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Memorandum

To: Kim Tisa; United States Environmental Protection Agency

From: David M. Sullivan, LSP;TRC Environmental Corporation

Subject: Response to Comments on the New Bedford High School (NBHS) Interior PCB Removal and Abatement Plan

Date: June 17, 2011

CC: C. Henlin, S. Alfonse; City of New Bedford
J. Mulhall; TRC Environmental Corporation
M. Beeler; AECOM

This memorandum was prepared by TRC Environmental Corporation (TRC) in response to our recent telephone conversation. TRC submitted the *New Bedford High School Building (NBHS) Interior PCB Removal and Abatement Plan, March 2011* (RAP) to address polychlorinated biphenyl (PCB) containing building materials at New Bedford High School (NBHS). The following provides responses to comments posed by the Environmental Protection Agency (EPA) regarding the RAP.

EPA Comment 1: *Please insure that the City provides the certification specified under § 761.61(a)(3)(i)(E).*

Response: The certification is attached. See Attachment A.

EPA Comment 2: *Page 1-5, Excluded PCB Products, 2nd sentence – This sentence states: "In addition, these materials must be part of the original construction or it must be reasonably determined that subsequent construction or maintenance activities could have led to the dilution of PCBs within the material."*

Response: The sentence should read "could not have".

EPA Comment 3: *Table 1 details all sampling conducted to-date and provides the waste classification for the identified materials. Of particular interest is the "Excluded PCB Product" classification for the carpeting and for the push-pin boards. For these categories, and given the waste classification for the auditorium seating, I recommend that additional justification be*

provided to support why the push-pins boards and the carpeting would not be a PCB Remediation Waste.

Response: The presence of PCBs in the carpet is believed to be from manufacture. The following are citations and other information concerning the use of PCBs in acrylic/carpet synthetics.

- From the International POPs Elimination Network (IPEN) paper on Open System Uses of PCBs:

  "*Sweden is one of the few countries to have taken action in relation to these important reservoirs of PCBs. The Swedish National Implementation Plan said:*

  "…..an application in the food industry [for PCBs] was as a plasticizer in an acrylic, non-skid flooring material."

  The citation for the use of PCBs as a plasticizer in acrylic is seen as being significant because 1) acrylic and other similar polymers were and continued to be used widely in the manufacture of carpeting and 2) Monsanto produced an acrylic polymer marketed as Acrilan.

- Also cited in the IPEN paper is the following:

  "*Results of a US population-based case-control study that examined non-Hodgkin lymphoma (NHL) risk and exposure to PCBs in carpet dust as an exposure indicator suggest an increased risk of NHL associated with exposure to PCBs, with evidence of greater effects for PCB 180 [30]."*

  These studies were conducted within residential homes in the urban Los Angeles area. Contamination of carpet dust, which was tested for PCBs as part of the study, would not be expected to come from another source within the house and was probably not tracked into the homes. Thus, the PCBs found in the carpet dust during these studies is believed to have come from the carpet fibers themselves and that the source of PCBs is manufacture. See Attachment B.

- Additionally, a legal document which was released by Monsanto in response to the Anniston, Alabama suits references 40 to 200 parts per billion (ppb) of PCBs in the plant effluent at Monsanto's Pensacola, FL plant (see attached). Monsanto did not manufacture PCBs at the Pensacola plant, as it was mostly manufactured at the Anniston, Alabama facility in the U.S. The Pensacola plant is cited on the Florida Department of Environmental Protection (FDEP) website (December 1992) as the world's largest unified production facility of nylon for carpets and industrial tires. See Attachment C.

  The presence of PCBs in the plant effluent ties to the use of PCBs at the facility. Because PCBs were not manufactured at this facility it is believed that PCBs were used in the

production of the major product manufactured at this location, which was nylon used in the manufacture of carpeting.

The date of manufacture and the brand names for the carpeting at the NBHS site are not known. However, carpets at the site have not been replaced with new carpeting and instead have been replaced with vinyl tile when the carpets became excessively worn. Thus, it is believed that the carpets could be original to the construction of NBHS.

This information indicates that PCBs were used in the manufacture of acrylic and nylon polymers. Because these fibers are commonly used in carpet manufacture, the likely source of PCBs in the carpet is from manufacture.

The use of PCBs in cork materials, similar to those used in the push-pin boards, is also documented. Therefore, the presence of PCBs in the push-pin boards is also likely from manufacture. The EPA document *Use Authorization for, and Distribution in Commerce of, Non-liquid Polychlorinated Biphenyls; Notice of Availability; Partial Reopening of Comment Period*, December 10, 1999 states *"materials made from processed cork that have been contaminated with PCBs at concentrations up to 6,400 ppm"*. This would indicate that EPA had documented the use of PCBs in the manufacture of cork gaskets that are very similar to the cork used in the push pin boards. See Attachment D.

These materials are believed to be Excluded Products based upon the information gathered but additional research into the matter will be performed.

EPA Comment 4: *Page 2-3, Wall Paint verification sampling (4 part comment/response a-d)*

a. *With respect to the proposed verification sampling of 1/1000 ft^2, it is unclear what this proposed alternative sampling is based upon.*

Response: Samples will be collected at a frequency of three (3) samples per room, for a total of nine (9) samples.

b. *No information was provided on the square footage of the paint to be removed and thus, the total surface area that would be decontaminated.*

Response: The surface areas that will be decontaminated by paint stripping are as follows.

A-211-3 -	93 square feet (s.f.)
A-213-4 -	93 s.f.
B-230 -	183 s.f.
Total:	**369 s.f.**

c. *Is there any data to confirm how effective the paint stripper was (any data generated during pilot test?).*

Response: Visual evidence was noted that the paint stripper was effective at removing paint. However, no additional data was collected during the pilot test.

d. *Clarify the location of A-211-3 and A-213-4 as it isn't clear on the Figures, unlike B-230.*

Response: The updated figure is attached. See Attachment E.

EPA Comment 5: *Page 2-4, Section 2.4.2 – Main Auditorium Seats (6 part comment/response a-f)*

a. *Will the auditorium seats be placed in bags prior to transport to the waste storage area?*

Response: Yes, all seating will be placed in bags prior to transport to the waste storage area?

b. *The analytical results for the plywood seats were not found in Table 1 or in Appendix A.*

Response: The analytical results for the plywood seats have been added to Table 1 and Appendix A of the RAP and are attached herein. See Attachments F and G.

c. *With respect to the proposed verification wipe samples, what would be the wipe action level?*

Response: The wipe action level is 1.0 ug/100 cm^2.

d. *With respect to the proposed verification sampling, what is the sampling frequency?*

Response: Corresponding bulk and wipe samples of the plywood backing will be collected at a frequency of one (1) sample per ten (10) seats for the first 100 seats. Assuming the results of these samples are <1.0 ug/100 cm^2 for wipes and <1.0 mg/kg for bulk material samples, subsequent wipe sampling only will be performed at a frequency of one (1) sample per 50 seats.

e. *Page 2-6. There is discussion of disposal of the foam as a < 50 ppm. The previous discussion of the auditorium seats only addressed the plywood, not the foam. Thus, a small discussion should be included in that section to support the proposed disposal as a < 50 ppm PCB waste. This is important, as it appears that only 5 samples were collected from over 1,300 seats. Thus, there needs to be a justification to support that these samples are representative of this waste type.*

Response: The airborne concentrations within the auditorium are homogenous throughout the room. The polyurethane foam seating has reached equilibrium over time. Since the seating has not been replaced within the auditorium and all of the seating has been exposed for the same amount of time, these five samples are representative of the entire data set.

f. Page 2-6. For the foam, the narrative states that the foam will be stored in the same manner as the PCB bulk product wastes. Based on my reading, this would be the paint, which will be stored in drums designed for caustic due to the stripper, itself. Thus, confirmation is required on the proposed storage.

Response: All polyurethane foam shall be disposed of as PCB Remediation Waste with total PCB concentrations <50 mg/kg. The foam will be segregated from all other wastes generated during the remediation for the purposes of disposal. The foam will be stored in lined rolloff containers equipped with tarps to provide cover when not in use.

EPA Comment 6: *Were any fluorescent light ballasts identified as leaking?*

Response: Yes, several PCB ballasts were identified as leaking.

EPA Comment 7: *Will all ballasts be consolidated together, regardless of whether leaking or non-leaking?*

Response: All of the PCB ballasts will be consolidated and treated as leaking, regardless of the condition in which they are found. Non-PCB ballasts will be disposed of with the light fixtures.

Please call or write if you have any questions, or if we can be of any other assistance.

ATTACHMENT A

ENVIRONMENTAL STEWARDSHIP DEPARTMENT/

NEW BEDFORD CONSERVATION COMMISSION

CITY OF NEW BEDFORD
SCOTT W. LANG, MAYOR

June 15, 2011

Kimberly N. Tisa, Region 1 PCB Coordinator
United State Environmental Protection Agency
5 Post Office Square, OSRR07-2
Boston, MA 02109-3912

Subject: Written Certification
NBHS Interior Remediation

Dear Ms. Tisa,

I certify that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination within the New Bedford High School Interior, are on file at City of New Bedford Department of Environmental Stewardship's office, and are available for EPA inspection.

If you have any questions, comments, or concerns, please contact Cheryl Henlin via phone at 508-961-4576 or via email at Cheryl.Henlin@newbedford-ma.gov.

Very Truly Yours,

Scott Alfonse
Director
City of New Bedford Department of Environmental Stewardship

133 William Street, Room 304, New Bedford, MA 02740
(508) 991-6188 Tel. · (508) 961-3045 Fax

ATTACHMENT B

– Keep the Promise at COP4

Open System Uses of PCBs
"Blowing in the Wind"

Introduction:

In 1992 some of the concerns of the environmental movement in relation to PCBs were succinctly summarised by Peter Montague [1] who wrote:

"Between 1929 and today, Monsanto made, or licensed someone else to make, a total of 1.2 million tons of PCBs[Tanabe[1]] .Of this total, 31% (370,000 tons) has so far escaped into the general environment. An estimated 4% of original production has been fed into incinerators, in hopes of destroying it. However, 780,000 tons of PCBs are still in use in transformers and capacitors, or have been sent to landfills where they are waiting patiently to escape. Thus the amount waiting to be released into the environment is approximately twice as large as the amount that has already been released."

The numbers have been improved slightly but the current situation is not very different from that of 20 years ago. Almost all the international efforts have, however, been focussed on uses of PCBs in capacitors and transformers. Whilst these are important stockpiles there is increasing evidence that "open system" use of PCBs, such as for building sealants, are a more important source of contemporary contamination.

These open source uses, releases and residual contamination should not be over-looked. Initiatives like the PCB Elimination Club that is proposed at COP4 should include these uses within their remit.

PCB Production:

Perhaps the best available data currently available for total PCB production is that published by Breivik [2] which shows a total global production of approximately 1.3 million tonnes over the period from 1930 to 1993:

Total PCB production as reported in the literature (in tonnes)

Producer	Country	Start	Stop	Amount	%	Reference
Monsanto	USA	1930	1977	641,246	48.4	de Voogt and Brinkman (1989)
Bayer AG	West Germany	1930	1983	159,062	12.0	de Voogt and Brinkman (1989)
Orgsteklo	U.S.S.R. (Russia)	1939	1990	141,800	10.7	AMAP (2000)
Prodelec	France	1930	1984	134,654	10.2	de Voogt and Brinkman (1989)
Monsanto	U.K.	1954	1977	66,542	5.0	de Voogt and Brinkman (1989)
Kanegafuchi	Japan	1954	1972	56,326	4.2	Tatsukawa (1976)
Orgsintez	U.S.S.R. (Russia)	1972	1993	32,000	2.4	AMAP (2000)
Caffaro	Italy	1958	1983	31,092	2.3	de Voogt and Brinkman (1989)
S.A. Cros	Spain	1955	1984	29,012	2.2	de Voogt and Brinkman (1989)
Chemko	Czechoslovakia	1959	1984	21,482	1.6	Schlosserová (1994)
Xi'an	China	1960	1979	8,000	0.6	Jiang et al. (1997)
Mitsubishi	Japan	1969	1972	2,461	0.2	Tatsukawa (1976)
Electrochemical Company	Poland	1966	1970	1,000	<0.1	Zulkowski et al. (2003)
Zaklady Azotowe	Poland	1974	1977	679	<0.1	Falandysz (2000)
Geneva Industries	USA	1971	1973	454	<0.1	de Voogt and Brinkman (1989)
Total	Global	1930	1993	1,325,810	100	

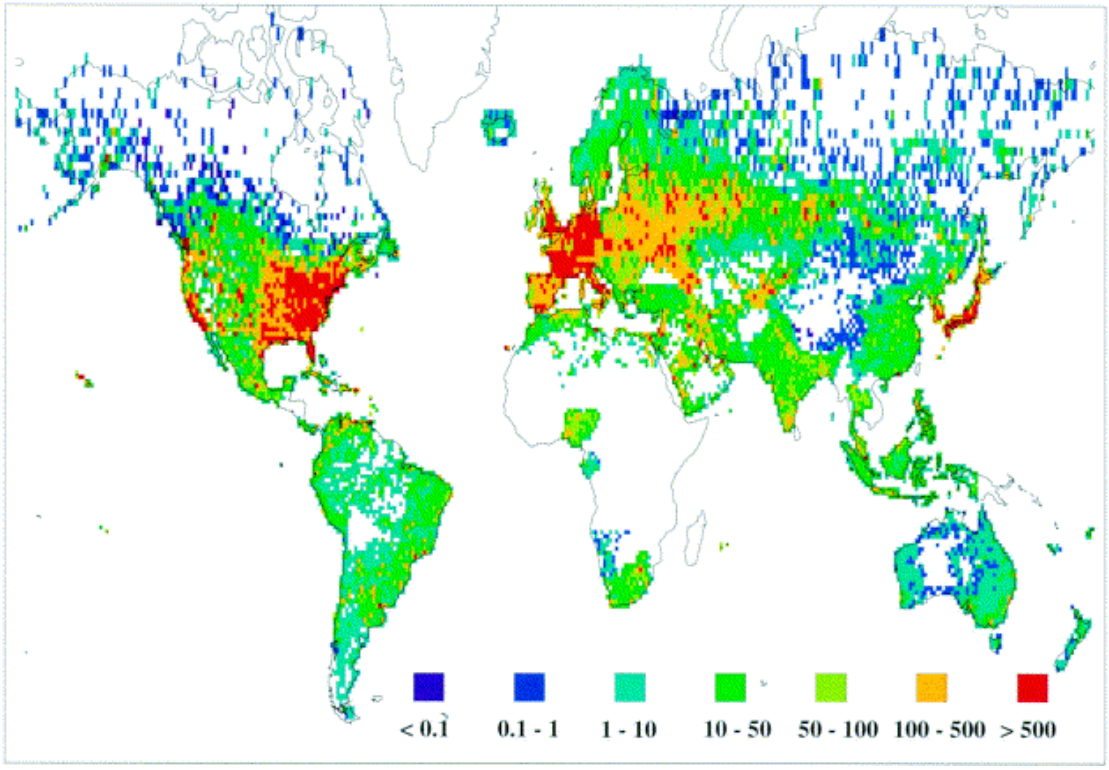
Approximately half of the total production was in the United States and only 10% of the total was manufactured outside either the USA, USSR, West Germany, France, UK or Japan.

PCB Usage:

[1] Shinsuke Tanabe, "PCB Problems in the Future: Foresight from Current Knowledge," ENVIRONMENTAL POLLUTION Vol. 50 (1988), pgs. 5-28

Approximately 48% of PCBs were used for transformer oil; c. 21% for small capacitors; 10% for other 'nominally closed' systems; and 21% for open uses.

Breivik [3] plotted global usage and suggests that almost 97% of the global historical use of PCBs have occurred in the Northern Hemisphere:



Remaining Stocks:

Whilst global production of PCBs ceased in 1993 [3] it is estimated that between 12.9% and16.5% of the original PCBs remain in use – the majority of which are in long-lived closed systems [2]. Many electrical transformers containing, or contaminated with, PCBs remain in use and it is estimated that c. 4 million tonnes of such equipment will eventually require environmentally sound waste management [4].

The real figure may be even higher. The Stockholm Convention secretariat reviewed the PCB data in the National Implementation Plans from the 88 parties who had submitted them by December 2008[2]. The results show that >6,431,886 tonnes of PCB contaminated oil together with 472,853 tonnes of contaminated equipment are listed by these 88 parties alone [5].

Treatment and Disposal Costs:

With current total treatment costs of US $2,000 to $5,000 per tonne (including packing, transport and destruction) this would amount to an estimated US $8 to $35 billion to manage transformer-associated PCBs alone. A comparison to the US $550 million allocated GEF funding for the Stockholm Convention from 2003 to 2010 demonstrates the magnitude of the financial challenge to implement the PCB obligations of the Stockholm Convention by the target date of 2028 [4].

The costs of a failure to act are even higher. The clean up and rehabilitation costs a single transformer fire in the US in the 1980s over the ten years after the accident ran to more than $40 million[3] [6]. The building had only cost $17 million to construct. Fires in less affluent countries will have resulted in lower costs but almost certainly greater levels of damage to human health and the environment.

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[2] 98 NIPS had been received by 24th April 2009 had been received – a further 64 are currently outstanding – 46 of which are overdue – many by nearly two years

[3] Equivalent to significantly more than 100 times the budget of the PEC at current values.

Current Sources of Emissions:

The approach adopted to PCBs by many parties cover only the 'closed system' use of PCBs in transformers and transformer oil. Whilst transformers and electrical equipment were the major uses of PCBs and are still important reservoirs [7] they may not be the most environmentally damaging source.

Data presented by Meijer [8] confirms the conclusion of Bignert et al [9] that at the present time PCB levels in background European air are still mostly controlled by primary emissions, rather than recycling/ secondary emissions from the major environmental repositories such as soils or water bodies.

Du et al [10] reported that whilst Aroclors represent more than 70% of all the PCBs produced in the US they only comprise about 27% of the atmospheric PCB burden in their study of Camden. The authors wrote the "*reasons for this discrepancy are not immediately apparent*". The most likely explanation, however, and one that is often overlooked, is that open system applications of PCBs are the major contributor to the atmospheric burden of PCBs.

Historically approximately 50% of the total[4] emissions have come from 'open system' uses. These open systems, such as building sealants, have resulted in total emissions about five times higher than closed systems. Whilst some countries have taken positive steps to address remaining open system uses (notably Norway, Sweden, Finland and Switzerland) other countries known to have similar problems have not even acknowledged these uses in their National Implementation Plans This is in spite of the increasing evidence indicating that these 'open system' uses of PCBs may currently be responsible for higher health risks and more environmental contamination than the remaining use of PCBs in transformers.

Open System Uses:

Open system applications of PCBs have included plasticisers, carbonless copy paper, lubricating oils, inks, laminating and impregnating agents, paints, adhesives, waxes, additives in cement and plaster, casting agents, dedusting agents, sealing liquids, fire retardants, immersion oils and pesticide extenders [de Voogt and Brinkman, 1989 quoted by [11]].

In Japan, most of the open use was for carbonless copy paper (Masuda et al., 1972; Tatsukawa,1976 quoted by [11]). Whilst much of this paper has been archived it has been noted as a source of contamination in paper recycling.

In the USA plasticisers were the principal open use (Nisbet and Sarofim, 1972). In 1972, Monsanto, the only North American manufacturer of PCBs, voluntarily ceased marketing them in dispersive uses, e.g. in commercial products such as carbonless carbon paper, printing inks, sealants, paints, etc [12]. The manufacture of PCBs for all other uses stopped in 1977.

The elastic polysulphide sealants used on prefabricated residential buildings, was identified in the 1990s in Germany, Sweden and Finland as a source of PCB contamination and Wong [13] recently noted:

The "fresher" signature observed in urban areas is presumed to be due to emissions from past and present uses of the chemicals [14]. For example, fresh emissions include those from banned "legacy" substances such as PCBs that are incorporated into the urban fabric within building sealants and other building materials.

Since the mid 1990's the increasing importance of urban areas as current source regions of PCBs to the atmosphere has been identified [11, 15-18].

Many houses and, especially, public buildings constructed with PCB containing materials during the period from 1950–1970s still exist [19]. It is estimated that in the Federal Republic of Germany alone about 20,000 tons of PCBs were used in the construction of school and office-buildings [20]. Estimates for the UK are 500 tonnes [21]. In Denmark it is estimated that 75 tonnes of PCB is still in buildings [22].

Usage has also varied in different countries. In Germany, PCB-containing sealants were used more often in indoor seams whilst in Finland PCBs were mainly used in outdoor seams between concrete blocks.

[4] including those from accidental releases; direct emissions; open burning, landfill and incineration

Estimates of the volume of PCBs used in sealants in Finland vary from 130 t to 270 t [23]. The most frequently applied commercial mixture was Aroclor 1260 or Aroclor 1254. A large block of flats can contain as much as 40–50 kg of PCB [23].

It appears that the use of PCBs in sealants and similar uses has been restricted mainly to the more developed countries. Devanathan [24] noted, for example, that although the suburbs the metropolitan cities tested for PCBs in ambient air and breast milk were industrialised "*PCBs levels are still low, indicating minimal usage of PCBs in open systems in India*".

Furthermore Breivik [3] suggests that almost 97% of the global historical use of PCBs have occurred in the Northern Hemisphere.

Only a few of the countries affected, including Sweden, Switzerland and Norway appear to have taken the issue seriously enough to recognize in their National Implementation Plans and to initiate action to address the problems.

The Swiss National Implementation Plan [25] says:

Joint sealants represent long-term diffuse sources for PCBs. The PCB inventory present in these materials is large enough to sustain elevated levels of PCB in indoor air for a very long period of time.

Joint sealants in concrete buildings erected between 1955 and 1975 and anti-corrosive coatings in large steel constructions (e. g. bridges, storage tanks, masts of high volume transmission lines) represent major inventories of PCBs in open systems. Removal and appropriate disposal of old joint sealants, coatings and paints from construction materials is crucial to prevent significant amounts of PCB being released into the environment and, eventually, incorporated in biota along the food chain.

Sweden is one of the few countries to have taken action in relation to these important reservoirs of PCBs. The Swedish National Implementation Plan said:

"Another important use is as a plasticizer in sealants used for joints in buildings: between prefabricated concrete cladding panels, in dilatation joints for large brick façades, around retail store fronts and around windows. Insulating glazing has been sealed with a sealant plasticized with PCBs. These sealants were mainly manufactured under licence in Sweden. The use of PCBs as hydraulic and heat transfer fluids was discontinued in the early 1970s, following the denial of permits. PCBs have also been used in paints for ships and corrosive environments. An application in the food industry was as a plasticizer in an acrylic, non-skid flooring material."

Legislation has recently been introduced requiring surveys and removal of these sealants and non-slip flooring materials.

Norway has undertaken an inventory of PCBs in building materials [26] and It has been calculated that around 85 tonnes, or approximately 18% of existing PCB, is present in plaster in Norwegian buildings. Other sources of PCB calculated include, glue in double-glazing (200 t), condensators (sic) (105 t), joint sealants (50 t) and paint (10 t). The consequence is that plaster regularly exceeds the threshold for hazardous waste as do some entire homes, schools and office buildings built in the period 1960-69.

The problem is not just an external one - Rudel [27] detected PCBs in indoor air in 31% of 120 homes tested on Cape Cod, MA.

Many sealants have been used internally together with PCB contaminated non-skid flooring and even floor polishes containing PCBs.

Evaporation and abrasion of PCBs can result in considerable house dust and indoor air contamination [19, 27, 28], leading to the increased PCB body burden of residents and occupants, probably through inhalation or ingestion exposure [27, 29].

Results of a US population-based case-control study that examined non-Hodgkin lymphoma (NHL) risk and exposure to PCBs in carpet dust as an exposure indicator suggest an increased risk of NHL associated with exposure to PCBs, with evidence of greater effects for PCB 180 [30].

While inhalation is the principal indoor pathway under a typical dust ingestion scenario, exposure via dust ingestion can exceeds that from either inhalation or diet for some North American toddlers [31].

Priha [23] demonstrated that in the most exposed cases of outdoor sealant use children can be exposed to daily doses near the level of the reference dose.

Direct transfer to food is possible in some applications. Sweeney [32] reported that while testing a bulk milk sample for pesticides in 1974, the Michigan Department of Agriculture detected PCB which was subsequently traced to a sealant called Kumar (33% PCBs) that had been introduced in Michigan in 1941[5].

Since exposure via food is gradually declining, indoor air is likely to become a more visible source for human exposure with dioxin-like PCB and should be urgently addressed because evaporation from non-remediated PCB sources in the indoor and urban environment continues over very long periods.

Most of PCB-contaminated public buildings erected in the 1960s and 1970s are still in use and will further be used for years or even decades. If the PCB issue is not addressed now then it is likely to become worse and especially when the buildings are finally demolished.

Ultimate Disposal:

Whether the PCBs for disposal are collected from open or closed systems particular attention should be given to disposal and environmentally sound management. Incineration of PCBs has resulted in some high levels of releases to the environment [33, 34] and non-incineration alternatives should be used where possible.

EndNotes

1. Montague, P., *As the Story of PCBs unfolds Rachels Hazardous Waste News No. 295 22/7/92*. 1992, Environmental Research Foundation: Annapolis, MD.
2. Breivik, K., et al., *Towards a global historical emission inventory for selected PCB congeners -- A mass balance approach: 3. An update.* Science of The Total Environment, 2007. **377**(2-3): p. 296-307.
3. Breivik, K., et al., *Towards a global historical emission inventory for selected PCB congeners -- a mass balance approach: 1. Global production and consumption.* The Science of The Total Environment, 2002. **290**(1-3): p. 181-198.
4. Weber, R., et al., *Dioxin - and POP- contaminated sites—contemporary and future relevance and challenges* <http://www.springerlink.com/content/0q10km8582605r1x/fulltext.pdf>. Environmental Science and Pollution Research, 2008.
5. Stockholm Convention, *Matters for consideration or action by the Conference of the Parties: effectiveness evaluation UNEP/POPS/COP.4/30 Appendix I Quantities of POPs reported in national implementation plan inventories of 88 Parties to the Convention*. 2009.
6. Schecter, A. and K. Charles, *The Binghamton State Office Building transformer incident after one decade.* Chemosphere, 1991. **23**(8-10): p. 1307-1321.
7. Breivik, K., et al., *Primary sources of selected POPs: regional and global scale emission inventories.* Environ Pollut, 2004. **128**(1-2): p. 3-16.
8. Meijer, S.N., et al., *Spatial and Temporal Trends of POPs in Norwegian and UK Background Air: Implications for Global Cycling.* Environ Sci Technol, 2003. **37**(3): p. 454-461.
9. Bignert, A., et al., *Temporal trends of organochlorines in Northern Europe, 1967-1995. Relation to global fractionation, leakage from sediments and international measures.* Environmental Pollution, 1998. **99**(2): p. 177-198.
10. Du, S. and L.A. Rodenburg, *Source identification of atmospheric PCBs in Philadelphia/Camden using positive matrix factorization followed by the potential source contribution function.* Atmospheric Environment, 2007. **41**(38): p. 8596-8608.
11. Breivik, K., et al., *Towards a global historical emission inventory for selected PCB congeners -- a mass balance approach: 2. Emissions.* The Science of The Total Environment, 2002. **290**(1-3): p. 199-224.
12. Commission for Environmental Cooperation (CEC), *Status of PCB management in North America*. 1996: Montreal, Canada.
13. Wong, F., et al., *Concentrations and chiral signatures of POPs in soils and sediments: A comparative urban versus rural study in Canada and UK.* Chemosphere, 2009. **74**(3): p. 404-411.

[5] The MDPH began recruiting residents from farms where Kumar was used in 1977 (the ''PCB Silo Cohort''), using the same data collection procedures employed in the PBB Cohort. A total of 991 persons were enrolled over the interval from 1978 to 1990. No funding was ever dedicated to support the establishment of this cohort; therefore, recruitment and follow-up was not as systematic or complete as with the PBB cohort (Humphrey, 1983).

14. Diamond, M.L. and E. Hodge, *Urban Contaminant Dynamics: From Source to Effect.* Environ Sci Technol, 2007. **41**(11): p. 3796-3800.
15. Halsall, C.J., et al., *PCBs in U.K. Urban Air.* Environ Sci Technol, 1995. **29**(9): p. 2368-2376.
16. Gasic, B., et al., *Measuring and Modeling Short-Term Variability of PCBs in Air and Characterization of Urban Source Strength in Zurich, Switzerland.* Environ Sci Technol, 2009. **43**(3): p. 769-776.
17. Du, S., et al., *Passive Air Sampling for Polychlorinated Biphenyls in the Philadelphia Metropolitan Area.* Environ Sci Technol, 2009. **43**(5): p. 1287-1292.
18. Cachada, A., et al., *The variability of polychlorinated biphenyls levels in urban soils from five European cities.* Environmental Pollution, 2009. **157**(2): p. 511-518.
19. Heinzow, B., et al., *PCB and dioxin-like PCB in indoor air of public buildings contaminated with different PCB sources - deriving toxicity equivalent concentrations from standard PCB congeners.* Chemosphere, 2007. **67**(9): p. 1746-1753.
20. Benthe, C., et al., *Polychlorinated biphenyls. Indoor air contamination due to thiokol-rubber sealants in an office building.* Chemosphere, 1992. **25**(7-10): p. 1481-1486.
21. ENDS, *Research highlights PCB exposure from building sealants.* Environmental Data Services (ENDS) Report, 2002. **335**: p. 6.
22. Wilkins, K., et al., *Detection of indoor PCB contamination by thermal desorption of dust. A rapid screening method?* Environ Sci Pollut Res Int, 2002. **9**(3): p. 166-8.
23. Priha, E., S. Hellman, and J. Sorvari, *PCB contamination from polysulphide sealants in residential areas--exposure and risk assessment.* Chemosphere, 2005. **59**(4): p. 537-543.
24. Devanathan, G., et al., *Persistent organochlorines in human breast milk from major metropolitan cities in India.* Environmental Pollution, 2009. **157**(1): p. 148-154.
25. Federal Office for the Environment, *Swiss National Implementation Plan , First Edition*. 2006, FOEN: Bern.
26. Andersson, M., R.T. Ottesen, and T. Volden, *Building materials as a source of PCB pollution in Bergen, Norway.* Science of The Total Environment, 2004. **325**(1-3): p. 139-144.
27. Rudel, R., L. Seryak, and J. Brody, *PCB-containing wood floor finish is a likely source of elevated PCBs in residents' blood, household air and dust: a case study of exposure.* Environmental Health, 2008. **7**(1): p. 2.
28. Herrick, R.F., et al., *An unrecognized source of PCB contamination in schools and other buildings.* Environ Health Perspect, 2004. **112**(10): p. 1051-3.
29. Liebl, B., et al., *Evidence for increased internal exposure to lower chlorinated polychlorinated biphenyls (PCB) in pupils attending a contaminated school.* International Journal of Hygiene and Environmental Health, 2004. **207**(4): p. 315-324.
30. Colt, J.S., et al., *Organochlorines in carpet dust and non-Hodgkin lymphoma.* Epidemiology, 2005. **16**(4): p. 516-25.
31. Harrad, S., et al., *Polychlorinated biphenyls in domestic dust from Canada, New Zealand, United Kingdom and United States: Implications for human exposure.* Chemosphere. **In Press, Corrected Proof**.
32. Sweeney, A.M., et al., *Changes in serum PBB and PCB levels over time among women of varying ages at exposure.* Environ Res, 2001. **86**(2): p. 128-39.
33. Lovett, A.A., et al., *The Panteg monitoring project: comparing PCB and dioxin concentrations in the vicinity of industrial facilities.* Journal of Hazardous Materials, 1998. **61**(1-3): p. 175-185.
34. Ball, D., et al., *Polychlorinated Biphenyls, Dioxins, and Furans in the Pontypool Environment—The Panteg Monitoring Project, Final Report to the Welsh Office, July 1993*. 1993, Schools of Environmental Sciences and Chemical Sciences University of East Anglia (UEA).

ATTACHMENT C

Monsanto

FROM (NAME & LOCATION): W. R. Richard - Research Center

DATE: September 9, 1969

SUBJECT: DEFENSE OF AROCLOR - F. FLUIDS

REFERENCE:

TO: E. Wheeler - EWHEE

cc: P. Hodges PHODG
M. Farrar Res. 1
H. Bergen HBERG

General Policy

Make the Govt., States and Universities prove their case, but avoid as much confrontation as possible. Comply and work with public officials to meet or exceed requirements ahead of time. Adverse publicity and competition are the real weapons.

Analytical for Aroclor { In Air - Which Aroclors are present? Where? / In Water - Which compounds interfere? / In Animals } Govt. Agencies

Keep track of how much contamination - which sources.

Prove Bioharmful - Let Govt. prove its case, on case by case basis.

Monsanto Visit-Govt. Biolabs - in search of toxicological experiments and evidence vs. Aroclors to keep up with progress.

Monsanto Prove Bioharmless - Limited work at Ind. Bio-test -

"Safe" toxic level for { man, mammals, fish } via { Rats, Chickens, Fish }

Seek evidence of Biodegradation

Question evidence against us.

Question shrimp toxicology especially other toxic chemicals.

If Aroclor bad, others must be worse.

Probable Outcome

We can prove some things are OK at low concentration. Give Monsanto some defense.

We can't defend vs. everything. Some animals or fish or insects will be harmed.

Aroclor degradation rate will be slow. Tough to defend against. Higher chlorination compounds will be worse than lower chlorine compounds.

Therefore we will have to restrict uses and clean-up as much as we can, starting immediately.

DSW 014256

PLAINTIFF'S EXHIBIT

Therefore we will have to work for alternate products in end use applications; for Aroclor production facilities.

Clean Up Aroclors and substitute products where necessary and when required, before threats of publicity and competitive activity overwhelm us.

Water Pollution seems to be first issue

Aroclor product is refractive, will settle out on solids - sewerage sludge - river bottoms, and apparently has a long life.

Florida or Gulf Coast - Aroclor 1254 - Aroclor 1260 present issue.

40-200 ppb - causing problem at Pensacola (Monsanto) in plant effluent-causing " with shrimp.
- can't risk shut-down of plant.

Federal and State can extrapolate to other plants in Gulf area.

San Francisco - Aroclor 1254 and 1260

Reported Aroclor to be present in San Francisco Bay.

Reported to be thin egg shells in birds -

Lot of screaming -

Great Lakes Warf studies on DDT

Aroclor 1254 will be found!

Aroclor 1242 will be found?

Air Pollution - Possible spread - but less of an issue right now.
Analytical work more difficult.

Direct Contact with Product

Doesn't seem to be an issue - except for food heat transfer.

We don't believe Aroclor is being used as carrier for insecticide - sprayed around -

We are not positive but most uses are "closed" systems or products used in solid plastics, or adhesives, or sealants.

F. Fluids	Possible Pollution by Customers Plant Operation	Possible Pollution by Customers Prod.
Product		
Hydraulic Fluids	Yes, leakage external	Possible - See Johnson Motors Castings.
Air Compressor Fluids	Yes, leakage external	Leakage into produc
Heat Transfer	Yes, leakage external	Leakage into produc
Capacitor Fluids	Yes, leakage from plant - Scrap materials.	In product but closed for end use*
Transformer Fluids	No, Should be clean. Yes, Reworked transformers	In product but closed for end use*

- Capacitors can go to land fill dumps. Probably not burned, in Al containers.

** Need to take care of Aroclor in discarded transformers. Product could be drained and reworked.

Probable Conclusions

Hydraulic Leakage	- Product could be caught at machines but will take a lot of clean-up work with customers. - Will have to have replacement product - with less-sensitive components. Work from this base on clean-up to prevent more pollution problems.
Air Compressor Fluids	"
Hydraulic Fluids	Must expect "shrimp" experiments, West Florida State, to be "aired" sometime soon; next few months. This will lead to bad publicity and competitive action vs. all Pydrauls. We will have to try to confine to Aroclor 1254 and Aroclor 1260.

We will have to take action before that time.

Gulf Coast -

Action	
W. Richard	Be able to replace Aroclor 1254 and Aroclor 1260 in Pydraul AC and 625 in 2 month's time before Nov. 15, 1969.
Fallon/ Richard	Have trial product in hands of Gulf Coast accounts and distributor before Dec. 15.
Fallon	Suggest possible buy of "all phosphate" ester from Food Machinery. Use this as one trial fluid MCS___ for insurance.
Richard/	Suggest possible substitution of Aroclor 5442 for Aroclor 1254 in hydraulic and compressor blends. E. Wheeler judges lower order of toxicity and solubility for 5442 series. Have to test product in pump test for deposits.
Fallon/ Richard	Suggest field trials of our own all-phosphate ester.
Fallon/ Kuhn/ Kountz	Work with large customers to clean-up streams. Bring in Findett as mfg. partner in the recycle business. Get money out of recycle operations.

Inland-Waterways-

Wheeler/ Richard	Be close enough to Great Lakes studies to judge situation. Are there animals which are being affected by the concentrations found?
Richard	Be prepared to replace Aroclor 1254 and Aroclor 1260 in 4 months in hydraulic fluids and in air compressor fluids.
Richard	Be prepared to replace all Aroclor 1242 or 1248 in 6 months in hydraulic fluids. This means replacement of Pydraul 312 series, and control of sale of Aroclor 1248 to other hydraulic accounts such as Cities Service and Mobil.

DSW 014259

Heat Transfer

Fallon/ Roush/ Kountz	Systems will have some leakage depending strongly on engineering and maintenance. Need to work with customers on clean-up.
Fallon/ Roush	Need to replace FR especially in food or sensitive product areas where the product is getting into water. See dish washer compounds. See letter E. Wheeler to T. Fallon.

We have possible replacement products in Therminol 55.
Therminol 66.

Action

Kuhn

Try to assure adequate production of Therminol 66 in face of decreased Aroclor production. H_2 and terphenyl supply may become short.

Switch customers to Therminol 55 or Therminol 66 ahead of pollution problems in customers plant.

Work with customers on plant and dumping practices.

Kuhn/ Fallon

Findett already set up to rework. Need to make them a manufacturing arm. We get sale of recycle-rework fluid.

Capacitor Fluids

Capacitor plants have re-purification and recycle systems but up to 5% of product can be lost by poor plant producers and off-quality material.

Mkt. Benignus/ Bryant

Eng.-Kountz/ Mfg-Hodges

5% of production could be 1M lbs/year. This is a big loss for the type of pollution we are trying now to guard against.

Capacitor products

Enclosed in Al or stainless steel for 5 to 25 year period.

Will ultimately have to dispose of capacitor products.

Recommend we try to save this product for a time.

Action

Eng.,TSD-Plant Pollution Control

Hodges/ Kountz

Monsanto must start to work with capacitor people to clean up plant practices. We have set-up to accept material for rework into hydraulic fluid but this relocation is not a satisfactory solution. Material must be reworked to electrical grade or destroyed, whichever is more economical. Must start now to get control of off-grade material.

Recommend replacement of future Aroclor business with other products. Have 2 years.

Action

Monsanto must help plant clean-up of customer plants decantation, coalescing, adsorption, disposal of adsorbent or recycle of adsorbents.
Monsanto badly needs "know-how" for clean-up.

Monsanto should seek Govt. contract money for clean-up research, (See MRC R. Binning, D. Nelson)

Transformers	Transformer Plant can operate in a clean, efficient manner with recycle of off-grade Aroclor.	Product transformers can remain closed and no exposure for 25 yrs.
Action Benignus/ Bryant	Should advise disposal of filter element materials so as to minimize chance of water pollution. Incinerate or dispose.	
	Reworked transformers pose a threat if the Aroclor is dumped into a water stream.	Should try to retain business by clean-up; by education of customers.
Action Benignus/ Bryant	Should try to minimize chance of dumping "old" fluid by re-working and by educating co. shops and collecting product for rework or disposal.	
	Dalton is set up in England to rework electrical grade fluid.	
Kuhn/Kountz Findett?	Need rework facility here + disposal scheme.	

Monsanto Plants

The Dept. of Interior and/or State authorities could monitor plant outfall and find ppm of chlorinated biphenyls at Krummrich or Anniston anytime they choose to do so. This would shut us down depending on what plants or animals they choose to find harmed.

Action - Take steps to see that every precaution is taken to prevent Aroclor entering water streams. Try to reduce to ppb level.

P.Hodges-TSD - Seek a Govt. contract on adsorption and incineration cycles - MRC.

Engrg.-Kountz - Take samples of streams and river water and mud evidence for before and after clean-up. Samples can be stored for further analysis if we can't keep up current with analytical determinations.

Apply Monsanto clean-up methods to customer plant clean up equipment and procedures.

Action - Engrg. & Mfg. Kountz and Kuhn	Evaluate liquid incinerators vs. solids handling incinerators for disposing of Aroclor and pentachlorophenol wastes. I estimate Aroclor disposal at 1-4M lbs/year, exclusive of cleaning up river bottoms or outfall bottoms.		
	Hydraulics	20% of 4M lbs	800,000 lbs
	Heat Transfer	10% of 2M lbs	200,000 lbs
	Capacitors	5% of 20M	1,000,000 lbs
	Transformers	5% of 15M	750,000 lbs
			2,750,000 lbs

Central Eng. & Mfg TSD

Kountz & Kuhn

Set up an incinerator to handle Aroclor disposal - preferably one which will handle solids such as muds - slurries as well as liquids. Have in operation within 12 months. Ideally have incinerators available different sections for disposal.

cost will be high

Possible help from MRC

Chronic Toxicity Studies - Ind. Bio-Test

Wheeler Keller Ind.Bio-Test

Continue studies to establish FDA type limits of toxicity on Aroclor 1242, Aroclor 1254 and Aroclor 1260.

Rework with R. Keller-S. Tucker the number of samples which are to be analyzed for Aroclor in tissue. Try to see if Aroclors are changed metabolically. Does concentration level off, decline if feeding is stopped?

Institute studies against the most limiting biological parameters. If shrimp are the most limiting species for Aroclor levels of toxicity, then we will have to have biological studies on these species to confirm or deny adverse findings.

Biodegradation Studies

Set up rate of biodegradation studies with Inorganic Div. on Aroclor 1242 vs. Aroclor 1254
Aroclor 5442 vs. Aroclor 5460

Swisher Chlorinated diphenyl ether
Chlorinated paraffin vs. chlorinated naphthalene
Chlorobromo Aroclors 1242 and 1248

Baxter, Lidgett, MCL — Contact Baxter and Lidgett at MCL regularly for results on Aroclor degradation. They are reported to be moving on laboratory experiments.

Establish contact with chlorophenol degradation studies of Cellu-Chem Group.

WRR

W. R. Richard

WRR:ms

ATTACHMENT D

federal register

Friday
December 10, 1999

Part III

Environmental Protection Agency

40 CFR Part 761

Use Authorization for, and Distribution in Commerce of, Non-liquid Polychlorinated Biphenyls; Notice of Availability; Partial Reopening of Comment Period; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 761

[OPPTS–66009F; FRL–6064–7]

RIN 2070–AD27

Use Authorization for, and Distribution in Commerce of, Non-liquid Polychlorinated Biphenyls; Notice of Availability; Partial Reopening of Comment Period

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule; notice of data availability; partial reopening of comment period.

SUMMARY: This action announces the availability of data that were submitted to EPA after the comment period closed for the December 6, 1994 proposal on the disposal of polychlorinated biphenyls (PCBs). This action also solicits additional information on the potential risks of exposure to PCBs, and the use and concentration of PCBs found in certain non-liquid PCB (NLPCB) applications. In the proposal of December 6, 1994, EPA solicited comment on a provision that would authorize the use of certain NLPCB applications (i.e., proposed § 761.30(q)). In addition to authorizing these uses, the proposed provision would have required compliance with several conditions (e.g., notification, marking, air monitoring and standard wipe tests, remediation, repair and/or removal, reporting and recordkeeping requirements). EPA is particularly interested in data regarding the PCB concentration and route(s) of exposure to PCBs found in the NLPCB applications that are the subject of this action and the associated risks of exposure. This action starts a 120–day data submission period which will be followed by an additional 90–day period for public comment on existing and new data submissions. Since EPA may rely on the data submissions that are generated as a result of this action to develop a final rule to authorize the use of these NLPCB applications, the Agency is providing the additional 90–day comment period for parties who are interested in reviewing and commenting on any of the existing or newly submitted data.

DATES: Data submissions must be received by EPA on or before April 10, 2000. Comments must be received by EPA on or before July 7, 2000.

ADDRESSES: Comments may be submitted by mail, electronically, or in person. Please follow the detailed instructions for each method as provided in Unit III. of the "SUPPLEMENTARY INFORMATION" section. To ensure proper receipt by EPA, it is imperative that you identify docket control number OPPTS–66009F in the subject line on the first page of your response.

FOR FURTHER INFORMATION CONTACT: *For general information contact*: Christine Augustyniak, Associate Director, Environmental Assistance Division (Mail Code 7408), Office of Pollution Prevention and Toxics, Rm. E–543B, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460; telephone: (202) 554–1404, TDD: (202) 554–0551, e-mail: TSCA-Hotline@epa.gov.

For technical information contact: Peggy Reynolds, Environmental Protection Agency, (Mail Code 7404), 401 M St., SW., Washington, DC 20460; telephone: (202) 260–3965, fax: (202) 260–1724, e-mail: reynolds.peggy@epa.gov.

SUPPLEMENTARY INFORMATION:

I. Does this Action Apply to Me?

You may be affected by this supplemental action if you own, use, process or distribute PCBs in commerce. Affected categories and entities include:

Category	Examples of Affected Entities
Industry	Electroindustry manufacturers, end-users of electricity and general contractors
Utilities and rural electric cooperatives	Electric power and light companies
Individuals, Federal, State, and Municipal Governments	Individuals and agencies which own, use, process and distribute PCBs in commerce

This table is not exhaustive, but lists the types of entities that could potentially be affected by this action. Other types of entities may also be interested in this action. To determine whether your entity is affected by this action, carefully examine the applicability criteria in Title 40 of the Code of Federal Regulations (CFR), part 761. If you have any questions regarding the applicability of this action to a particular entity, you should consult the applicable regulations, or the technical contact listed in "FOR FURTHER INFORMATION CONTACT" for the referenced final rule.

II. How Can I Get Additional Information, Copies of this Document, and Support Documents?

1. *Electronically*. You may obtain electronic copies of this document on the Internet from the EPA Home Page at http://www.epa.gov. An electronic copy of this document can be found under the "Federal Register-Environmental Documents" listing and the date of the publication of this document in the Federal Register (http://www.epa.gov/fedrgstr/EPA-TOX/1999/).

2. *In person*. The official record for this action, including the public version, has been established under docket control number OPPTS–66009F. The official record also includes all material and submissions filed under docket control number OPPTS–66009C, the record for the referenced final rule. The public version of the record, including printed, paper versions of any electronic comments, which does not include any information claimed as confidential business information (CBI), is available for inspection in the TSCA Nonconfidential Information Center, Northeast Mall Rm. NE–B607, 401 M St., SW., Washington, DC. The Center is open from noon to 4 p.m., Monday through Friday, excluding legal holidays. The telephone number of the Center is (202) 260–7099.

III. How and to Whom Do I Submit Comments?

You may submit comments through the mail, in person, or electronically. To ensure proper receipt by EPA, it is

imperative that you identify docket control number OPPTS–66009F in the subject line on the first page of your response.

1. *By mail.* Submit your comments to: Document Control Office (7407), Office of Pollution Prevention and Toxics (OPPT), Environmental Protection Agency, 401 M St., SW., Washington, DC 20460.

2. *In person or by courier.* Deliver your comments to: OPPT Document Control Office (DCO) in the East Tower Rm. G-099, Waterside Mall, 401 M St., SW., Washington, DC. The DCO is open from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The telephone number for the DCO is 202–260–7093.

3. *Electronically.* You may submit your comments electronically by e-mail to: "oppt.ncic@epa.gov," or mail your computer disk to the address identified above. Do not submit any information electronically that you consider to be CBI. Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Comments will also be accepted on standard computer disks in Wordperfect 6.1/8.0 or ASCII file format. All comments in electronic form must be identified by the docket control number OPPTS–66009F. Electronic comments may also be filed online at many Federal Depository Libraries.

IV. How Should I Handle CBI Information That I Want to Submit to the Agency?

Do not submit any information electronically that you consider to be CBI. You may claim information that you submit to EPA in response to this document as CBI by marking any part or all of that information as CBI. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. In addition to one complete version of the comment that includes any information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public version of the official record. Information not marked confidential will be included in the public version of the official record without prior notice. If you have any questions about CBI or the procedures for claiming CBI, please consult the technical person identified in the "FOR FURTHER INFORMATION CONTACT" section.

V. What Does this Action Do?

This action announces the availability of data that were submitted to EPA after the comment period closed for the December 6, 1994 proposed rule (59 FR 62788) (FRL–4167–1). These data, as described below, are available for review and comment. This action also solicits additional information and comment on the potential risks of exposure to PCBs, and the use and concentration of PCBs found in the non-liquid PCB (NLPCB) applications that are the subject of this action. EPA proposed to amend its rules under the Toxic Substances Control Act (TSCA) to authorize the use of NLPCBs and their distribution in commerce, and to impose related information collection requirements. These issues had also been discussed in the Advanced Notice of Proposed Rulemaking (ANPR) of June 10, 1991 (56 FR 26740).

In advocating the removal of the conditions that were included in the December 6, 1994 proposal (e.g., notification, marking, air monitoring and standard wipe tests, remediation, repair and/or removal, reporting and recordkeeping requirements), some commenters submitted supplemental data that they claim showed that these NLPCB uses "do not pose a risk above acceptable measures." However, EPA did not include this use authorization in the final rule which was published on June 29, 1998 (63 FR 35384) (FRL–5726–1) because insufficient data were available to enable the Agency to make the no unreasonable risk finding for many of the NLPCB uses. These data submissions, as well as an assessment of those data are available for inspection (see the listing of reference documents at Unit VIII. of this action) in the TSCA Public Docket Office. In the absence of data which could be used to determine whether a correlation exists between PCB bulk sample results and PCB surface contamination, several conservative assumptions were used in the draft risk document (see Ref. 23 "Revised Draft, Assessment of Risks Associated with Proposed PCB Use Authorizations"). The Agency solicits public comment on these materials, and in particular, would appreciate comments, which are supported by data, regarding the draft risk analysis.

VI. What Non-liquid PCB Uses Are of Interest to EPA?

In the ANPR (June 10, 1991), EPA solicited information on unauthorized uses of NLPCBs in existing applications, and in the NPRM of December 6, 1994 (59 FR 62788), EPA solicited comments regarding a provision which would authorize the use of these NLPCBs. Items not authorized by the regulations but currently in use and identified as containing PCBs include, but are not limited to, some wool felt insulating materials, plastics, paint formulations, small rubber parts, adhesive tape, insulating materials used in electrical cabling, fluorescent light ballast potting materials, gaskets in heating, ventilation and air conditioning and other duct systems, caulking, coatings for ceiling tiles, flooring and floor wax/sealants, roofing and siding materials, adhesives, waterproofing compounds, anti-fouling compounds, fire retardant coatings, coal-tar enamel coatings for steel water pipe and underground storage tanks (i.e., American Water Works Association (AWWA) Standard C203 coal tar enamel), and any number of other chemical uses such as additives and plasticizers. The PCB contamination in these various products was reported to range from <1 to 688,498 parts per million (ppm). EPA is interested in data for those NLPCBs that do not satisfy the criteria for excluded PCB products, recycled PCBs, or inadvertently generated PCBs (i.e., generally historic uses of PCBs at concentrations of <50 ppm PCB) which are authorized by the current regulations. (For a detailed discussion, see 40 CFR 761.3 for the definitions of "excluded PCB products" and "recycled PCBs." Also see the definition for "excluded manufacturing processes" at 40 CFR 761.3, the regulatory requirements for excluded manufacturing processes at 40 CFR 761.185 and 761.187, and the requirements for inadvertently generated PCBs at 40 CFR 761.193.)

A brief description of the non-liquid PCB uses which have been reported to EPA follows. Limited information regarding many of these products is contained in the NPRM (see 59 FR 62809–62811, December 6, 1994), as well as the comments and data that were submitted to EPA in response to the ANPR and NPRM (OPPTS-66009/66009A) and are summarized below. The following descriptions also reflect information gained by EPA over the course of implementing the PCB program. Additional non-liquid PCB products, when discovered, may also be covered by this use authorization. Therefore, information concerning unauthorized NLPCB uses which have not been identified above are also of interest and may be submitted to the Agency.

• *Insulation (e.g., wool felt, foam rubber and fiberglass) and sound-dampening materials.* These materials have been found to contain PCBs at concentrations which exceed 50 ppm. Wool felt and foam rubber insulation, as well as sound-dampening materials have been discovered in naval vessels and may include ships of all types, as well as nuclear submarine reactor

compartments. PCB concentrations were reported to range from <1 ppm to a high of 688,498 ppm (Ref. 15). Fiberglass insulation containing PCBs has been found in federally owned buildings at various concentrations. Bulk PCB concentrations were reported to range between <1 to 39,158 ppm, and surface contamination was reported to range between 7.5 to 188 micrograms per 100 square centimeters. All air samples were reported by the submitter as being below the analytical detection limit which was generally reported as 0.97 micrograms per cubic meter (Ref. 3). The use of PCB-contaminated fiberglass insulation may be widespread throughout the United States.

• *Plastics, small foam rubber and rubber parts, adhesive tape, and insulating materials used in electrical cabling.* PCBs may be in many of the components of electric cable at concentrations ranging from <1 ppm PCBs to 280,000 ppm PCBs (Refs. 15 and 16). In addition to electrical applications, these components may be in widespread use in marine and industrial applications. It is not clear whether PCB-containing cables would be found in residential settings.

• *Paint formulations.* During the 1950–1960 time frame, PCBs were added to paint formulations as drying oils (resins) and plasticizers or softening agents (liquids) in concentrations that range from 10–12% PCBs (100,000–120,000 ppm) to 20–30% PCBs (200,000–300,000 ppm). Concrete surfaces and equipment, as well as marine or waterproofing applications, used at Federal installations and in the manufacturing and industrial sectors may have painted surfaces contaminated with PCBs. Data provided to EPA indicate that PCBs have been found in dried paint at concentrations that range from <1 ppm to 97,000 ppm (Refs. 9 and 13).

• *Fluorescent light ballast potting materials.* Older fluorescent lamps (i.e., manufactured prior to 1978) may contain a small PCB Capacitor with 100% PCBs (i.e., 1,000,000 ppm) and/or petroleum-asphalt insulating material contaminated with PCBs (Ref. 6).

• *Gaskets in heating, ventilation and air conditioning (HVAC) and other duct systems.* It is not known whether this particular PCB application represents a widespread use. PCBs were discovered in older government buildings at concentrations of 18,900 ppm (Ref. 16); however, given the generic nature of the specifications for this material, these gaskets also may have been installed in commercial and industrial buildings. Additionally, ventilation system gasket materials made from processed cork that have been contaminated with PCBs at concentrations up to 6,400 ppm PCB have been found on naval vessels (Ref. 15).

• *Coatings for ceiling tiles.* Ceiling tiles contaminated with PCBs have been found at educational institutions with surface level PCB concentrations at a maximum of 53 ppm. However, the availability and dissemination in the marketplace of this material is not known.

• *Flooring and floor wax/sealants.* A commenter indicated that these materials have been found to contain PCBs; however, little else is known about specific PCB concentrations, application(s) or its availability and dissemination in the marketplace (Ref. 2).

• *Roofing and siding materials.* This material was manufactured and marketed worldwide as Robertson Protected Metal (RPM) and Galbestos to airlines, railroads, chemical plants, steel mills, mines, industrial/manufacturing facilities, and military facilities. PCB concentrations have been found to range from <2 ppm to 30,000 ppm (59 FR 62809).

• *Caulking and grout.* Very little is known about contaminated caulking and grout, their specific applications and dissemination in the marketplace. Samples of caulking that have been contaminated with PCBs have been found in a setting previously used as a school at a maximum concentration of 310,000 ppm PCBs (Ref. 12). Likewise, grout has been found in the joints and cracks of a water reservoir at 2,700 ppm PCB and on marine vessels at concentrations which range from <1 to 9,100 ppm PCB (Ref. 15) in the mess room and other onboard locations.

• *Waterproofing compounds, anti-fouling compounds, and fire retardant coatings.* These non-liquid uses of PCBs have been found in military, marine and other applications; PCB concentrations have been found as high as 59,000 ppm PCB.

• *Coal-tar enamel coatings for steel water pipe and underground storage tanks (i.e., AWWA C203 coal tar enamel).* This coating was previously approved for use by EPA pursuant to the Safe Drinking Water Act and has been used in some older Army, municipal and other water supply systems. The PCB concentration in this enamel may range from non-detect to 1,264 ppm (Refs. 11 and 26). EPA withdrew and thereby invalidated its list of acceptable drinking water products on April 7, 1990, and since that time, individual States have had the authority to regulate the sale and/or use of specific products. The Agency has never used its authority under TSCA to control the use of this indirect additive to a drinking water system.

VII. What Data Are Currently Available to EPA?

The following table provides information on the maximum PCB concentrations found in sample data that have been submitted to EPA. A review of this table, along with the criteria discussions that follow, will give you some indication of the NLPCBs that EPA could possibly authorize under the TSCA PCB regulations and the data that would be useful in order to evaluate the risks of exposure to PCBs associated with specific NLPCB uses. Unit VI. of this action provides additional guidance on the type of data that EPA needs to finalize a NLPCB use authorization.

Table 1.—Maximum PCB Concentrations From Sample Data

Material	Bulk Sample (mg/kg or ppm)	Standard Wipe Sample (µg/100 cm²)	Air Sample (µg/cm³)
Adhesive tape	1,400	No data available	No data available
Anti-fouling compounds	No data available	No data available	No data available
Caulking	310,000	No data available	No data available
Ceiling tiles	53	1.3	No data available

Table 1.—Maximum PCB Concentrations From Sample Data—Continued

Material	Bulk Sample (mg/kg or ppm)	Standard Wipe Sample (μg/100 cm²)	Air Sample (μg/cm³)
Cloth/paper insulating material	12,000	No data available	No data available
Coal-tar enamel coatings	1,264	No data available	No data available
Dried paint	63,300[1] 97,000[2]	2,560[1] 40[2]	No data available No data available
Fiberglass insulation[3]	39,158	188	<0.97
Fire retardant coatings	No data available	No data available	No data available
Flooring and floor wax/sealant	No data available	No data available	No data available
Fluorescent light ballast potting material	No data available	No data available	No data available
Foam rubber insulation	13,100	No data available	No data available
Foam rubber parts	1,092	No data available	No data available
Grout	9,100	No data available	No data available
Insulating materials in electric cable	280,000	No data available	No data available
Plastics/plasticizers	13,000	30[4]	No data available
Processed cork ventilation system gasket material	6,400	No data available	No data available
Roofing/siding material	22,000	No data available	No data available
Rubber parts	84,000	No data available	No data available
Sound-dampening material	No data available	No data available	No data available
Thermal insulation	73,000	No data available	No data available
Waterproofing compounds	No data available	No data available	No data available
Wool felt gaskets	688,498	No data available	No data available

[1] Non-degraded gray chlorinated rubber-based paint, Federal specification TT-P-912; PCBs added presumably to prevent brittleness.
[2] Semi-gloss paint; white and light blue, Amercoat 33HB with red Amercoat 86 primer.
[3] Athough sampling results for this material are available from the docket, these data were not available at the time the draft risk analysis was completed.
[4] Surface PCB concentration taken from wipe samples of plastic cable.

EPA's criteria for authorizing a NLPCB use. EPA will apply certain criteria to test data results when determining whether a material that is suspected of containing PCBs should be authorized for use. For instance, EPA has received some data that would not satisfy the criteria stated below. These data showed positive wipe sample results from contamination of the surface by PCBs. However, the bulk sample did not contain PCBs. This type of information is not useful for authorizing a NLPCB application. EPA believes these results indicate contamination due to a PCB spill rather than contamination associated with the manufacture of a product containing PCBs. EPA will not authorize the use of spilled PCBs. If you own items that have been contaminated as a result of a spill, you should either decontaminate or dispose of the item(s). The objective of the use authorization is to allow the continued use of those PCB-containing materials that do not pose an unreasonable risk. The use of these materials is currently unauthorized. Since some items currently being considered for the NLPCB use authorization may be contaminated with PCBs due to their proximity to PCB liquids, as opposed to being a PCB containing item, EPA intends to use the following criteria for determining whether materials suspected of containing PCBs should actually be considered for the NLPCB use authorization.

• If the bulk sample contains PCBs, but the wipe sample does not contain detectable levels of PCBs, then the PCBs have not significantly migrated from the material onto the surface. If there are no PCBs present on the surface, then it is assumed that no significant releases of PCBs to air are occurring. Therefore, air sampling would not be necessary. In

this situation, there would most likely be a low risk of exposure to PCBs, since PCBs are being released from the material at a low or non-existent rate. EPA could most likely authorize this use without some or all of the conditions listed in the proposal (see 59 FR 62857).

• If the bulk sample contains PCBs that are migrating out onto the surface, then the wipe sample will be expected to contain PCBs. Likewise, if the PCBs are being released from the surface into the air, then the air sample will be expected to contain PCBs. Note that the air sample will most likely contain PCBs at more dilute concentrations than those in the surface levels. EPA may or may not authorize this use, depending on the risk of exposure to PCBs.

• If neither the bulk nor the wipe sample contains PCBs, but the air sample does contain PCBs, then the PCBs are most likely from a source other than the material being tested. EPA cannot use these data to support a use authorization.

• If there are no PCBs in the bulk sample, but the wipe sample contains PCBs, then the PCBs are most likely from a spill rather than from the material being tested. EPA cannot use these data to support a use authorization.

The following chart provides a summary of the criteria that EPA will use to authorize the use of certain non-liquid PCBs.

Table 2.—Criteria for Authorizing the Use of NLPCBs

Bulk Sample	Wipe Sample	Air Sample	Possible Result
Contains PCBs	No PCBs	No PCBs or data are not available	PCBs not being released; possible authorization for use
Contains PCBs	Contains PCBs	Contains PCBs	PCBs are being released from the material; use authorization depends on risk levels
No PCBs	No PCBs	Contains PCBs	PCB contamination from another source
No PCBs	Contains PCBs	May or may not contain PCBs	PCBs due to a spill

In addition to the risk of developing cancer, PCBs also have significant non-carcinogenic effects, including neurotoxicity, reproductive and developmental toxicity, immune system suppression, liver damage, skin irritation, and endocrine disruption. These toxic effects should also be considered when assessing risk (Ref. 27). Therefore, in addition to evaluating the cancer risks associated with these NLPCB uses, the Agency intends to consider the potential non-cancer effects. It should be noted, however, that the Agency is currently conducting a reassessment of the non-carcinogenic effects of PCBs in order to determine whether the reference dose (RfD) factors for PCBs currently in the Agency's Integrated Risk Information System (IRIS) can be updated. It is possible, therefore, that the current RfDs may not be retained. Therefore, detection limits that are estimated using the current RfDs may not be low enough after the Agency's re-evaluation is complete. Thus, achieving the lowest possible detection limits is the recommended course of action in order to avoid reanalyzing samples if these RfDs are lowered.

VIII. What Data Does EPA Need?

EPA received some very useful data, but much of these data do not address the Agency's objective of assessing the risk of exposure due to the use of PCBs in a particular product. For example, wipe samples from the wall of a ship's engine room or air samples from living quarters cannot be used to evaluate the risk from air handling system gaskets when other potential sources of PCBs may be present on the ship or when no gaskets containing PCBs are present in the ship's handling system. It would be useful to have both surface results and bulk sampling results so that possible relationships between bulk and surface concentrations could be better defined. EPA also needs a better understanding of the individual sampling results including summary statistics such as range, median mean, standard deviation, and geometric mean in order to better determine if the results are representative of the sample population. Likewise, it is necessary to know the population characteristics with respect to PCB concentration, number of data points collected within a population, and how those data points represent the overall population of the items in use.

EPA would like to use the data to assess exposure via dermal contact and inhalation for most materials, as well as via incidental ingestion, as appropriate (e.g., paint chips). Surface samples are preferable for estimating dermal exposures because they reflect the PCB concentrations that individuals actually contact. EPA has data on a limited number of uses for which there are both bulk PCB concentrations and surface concentrations for the same material. Therefore, information on both bulk sample concentrations and wipe sample concentrations would be useful for defining the relationship between bulk and surface samples for use in dermal exposure assessments. Bulk sample data are also needed to assess incidental ingestion for some materials. EPA has no data on the volatilization or entrainment of PCBs from individual uses. This information would greatly facilitate the estimation of inhalation risk. Preliminary estimates were based on theoretical calculations, often employing very conservative approaches (Refs. 23 and 24). Also, the data EPA is currently using to assess dermal and inhalation risk for most uses is relatively old. Newer data would be useful in providing updated estimates.

As suggested earlier, EPA is interested in being able to detect cancer risks at or below 1×10^{-6} and non-carcinogenic hazards at or below a hazard index of 1. Because traditional sampling techniques may not have sufficiently low practical limits of quantitation (PQL) for EPA to determine that these NLPCB uses do not pose unreasonable risks, the approach to sampling may require much larger surface areas, much larger air volumes, or much more sensitive chemical analysis procedures than previously used. Consideration should also be given to achieving the lowest possible detection limits because of potential changes to the current RfDs.

Prior to finalizing a rule that would authorize the conditional use of these materials, the Agency is soliciting public review of and comment on the data that were submitted subsequent to

the official comment period for the December 6, 1994 NPRM. Data supporting a non-conditional use authorization for NLPCBs (i.e., a provision which would eliminate or minimize notification, marking, air monitoring and standard wipe test, remediation, repair and/or removal, reporting and recordkeeping requirements) may be submitted for the use of PCBs in any of the various applications identified above. A listing of the data elements that are required for this analysis is provided below. Please note that due to the uncertainty associated with updating the reference dose (RfD) for PCBs, the following discussions focus solely on the risk of developing cancer. In the absence of an updated RfD, the Agency is inclined to continue to use conservative risk assumptions for issues associated with the use of PCBs.

1. *Wipe sample data for each of the products (or classes of products, i.e., paint) for which use would be authorized.* Data should be collected from products that are known to contain PCBs (i.e., based on bulk sample results or from historic knowledge). Also, the detection limits for these materials should be sufficiently low to ensure that the cancer risks and non-carcinogenic hazards can be calculated down to less than 1×10^{-6} and below 1, respectively (note that the current RfDs for PCBs are likely to change), in order for the NLPCB use to be authorized. EPA recommends using the lowest achievable detection limit possible.

2. *Transfer data.* Information on the transfer of PCBs to human skin from the non-liquid PCBs listed in Table 1 of Unit V.

3. *Air monitoring data for each of the products (or classes of products, i.e., paint) for which use would be authorized.* Data should be collected from products that are known to contain PCBs (i.e., based on bulk sample results or from historic knowledge). Also, the detection limits for these materials should be sufficiently low to ensure that the cancer risks and non-carcinogenic hazards can be calculated down to less than 1×10^{-6} and below 1, respectively. EPA recommends using the lowest achievable detection limit possible.

Each product (or class of products, i.e., paint) sampled must contain high enough concentrations of PCBs in their bulk sample to be representative of the highest concentrations of PCBs in the product (or class of products, i.e., paint). For example, commenters provided information that paint formulations with 10-12% PCBs were recommended in the commercial formulation manuals. Therefore, EPA is especially interested in wipe sample and air monitoring data for products such as paints with bulk sample levels of 10-12% PCBs. In addition to the collected data, EPA requests the sampling plan that was used in collecting the data and a description of the quality assurance/quality control procedures that were applied to the data set.

In order to facilitate EPA's review of the data (i.e., bulk, standard wipe, and air sample results) on NLPCB containing materials, you should consider the following in order to judge the adequacy of your data submissions:

- Are the bulk and wipe samples of specific materials (i.e., uses) rather than of areas (e.g., engine room, mess deck/galley, berthing, pilot house, etc.)?
- Do you have corresponding samples (i.e., both bulk and wipe samples) for the specific materials?
- Did you collect air samples using procedures for chamber testing in order to differentiate PCBs that offgas from specific materials rather than from PCBs that are in ambient air?

EPA recommends using the lowest achievable detection limit possible so that cancer risks of 1×10^{-6} or non-cancer hazards of 1 may be detected. The detection limits at these risk levels may be estimated using cancer slope factors or reference doses for PCBs developed by EPA. The lower of the detection limits based on either cancer or non-cancer endpoints should be used to ensure that both types of effects could be detected.

If commenters and/or data submitters would like to submit comments or data anonymously, EPA will accept anonymous comments and data submissions (e.g., via a third party). However, it is important that EPA be able to contact someone should questions arise concerning the collection methodology, analytical procedures or other technical issues, even if through a third party.

IX. List of Reference Documents

The following documents are available in the combined docket for OPPTS–66009 (OPPTS–66009A, OPPTS–66009B and OPPTS–66009C). Documents identified with an asterisk were submitted to EPA after the official comment period for the proposed rule had closed. Since these data will be used in the Agency's decision making process, this listing is intended to ensure ample opportunity for public review and comment on pertinent documents.

1. Aluminum Company of America. Comments from Connie Glover Ritzert to the TSCA Nonconfidential Information Center, USEPA. Subject: Comments on Proposed Amendments to the TSCA PCB Regulations (59 FR 62788) - OPPS[sic]-66009A; FRL–4167–1 (May 3, 1995) (see C1-239, Table 3).

2. Consumers Power. Comments from William L. Beckman to the TSCA Nonconfidential Information Center, USEPA. Subject: Document Control Number OPPTS-66009A; FRL-4167-1, U.S. Environmental Protection Agency, December 6, 1994, Proposed Amendment to 40 CFR Part 761, Disposal of Polychlorinated Biphenyls (PCBs) (May 4, 1995) (see C1-179).

3. General Services Administration. Letter from David Spannbauer to Barry Breen, Federal Facilities Enforcement, USEPA, Subject: PCBs in Fiberglass Insulation in Federally Owned Buildings (1994) With Enclosures (see B3-032).*

4. General Services Administration. Letter from Casey Jones to Robert Harding, Section Chief, Toxic Substance Branch, USEPA, Subject: PCB Contamination at the Wallace F. Bennett Federal Building (date not discernible) With Enclosure (see B3-033).*

5. General Services Administration. Letter from Casey Jones to Kim Le, USEPA, Subject: Update on PCB Contaminated Insulation at the Wallace F. Bennett Federal Building (February 2, 1994) With Enclosure (see B3-034).*

6. Kominsky, John, NIOSH et al. "Polychlorinated Biphenyl Contamination Resulting from Fluorescent Light Ballast Burnout (Draft)." (April 14, 1986) (see C3-010).

7. Larcom, B.J.; Cline, J.M.; Merrill, E.A.; Jederberg, W.W.; Still, W.R. "Risk Assessment of Polychlorinated Biphenyls On-board Navy Ships." A report prepared for the U.S. Navy. AL/OE-TR-1996-0153. WRAIR-TR-NMRI-96-72 (1996) (see C3-001).*

8. Parsons Engineering Science, Inc. "Risk Review Paper, Evaluation of Existing Data for PCBs in Non-liquid Material (NLPCBs)." A report prepared for Environmental Management Directorate, Robins Air Force Base, GA and Air Force Material Command Under USAF Contract No. F41624-94-D-8136, Delivery Order No. 0069 (1997) (see C3-002).*

9. Ropes Gray. Letter from Mark A. Greenwood to Mr. John H. Smith, USEPA. Subject: Response to Data Request on PCBs in Paint (July 21, 1998) (see C3-017).*

10. Ross, M.; Mangum, S.; Adema, C. "Sampling and Analysis of Polychlorinated Biphenyls (PCBs) in Navy Ship Cables." A report prepared by the Naval Sea Systems Command, Code 05V, Report No. 9510, Ser. 6110/121 (1993) (see C1-107, Enclosure 11).

11. U.S. Army. Comments from Lewis D. Walker to Joseph S. Carra, USEPA. Subject: Comments on Proposed Polychlorinated Biphenyl Rule (May 2, 1995) (see C1-260).

12. U.S. Army Corps of Engineers, New England Division. "Final Site Investigation Report for Campbell, Lyle, Stone and Otis Memorial Schools, Bourne, MA." A report prepared by Stone and Webster Environmental Technology and Services under Delivery Order 17, Contract No. DACW33-94-D-007 (1996) (see B3-001).*

13. U.S. Department of Energy. Letter from Thomas T. Traceski to Mr. John Melone, USEPA. Subject: Results of Testing at the Savannah River Site (October 29, 1988) (see C3-018).*

14. U.S. Department of Energy, Schenactady Naval Reactors Office. Letter from A.R. Seepo to Kim Tisa, USEPA Region 1. Subject: Documentation of Research Regarding Historical Uses of PCBs in Paint (April 19, 1995) (see C3-004).

15. U.S. Department of the Navy. Electronic submission; CD-ROM containing spreadsheets of PCB sample results, Excel for Office 97. Samples taken from various naval vessels; Files: PCBEPA01.XLS (see Sheet 1) and PCBEPA02.XLS (see Sheet 1) (see C3-019).*

16. U.S. Department of Transportation, Maritime Administration. Appendices from Report No. MA-ENV-820-96003; Appendix D, Sampling and Analysis (January 1997) and Appendix E, Survey of Ships and Materials (July 1997) (see B3-030).*

17. U.S. Department of Transportation, U.S. Coast Guard. Memorandum from Alan M. Steinman, Chief, Office of Health and Safety to Chief, Office of Engineering, Logistics and Development. Subject: Health Risk Evaluation of 65' WYTL and 82' WPB Class Cutters (January 18, 1996) With Enclosure: "PCB Health Risk Evaluation of 65' WYTL and 82' WPB Class Cutters, Office of Health and Safety, Safety and Environmental Health Division, January 1996." (see B3-031).*

18. Versar Inc. Memo from Linda Phillips to Tony Baney, USEPA. Subject: Review of PCB Data for DOE Savannah River Site (November 13, 1998) (see B3-038).*

19. Versar Inc. Memo from Linda Phillips to Tony Baney, USEPA. Subject: Review of Ropes Gray Sampling Data (October 12, 1998) (see B3-037).*

20. Versar Inc. Memo from Linda Phillips to Peggy Reynolds, USEPA. Subject: Data Submissions for Risk Analysis for Authorized Uses of PCBs (December 8, 1998) (see B3-039).*

21. Versar Inc. Memo from Linda Phillips to John Smith, USEPA. Subject: Review of Air Force Risk Assessment (November 10, 1997) (see B3-035).*

22. Versar Inc. Memo from Linda Phillips to John Smith, USEPA. Subject: Review of U.S. Coast Guard PCB Risk Assessment (March 13, 1998) (see B3-036).*

23. Versar, Inc. "Revised Draft, Assessment of Risks Associated with Proposed PCB Use Authorizations." A report prepared for the U.S. Environmental Protection Agency under Contract No. 68-W6-0023, Work Assignment No. III-3 (March 12, 1999) (see B3-040).*

24. Versar, Inc. "Revised Preliminary Draft, Assessment of Risks Associated with Proposed PCB Use Authorizations." A report prepared for the U.S. Environmental Protection Agency under Contract No. 68-W6-0023, Work Assignment No. II-9 (October 14, 1997) (see E3-021).*

25. Westinghouse Savannah River Company. Letter from Nancy Lowry to David K. Hannemann, USEPA. Subject: Detailed Information on PCB Analyses of Painted Surfaces (May 28, 1997) (see C3-005).*

26. U.S. Army Corps of Engineers. Comments from Daniel R. Burns to the TSCA Nonconfidential Information Center, USEPA. Subject: Comments on the Proposed Rule on the Disposal of Polychlorinated Biphenyls (April 20, 1995) (see C1-139).

27. U.S. Environmental Protection Agency. PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures, EPA/600/P-96/001 (September 1996) (See B3-026).*

28. Midwest Research Institute. "Polychlorinated Biphenyl Analysis of Cable Samples from U.S. Navy Ships." A report prepared for the U.S. Environmental Protection Agency under Contract No. 68-DO-0137, Work Assignment No. 30 (August 14, 1992) (See B3-043)*.

List of Subjects in 40 CFR Part 761

Environmental protection, Hazardous substances, Polychlorinated biphenyls, Reporting and recordkeeping requirements.

Dated: November 29, 1999.

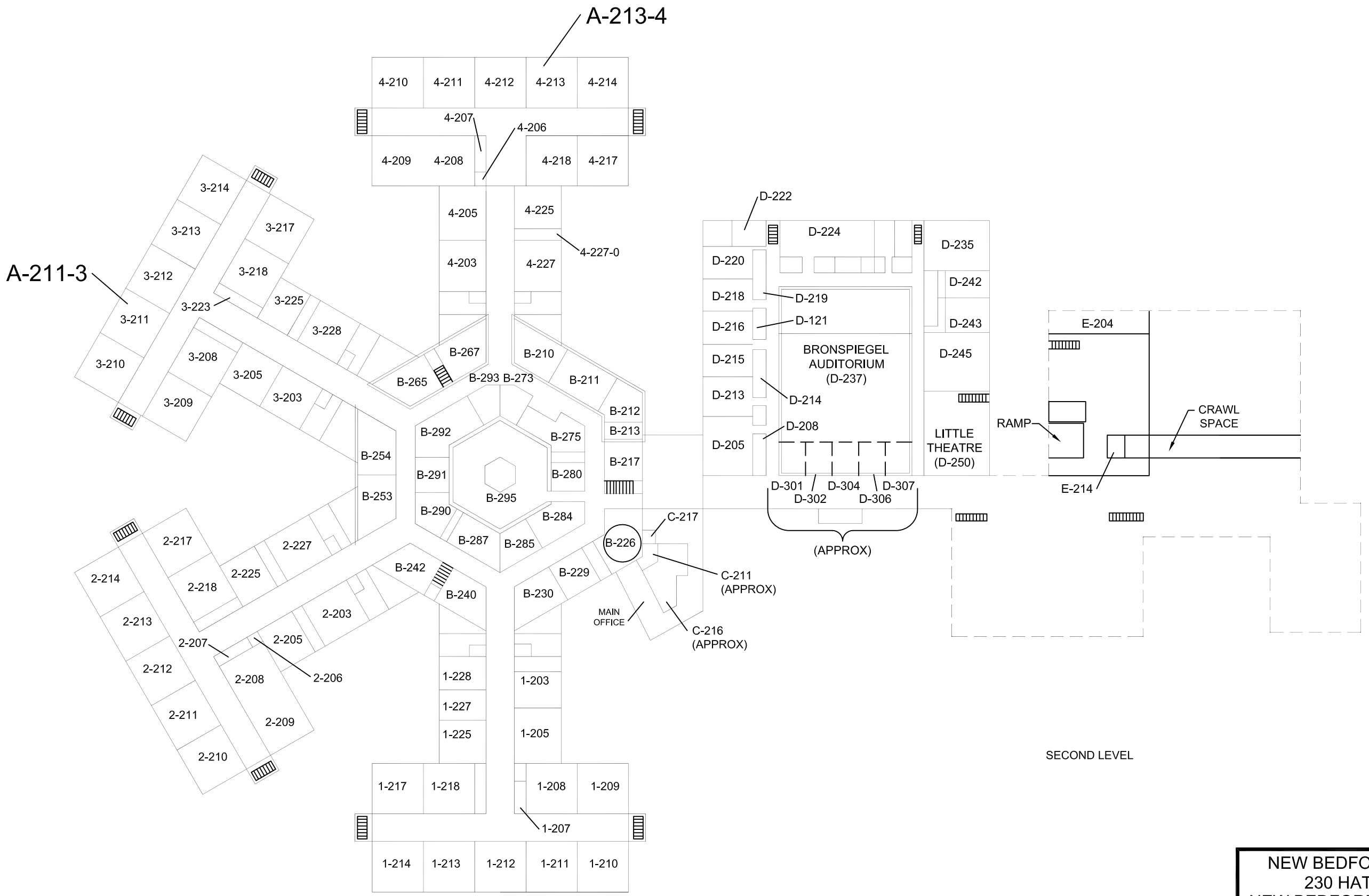
Susan H. Wayland,

Deputy Assistant Administrator for Prevention, Pesticides and Toxic Substances.

[FR Doc. 99–32079 Filed 12–9–99; 8:45 am]

BILLING CODE 6569–50–F

ATTACHMENT E



NEW BEDFORD HIGH SCHOOL
230 HATHAWAY BLVD
NEW BEDFORD, MASSACHUSETTS

SECOND FLOOR
FLOOR PLAN

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
(978) 970-5600

DRAWN BY: HWB
CHECKED BY: JCM
DATE:
JUNE 2011

FIGURE
2B

FILE: T:\E_CAD\115058\NBHS\2ND FLR -2011 RAP.dwg

ATTACHMENT F

Table 1
Bulk Product Sample Results
New Bedford High School
New Bedford, MA

Sample #[1]	Type of sample	Location	Description	PCB Concentration (mg/kg)	Date Installed	Classification
Univent Coatings						
376	BULK	B-211	Univent Coating	**255**	Original	PCB Bulk Product Waste
452	BULK	B-312	Univent Coating	**116**	Original	PCB Bulk Product Waste
449	BULK	B-240	Univent Coating	**65.4**	Original	PCB Bulk Product Waste
453	BULK	B-318	Univent Coating	33.5	Original	Excluded PCB Product
448	BULK	B-129	Univent Coating	6.57	Original	Excluded PCB Product
450	BULK	B-212	Univent Coating	6.53	Original	Excluded PCB Product
451	BULK	B-354	Univent Coating	4.67	Original	Excluded PCB Product
478	BULK	B-116	Univent Coating	1.763	Original	Excluded PCB Product
Laminate Adhesives						
109	BULK	B-240	White Laminate Adhesive	**230**	Original	PCB Bulk Product Waste
325	BULK	A-319-3	Lt. Brown Laminate Adhesive	**176.9**	Original	PCB Bulk Product Waste
577	BULK	A-203-4	Red Laminate Adhesive	**141.8**	Original	PCB Bulk Product Waste
117	BULK	A-205-4	White Laminate Adhesive	**114**	Original	PCB Bulk Product Waste
550	BULK	B-287	Red Laminate Adhesive	13.5	Original	Excluded PCB Product
371	BULK	B-211	Laminate Adhesive	11.8	Original	Excluded PCB Product
550 Dup	BULK	B-287	Red Laminate Adhesive	10.1	Original	Excluded PCB Product
337	BULK	A-316-4	Laminate Adhesive	8.12	Original	Excluded PCB Product
527	BULK	A-110-4	Red Laminate Adhesive	6.45	Original	Excluded PCB Product
351	BULK	A-309-1	Laminate Adhesive	6.128	Original	Excluded PCB Product
354	BULK	A-316-1	Laminate Adhesive	5.705	Original	Excluded PCB Product
526	BULK	B-265	Laminate Adhesive	5.59	Original	Excluded PCB Product
385	BULK	B-344	Laminate Adhesive	5.39	Original	Excluded PCB Product
342	BULK	A-311-4	Laminate Adhesive	5.03	Original	Excluded PCB Product
344	BULK	A-227-1	Laminate Adhesive	4.752	Original	Excluded PCB Product
428	BULK	Prep Room	Laminate Adhesive	4.63	Original	Excluded PCB Product
348	BULK	A-213-1	Laminate Adhesive	4.531	Original	Excluded PCB Product
530	BULK	A-111-3	Red Laminate Adhesive	4.29	Original	Excluded PCB Product
358	BULK	A-309-4	Laminate Adhesive	4.006	Original	Excluded PCB Product
319	BULK	A-306-2	Laminate Adhesive	3.5	Original	Excluded PCB Product
355	BULK	A-311-1	Laminate Adhesive	3.496	Original	Excluded PCB Product
316	BULK	A-312-2	Laminate Adhesive	3.35	Original	Excluded PCB Product
227	BULK	A-117-1	Laminate Adhesive	3.246	Original	Excluded PCB Product
432	BULK	A-309-2	Laminate Adhesive	3.22	Original	Excluded PCB Product
529	BULK	A-110-3	Red Laminate Adhesive	2.93	Original	Excluded PCB Product
299	BULK	A-209-2	Laminate Adhesive	2.916	Original	Excluded PCB Product
288	BULK	A-209-4	Laminate Adhesive	2.903	Original	Excluded PCB Product
528	BULK	A-111-4	Red Laminate Adhesive	2.85	Original	Excluded PCB Product
334	BULK	A-319-4	Laminate Adhesive	2.528	Original	Excluded PCB Product
272	BULK	A-116-4	Laminate Adhesive	2.52	Original	Excluded PCB Product
305	BULK	A-217-3	Laminate Adhesive	2.383	Original	Excluded PCB Product
401	BULK	C-216	Laminate Adhesive	2.22	Original	Excluded PCB Product
571	BULK	A-318-3	Laminate Adhesive	2.08	Original	Excluded PCB Product
314	BULK	A-308-2	Laminate Adhesive	1.97	Original	Excluded PCB Product
126	BULK	A-311-2	Laminate Adhesive	1.95	Original	Excluded PCB Product
330	BULK	A-310-3	Laminate Adhesive	1.861	Original	Excluded PCB Product
104	BULK	A-114-3	Laminate Adhesive	1.314	Original	Excluded PCB Product
223	BULK	A-112-1	Laminate Adhesive	1.00	Original	Excluded PCB Product
439	BULK	B-320	Laminate Adhesive	0.943	Original	Excluded PCB Product
392	BULK	D-213	Laminate Adhesive	0.533	Original	Excluded PCB Product
549	BULK	A-209-1	Red Laminate Adhesive	<0.921	Original	Excluded PCB Product
547	BULK	A-210-2	Laminate Adhesive	<0.965	Original	Excluded PCB Product
600	BULK	A-210-4	Red Laminate Adhesive	<0.962	Original	Excluded PCB Product
596	BULK	A-211-1	Red Laminate Adhesive	<0.954	Original	Excluded PCB Product
597	BULK	A-211-2	Red Laminate Adhesive	<0.958	Original	Excluded PCB Product
579	BULK	A-211-3	Laminate Adhesive	<0.890	Original	Excluded PCB Product
599	BULK	A-211-4	Red Laminate Adhesive	<0.877	Original	Excluded PCB Product
555	BULK	A-213-2	Red Laminate Adhesive	<0.942	Original	Excluded PCB Product
581	BULK	A-213-3	Laminate Adhesive	<0.992	Original	Excluded PCB Product
598	BULK	A-213-3	Red Laminate Adhesive	<0.885	Original	Excluded PCB Product
578	BULK	A-227-4	Laminate Adhesive	<0.940	Original	Excluded PCB Product
580	BULK	A-228-3	Laminate Adhesive	<0.933	Original	Excluded PCB Product
569	BULK	A-303-3	Red Laminate Adhesive	<0.962	Original	Excluded PCB Product
601	BULK	A-304-4	Tan/Blue tint Laminate Adhesive	<0.969	Original	Excluded PCB Product
602	BULK	A-308-4	Red Laminate Adhesive	<0.980	Original	Excluded PCB Product
575	BULK	A-319-1	Laminate Adhesive	<0.938	Original	Excluded PCB Product
603	BULK	A-319-2	Red Laminate Adhesive	<0.973	Original	Excluded PCB Product
568	BULK	B-242	Laminate Adhesive (redo-506)	<0.901	Original	Excluded PCB Product
551	BULK	B-309	Red Laminate Adhesive	<0.859	Original	Excluded PCB Product
484	BULK	B-363	Red Laminate Adhesive	<0.701	Original	Excluded PCB Product
586	BULK	D-120	Laminate Adhesive	<0.850	Original	Excluded PCB Product
587	BULK	D-136	Laminate Adhesive	<0.871	Original	Excluded PCB Product
524	BULK	D-216	Red Laminate Adhesive	<0.923	Original	Excluded PCB Product
524 Dup	BULK	D-216	Red Laminate Adhesive	<0.980	Original	Excluded PCB Product
604	BULK	D-232	Red Laminate Adhesive	<0.893	Original	Excluded PCB Product
393	BULK	D-218	Laminate Adhesive	<2.37	Original	Excluded PCB Product
369	BULK	B-253	Laminate Adhesive	<0.477	Original	Excluded PCB Product
267	BULK	A-115-2	Laminate Adhesive	<0.409	Original	Excluded PCB Product
250	BULK	A-312-1	Laminate Adhesive	<0.242	Original	Excluded PCB Product
275	BULK	A-110-2	Laminate Adhesive	<0.158	Original	Excluded PCB Product

Table 1
Bulk Product Sample Results
New Bedford High School
New Bedford, MA

Sample #[1]	Type of sample	Location	Description	PCB Concentration (mg/kg)	Date Installed	Classification
Paint						
291	BULK	A-206-4	Blue Paint	**94.4**	1999-2000	PCB Bulk Product Waste
502	BULK	B-230	White Paint	**55.7**	1999-2000	PCB Bulk Product Waste
507	BULK	A-211-3	Paint	42.69	1999-2000	PCB Bulk Product Waste
133	BULK	A-213-4	New paint (blue)	26.2	1999-2000	PCB Bulk Product Waste
458	WIPE	A-213-4	Wipe sample, Blue Paint	1.02	1999-2000	Not Applicable
380	BULK	B-320	Green Paint	17.81	1999-2000	Excluded PCB Product
469	WIPE	B-320	Wipe sample, Light Green Paint	<0.5	1999-2000	Not Applicable
349	BULK	A-309-1	Green Paint	16.72	1999-2000	Excluded PCB Product
463	WIPE	A-309-1	Wipe sample, Green Paint	<0.5	1999-2000	Not Applicable
464	BULK	A-309-1	Old Yellow Paint	16.4	Original	Excluded PCB Product
442	BULK	A-213-4	Blue Paint	16.15	1999-2000	Excluded PCB Product
289	BULK	A-209-4	Blue Paint	14.71	1999-2000	Excluded PCB Product
456	WIPE	A-209-4	Wipe sample, Blue Paint	<0.5	1999-2000	Not Applicable
460	BULK	A-309-4	Old White Paint	14.71	Original	Excluded PCB Product
459	WIPE	A-309-4	Wipe sample, Blue Paint	<0.5	1999-2000	Not Applicable
503	BULK	A-228-3	Paint	14.31	1999-2000	Excluded PCB Product
473	BULK	D-124	Old Green Paint	14.3	Original	Excluded PCB Product
472	WIPE	D-124	Wipe sample, Green Paint	<0.5	1999-2000	Not Applicable
483	BULK	B-363	Paint	13.5	1999-2000	Excluded PCB Product
457	BULK	A-209-4	Old Light Green Paint	12.2	Original	Excluded PCB Product
470	BULK	B-320	Old Yellow Paint	12.0	Original	Excluded PCB Product
406	BULK	D-124	Green Paint	11.84	1999-2000	Excluded PCB Product
309	BULK	A-223-3	Tan Paint	10.91	1999-2000	Excluded PCB Product
465	WIPE	A-223-3	Wipe sample, Tan Paint	0.91	1999-2000	Not Applicable
409	BULK	D-115	Beige Paint	10.57	1999-2000	Excluded PCB Product
471	WIPE	D-115	Wipe sample, Yellow Paint	<0.5	1999-2000	Not Applicable
360	BULK	A-309-4	Blue Paint	10.53	1999-2000	Excluded PCB Product
466	BULK	A-223-3	Old Tan Paint	10.09	Original	Excluded PCB Product
269	BULK	A-115-2	Gold Paint	9.96	1999-2000	Excluded PCB Product
429	BULK	A-309-2	Gold Paint	9.46	1999-2000	Excluded PCB Product
353	BULK	A-316-1	Green Paint	9.34	1999-2000	Excluded PCB Product
116	BULK	A-205-4	Green paint from I-Beams	8.84	1999-2000	Excluded PCB Product
134	BULK	A-212/213-4	Green paint from I-Beams	8.41	1999-2000	Excluded PCB Product
347	BULK	A-207-1	Green Paint	7.71	1999-2000	Excluded PCB Product
570	BULK		Tan Paint	7.54	1999-2000	Excluded PCB Product
426	BULK	Prep Room	Green Paint	7.42	1999-2000	Excluded PCB Product
323	BULK	A-319-3	Tan Paint	7.06	1999-2000	Excluded PCB Product
345	BULK	A-227-1	Green Paint	6.68	1999-2000	Excluded PCB Product
297	BULK	A-207-2	Gold Paint	6.65	1999-2000	Excluded PCB Product
509	BULK	D-250	Yellow/Tan Paint	6.63	1999-2000	Excluded PCB Product
444	BULK	A-205-4	Blue Paint	6.48	1999-2000	Excluded PCB Product
570 Dup	BULK	A-303-3	Tan Paint over Blue Paint	6.47	1999-2000	Excluded PCB Product
226	BULK	A-117-1	Green Wall Paint	6.43	1999-2000	Excluded PCB Product
576	BULK	A-319-1	Paint	6.11	1999-2000	Excluded PCB Product
113	BULK	A-205-4	New paint (blue)	6.07	1999-2000	Excluded PCB Product
307	BULK	A-217-3	Tan Paint	6.02	1999-2000	Excluded PCB Product
300	BULK	A-209-2	Gold Paint	5.98	1999-2000	Excluded PCB Product
576 Dup	BULK	A-319-1	Paint	5.76	1999-2000	Excluded PCB Product
582	BULK	A-213-2	Paint	5.73	1999-2000	Excluded PCB Product
254	BULK	A-312-1	Green Wall Paint (w/ some blue)	5.57	1999-2000	Excluded PCB Product
122	BULK	A-311-2	New paint (beige/gold)	5.418	1999-2000	Excluded PCB Product
490	BULK	A-203-4	Paint	5.22	1999-2000	Excluded PCB Product
510	BULK	D-250	Blue Paint	5.1	1999-2000	Excluded PCB Product
387	BULK	B-373	Green Paint	4.97	1999-2000	Excluded PCB Product
317	BULK	A-312-2	Gold Paint	4.92	1999-2000	Excluded PCB Product
273	BULK	A-116-4	Blue Paint (w/ some yellow)	4.7	1999-2000	Excluded PCB Product
440	BULK	A-311-2	Gold Paint	4.64	1999-2000	Excluded PCB Product
148	BULK	A-311-2	Old paint (blue)	4.512	1999-2000	Excluded PCB Product
283	BULK	A-208-4	Blue Paint	4.41	1999-2000	Excluded PCB Product
293	BULK	A-227-4-O	Blue Paint	4.24	1999-2000	Excluded PCB Product
419	BULK	A-107-2	Gold Paint	4.184	1999-2000	Excluded PCB Product
420 DUP	BULK	B-122	Green Paint	4.00	1999-2000	Excluded PCB Product
420	BULK	B-122	Green Paint	3.98	1999-2000	Excluded PCB Product
422	BULK	B-287	Green Paint	3.79	1999-2000	Excluded PCB Product
419 DUP	BULK	A-107-2	Gold Paint	3.50	1999-2000	Excluded PCB Product
357	BULK	A-311-1	Green Paint	3.28	1999-2000	Excluded PCB Product
414 DUP	BULK	C-211	White Paint	3.163	1999-2000	Excluded PCB Product
411	BULK	D-301	Blue Paint	3.16	1999-2000	Excluded PCB Product
414	BULK	C-211	White Paint	3.118	1999-2000	Excluded PCB Product
312	BULK	A-308-2	Gold Paint	3.06	1999-2000	Excluded PCB Product
413	BULK	C-216	Yellow Paint	2.946	1999-2000	Excluded PCB Product
216	BULK	A-112-1	Green Paint	2.73	1999-2000	Excluded PCB Product
413 DUP	BULK	C-216	Yellow Paint	2.701	1999-2000	Excluded PCB Product
404	BULK	D-143	Yellow Paint	2.113	1999-2000	Excluded PCB Product
416 DUP	BULK	E-136	Beige Paint	1.556	1999-2000	Excluded PCB Product
135	BULK	A-213-4	Old paint (tan)	1.314	1999-2000	Excluded PCB Product
365	BULK	B-226	Green Paint	1.308	1999-2000	Excluded PCB Product
407	BULK	D-111	Green Paint	1.247	1999-2000	Excluded PCB Product
416	BULK	E-136	Beige Paint	1.15	1999-2000	Excluded PCB Product
477	BULK	D-115	Old Beige Paint / Cinder Block	0.647	Original	Excluded PCB Product
417	BULK	Stairs	Beige Paint	0.526	1999-2000	Excluded PCB Product
114	BULK	A-205-4	Old paint (tan)	0.3344	1999-2000	Excluded PCB Product
274	BULK	B-145	Yellow Paint (w/ some blue)	<1.64	1999-2000	Excluded PCB Product
147	BULK	A-311-2	Green paint from I-Beams	<0.05	1999-2000	Excluded PCB Product

Table 1
Bulk Product Sample Results
New Bedford High School
New Bedford, MA

Sample #[1]	Type of sample	Location	Description	PCB Concentration (mg/kg)	Date Installed	Classification
Polyurethane Foam Materials						
492	BULK	A-203-4	Seat Cushion from Leather Chair	47.43	Not Determined	PCB Remediation Waste
481	BULK	A-303-3	Seat Cushion	31.3	Not Determined	PCB Remediation Waste
500	BULK	A-217-1	Seat Cushion from Red-Orange Chair	17.71	Not Determined	PCB Remediation Waste
487	BULK	A-203-4	Seat Cushion from Leather Chair	14.58	Not Determined	PCB Remediation Waste
499	BULK	A-213-2	Seat Cushion from Brown Leather Chair	13	Not Determined	PCB Remediation Waste
522	BULK	D-136	Cushion from Blue Mat	13	Not Determined	PCB Remediation Waste
505	BULK	B-242	Seat Cushion	10.65	Not Determined	PCB Remediation Waste
494	BULK	A-205-4	Seat Cushion from Yellow Office Chair	8.41	Not Determined	PCB Remediation Waste
512 Dup	BULK	B-242	Seat Cushion in Windmill Lounge Chair	6.27	Not Determined	PCB Remediation Waste
512	BULK	B-242	Seat Cushion Windmill Lounge Chair	6.20	Not Determined	PCB Remediation Waste
491 Dup	BULK	A-203-4	Seat Cushion from Leather Chair	5.596	Not Determined	PCB Remediation Waste
518	BULK	A-310-1	Seat Cushion Brown Leather Chair	5.50	Not Determined	PCB Remediation Waste
493	BULK	A-205-4	Cushion from Black office Couch	5.30	Not Determined	PCB Remediation Waste
491	BULK	A-203-4	Seat Cushion from Black Leather Chair	4.883	Not Determined	PCB Remediation Waste
136	BULK	A-205-4	Couch foam, black couch	3.809	Original	PCB Remediation Waste
488	BULK	A-203-4	Seat Cushion from Blue Fabric Chair	3.269	Not Determined	PCB Remediation Waste
567	BULK	Auditorium	Auditorium Seat Cushion (redo-513)	3.09	Original	PCB Remediation Waste
515	BULK	D-273	Auditorium Seat Cushion	3.08	Original	PCB Remediation Waste
514	BULK	D-273	Auditorium Seat Cushion	2.93	Original	PCB Remediation Waste
517	BULK	D-273	Auditorium Seat Cushion	2.59	Original	PCB Remediation Waste
516	BULK	D-273	Auditorium Seat Cushion	2.44	Original	PCB Remediation Waste
561	BULK	Girl's Gym	Cushion from Blue High Jump Mat	2.26	Not Determined	PCB Remediation Waste
558	BULK	Girl's Gym	Cushion from Wrestling Mats	1.87	Not Determined	PCB Remediation Waste
559	BULK	Girl's Gym	Cushion from older Red Wall Mats	1.59	Not Determined	PCB Remediation Waste
521	BULK	D-136	Cushion from White Mats	1.26	Not Determined	PCB Remediation Waste
558 Dup	BULK	Girl's Gym	Cushion from Wrestling Mats	1.23	Not Determined	PCB Remediation Waste
519	BULK	A-318-1	Seat Cushion from Blue office Chair	0.721	Not Determined	Not Regulated
556	BULK	Boy's Gym	Cushion from Red Wall Mats	<0.962	Not Determined	Not Regulated
557	BULK	Boy's Gym	Cushion from Red Folding Gym Mat	<0.859	Not Determined	Not Regulated
560	BULK	Girl's Gym	Cushion from Red High Jump Mat	<0.867	Not Determined	Not Regulated
562	BULK	Girl's Gym	Cushion from Blue Tumble Mat	<0.890	Not Determined	Not Regulated
563	BULK	Girl's Gym	Cushion from Red Mesh Mat	<0.867	Not Determined	Not Regulated
Plywood Seat Backing						
PLY-1	BULK	Auditorium	Plywood backing for seat cushion	<0.480	Original	Not Regulated
PLY-2	BULK	Auditorium	Plywood backing for seat cushion	<0.496	Original	Not Regulated
PLY-3	BULK	Auditorium	Plywood backing for seat cushion	<0.497	Original	Not Regulated
PLY-4	BULK	Auditorium	Plywood backing for seat cushion	<0.445	Original	Not Regulated
Wall Divider Gaskets						
235	BULK	A-213-1	Wall divider gasket	28.5	Original	Excluded PCB Product
131	BULK	A-212/213-4	Wall divider gasket	26.4	Original	Excluded PCB Product
328	BULK	A-310-3	Wall divider gasket	12.42	Original	Excluded PCB Product
340	BULK	A-311-4	Wall divider gasket	10.6	Original	Excluded PCB Product
340 DUP	BULK	A-311-4	Wall divider gasket	10.2	Original	Excluded PCB Product
243	BULK	A-311-1	Wall divider gasket	9.14	Original	Excluded PCB Product
370	BULK	B-253	Wall divider gasket	7.76	Original	Excluded PCB Product
Window Caulk						
128	BULK	A-212/213-4	Window Caulk	25.1	Original	Excluded PCB Product
232	BULK	A-212-4	Window Caulk	19.6	Original	Excluded PCB Product
285	BULK	A-209-4	Window Caulk	17.38	Original	Excluded PCB Product
374	BULK	B-211	Window Caulk	13	Original	Excluded PCB Product
361	BULK	A-309-4	Window Caulk	10.58	Original	Excluded PCB Product
377	BULK	B-320	Window Caulk	9.84	Original	Excluded PCB Product
338	BULK	A-316-4	Window Caulk	9.04	Original	Excluded PCB Product
240	BULK	A-309-1	Window Caulk	8.79	Original	Excluded PCB Product
252	BULK	A-316-1	Window Caulk	5.69	Original	Excluded PCB Product
341	BULK	A-311-4	Window Caulk	4.896	Original	Excluded PCB Product
237	BULK	A-227-1	Window Caulk	4.85	Original	Excluded PCB Product
433	BULK	D-230	Window Caulk	4.71	Original	Excluded PCB Product
327	BULK	A-310-3	Window Caulk	4.58	Original	Excluded PCB Product
234	BULK	A-213-1	Window Caulk	4.34	Original	Excluded PCB Product
263	BULK	A-306-2	Window Caulk	4.203	Original	Excluded PCB Product
281	BULK	A-208-4	Window Caulk	4.13	Original	Excluded PCB Product
295	BULK	A-209-2	Window Caulk	4.102	Original	Excluded PCB Product
277	BULK	A-110-2	Window Caulk	3.834	Original	Excluded PCB Product
230	BULK	A-103-1	Window Caulk	3.343	Original	Excluded PCB Product
244	BULK	A-311-1	Window Caulk	3.274	Original	Excluded PCB Product
111	BULK	A-205-4	Window Caulk	3.209	Original	Excluded PCB Product
266	BULK	A-115-2	Window Caulk	3.132	Original	Excluded PCB Product
311	BULK	A-308-2	Window Caulk	3.13	Original	Excluded PCB Product
384	BULK	B-344	Window Caulk	2.99	Original	Excluded PCB Product
248	BULK	A-312-1	Window Caulk	2.927	Original	Excluded PCB Product
257	BULK	A-309-2	Window Caulk	2.84	Original	Excluded PCB Product
303	BULK	A-217-3	Window Caulk	2.76	Original	Excluded PCB Product
321	BULK	A-319-3	Window Caulk	2.56	Original	Excluded PCB Product
260	BULK	A-312-2	Window Caulk	2.454	Original	Excluded PCB Product
331	BULK	A-319-4	Window Caulk	2.27	Original	Excluded PCB Product
394	BULK	D-218	Window Caulk	2.013	Original	Excluded PCB Product
367	BULK	B-253	Window Caulk	2.01	Original	Excluded PCB Product
120	BULK	A-311-2	Window Caulk	1.741	Original	Excluded PCB Product
222	BULK	A-112-1	Window Caulk	1.43	Original	Excluded PCB Product
391	BULK	D-213	Window Caulk	1.397	Original	Excluded PCB Product
164	BULK	Exterior	Exterior Window Caulk	0.848	Original	Excluded PCB Product
167	BULK	Exterior	Exterior Window Caulk	0.597	Original	Excluded PCB Product
137	BULK	Exterior	Exterior Window Caulk	0.334	Original	Excluded PCB Product

Table 1
Bulk Product Sample Results
New Bedford High School
New Bedford, MA

Sample #[1]	Type of sample	Location	Description	PCB Concentration (mg/kg)	Date Installed	Classification
Window Glaze						
335	BULK	A-316-4	Window Glaze	24.67	Original	Excluded PCB Product
127	BULK	A-212/213-4	Window Glaze	22.8	Original	Excluded PCB Product
386	BULK	B-344	Window Glaze	12.67	Original	Excluded PCB Product
373	BULK	B-211	Window Glaze	12.12	Original	Excluded PCB Product
378	BULK	B-320	Window Glaze	11.58	Original	Excluded PCB Product
373 DUP	BULK	B-211	Window Glaze	11.41	Original	Excluded PCB Product
238	BULK	A-309-1	Window Glaze	10.53	Original	Excluded PCB Product
368	BULK	B-253	Window Glaze	8.95	Original	Excluded PCB Product
238 DUP	BULK	A-309-1	Window Glaze	8.45	Original	Excluded PCB Product
251 DUP	BULK	A-316-1	Window Glaze	6.8	Original	Excluded PCB Product
233	BULK	A-213-1	Window Glaze	5.79	Original	Excluded PCB Product
251	BULK	A-316-1	Window Glaze	5.50	Original	Excluded PCB Product
278	BULK	A-110-2	Window Glaze	5.35	Original	Excluded PCB Product
112	BULK	A-205-4	Window Glaze	4.40	Original	Excluded PCB Product
397	BULK	D-124	Window Glaze	3.952	Original	Excluded PCB Product
284	BULK	A-209-4	Window Glaze	3.80	Original	Excluded PCB Product
280	BULK	A-208-4	Window Glaze	3.50	Original	Excluded PCB Product
256	BULK	A-309-2	Window Glaze	3.456	Original	Excluded PCB Product
363	BULK	A-309-4	Window Glaze	3.42	Original	Excluded PCB Product
259	BULK	A-312-2	Window Glaze	3.41	Original	Excluded PCB Product
241	BULK	A-311-1	Window Glaze	3.30	Original	Excluded PCB Product
326	BULK	A-310-3	Window Glaze	3.29	Original	Excluded PCB Product
339	BULK	A-311-4	Window Glaze	3.17	Original	Excluded PCB Product
229	BULK	A-103-1	Window Glaze	3.161	Original	Excluded PCB Product
236	BULK	A-227-1	Window Glaze	3.16	Original	Excluded PCB Product
390 DUP	BULK	D-213	Window Glaze	2.554	Original	Excluded PCB Product
262	BULK	A-306-2	Window Glaze	2.32	Original	Excluded PCB Product
425 DUP	BULK	D-244	Window Glaze	2.292	Original	Excluded PCB Product
320	BULK	A-319-3	Window Glaze	2.246	Original	Excluded PCB Product
302	BULK	A-217-3	Window Glaze	2.012	Original	Excluded PCB Product
121	BULK	A-311-2	Window Glaze	1.98	Original	Excluded PCB Product
396	BULK	D-218	Window Glaze	1.925	Original	Excluded PCB Product
217	BULK	A-112-1	Window Glaze	1.89	Original	Excluded PCB Product
302 DUP	BULK	A-319-3	Window Glaze	1.767	Original	Excluded PCB Product
390	BULK	D-213	Window Glaze	1.755	Original	Excluded PCB Product
310	BULK	A-308-2	Window Glaze	1.549	Original	Excluded PCB Product
246	BULK	A-312-1	Window Glaze	1.52	Original	Excluded PCB Product
332	BULK	A-319-4	Window Glaze	1.299	Original	Excluded PCB Product
425	BULK	D-243	Window Glaze	1.292	Original	Excluded PCB Product
294	BULK	A-209-2	Window Glaze	1.20	Original	Excluded PCB Product
265	BULK	A-115-2	Window Glaze	1.087	Original	Excluded PCB Product
Push-Pin Material						
375	BULK	B-211	Push-pin Material	19.3	Original	Excluded PCB Product
382	BULK	B-320	Push-pin Material	15.48	Original	Excluded PCB Product
336	BULK	A-316-4	Push-pin Material	12.04	Original	Excluded PCB Product
286	BULK	A-209-4	Push-pin Material	10.6	Original	Excluded PCB Product
455	BULK	A-209-4	Push-pin Material	8.77	Original	Excluded PCB Product
468	BULK	B-320	Push-pin Material	8.71	Original	Excluded PCB Product
108	BULK	B-240	Push-pin Material	7.53	Original	Excluded PCB Product
359	BULK	A-309-4	Push-pin Material	7.521	Original	Excluded PCB Product
249	BULK	A-316-1	Push-pin Material	7.28	Original	Excluded PCB Product
474	BULK	B-211	Push-pin Material	7.24	Not Determined	Excluded PCB Product
462	BULK	A-316-4	Push-pin Material	6.38	Original	Excluded PCB Product
383	BULK	B-344	Push-pin Material	6.02	Original	Excluded PCB Product
239	BULK	A-309-1	Push-pin Material	5.053	Original	Excluded PCB Product
261	BULK	A-306-2	Push-pin Material	4.41	Original	Excluded PCB Product
231	BULK	A-213-1	Push-pin Material	4.2	Original	Excluded PCB Product
296	BULK	A-209-2	Push-pin Material	3.979	Original	Excluded PCB Product
247	BULK	A-312-1	Push-pin Material	3.947	Original	Excluded PCB Product
264	BULK	A-115-2	Push-pin Material	3.71	Original	Excluded PCB Product
343	BULK	A-311-4	Push-pin Material	3.53	Original	Excluded PCB Product
225	BULK	A-117-1	Push-pin Material	3.412	Original	Excluded PCB Product
258	BULK	A-312-2	Push-pin Material	3.31	Original	Excluded PCB Product
242	BULK	A-311-1	Push-pin Material	3.1	Original	Excluded PCB Product
255	BULK	A-309-2	Push-pin Material	3.039	Original	Excluded PCB Product
102	BULK	A-114-3	Push-pin Material	2.97	Original	Excluded PCB Product
329	BULK	A-310-3	Push-pin Material	2.83	Original	Excluded PCB Product
333	BULK	A-319-4	Push-pin Material	2.71	Original	Excluded PCB Product
304	BULK	A-217-3	Push-pin Material	2.589	Original	Excluded PCB Product
366	BULK	B-226	Push-pin Material	2.482	Original	Excluded PCB Product
398	BULK	D-124	Push-pin Material	2.478	Original	Excluded PCB Product
218	BULK	A-112-1	Push-pin Material	2.474	Original	Excluded PCB Product
324	BULK	A-319-3	Push-pin Material	2.38	Original	Excluded PCB Product
279	BULK	A-110-2	Push-pin Material	2.136	Original	Excluded PCB Product
271	BULK	A-116-4	Push-pin Material	2.123	Original	Excluded PCB Product
313	BULK	A-308-2	Push-pin Material	1.94	Original	Excluded PCB Product
389	BULK	D-213	Push-pin Material	1.701	Original	Excluded PCB Product
395	BULK	D-218	Push-pin Material	1.58	Original	Excluded PCB Product
405	BULK	D-143	Push-pin Material	1.383	Original	Excluded PCB Product
454	BULK	A-209-4	Push-pin Mastic	0.476	Original	Excluded PCB Product
461	BULK	A-316-4	Push-pin Mastic	0.233	Original	Excluded PCB Product
400	BULK	C-216	Push-pin Material	<0.46	Original	Excluded PCB Product
467	BULK	B-320	Push-pin Mastic	<0.195	Original	Excluded PCB Product
Vinyl Cove Base						
105	BULK	B-240	Vinyl cove base	7.84	Original	Excluded PCB Product
101	BULK	A-114-3	Vinyl cove base	3.67	Original	Excluded PCB Product
130	BULK	A-212/213-4	Vinyl cove base	1.78	Original	Excluded PCB Product

Table 1
Bulk Product Sample Results
New Bedford High School
New Bedford, MA

Sample #[1]	Type of sample	Location	Description	PCB Concentration (mg/kg)	Date Installed	Classification
Joint Materials						
540	BULK	B-230	Gray Joint Sealant / White Paint	41.7	Original	Excluded PCB Product
149	BULK	Roof	Flashing joint patch near chimney	7.06	New	Excluded PCB Product
140	BULK	Boiler Room	Adhesive around joints (north side)	6.25	Original	Excluded PCB Product
541	BULK	Faculty Base Room	Gray Joint Sealant	3.714	Original	Excluded PCB Product
533	BULK	Muralled Lobby	Gray Join Sealant / Yellow Paint	3.548	Original	Excluded PCB Product
539	BULK	A-211-4	Gray Joint Sealant / Blue Paint	2.675	Original	Excluded PCB Product
536	BULK	B-354	Gray Joint Sealant / L. Green Paint	2.654	Original	Excluded PCB Product
532	BULK	C Block Hall	Gray Join Sealant / No Paint	2.512	Original	Excluded PCB Product
533 Dup	BULK	Muralled Lobby	Gray Join Sealant / Yellow Paint	2.45	Original	Excluded PCB Product
534	BULK	Main Lobby	Brown Joint Sealant	2.306	Original	Excluded PCB Product
525	BULK	B-265	Gray Join Sealant / White Paint	2.186	Original	Excluded PCB Product
538	BULK	B-Block Hall	Gray Joint Sealant	2.18	Original	Excluded PCB Product
537	BULK	A-304-2	Gray Joint Sealant / Yellow Paint	1.923	Original	Excluded PCB Product
531	BULK	1st floor Hall	Gray Joint Sealant / Green Paint	1.78	Original	Excluded PCB Product
588	BULK	D-216	Joint Sealant	1.647	Original	Excluded PCB Product
501	BULK	A-217-1	Gray Joint Sealant / Green Paint	1.43	Original	Excluded PCB Product
535	BULK	A-310-4	Gray Joint Sealant / Blue Paint	1.36	Original	Excluded PCB Product
589	BULK	D-213	Joint Sealant	1.257	Original	Excluded PCB Product
146	BULK	Boiler Room	Expansion joint	1.124	Original	Excluded PCB Product
496	BULK	A-213-2	Gray Join Sealant / Yellow Paint	0.993	Original	Excluded PCB Product
496 Dup	BULK	A-213-2	Gray Joint Sealant / Yellow Paint	0.943	Original	Excluded PCB Product
145	BULK	Boiler Room	Flue joint material	0.734	Original	Excluded PCB Product
584	BULK	A-303-3	Joint Sealant	0.667	Original	Excluded PCB Product
154	BULK	Exterior	Expansion joint stuffing	0.375	Original	Excluded PCB Product
166	BULK	Exterior	Exterior Door Caulk	0.158	Original	Excluded PCB Product
152	BULK	C-Block	Interior expansion joint stuffing	<0.146	Original	Excluded PCB Product
Carpet						
158	BULK	D-219	Green carpet, fine arts office	15.37	Not Determined	Excluded PCB Product
156	BULK	D-250	Red carpet little theater	3.652	Not Determined	Excluded PCB Product
511	BULK	D-250	Carpet Cushion under Red Carpet	2.55	Not Determined	Excluded PCB Product
155	BULK	D-237	Blue carpet from auditorium	1.717	Not Determined	Excluded PCB Product
162	BULK	B-292	Brown carpet, media room	1.525	Not Determined	Excluded PCB Product
161	BULK	B-275	Brown carpet, library office	1.434	Not Determined	Excluded PCB Product
163	BULK	B-375	Green carpet, science media center	1.398	Not Determined	Excluded PCB Product
160	BULK	main office	Light brown carpet	1.01	Not Determined	Excluded PCB Product
159	BULK	D-208	Blue/tan carpet glued to vinyl tile	<1.06	Not Determined	Excluded PCB Product
157	BULK	D-250	Carpet pad, little theater	<0.176	Not Determined	Excluded PCB Product
Mastics						
132	BULK	A-212/213-4	Tile gaps (floor mastic)	32.51	Original	Excluded PCB Product
107	BULK	B-240	Floor tile mastic	10	Original	Excluded PCB Product
352	BULK	A-316-1	Vinyl Cove Base Mastic	5.19	Original	Excluded PCB Product
410	BULK	D-115	Vinyl Cove Base Mastic	3.75	Original	Excluded PCB Product
228	BULK	A-117-1	Vinyl Cove Base Mastic	3.73	Original	Excluded PCB Product
446	BULK	A-114-3	Vinyl Cove Base Mastic, soft, white	3.72	Original	Excluded PCB Product
268	BULK	A-115-2	Vinyl Cove Base Mastic	3.56	Original	Excluded PCB Product
124	BULK	A-311-2	Tile gaps (floor mastic)	3.33	Original	Excluded PCB Product
115	BULK	A-205-4	Vinyl Cove Base Mastic	3.03	Original	Excluded PCB Product
287	BULK	A-209-4	Vinyl Cove Base Mastic	2.751	Original	Excluded PCB Product
224	BULK	A-112-1	Vinyl Cove Base Mastic	2.64	Original	Excluded PCB Product
276	BULK	A-110-2	Vinyl Cove Base Mastic	2.58	Original	Excluded PCB Product
372	BULK	B-211	Vinyl Cove Base Mastic	2.355	Original	Excluded PCB Product
207	BULK	A-213-4	Floor tile mastic	1.906	Original	Excluded PCB Product
118	BULK	A-205-4	Tile gaps (floor mastic)	1.849	Original	Excluded PCB Product
350	BULK	A-309-1	Vinyl Cove Base Mastic	1.791	Original	Excluded PCB Product
308	BULK	A-223-3	Vinyl Cove Base Mastic	1.71	Original	Excluded PCB Product
318	BULK	A-312-2	Vinyl Cove Base Mastic	1.54	Original	Excluded PCB Product
213	BULK	A-311-2	Floor tile mastic	1.493	Original	Excluded PCB Product
270	BULK	A-116-4	Vinyl Cove Base Mastic	1.37	Original	Excluded PCB Product
253	BULK	A-312-1	Vinyl Cove Base Mastic	1.36	Original	Excluded PCB Product
214	BULK	A-311-2	Vinyl Cove Base Mastic	1.34	Original	Excluded PCB Product
298	BULK	A-207-2	Vinyl Cove Base Mastic	1.331	Original	Excluded PCB Product
202	BULK	B-240	Vinyl Cove Base Mastic	1.308	Original	Excluded PCB Product
290	BULK	A-227-4-O	Vinyl Cove Base Mastic	1.19	Original	Excluded PCB Product
356	BULK	A-311-1	Vinyl Cove Base Mastic	1.16	Original	Excluded PCB Product
306	BULK	A-217-3	Vinyl Cove Base Mastic	1.08	Original	Excluded PCB Product
208	BULK	A-213-4	Vinyl Cove Base Mastic	1.02	Original	Excluded PCB Product
201	BULK	B-240	Floor tile mastic	0.954	Original	Excluded PCB Product
301	BULK	A-209-2	Vinyl Cove Base Mastic	0.927	Original	Excluded PCB Product
292	BULK	A-206-4	Vinyl Cove Base Mastic	0.923	Original	Excluded PCB Product
362	BULK	A-309-4	Vinyl Cove Base Mastic	0.899	Original	Excluded PCB Product
388	BULK	B-373	Vinyl Cove Base Mastic	0.896	Original	Excluded PCB Product
129	BULK	A-212/213-4	Vinyl Cove Base Mastic	0.853	Original	Excluded PCB Product
322	BULK	A-319-3	Vinyl Cove Base Mastic	0.828	Original	Excluded PCB Product
346	BULK	A-227-1	Vinyl Cove Base Mastic	0.728	Original	Excluded PCB Product
123	BULK	A-311-2	Vinyl Cove Base Mastic	0.728	Original	Excluded PCB Product
110	BULK	A-114-3	Floor tile mastic	0.694	Original	Excluded PCB Product
315	BULK	A-308-2	Vinyl Cove Base Mastic	0.652	Original	Excluded PCB Product
379	BULK	B-320	Vinyl Cove Base Mastic	0.632	Original	Excluded PCB Product
399	BULK	D-124	Vinyl Cove Base Mastic	0.592	Original	Excluded PCB Product
430	BULK	A-309-2	Vinyl Cove Base Mastic	0.56	Original	Excluded PCB Product
402	BULK	C-216	Vinyl Cove Base Mastic	0.547	Original	Excluded PCB Product
282	BULK	A-208-4	Vinyl Cove Base Mastic	0.517	Original	Excluded PCB Product
418 DUP	BULK	Stairs	Vinyl Cove Base Mastic	0.494	Original	Excluded PCB Product
427	BULK	Prep Room	Vinyl Cove Base Mastic	0.483	Original	Excluded PCB Product
364	BULK	B-226	Vinyl Cove Base Mastic	0.412	Original	Excluded PCB Product
424	BULK	D-243	Vinyl Cove Base Mastic	0.382	Original	Excluded PCB Product
412	BULK	D-301	Vinyl Cove Base Mastic	0.343	Original	Excluded PCB Product
403	BULK	D-143	Vinyl Cove Base Mastic	0.307	Original	Excluded PCB Product
408	BULK	D-111	Vinyl Cove Base Mastic	0.286	Original	Excluded PCB Product
423	BULK	A-114-4	Vinyl Cove Base Mastic	<2.37	Original	Excluded PCB Product
421	BULK	B-287	Vinyl Cove Base Mastic	<0.248	Original	Excluded PCB Product
418	BULK	Stairs	Vinyl Cove Base Mastic	<0.243	Original	Excluded PCB Product
415	BULK	C-211	Vinyl Cove Base Mastic	<0.21	Original	Excluded PCB Product

Table 1
Bulk Product Sample Results
New Bedford High School
New Bedford, MA

Sample #[1]	Type of sample	Location	Description	PCB Concentration (mg/kg)	Date Installed	Classification
Other Building Materials						
475	BULK	B-116	Cork-type pipe wrap	4.66	Original	Excluded PCB Product
476	BULK	B-116	Foam-type pipe wrap	2.03	Original	Excluded PCB Product
142	BULK	Boiler Room	Air handler door insulation	0.826	Original	Excluded PCB Product
150	BULK	Roof	Roof Edge Patch by chimney	<0.05	New	Excluded PCB Product
Tile						
106	BULK	B-240	Vinyl tile, brown	2.558	Original	Excluded PCB Product
125	BULK	A-311-2	Vinyl tile	1.182	Original	Excluded PCB Product
119	BULK	A-205-4	Vinyl tile, blue	0.388	Original	Excluded PCB Product
103	BULK	A-114-3	Vinyl tile	0.176	Original	Excluded PCB Product
Wallboard						
443	BULK	A-213-4	Wallboard under paint	0.362	Original	Excluded PCB Product
445	BULK	A-205-4	Wallboard under paint	0.344	Original	Excluded PCB Product
206	BULK	B-240	Wallboard under cove base	0.2172	Original	Excluded PCB Product
431	BULK	A-309-2	Wallboard under cove base	0.162	Original	Excluded PCB Product
441	BULK	A-311-2	Wallboard under paint	0.133	Original	Excluded PCB Product
209	BULK	A-213-4	Wallboard under cove base	0.271	Original	Excluded PCB Product
447	BULK	A-114-3	Wallboard under cove base	<0.0893	Original	Excluded PCB Product
215	BULK	A-311-2	Wallboard under cove base	<0.05	Original	Excluded PCB Product
Concrete						
245	BULK	A-212-4	Concrete (0 - 0.5")	1.247	Original	Not Regulated
436	BULK	A-212-4	Concrete (0.5 - 1")	0.327	Original	Not Regulated
434	BULK	A-205-4	Concrete (0 - 0.5")	0.198	Original	Not Regulated
593	BULK	A-319-3	Concrete (0 - 0.5")	0.179	Original	Not Regulated
203	BULK	B-240	Concrete (0 - 0.5")	0.113	Original	Not Regulated
590	BULK	A-206-4	Concrete (0 - 0.5")	<0.0500	Original	Not Regulated
591	BULK	A-206-4	Concrete (0.5 - 1")	<0.0500	Original	Not Regulated
592	BULK	A-206-4	Concrete (1 - 1.5")	<0.0791	Original	Not Regulated
594	BULK	A-319-3	Concrete (0.5 - 1")	<0.0500	Original	Not Regulated
595	BULK	A-319-3	Concrete (1 - 1.5")	<0.0599	Original	Not Regulated
221	BULK	A-311-2	Concrete (1 - 1.5")	<0.10	Original	Not Regulated
211	BULK	A-213-4	Concrete (0.5 - 1")	<0.0993	Original	Not Regulated
205	BULK	B-240	Concrete (1 - 1.5")	<0.0988	Original	Not Regulated
204	BULK	B-240	Concrete (0.5 - 1")	<0.0985	Original	Not Regulated
212	BULK	A-213-4	Concrete (1 - 1.5")	<0.0983	Original	Not Regulated
435	BULK	A-205-4	Concrete (0.5 - 1")	<0.098	Original	Not Regulated
220	BULK	A-311-2	Concrete (0.5 - 1")	<0.0976	Original	Not Regulated
438	BULK	A-209-2	Concrete (0.5 - 1")	<0.0956	Original	Not Regulated
437	BULK	A-209-2	Concrete (0 - 0.5")	<0.0871	Original	Not Regulated
210	BULK	A-213-4	Concrete (0 - 0.5")	<0.0511	Original	Not Regulated
219	BULK	A-311-2	Concrete (0 - 0.5")	<0.05	Original	Not Regulated
Wipe Samples						
138	WIPE	Boiler Room	Bearing lube wipe, air handler	7.07	Original	Not Regulated
139	WIPE	Boiler Room	Johnson controls floor wipe	2.307	Original	Not Regulated
151	WIPE	A-207-1	Pneumatic panel, 2nd floor wipe	1.55	Original	Not Regulated
144	WIPE	Boiler Room	West compressor wipe	1.53	Original	Not Regulated
141	WIPE	Boiler Room	Electric motor wipe sample	1.349	Original	Not Regulated
143	WIPE	Boiler Room	East compressor wipe	<0.5	Original	Not Regulated
153	WIPE	Boiler Room	Wipe inside of GE control panel	<0.5	Original	Not Regulated
165	WIPE	Exterior	Wipe Inside Univent	<0.5	Original	Not Regulated

Notes: Units for total PCB Concentrations presented are mg/kg for wipe samples which are ug/100cm^2.
Total PCB Concentrations in **BOLD** exceed 50 mg/kg.
Reported sample results hilighted in green represent materials that have already been removed from the building.
Reported sample results hilighted in yellow represent materials that are scheduled for removal from the building in summer 2011.

ATTACHMENT G

1D-1
PCB ANALYSIS DATA SHEET

Laboratory Name:	NEA - A Division of PACE	SDG No:	11020142
ELAP ID No:	11078	LRF ID:	11020142-01
Matrix:	Solid	Client ID:	TRC-PLY-1
Sample wt(Dry)/vol:	1.0410 g	Lab Sample ID:	AO01588
Percent Moisture:	0	Date Received:	02/17/2011
Extraction:	Soxhlet Method (3540C)	Date Extracted:	02/17/2011
Conc. Extract Volume:	25000 uL	Date Analyzed:	02/18/2011
Method:	SW-846 8082 (PCB)	Dilution Factor:	1
		Sulfur Cleanup:	YES

Column 1 Information:

GC Column: Phenomenex, Zebron ZB-1, 30 m, 0.25 mm ID, 0.25 µm

Injection Volume: 1.0 uL

Lab File ID: GC20F-903-6

Column 2 Information:

GC Column: Phenomenex, Zebron ZB-5, 30 m, 0.25 mm ID, 0.25 µm

Injection Volume: 1.0 uL

Lab File ID: GC20B-883-6

Column Number	CAS NO	COMPOUND NAME	CONCENTRATION UG/G	Q
1	12674-11-2	Aroclor 1016	0.480	U
1	11104-28-2	Aroclor 1221	0.480	U
1	11141-16-5	Aroclor 1232	0.480	U
1	53469-21-9	Aroclor 1242	0.480	U
1	12672-29-6	Aroclor 1248	0.480	U
1	11097-69-1	Aroclor 1254	0.480	U
1	11096-82-5	Aroclor 1260	0.480	U

Laboratory Qualifiers:
U - Denotes analyte not detected at concentration greater than or equal to the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

FORM I-CLP-PCB (NEA)

Print Date: 2/21/2011
Lims Version : 5.0.5.3

1D-1
PCB ANALYSIS DATA SHEET

Laboratory Name:	NEA - A Division of PACE	SDG No:	11020142
ELAP ID No:	11078	LRF ID:	11020142-02
Matrix:	Solid	Client ID:	TRC-PLY-2
Sample wt(Dry)/vol:	1.0090 g	Lab Sample ID:	AO01589
Percent Moisture:	0	Date Received:	02/17/2011
Extraction:	Soxhlet Method (3540C)	Date Extracted:	02/17/2011
Conc. Extract Volume:	25000 uL	Date Analyzed:	02/18/2011
Method:	SW-846 8082 (PCB)	Dilution Factor:	1
		Sulfur Cleanup:	YES

Column 1 Information:

GC Column: Phenomenex, Zebron ZB-1, 30 m, 0.25 mm ID, 0.25 µm

Injection Volume: 1.0 uL

Lab File ID: GC20F-903-7

Column 2 Information:

GC Column: Phenomenex, Zebron ZB-5, 30 m, 0.25 mm ID, 0.25 µm

Injection Volume: 1.0 uL

Lab File ID: GC20B-883-7

Column Number	CAS NO	COMPOUND NAME	CONCENTRATION UG/G	Q
1	12674-11-2	Aroclor 1016	0.496	U
1	11104-28-2	Aroclor 1221	0.496	U
1	11141-16-5	Aroclor 1232	0.496	U
1	53469-21-9	Aroclor 1242	0.496	U
1	12672-29-6	Aroclor 1248	0.496	U
1	11097-69-1	Aroclor 1254	0.496	U
1	11096-82-5	Aroclor 1260	0.496	U

Laboratory Qualifiers:
U - Denotes analyte not detected at concentration greater than or equal to the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

FORM I-CLP-PCB (NEA)

Print Date: 2/21/2011
Lims Version : 5.0.5.3

1D-1
PCB ANALYSIS DATA SHEET

Laboratory Name:	NEA - A Division of PACE	SDG No:	11020142
ELAP ID No:	11078	LRF ID:	11020142-03
Matrix:	Solid	Client ID:	TRC-PLY-3
Sample wt(Dry)/vol:	1.0070 g	Lab Sample ID:	AO01590
Percent Moisture:	0	Date Received:	02/17/2011
Extraction:	Soxhlet Method (3540C)	Date Extracted:	02/17/2011
Conc. Extract Volume:	25000 uL	Date Analyzed:	02/18/2011
Method:	SW-846 8082 (PCB)	Dilution Factor:	1
		Sulfur Cleanup:	YES

Column 1 Information:

GC Column: Phenomenex, Zebron ZB-1, 30 m, 0.25 mm ID, 0.25 µm

Injection Volume: 1.0 uL

Lab File ID: GC20F-903-8

Column 2 Information:

GC Column: Phenomenex, Zebron ZB-5, 30 m, 0.25 mm ID, 0.25 µm

Injection Volume: 1.0 uL

Lab File ID: GC20B-883-8

Column Number	CAS NO	COMPOUND NAME	CONCENTRATION UG/G	Q
1	12674-11-2	Aroclor 1016	0.497	U
1	11104-28-2	Aroclor 1221	0.497	U
1	11141-16-5	Aroclor 1232	0.497	U
1	53469-21-9	Aroclor 1242	0.497	U
1	12672-29-6	Aroclor 1248	0.497	U
1	11097-69-1	Aroclor 1254	0.497	U
1	11096-82-5	Aroclor 1260	0.497	U

Laboratory Qualifiers:
U - Denotes analyte not detected at concentration greater than or equal to the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

FORM I-CLP-PCB (NEA)

Print Date: 2/21/2011
Lims Version : 5.0.5.3

1D-1
PCB ANALYSIS DATA SHEET

Laboratory Name:	NEA - A Division of PACE	SDG No:	11020142
ELAP ID No:	11078	LRF ID:	11020142-04
Matrix:	Solid	Client ID:	TRC-PLY-4
Sample wt(Dry)/vol:	1.1240 g	Lab Sample ID:	AO01591
Percent Moisture:	0	Date Received:	02/17/2011
Extraction:	Soxhlet Method (3540C)	Date Extracted:	02/17/2011
Conc. Extract Volume:	25000 uL	Date Analyzed:	02/18/2011
Method:	SW-846 8082 (PCB)	Dilution Factor:	1
		Sulfur Cleanup:	YES

Column 1 Information:

GC Column: Phenomenex, Zebron ZB-1, 30 m, 0.25 mm ID, 0.25 µm

Injection Volume: 1.0 uL

Lab File ID: GC20F-903-9

Column 2 Information:

GC Column: Phenomenex, Zebron ZB-5, 30 m, 0.25 mm ID, 0.25 µm

Injection Volume: 1.0 uL

Lab File ID: GC20B-883-9

Column Number	CAS NO	COMPOUND NAME	CONCENTRATION UG/G	Q
1	12674-11-2	Aroclor 1016	0.445	U
1	11104-28-2	Aroclor 1221	0.445	U
1	11141-16-5	Aroclor 1232	0.445	U
1	53469-21-9	Aroclor 1242	0.445	U
1	12672-29-6	Aroclor 1248	0.445	U
1	11097-69-1	Aroclor 1254	0.445	U
1	11096-82-5	Aroclor 1260	0.445	U

Laboratory Qualifiers:
U - Denotes analyte not detected at concentration greater than or equal to the Practical Quantitation Limit (PQL). PQLs are adjusted for sample weight/volume and dilution factors.

FORM I-CLP-PCB (NEA)

Print Date: 2/21/2011
Lims Version : 5.0.5.3