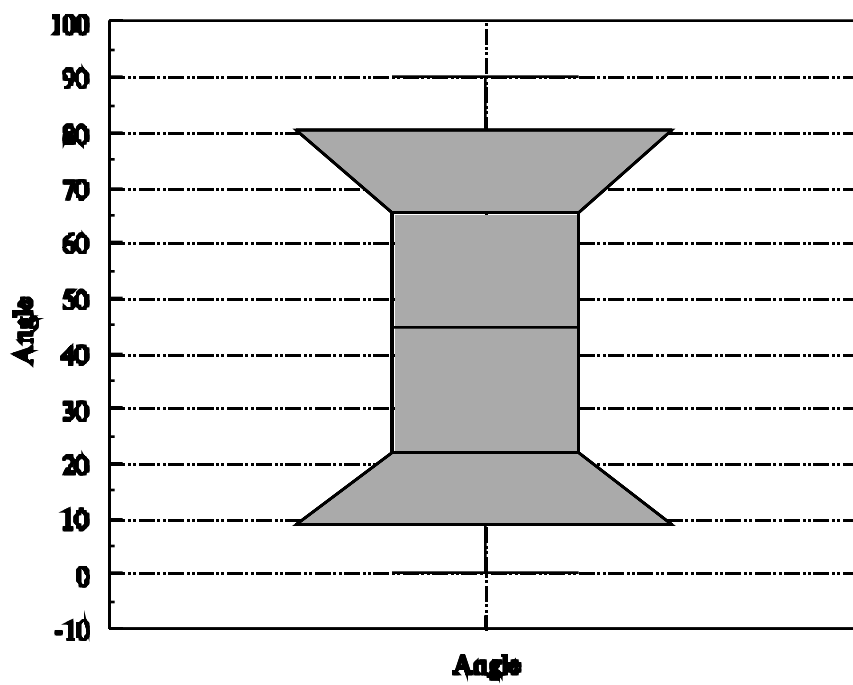


Figure A.21 Box plot of receptor well angle for receptor well concentrations that exceeded lead action level for Construction and Demolition landfill scenario.