ALASKA LEGISLATURE COMMITTEE FILES 1983 - 1984 8672
2728 SLC HB 508 (FILE 2)
2728

slowly into water after days or weeks of pipe use, and to be independent of whether the initial joint was "good" or "bad". Specifically, as shown in Chart 2 (p. 30) and Montgomery Tables 3-8 through 3-12, a general trend is evident for the increased appearance of these compounds with time, whereas the solvent concentrations tend to diminish with time.

The full extent of the possible health effects of these two compounds is undetermined. A summary of the available literature study is included as Appendix VII. This initial review suggests that little human health hazard is posed by the compounds at the levels we have measured. Accumulations 2-3 times above those detected in our model systems might pose a hazard, since adverse reproductive effects and cancer have been reported at high doses (see Appendix VII and X). Since our simulation study showed little or no phthalates after 30 days of "normal" use, we are fairly confident that they are not a source of concern under normal use conditions. Since these relatively insoluble compounds appear to migrate from the pipe itself it is possible that appreciable build-ups could occur if the plumbing systems were left stagnant for a protracted period. This possibility indicates the need for formal notice to a home owner to take minimal precautions on re-entering a house in which the plumbing system has been out of use for a prolonged period.

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY EDMUND G. BROWN JR., Gover

DEPARTMENT OF HEALTH SERVICES / DEPARTMENT OF INDUSTRIAL RELATIONS
2151 BERKELEY WAY
BERKELEY, CA 94704
(415) 540-2115

February 2, 1981

Patrick J. Higgins
Technical Director
National Association of
Plumbing, Heating, Cooling Contractors
1016 20th Street, N.W.
Washington, DC 20036

Dear Mr. Higgins:

Thank you for your letter of January 19 inviting me to clarify the record on plastic pipe evaluations performed by this office and subsequent policy statements released by the Department of Health. Taking your attachments in order, I have the following comments:

a. Purported Chapter 3, RESULTS section of the Montgomery Report
This section is actually the findings of the preliminary Montgomery report As stated in the first line, it includes only tables 3-1 through 3-16, in fact there were 19 tables in the final report. Table 19 in particular, contained the highest readings on chemicals of concern to us, and substantially changed our analysis of the final results. (Table 19 attached for comparison).

b. Toxicological Analysis
This analysis was presented to us as an unsigned and unreferenced memo from John Stohlton at the end of September before the final Montgomery data were available for review. It is flawed, incomplete and does not reflect accurately our own interpretation of the findings, even from the preliminary material we had for review. Specifically, we found that solvent levels did exceed recommended values for some of the static tests (refer to our report of October 17, 1980). This analysis and the accompanying "RESULTS" section severely distort the actual findings of the report.

c. Summary Analysis Final Report by HFSIS
This analysis reflects the opinion of an unidentified industry group of toxicologists concerning our interpretations of the same data. We would have much preferred an independent analysis of the data itself. As it is, this so-called summary analysis contains both comment and recapitulation of selected aspects of our report. It is not an accurate description of our findings. We expressed considerable concern about the finding of excess levels of chloroform and carbon tetrachloride (data presented in Appendix II of our report). Specifically, we stated (p. 37 that "The significance of these recommendations is underscored by the discovery of excessive amounts of volatile organics in pipes..." Additionally, as you can see from page ii of our executive summary, section B. Consumer Health, we reached totally different conclusions regarding potential risks than did this review committee; we were clearly convinced that the risks were real and needed to be abated. We also resolved the issue of phthalates by repeat testing and concluded that the evidence pointed to the pipes or a combination of pipes and solvents as the source of DEHP and not laboratory artifact.

d. News Release of October,8, 1980

This release is factually in error and seriously misleading regarding our findings: we did not find that "in all cases the levels of solvent were well below the 'Suggested No Adverse Response Levels'..."; quite the contrary, the excesses we did find were taken as indicative of the need to require further flushing to reduce the levels to our proposed limits. Moreover, by mixing the Task Force findings with our own, the news release leaves the possible impression that we are the "task force" in question, when in fact they are an industry group whose findings differ significantly from our own.

Lastly, the executive summary that you sent to me is indeed the summary that is in the final report and reflects the conclusions of the Department of Health Services as a whole. Perhaps you could allude to this summary and the present letter as a way of setting the record straight. I strongly believe that it needs this type of action, and leave it to your obvious concern for objectivity and the truth to determine its exact content.

Sincerely,

Marc Lappé

Marc Lappe, Ph.D.
Chief
Hazard Evaluation System &
Information Service

ATTACHMENTS

cc: Ephraim Kahn, M.D., Chief
Epidemiological Studies Section

Kathleen Acree, M.D., Chief
Preventive Medical Services Branch

NATIONAL ASSOCIATION OF PLUMBING · HEATING · COOLING CONTRACTORS

1016 20th STREET N.W., WASHINGTON, D.C. 20036 • (202) 331-7675

January 19, 1981

Dr. Marc Lappe
Chief of Hazard Evaluation
System and Information Service
Department of Health Service Department
of Industrial Relations California
2151 Berkeley Way
Berkeley, California 94704

Dear Dr. Lappe:

With regard to the issue of the use of plastic pipe in potable water systems, I would like to reiterate the concern of our association in the presentation of the facts issued by your department as to the dangers of solvent cements in plastic piping systems for potable water use. As I stated in our telephone conservation, there was a press release issued by the Plastic Pipe Fittings Association which stated entitled "Plastic Solvents Passed Health Tests". Our association printed this press release which prompted one of our local associations to complain as to the reliability of the report data. Further investigation into the article prompted us to contact your office at the request of Chuck Lott, Executive Director of our Oregon state association. We also contacted the source of the press release, the Plastic Pipe and Fittings Association of Glen Ellyn Illinois to receive additional information relative to their analysis of your toxicological report.

The following materials have been forwarded to our offices from PPFA regarding the total issue of the safety of plastic pipe potable water systems. The first item identified by the letter "A" at the top of the report, apparently is a chemical analysis of the analytical tests conducted by Montgomery Laboratories. As item A appears incomplete and the necessary tables for item A are not attached, therefore, we cannot draw any conclusions or derive any information from this material. Item "B", appears to be a toxicological analysis of the Montgomery report. This analysis was prepared by a toxicological task force representing the Plastic Pipe and Fittings Association. The PPFA representatives apparently analyzed the Montgomery findings and generated their own conclusions. Item "C" is a summary analysis also prepared by the PPFA toxicological task force reflecting their conclusions of your report entitled the "Final Report on the Potential Health Hazards Associated with the Use of Plastic Pipe in Potable Water Systems". This task force's conclusions relative to your report are issued in item C. It is interesting to note how your report is reworded or interpreted to mean something rather different from what was generated by your organization.

Finally, in item "D", we see the press release circulated to the industry relative to plastic pipe solvents entitled, "Plastic Pipe Solvents Pass Health Tests". It was from this press release that we received so many controversial letters.

You will note sequentially that items "A" and "B" were first to be released in September of 1980, item "D" apparently was generated from items "A" and "B" and released on October 8th of 1980. Item "C" was generated in November of 1980.

We are very concerned to hear your comments relative to items "B", "C", and "D". From your conversation, you appear to be rather distressed at the possibility of misrepresentation of information by PPFA. It is our prime concern to set the record straight, therefore, we would appreciate your comments on items "B", "C" and "D". If such findings are a misrepresentation of the facts, we would like to publish your comments in our monthly newsletter to "right the wrong". We appreciate any and all additional background information so that we can produce a factual report which relates the truth of the matter.

We thank you for your concern about and prompt attention of our requests and we look forward to working with you and your organization in the resolution of this issue.

Best personal regards,

Patrick J. Higgins

Patrick J. Higgins
Technical Director

Enclosures

cc: A. T. Strother
Don Paull
Con Mahoney
Stuart Minor
The NAPHCC Technical Committee

PJH:jsj
T81005

TABLE 3-19

VOLATILE HALOGENATED COMPOUNDS IN TWO WEEKS STATIC SAMPLES

CONCENTRATION (µg/l)

System/Joint/Water	Chloroform	Dichlorobromomethane	Dibromochloromethane	Bromoform	Carbon Tetrachloride	Tetrachloroethene	Trichloroethene
CPVC/Good/Hot Pasadena	92	3,0	2.4	0.7	32	9.7	0.7
CPVC/Poor/Hot Pasadena	69	3.3	3.0	1.3	21	5.4	0.3
CPVC/Good/Cold Pasadena	78	3.5	2.9	0.9	32	7.6	0.7
CPVC/Poor/Cold Pasadena	146	3.3	2.6	0.8	50	7.5	0.7
PVC/Good/State Project	3.1	0.2	0.1	ND	0.4	0.1	4.0
PVC/Good/Colorado River	25	12	11	2.4	0.5	0.1	1.1

STATE OF CALIFORNIA STATE AND CONSUMER SERVICES AGENCY EDMUND G BROWN JR, Governor

DEPARTMENT OF
Consumer Affairs
(916) 445-4465
1020 N STREET, SACRAMENTO, CALIFORNIA 95814

November 21, 1980

Myron Moskovitz
Chairman
Commission on Housing
and Community Development
921 Tenth Street
Sacramento, California 95814

Dear Chairman Moskovitz:

I am writing to urge the Housing and Community Development Commission not to authorize the expanded use of any kind of plastic pipe at your meeting next Monday, but rather to prepare an Environmental Impact Report before deciding whether or not to approve the use of the pipe for residential drinking water.

The Department of Health Services report, which has been available for analysis for only a few weeks, provides clear evidence of health hazards: toxic and carcinogenic chemicals were found at dangerous levels in water in plastic pipes. Furthermore, the report provides no statistically significant evidence that its proposed flushing procedure would reduce the levels of toxic contaminents in water in plastic pipes.

Of far greater import, however, is new information from the federal Environmental Protection Agency (EPA) which establishes a very high level of cancer potential in three carcinogens found in water in plastic pipes. After finding that no amount of these chemicals (chloroform, carbon tetrachloride, and tetrachloroethylene) is safe for humans to drink, the EPA has recently established final impact measurements for use in establishing standards for water quality. The EPA levels will be published in the Federal Register next week.

The average amounts of these carcinogens reported by Health Services as present in water in two kinds of plastic pipe are 433 times greater than the EPA level for chloroform, 85 times greater for carbon tetrachloride, and 9 times greater for tetrachloroethylene. Based on these figures, we can expect at least 1,476 new cancer cases in California in the next five years caused by these three carcinogens alone, if all new homes and mobile homes contain the kind of pipe in the Health Services study. This is of course a very conservative estimate, since it does not take into account the cumulative effects of these substances when combined as they are in pipes with other chemicals.

We do not yet have complete or totally conclusive date on the health

hazards of using plastic pipe for domestic water supply. The study analyzed in the Health Services report is limited to only two kinds of plastic pipe and has statistical features that make analysis of the significance of its findings difficult. Furthermore, there is no scientific information on polybutylene pipe and available information on Acrylonitrile-Butadiene-Styrene (ABS) pipe suggests that it is unsuitable for potable water in any circumstances.

As Director of Consumer Affairs, I share the Housing Commission's concern for meeting the need for affordable housing in California. It is the responsibility of government agencies like the Commission to encourage technological developments and other means of alleviating the housing crisis. Government must not, however, put aside its responsibility to protect the public health and safety. In light of the new information before us, it would clearly be unwise to decide now to expose Californians in their own homes to what may be an extremely serious health hazard. The best means for providing the Commission with the further information necessary to make a responsible policy decision is an Environmental Impact Report. My legal staff advises me that the California Environmental Quality Act requires an EIR in this instance. Preparing an EIR now, before plastic pipe is put to this new use, would be far less costly and cumbersome than having to remove the pipes after they are installed in homes.

I urge your caution and prudence in this matter.

Sincerely,

RICHARD B. SPOHN
Director

RBS:jmc

cc: Commissioners
I. Donald Terner

California Analytical Laboratories, Inc.

401 NORTH 16th STREET
SACRAMENTO, CALIFORNIA 95814
(916) 444-9602

December 31, 1980
Lab No. 12343
Received: 11/17/80

Mr. Raymond Leonardini
Attorney at Law
717 "K" St., Suite 510
Sacramento, CA 95814

Dear Mr. Leonardini:

Attached are the results of our GC/MS analysis of two polybutylene pipe samples received at CAL from a representative of the City of Sacramento Public Works Department and logged under CAL I.D. 12343.

The method of sample preparation and the GC/MS techniques were essentially the same as those employed for the previous analyses of PVC, ABS and CPVC pipe (refer to CAL report of 12 November, 1980, CAL I.D. 12295 and 12298).

Over fifteen components were identified and their levels in the pipe samples estimated. It must be emphasized that the levels are rough estimates only.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Charles J. Soderquist, PhD
Vice President
Agricultural and Environmental Chemist

CJS/slh

California Analytical Laboratories, Inc.

401 NORTH 16th STREET
SACRAMENTO, CALIFORNIA 95814
(916) 444-9602

December 31, 1980
Lab No. 12343
Received: 11/17/80

Mr. Raymond Leonardini
Attorney at Law
717 "K" St., Suite 510
Sacramento, CA 95814

Two lengths of polybutylene pipe for analysis.

Sample I.D.

1. Westpro Bluetube 21-37-7 AWWA C902 BJO 52 1" CTS PB 2110 SDR 13.5 160 PSI @ 73°F D2666

2. 1" CTS PB 2110 SDR 13.5 160 PSI D2666 Westpro ColFlare

The pipe samples were prepared for analysis as follows: Each piece was cleaned with a mild detergent solution to remove grease, oil or tape from the outside surface, rinsed with copious amounts of tap water and allowed to dry.

Subsamples were obtained by boring a series of 3/8-inch cores from each piece at least six inches in from the end. The turnings were collected on a piece of hexane rinsed aluminum foil. The drill bit was rinsed with acetone and hexane and dried between samples. The drill was run at low speed so that very thin turnings were obtained.

Standard CAL 40 mL vials which had been rinsed with methanol, baked at 110° overnight and capped with a teflon-lined septum were charged with about 1 gram (weighed exactly) of sample; three such vials were obtained per composite. Two of these were held for VOA GC/MS analysis. To the third was added 10 mL of hexane (Baker Resianalyzed Grade); these were shaken and held under ambient conditions overnight for Base/Neutral GC/MS analysis.

Volatile organic compounds were determined by placing five mL portions of "clean" water (spiked with 100 ng of a deuterated standard) in the vials containing plastic pipe shavings. The vials were allowed to stand for 48 hours prior to analysis. At the time of analysis, the vials were purged for 15 minutes with 40 mL per minute of helium and trapped on a Tenax-silica gel trap. During the purge, the vial was immersed in an 80°C water bath. The trapped organics were desorbed into the GC/MS system and analyzed. Results are prefixed by a V in Table I.

Semi-volatile organic compounds were determined by injection of an aliquot of the hexane extract of the shavings; this constituted the Base/Neutral fraction

(prefixed by B in Table I).

Levels of identified compounds were estimated by comparison to the known levels of deuterated internal standards added before analysis. The reported levels are to be considered as rough estimates only.

Results are presented in Table I.

All raw GC/MS data will be retained at CAL for your future use.

Charles J. Soderquist, PhD
Vice President
Agricultural and Environmental Chemistry

Paul A. Taylor, PhD
President

Michael J. Miille, PhD
Director of GC/MS Services

CJS/PAT/MJM/lsh

TABLE I

Sample	Compound	GC/MS reference scan no. [a]	Estimated level, ppm (mg/kg)
12343-1	butene	V72	0.1-1.0
	acetone	V92	0.5-5.0
	diethyl ether	V160	0.01-0.1
	methyl cyclopentane	V226	0.1-1.0
	methyl cyclohexane	V324	1-10
	3-methyl hexane	V373	1-10
	3-ethyl-3-methyl pentane	V366	1-10
	heptane	V437	1-10
	5 alkanes ($>C_{16}$)	B407, B421, B479 B496, B647	100-1000 total
	butylated hydroxy toluene (BHT)	B533	50-500
	bis (2-ethylhexyl)phathalate (BEHP)	B633	50-500
	a C_{18}-C_{19} alkene	B681	5000-50,000
12343-2	acetone	V93	0.5-5.0
	diethyl ether	V161	0.05-0.5
	methyl cyclohexane	V325	0.5-5.0
	2,3,3-trimethyl hexane	V388	0.5-5.0
	10 alkanes ($>C_{16}$)	B388, B407, B420, B478, B488, B507, B540, B549, B596, B646	100-1,000 total

NOTES: [a] V = Volatile Organic fraction, B = Base/Neutral (hexane-extracted) fraction.

OFFICE OF PESTICIDES AND TOXIC SUBSTANCES, U.S. ENVIRONMENTAL PROTECTION AGENCY

(November 28, 1980)

Addendum

Priority Review Level I - Di-(2-ethylhexyl) Phthalate DEHP

After this assessment was completed, Assessment Division received information from the California Department of Health Services, and from representatives of the Plumbers Union concerning actual and projected levels of DEHP in drinking water resulting from the migration of DEHP from plastic water pipe.

Water pipe made from polyvinyl chloride (PVC) and chlorinated polyvinyl chloride (CPVC) and plasticized with DEHP is in common usage and is rapidly replacing copper pipe in new home construction. While the California studies were primarily concerned with solvents used to join the pipe together, data were developed from conditions simulating use situations that indicated that DEHP may be present at up to 246 ppb in drinking water. Limited evaluations of measured levels in drinking water supplies of new homes were up to 110 ppb. These levels are considerably higher than previously recorded for drinking water and represent a risk of 9.4×10^{-5} and 2.9×10^{-5} respectively.

The DEHP levels reported in these studies varied considerably. Factors such as the physical and chemical properties of the water, dwell time, and analytical methodology frequently lead to discrepencies in reported levels for DEHP. However, these data represent the most reliable data on levels or potentials levels in drinking water from DEHP containing plastic pipe.

California Analytical Laboratories, Inc.

401 NORTH 16th STREET
SACRAMENTO, CALIFORNIA 95814
(916) 444-9602

March 18, 1981
Lab Nos. 12752/12754
Received: 3/3/81

Ray Leonardini
717 "K" St., Suite 510
Sacramento, CA 95814

Four pipe and fixture connector samples were received from Mr. John Gorman to be analyzed for organic constituents.

CAL I.D.	Sample Description
12752-1	gray fixture connector, PB2110--QEST-H-PB2100-NSF-PW FDR 11-180°F 100 psi ASTM-D-3309 PAS CERT- (unreadable)-B137.80 1/4 CTS-062 080279
12752-2	gray fixture connector, PB2110-IAPMO UPC PB2110-SDR11-1 BSF-pw 1/4 X 3/8-180°-100 psi-D3309-CSA-CERT
12754-1	gray pipe, PB2110--QEST-H-IAPMO-UOC-PB2110-SDR11-NSF-pw 3/8 X 1/2 180°-100 psi-D-3309-CSA-CERT-B137.8 1/23/77
12754-2	black pipe, PB2110--NSF pw ASTM-D3309 100 psi-(unreadable)-180°F-122 1106C-(unreadable)-1/2" CTS SDR-11 P

Sample Preparation: Samples 12752 and 2-foot lengths of samples 12754 were cleaned with detergent, rinsed with copious amounts of water and air dried. Representative subsamples were obtained by filing with a coarse rasp. Each subsample was rinsed with hexane and portions then placed in clean sample tubes with 5 mL of hexane (-a series) and with benzene)-b series). Identical tubes were filled with the same solvents (both were Nanograde quality) to serve as controls. The samples were held under ambient conditions for five days (for GC/MS) and for an additional five days until selective detector GC analysis was made.

Analysis I--GC/MS. Just prior to analysis by gas-chromatography mass-spectrometry (GC/MS), a 1.0 mL aliquot of the extract was removed and spiked with D-10 anthracene as an internal standard. A 5 µL portion was then injected and processed per the EPA Priority Pollutant (B/N fraction) protocol. Compounds were identified by computer searches of an EPA library, and quantities were estimated by comparison to the known amount of D-10 anthracene added.

Only the hexane extracts (-a series) were analyzed by GC/MS. The hexane blank was clean.

II. Specific-detector GC. Sample extracts were examined by electron-capture gas chromatography (ECD-GC) and thermionic-specific gas chromatography (TSD-GC); these detectors are generally selective for halogenated and nitrogen and/or phosphorus organics, respectively, although ECD-GC is suitable for the determination of phthalate ester plasticizers.

Results: The GC/MS analyses indicated that all four samples were qualitatively similar in that a series of C_{21}-C_{31} hydrocarbons was present in each; their total concentation was estimated to be in the 500-2,500 ppm (mg/Kg) range. Butylated hydroxytoluene (BHT) was present in each sample at the 10-50 ppm level. Bis (ethylhexyl) phthalate (DEHP) was also found at varying levels in each sample as indicated in Table I.

The TSD-GC analyses indicated that no nitrogen or phosphorus containing organic compounds, which were amenable to GC analysis, were present above 10 ppm.

The ECD-GC analyses indicated that DEHP was present in all samples. Identification and quantitation was based on co-chromatography with an authentic DEHP reference standard. Results are summarized in Table I.

Results of Table I should be considered as minimum values since the efficiency of extraction with either solvent is not known and is probably less than 100%.

Charles J. Soderquist, PhD
Vice President
Agricultural and Environmental Chemistry

Michael J. Mille, PhD
Director of GC/MS Services

CJS/slh

TABLE I

Sample	Extractant	ppm DEHP found (mg/Kg)	
		by ECD-GC	by GC/MS
12752-1a	Hexane	4.0	4.5
-1b	Benzene	5.0	n.m.
-2a	Hexane	0.8	0.6
-2b	Benzene	0.7	n.m.
12754-1a	Hexane	$\geq$20	32
-1b	Benzene	$\geq$20	n.m.
-2a	Hexane	1.8	2.1
-2b	Benzene	1.4	n.m.

n.m. = not measured

DEPARTMENT OF HEALTH SERVICES/DEPARTMENT OF INDUSTRIAL RELATIONS
2151 Berkeley Way
Berkeley, CA 94704
(415) 540-2115

January 28, 1981

Mr. Myron Moskovitz
Chairman
Commission on Housing &
Community Development
2371 Eunice St.
Berkeley, CA 94707

Dear Mr. Moskovitz:

I just received a preliminary analysis of polybutylene pipe performed by the California Analytical Laboratories, Inc. (Lab. No. 12343) that contains disturbing data in light of public comments by Steve Pregrun of Shell in response to my questioning about possible contamination of polybutylene.

Specifically, Mr. Pregrun stated that polybutylene does not use plasticizers (p. 74 of the hearing record for 11/24/80). On Table 1, note that Cal Labs found 50-500 ppm of DEHP (DEHP or diethylhexylphthalate) a plasticizer singled out in my unit's final report because of its carcinogenicity in animal testing. It is disturbing that the Commission was given such apparently misleading testimony, since the potential leaching of this compound, if present in the type of PB used for potable water, poses a potential health hazard to consumers.

Obviously, this situation deserves immediate attention because of the health risk at stake. I would be happy to discuss this situation further with regard to the requirement for an EIR.

Sincerely,

Marc Lappe

Marc Lappe, Ph.D.
Chief
Hazard Evaluation System &
Information Service

Enclosure

ML:vk

cc: Ephraim Kahn, M.D.
Kathleen Acree, M.D.

TABLE I

Sample	Compound	GC/MS reference scan no. [a]	Estimated level, ppm (mg/kg)
12343-1	butene	V72	0.1-1.0
	acetone	V92	0.5-5.0
	diethyl ether	V160	0.01-0.1
	methyl cyclopentane	V226	0.1-1.0
	methyl cyclohexane	V324	1-10
	3-methyl hexane	V373	1-10
	3-ethyl-3-methyl pentane	V386	1-10
	heptane	V437	1-10
	5 alkanes ($>C_{16}$)	B407, B421, B479 B496, B647	100-1000 total
	butylated hydroxy toluene (BHT)	B533	50-500
	bis (2-ethylhexyl)phathalate (BEHP)	B633	50-500
	a C_{18}-C_{19} alkene	B681	5000-50,000
12343-2	acetone	V93	0.5-5.0
	diethyl ether	V161	0.05-0.5
	methyl cyclohexane	V325	0.5-5.0
	2,3,3-trimethyl hexane	V388	0.5-5.0
	10 alkanes ($>C_{16}$)	B388, B407, B420, B478, B488, B507, B540, B549, B596, B646	100-1,000 total

NOTES: [a] V = Volatile Organic fraction, B = Base/Neutral (hexane-extracted) fraction.

Radian # 225-065

Analysis of Polybutene Pipe Leachate For Selected Organic Species

March,1981

Presented to:

Shell Development Company
Westhollow Research Center
Houston, TX

RADIAN
CORPORATION

RADIAN
CORPORATION

Radian Contract No. 225-065-07

ANALYSIS OF POLYBUTENE PIPE LEACHATE FOR SELECTED ORGANIC SPECIES

12 March 1981

Presented to:

Shell Development Company
Westhollow Research Center
3333 Highway 6 South
Houston, Texas 77082

Prepared by:

Radian Corporation
P. O. Box 9948
Austin, Texas 78766

RADIAN CORPORATION

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1.0 INTRODUCTION

This report summarizes Radian's results from the determination of various organic species in four polybutene pipe leachate samples. The samples were analyzed for organic priority pollutants and other specific organic compounds.

This report contains in Section 2.0 Results, and in subsequent sections, a discussion of analytical methodology, sample control and quality assurance/quality control. A discussion of the results is presented in Section 5.0.

2.0 RESULTS

The results from the analyses of the organic priority pollutants and the specific organic compounds requested are summarized in Table 2-1. No other priority pollutants or specific organic compounds were detected in the samples. Table 2-2 summarizes the required sensitivity limit for these species in water according to the methodology employed. In order to obtain this sensitivity limit for the weakly responding compounds, the analytical instrumentation conditions are adjusted such that most of the compounds can be detected at concentrations well below the required limits. For example, the values for toluene reported are below this required sensitivity limit. Although the identification of this compound was done with a high degree of certainty, the quantitative measurement is less precise at these low concentrations.

The mass spectral data files were also examined to determine what other organic compounds were present. During this examination three deuterated compounds were detected in the base/neutral extract. Subsequent conversation with Shell personnel indicated that these compounds were spiked into the water before the leaching study as a quality control indicator. The concentration and percent recovery of these spikes is presented in Table 2-3.

The mass spectral data files were also searched for the following specific organic species:

VOA Fraction		Base/Neutral Fraction
tetrahydrofuran	methyl cyclopentane	alkanes - C_{10}-C_{30}
dimethyl formamide	methyl cyclohexane	butylated hydroxy toluene (BHT)
methyethyl ketone	3-methyl hexane	
cyclchexanone	3-ethyl-3-methyl pentane	alkenes C_{15} - C_{20}
butene	heptane	
diethyl ether	2,3,3-trimethylhexane	

With the exception of tetrahydrofuran none of these species were found in any of the samples.

TABLE 2-1. RESULTS FROM ANALYSIS OF SHELL SAMPLES

Pollutant	Concentration, mg/L			
	180°	Room Temperature	Control 180°	Control, Room Temperature
I. Volatile Fraction				
Methylene chloride	.028	.023	.018	.016
Tetrahydrofuran*	.072	.063	.029	.036
Toluene	.002	ND	.002	.002
II. Base/Netural Fraction				
No Priority Pollutants Detected/No Specific Organic Pollutants Detected				
III. Acid Fraction				
No Priority Pollutants Detected/No Specific Organic Pollutants Detected				

*Not a priority pollutant. Compound was on list of specific organic pollutants.

TABLE 2-2. SENSITIVITY LIMITS FOR ORGANIC PRIORITY POLLUTANTS

Pollutant	Limit (mg/L)
I. VOLATILE COMPOUNDS	
1V Acrolein	0.1
2V Acrylonitrile	0.1
3V Benzene	0.01
4V bis(Chloromethyl)ether	0.01
5V Bromoform	0.01
6V Carbon tetrachloride	0.01
7V Chloro benzene	0.01
8V Chlorodibromomethane	0.01
9V Chloroethane	0.01
10V 2-Chloroethylvinyl ether	0.01
11V Chloroform	0.01
12V Dichlorobromomethane	0.01
13V Dichlorodifluoromethane	0.01
14V 1,1-Dichloroethane	0.01
15V 1,2-Dichloroethane	0.01
16V 1,1-Dichloroethylene	0.01
17V 1,2-Dichloropropane	0.01
18V 1,2-Dichloropropylene	0.01
19V Ethylbenzene	0.01
20V Methyl bromide	0.01
21V Methyl chloride	0.01
22V Methylene chloride	0.01
23V 1,1,2,2-Tetrachloroethane	0.01
24V Tetrachloroethylene	0.01
25V Toluene	0.01
26V 1,2-trans-Dichloroethylene	0.01
27V 1,1,1-Trichloroethane	0.01
28V 1,1,2-Trichloroethane	0.01
29V Trichloroethylene	0.01
30V Trichlorofluoromethane	0.01
31V Vinyl chloride	0.01
II. PESTICIDES	
1P Aldrin	0.01
2P α BHC	0.01
3P β BHC	0.01
4P γ BHC	0.01
5P δ BHC	0.01
6P Chlordane	†
7P 4,4'-DDT	0.01
8P 4,4'-DDE	0.01
9P 4,4'-DDD	0.01
10P α-endosulfan	0.01
12P β-endosulfan	0.01
13P Endosulfan sulfate	0.01
14P Endrin	0.01
15P Endrin aldehyde	0.01
16P Heptachlor	0.01
17P Heptachlor epoxide	0.01
18P PCB-1242	†
19P PCB-1254	†
20P PCB-1221	†
21P PCB-1232	†
22P PCB-1248	†
23P PCB-1260	†
24P PCB-1016	†
25P Toxaphene	†

Pollutant	Limit (mg/L)
III. BASE/NEUTRAL COMPOUNDS	
1B Acenaphene	0.01
2B Acenaphtylene	0.01
3B Anthracene	0.01
4B Benzidine	0.01
5B Benzo(a)anthracene	0.01
6B Benzo(a)pyrene	0.01
7B 3,4-Benzofluoranthene	0.01
8B Benzo(g,h,i)perylene	0.025
9B Benzo(k)fluoranthene	0.01
10B bis(2-chloroethoxy)methane	0.01
11B bis(2-chloroethyl)ether	0.01
12B bis(2-chloroisopropyl)ether	0.01
13B bis(2-ethylhexyl)phthalate	0.01
14B 4-bromophenyl phenylether	0.01
15B Butyl benzyl phthalate	0.01
16B 2-chloronaphthalene	0.01
17B 4-chlorophenyl phenyl ether	0.01
18B Chrysene	0.01
19B Dibenzo(a,h)anthracene	0.025
20B 1,2-Dichlorobenzene	0.01
21B 1,3-Dichlorobenzene	0.01
22B 1,4-Dichlorobenzene	0.01
23B 3,3'-Dichlorobenzidine	0.01
24B Diethyl phthalate	0.01
25B Dimethyl phthalate	0.01
26B Di-N-butyl phthalate	0.01
27B 2,4-Dinitrotoluene	0.01
28B 2,6-Dinitrotoluene	0.01
29B Di-N-octyl phthalate	0.01
30B 1,2-Diphenyl hydrazine (as Azobenzene)	0.01
31B Fluoranthene	0.01
32B Fluorene	0.01
33B Hexachlorobenzene	0.01
34B Hexachlorobutadiene	0.01
35B Hexachlorocyclopentadiene	0.01
36B Hexachloroethane	0.01
37B Indeno(1,2,3-c,d)pyrene	0.025
38B Isophorone	0.01
39B Naphthalene	0.01
40B Nitrobenzene	0.01
41B N-Nitrosodimethylamine	†
42B N-Nitrosodi-N-propylamine	0.01
43B N-Nitrosodiphenylamine (detected as diphenylamine)	0.01
44B Phenanthrene	0.01
45B Pyrene	0.01
46B 1,2,4-Trichlorobenzene	0.01
IV. ACID COMPOUNDS	
1A 2-chlorophenol	0.025
2A 2,4-Dichlorophenol	0.025
3A 2,4-Dimethylphenol	0.025
4A 2,6-Dinitro-o-cresol	0.250
5A 2,4-Dinitrophenol	0.025
6A 2-Nitrophenol	0.025
7A 4-Nitrophenol	0.025
8A p-Chloro-m-cresol	0.025
9A Pentachlorophenol	0.025
10A Phenol	0.025
11A 2,4,6-Trichlorophenol	0.025

†EPA has not yet published determination limits for these pollutants.

PAUL A. TAYLOR, Ph.D.
PRESIDENT

CHARLES J. SODERQUIST, Ph.D
VICE PRESIDENT

ANTHONY S. WONG, Ph.D.
VICE PRESIDENT

RUBY A. ULRICH
SECRETARY/TREASURER

California Analytical Laboratories, Inc.

401 NORTH 16th STREET
SACRAMENTO, CALIFORNIA 95814
(916) 444-9602

REVIEW AND EVALUATION

OF

RADIAN CORPORATION'S

(Under Contract for:
Shell Development Company)

"ANALYSIS OF POLYBUTENE PIPE LEACHATE

FOR SELECTED ORGANIC SPECIES" March 1981

Charles J. Soderquist

Charles J. Soderquist, Ph.D.

April 1981

INTRODUCTION

At the request of Mr. Raymond Leonardini, California Analytical Laboratories, Inc. (C.A.L.) has prepared a brief review and evaluation of the Radian Corporation's "Analysis of Polybutene Pipe Leachate for Selected Organic Species," March 1981. Radian's report was conducted under a contract with Shell Development Company.

While the Radian report is the core document, it cannot be adequately and properly evaluated without reference to the March 13, 1981, letter of S.E. Pregun, Staff Business Representative, Polybutylene Department, Shell Chemical Company, to the Chair of the California Commission on Housing and Community Development. As a result, analysis and evaluation of this letter is also included.

RADIAN REPORT

The Radian report ("Analysis of Polybutene[1/] Pipe Leachate For Selected Organic Species," March 1981) is typical of that expected from an analytical laboratory. The inclusion of Quality Assurance/Quality Control data (Tables 4-1 and 4-2) and the acceptable recovery of spiked surrogates (Table 2-3) indicates that adequate VOA, Base/Neutral, and Acid fraction GC-MS analyses were performed.

In brief, we find little fault with the Radian data as stated. Radian received certain water samples from an unknown water system, drawn by an unknown separate entity (apparently Shell), and used a standard EPA approved protocol (the standard protocol also used by C.A.L. and other labs for GC-MS analysis). The problem, if there is one, is in what Radian did not report. The inadequacy of the study, in other words, is not in the reporting of the data. Rather it is in the lack of any information regarding the methods of obtaining the leachates.

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1. The terms "polybutene" and "polybutylene" are interchangeable from a chemical viewpoint. Whether or not this reflects actual differences in the constituent elements or functions of the chemical, e.g. potable water piping vis a vis piping for other purposes, is not known.

For example, we note that the Priority Pollutant List (of 112 selected pollutants) has been used by both Radian and C.A.L. mainly because of its convenience. That is, the protocol has been validated (under EPA sanction) to yield acceptable results, using routine methodology for 112 industrial compounds. There is no objective reason to suspect that any of these Priority Pollutants would be present in polybutylene (or any other) plastic pipe. The list was designed as a screen for industrial chemical plant effluents, not potable drinking water transport devices.

The potential presence of plastic pipe additives (stablizers, etc.) which are not amenable to this general (GC-MS) technique has not been successfully explored since independent investigators have not had access to manufacturing data. In other words, the method of sample preparation (e.g., the extraction technique) and the style of contaminant identification (GC-MS or others) is dependent, to a certain extent, on some prior knowledge of the potential contaminants.

Organotin compounds, for example, are known additives in some types of plastic pipe, yet their presence or absence would not be indicated by the Priority Pollutant GC-MS technique. Knowledge of the possible presence of organotin compounds would allow development of analytical methodologies consistent with assessment of their "leachability" into potable water.

One final comment, minor though troubling, on the Radian report itself. It is uncharacteristic of an analytical laboratory to use the terms "ultratrace" and "insignificant in terms of potential health effects." (Report p. 11) As to the former term, it is a relative term and unscientific. It connotes impressions inappropriate in date reporting.2/ As to the latter terms, analytical chemists are not qualified to render such medical judgments.3/

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2. For example, 0.072 mg/L THF is labelled "ultratrace," yet is 7 times greater than their presumed detection limit.

3. The toxicity questions and health-effect value judgments are reserved, appropriately, for epidemiologists, pathologists and the like.

SHELL CHEMICAL LETTER OF MARCH 13, 1981

With the absence of the expected scientific explanation in the Radian report, it becomes necessary to review Shell's letter to the Housing Commission wherein some scientific details are given.[4]

The Material Studied by Radian. At the outset, note that no experimental details of the materials used to leach the pipe are provided. More fundamentally, "water extractable material" (first sentence of Shell's letter) is vague and ambiguous. Since Radian did not construct the pipe experiment, does this terminology mean Radian received the water or some other "extractable material"?

Moreover, assuming Radian received water samples from certain pipe from Shell, what are the characteristics of the pipe itself? Is PB 4127 the same grade as PB 2110? Is it used for potable water? Was the manufacturing (extrusion) process conducted by Shell or an independent manufacturer?

Experimental Procedure. A number of questions should be answered before any useful scientific conclusions can be drawn on the validity of the water samples.

1) Was the pipe-to-water ratio consistent with expected consumer use ratios?

2) Was the pipe leached in a sealed container (to prevent loss of volatiles)?

3) What was the quality of the water?

4) Were the leachates delivered to Radian in glass containers? Sealed? With headspace? Bubbles?

5) Were samples transported in cold and amber bottles to prevent decomposition? Ambient and in clear glass?

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4. Please note, however, the letter is written by a "Staff Business Representative" of the Shell Chemical Company. His scientific credentials are not stated. Moreover, it is unusual that the protocol described by this gentleman was not described by Radian. Apparently, though not stated in either document, some lab other than Radian constructed the pipe experiment.

Letter Item 1

"Five days" is not necessarily an "extended period" of time. By comparison, the Montgomery Study of PVC and CPVC for potable water designed multiple holding periods, up to 90 days.

Although unclear in the letter, the likelihood that the client (Shell) and not the independent contract laboratory (Radian) performed the leach procedure raises serious questions about the overall credibility of the study.

Letter Item 2

This item states that the methods were "proven capable of identifying materials at concentrations of one part per billion (ppb)." This is in direct contradiction to the actual Radian report wherein the lowest detection limit noted (Table 2-2) is 10 ppb (0/010 mg/L, ppm).

C.A.L. employs the same GC-MS technique using in-house GC/MS systems for our existing EPA contracts and for our polybutylene research.

Letter Item 3

EPA methods 624 and 625 utilize the same measurement techniques employed by C.A.L. during its pipe study.

Letter Item 4

See the discussion under the Radian test for Priority Pollutants. Note, however, that it is just as scientifically valid to theorize that such contamination resulted from ubiquitous chemical contamination in the manufacturing process.

Letter Items 6, 7, 8

Regarding these questions raised as to the source of DEHP found in the PB pipe by C.A.L., volumes could be written. In the C.A.L. report to Mr. Leonardini (C.A.L. ID # 12343, completed 31 December 80), a summary of the extraction procedure was provided. While the report did not mention the use of reagent "controls," adequate controls were included in the procedure as they are in all analytical work at C.A.L., and in any competent laboratory. C.A.L. is well aware of the ubiquitous

nature of phthalate ester plasticizers, notably DEHP. As mentioned before, stronger scientific hypotheses could be suggested for manufacturing contamination of phthalates in the Shell manufacturing process (or the pipe extrusion process) than in the laboratory context. Given the large amount of DEHP sold annually (2 billion pounds) contamination is indeed more likely at the chemical factory site than the analytical chemist test tube.

Shell Chemical Company
A Division of Shell Oil Company

One Shell Plaza
P.O. Box 2463
Houston, Texas 77001

March 13, 1981

Mr. Myron Moskovitz, Chairman
Commission on Housing and Community Development
921 Tenth Street
Sacramento, CA 95814

Dear Mr. Moskovitz:

As a followup to our meeting of February 23, 1981, we have enclosed data developed on water extractable material leached from PB 4127 polybutylene pipe. We will attempt to summarize the position of Shell Chemical Company on the reason, procedure, and conclusions derived from the analysis.

There have been repeated claims by the California Pipe Trades Council that polybutylene might contain chlorinated hydrocarbons, aromatic hydrocarbons, phathalate plasticizers, or polychlorinated biphenyls and might leach these materials into potable water. Two separate tests have been conducted which challenge all of these allegations. The tests were conducted by Radian Corporation of Austin, Texas, at Shell's request and by California Analytical Laboratories, Inc. for the California Pipe Trades Council.

Let us first dicuss the Radian report (copy enclosed) and its findings. Radian is a recognized EPA contractor and often performs analyses of trace contaminants in water for various governmental agencies as well as private industry.

1) Polybutylene, PB 4127 pipe, produced from commercial lot No. 10APP016, was cut up and allowed to soak in pure water for five days at temperatures of 73°F and 180°F. This set of conditions was chosen in order to test the pipe under environmental conditions similar to its intended service use. The steps of cutting the pipe and soaking for an extended period were intended to maximize the amount of any extractable materials in the aqueous phase.

2) The water leachate was then analyzed by the most sophisticated chemical techniques (i.e., GC/MS). These methods were proven capable of identifying materials at concentrations of one part per billion (ppb).

3) The water was analyzed using procedures for water as suggested by the Environmental Protection Agency Methods 624 and 625 as published in the Federal Register on December 3, 1979.

4) The data were analyzed for any evidence of the 112 materials listed on the federal Priority Pollutants list. Three materials were found at ultra trace contamination levels in the pipe extract. These are common laboratory contaminants and may have come from a source other than the pipe leachate. (See Table 2-1.)

5) No trace of any of the alleged carcinogenic materials suggested as possible pollutants by the California Pipe Trades Council were found in the water extract -- meaning that a homeowner would not be exposed to any hazardous materials as a result of having a polybutylene plumbing system. The same statement, of course, cannot be made for metal pipes.

6) California Analytical Laboratories, Inc., under the sponsorship of the California Pipe Trades Council, conducted a separate test under conditions which differed in protocol from the Radian procedure. Nevertheless, they were also unable to find any of the many carcinogens which were alleged to exist in polybutylene plumbing pipe. None of the materials claimed to be found by California Analytical Laboratories, Inc. (Table I, Letter of Dr. M. Lappe to the Commission on January 28, 1981) were found in the Radian extraction test.

   The basic difference in methodology was that Radian used a water leachate study to represent conditions the pipe would see in service. California Analytical Laboratories, Inc. used large volumes of solvent with small amounts of pipe, thus magnifying the effect of any trace contaminants which might occur in the solvent. Necessary controls to correct for such contamination, if performed at all, were not indicated in the report.

7) California Analytical Laboratories, Inc. did claim to find an estimated 50 - 500 ppm of DEHP in their polybutylene extract. Shell maintains that no DEHP is used to produce our pipe resin and, in addition, it is not used for the production or installation of PB pipe. We suggest that whatever was found was not introduced by Shell or our customers and is most likely a result of outside contamination or laboratory procedure.

8) As a point of information, an estimated two billion pounds of DEHP was sold in the U.S. during the past five years. This has gone into numerous applications such as shower curtains, seat covers, umbrellas, paper tissue, and notably, scientific laboratory tubing; but none has been used for PB pipe production. It is entirely conceivable, in fact, that the DEHP "found" by California Analytical Laboratories, Inc. was likely contamination from a source within their laboratory.

9) As additional backup, we plan to pick up random samples of PB 4127 pipe during the week of March 30, 1981, from various northern California suppliers. These will be tested as a composite sample, to represent a cross section of PB manufacturers. These samples will then be tested in accordance with protocol specified in the Radian report (hopefully prior to the April 20, 1981, meeting).

We invite the California Pipe Trades Council to assist in the sample gathering so they may obtain representative specimens for any further tests they may wish to conduct.

We feel the information already developed clearly indicates that polybutylene plumbing pipe not only does not present a health hazard; in fact, it is now

clearly demonstrated to be less of a concern than any approved piping material. We see no need for this Commission to require an Environmental Impact Report -- rather, it seems, continued delay poses a risk to the health of the consumers of California by depriving them of the opportunity to use this new material.

Sincerely,

S. E. Pregun
Staff Business Representative
Polybutylene Department

Enclosure

cc - Mr. William [illegible]man

TO: GRACE PLS DISTRIBUTE TO COMMISSIONERS WB 6/30/81

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STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY/AGRICULTURE AND SERVICES AGENCY
EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES/DEPARTMENT OF INDUSTRIAL RELATIONS
HAZARD EVALUATION SYSTEM AND INFORMATION SERVICE (HESIS)
2151 BERKELEY WAY
BERKELEY, CA 94704
(415) 540-2115

June 15, 1981

William Holliman
McDonough, Holland & Allen
Attorneys at Law
555 Capitol Mall, Suite 950
Sacramento, CA 95814

Dear Mr. Holliman:

Two important groups of data remain outstanding for assessing polybutylene's potential toxicity. The first deals with the toxicological effects of the antioxidant, Irganox 1010 or its hydrolysis products in water carried by PB pipe. As you may be aware, Irganox is a chemical analog of butylated hydroxy-toluene (BHT), a food additive in use for over 20 years. Both BHT and Irganox have been represented by Shell as being FDA-approved and, therefore, safe.

Recent developmental toxicological studies have shown that chronic, relatively low level (0.25 - 0.5% in diet) ingestion of BHT can lead to reduced weight gain, increased liver size and raised serum cholesterol in a number of separate animal tests. Other studies have shown reduced litter size following exposure during embryonic development. (For a current review, see C.V. Vorhess, et al, "Developmental neurobehavioural toxicity of butylated hydro-toluene in rats," Food and Cosmetic Toxicology 19: 153-162, 1981.)

These studies do not, of course, directly implicate Irganox; but they suggest by analogy the critical importance of obtaining two types of data for a substance otherwise considered "safe": 1) Leaching rates of Irganox from PB in different water qualities; and 2) Toxicological data pertinent to the levels of exposure likely to be encountered from ingestion of Irganox in water. I understand that latter data has been promised from Ciba-Geigy, but has not yet been received.

The second issue that deserves further study from a toxicological perspective is the possible presence of alkylbenzene sulphonate from PB pipe. Ambiguous data from the first Radian test suggested the presence of this emulsifier in PB pipe. I would like to see further evidence pertaining to this chemical since it is readily soluble and, if present in PB pipe, would be expected to be found in water leachates. However, it might not be seen in washed pipe, a process that I believe is undesirable prior to testing, unless the same washing process is used commercially prior to installation.

Alkylbenzene sulphonate is of concern because it can cause lysis of cells in vitro at levels as low as 5 ppm. While the relevance of such finding for possible occupational or consumer hazards of this substance is currently under review (see G.H. Pigott and J. Ishmael, "A comparison between in vitro toxicity

of PVC powders and their tissue reaction in vivo," Annals of Occupational Hygiene 22: 111-119, 1979), the presence of more than trace quantities of this potent cellular toxin in drinking water would be a cause for concern.

Please inform me of your intention to provide this additional material so that a reasonably complete preliminary assessment of polybutylene may be expeditiously completed.

Sincerely,

Marc Lappé

Marc Lappe', Ph.D.
Staff Toxicologist

cc: Myron Moskovitch
Commission on Housing &
Community Development

ML/sb

State of California — Business and Transportation Agency

Memorandum

To: MEMBERS OF THE COMMISSION OF HOUSING AND COMMUNITY DEVELOPMENT — Date April 27, 1981

From: Department of Housing and Community Development
Office of the Director

Subject:

I have recently reviewed the current status of the Commission's proceedings concerning the proposed adoption of regulations permitting the expanded use of plastic pipe. I am informed that the Commission is scheduled to decide whether or not an Environmental Impact Report should be prepared prior to taking any action to approve the expanded use of PB water pipe and ABS/PVC vent pipe.

I have reviewed this matter with members of my staff and interested members of the public. After having considered the evidence and discussed the issues with our legal counsel I am convinced that it would be most prudent for the Commission for prepare an EIR before proceeding with any decision to expand the use of plastic pipe.

My recommendation is based upon several factors. There presently is evidence in the record of the existence of potentially hazardous substances such as DEHP in polybutylene pipe and fittings. I am aware that there is also evidence in the record which suggests that there is no potential hazard from PB. Likewise, there is conflicting evidence concerning potential hazards associated with the use of ABS and PVC vent pipe. However, regardless of whether or not there is conflicting evidence, the evidence of potential hazards that has been presented to date is sufficient to legally compel the preparation of an EIR.

The issues in this matter have become extremely complex and esoteric. You are being asked to resolve highly technical questions such as the validity of laboratory studies, a matter which only highly trained specialists in these areas can truly answer. In addition, only within the framework of the preparation of an EIR can a reliable and unbiased answer to these questions be obtained. Such an approach would also serve to reassure an already apprehensive public and instill confidence in the ultimate decision on the merits of plastic pipe.

Finally, it is illustrative to remember the tremendous amount of time the Commission has devoted to deliberations on this issue. The Commission started holding hearings on plastic pipe over four years ago, in 1977. Throughout these proceedings the chief controversy has been compliance with CEQA. In this regard, numerous studies, substantial testimony and reams of documents have been presented for your consideration. This controversy could continue before the Commission for months to come. For example, further environmental evidence might be presented to the Commission at the last minute which, as has occured throughout these proceedings, can lead to further hearings.

The evidence presented to date compels the preparation of an EIR. The only method of ensuring adherence to the law and directing this matter to a reasonable conclusion is for the Commission to require the preparation of an EIR before it takes any action to approve the use of plastic pipe. Therefore, I strongly urge the Commission to take such action.

Sincerely,

J. Donald Perner
Secretary to the Commission

STATE OF CALIFORNIA—STATE AND CONSUMER SERVICES AGENCY EDMUND G. BROWN JR., Governor

DEPARTMENT OF Consumer Affairs

1020 N STREET, SACRAMENTO, CALIFORNIA 95814
(916) 445-4465

April 16, 1981

Mr. Myron Moskovitz, Chairman
Commission on Housing and
Community Development
921 Tenth Street
Sacramento, CA 95814

Dear Chairman Moskovitz:

Transmitted herewith is our argument which demonstrates why, as a matter of law an environmental impact report regarding polybutylene pipe is required prior to any decision by the Commission as to whether it should be approved for transporting potable water. While the appended document is sufficient to provide the legal justification necessary in this matter, I cannot allow to pass without comment the appalling procedural irregularities in this case and the highly questionable Radian report submitted by Shell Chemical Company with their accompanying letter of March 13, 1981.

I. Procedure

After being informed on April 6 that the April 20 hearing had been postponed for one month, we discovered indirectly on April 14 that the hearing had not been postponed after all! We have only subsequently discovered the intervening sequence of events which must be characterized as incomprehensible and deplorable:

April 6 -- Upon chance inquiry by Department of Consumer Affairs staff, we were informed the April 20 hearing was postponed one month because Shell claimed it could not be prepared in time. As a result, our brief was not submitted and Commission members have not had the opportunity to review it.

April 7 -- California Pipe Trades Council attorney was informed of postponement by Housing and Community Development attorney.

April 7 -- Later the same day, California Pipe Trades Council attorney was informed postponement had been reconsidered and April 20 meeting would be held as previously scheduled.

April 9 -- Department of Consumer Affairs received a Commission agenda for May 18, 1981, which showed plastic pipe consideration on the agenda.

April 9 -- Department of Consumer Affairs Director sent a mailgram to the Housing and Community Development Commission Chairman deploring the postponement of the April 20 hearing (copy attached).

April 10 -- California Pipe Trades Council attorney received Commission agenda for April 20, 1981, which showed plastic pipe consideration on the agenda.

April 14 -- Member of Community Health Action Coalition (CHAC) informed Roger Dickinson, Department of Consumer Affairs attorney, that he was told by Paul Reynaga, Housing and Community Development attorney, that the hearing on PB pipe is scheduled for April 20.

April 15 -- Confirmation of April 20 date by Department of Consumer Affairs by phone with California Pipe Trades Council attorney who also related prior conversations and notices detailed above.

We, the petitioners in this instance, have never received a call from Housing and Community Development staff regarding the on-again, off-again status of the April 20 meeting, nor have we been provided with a copy of the information submitted subsequent to the February 23 Commission meeting. We have only obtained information through our own direct inquiry or from a third party. As a result, we have suffered from a lack of information which has unreasonably affected our ability to fully prepare for the April 20 hearing and unfairly prejudiced our opportunity to provide a full, complete, and thorough presentation before the Commission.

II. The Shell Test Results

Two sets of test results submitted by California Analytical Laboratories, Inc. show the presence of DEHP. Dr. Marc Lappe, Chief of the Hazard Evaluation System for the State, has characterized these results as posing "a potential health hazard to consumers." Given this substantial evidence of potential adverse environmental effects, the courts have made it clear that contrary evidence is insufficient to overcome

the need for an EIR. Therefore, the Shell test results are insignificant in considering whether an EIR is required with respect to PB pipe.

Nonetheless, I am deeply disturbed by the lack of basic information, the lack of specificity, and the lack of consistency in the report and letter submitted by Shell. These shortcomings must certainly call into question the very validity of the testing performed and the results apparently obtained.

For example, the Radian report fails to state at any point how the samples analyzed were prepared. It is only Shell's accompanying letter which reveals that Shell itself procured some unspecified pipe and prepared the samples of "water extractable material," whatever that might be. Not only should these samples, to assure scientific integrity, have been prepared by the laboratory itself, but we have subsequently discovered the pipe analyzed is designed to conduct heat not transport water.

In addition, on page two, the Radian report reveals that Shell personnel spiked the water before the leaching study! Why was the spiking done? Should not the laboratory itself have prepared sufficient samples, including control samples, to assure both the validity and the veracity of their results? How are we to know that Shell followed the recommended EPA protocol? Absent some unimaginable explanation, such a procedure must surely be considered invalid for offering reliable evidence of the potential leaching properties of polybutylene pipe.

Shell claims the pipe was soaked for five days, "an extended period". This characterization must be considered disingenuous at best considering the Montgomery test was based on leaching periods of 30, 60, and 90 days. Further, Shell states in its letter that the methods used to analyze the water leachate were "capable of identifying materials at concentrations of one part per billion (ppb)." In fact, the Radian report shows a detection capability of only 10 parts per billion.

Finally, the Radian results detected the presence of tetrahyrofuran, a compound not previously suggested to be present in polybutylene pipe. Where did it come from and how can a laboratory analysis by an unknown author presume to label it "insignificant in terms of potential health effects"?

In short, it requires no scientific training to harbor serious reservations regarding the validity or utility of the test

results so obligingly supplied by Shell. While, even if fully believable such results would not obviate the need for an EIR, it is distressing indeed to witness such an attempt to influence the Commission.

Sincerely,

RICHARD B. SPOHN
Director

cc: William Holliman

MAILGRAM SE [illegible]NTER
MIDDLETOWN, VA. 22645

western union Mailgram

1-042539M103 04/13/81 ICS IPMPOCC RNC SACA
00092 9164454465 MGM TDRN SACRAMENTO CA 04-13 1100P PST

CALIFORNIA DEPT OF CONSUMER AFFAIRS ROOM 516
1020 N ST
SACRAMENTO CA 95814

THIS MAILGRAM IS A CONFIRMATION COPY OF THE FOLLOWING MESSAGE:

9164454465 MGM TDRN SACRAMENTO CA 157 04-0A 0P18P EST
ZIP
MYRON MOSKOVITZ
2371 EUNICE ST
BERKELEY CA 94708
I DEPLORE YOUR UNILATERAL DECISION TO DELAY THE HEARING ON
OUR
PETITION REGARDING PR PIPE. YOUR ACTION APPEARS TO BE ANOTHER
IN THE
LINE OF ADMINISTRATIVE MISFIRES WHICH CAUSED POSTPONEMENT
OF THE
DECEMBER AND JANUARY COMMISSION MEETING. WE SEE NO JUSTIFICATION
FOR
DELAY IN THE APRIL 20 HEARING ON THE BASIS THAT SHELL WILL
NOT BE
PREPARED TO OFFER REBUTTAL EVIDENCE TO THE CALIFORNIA LABORATORIES

ANALYSIS. CEQA MAKES IT CLEAR THAT SUBSTANTIAL EVIDENCE OF
A
POTENTIAL SIGNIFICANT ENVIRONMENTAL EFFECT CANNOT BE NEGATED
BY
CONTRARY EVIDENCE. THE APPROPRIATE VEHICLE FOR OBJECTIVELY
DEVELOPING
AND ANALYZING EVIDENCE OF SIGNIFICANT ENVIRONMENTAL EFFECTS
IS AN
EIR. I WOULD APPRECIATE BEING CONSULTED PRIOR TO ANY FUTURE
ACTION OF
THE COMMISSION ON THIS MATTER SO THAT THE INTERESTS OF CALIFORNIA

CONSUMERS WILL BE ADEQUATELY CONSIDERED. I ALSO FORMALLY REQUEST
THAT
THE COMMUNICATION BE ENTERED ON THE RECORD.
RICHARD B SPOHN, DIRECTOR
CALIFORNIA DEPT OF CONSUMER AFFAIRS
(EX).
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4 San Francisco Chronicle Tues., April 21, 1981

Plastic Water Pipes Flunk A State Test

Sacramento

Some laboratory tests indicate plastic water pipes considered for widespread residential use in California may cause sterility and cancer in humans, a state commission was told yesterday.

The Commission on Housing and Community Development had tentatively approved use of the polybutylene pipe, manufactured by Shell Chemical Co., beginning on November 24.

The commission later delayed final authorization for expanded use of the pipe in California to allow more time to consider potential health hazards.

The pipe would be used instead of galvanized or copper pipes.

In yesterday's hearing, state Consumer Affairs Director Richard Spohn said tests by the California Analytical Laboratory indicated a chemical known as DEHP, which has been found to cause cancer and sterility in laboratory animals, may exist in hazardous quantities in the pipe.

"One scientist has dubbed DEHP the equivalent of a chemical vasectomy," Spohn said. "If you do approve the use of this pipe, it is quite likely there will be widespread use throughout the state. You'd want to be pretty certain that you don't cause a massive sterilization."

The commission also received a letter from I. Donald Terner, director of the Department of Housing and Community Development, and a telephone call from state Fire Marshal Phil Favro. Both asked for further study of the pipe.

But Shell's lawyer, William Holliman, told the commission that Spohn gathered all his data from one set of test results and that another laboratory, financed by Shell, has repeatedly found nothing linking the pipe to cancer.

Before Holliman's testimony, Myron Moskovitz, chairman of the Housing and Community Development Commission, said he already had decided to require further study before the pipe was authorized. This statement angered Holliman, who said it "prejudiced the other commissioners" before they had a chance to vote on the issue.

United Press

A8 The Sacramento Bee • Tuesday, April 21, 1981 ★ ★

Capitol Digest

Cancer Fears Delay Plastic Pipe OK

Laboratory tests indicate that plastic water pipes considered for widespread residential use in California may cause sterility and cancer in humans, a state commission was told Monday.

The Commission on Housing and Community Development has delayed final authorization for use of the polybutylene pipe, manufactured by Shell Chemical Co., on Nov. 24.

In Monday's hearing, state Consumer Affairs Director Richard Spohn said tests by the California Analytical Laboratory indicated a chemical known as DEHP, which has been found to cause cancer and sterility in laboratory animals, may exist in hazardous quantities in the pipe.

State and Consumer Services Agency

OFFICE OF THE SECRETARY
1220 N STREET SUITE 409
SACRAMENTO CA 95814
(916) 445-1935

DEPARTMENT OF CONSUMER AFFAIRS
DEPARTMENT OF GENERAL SERVICES
DEPARTMENT OF VETERANS AFFAIRS
FRANCHISE TAX BOARD
OFFICE OF THE STATE FIRE MARSHAL
STATE PERSONNEL BOARD
STATE TEACHERS' RETIREMENT SYSTEM
PUBLIC EMPLOYEES' RETIREMENT SYSTEM
CALIFORNIA PUBLIC BROADCASTING COMMISSION
MUSEUM OF SCIENCE AND INDUSTRY
INTERGOVERNMENTAL PERSONNEL
ACT GRANT PROGRAM

July 21, 1981

John Gorman
California Pipe Trades Council
614 Gibson Road
Woodland, California 95695

Dear John,

This is in reply to your request for clarification of the legal relationship between the California Building Standards Law and the California Environmental Quality Act (CEQA).

I

Housing and Community Development Commission
Amendments to 1979 Uniform Plumbing Code

HCD is proposing several amendments to the 1979 UPC by allowing for expanded use of plastic plumbing pipe. After several months of public testimony, the HCD determined (and voted) that prior to any decision to adopt these regulations, an Environmental Impact Report (EIR) must be developed in compliance with the California Environmental Quality Act (CEQA). As you well recall, I appeared at one such hearing (November 24, 1980) and stated on the record that HCD must comply with requirements for an EIR prior to submitting proposed building standards to the SBSC.

While beginning the EIR process, the HCD budget was deleted by the Legislature, casting doubt as to when, if at all, the EIR will be completed. Nonetheless, several legal issues remain. In particular, should the 1982 UPC incorporate all of the HCD proposed amendments to the 79 UPC, may HCD adopt the new code by reference without filing an EIR?

As discussed below, HCD may not adopt such building standards by reference without complying with CEQA. Furthermore, the SBSC cannot approve such adoption without a demonstration of compliance with CEQA by the adopting agency.

II

Building Standards and CEQA*

The new California State Building Standards Law (Chapters 1 - 5 of Part 2.5 of Division 13, Health and Safety Code, Sections 18901 et. seq.) provides for uniformity and consistency in code promulgation through compliance with eight specified criteria (Health and Safety Code § 18930). State agencies, including the Commission on Housing and Community Development, must comply with all of these criteria before any of their "proposed" regulations** can be "approved and have full binding legal effect." (Cf. Health and Safety Code § 18905.)

One such criterion states: "the proposed building standard (must be) within the parameters established by enabling legislation. (Health and Safety Code § 18930(a)(2).) To meet this criterion, the adopting agency must demonstrate compliance with other applicable substantive and procedural requirements of law in its adoption of building standards." 24 Cal. Admin. C. §§ 1-304(c)(2)(C).

The California Environmental Quality Act (Pub. Res. C. §§ 21000 et. seq., "CEQA") is clearly "applicable substantive law." The Legislature, it appears, specifically sought to include building standards within the scope of CEQA:

> "All agencies of state government which regulate activities of private individuals, corporations.... shall regulate such activities so that major consideration is given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian.: (Pub. Res. C. § 21000(g).) (Emphasis added.)

Therefore, once an adopting agency has made a finding that its proposed building standards are subject to CEQA, and the public record indicates that they have made such a finding, then the SBSC must review and evaluate such building standards in light of CEQA. (Health and Safety Code § 18930(a)(2).)

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* This analysis is confined to an interpretation of the Building Standards law (1979 Statutes, Chapter 1152) as it relates to CEQA. An analysis of the State Housing Law, although subject to CEQA, is not provided here.

**Regulations "adopted" by HCD have the character only of "proposed" standards when before the BSC.

Should the adopting agency submit its building standards without compliance with CEQA (whether the submittals are in the form of amendments to model codes or in the model code itself) the standards would fail the above-noted criterion. It would be then my direction to the SBSC that such standards not be approved for failure to comply with clearly applicable statutes.

III

Conclusion

An adopting agency cannot avoid compliance with CEQA by adopting a "model" code by reference where the code contains material that was previously found to be subject to CEQA. To do otherwise would violate both the State Building Standards Law and the California Environmental Quality Act.

I hope this letter responds to your concerns. Please call if you have any questions.

Very truly yours,

M. Amanda Behe
Commission Counsel

MAB:jlr

cc: William Hastie
Wayne Jensen

PLEASE NOTE: THE PRECEDING PAGES WERE TREATED AS A UNIT IN THE ORIGINAL DOCUMENT.

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF LABOR

OFFICE OF THE COMMISSIONER

P.O. BOX 1149
JUNEAU, ALASKA 99802
PHONE: (907)465-2700

May 11, 1984

The Honorable Richard Eliason
Chairman, Senate Labor and
Commerce Committee
State Capitol
Pouch V
Juneau, AK 99811

Dear Senator Eliason:

This is in response to your request during the hearing yesterday on HB 508 regarding adoption of the 1982 Uniform Plumbing Code (UPC) by various local areas and municipalities around the state.

Enclosed are copies of letters sent out by our Mechanical Inspection office to various local officials and contractors throughout the state, advising them that the 1979 edition of the UPC was still in effect and would continue to be enforced as the State's minimum plumbing standards despite adoption of the 1982 UPC by several local jurisdictions. I have also enclosed a copy of the Superior Court's decision and order in the lawsuit brought by the Department of Labor against the City of Fairbanks, establishing that local areas and municipalities may not adopt their own plumbing codes which are less stringent than the State's minimum plumbing standards.

In response to Senator Mulcahy's question concerning fire hazards in trailers, I am informed that mobile home standards addressing this problem were first enacted in 1971 but were repealed in 1980 after the U.S. Department of Housing and Urban Development issued nationwide standards for trailers. The repealed State mobile home standards were under the jurisdiction of the Department of Commerce and Economic Development. For further information, contact Mr. Joe Swanson, Division of Measurement Standards.

07 G9LH

I hope the above information is of assistance to you. Please contact me if you need any further information.

Sincerely,

Robert W. Landau
Assistant Commissioner

Enclosures

cc/enc: Senator Mulcahy

FILE: AKMI (IR 3)

April 1, 1983

Arctic Sun Contracting
Box 350
Bethel, AK 99559

Attn. Mr. Greg Drury

Dear Mr. Drury:

You were correct in your letter; the 1982 Uniform Plumbing Code (UPC) has not been adopted by the state. When the 1982 UPC is adopted, the use of polybutylene pipe will be addressed, thus it's use should be allowed.

The state presently enforces the provisions of the 1979 UPC, which does not address the use of polybutylene, so I am not empowered to give a waiver.

In the case of the house at Lot 14, Block 10, Bethel; Mr. Barce's greatest concern is the overall piping installation. Photographs that I have reviewed show the polybutylene tubing is installed without the proper strapping, the tubing is not plumb, and the overall installation looks very unprofessional.

This normally means that the installer has little pride in his work or has very limited knowledge about installing plumbing.

If I may be of future help, please do not hesitate to call.

Sincerely,

R. D. Cather
Chief
Mechanical Inspection

FILE: AKMI (IR 3)

April 29, 1983

City of Fairbanks
410 Cushman Street
Fairbanks, AK 99701

Attn: Mr. R. H. Hardin
Building Official

Dear Mr. Hardin:

It is my understanding that the City of Fairbanks, Building Department, is allowing the use of ABS/PVC pipe in commercial buildings.

In reviewing the 1979 Uniform Plumbing Code, Sections 401 and 503, it is noted that ABS/PVC pipe is not allowed for commercial construction. It is only allowed in residential construction, no more than two stories in height.

The 1979 Uniform Plumbing Code, Sections 401 and 503, does not allow a waiver by the administrative authority to use ABS/PVC.

Since the 1979 Uniform Plumbing Code is the minimum state authority, under AS 18.60.705 - 740, its minimum guidelines must be met.

Sincerely,

R. D. Cather
Chief
Mechanical Inspection

cc: Bob Bacolas
Don Wilson
Adele Bacon

RDC:gr

FILE: AKMI (IR 10)

April 29, 1983

William Henderson
DBA Pete's Place
SR Box 90306
Fairbanks, AK 99701

This is in response to your request for a variance to use ABS/PVC drain and vent piping in a commercial establishment.

A variance cannot be granted for the following reason.

The state presently enforces the provisions of the 1979 Uniform Plumbing Code, in which the use of ABS/PVC waste/drain/venting pipe is restricted to residential construction, no more than two stories in height.

If you need confirmation, please review the Alaska state statutes: AS 18.60.705 and the 1979 Uniform Plumbing Code, Sections 401 and 503.

Should you need more help, please do not hesitate to call upon us.

Sincerely,

R. D. Cather
Chief
Mechanical Inspection

cc: Adele Bacon

RDC:gr

FILE: AKMI (IR 3)

June 28, 1983

Harry Chartier
City and Borough of Sitka
Building Official
Box 79
Sitka, AK 99835

Dear Mr. Chartier:

Please excuse the delay in responding to your letter of June 17, 1983. It is our function to assist all the building officials in carrying out their duties. Al Anaka was following my instructions in advising the various city building officials within his inspection district, that the state's basic plumbing code is still the 1979 edition of the Uniform Plumbing Code (UPC). We are currently trying to resolve a similar problem concerning the City of Fairbanks. Suit has been filed in Fairbanks by the Department of Labor to enforce the 1979 UPC.

Rest assured it is not the intent of the state to prevent Sitka from adopting the 1982 UPC. It should be noted, however, that there are certain sections of the 1982 UPC which are less stringent than the 1979 UPC and cannot be enacted. These less stringent sections are 401 and 503, which retricts the use of ABS/PVC.

For your information, Senate Bill 214 is awaiting legislative action. If it is passed as proposed, the 1982 UPC will be the standard for the state. If you feel the 1979 UPC is obsolete, you are free to encourage the adoption of SB 214.

Sincerely,

Don Cather
Chief

RDC:mn

C/B

FILE: AKMI (IR 3)

June 29, 1983

Bruce Davies
City Manager
City of Saxman
Saxman, AK 99835

Dear Mr. Davies:

Please excuse the delay in responding to Mr. Eddy's letter of June 15, 1983. It is our function to assist all the builders and city managers in carrying out their duties. Al Anaka was following my instructions in advising the various builders, within his inspection district, that the state's basic plumbing code is still the 1979 edition of the Uniform Plumbing Code (UPC). We are currently trying to resolve a similar problem concerning the City of Fairbanks. Suit has been filed in Fairbanks by the Department of Labor to enforce the 1979 UPC.

Rest assured it is not the intent of the state to prevent Saxman from adopting the 1982 UPC. It should be noted, however, that there are certain sections of the 1982 UPC which are less stringent than the 1979 UPC and cannot be enacted. These less stringent sections are 401 and 503, which retricts the use of ABS/PVC.

For your information, Senate Bill 214 is awaiting legislative action. If it is passed as proposed, the 1982 UPC will be the standard for the state. If you feel the 1979 UPC is obsolete, you are free to encourage the adoption of SB 214.

Sincerely,

Don Cather
Chief

RDC:mn

C/8

September 14, 1983 FILE: AKMI (IR 3)

Brice Gordon, Building Inspector
Kodiak Island Borough
Box 1246
Kodial, Alaska 99615

Dear Mr. Gordon:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather

Don Cather Chief
Mechanical Inspection.

September 14, 1983

FILE: AKMI (IR 3)

Mayor Ronald Larson
Matanuska-Susitna Borough
Box R
Palmer, Alaska 99645

Dear Mr. Larson:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather, Chief
Mechanical Inspection.

september 14, 1983 FILE: AKMI (IR 3)

Mayor Stan Thompson
Keani Peninsula Borough
Box 850
Keani, Alaska 99669

Dear Mr. Thompson:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be adv sed that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather, Chief
Mechanical Inspection.

September 14, 1983 FILE: AKMI (IR 3)

John Carlson, Mayor
Fairbanks North Star Borough
Box 1267
Fairbanks, Alaska 99701

Dear Mr. Carlson:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather

Don Cather Chief
Mechanical Inspection.

September 14, 1983 FILE: AKMI (IR 3)

Mayor Carol Fader
Ketchikan Gateway Borough
344 Front Street
Ketchikan, Alaska 99901

Dear Mrs. Fader:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather Chief
Mechanical Inspection.

September 15, 1983 FILE: AKMI (IR 3)

Mayor Joe Hill
City of Kotzebue
Box 46
Kotzebue, Alaska 99752

Dear Mr. Hill:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather Chief
Mechanical Inspection.

September 15, 1983 FILE: AKMI (IR 3)

Mayor Richard Underkofler
City of Petersburg
Box 329
Petersburg, Alaska 99833

Dear Mr. Underkofler:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather

Don Cather Chief
Mechanical Inspection.

September 15, 1983

FILE: AKMI (IR 3)

Mayor Justin Maile
City of Soldotna
Box 409
Soldotna, Alaska 99669

Dear Mr. Maile:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather - Chief
Mechanical Inspection.

September 15, 1983 FILE: AKMI (IR 3)

Mayor Suzi Collins
City of Valdez
Box 307
Valdez, Alaska 99686

Dear Mr. Collins:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather Chief
Mechanical Inspection.

September 15, 1983 FILE: AKMI (IR 3)

Mayor Don Cripps
City of Seward
Box 337
Seward, Alaska 99664

Dear Mr. Cripps:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather Chief
Mechanical Inspection.

September 15, 1983 FILE: AKMI (IR 3)

Mayor Leo Rasmussen
City of Nome
Box 281
Nome, Alaska 99762

Dear Mr. Rasmussen:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather Chief
Mechanical Inspection.

September 15, 1983 FILE: AKMI (IR 3)

Mayor Allen Beardsley
City of Kodiak
Box 1197
Kodiak, Alaska 99615

Dear Mr. Beardsley:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather Chief
Mechanical Inspection.

September 15, 1983 FILE: AKMI (IR 3)

Mayor Ron Malson
City of Keani
Box 580
Keani, Alaska 99661

Dear Mr. Malson:

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather

Don Cather Chief
Mechanical Inspection.

September 15, 1983 FILE: AKMI (IR 3)

Mayor Nate Olemaun
City of Barrow
Box 629
Barrow, Alaska 99723

Dear Mr. Olemaun

Recently we have been questioned about the 1982 Uniform Plumbing Code and the use of ABS/PVC waste and drain piping.

Please be advised that the 1979 edition of the Uniform Plumbing Code is still in effect and is being enforced by the state as the minimum plumbing code.

Until the legislature ammends AS 18.60.705, those ABS/PVC waste and drains installations subject to Chapter 401 (a) and Chapter 503 (a) of the 1979 Uniform Plumbing Code, are limited to residential construction, not more than two (2) stories in height.

Should you have any questions, please do not hesitate to call.

Don Cather

Don Cather Chief
Mechanical Inspection.