

Dynamic Chamber Baseline Tests

To provide an underpinning for the interpretation of results from tests with the surfaces of interest present, several trials were performed with the test chamber empty. Figure 13 illustrates a phenomenon which will be seen to be present in all of the dynamic test results to some extent. Note that the EtSH and C_3H_8 mixture is injected into the chamber beginning at $t = 0$. There is, in this case, a lag of nearly 400 minutes between the start of injection and the detection of measurable EtSH in the chamber. The model predictions shown in the figure assume the average EtSH rate of loss observed in static tests in the empty chamber ($3.4 \times 10^{-4} \text{ min}^{-1}$). Such a lag in system response was not observed in the static tests, and this suggests that the experimental system includes a sink which is sufficient to completely remove the small amount of EtSH present in the dynamic runs. In the static tests, the initial injection of EtSH was delivered as a bolus, and the effect of the sink observed here was simply to reduce the starting concentration observed in the test. To examine this effect, a test was performed in which the EtSH/ C_3H_8 mixture was injected for 15 minutes into the static chamber. The following concentrations were measured:

<u>t,</u> <u>min</u>	<u>EtSH,</u> <u>ppm</u>	<u>$C_3H_8,$</u> <u>ppm</u>
8	0	.053
38	0	.119
68	.010	.116
98	.007	.119
128	.008	.115
158	.010	.111

The C_3H_8 concentration is seen to rise during the 15-minute injection and reach a fairly steady value of 0.116 ppm by $t = 38$ minutes. The ultimate EtSH concentration reached is only 0.009 ppm, and this is not detected until 68 minutes. The ratio of the concentrations of the two

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The C_3H_8 concentration is seen to rise during the 15-minute injection and reach a fairly steady value of 0.116 ppm by $t = 38$ minutes. The ultimate EtSH concentration reached is only 0.009 ppm, and this is not detected until 68 minutes. The ratio of the concentrations of the two

gases in the injection tank indicate that the EtSH should actually have reached 0.092 ppm, so there is clearly an initial loss of the mercaptan.

It is seen below that low EtSH injection rates and high chamber purge rates lead to greater time lags between injection and detection of EtSH. While this effect does complicate the interpretation of the dynamic test results, it does not invalidate the tests.

Duplicate runs were performed in the empty chamber to obtain the results shown in Figures 14 and 15. In both cases there is very good agreement between the propane concentrations observed and the model predictions. This is to be expected, as the model predictions are computed from the injected flow rate which provides the best agreement with the measured propane concentrations. The fact that the curves nearly coincide indicate that the steady flow rate and low ($1.25 \times 10^{-6} \text{ min}^{-1}$) decay rate for propane accurately represent the system behavior. The EtSH concentrations predicted by the model include the average decay rate observed for EtSH in the static tests. In these two figures, the EtSH measurements display the lag discussed above, but ultimately the loss rate used in the model appears to slightly overestimate the extent of EtSH removal in the empty chamber. The difference between the predicted and observed EtSH concentration profiles is not, however, outside of the bounds of the variations observed in the static decay rates. These results provided an adequate basis to perform dynamic trials with the surfaces of interest.

Dynamic Tests with Unpainted Masonry

Six experiments were successfully performed with the unpainted masonry block surface in the test chamber. One additional test was not successful, because the EtSH injection rate selected was too low to provide sufficient test data during the duration of the experiment. A typical set of concentration profiles for these experiments is shown in Figure 16. It is clear in this figure that the EtSH concentration has achieved a nearly steady value after several hundred minutes, while the propane concentration is still increasing at 1000 minutes. This is

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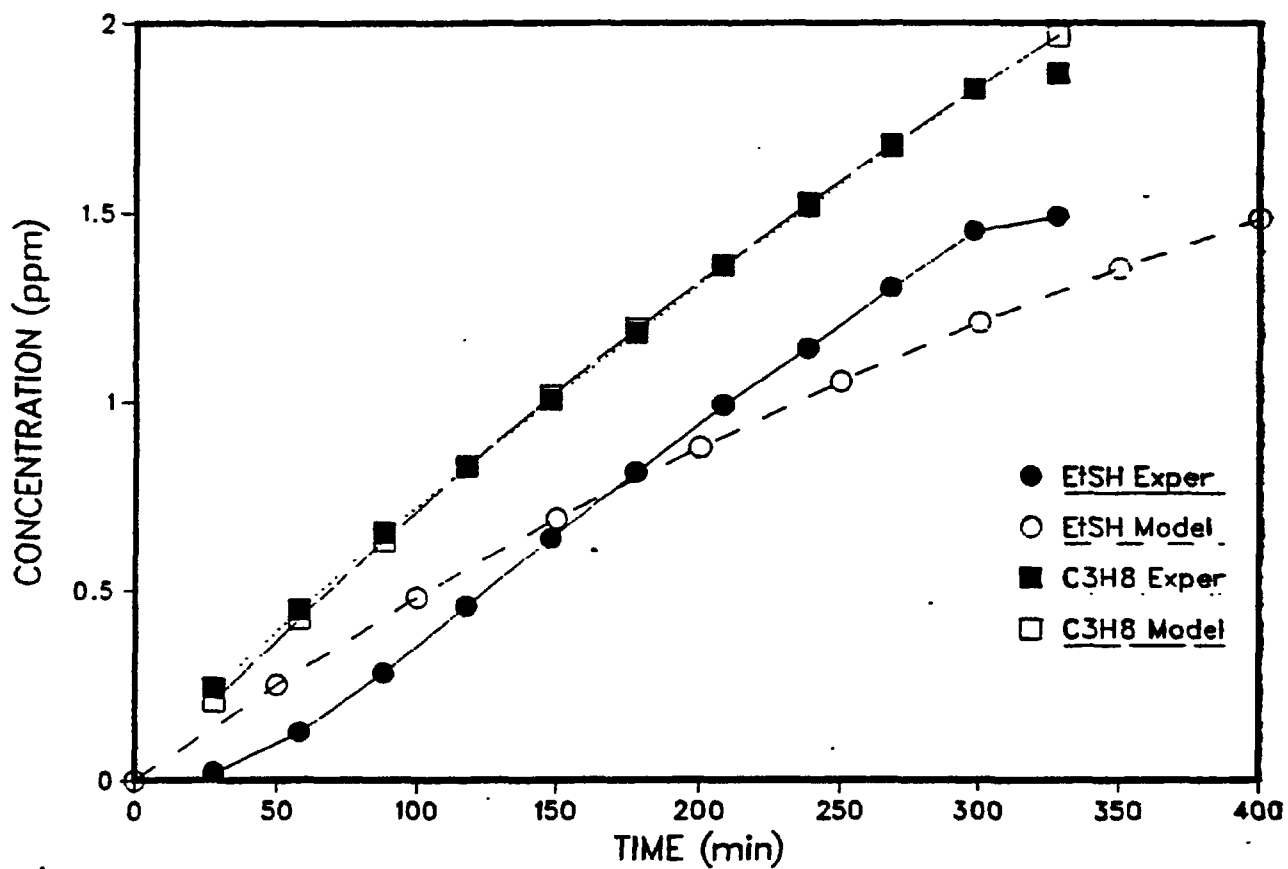


FIGURE 15. MEASURED AND PREDICTED CONCENTRATION PROFILES FOR EtSH AND PROPANE IN A DUPLICATE DYNAMIC TEST IN THE EMPTY CHAMBER (Note reduction in EtSH lag time)

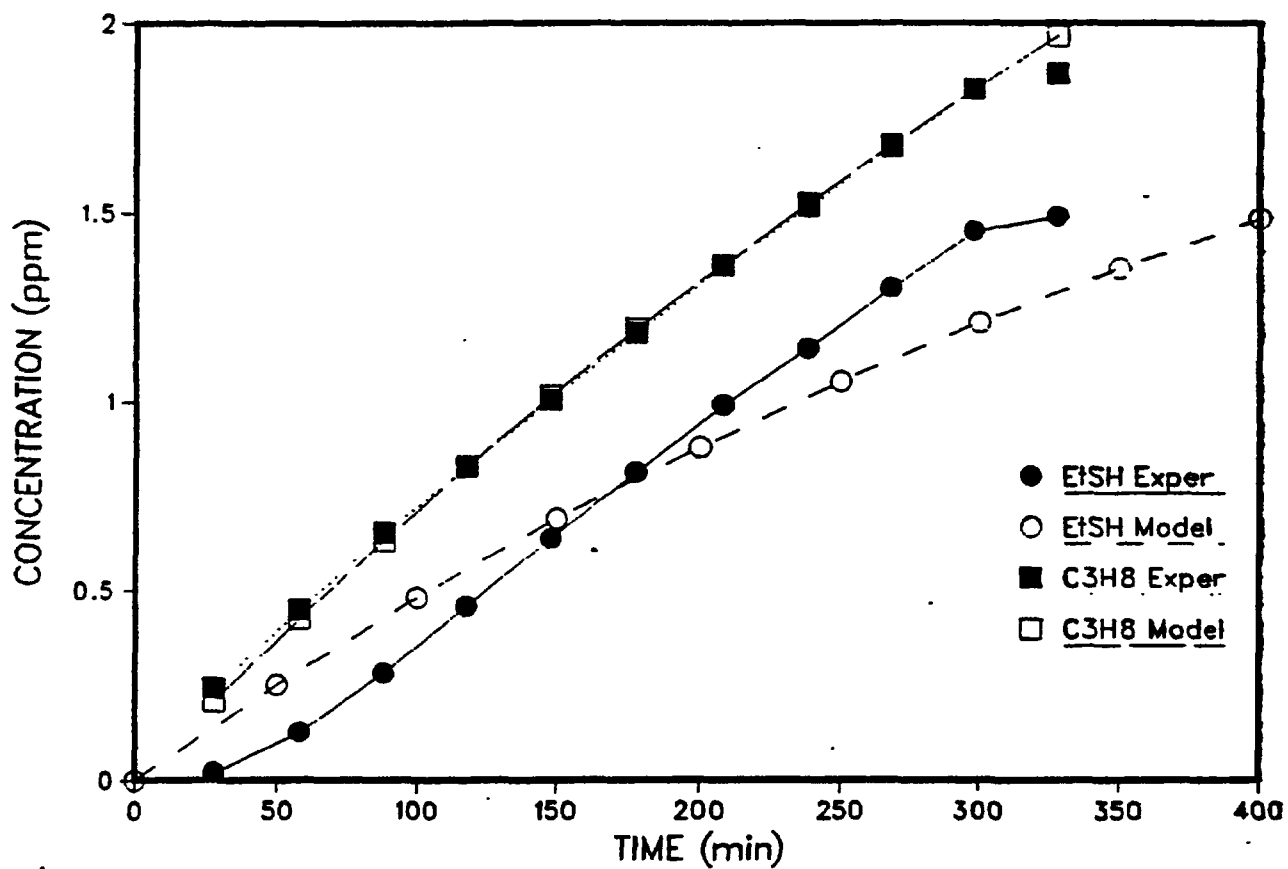


FIGURE 15. MEASURED AND PREDICTED CONCENTRATION PROFILES FOR EtSH AND PROPANE IN A DUPLICATE DYNAMIC TEST IN THE EMPTY CHAMBER (Note reduction in EtSH lag time)

clearly attributable to the large difference in the decay rates of the two gases when the concrete block surface is present. In Figure 17, the EtSH data and model predictions are presented. Model calculations were performed assuming two different EtSH decay rates: $6.5 \times 10^{-3} \text{ m}^{-2} \text{ min}^{-1}$, which is the average value measured in the static trials, and $9.4 \times 10^{-3} \text{ m}^{-2} \text{ min}^{-1}$, which approximates the decay rate reflected in the EtSH data for this test. Note that there is still a lag between the predicted values and the observed concentrations early in the run, although the effect is much less pronounced here because of the greater decay rate exhibited due to the masonry surface. Figure 18 contains data and predictions from a separate experiment with the unpainted masonry surface. For the six dynamic tests performed with this surface, the best approximations to the experimental data were provided in the following decay rates:

<u>Date</u>	<u>k (10⁻⁴ m⁻² min⁻¹)</u>
1/23	94
1/24	94
1/31	78
2/1	45
2/2	31
2/3	<u>83</u>
Average	71

This compares well with the average value of $65 \times 10^{-4} \text{ m}^{-2} \text{ min}^{-1}$ measured in the static experiments and provides a clear indication that the results of the static trials can be extended to the dynamic situation with no loss of validity.

Dynamic Tests with Poured Concrete

A series of seven dynamic tests were performed in the poured concrete surface in the chamber. This surface produced a range of EtSH decay rates from nearly double the average observed in the static tests to less than half that average value. Unfortunately, because of the

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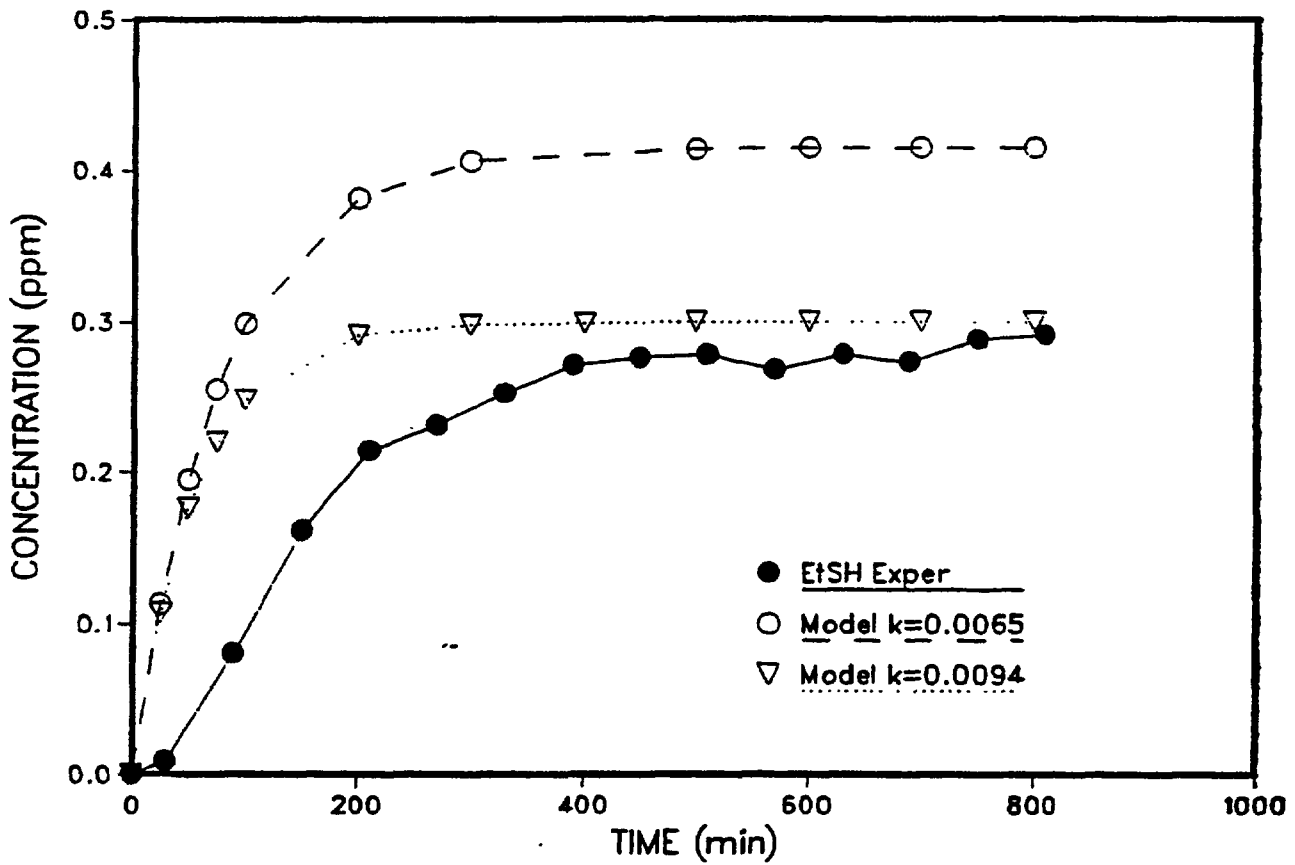


FIGURE 18. MEASURED AND PREDICTED EtSH CONCENTRATION PROFILES. DATA ARE FROM 1/24. (Units of $k = m^{-2} \text{ min}^{-1}$)

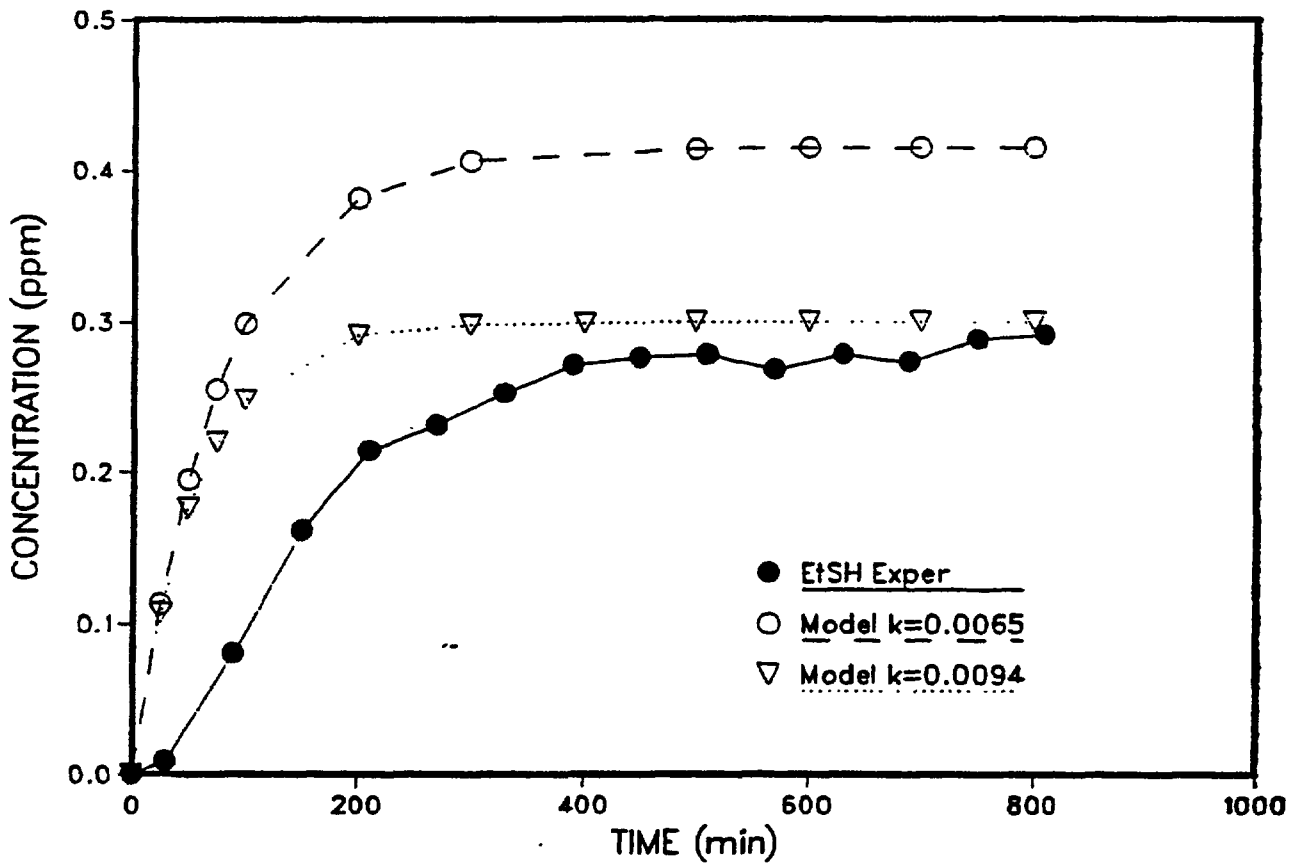


FIGURE 18. MEASURED AND PREDICTED EtSH CONCENTRATION PROFILES. DATA ARE FROM 1/24. (Units of $k = m^{-2} \text{ min}^{-1}$)

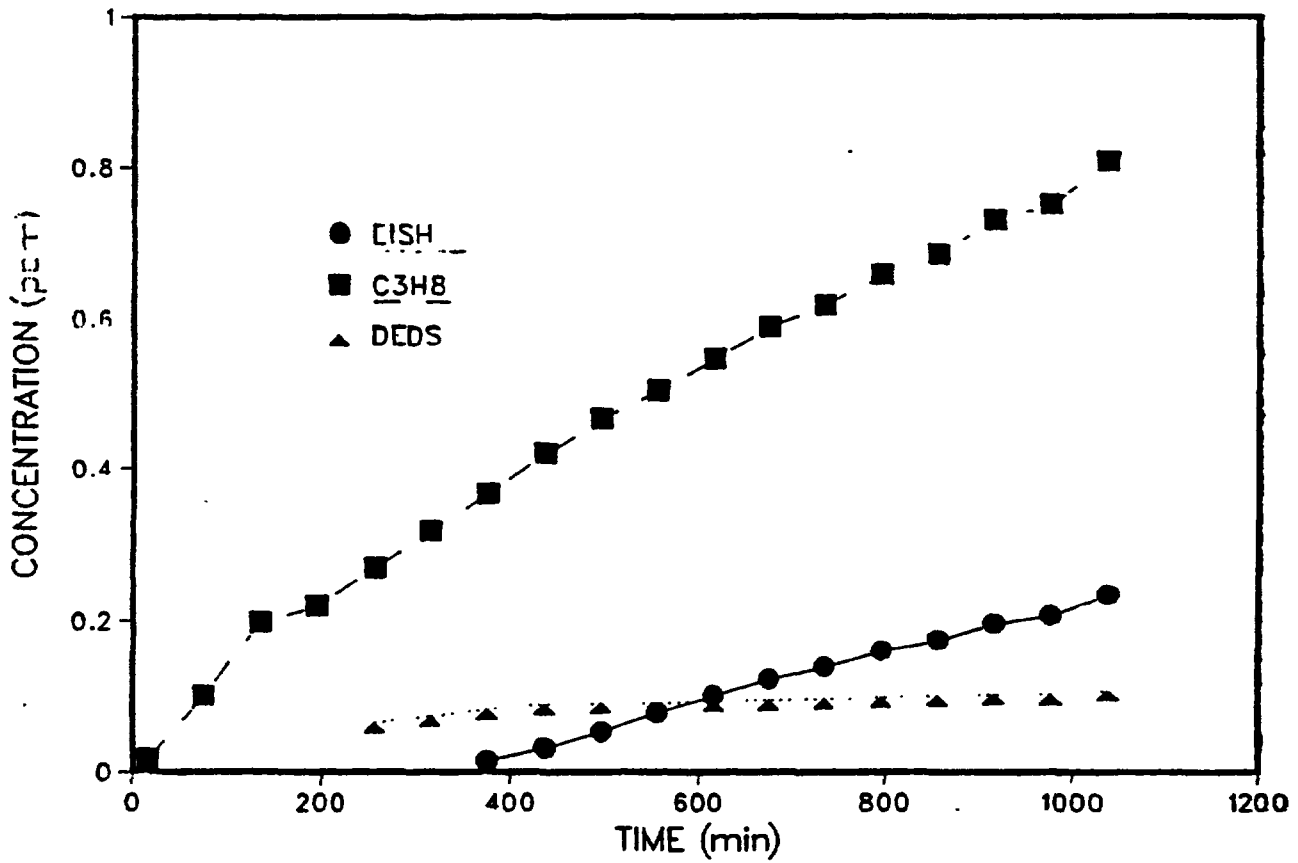


FIGURE 19. MEASURED CONCENTRATION PROFILES (1/12) FOR DYNAMIC TEST WITH POURED CONCRETE SURFACE EXHIBITING HIGHER THAN AVERAGE C1SH DECAY RATE

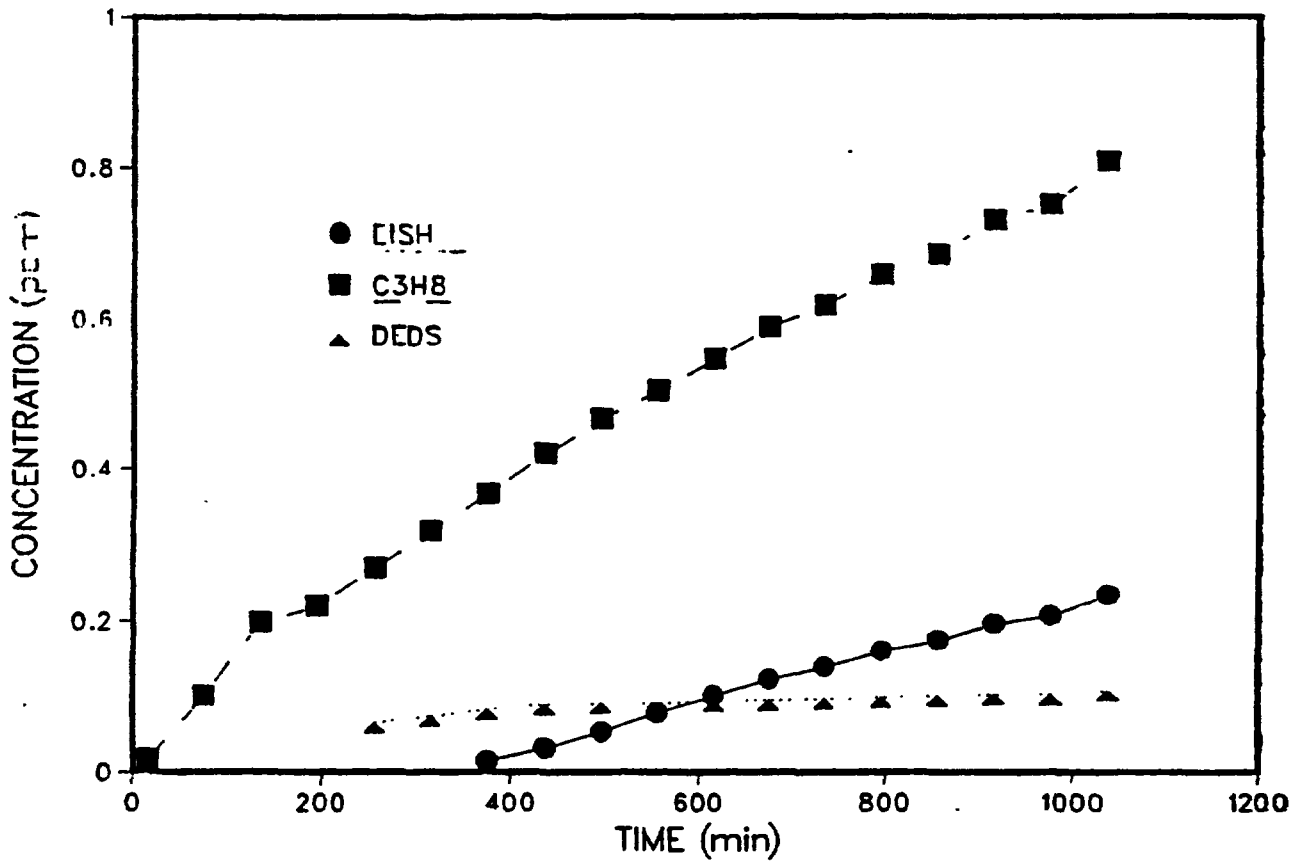


FIGURE 19. MEASURED CONCENTRATION PROFILES (1/12) FOR DYNAMIC TEST WITH POURED CONCRETE SURFACE EXHIBITING HIGHER THAN AVERAGE EtSH DECAY RATE

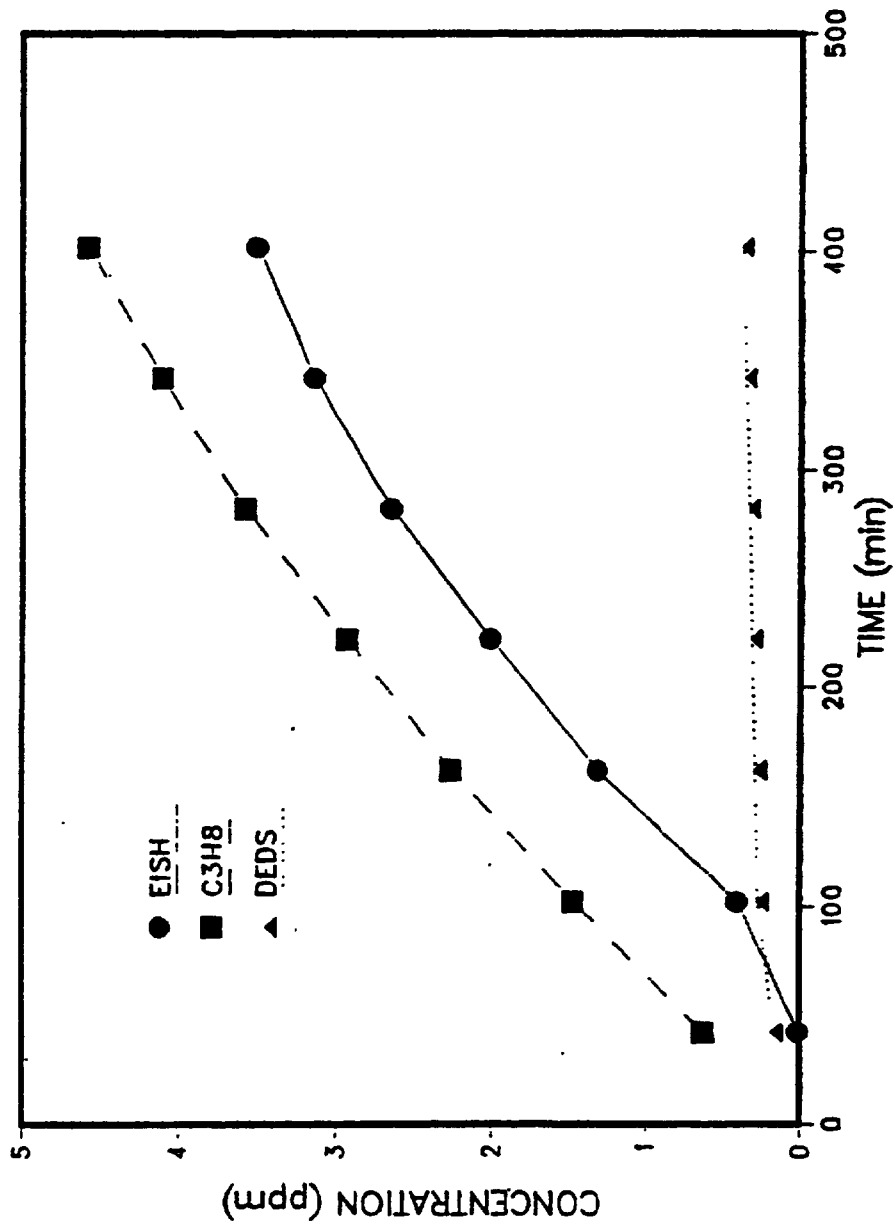


FIGURE 21. CONCENTRATION PROFILES MEASURED FOR A TYPICAL DYNAMIC RUN WITH
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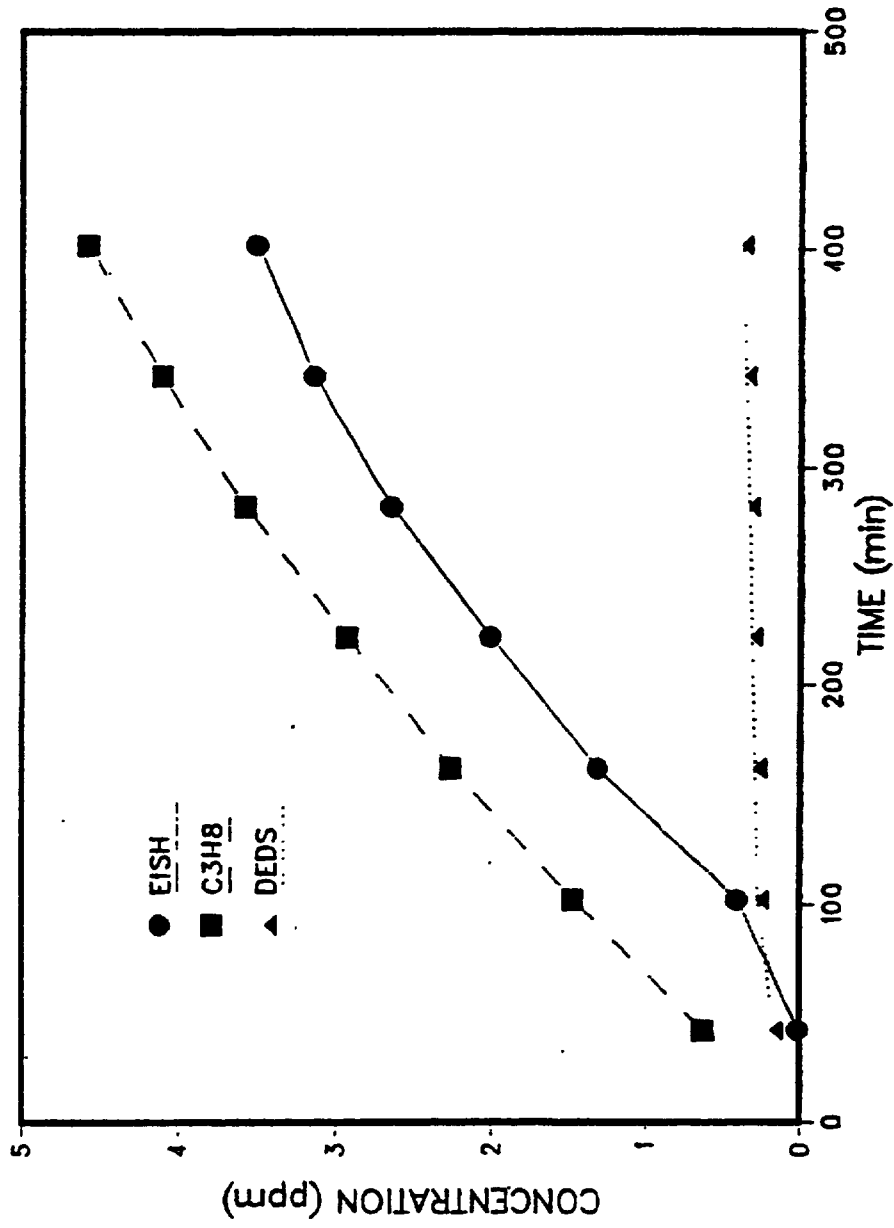


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order process as discussed in the text of this report. The greatest rate of removal was exhibited by the unpainted masonry block surface. For those tests, the average rate of EtSH removal was $65 \times 10^{-4} \text{ m}^{-2} \text{ min}^{-1}$. The removal rates for the other surfaces were less than this figure, $19 \times 10^{-4} \text{ m}^{-2} \text{ min}^{-1}$ for poured concrete, $12 \times 10^{-4} \text{ m}^{-2} \text{ min}^{-1}$ for wallboard, and $6.0 \times 10^{-4} \text{ m}^{-2} \text{ min}^{-1}$ for painted masonry block.

Run to run variations in the EtSH decay rate were observed, but these could not be attributed to changes in humidity or temperature used in the test, nor to surface capacity limits.

The rates of decay observed in the static tests performed are seen to adequately characterize the behavior of EtSH under dynamic test conditions with the unpainted masonry surface. The rates of decay of EtSH with the poured concrete were near the limit of the dynamic experimental approach to measure, but no indication of new phenomena were uncovered in the data analysis.

One may wish to make immediate use of the EtSH decay rates determined in this work to predict the concentration of EtSH in a residential situation. Gaps remain in our ability to accurately characterize a "real-world" setting. While the model presented in this report accurately characterizes the behavior of EtSH in the test chamber, a residential basement has significant differences from the test chamber. The degree of mixing of the atmosphere in a residential basement is uncharacterized and this may play a major role in determining the behavior of LPG leaked into that atmosphere. Secondly, air exchange rates for residential basement are not well characterized at this time. This rate is an important determinant of the propane and EtSH concentrations which are achieved for a given leakage rate.

We recommend that a study be performed to characterize the dispersal of leaked LPG (or a suitable, safe simulant) in residential basements. The distribution of the gas during the leakage will provide added insight into the processes occurring in "real-world" situations and will provide information necessary to properly use the data obtained in this study.

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APPENDIX A

DATA LIBRARY

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1/23	8 Unpainted Concrete Block (CH2 only)	28	19
1/24	8 Unpainted Concrete Block (CH2 only)	28	17
1/25	Empty (CH2 only)	28	
1/30	Empty (CH2 only)	28	10
1/31	8 Unpainted Concrete Block (CH2 only)	28	17
2/1	8 Unpainted Concrete Block (CH2 only)	28	63
2/2	8 Unpainted Concrete Block (CH2 only)	28	64
2/3	8 Unpainted Concrete Block (CH2 only)	28	23
2/5	3 Concrete Slabs (CH2 only)	28	30
2/6	3 Concrete Slabs (CH2 only)	28	13
2/7	3 Concrete Slabs (CH2 only)	28	65
2/8	3 Concrete Slabs (CH2 only)	28	85
2/9	3 Concrete Slabs (CH2 only)	28	45
2/20	Fan Test	-	-
2/23	Fan Test w/ 3 Concrete Slabs	28	low
2/24	Fan Test w/ 3 Concrete Slabs	28	low
3/1	Fan Test w/ 8 Concrete Blocks	28	low
3/3	Fan Test w/ 8 Concrete Blocks	28	-
3/10	Painted Wall Board (CH2 only)	28	low
3/12	Painted Wall Board (CH2 only)	28	low
3/13	Painted Wall Board (CH2 only)	28	med
3/22	Painted Wall Board (CH2 only)	28	-

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3/13	Painted Wall Board (CH2 only)	28	med
3/22	Painted Wall Board (CH2 only)	28	-

RAPID PURGING 10/23

CHAMBER 1

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
19	0.434	0.289	0.041	4.437
79	0.304	0.210	0.033	2.804
139	0.070	0.008	0.019	1.331
199	0.000	0.000	0.000	0.229
259	0.000	0.000	0.008	0.000

RAPID PURGING 10/23

CHAMBER 2

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
49	0.362	0.306	0.048	4.310
109	0.264	0.230	0.039	2.832
169	0.000	0.000	0.000	0.871
229	0.000	0.000	0.000	0.000
289	0.000	0.000	0.007	0.000

CH1 10/24 - 10/25

40 C DRY RUN

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
102	0.781	0.445	0.036	8.372
162	0.825	0.432	0.037	8.373
222	0.822	0.437	0.038	8.336
282	0.825	0.439	0.039	8.274
342	0.800	0.428	0.040	8.221
402	0.802	0.427	0.040	8.144
462	0.778	0.424	0.040	8.171
522	0.779	0.414	0.040	8.148
582	0.769	0.407	0.041	8.101
642	0.761	0.411	0.041	8.075

CH2 10/24 - 10/25

40 C DRY RUN

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
72	0.848	0.497	0.047	7.960
132	0.845	0.480	0.051	7.947
192	0.839	0.489	0.055	7.937
252	0.815	0.483	0.056	7.956
312	0.801	0.473	0.056	7.926
372	0.773	0.459	0.057	7.912
432	0.765	0.471	0.059	7.903
492	0.759	0.459	0.060	7.892
552	0.759	0.462	0.061	7.930
612	0.736	0.446	0.062	7.909

CH2 11/10 - 11/11

24.5 C 17.5% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
480	0.996	0.606	0.143	5.344
540	0.975	0.631	0.148	5.341

CH1 11/10 - 11/11

28 C 26% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
30	0.812	0.707	0.209	6.340
90	0.919	0.680	0.157	6.744
150	0.970	0.688	0.144	6.710
210	0.908	0.598	0.137	6.599
270	0.853	0.625	0.138	6.486
330	0.819	0.623	0.141	6.379
390	0.842	0.612	0.130	6.244
450	0.834	0.613	0.132	6.201
510	0.787	0.612	0.131	6.177
570	0.787	0.595	0.129	6.164

CH2 11/10 - 11/11

4 C 37% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
0	0.797	0.756	0.270	-----
60	1.053	0.715	0.194	5.296
120	1.111	0.692	0.153	5.449
180	1.102	0.687	0.148	5.461
240	1.039	0.656	0.141	5.454
300	0.992	0.646	0.141	5.417
360	0.991	0.634	0.139	5.367
420	1.022	0.645	0.145	5.358

CH1 11/14

40 C 68% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
9	1.130	0.484	0.129	-----
69	1.117	0.479	0.141	2.520
129	0.994	0.470	0.143	2.480
189	0.781	0.434	0.138	2.539
249	0.827	0.433	0.150	2.589
309	0.767	0.414	0.144	2.583
369	0.827	0.425	0.142	2.583
429	0.685	0.405	0.129	2.558
489	0.752	0.395	0.136	2.557

RAPID PURGING 10/23

CHAMBER 1

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
19	0.434	0.289	0.041	4.437
79	0.304	0.210	0.033	2.804
139	0.070	0.008	0.019	1.331
199	0.000	0.000	0.000	0.229
259	0.000	0.000	0.008	0.000

RAPID PURGING 10/23

CHAMBER 2

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
49	0.362	0.306	0.048	4.310
109	0.264	0.230	0.039	2.832
169	0.000	0.000	0.000	0.871
229	0.000	0.000	0.000	0.000
289	0.000	0.000	0.007	0.000

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CH2 10/24 - 10/25

40 C DRY RUN

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72	0.848	0.497	0.047	7.960
132	0.845	0.480	0.051	7.947
192	0.839	0.489	0.055	7.937
252	0.815	0.483	0.056	7.956
312	0.801	0.473	0.056	7.926
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480	0.996	0.606	0.143	5.344
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90	0.919	0.680	0.157	6.744
150	0.970	0.688	0.144	6.710
210	0.908	0.598	0.137	6.599
270	0.853	0.625	0.138	6.486
330	0.819	0.623	0.141	6.379
390	0.842	0.612	0.130	6.244
450	0.834	0.613	0.132	6.201
510	0.787	0.612	0.131	6.177
570	0.787	0.595	0.129	6.164

CH2 11/10 - 11/11

4 C 37% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
0	0.797	0.756	0.270	-----
60	1.053	0.715	0.194	5.296
120	1.111	0.692	0.153	5.449
180	1.102	0.687	0.148	5.461
240	1.039	0.656	0.141	5.454
300	0.992	0.646	0.141	5.417
360	0.991	0.634	0.139	5.367
420	1.022	0.645	0.145	5.358

CH1 11/14

40 C 68% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
9	1.130	0.484	0.129	-----
69	1.117	0.479	0.141	2.520
129	0.994	0.470	0.143	2.480
189	0.781	0.434	0.138	2.539
249	0.827	0.433	0.150	2.589
309	0.767	0.414	0.144	2.583
369	0.827	0.425	0.142	2.583
429	0.685	0.405	0.129	2.558
489	0.752	0.395	0.136	2.557

CH1 11/22 - 11/23
NO TEMP OR RH RECORDED

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
58	0.325	0.409	0.129	7.201
118	0.152	0.406	0.148	7.091
178	0.068	0.394	0.154	6.927
238	0	0.389	0.15	6.817
298	0	0.33	0.151	6.669
358	0	0.335	0.146	6.544
418	0	0.397	0.143	6.431
478	0	0.385	0.13	6.326
538	0	0.369	0.125	6.211

CH1 11/27
50 % R.H.
33 C

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
16	1.408	1.003	0.158	6.660
46	1.055	0.988	0.191	6.322
76	0.748	0.969	0.216	6.422
106	0.546	0.925	0.239	6.357
136	0.379	0.994	0.251	6.267
166	0.267	0.98	0.267	6.334
196	0.184	1	0.298	6.306
226	0.121	0.978	0.27	6.263
256	0.081	0.965	0.265	6.157
286	0.05	0.969	0.267	6.142
316	0	0.967	0.268	6.146

CH2 11/22 - 11/23 88 % R.H.
28 C

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
28	0.495	0.485	0.12	7.035
88	0.296	0.455	0.15	6.906
148	0.158	0.352	0.154	6.892
208	0.082	0.444	0.166	6.853
268	0	0.354	0.173	6.790
328	0	0.389	0.172	6.734
388	0	0.446	0.17	6.706
448	0	0.432	0.158	6.668
508	0	0.433	0.156	6.623

CH2 11/28
36 % R.H.
2.5 C

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
11	0.882	0.801	0.111	5.850
41	0.573	0.802	0.117	5.878
71	0.354	0.818	0.119	5.831
101	0.219	0.845	0.118	5.786
131	0.133	0.816	0.11	5.793
161	0.079	0.803	0.104	5.796
191	0.045	0.796	0.096	5.799
221	0	0.771	0.088	5.863

CH2 11/24
36.3 C
50 % R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
7	1.525	1.018	0.172	7.835
37	1.143	1.044	0.256	7.694
67	0.783	1.01	0.276	7.806
97	0.565	1.003	0.312	7.709
127	0.409	1.008	0.338	7.666
157	0.308	1.014	0.319	7.634
187	0.221	1.024	0.357	7.505
217	0.158	1.01	0.341	7.654
247	0.11	0.993	0.333	7.667
277	-----	-----	-----	7.676

CH1 11/28
27.5 60 % R.H.
60 % R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
41	0.854	0.87	0.196	7.870
101	0.419	0.816	0.216	7.742
161	0.209	0.789	0.219	7.685
221	0.111	0.793	0.222	7.602
281	0.053	0.817	0.219	7.461
341	0	0.776	0.199	7.250

CH1 11/22 - 11/23
NO TEMP OR RH RECORDED

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
58	0.325	0.409	0.129	7.201
118	0.152	0.406	0.148	7.091
178	0.068	0.394	0.154	6.927
238	0	0.389	0.15	6.817
298	0	0.33	0.151	6.669
358	0	0.335	0.146	6.544
418	0	0.397	0.143	6.431
478	0	0.385	0.13	6.326
538	0	0.369	0.125	6.211

CH1 11/27 50 % R.H.
33 C

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
16	1.408	1.003	0.158	6.660
46	1.055	0.988	0.191	6.322
76	0.748	0.969	0.216	6.422
106	0.546	0.925	0.239	6.357
136	0.379	0.994	0.251	6.267
166	0.267	0.98	0.267	6.334
196	0.184	1	0.298	6.306
226	0.121	0.978	0.27	6.263
256	0.081	0.965	0.265	6.157
286	0.05	0.969	0.267	6.142
316	0	0.967	0.268	6.146

CH2 11/22 - 11/23 88 % R.H.
28 C

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
28	0.495	0.485	0.12	7.035
88	0.296	0.455	0.15	6.906
148	0.158	0.352	0.154	6.892
208	0.082	0.444	0.166	6.853
268	0	0.354	0.173	6.790
328	0	0.389	0.172	6.734
388	0	0.446	0.17	6.706
448	0	0.432	0.158	6.668
508	0	0.433	0.156	6.623

CH2 11/28 36 % R.H.
2.5 C

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
11	0.882	0.801	0.111	5.850
41	0.573	0.802	0.117	5.878
71	0.354	0.818	0.119	5.831
101	0.219	0.845	0.118	5.786
131	0.133	0.816	0.11	5.793
161	0.079	0.803	0.104	5.796
191	0.045	0.796	0.096	5.799
221	0	0.771	0.088	5.863

CH2 11/24 50 % R.H.
36.3 C

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
7	1.525	1.018	0.172	7.835
37	1.143	1.044	0.256	7.694
67	0.783	1.01	0.276	7.806
97	0.565	1.003	0.312	7.709
127	0.409	1.008	0.338	7.666
157	0.308	1.014	0.319	7.634
187	0.221	1.024	0.357	7.505
217	0.158	1.01	0.341	7.654
247	0.11	0.993	0.333	7.667
277				7.676

CH1 11/28 60 % R.H.
27.5 60 % R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
41	0.854	0.87	0.196	7.870
101	0.419	0.816	0.216	7.742
161	0.209	0.789	0.219	7.685
221	0.111	0.793	0.222	7.602
281	0.053	0.817	0.219	7.461
341	0	0.776	0.199	7.250

CH1 12/5

39.8 C 5% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
45	1.395	1.29	0.417	-----
105	-----	-----	0.475	12.539
165	0.236	0.396	0.205	12.336
225	0.441	1.239	0.541	12.366
285	0.288	1.254	0.22	12.049

CH2 12/5

25.6 C 50% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
15	1.32	1.099	0.175	-----
75	0.79	1.098	0.22	5.735
135	0.461	1.087	0.251	5.764
195	0.268	1.077	0.265	5.750
255	0.115	0.711	0.2	5.691

CH1 12/6

40.5 C 50% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
45	0.777	0.888	0.249	6.398
105	0.319	0.897	0.295	6.320
165	0.138	0.904	0.307	6.223
225	0.15	0.899	0.302	6.148
285	0.099	0.863	0.285	6.106
345	0.114	0.845	0.278	6.043
405	0.125	0.853	0.263	6.049
465	0.136	0.833	0.246	5.937

CH2 12/6

25.6 C 30% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
15	1.39	0.89	0.213	5.794
75	0.88	0.87	0.21	5.744
135	0.563	0.875	0.252	5.761
195	0.37	0.879	0.271	5.716
255	0.25	0.864	0.275	5.733
315	0.158	0.815	0.264	5.682
375	0.117	0.849	0.272	5.697
435	0.08	0.869	0.274	5.675

CH1 12/7

27.5 C 25% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
45	1.365	0.828	0.131	5.837
105	1.119	0.829	0.17	5.774
165	0.945	0.85	0.205	5.575
225	0.696	0.794	0.217	5.578
285	0.546	0.766	0.227	5.482
345	0.437	0.769	0.24	5.420

CH2 12/7

3.3 C 38% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
15	1.244	0.831	0.103	5.495
75	0.883	0.82	0.107	5.353
135	0.614	0.832	0.109	5.269
195	0.41	0.849	0.107	5.212
255	0.222	0.766	0.095	5.251
315	0.126	0.765	0.086	5.158

CH1 12/8

27.5 C 6.2% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
16	1.416	0.857	0.117	5.716
76	1.518	0.847	0.116	5.665
136	1.553	0.857	0.117	5.590
196	1.512	0.839	0.122	5.643
256	1.446	0.81	0.124	5.556
316	1.411	0.799	0.127	5.528
376	1.429	0.803	0.125	5.419

CH2 12/8

2.5 C 36% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
46	1.599	0.86	0.113	4.852
106	1.623	0.866	0.115	4.822
166	1.596	0.856	0.115	4.744
226	1.528	0.842	0.118	4.744
286	1.469	0.823	0.121	4.705
346	1.454	0.816	0.121	4.722
406	1.443	0.819	0.122	4.650

CH1 12/5

39.8 C 5% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
45	1.395	1.29	0.417	-----
105	-----	-----	0.475	12.539
165	0.236	0.396	0.205	12.336
225	0.441	1.239	0.541	12.366
285	0.288	1.254	0.22	12.049

CH2 12/5

25.6 C 50% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
15	1.32	1.099	0.175	-----
75	0.79	1.098	0.22	5.735
135	0.461	1.087	0.251	5.764
195	0.268	1.077	0.265	5.750
255	0.115	0.711	0.2	5.691

CH1 12/6

40.5 C 50% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
45	0.777	0.888	0.249	6.398
105	0.319	0.897	0.295	6.320
165	0.138	0.904	0.307	6.223
225	0.15	0.899	0.302	6.148
285	0.099	0.863	0.285	6.106
345	0.114	0.845	0.278	6.043
405	0.125	0.853	0.263	6.049
465	0.136	0.833	0.246	5.937

CH2 12/6

25.6 C 30% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
15	1.39	0.89	0.213	5.794
75	0.88	0.87	0.21	5.744
135	0.563	0.875	0.252	5.761
195	0.37	0.879	0.271	5.716
255	0.25	0.864	0.275	5.733
315	0.158	0.815	0.264	5.682
375	0.117	0.849	0.272	5.697
435	0.08	0.869	0.274	5.675

CH1 12/7

27.5 C 25% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
45	1.365	0.828	0.131	5.837
105	1.119	0.829	0.17	5.774
165	0.945	0.85	0.205	5.575
225	0.696	0.794	0.217	5.578
285	0.546	0.766	0.227	5.482
345	0.437	0.769	0.24	5.420

CH2 12/7

3.3 C 38% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
15	1.244	0.831	0.103	5.495
75	0.883	0.82	0.107	5.353
135	0.614	0.832	0.109	5.269
195	0.41	0.849	0.107	5.212
255	0.222	0.766	0.095	5.251
315	0.126	0.765	0.086	5.158

CH1 12/8

27.5 C 6.2% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
16	1.416	0.857	0.117	5.716
76	1.518	0.847	0.116	5.665
136	1.553	0.857	0.117	5.590
196	1.512	0.839	0.122	5.643
256	1.446	0.81	0.124	5.556
316	1.411	0.799	0.127	5.528
376	1.429	0.803	0.125	5.419

CH2 12/8

2.5 C 36% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
46	1.599	0.86	0.113	4.852
106	1.623	0.866	0.115	4.822
166	1.596	0.856	0.115	4.744
226	1.528	0.842	0.118	4.744
286	1.469	0.823	0.121	4.705
346	1.454	0.816	0.121	4.722
406	1.443	0.819	0.122	4.650

CH1 12/14/89
28 C 67% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	1.382	1.093	0.270	4.335
78	1.599	1.065	0.232	4.326
138	1.592	1.086	0.196	4.269
198	1.459	1.049	0.229	4.218
258	1.350	1.040	0.211	4.133

CH2 12/14/89
5 C 43% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
48	1.308	0.880	0.870	5.165
108	1.335	0.900	0.306	5.064
168	1.249	0.876	0.243	4.971
228	1.154	0.875	0.206	4.977
288	1.068	0.856	0.170	4.957

CH1 12/15/89
28 C 80% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
46	0.635	0.434	0.106	2.768
106	0.638	0.437	0.098	2.714
166	0.618	0.422	0.103	2.679
226	0.573	0.429	0.109	2.607
286	0.532	0.421	0.102	2.600

CH2 12/15/89
40 C 66% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
16	0.581	0.468	0.173	3.782
76	0.662	0.491	0.154	3.684
136	0.643	0.490	0.169	3.629
196	0.591	0.509	0.175	3.583
256	0.520	0.483	0.177	3.626

CH 1 12/18/89
40 C LOW % R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
48	1.275	0.776	0.351	2.408
108	1.178	0.734	0.398	2.315
168	1.138	0.764	0.235	2.215
228	1.096	0.779	0.251	2.255
288	0.930	0.739	0.226	2.196
528	0.711	0.704	0.129	2.054
588	0.689	0.713	0.253	2.105
648	0.627	0.721	0.283	2.115
708	0.559	0.712	0.291	2.075
768	0.498	0.691	0.196	2.065

CH 2 12/18/89
40 C 20/33% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	1.002	0.821	0.282	3.003
78	1.184	0.780	0.492	2.973
138	1.215	0.830	0.210	2.918
198	1.119	0.815	0.226	2.888
258	1.038	0.816	0.243	2.831
**	2.273	0.785	0.399	2.429
558	2.325	0.790	0.353	2.779
618	2.195	0.797	0.363	2.867
678	2.041	0.803	0.371	2.798
738	1.867	0.805	0.377	2.812

(ADDITIONAL 5ul OF EtSH INJ. @**)
(BECOME 33 @*)

CH 1 12/19/89
28 C %R.H. NR
2 PAINTED BLOCKS

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
46	0.181	0.446	0.247	2.318
106	0.190	0.429	0.233	2.256
166	0.172	0.403	0.217	2.276
226	0.168	0.404	0.207	2.039
286	0.162	0.398	0.201	2.181

CH1 12/14/89
28 C 67% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	1.382	1.093	0.270	4.335
78	1.599	1.065	0.232	4.326
138	1.592	1.086	0.196	4.269
198	1.459	1.049	0.229	4.218
258	1.350	1.040	0.211	4.133

CH2 12/14/89
5 C 43% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
48	1.308	0.880	0.870	5.165
108	1.335	0.900	0.306	5.064
168	1.249	0.876	0.243	4.971
228	1.154	0.875	0.206	4.977
288	1.068	0.856	0.170	4.957

CH1 12/15/89
28 C 80% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
46	0.635	0.434	0.106	2.768
106	0.638	0.437	0.098	2.714
166	0.618	0.422	0.103	2.679
226	0.573	0.429	0.109	2.607
286	0.532	0.421	0.102	2.600

CH2 12/15/89
40 C 66% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
16	0.581	0.468	0.173	3.782
76	0.662	0.491	0.154	3.684
136	0.643	0.490	0.169	3.629
196	0.591	0.509	0.175	3.583
256	0.520	0.483	0.177	3.626

CH 1 12/18/89
40 C LOW % R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
48	1.275	0.776	0.351	2.408
108	1.178	0.734	0.398	2.315
168	1.138	0.764	0.235	2.215
228	1.096	0.779	0.251	2.255
288	0.930	0.739	0.226	2.196
528	0.711	0.704	0.129	2.054
588	0.689	0.713	0.253	2.105
648	0.627	0.721	0.283	2.115
708	0.559	0.712	0.291	2.075
768	0.498	0.691	0.196	2.065

CH 2 12/18/89
40 C 20/33% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	1.002	0.821	0.282	3.003
78	1.184	0.780	0.492	2.973
138	1.215	0.830	0.210	2.918
198	1.119	0.815	0.226	2.888
258	1.038	0.816	0.243	2.831
**	2.273	0.785	0.399	2.429
558	2.325	0.790	0.353	2.779
618	2.195	0.797	0.363	2.867
678	2.041	0.803	0.371	2.798
738	1.867	0.805	0.377	2.812

(ADDITIONAL 5ul OF EtSH INJ. @**)
(BECOME 33 @*)

CH 1 12/19/89
28 C %R.H. NR
2 PAINTED BLOCKS

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
46	0.181	0.446	0.247	2.318
106	0.190	0.429	0.233	2.256
166	0.172	0.403	0.217	2.276
226	0.168	0.404	0.207	2.039
286	0.162	0.398	0.201	2.181

CH 2 12/29/89
28 C 90% R.H.
3 CONCRETE SLABS (2 MIN. SAMPLES)

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
46	0.438	0.413	0.121	1.330
106	0.519	0.489	0.112	1.311
166	0.541	0.418	0.111	1.342
226	0.515	0.413	0.121	1.311
286	0.499	0.416	0.113	1.310
346	0.468	0.409	0.131	1.240

CH 1 1/2/90
28 C 48% R.H.
3 CONCRETE SLABS

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
49	0.867	0.884	0.248	5.230
109	1.012	0.825	0.200	4.989
169	0.976	0.787	0.190	4.737
229	1.026	0.819	0.192	4.596
289	1.018	0.837	0.194	4.383
349	0.879	0.766	0.186	4.224
409	0.822	0.744	0.180	4.047

CH 1 12/30/89
28 C 46% R.H.
3 CONCRETE SLABS (4 MIN. SAMPLES)

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
48	0.805	0.807	0.197	0.382
108	0.998	0.791	0.157	0.241
168	1.000	0.793	0.147	0.295
228	0.895	0.755	0.141	0.318
288	0.869	0.760	0.141	0.274
348	0.779	0.725	0.139	0.196

CH 2 1/2/90
5 C 34% R.H.
3 CONCRETE SLABS

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
19	0.692	0.881	0.246	4.688
79	0.944	0.813	0.172	4.663
139	0.965	0.810	0.157	4.559
199	0.915	0.787	0.148	4.462
259	0.941	0.825	0.147	4.288
319	0.858	0.804	0.143	4.221
379	0.755	0.747	0.134	4.018
439	0.747	0.757	0.130	3.901

CH 2 12/30/89
28 C 30% R.H.
3 CONCRETE SLABS (4 MIN. SAMPLES)

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	0.281	0.797	0.345	0.801
78	0.993	0.780	0.187	0.763
138	1.087	0.794	0.176	0.794
198	1.043	0.784	0.167	0.719
258	0.958	0.768	0.165	0.783
318	0.914	0.773	0.167	0.778

CH 2 ONLY 1/3/90
5 C 32% R.H.
3 CONCRETE SLABS

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
20	0.988	0.772	0.221	1.527
50	1.128	0.733	0.171	1.898
80	1.128	0.713	0.162	1.864
110	1.080	0.693	0.153	1.848
140	1.045	0.694	0.149	1.802
170	0.961	0.679	0.145	1.817
200	0.960	0.674	0.142	1.787
230	0.893	0.657	0.140	1.785
260	0.878	0.672	0.140	1.763
290	0.831	0.664	0.139	1.716
320	0.792	0.637	0.138	1.725

CH 2 12/29/89
28 C 90% R.H.
3 CONCRETE SLABS (2 MIN. SAMPLES)

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
46	0.438	0.413	0.121	1.330
106	0.519	0.489	0.112	1.311
166	0.541	0.418	0.111	1.342
226	0.515	0.413	0.121	1.311
286	0.499	0.416	0.113	1.310
346	0.468	0.409	0.131	1.240

CH 1 1/2/90
28 C 48% R.H.
3 CONCRETE SLABS

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
49	0.867	0.884	0.248	5.230
109	1.012	0.825	0.200	4.989
169	0.976	0.787	0.190	4.737
229	1.026	0.819	0.192	4.596
289	1.018	0.837	0.194	4.383
349	0.879	0.766	0.186	4.224
409	0.822	0.744	0.180	4.047

CH 1 12/30/89
28 C 46% R.H.
3 CONCRETE SLABS (4 MIN. SAMPLES)

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
48	0.805	0.807	0.197	0.382
108	0.998	0.791	0.157	0.241
168	1.000	0.793	0.147	0.295
228	0.895	0.755	0.141	0.318
288	0.869	0.760	0.141	0.274
348	0.779	0.725	0.139	0.196

CH 2 1/2/90
5 C 34% R.H.
3 CONCRETE SLABS

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
19	0.692	0.881	0.246	4.688
79	0.944	0.813	0.172	4.663
139	0.965	0.810	0.157	4.559
199	0.915	0.787	0.148	4.462
259	0.941	0.825	0.147	4.288
319	0.858	0.804	0.143	4.221
379	0.755	0.747	0.134	4.018
439	0.747	0.757	0.130	3.901

CH 2 12/30/89
28 C 30% R.H.
3 CONCRETE SLABS (4 MIN. SAMPLES)

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	0.281	0.797	0.345	0.801
78	0.993	0.780	0.187	0.763
138	1.087	0.794	0.176	0.794
198	1.043	0.784	0.167	0.719
258	0.958	0.768	0.165	0.783
318	0.914	0.773	0.167	0.778

CH 2 ONLY 1/3/90
5 C 32% R.H.
3 CONCRETE SLABS

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
20	0.988	0.772	0.221	1.527
50	1.128	0.733	0.171	1.898
80	1.128	0.713	0.162	1.864
110	1.080	0.693	0.153	1.848
140	1.045	0.694	0.149	1.802
170	0.961	0.679	0.145	1.817
200	0.960	0.674	0.142	1.787
230	0.893	0.657	0.140	1.785
260	0.878	0.672	0.140	1.763
290	0.831	0.664	0.139	1.716
320	0.792	0.637	0.138	1.725

CH2 1/17/90 EMPTY
T=28C RH=22%

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	0.000	0.000	0.029	22.457
78	0.000	0.037	0.031	18.175
138	0.000	0.090	0.037	16.871
198	0.000	0.150	0.059	15.095
258	0.000	0.199	0.061	13.816
318	0.000	0.240	0.070	12.615
378	0.000	0.282	0.079	11.598
438	0.016	0.333	0.084	10.802
498	0.042	0.359	0.086	9.817
558	0.071	0.409	0.089	8.880
618	0.094	0.434	0.093	8.050
678	0.119	0.472	0.095	7.192
738	0.139	0.492	0.097	6.628
798	0.168	0.518	0.098	6.101
858	0.188	0.554	0.097	5.560
918	0.213	0.573	0.098	4.997
978	0.229	0.604	0.099	4.579
1038	0.252	0.628	0.099	4.147

CH2 1/19/90 8 UNPAINTED CONCRETE B
T=28C RH=25%

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	0.000	0.000	0.031	0.000
48	0.850	84.180	0.244	0.836
78	0.825	83.033	0.226	3.933
108	0.587	83.425	0.238	3.928
138	0.433	83.644	0.251	3.976
168	0.299	81.801	0.250	3.906
198	0.214	81.129	0.246	3.908
228	0.161	81.338	0.247	3.944
258	0.110	79.551	0.234	3.864
288	0.091	77.893	0.225	3.856
318	0.064	76.222	0.216	3.827
348	0.045	75.469	0.214	3.885
378	0.037	72.847	0.205	3.839
408	0.027	71.415	0.200	3.814
438	0.031	68.744	0.191	3.889
468	0.021	65.246	0.178	3.838
498	0.006	62.647	0.177	3.773
528	0.017	57.285	0.165	3.791
558	0.016	53.432	0.160	3.772
588	0.015	48.648	0.156	3.704
618	0.013	41.400	0.147	3.800

1/18/90
CH 2 ONLY EMPTY
DYNAMIC 3 cccyln. 1L dil.
28 C 98% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	-	0.031	0.088	36.354
78	-	0.064	0.054	33.519
138	-	0.111	0.049	33.117
198	-	0.161	0.058	32.184
258	-	0.217	0.067	30.841
318	-	0.250	0.076	29.970
378	0.007	0.304	0.085	29.117
438	0.031	0.360	0.093	28.597
498	0.060	0.415	0.098	27.723
558	0.081	0.438	0.100	27.044
618	0.112	0.481	0.105	26.182
678	0.131	0.516	0.108	25.249
738	-	-	-	24.059
798	-	TAPE ST	-	23.538
858	-	-	-	22.503
918	0.301	0.710	0.125	21.810
978	0.338	0.709	0.126	20.535
1038	1.072	0.742	0.129	20.039
1098	1.049	0.781	0.132	19.087

1/22/90
28 C 19% R.H.
CH 2 ONLY

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
10	-	2.780	0.036	-
70	-	1.244	0.048	2.599
130	-	1.362	0.060	2.582
190	-	1.375	0.068	2.653
250	-	1.498	0.080	2.624
310	-	1.593	0.089	2.601
370	-	1.624	0.095	2.656
430	-	1.644	0.098	2.590
490	-	1.759	0.105	2.570
550	-	1.788	0.108	2.522
610	-	1.786	0.109	2.612
670	-	1.868	0.113	2.595
730	-	1.997	0.118	2.500
790	0.017	2.091	0.122	2.436
850	0.016	2.154	0.124	2.441
910	0.037	2.287	0.133	2.456

CH2 1/17/90 EMPTY
T=28C RH=22%

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	0.000	0.000	0.029	22.457
78	0.000	0.037	0.031	18.175
138	0.000	0.090	0.037	16.871
198	0.000	0.150	0.059	15.095
258	0.000	0.199	0.061	13.816
318	0.000	0.240	0.070	12.615
378	0.000	0.282	0.079	11.598
438	0.016	0.333	0.084	10.802
498	0.042	0.359	0.086	9.817
558	0.071	0.409	0.089	8.880
618	0.094	0.434	0.093	8.050
678	0.119	0.472	0.095	7.192
738	0.139	0.492	0.097	6.628
798	0.168	0.518	0.098	6.101
858	0.188	0.554	0.097	5.560
918	0.213	0.573	0.098	4.997
978	0.229	0.604	0.099	4.579
1038	0.252	0.628	0.099	4.147

CH2 1/19/90 8 UNPAINTED CONCRETE B
T=28C RH=25%

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	0.000	0.000	0.031	0.000
48	0.850	84.180	0.244	0.836
78	0.825	83.033	0.226	3.933
108	0.587	83.425	0.238	3.928
138	0.433	83.644	0.251	3.976
168	0.299	81.801	0.250	3.906
198	0.214	81.129	0.246	3.908
228	0.161	81.338	0.247	3.944
258	0.110	79.551	0.234	3.864
288	0.091	77.893	0.225	3.856
318	0.064	76.222	0.216	3.827
348	0.045	75.469	0.214	3.885
378	0.037	72.847	0.205	3.839
408	0.027	71.415	0.200	3.814
438	0.031	68.744	0.191	3.889
468	0.021	65.246	0.178	3.838
498	0.006	62.647	0.177	3.773
528	0.017	57.285	0.165	3.791
558	0.016	53.432	0.160	3.772
588	0.015	48.648	0.156	3.704
618	0.013	41.400	0.147	3.800

1/18/90
CH 2 ONLY EMPTY
DYNAMIC 3 cccyln. 1L dil.
28 C 98% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	-	0.031	0.088	36.354
78	-	0.064	0.054	33.519
138	-	0.111	0.049	33.117
198	-	0.161	0.058	32.184
258	-	0.217	0.067	30.841
318	-	0.250	0.076	29.970
378	0.007	0.304	0.085	29.117
438	0.031	0.360	0.093	28.597
498	0.060	0.415	0.098	27.723
558	0.081	0.438	0.100	27.044
618	0.112	0.481	0.105	26.182
678	0.131	0.516	0.108	25.249
738	-	-	-	24.059
798	-	TAPE ST	-	23.538
858	-	-	-	22.503
918	0.301	0.710	0.125	21.810
978	0.338	0.709	0.126	20.535
1038	1.072	0.742	0.129	20.039
1098	1.049	0.781	0.132	19.087

1/22/90
28 C 19% R.H.
CH 2 ONLY

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
10	-	2.780	0.036	-
70	-	1.244	0.048	2.599
130	-	1.362	0.060	2.582
190	-	1.375	0.068	2.653
250	-	1.498	0.080	2.624
310	-	1.593	0.089	2.601
370	-	1.624	0.095	2.656
430	-	1.644	0.098	2.590
490	-	1.759	0.105	2.570
550	-	1.788	0.108	2.522
610	-	1.786	0.109	2.612
670	-	1.868	0.113	2.595
730	-	1.997	0.118	2.500
790	0.017	2.091	0.122	2.436
850	0.016	2.154	0.124	2.441
910	0.037	2.287	0.133	2.456

CH2 1/22/90 8 UNPAINTED CONCRETE BLOCK 1/31/90

T=28C RH=25%

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
18	0.000	0.000	0.014	0.000
48	0.465	85.330	0.300	0.347
78	0.429	86.448	0.266	0.383
108	0.253	80.956	0.248	3.750 a
138	0.169	85.822	0.259	3.857
168	0.103	86.027	0.255	3.853
198	0.057	84.101	0.239	3.876
228	0.033	83.195	0.227	3.851
258	0.017	82.547	0.217	3.782
288	0.010	84.143	0.213	3.860

CH 2 ONLY 8 BLOCKS

28 C 17% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
28	0.012	0.199	0.055	21.155
58	0.025	0.428	0.094	19.671
88	0.068	0.674	0.123	19.037
118	0.098	0.845	0.143	18.169
148	0.196	1.043	0.159	17.579
178	0.239	1.246	0.177	16.410
208	0.292	1.450	0.193	15.704
238	0.335	1.628	0.210	15.182
268	0.365	1.806	0.226	14.524

a SECOND INJECTION OF SF6 WAS MADE

1-30-90

28 C 10% R.H.

DYNAMIC

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
28	0.000	0.188	0.044	23.849
58	0.027	0.383	0.085	22.485
88	0.098	0.580	0.114	21.976
118	0.243	0.790	0.130	20.571
148	0.425	0.940	0.143	19.578
178	0.617	1.181	0.152	18.717
208	0.785	1.355	0.162	17.908
238	0.963	1.519	0.169	17.179
268	1.106	1.668	0.175	16.415
298	1.335	1.889	0.181	15.825
328	1.542	2.094	0.187	15.190

2/1/90

CH 2 ONLY 8 BLOCKS

28 C 63% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
28	0.027	0.463	0.090	26.159
58	0.034	0.711	0.144	25.860
88	0.071	0.937	0.172	25.952
118	0.177	1.130	0.188	24.663
148	0.311	1.335	0.196	24.538
178	0.422	1.540	0.210	23.872
208	-	-	0.244	23.441
238	-----OUT OF-----			
283	0.632	2.287	0.305	21.855
313	0.722	2.454	0.289	21.274

1-30-90

28 C 11% R.H.

DYNAMIC DUPLICATE

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
28	0.021	0.244	0.064	25.748
58	0.126	0.449	0.084	24.970
88	0.282	0.652	0.100	23.485
118	0.458	0.829	0.109	22.627
148	0.637	1.003	0.118	22.064
178	0.813	1.181	0.126	21.010
208	0.990	1.359	0.133	20.100
238	1.139	1.514	0.141	19.005
268	1.300	1.671	0.150	18.030
298	1.450	1.827	0.157	17.520
328	1.488	1.867	0.161	14.832

2/2/90

CH 2 ONLY 8 BLOCKS

28 C 64% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
28	0.009	0.192	0.068	22.956
58	0.028	0.421	0.118	22.662
88	0.081	0.634	0.144	21.879
118	0.187	0.859	0.156	21.363
148	0.332	1.055	0.165	20.765
178	0.474	1.281	0.178	20.724
208	0.558	1.469	0.194	20.006
238	0.649	1.631	0.209	19.374
268	0.732	1.890	0.225	19.482
298	0.739	2.105	0.247	18.645

2/3/90
CH 2 ONLY 8 BLOCKS
8 MIN. SAMPLES
28 C 23% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
32	-	0.402	0.091	2.850
92	0.012	1.245	0.236	2.725
152	0.126	1.953	0.330	2.522
212	0.311	2.906	0.401	2.398
272	0.457	3.742	0.473	2.284
332	0.549	4.571	0.553	2.148
392	0.613	5.361	0.631	2.080
452	0.640	6.085	0.694	2.001
512	0.696	6.992	0.781	1.968
572	0.704	7.621	0.843	1.813
632	0.728	8.412	0.909	1.713
692	0.744	9.057	0.952	1.626

2-7-90
28 C 65% R.H.
CH 2 ONLY

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
42	0.019	0.639	0.166	31.435
102	0.330	1.551	0.353	30.464
162	1.242	2.506	0.273	29.871
222	2.150	3.409	0.451	28.489
282	2.978	4.274	0.361	27.369
342	3.796	5.168	0.517	26.769

2-8-90
28 C 85% R.H.
CH 2 ONLY

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
42	0.000	0.509	0.096	25.567
102	0.296	1.408	0.162	20.393
162	1.064	2.146	0.251	16.309
222	-	2.825	0.272	13.136
282	2.358	3.455	0.316	10.424
342	2.800	3.855	0.350	8.104

2/5/90
CH 2 ONLY 3 SLABS
28 C 30% R.H.

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
42	-	0.598	0.151	12.671
102	0.154	1.385	0.300	-
162	0.843	2.201	0.335	10.629
222	1.531	2.909	0.341	9.161
282	2.284	3.765	0.367	8.115
342	2.901	4.475	0.403	-

2/9/90
3 CONCRETE SLABS
T=28 C %RH=45

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
42	0.010	0.627	0.179	23.968
102	0.406	1.469	0.274	20.079
162	1.309	2.261	0.293	16.518
222	2.010	2.927	0.320	13.749
282	2.647	3.572	0.336	11.409
342	3.136	4.103	0.362	9.593
402	3.503	4.573	0.385	7.635

2-6-90
28 C 13% R.H.
3 CONCRETE SLABS

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
42	0.000	0.555	0.158	18.445
102	0.177	1.354	0.308	16.159
162	0.836	2.146	0.328	14.337
222	1.525	2.846	0.340	12.229
282	2.173	3.598	0.370	10.633
342	2.598	4.181	0.394	9.262

2-23-90 (OFF @ 63, ON @ 243)
FAN TEST

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
33	0.216	0.896	0.081	5.569
63	0.274	0.895	0.076	5.530
93	0.278	0.851	0.075	5.494
123	0.273	0.885	0.077	5.457
153	0.261	0.875	0.079	5.450
183	0.247	0.881	0.083	5.441
213	0.238	0.881	0.086	5.425
243	0.222	0.886	0.093	5.467
273	0.211	0.889	0.090	5.464

1-90

C
PAINTED WALL BOARD
TIME EtSH C3H8 DEDS SF6
(min) (ppm) (ppm) (ppm) (ppb)

14	0.238	0.945	0.227	0.358
14	0.188	0.961	0.227	0.388
14	0.112	0.956	0.227	0.263
14	0.059	0.945	0.227	0.180
12	2nd injection			
14	0.563	0.956	0.227	0.211
12	fan off			
14	0.378	0.951	0.317	0.098
14	0.221	0.940	0.327	0.194
14	0.139	0.961	0.327	0.032
14	0.074	0.955	0.325	0.982
14	0.045	0.953	0.316	0.950
14	0.019	0.949	0.306	0.934
17	fan on/3rd injection			
14	0.849	0.950	0.326	0.906
14	0.545	0.947	0.435	0.946
14	0.297	0.935	0.456	0.962
14	0.158	0.928	0.466	0.890
14	0.089	0.928	0.466	0.934

3-13-90

28 C MED. %R.H.
PAINTED WALL BOARD
TIME EtSH C3H8 DEDS SF6
(min) (ppm) (ppm) (ppm) (ppb)

24	0.065	0.869	0.142	10.628
54	0.119	0.873	0.133	10.421
84	0.138	0.867	0.124	10.449
114	0.134	0.865	0.121	10.374
144	0.125	0.857	0.116	10.359
174	0.125	0.851	0.107	10.456
204	0.110	0.828	0.109	10.508
234	0.097	0.862	0.110	10.208
264	0.091	0.859	0.106	10.112
294	0.076	0.859	0.113	10.301
324	0.068	0.852	0.103	10.188
354	0.062	0.850	0.100	10.208
384	0.057	0.851	0.107	10.250
414	0.050	0.844	0.106	10.117

3-22-90

28 C 71% R.H.
PAINTED WALL BOARD
TIME EtSH C3H8 DEDS SF6
(min) (ppm) (ppm) (ppm) (ppb)

16	2.479	1.167	0.565	-
46	2.774	1.190	0.503	16.029
76	2.834	1.182	0.442	15.951
106	2.716	1.188	0.432	15.846
136	2.555	1.107	0.432	15.858
166	2.318	1.163	0.424	15.818
196	2.128	1.163	0.428	15.884
226	1.910	1.148	0.427	15.824
256	1.747	1.148	0.433	15.621
286	1.619	1.142	0.442	15.866
316	1.479	1.134	0.445	15.856
346	1.330	1.128	0.444	15.522
376	1.218	1.128	0.452	15.684
406	1.106	1.118	0.457	15.471
436	1.000	1.125	0.461	15.745
466	0.924	1.111	0.465	15.492
496	0.830	1.109	0.474	15.481
526	0.723	1.104	0.470	15.348
556	0.663	1.098	0.477	15.687

12-90

C LGW %R.H.
PAINTED WALL BOARD
TIME EtSH C3H8 DEDS SF6
(min) (ppm) (ppm) (ppm) (ppb)

15	0.055	0.937	0.127	0.167
15	0.118	0.930	0.087	0.350
15	0.152	0.921	0.087	0.115
15	0.136	0.907	0.087	0.147
15	0.129	0.903	0.087	0.238
15	0.126	0.899	0.087	0.198
15	0.105	0.879	0.087	0.176
15	0.098	0.861	0.087	0.050
15	0.085	0.830	0.087	0.049
15	0.069	0.821	0.087	0.067
15	0.061	0.821	0.087	0.148
15	0.055	0.823	0.087	0.172
15	0.044	0.834	0.087	0.074
15	0.042	0.823	0.087	0.010

1-90

C

PAINTED WALL BOARD

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS SF6 (ppb)
------------	------------	------------	----------------

14	0.238	0.945	0.227.358
14	0.188	0.961	0.227.388
14	0.112	0.956	0.227.263
14	0.059	0.945	0.227.180
12	2nd injection		
14	0.563	0.956	0.227.211
12	fan off		
14	0.378	0.951	0.317.098
14	0.221	0.940	0.327.194
14	0.139	0.961	0.327.032
14	0.074	0.955	0.325.982
14	0.045	0.953	0.316.950
14	0.019	0.949	0.306.934
17	fan on/3rd injection		
14	0.849	0.950	0.326.906
14	0.545	0.947	0.435.946
14	0.297	0.935	0.456.962
14	0.158	0.928	0.466.890
14	0.089	0.928	0.416.934

12-90

C LGW 7R.H.

PAINTED WALL BOARD

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS SF6 (ppb)
------------	------------	------------	----------------

15	0.055	0.937	0.127.167
15	0.118	0.930	0.087.350
15	0.152	0.921	0.087.115
15	0.136	0.907	0.087.147
15	0.129	0.903	0.087.238
15	0.126	0.899	0.087.198
15	0.105	0.879	0.087.176
15	0.098	0.861	0.087.050
15	0.085	0.830	0.087.049
15	0.069	0.821	0.087.067
15	0.061	0.821	0.087.148
15	0.055	0.823	0.087.172
15	0.044	0.834	0.087.074
15	0.042	0.823	0.087.010

3-13-90

28 C MED. 7R.H.

PAINTED WALL BOARD

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
------------	------------	------------	------------	-----------

24	0.065	0.869	0.142	10.628
54	0.119	0.873	0.133	10.421
84	0.138	0.867	0.124	10.449
114	0.134	0.865	0.121	10.374
144	0.125	0.857	0.116	10.359
174	0.125	0.851	0.107	10.456
204	0.110	0.828	0.109	10.508
234	0.097	0.862	0.110	10.208
264	0.091	0.859	0.106	10.112
294	0.076	0.859	0.113	10.301
324	0.068	0.852	0.103	10.188
354	0.062	0.850	0.100	10.208
384	0.057	0.851	0.107	10.250
414	0.050	0.844	0.106	10.117

3-22-90

28 C 71% R.H.

PAINTED WALL BOARD

TIME (min)	EtSH (ppm)	C3H8 (ppm)	DEDS (ppm)	SF6 (ppb)
------------	------------	------------	------------	-----------

16	2.479	1.167	0.565	-
46	2.774	1.190	0.503	16.029
76	2.834	1.182	0.442	15.951
106	2.716	1.188	0.432	15.846
136	2.555	1.107	0.432	15.858
166	2.318	1.163	0.424	15.818
196	2.128	1.163	0.428	15.884
226	1.910	1.148	0.427	15.824
256	1.747	1.148	0.433	15.621
286	1.619	1.142	0.442	15.866
316	1.479	1.134	0.445	15.856
346	1.330	1.128	0.444	15.522
376	1.218	1.128	0.452	15.684
406	1.106	1.118	0.457	15.471
436	1.000	1.125	0.461	15.745
466	0.924	1.111	0.465	15.492
496	0.830	1.109	0.474	15.481
526	0.723	1.104	0.470	15.348
556	0.663	1.098	0.477	15.687

```
program CPSC;
```

```
ar
```

```
Pause,QLP,CLP,Height,Width,Length,Exchange,time,steps:Real;  
Floor_area,Wall_area,Volume,Surface_to_Vwall,Surface_to_Vfloor:Real;  
Kfloor,Kwall,Kstar,Qnot,a1,a2,b1,b2,Interval,steptime:Real;  
ConcE,ConcC,Etsh_time,C3H8_time,ELtime:Real;  
floor,wall,choice,FirstChar,Column,Row,Depth,RHtemp:Integer;  
T,RH:Integer;  
CH,KBD,Answer :CHAR;
```

```
value:array[5..40,1..9,1..5] of REAL;
```

```
label spot;  
label spot2;
```

```
begin
```

```
    {Set default values and k-values}
```

```
T:=60;  
RH:=60;  
QLP:=35000.0;  
CLP:=3.0;  
Height:=8.0;  
Width:=30.0;  
Length:=40.0;  
Exchange:=0.1;  
time:=12.0;  
steps:=24.0;  
floor:=1;  
wall:=1;
```

```
kvalue[5,1,1]:=0;  
kvalue[5,1,2]:=1.0;  
kvalue[5,1,3]:=0.5;  
kvalue[5,1,4]:=0.1;  
kvalue[5,1,5]:=1.0;  
kvalue[5,6,1]:=0;  
kvalue[5,6,2]:=1.0;  
kvalue[5,6,3]:=0.5;  
kvalue[5,6,4]:=0.1;  
kvalue[5,6,5]:=1.0;  
kvalue[5,9,1]:=0;  
kvalue[5,9,2]:=1.0;  
kvalue[5,9,3]:=0.5;  
kvalue[5,9,4]:=0.1;  
kvalue[5,9,5]:=1.0;  
kvalue[28,1,1]:=0;  
kvalue[28,1,2]:=1.0;  
kvalue[28,1,3]:=0.5;  
kvalue[28,1,4]:=0.1;  
kvalue[28,1,5]:=1.0;  
kvalue[28,6,1]:=0;  
kvalue[28,6,2]:=1.0;  
kvalue[28,6,3]:=0.5;  
kvalue[28,6,4]:=0.1;  
kvalue[28,6,5]:=1.0;  
kvalue[28,9,1]:=0;  
kvalue[28,9,2]:=1.0;  
kvalue[28,9,3]:=0.5;  
kvalue[28,9,4]:=0.1;  
kvalue[28,9,5]:=1.0;
```

```
program CPSC;
```

```
ar
```

```
Pause,QLP,CLP,Height,Width,Length,Exchange,time,steps:Real;  
Floor_area,Wall_area,Volume,Surface_to_Vwall,Surface_to_Vfloor:Real;  
Kfloor,Kwall,Kstar,Qnot,a1,a2,b1,b2,Interval,steptime:Real;  
ConcE,ConcC,Etsh_time,C3H8_time,ELtime:Real;  
floor,wall,choice,FirstChar,Column,Row,Depth,RHtemp:Integer;  
T,RH:Integer;  
CH,KBD,Answer :CHAR;
```

```
value:array[5..40,1..9,1..5] of REAL;
```

```
label spot;  
label spot2;
```

```
begin
```

```
  {Set default values and k-values}
```

```
T:=60;  
RH:=60;  
QLP:=35000.0;  
CLP:=3.0;  
Height:=8.0;  
Width:=30.0;  
Length:=40.0;  
Exchange:=0.1;  
time:=12.0;  
steps:=24.0;  
floor:=1;  
wall:=1;
```

```
kvalue[5,1,1]:=0;  
kvalue[5,1,2]:=1.0;  
kvalue[5,1,3]:=0.5;  
kvalue[5,1,4]:=0.1;  
kvalue[5,1,5]:=1.0;  
kvalue[5,6,1]:=0;  
kvalue[5,6,2]:=1.0;  
kvalue[5,6,3]:=0.5;  
kvalue[5,6,4]:=0.1;  
kvalue[5,6,5]:=1.0;  
kvalue[5,9,1]:=0;  
kvalue[5,9,2]:=1.0;  
kvalue[5,9,3]:=0.5;  
kvalue[5,9,4]:=0.1;  
kvalue[5,9,5]:=1.0;  
kvalue[28,1,1]:=0;  
kvalue[28,1,2]:=1.0;  
kvalue[28,1,3]:=0.5;  
kvalue[28,1,4]:=0.1;  
kvalue[28,1,5]:=1.0;  
kvalue[28,6,1]:=0;  
kvalue[28,6,2]:=1.0;  
kvalue[28,6,3]:=0.5;  
kvalue[28,6,4]:=0.1;  
kvalue[28,6,5]:=1.0;  
kvalue[28,9,1]:=0;  
kvalue[28,9,2]:=1.0;  
kvalue[28,9,3]:=0.5;  
kvalue[28,9,4]:=0.1;  
kvalue[28,9,5]:=1.0;
```

```

Readln(T);
Writeln('Relative Humidity (%) ?');
Readln(RH);
Writeln('LP-gas leak rate (Btu/h) ?');
Readln(QLP);
Writeln('EtSH concentration in the LP-gas (ppm) ?');
Readln(CLP);
Writeln('Basement ceiling height (ft) ?');
Readln(Height);
Writeln('Basement floor width (ft) ?');
Readln(Width);
Writeln('Basement floor length (ft) ?');
Readln(Length);
Writeln('Clean air exchange rate (1/h) ?');
Readln(Exchange);
Writeln('Duration of simulation (h) ?');
Readln(time);
Writeln('Number of steps ?');
Readln(steps);
Writeln; Writeln;
Writeln('Please select floor material');
Writeln;
Writeln(' 1 = Poured concrete');
Writeln(' 0 = Other');
Readln(floor);

Writeln;
Writeln('Please select wall material');
Writeln;
Writeln(' 1 = Plain concrete block');
Writeln(' 2 = Painted concrete block');
Writeln(' 3 = Painted drywall');
Writeln(' 0 = Other');
Readln(wall);
Writeln;Writeln;Writeln;Writeln;Writeln;Writeln;
Writeln('You have entered the following parameters. ');
Writeln;
Writeln;
Writeln('Room Temperature           ',T,' (F)');
Writeln('Relative Humidity           ',RH,' (%)');
Writeln('LP-gas leak rate            ',QLP:6:2,' (Btu/h)');
Writeln('EtSH concentration in the LP-gas ',CLP:3:2,' (ppm)');
Writeln('Basement ceiling height     ',Height:2:2,' (ft)');
Writeln('Basement floor width        ',Width:3:2,' (ft)');
Writeln('Basement floor length       ',Length:3:2,' (ft)');
Writeln('Clean air exchange rate     ',Exchange:2:4,' (1/h)');
Writeln('Duration of simulation      ',time:3:1,' (h)');
Writeln('Number of steps             ',steps:3:1);
Writeln;
IF floor=1 THEN Writeln('The floor is poured concrete');
IF floor=0 THEN Writeln('The floor is something other than poured concrete');
Writeln;
IF wall=1 THEN Writeln('The walls are plain concrete block');
IF wall=2 THEN Writeln('The walls are painted concrete block');
IF wall=3 THEN Writeln('The walls are painted drywall');
IF wall=0 THEN Writeln('The walls are made of a non-specific material');
Writeln;Writeln;Writeln;
Writeln('Do you wish to re-enter this data before continuing?');
Readln(answer);
IF answer='y' THEN GOTO spot;
IF answer='Y' THEN GOTO spot;

```

```

Readln(T);
Writeln('Relative Humidity (%) ?');
Readln(RH);
Writeln('LP-gas leak rate (Btu/h) ?');
Readln(QLP);
Writeln('EtSH concentration in the LP-gas (ppm) ?');
Readln(CLP);
Writeln('Basement ceiling height (ft) ?');
Readln(Height);
Writeln('Basement floor width (ft) ?');
Readln(Width);
Writeln('Basement floor length (ft) ?');
Readln(Length);
Writeln('Clean air exchange rate (1/h) ?');
Readln(Exchange);
Writeln('Duration of simulation (h) ?');
Readln(time);
Writeln('Number of steps ?');
Readln(steps);
Writeln; Writeln;
Writeln('Please select floor material');
Writeln;
Writeln(' 1 = Poured concrete');
Writeln(' 0 = Other');
Readln(floor);

Writeln;
Writeln('Please select wall material');
Writeln;
Writeln(' 1 = Plain concrete block');
Writeln(' 2 = Painted concrete block');
Writeln(' 3 = Painted drywall');
Writeln(' 0 = Other');
Readln(wall);
Writeln;Writeln;Writeln;Writeln;Writeln;Writeln;
Writeln('You have entered the following parameters. ');
Writeln;
Writeln;
Writeln('Room Temperature           ', T, ' (F)');
Writeln('Relative Humidity           ', RH, ' (%)');
Writeln('LP-gas leak rate            ', QLP:6:2, ' (Btu/h)');
Writeln('EtSH concentration in the LP-gas ', CLP:3:2, ' (ppm)');
Writeln('Basement ceiling height     ', Height:2:2, ' (ft)');
Writeln('Basement floor width        ', Width:3:2, ' (ft)');
Writeln('Basement floor length       ', Length:3:2, ' (ft)');
Writeln('Clean air exchange rate     ', Exchange:2:4, ' (1/h)');
Writeln('Duration of simulation       ', time:3:1, ' (h)');
Writeln('Number of steps              ', steps:3:1);
Writeln;
IF floor=1 THEN Writeln('The floor is poured concrete');
IF floor=0 THEN Writeln('The floor is something other than poured concrete');
Writeln;
IF wall=1 THEN Writeln('The walls are plain concrete block');
IF wall=2 THEN Writeln('The walls are painted concrete block');
IF wall=3 THEN Writeln('The walls are painted drywall');
IF wall=0 THEN Writeln('The walls are made of a non-specific material');
Writeln;Writeln;Writeln;
Writeln('Do you wish to re-enter this data before continuing?');
Readln(answer);
IF answer='y' THEN GOTO spot;
IF answer='Y' THEN GOTO spot;

```



```
ELtime:=(-1/b2)*(ln(1-0.021*b2/a2));
```

```
WriteLn('Time to reach 90% EtSH concentration = ',EtSH_time:4:1,' (hrs.)');
```

```
WriteLn;
```

```
WriteLn('Time to reach 90% C3H8 concentration = ',C3H8_time:4:1,' (hrs.)');
```

```
WriteLn;
```

```
WriteLn('Time to reach 2.1% C3H8 (explosive limit) = ',ELtime:4:1,' (hrs.)');
```

```
Read(KBD,CH);
```

```
_nd.
```

```
ELtime:=(-1/b2)*(ln(1-0.021*b2/a2));
```

```
writeln('Time to reach 90% EtSH concentration = ',EtSH_time:4:1,' (hrs.)');
```

```
writeln;
```

```
writeln('Time to reach 90% C3H8 concentration = ',C3H8_time:4:1,' (hrs.)');
```

```
writeln;
```

```
writeln('Time to reach 2.1% C3H8 (explosive limit) = ',ELtime:4:1,' (hrs.)');
```

```
Read(KBD,CH);
```

```
_nd.
```