



U.S. Department of Transportation
**Pipeline and Hazardous Materials
Safety Administration**

1200 New Jersey Ave, S.E.
Washington, D.C. 20590

AUG 13 2009

Mr. George Kerchner
Wiley Rein LLP
1776 K Street NW
Washington, DC 20006

Ref. No.: 09-0150

Dear Mr. Kerchner:

This letter serves as a follow-up to the May 23, 2009 letter you received from this office concerning the applicability of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) to shipments of spent batteries collected through a county recycling program. You provide additional test data to demonstrate that used 6-volt zinc carbon batteries and 9-volt alkaline batteries contain very little, if any, energy content and that they are not capable of producing a dangerous evolution of heat even when short circuited.

Based on the test data provided with your letter, it is the opinion of this Office that used 6-volt zinc carbon batteries and 9-volt alkaline batteries are not likely to generate a dangerous quantity of heat nor are they likely to short circuit or create sparks when they are transported in a packaging with no other battery chemistries present. Therefore, when transported by highway or rail and separated from other types batteries of different chemistries, used alkaline and zinc carbon batteries do not pose an unreasonable risk in transportation and are not subject to regulation under the HMR.

I trust this satisfies your inquiry. If we can be of further assistance, please contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles E. Betts".

Charles E. Betts
Chief, Standards Development
Office of Hazardous Materials Standards



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May 6, 2009

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Ms. Susan Gorsky
Pipeline and Hazardous Materials Safety Administration
United States Department of Transportation
1200 New Jersey Avenue SE, second floor
Washington, D.C. 20590-0001

Re: Request for Interpretation on Shipping Spent Batteries for Recycling

Dear Ms. Gorsky:

I am writing to request the U.S. Department of Transportation's (DOT) interpretation on the requirements of 49 CFR §172.102, Special Provisions 130, 188 and 189 as they apply to shipments of spent (used) "dry cell" batteries (e.g., alkaline) and lithium/lithium ion batteries that are being transported for recycling.

Background

We are aware of several counties that operate spent battery collection and recycling programs, some of which have been operating for nearly twenty years. One particular county has collected 4.8 million pounds of batteries since 1990 from about 130 host sites dispersed throughout the County. This particular program has not had a transportation incident where batteries caused a fire, violent rupture, explosion or dangerous evolution of heat.

Many of these counties have the same logistics arrangements. For example, host sites include such places as public libraries, retail stores and city halls where people drop off used batteries of all types into large plastic containers. When containers are nearly full, the county's contractor picks up the batteries using a county vehicle, and transports them within the same day to the contractor's sorting and packaging facility. The containers of mixed batteries can weigh about 150-200 pounds each.

After the batteries arrive at a contractor's facility, the contractor sorts the batteries by chemistry and packages them for transport. The purpose of sorting and packaging is three-fold: first to consolidate the batteries into fewer shipments; second to meet the specifications of the recycling or disposal facilities; and third to prevent the dangerous evolution of heat. Specifically, the terminals of lithium and lithium-ion batteries are taped then placed into plastic-lined, sealed drums. Other batteries are sorted by type and placed directly into plastic-lined, sealed steel drums.



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When a truckload of batteries has accumulated at a contractor's facility, the county arranges for ground shipment of the drums by a hazardous waste transporter to recycling, metal recovery, or other management facilities.

For reference, the table below lists the weight, in pounds of batteries shipped to disposal facilities in one particular county in 2008. As noted, over 80% of the batteries collected are alkaline and zinc carbon.

Battery Chemistry	Year 2008	Percent
Alkaline	186,177	72%
Zn/Carbon	28,941	11%
Lead Acid Gel Cells	20,774	8%
NiCad	14,635	6%
Ni Metal Hydride	3,098	1%
Lithium Ion	2,657	1%
Lithium	2,178	1%
Mixed Button	556	0%
Mercury	-	0%
Total (in pounds)	259,016	100%

The attached Exhibit A provides additional data on the types and weights (in pounds) of batteries collected by one county from 1999 to 2007

Request for Interpretation

There are several issues that require clarification from DOT that may significantly impact county battery collection programs.

First, in the situation described above, a county contracts with a company to have its employees drive County vehicles to pick up and transport containers of spent batteries from public facilities and retail stores. We do not believe these shipments are "in commerce" and subject to the U.S. hazardous materials regulations (HMR) because they are being transported in county vehicles for noncommercial, local government purposes. Therefore, we would like confirmation from your office that these shipments are not subject to the HMR.

Second, as noted above, over 80% of the spent batteries collected by counties are alkaline and zinc carbon. When new, these batteries have a low voltage (no more



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than 1.5 V) and present a very low risk in transportation. When spent, these batteries have very little electrical potential and therefore present even less of a risk in transportation. We believe that when spent alkaline and zinc carbon batteries are sorted from other battery chemistries and placed into plastic-lined, sealed 55-gallon drums, it meets the requirement of Special Provision 130. That is, the sorted spent batteries have been prepared and packaged for transport in a manner to prevent a dangerous evolution of heat and short circuits. Therefore, we would like confirmation from your office that this sorting and packaging procedure for spent alkaline batteries meets the requirements of Special Provision 130.

* * * * *

We would appreciate your immediate attention to this request for interpretation since it has significant implications on many county-operated battery collection and recycling programs throughout the U.S.

Thank you for your assistance.

Sincerely,

George A. Kerchner

George A. Kerchner

Draft

Table 3

6 used 6 volt lantern batteries: ambient temp 76 degree Fahrenheit 6.2 volt circuit at the beginning of the test						
Cell Voltage	Time	11:20	11:24	11:28	11:33	11:35
6.3	Temp cell 1	74	75	77	77	76
0.3	Temp cell 2	75	76	77	78	77
0.9	Temp cell 3	75	75	76	78	77
1.8	Temp cell 4	76	75	78	77	78
6.2	Temp cell 5	75	78	77	78	77
2.4	Temp cell 6	75	79	78	78	78

Experiment terminated due to lack of result after 15. Min. (Temp variations are within the accuracy of the hand held thermal gun)



Prior to starting the circuit



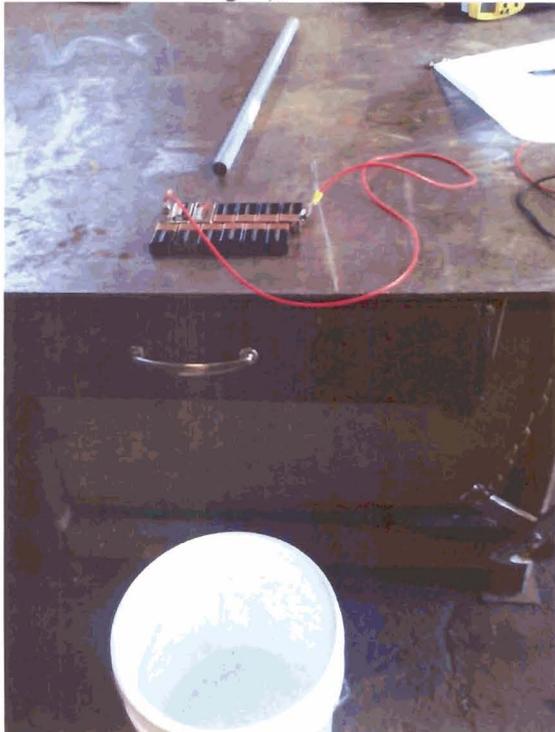
Closed circuit

Draft

Table 4

12 used 9 volt batteries: ambient temp 77 degree Fahrenheit 39.5 volt circuit at the beginning of the test						
Cell Voltage	Time	11:39	11:41	11:45	11:49	11:54
8.2	Temp cell 1	75	83	80	77	77
8.2	Temp cell 2	76	77	78	77	77
7.0	Temp cell 3	77	76	76	77	78
5.0	Temp cell 4	77	77	77	78	78
2.5	Temp cell 5	76	78	78	77	76
2.6	Temp cell 6	78	80	78	75	75
1.0	Temp cell 7	78	78	77	76	77
0.1	Temp cell 8	75	77	78	77	77
1.2	Temp cell 9	76	77	77	78	76
0.5	Temp cell 10	77	78	76	76	75
1.2	Temp cell 11	75	76	77	76	77
0.2	Temp cell 12	78	78	77	77	77

Experiment terminated due to lack of result after 15. Min. (Temp variations are within the accuracy of the hand held thermal gun)



A bucket of water was set near the test in case of fire



Hand held thermal gun used to monitor temp.



The 9 volt batteries were connected positive to negative. Even with a 39.5 volt circuit the batteries were not noticeable warm to the touch even when securely locked into each other.

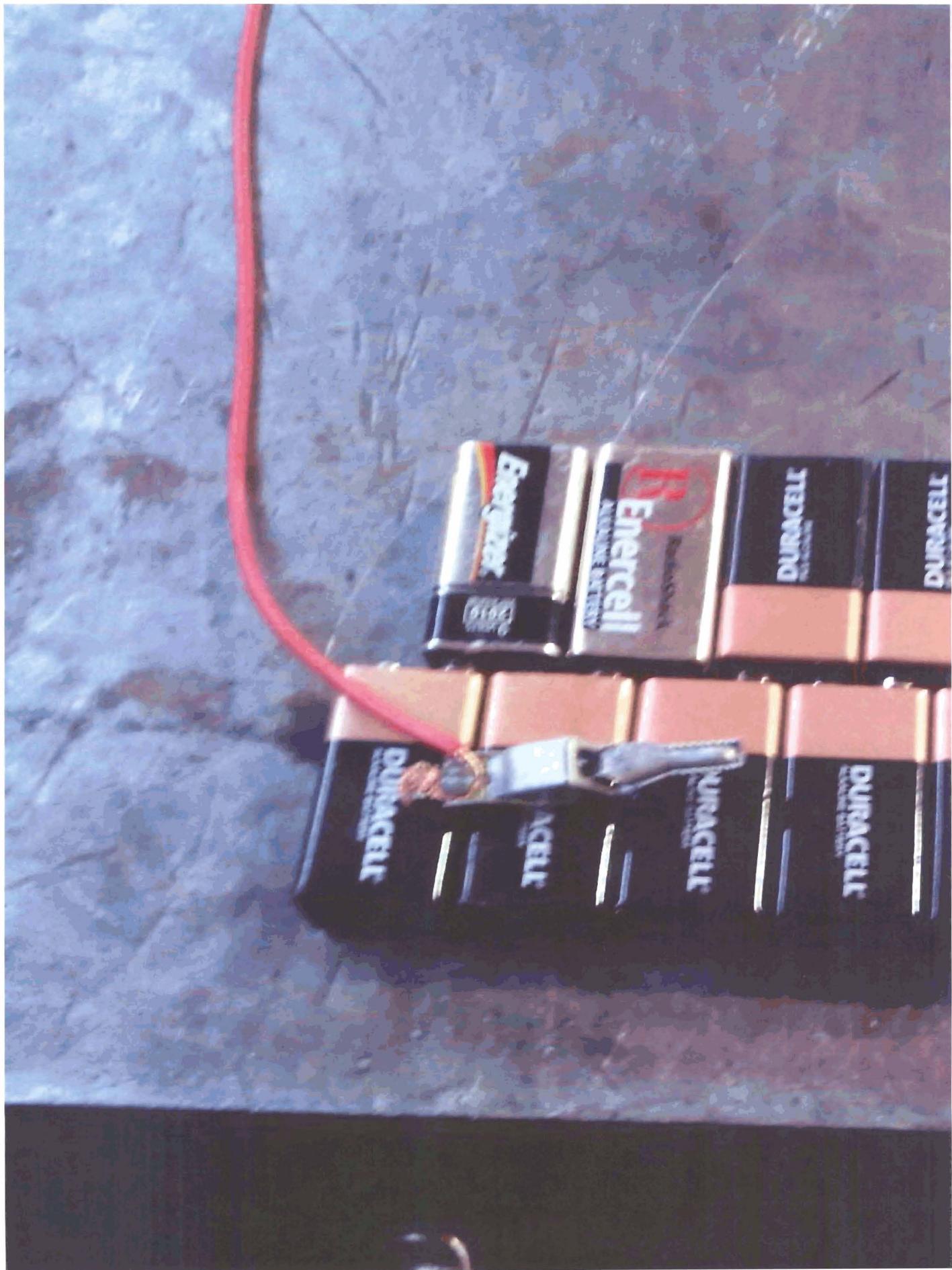




EXHIBIT A

Battery Type	1999	2000	2001	2002	2003	2004	2005	2006	2007
Alkaline	191,297	205,095	212,761	218,016	213,196	187,599	190,440	150,699	186,186
Zn/Carbon	60,423	56,286	53,105	52,523	45,400	36,813	35,797	27,388	32,621
NiCad	12,970	21,665	12,656	14,361	9,390	16,533	12,115	10,154	15,740
Mixed Button	-	-	1,822	798	-	1,840	-	-	691
Mercury	-	-	-	1,619	-	-	-	62	-
Lithium	2,000	2,842	3,007	2,779	1,959	4,205	5,141	2,934	1,503
Lithium Ion	-	-	-	372	-	1,878	-	-	2,749
Lead Acid Gel Cells	14,884	14,891	11,647	13,877	17,558	17,398	14,000	14,000	12,000
Nickel Metal Hydride	-	449	3,988	1,914	2,394	2,398	2,872	1,717	3,701
Total	281,573	301,228	298,985	306,259	289,896	268,664	260,365	206,954	255,191