

CAMPBELL  
ENVIRONMENTAL GROUP

April 5, 2016

Mr. Thomas Martin  
Hancock County Planning Commission  
395 State Street  
Ellsworth, Maine 04605

Re: Polychlorinated Biphenyl Memorandum  
Building #85 and Building #153 Complexes  
Corea, Maine

Dear Mr. Martin:

Campbell Environmental Group, Inc. (CEG) has drafted this memorandum to serve as a discussion in how to address polychlorinated biphenyls (PCBs) that were detected in the above referenced subject properties. CEG would like to develop a consensus with Maine Department of Environmental Protection (MEDEP) and United States Environmental Protection Agency (USEPA) to determine how to best recommend the management of these materials.

### **Background**

On November 12 and 13, 2015 CEG and MEDEP personnel collected a total of 32 building material and concrete samples from Building Complexes #85 and #153 in Corea, Maine. Fourteen of these samples tested above the respective laboratory reporting limit for PCBs. Thirteen samples were reported to contain PCBs at concentrations exceeding one milligram per kilogram (mg/kg). Complete sample results are included Tables #1 and #2, attached to this document. PCB aroclor 1254 is the only aroclor detected in each of the samples. This aroclor was commonly used in electrical transformers, capacitors, caulking, and adhesives.

Samples exceeding 1 mg/kg were detected in the following locations:

- ▲ Building #85 - Building material caulk (BM-2, BM-3, BM-4, and BM-10), roofing materials (BM-11 and BM-12), and carpeting located at the center of the building (BM-85 Carpet). Aroclor 1254 was also detected in concrete floor samples (BM-5-B and BM-5-C) collected in an area identified to have previously contained electrical transformers;
- ▲ Building #154, the former uninterrupted power supply building that supported operations in Building #153. PCBs were detected in a concrete floor sample (BM-3-C) in an area formerly thought to contain electrical transformers and from the building's exterior caulk (BM-32);
- ▲ Former concrete transformer pad located to the northeast of Building #153 (BM-14-A); and
- ▲ Radome #178 caulk (BM-33).

The only samples that exceeded 50 mg/kg included the caulk samples BM-2, BM-3, BM-4, and roofing material sample BM-11 all from Building #85.

Building #85 was constructed in 1961, Buildings #153 and #154 were constructed in 1972, and Radome #178 was constructed in 1974. Building #153 had several additions which dated to 1986. It is likely that the transformer pad located northeast of Building #153 is related to the more recent building additions. Operations ceased in all buildings in the late 1990s or early 2000s. There is no record of any PCB spills at any of these locations. In addition, there is no written record of the concentration of PCBs within equipment at any of these areas.

### **Current and Future Site Plans**

The site is currently vacant and located in a remote rural area adjacent to the Atlantic Ocean and undeveloped land. There is a single access road that features a locked gate to prevent vehicle access. The gate, however, does not eliminate all trespassers from entering the site.

An aquaculture business is currently considering purchasing the Building #153 Complex and anticipates demolishing Building #153, but using Building #154. Two additional businesses are interested in purchasing the Building #85 Complex. Currently, Building #85 is not included in any redevelopment plans or operations proposed by the prospective businesses. One business plan involves converting the grounds surrounding Building #85 into Maine's largest solar energy facility. The other prospective purchaser would convert the grounds surrounding Building #85 into an aquaculture business.

### **MEDEP Regulatory Evaluation**

Tables #1 and #2, included below, list applicable MEDEP Remedial Action Guidelines (RAGS) for PCBs as noted in their February 5, 2016 guidance document. This guidance reflects health based exposure scenarios that have been exceeded in several of the aforementioned samples, including the caulk, roofing materials, concrete floor in both the Building #85, and Building #153 Complexes. As a result, these materials are considered to be health risks and should be addressed through either remediation or institutional controls. 

### **Toxic Substances Control Act (TSCA) and USEPA Regulatory Evaluation**

There are two types of PCB materials that tested above 1 mg/kg at the Building Complexes. Each of these materials can be categorized according to one of the following definitions as described in Title 40 Part 761:

*PCB Bulk Product Waste means waste derived from manufactured products containing PCBs in a non-liquid state, at any concentration where the concentration at the time of designation for disposal was  $\geq 50$  mg/kg PCBs. PCB bulk product waste does not include PCBs or PCB Items regulated for disposal under §761.60(a) through (c), §761.61, §761.63, or §761.64. PCB bulk product waste includes, but is not limited to:*

*(1) Non-liquid bulk wastes or debris from the demolition of buildings and other man-made structures manufactured, coated, or serviced with PCBs. PCB bulk product waste does not include debris from the demolition of buildings or other man-made structures that is contaminated by spills from regulated PCBs*

which have not been disposed of, decontaminated, or otherwise cleaned up in accordance with subpart D of this part.

(2) PCB-containing wastes from the shredding of automobiles, household appliances, or industrial appliances.

(3) Plastics (such as plastic insulation from wire or cable; radio, television and computer casings; vehicle parts; or furniture laminates); preformed or molded rubber parts and components; applied dried paints, varnishes, waxes or other similar coatings or sealants; caulking; adhesives; paper; Galbestos; sound deadening or other types of insulation; and felt or fabric products such as gaskets.

(4) Fluorescent light ballasts containing PCBs in the potting material.

PCB Remediation Waste means waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations: Materials disposed of prior to April 18, 1978, that are currently at concentrations  $\geq 50$  mg/kg PCBs, regardless of the concentration of the original spill; **materials which are currently at any volume or concentration where the original source was  $\geq 500$  mg/kg PCBs beginning on April 18, 1978, or  $\geq 50$  mg/kg PCBs beginning on July 2, 1979;** and materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under this part. PCB remediation waste means soil, rags, and other debris generated as a result of any PCB spill cleanup, including, but not limited to:

(1) Environmental media containing PCBs, such as soil and gravel; dredged materials, such as sediments, settled sediment fines, and aqueous decantate from sediment.

(2) Sewage sludge containing  $< 50$  mg/kg PCBs and not in use according to §761.20(a)(4); PCB sewage sludge; commercial or industrial sludge contaminated as the result of a spill of PCBs including sludges located in or removed from any pollution control device; aqueous decantate from an industrial sludge.

(3) Buildings and other man-made structures (such as concrete floors, wood floors, or walls contaminated from a leaking PCB or PCB-Contaminated Transformer), porous surfaces, and non-porous surfaces.

### **Building Materials Samples**

The PCB impacted caulk and building materials contained in Building #85 that equal or exceed 50 mg/kg are considered **PCB Bulk Product Waste** and would need to be managed according to 40 CFR Part 761.62. These materials can be removed and disposed of at a licensed state or federal solid waste disposal facility as non-hazardous wastes. The concrete and building materials that are attached to the caulk may also be removed at the time of the caulk removal and can be considered **PCB Bulk Product Waste**. Following the removal, additional samples should be collected from the building materials abutting the PCB Bulk Product Waste to determine if all of the PCB-impacted material exceeding 1 mg/kg has been removed.

If the building materials that are attached to the PCB Bulk Product Wastes are not removed in conjunction with the caulk and impacted roofing materials and these materials contain PCBs at concentrations greater than 1 mg/kg, then, the remaining impacted building materials would be considered **PCB Remediation Waste** and should be managed according to 40 CFR 761.61.

Caulk in Building #154 and Radome #178 have PCB concentrations less than 50 mg/kg. As a result, they are not regulated under TSCA, but still exceed applicable MEDEP RAGs. These materials should be addressed using MEDEP guidance. CEG recommends sampling the additional Radomes and caulk from Building #154. Based on sampling results, CEG and MEDEP could devise a plan to minimize any potential health impacts to the public. This may include removal of the caulk or institutional controls.

The impacted carpet sample is unlikely to be a PCB Bulk Product Waste because it is not likely that PCBs were incorporated into its manufactured components. It is more plausible that the carpet was impacted either from a spill, or through sampling cross contamination during sampling activities. This sample was partly collected using a chisel and the subsequent equipment blank indicated a PCB concentration of 0.5 micrograms per liter (ug/l). As a result, all of the samples could be biased high and are flagged with a "B", indicating blank contamination. Despite this potential bias, CEG believes that the data is valid and does not believe re-sampling is necessary, with the exception of sample BM-85 Carpet. Additional sampling of the carpeting may be necessary to determine if the observed PCB concentration represents sampling error.

### **Concrete Samples From Below Former Transformer Pads**

The spill date and original concentration of PCB containing material impacting the concrete below the transformers in Buildings #85, #154, and northeast of Building #153 are not known. As a result, CEG assumes that the spill date is after July 2, 1979 and the concentration of the original material was equal to or greater than 50 mg/kg. Therefore, associated impacted material meets the definition of a **PCB Remediation Waste**. PCB remediation Waste should be managed according to federal regulations which apply to disposal, characterization, and remediation activities. There are different options for cleanup and disposal. For most cleanups, the generator of the waste must submit a notification under 40 CFR 761.61(a)(3) to the regional TSCA coordinator.

CEG recommends further investigation of the rooms in which the PCB-impacted concrete samples were collected from Buildings #85 and #154 and the former transformer concrete pad north east of Building #153. Sampling can be completed following 40 CFR 761.61.265.

The cleanup requirements for this porous media are dependent on several factors including the frequency of human occupancy, the concentration of the PCBs, and the future use of the area. Depending on these factors, cleanup could consist of, but not be limited to:

- Physical removal of the impacted concrete followed by cleanup verification sampling;
- Capping of the impacted area, maintaining the cap indefinitely to prevent rainwater infiltration and human contact, marking the area for PCBs, and completing a deed notice with institutional controls; or
- Cleaning the impacted surface followed by applying two layers of different colored epoxy paint that is both solvent and water resistant, maintaining the epoxy paint in perpetuity, marking the area for PCBs, and completing a deed restriction with institutional controls.

Prior to remediation of the PCB-impacted media, CEG recommends contacting EPA regulatory staff that administer TSCA requirements.

If you have any questions or comments, please do not hesitate to contact us. We appreciate working with you on this project.

Sincerely,

A handwritten signature in black ink that reads "Richard Campbell". The signature is written in a cursive, flowing style.

Richard Campbell  
Maine Certified Geologist  
President

Table 1 Solid Material Sample Results Compared with MEDEP Hazardous Substance RAGs and TSCA Cleanup Criteria For Building #85 Complex															
Analyte	CAS No.	SOIL (mg/kg) 2016 MEDEP (RAGs)						Soil Sample Identification							
		TSCA Hazardous	Residential	Park User	Commercial Worker	Construction Worker	TSCA Cleanup	BM-2	BM-3	BM-4	BM-5-A	BM-5-B	BM-5-C	BM-6	BM-6DUP
		<b>Metals (Analytical Methods 6010/7000)</b>													
<b>Polychlorinated biphenyls (PCBs) Analytical Method 8082</b>															
Aloclor 1254	1336363	50	2.4	4.1	12	6.5	1	65000***	69000***	480***	<0.4	15	38***	<0.7**	<0.7
<b>Notes:</b> mg/kg-milligram per kilogram, ug/g -micrograms per gram, nr = not regulated, BDL-Below Detection Limit, NA - Not Analyzed <div style="background-color: yellow; width: 100px; height: 10px; margin-bottom: 2px;"></div> Concentration exceeds most stringent RAG <div style="background-color: yellow; width: 100px; height: 10px; margin-bottom: 2px;"></div> Concentration exceeds multiple scenario RAGs MEDEP = Maine Department of Environmental Protection 2016 MEDEP RAGs = Maine Remedial Action Guidelines for Sites Contaminated with Hazardous Substances, Revised February 5, 2016 TSCA - Toxic Substances Control Act *-Surrogate showed recovery outside the acceptance criteria limits **- Surrogate diluted out of calibration range ***-Diluted required due to matrix interference															

Table 1 Solid Material Sample Results Compared with MEDEP Hazardous Substance RAGs and TSCA Cleanup Criteria For Building #85 Complex														
Analyte	CAS No.	SOIL (mg/kg) 2016 MEDEP (RAGs)						Soil Sample Identification						
		Leaching to Groundwater	Residential	Park User	Commercial Worker	Construction Worker	TSCA Cleanup	BM-7-A	BM-7-A-DUP	BM-10	BM-11	BM-12	BM-85 Carpet	EQ BLK CHISEL Units in ug/l
		<b>Polychlorinated biphenyls (PCBs) Analytical Method 8082</b>												
Aloclor 1254	1336363	nr	2.4	4.1	12	6.5	1	<0.2*	<0.2	20***	370***	1.7*	1.9	0.5*
<b>Notes:</b> mg/kg-milligram per kilogram, ug/g -micrograms per gram, nr = not regulated, BDL-Below Detection Limit, ug/l = micrograms per liter <div style="background-color: yellow; width: 100px; height: 10px; margin-bottom: 2px;"></div> Concentration exceeds most stringent RAG <div style="background-color: yellow; width: 100px; height: 10px; margin-bottom: 2px;"></div> Concentration exceeds multiple scenario RAGs <div style="background-color: orange; width: 100px; height: 10px; margin-bottom: 2px;"></div> Concentration exceeds TSCA clean up limit for high occupancy MEDEP = Maine Department of Environmental Protection 2016 MEDEP RAGs = Maine Remedial Action Guidelines for Sites Contaminated with Hazardous Substances, Revised February 5, 2016 TSCA - Toxic Substances Control Act *-Surrogate showed recovery outside the acceptance criteria limits **- Surrogate diluted out of calibration range ***-Diluted required due to matrix interference														

**Table 2  
Solid Material Sample Results Compared with MEDEP Hazardous Substance RAGs and TSCA Cleanup Criteria For Building #153 Complex**

Analyte	CAS No.	SOIL (mg/kg) 2016 MEDEP (RAGs)						BM-1-A	BM-1-B	BM-1-C	BM-3-A	BM-3-B	BM-3-C	BM-14-A	BM-14-B
		Leaching to Groundwater	Residential	Park User	Commercial Worker	Construction Worker	TSCA Cleanup								
<b>Polychlorinated biphenyls (PCBs) Analytical Method 8082</b>															
Aloclor 1254	1336363	nr	2.4	4.1	12	6.5	1	<0.1	<0.2	<0.2	<0.1	<0.2	23	3.6***	<0.2
<b>Notes:</b>															
mg/kg-milligram per kilogram, ug/g -micrograms per gram, nr = not regulated, BDL-Below Detection Limit															
Concentration exceeds most stringent RAG															
Concentration exceeds multiple scenario RAGs															
MEDEP = Maine Department of Environmental Protection															
2016 MEDEP RAGs = Maine Remedial Action Guidelines for Sites Contaminated with Hazardous Substances, Revised February 5, 2016															
TSCA - Toxic Substances Control Act															
*-Surrogate showed recovery outside the acceptance criteria limits															
**- Surrogate diluted out of calibration range															
***-Diluted required due to matrix interference															

**Table 2  
Solid Material Sample Results Compared with MEDEP Hazardous Substance RAGs and TSCA Cleanup Criteria For Building #153 Complex**

Analyte	CAS No.	SOIL (mg/kg) 2016 MEDEP (RAGs)						BM-14-C	BM-20-A	BM-20-B	BM-20-C	BM-30	BM-31	BM-32	BM-33
		Leaching to Groundwater	Residential	Park User	Commercial Worker	Construction Worker	TSCA Cleanup								
<b>Polychlorinated biphenyls (PCBs) Analytical Method 8082</b>															
Aloclor 1254	1336363	nr	2.4	4.1	12	6.5	1	<0.1	<0.1	<0.2	<0.2	<0.8**	<0.1	29***	11***
<b>Notes:</b>															
mg/kg-milligram per kilogram, ug/g -micrograms per gram, nr = not regulated, BDL-Below Detection Limit															
Concentration exceeds most stringent RAG															
Concentration exceeds multiple scenario RAGs															
MEDEP = Maine Department of Environmental Protection															
2016 MEDEP RAGs = Maine Remedial Action Guidelines for Sites Contaminated with Hazardous Substances, Revised February 5, 2016															
TSCA - Toxic Substances Control Act															
*-Surrogate showed recovery outside the acceptance criteria limits															
**- Surrogate diluted out of calibration range															
***-Diluted required due to matrix interference															

**Table 2  
Solid Material Sample Results Compared with MEDEP Hazardous Substance RAGs and TSCA Cleanup Criteria For Building #153 Complex**

Analyte	CAS No.	SOIL (mg/kg) 2016 MEDEP (RAGs)						Soil Sample Identification							
		TSCA Hazardous	Residential	Park User	Commercial Worker	Construction Worker	TSCA Cleanup	BM-34							

**Metals (Analytical Methods 6010/7000)**

**Polychlorinated biphenyls (PCBs) Analytical Method 8082**

Aloclor 1254	1336363	50	2.4	4.1	12	6.5	1	-0.2							
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**Notes:**

mg/kg-milligram per kilogram, ug/g -micrograms per gram, nr = not regulated, BDL-Below Detection Limit, NA - Not Analyzed

Concentration exceeds most stringent RAG

Concentration exceeds multiple scenario RAGs

MEDEP = Maine Department of Environmental Protection

2016 MEDEP RAGs = Maine Remedial Action Guidelines for Sites Contaminated with Hazardous Substances, Revised February 5, 2016

TSCA - Toxic Substances Control Act

\*-Surrogate showed recovery outside the acceptance criteria limits

\*\* - Surrogate diluted out of calibration range

\*\*\*-Diluted required due to matrix interference