State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL
Scott T. Anderson
Director

A regular meeting of the Waste Management and Radiation Control Board has been scheduled for May 12, 2016 at 1:30 p.m., at the Utah Department of Environmental Quality, Multi-Agency State Office Building, Conference Room #1015, 195 North 1950 West, SLC.

(One or more Board members may participate telephonically.)

AGENDA

I. Call to Order.

II. Approval of the Meeting Minutes for the April 14, 2016 Board Meeting **(Board Action Item)** ..... Tab 1

III. Underground Storage Tanks Update ..... Tab 2

IV. X-Ray Program ..... Tab 3

A. Approval of Mammography Imaging Medical Physicists (MIMPs) in accordance with UCA 19-6-104(2)(b) **(Board Action Item)**.

V. Low Level Radioactive Waste Section ..... Tab 4

A. Energy*Solutions*, LLC request for a site-specific treatment variance from the Hazardous Waste Management Rules. Energy*Solutions*, LLC seeks authorization to treat waste containing High Subcatagory Mercury by stabilization rather than retort and recovery (Information Item Only).

B. Energy*Solutions*, LLC request for a site-specific treatment variance from the Hazardous Waste Management Rules. Energy*Solutions*, LLC seeks authorization to treat waste containing hazardous contaminants and PCBs (Information Item Only).

VI. Hazardous Waste Section ..... Tab 5

A. Proposed Stipulation and Consent Order between the Board and Heckmann Woods Cross (**Board Action Item**).

(Over)

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144880 • Salt Lake City, UT 84114-4880
Telephone (801) 536-0200 • Fax (801) 536-0222 • T.D.D. (801) 903-3978
www.deq.utah.gov

VII. Other Business.

A. Misc. Information Items.
B. Scheduling of next Board Meeting.

VIII. Election of Board Chair and Vice Chair.

IX. Recognition of Dwayne Woolley (Retiring).

X. Adjourn.

In compliance with the Americans with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Dana Powers, Office of Human Resources at (801) 499-2117 TDD (801) 903-3978 or by email at dpowers@utah.gov.

Waste Management and Radiation Control Board Meeting
Utah Department of Environmental Quality
195 North 1950 West (Conference Room #1015) SLC, Utah
April 14, 2016
1:30 p.m.

Board Members Present: Dwayne Woolley (Chair), Richard Codell, Marc Franc (Conference Call Participant), Jeremy Hawk, Steve McIff, Brett Mickelson, Vern Rogers, and Shane Whitney

Board Members Absent: Dennis Riding (Vice Chair), Danielle Endres, Alan Matheson, Shawn Milne

Staff Members Present: Scott Anderson, Brent Everett, Ralph Bohn, Eric Boone, Arlene Lovato, Deborah Ng, Rick Page, Jerry Rogers, Elisa Smith, Otis Willoughby and Raymond Wixom

Others Present: Tim Orton, Gary Merrell, Ashley Soltysiak

I. Call to Order.

Dwayne Woolley (Chair) welcomed all in attendance and called the meeting to order at 1:30 p.m.

II. Approval of the meeting minutes for the March 10, 2016 Board meeting.

It was moved by Shane Whitney and seconded by Richard Codell and UNANIMOUSLY CARRIED to approve the March 10, 2016 Board Meeting minutes with the following correction:

Page 4, IV Administrative Rules, Section D, Approval of a change in a proposed rule to R313-22-35 to incorporate comments made by the Nuclear Regulatory Commission, Board Motion. It was moved by Shane Whitney and seconded by ~~Shane~~ Shawn Milne and UNANIMOUSLY CARRIED to approve the filing of a change to proposed Rule to R313-22-35 to incorporate comments made by the Nuclear Regulatory Commission with an effective date of May 9, 2016.

III. Underground Storage Tanks Update.

Brent Everett, Director of the Division of Environmental Response and Remediation (DERR), informed the Board that the cash balance of the Petroleum Storage Tank (PST) Trust Fund at the end of February 2016 was $16,667,613.00. The preliminary estimate for the cash balance of the PST Trust Fund for the end of March 2016 is $16,375,040.00. The PST Trust Fund is managed on a cash balance basis to ensure sufficient coverage for known claims that have been reported. The balance fluctuates based on the number of claims received and the cost of claims paid. There were no questions or comments on the PST Trust Fund balance.

Board Member Dr. McIff asked for more information regarding how the PST Trust Fund works. Mr. Everett explained that the PST Trust Fund is one option available to UST owners/operators for demonstrating the EPA required financial responsibility. Although not insurance, it serves to cover the cost of cleanups for releases at facilities that participate on the fund for their financial assurance. The fund is funded by fees and a surcharge on fuel collected at the first point of sale.

Mr. Everett informed the Board that because of the federal UST rule changes finalized last summer, DERR is currently updating Utah's UST program rules to be consistent with the new federal rules.

These rule changes will come before the board first as an informational item and then for approval to proceed with formal rule making. In conjunction with the rule changes, the UST program is also going through the EPA State Program Approval (SPA) process in order to maintain delegation approval for UST program in Utah. The deadline for reauthorization is September 2018. The DERR plans to have all documents completed and submitted to the EPA by January 2017.

Mr. Everett informed the Board that House Bill 385, regarding petroleum vapor recovery at the time of fuel delivery, did not pass in the last legislative session.

IV. Administrative Rules.

A. Final adoption of proposed changes to Hazardous Waste Rules R315-103, R315-124, R315-260, R315-261, R315-262, R315-263, R315-264, R315-265, R315-266, R315-268, R315-270, and R315-273 and setting of an effective date (Board Action Item).

Ralph Bohn, Planning and Technical Support Manager, Division of Waste Management and Radiation Control, reviewed the Board's approval in the January Board meeting of the rules listed above for publication in the Utah Bulletin to start a 30-day public comment period. The proposed rules were published in the February 1, 2016 Bulletin. The comment period ended March 2, 2016.

Two commenters made comments on Rules R315-124, R315-260 and R315-261. In addition, the proposed rules were reviewed a second time by Division staff and some needed changes to Rules R315-124, R315-262, R315-264 and R315-273 were identified.

The Division of Administrative Rules classifies rule changes as substantive and nonsubstantive. Nonsubstantive changes can be made without public comment and are not published in the Bulletin. All nonsubstantive changes that were found by the Division staff review and from public comments have been made. Substantive changes that are needed to address comments and corrections resulting from staff review will be addressed in a separate Board action request.

Mr. Bohn summarized the comments received on R315-124 and R315-101. (The comments and the Division's response to the comments were provided in the Board's April 14, 2016 Board packet.)

Dwayne Woolley asked if the Division's response to comments had been discussed with and sent to the commenters. Mr. Bohn stated that they have not, as the response to comments needed to be presented to and approved by the Board first.

Mr. Bohn also noted that the entire rulemaking package will be presented to the U.S. Environmental Protection Agency for authorization. The EPA will do a word-for-word comparison and any other errors found will be brought back to the Board to address. The Division staff did not do a word-for-word check. Mr. Bohn explained that there is a not a specific timeframe required for these rules to be adopted. These are optional rules, so a strict timeframe is not a concern.

As part of continued authorization of the Hazardous Waste Program, the EPA is involved in all rule changes. Once the EPA approves the rules, they are published in the Federal Register and then become Utah law.

It was moved by Steve McIff and seconded by Richard Codell and UNANIMOUSLY CARRIED to approve for final adoption the proposed changes to Hazardous Waste Rules R315-103, R315-124, R315-260, R315-261, R315-262, R315-263, R315-264, R315-265, R315-266, R315-268, R315-270, and R315-273 with an effective date of April 15, 2016.

B. **Final adoption of the repeal of Hazardous Waste Rules R315-1, R315-2, R315-3, R315-4, R315-5, R315-6, R315-7, R315-8, R315-9, R315-12, R315-13, R315-14, R315-16, and R315-50 and setting of an effective date (Board Action Item).**

Ralph Bohn informed the Board that, upon adoption of the new rules in the previous motion, the current hazardous waste rules must be repealed. The Board is now being asked to repeal Hazardous Waste Rules R315-1, R315-2, R315-3, R315- 4, R315-5, R315- 6, R315-7, R315-8, R315-9, R315-12, R315-13, R315-14, R315-16, and R315-50. The repeal of the current rules will not take place until the new rules are in affect.

It was moved by Shane Whitney and seconded by Steve McIff and UNANIMOUSLY CARRIED to approve for final adoption the repeal of Hazardous Waste Rules R315-1, R315-2, R315-3, R315-4, R315-5, R315-6, R315-7, R315-8, R315-9, R315-12, R315-13, R315-14, R315-16, and R315-50 with an effective date April 15, 2016.

C. **Approval to proceed with formal rulemaking and a 30-day public comment period for amendments to the Hazardous Waste Rules R315-124, R315-260, R315-261, R315-262, R315-264 and R315-273 (Board Action Item).**

Ralph Bohn informed the Board that, to address the public comments that have been received, the Board is being asked to approve changes to Rules R315-124, R315-260, R315- 261, R315-262, R315-264, and R315-273 for publication in the Utah Bulletin and commencement of a 30-day public comment period.

In the January Board meeting, the Board approved Rules R315-103, R315-124, R315-260, R315-261, R315-262, R315-263, R315-264, R315-265, R315-266, R315-268, R315-270, and R315-273 for publication in the Utah Bulletin and to start a 30-day public comment period. The proposed rules were published in the February 1, 2016 Bulletin and the comment period ended March 2, 2016.

Two commenters made comments on rules R315-124, R315-260 and R315-261. The comments and the response to the comments are included in the Board packet. In addition, the Division identified additional corrections to Rules R315-124, R315-262, R315-264 and R315-273 that need to be made.

This Board Action is to publish modifications to Rules R315-124, R315-260, R315-261, R315-262, R315-264 and R315-273 to address the public comments and the sections needing corrections.

It was moved by Brett Mickelson and seconded by Vern Rogers and UNANIMOUSLY CARRIED to approve to proceed with formal rulemaking and a 30-day public comment period for changes to the Hazardous Waste Rules R315-124, R315-260, R315-261, R315-262, R315-264 and R315-273).

D. Approval to proceed with formal rulemaking and a 30-day public comment period for proposed changes to Radiation Control Rules R313-19 and R313-22 to incorporate changes requested by the Nuclear Regulatory Commission (NRC) (Board Action Item).

Ralph Bohn explained the Director's request for Board approval of proposed changes to R313-19-13, Exemptions and selected sections of R313-22, Specific Licenses, to incorporate comments received from the Nuclear Regulatory Commission (NRC) in a letter dated November 13, 2015 (the letter was provided in the April 14, 2016 Board packet).

For compatibility with the corresponding federal radioactive materials regulations, the NRC requested the removal of selected references to the federal Atomic Energy Act and the correction of certain rule citations along with the proper location of a specific paragraph.

As an Agreement State with the NRC, Utah is required to maintain rules that are compatible with the corresponding federal radioactive materials rules promulgated by the NRC. Last September, the Division submitted to the NRC for its compatibility review, changes to the state radiation control rules that were previously approved by the Board. The approved rule changes incorporated federal regulatory revisions published in the Federal Register on July 25, 2012 (77 FR 43666). The specific rule changes requested by the NRC are found in the Compatibility Comments on Utah Final Regulations Table (the table was provided in the April 14, 2016 Board packet accompanying the NRC letter).

It was moved by Richard Codell and seconded by Jeremy Hawk and UNANIMOUSLY CARRIED to approve to proceed with formal rulemaking and a 30-day public comment period for proposed changes to Radiation Control Rules R313-19 and R313-22 to incorporate changes requested by the Nuclear Regulatory Commission (NRC).

V. Low Level Radioactive Waste Section.

A. Energy*Solutions*, LLC request for a site-specific treatment variance from the Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to dispose of one, 5-gallon bucket of spent Lithium-thionyl chloride batteries following macroencapsulation (Board Action Item).

Otis Willoughby, Environmental Scientist in the Low Level Radioactive Waste Section provided information on Energy*Solutions*' request for a variance from the Utah Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to dispose of lithium-thionyl chloride batteries following macroencapsulation

The Mixed Waste Facility has received one, 5-gallon bucket of spent lithium-thionyl chloride batteries.

The land disposal regulations require that batteries containing lithium be deactivated prior to land disposal. Macreoencapsulation technology requires the waste to be classified as debris (which is a material exceeding 60 mm) before that technology can be used.

Energy*Solutions* proposes to treat this 5-gallon bucket by macroencapsulation (even though the batteries are smaller than 60 mm) in the Mixed Waste Landfill Cell. This method will isolate the waste from precipitation and potential leaching. This request is based on the fact that, in order to deactivate the batteries, they would first need to be shredded. This method of treatment creates additional hazards to the employees without the assurance that the batteries, based on their size and shape, would be shredded. Final disposal of the waste will occur in the Mixed Waste Landfill Cell at the Mixed Waste Facility.

A notice for public comment was published in the Salt Lake Tribune, the Deseret News and the Tooele Transcript Bulletin on March 1, 2016. The comment period began March 1, 2016 and ended March 30, 2016. No comments were received.

The Director recommends approval of this variance request based on the following findings: the proposed alternative treatment method meets the regulatory basis for a variance, will be as safe to human health and the environment as the required method, and the rules would allow macroencapsulation of this waste if it contained slightly larger pieces.

Richard Codell noted these types of batteries can still hold a lot of power/charge and if they are put into some sort of cement matrix and sealed up tight, they may still have power/charge and are discharging through the conductive presence of water and electrolytes. Mr. Codell asked if they produce gas or get hot.

Mr. Willoughby stated he does not have any experience with that scenario, but even if there is heat, there is no organic material in the landfill cell, which could cause an issue. Additional information will be requested from Energy*Solutions* safety personnel. Mr. Codell stated he is not especially concerned with this issue, but that because he has experience with lithium and power cells, he wanted to bring it up.

It was moved by Shane Whitney and seconded by Brett Mickelson and UNANIMOUSLY CARRIED to approve Energy*Solutions*, LLC request for a site-specific treatment variance from the Hazardous Waste Management Rules to dispose of one, 5-gallon bucket of spent Lithium-thionyl chloride batteries following macroencapsulation. (Vern Rogers abstained from voting.)

B. Energy*Solutions*, LLC request for a site-specific treatment variance from the Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to dispose of High Concentration Arsenic Waste following macroencapsulation (Board Action Item Only).

Otis Willoughby provided information on Energy*Solutions'* request for a site-specific treatment variance from the Utah Hazardous Waste Management Rules to dispose of High Concentration Arsenic Waste following macroencapsulation.

The Mixed Waste Facility has received approximately 105 cubic feet of Natural Gas Sweetener Filter Media. This waste, made of clay pellets, retains hazardous waste codes for arsenic, cadmium and benzene.

Energy*Solutions* proposes to treat this waste by macroencapsulation in the Mixed Waste Landfill Cell following chemical stabilization of the other contaminants. Macroencapsulation will isolate the waste from precipitation and potential leaching.

This request is based on the fact that the facility has attempted a variety of treatment formulas and has been unsuccessful in attaining treatment levels for the arsenic. The other contaminants have been treated below Land Disposal Restriction levels.

A notice for public comment was published in the Salt Lake Tribune, the Deseret News and the Tooele Transcript Bulletin on March 1, 2016. The comment period began March 1, 2016 and ended March 30, 2016. No comments were received.

The Director recommends approval of this variance request based on the following findings: the proposed alternative treatment method meets the regulatory basis for a variance, will be as safe to human health and the environment as the required method and the facility has made several unsuccessful attempts to treat the arsenic contaminants in the waste.

It was moved by Jeremy Hawk and seconded by Brett Mickelson and UNANIMOUSLY CARRIED to approve Energy*Solutions*, LLC request for a site-specific treatment variance from the Hazardous Waste Management Rules to dispose of High Concentration Arsenic Waste following macroencapsulation. (Vern Rogers abstained from voting.)

VI. Director's Report.

Scott Anderson provided an update on legislation from the 2016 General Session of the Legislature that impacts the Division of Waste Management and Radiation Control.

House Joint Resolution 13, sponsored by Representative McKell, directed the Division to study solid waste disposal fees and propose a "fair and equitable" solid waste fee structure. This bill was placed on Interim Study. It is anticipated that the Division will study this matter and report the findings to one or more Interim Study Committees.

House Joint Resolution 20, sponsored by Representative Perry, gives Legislative Approval for construction and operation of a Class V solid waste landfill. Class V solid waste landfills are defined as "commercial" and require legislative approval, local government approval, a permit from the Director and the Governor's approval.

This resolution is the first step in the process to obtain the necessary approvals. The landfill is located in Box Elder County. The owners already have a permit for Class I landfill at this location, which could be amended to a Class V permit. However, because of the extensive requirements associated with a Class V permit, it is being treated as a new application rather than amendment. The facility will also have to meet location standards, etc. Currently, the facility has not done any construction at the location. This Joint Resolution has been signed by the Governor.

House Bill 20, sponsored by Representative Perry, extends the sunset date for the Lead Acid Battery Disposal Act from 2016 to 2026. This bill has been signed by the Governor.

House Bill 138, sponsored by Representative Perry, eliminates the requirement for the Division to report on electronic waste recycling to the House Natural Resources, Agriculture and Environment and Public Utilities Interim Committees. This bill has been signed by the Governor. Mr. Anderson noted that the data will continue to be collected but will no longer be provided to these committees.

House Bill 258, sponsored by Representative Oda, created some exemptions from the definition of "solid waste" and "solid waste management facilities" for metal and metal recycling facilities and creates standards for recyclers under certain conditions.

However, because these exemptions do not exist in Federal law, the Environmental Protection Agency has reviewed these exemptions and has made the determination that they conflict with Federal law. The EPA has determined that these exemptions make the State of Utah hazardous waste program less stringent than the federal government and raise state authorization (primacy) issues. The Division's waste management programs can be more stringent than the Federal Government; but they cannot be less stringent.

This bill was vetoed. The Governor is willing to consider another bill, which does not conflict with Federal law, for the special session scheduled for May. The Division is currently working with EPA and the sponsors of this bill.

House Bill 347, sponsored by Representative Handy, creates authority for special service districts to acquire, construct and operate a resource recovery project. This bill is similar to Senate Bill 142, sponsored by Senator Weiler. During a committee meeting it was decided to move the relevant language in SB 142 to HB 347, because HB 347 opened the same part of the Code and was ahead of SB142. This bill is to assist a particular Sewer Improvement District (SID) to take food wastes and put them through a process to generate gas for use in production of electricity. The SID will be required to

obtain a Plan of Operation that identifies waste types and how they are managed on-site before they are treated in this process. This bill has been signed by the Governor.

House Bill 476, sponsored by Representative Ipson, created a waste paint management program. This bill provides for fees on the sale of paint at the distributor and retail level. The money collected would be utilized to fund a program for recycling and re-use of waste paint rather than disposal in a landfill. This bill did not pass, but was placed on the Interim Study list.

Senate Bill 196, sponsored by Senator Iwamoto, created incentives for recycling plastic bags, and imposes a 10 cent fee on certain plastic bags at point of sale. This bill did not pass.

Senate Bill 231, sponsored by Senator Adams. This bill is in response to legislation Senator Adams sponsored last year to address options for establishing financial assurance hazardous waste and low level land disposal facilities.

The Nuclear Regulatory Commission (NRC) declared that legislation not compatible with the federal program so SB 231 was drafted to address those issues raised by the NRC. SB 231 provides approval authority for the Director regarding financial assurance from low level waste management facilities and authority to require financial assurance for "disturbed lands." The NRC still had some issues and this bill, due to time constraints, was pulled at the sponsor's request. The Division will continue to work with the NRC and will prepare language for the 2017 Legislation.

Vern Rogers stated that Senate Bill 231 was pulled but it was drafted to revise legislation that was passed in 2015. There are licensees that are currently operating under some of that language of the 2015 statute. Mr. Rogers asked if the Division plans on developing rules consistent with that statute or is it going to wait until the law is amended again.

Mr. Anderson stated that discussions are currently taking place on this matter and the intent is to move forward with the rules.

VII. Other Business.

A. Misc. Information Items.

Dwayne Woolley announced he will be retiring; the May meeting will be his last meeting. It is anticipated that an election of a new Chairman will be held at the next month meeting.

B. Scheduling of next Board Meeting.
The next Board meeting is scheduled for 1:30 p.m. on May 12, 2016 at the Utah Department of Environmental Quality, 195 North 1950 West, SLC.

VIII. Adjourn.

The meeting adjourned at 2:21 p.m.

UST STATISTICAL SUMMARY
April 1, 2015 -- March 31, 2016

PROGRAM

	April	May	June	July	August	September	October	November	December	January	February	March	(+/-) OR Total
Regulated Tanks	4,005	3,982	3,972	3,969	3,971	3,993	4,000	3,989	3,991	4,003	4,007	4,006	**1**
Tanks with Certificate of Compliance	3,914	3,906	3,893	3,893	3,889	3,885	3,889	3,887	3,887	3,916	3,919	3,917	**3**
Tanks without COC	91	76	79	76	82	108	111	102	104	87	88	89	**(2)**
Cumulative Facilitlies with Registered A Operators	1,341	1,336	1,331	1,330	1,330	1,333	1,334	1,333	1,332	1,333	1,333	1,332	**97.80%**
Cumulative Facilitlies with Registered B Operators	1,341	1,336	1,331	1,329	1,329	1,334	1,335	1,334	1,333	1,334	1,334	1,333	**97.87%**
New LUST Sites	4	7	6	8	14	7	5	4	6	3	4	10	**78**
Closed LUST Sites	10	2	12	13	10	6	9	7	10	9	3	10	**101**
Cumulative Closed LUST Sites	4800	4805	4817	4824	4842	4848	4857	4859	4867	4878	4886	4889	**89**

FINANCIAL

	April	May	June	July	August	September	October	November	December	January	February	March	(+/-)
Tanks on PST Fund	2,891	2,884	2,870	2,867	2,860	2,846	2,844	2,840	2,840	2,763	2,766	2,764	**(127)**
PST Claims (Cumulative)	633	636	638	638	646	647	648	649	647	647	649	649	**16**
Equity Balance	-$9,282,773	-$9,325,810	-$9,241,227	-$8,880,024	-$9,079,617	-$7,810,251	-$7,663,788	-$7,186,058	-$7,441,692	-$7,435,326	-$7,180,546	-$7,535,427	**$1,747,346**
Cash Balance	$16,390,243	$16,347,205	$16,431,789	$16,792,993	$16,214,452	$16,211,196	$16,357,660	$16,835,389	$16,406,467	$16,412,833	$16,667,613	$16,375,040	**($15,203)**
Loans	3	0	0	3	0	0	0	0	2	0	1	0	**-3**
Cumulative Loans	102	102	102	105	105	105	105	105	107	107	108	108	**6**
Cumulative Amount	$3,691,025	$3,691,026	$3,691,026	$3,727,980	$3,727,980	$3,727,980	$3,727,980	$3,727,980	$3,889,300	$3,889,300	$3,911,924	$3,911,924	**$220,899**
Defaults/Amount	0	0	0	0	0	0	0	0	0	0	0	0	**0**

	April	May	June	July	August	September	October	November	December	January	February	March	TOTAL
Speed Memos	36	28	51	34	34	45	52	38	20	18	10	49	**415**
Compliance Letters	7	3	4	6	5	3	14	3	6	13	1	5	**70**
Notice of Intent to Revoke	0	1	0	0	0	0	0	0	0	0	0	0	**1**
Orders	3	5	2	1	0	0	1	0	0	1	0	0	**13**

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
Mammography Imaging Medical Physicists
May 12, 2016

What is the issue before the Board?	Approval of qualified Mammography Imaging Medical Physicists.
What is the historical background or context for this issue?	Physicists who perform radiation surveys and evaluate the quality control programs of the facilities in Utah providing mammography examinations are referred to as Mammography Imaging Medical Physicists (MIMPs). These individuals are required to submit an application for review of qualifications and receive certification from the Board annually. In April 2016, thirteen individuals filed applications to be re-certified as MIMPs. Also, one new application was received from Warren Scott Helms, M.S. to be certified as a MIMP. Division staff reviewed all the applicants' qualifications. All applicants meet the requirements specified in R313-28-140.
What is the governing statutory or regulatory citation?	19-3-103.5(2)(f) of the Utah Code Annotated requires the Board to review the qualifications of, and issue certificates of approval to individuals who: (i) survey mammography equipment; or (ii) oversee quality assurance practices at mammography facilities. This statutory requirement was effective May 8, 2012.
Is Board action required?	Yes.
What is the Division Director's recommendation?	The Director of the Division of Waste Management and Radiation Control recommends the Board issue a certificate of approval for the applicants reviewed and presented to the Board.
Where can more information be obtained?	For additional information, please call Lisa Mechem, DVM, Environmental Scientist at (801) 536-4286.

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
REQUEST FOR A SITE-SPECIFIC TREATMENT VARIANCE
Energy*Solutions* LLC
May 12, 2016

What is the issue before the Board?	This is a request from Energy*Solutions* LLC for a site-specific treatment variance from the Utah Hazardous Waste Management Rules to treat, by stabilization, waste containing High Subcatagory Mercury.
What is the historical background or context for this issue?	Energy*Solutions* requests approval to receive and dispose of waste containing the D009 or U151 High Mercury-Organic Subcategory and High Mercury-Inorganic Subcategory hazardous waste codes that has been treated using stabilization/amalgamation technologies. Furthermore, Energy*Solutions* will perform the stabilization/amalgamation treatment on D009 and U151 High Mercury Subcategory waste streams that have not been treated prior to arrival at the Energy*Solutions* Clive facility. All actions will be performed in accordance with Energy*Solutions'* State-issued Part B Permit. The listed treatment technology in 40 CFR 268.40 for the D009 High Mercury-Organic Subcategory is either incineration (IMERC) or retorting/roasting for mercury recovery (RMERC). The listed treatment technology for the D009 High Mercury-Inorganic Subcategory and for U151 is RMERC. The need and justification for this action are as follows: The intent of the RMERC treatment process is to recover elemental mercury for recycling. However, radioactive mercury cannot be recycled and the RMERC process generates secondary waste (radioactive elemental mercury) which requires additional treatment by amalgamation (a stabilization technology) prior to disposal. The IMERC technology is also intended to be a mercury recovery technology where the waste is incinerated and the mercury recovered in the ash or in a specific off-gas control system. For radioactive mercury, both the ash and the control equipment/media will require further treatment. Furthermore, IMERC involves an extra handling step for the radioactive residue. Successful chemical stabilization of High Mercury-Inorganic Subcategory wastes has been demonstrated to achieve a measure of performance equivalent to the required methods which require two treatment methods (RMERC and stabilization) with no detrimental effect to human health or the environment.

	The U.S. Environmental Protection Agency (US EPA) has issued a Determination of Equivalent Treatment (DET) for these High Mercury Subcategory wastes that were chemically stabilized. In the EPA's determination, the agency concluded that, for waste streams that are radioactive and contain mercury, the recovery portion of RMERC may not be appropriate and that alternative treatment processes should be pursued. The US EPA has reviewed the treatment of mercury-bearing waste in a Federal Register Notice (68 FR 4481). In this notice, the US EPA concluded that treatment of mercury waste is possible and suggested that stakeholders use the site specific treatment variance process to achieve approval for the treatment of high subcategory mercury wastes. The notice specifically designates an example of when this would be appropriate as the case of a high mercury subcategory waste that is also radioactive. This variance request consists of waste that may be shipped to Energy*Solutions* over the next year. To date, Energy*Solutions* has disposed of approximately 10,560 cubic feet of treated High Mercury Subcategory waste. From knowledge of the current market of High Mercury Subcategory Waste requiring treatment or disposal, and from past experience receiving this type of waste, Energy*Solutions* anticipates up to approximately 500 cubic feet of additional High Mercury Subcategory waste for disposal in the next year under this treatment variance. A notice for public comment was published in the Salt Lake Tribune, the Deseret News and the Tooele County Transcript Bulletin on May 3, 2016. The comment period began May 3, 2016 and will end June 3, 2016.
What is the governing statutory or regulatory citation?	Variances are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act. This is a one-time site-specific variance from an applicable treatment standard as allowed by R315-268.44 of the Utah Administrative Code.
Is Board action required?	No. This is an informational item before the Board.
What is the Division Director's recommendation?	The Director will provide a recommendation at the next Board meeting.
Where can more information be obtained?	For technical questions, please contact Otis Willoughby (801) 536-0220. For legal questions, please contact Raymond Wixom at (801) 536-0290.

ENERGY*SOLUTIONS*

April 21, 2016

CD16-0085

Mr. Scott T. Anderson
Director
Division of Waste Management and Radiation Control
195 North 1950 West
Salt Lake City, UT 84114-4880

Subject: Request for a Site-Specific Treatment Variance for Wastes Containing High-Subcategory Mercury

Dear Mr. Anderson:

Energy*Solutions*, LLC hereby requests a variance that provides an exemption from 40 CFR 268.40(a)(3) for wastes that are characterized with hazardous waste codes D009 or U151, High Mercury-Organic Subcategory or High Mercury-Inorganic Subcategory.

This request is submitted in accordance with Utah Administrative Code (UAC) R315-13-1 (40 CFR 268.44 incorporated by reference), which allows a site-specific variance from an applicable treatment standard provided that the following condition is met:

> 40 CFR 268.44(h)(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible.

This request is submitted in accordance with the requirements of 40 CFR 260.20(b).

40 CFR 260.20(b)(1): This petition is being submitted by

> Energy*Solutions*, LLC
> 299 South Main Street, Suite 1700
> Salt Lake City, UT 84111

40 CFR 260.20(b)(2): Energy*Solutions* requests approval to receive and dispose, in Energy*Solutions*' Mixed Waste Landfill Cell, waste containing the D009 or U151 High Mercury-Organic Subcategory and High Mercury-Inorganic Subcategory hazardous waste codes that has been treated using stabilization/amalgamation technologies. Furthermore, Energy*Solutions* will perform the stabilization/amalgamation treatment on D009 and U151 High Mercury Subcategory waste streams that have not been treated prior to arrival at the Energy*Solutions* Clive facility. All actions will be performed in accordance with Energy*Solutions*' State-issued Part B Permit.

40 CFR 260.20(b)(3): Energy*Solutions* proposes to dispose of treated High Mercury Subcategory hazardous waste that has been treated below a mercury concentration of 0.2 mg/L using the Toxicity Characteristic Leaching Procedure (TCLP). Additionally, Energy*Solutions* proposes to dispose of treated High Mercury Subcategory contaminated soil that has been treated below a mercury concentration of 0.25 mg/L TCLP.

Energy*Solutions* proposes to perform the stabilization/amalgamation treatment for waste that has not been treated prior to arrival at Energy*Solutions*' Clive facility. Waste concentrations for off-site treated waste will be verified by sampling incoming waste shipments in accordance with Attachment II-1, *Waste Analysis Plan*, of Energy*Solutions*' State-issued Part B Permit. Waste concentrations for on-site treated waste will be verified using the procedures described in Attachment II-1-3, *Waste Stabilization Plan*. Further, all other constituents of the waste will be verified Land Disposal Restriction (LDR) compliant prior to disposal.

40 CFR 260.20(b)(4): The D009 High Mercury-Organic Subcategory is described in the "Treatment Standards for Hazardous Waste" table in 40 CFR 268.40. The description is as follows:

> "Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that also contain organics and are not incinerator residues. (High Mercury-Organic Subcategory)"

Likewise, the D009 High Mercury-Inorganic Subcategory's description is as follows:

> "Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC. (High Mercury-Inorganic Subcategory)"

The U151 hazardous waste code does not delineate between organic or inorganic; the description simply states the following:

> "U151 (mercury) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury."

The listed treatment technology in 40 CFR 268.40 for the D009 High Mercury-Organic Subcategory is either incineration (IMERC) or retorting/roasting for mercury recovery (RMERC). The listed treatment technology for the D009 High Mercury-Inorganic Subcategory and for U151 is RMERC.

The need and justification for this action are as follows:

- The intent of the RMERC treatment process is to recover elemental mercury for recycling. However, radioactive mercury cannot be recycled and the RMERC process generates secondary waste (radioactive elemental mercury) which requires additional treatment by amalgamation (a stabilization technology) prior to disposal.

- The IMERC technology is also intended to be a mercury recovery technology where the waste is incinerated and the mercury recovered in the ash or in a specific off-gas control system. For radioactive mercury, both the ash and the control equipment/media will require further treatment. Furthermore, IMERC involves an extra handling step for the radioactive residue.

- Both IMERC and RMERC are described in Table 1 of 40 CFR 268.42. Both descriptions state that

  > "[A]ll wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (e.g., High or Low Mercury Subcategories)."

  For RMERC, this treatment standard is explained as an additional D009 subcategory:

  > "[N]onwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury and that are residues from RMERC only."

  The treatment standard for this subcategory is 0.2 mg/L TCLP. For IMERC, the ash and/or control equipment media will be a newly generated hazardous waste and would therefore be required to meet the toxicity characteristic for mercury of 0.2 mg/L TCLP. The disposal standard proposed by Energy*Solutions* meets this LDR TCLP concentration in a single step.

- Successful chemical stabilization of High Mercury-Inorganic Subcategory wastes has been demonstrated to achieve a measure of performance equivalent to the required methods which require two treatment methods (RMERC and stabilization) with no detrimental effect to human health or the environment. The U.S. Environmental Protection Agency (US EPA) has issued a Determination of Equivalent Treatment (DET) for these High Mercury Subcategory wastes that were chemically stabilized. In the EPA's determination, they concluded that for waste streams that are radioactive and contain mercury, the recovery portion of RMERC may not be appropriate and that alternative treatment processes should be pursued. A copy of this letter is attached for reference.

- The US EPA has reviewed the treatment of mercury-bearing waste in a Federal Register Notice (68 FR 4481). In this notice, the US EPA concluded that treatment of mercury waste is possible and it is suggested that stakeholders should use the site specific treatment variance process to achieve approval for the treatment of high subcategory mercury wastes. The notice specifically designates an example of when this would be appropriate as the case of a high mercury subcategory waste that is also radioactive.

- Energy*Solutions* has requested similar site-specific treatment variances for High Mercury Subcategory waste in letters dated November 21, 2001; October 21, 2003; April 28, 2004; November 8, 2004; November 29, 2005; December 20, 2006; January 25, 2008; January 20, 2009; January 27, 2010; February 15, 2011; March 21, 2012; March 7, 2013; and March 4, 2014. These variance requests were approved on January 8, 2002; December 11, 2003; June 10, 2004; January 13, 2005; January 12, 2006; February 8, 2007; March 13, 2008; March 12, 2009; April 8, 2010; May 12, 2011; May 10, 2012; April 11, 2013; and April 10, 2014, respectively.

- Over the years that this variance has been granted, Energy*Solutions* and generators have consistently been successful at treating high subcategory mercury to LDR compliant levels.

This variance request consists of waste that may be shipped to Energy*Solutions* over the next year. To date, Energy*Solutions* has disposed of approximately 10,560 cubic feet of treated High Mercury Subcategory waste. From knowledge of the current market of High Mercury Subcategory Waste requiring treatment or disposal, and from past experience receiving this type of waste, Energy*Solutions* anticipates up to approximately 500 cubic feet of additional High Mercury Subcategory waste for disposal in the next year under this treatment variance.

Energy*Solutions* requests that a variance be granted to allow the receipt and disposal of High Mercury Subcategory waste that has been treated either to the 0.2 mg/L TCLP standard for hazardous waste or the 0.25 mg/L TCLP standard for contaminated soil.

The name, phone number, and address of the person who should be contacted to notify Energy*Solutions* of decisions by the Director is:

Mr. Vern Rogers
Manager, Compliance and Permitting
Energy*Solutions* LLC
299 South Main Street, Suite 1700
Salt Lake City, UT 84111
(801) 649-2000

Should there by any questions to this request, please contact me at (801) 649-2144.

Sincerely,

Timothy L. Orton, P.E.
Environmental Engineer

cc: Don Verbica, DWMRC

enclosure

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Generator: Brookhaven National Laboratory
Generator # / Waste Stream #: [illegible]
Waste Stream Name: BNL Treated Mercury Soil

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. George J. Malosh
U.S. Department of Energy
Brookhaven Group Building 464
Upton, NY 11973-5000

Dear Mr. Malosh:

EPA has reviewed your request for a determination of equivalent treatment as authorized by 40 CRF 268.40(b) for the mercury contaminated waste from your facility that will be the subject of treatability studies.

Based on the information provided in your application and conversations between your staff and mine, EPA is approving the request for a determination of equivalent treatment. EPA agrees that RMERC is not appropriate for this waste, due to the generation of elemental mercury that is contaminated with radioactive materials and that has no current use via recycling. Instead, the facility will need to meet a replacement concentration-based treatment standard for this waste, which is detailed in the enclosed determination. This standard does not replace any other applicable federal, state, or local requirements as specified in the facility's waste analysis plan. Additionally, all wastes subject to this determination must be disposed at a facility permitted to accepted the radioactive elements present in the waste following treatment.

Enclosed you will find our determination on your request. If you need further assistance, please contact John Austin, Waste Treatment Branch (703/308-0436).

Sincerely yours,

Elizabeth A.
Cotsworth, Acting
Director
Office of Solid
Waste

Enclosure

cc: Jim Thompson, OWPE
RCRA Hotline

Generator: Brookhaven National Laboratory
Generator # / Waste Stream #: [illegible] 6646 01
Waste Stream Name: BNL Treated Mercury Soil

Determination of Equivalent Treatment
40 CFR 268.42(b)
Notification of Acceptance

Notification Number: OSW-DE016-0698

Requesting Facility: Brookhaven National Laboratory

Facility Address: U. S. Department of Energy
Brookhaven Group Building 464
Upton, NY 11973-5000

EPA Facility ID #: NY7890008975

Facility Representatives: Gail Penny, Project Manager
(516)344-3229; Email: gpenny@bnl.gov

Glen Todzia, Project Engineer
(516)344-7488

Date of Request: July 1, 1998

Waste Description for Which Replacement Standard is Sought:

The subject wastes consist of (a) treatability samples totaling 4990 kg of RCRA characteristic mercury- and radioactive-contaminated soils and (b) an unspecified amount of residues and newly generated wastes resulting from multiple treatability studies on these samples. The treatability samples are soils that are mostly sand but contain some gravel. Approximately 5% of the treatability sample wastes consists of pieces of glass, metal, and plastic. A summary waste description is given in Table 1.

The subject waste soils were excavated in 1997 from a former land disposal area ("Chemical Holes Area") for miscellaneous laboratory wastes at Brookhaven National Laboratory, in Long Island, New York. The retrieval was performed as a CERCLA removal action. Segregation of the excavated waste into two waste streams was performed by sieving with a 2-inch sieve as the waste was excavated. Only materials that passed through the 2-inch sieve are the subject of the planned treatability studies.

Basis of Request:

The subject mercury-contaminated waste soils (above 260 ppm mercury) are also contaminated with low levels of radioactive materials. The LDR technology specific treatment standard for this waste is RMERC (retorting or roasting with recovery of the mercury for reuse). Retorting or

roasting of the waste is inappropriate because any mercury recovered would still be contaminated with radioactive materials, which would prohibit its recycle or reuse as elemental mercury. The

Table 1. Initial Waste Descriptions

Waste Container ID	Approximate Volume (yd3)	Approximate Weight (kg)	Total Mercury Concentration (mg/kg)	TCLP Mercury Concentration (mg/l)	Primary Mercury Species	Other RCRA Constituents that exceed TC Regulatory Levels or are Listed Wastes	Waste Description and treatment/ Regulatory Subcategory	Assigned EPA Waste Code	Applicable LDR Treatment Standard
Bin 1	2	2495	16750	3.56	Elemental*	None Identified	Nonwastewater, High Mercury Subcategory*	D009	RMERC
Bin 2	2	2495	15,000	0.263	Elemental*	None Identified	Nonwastewater, High Mercury Subcategory*	D009	RMERC 1. Determine by visual inspection.

2. Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW 846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including residues from RMERC.

elemental mercury would therefore require further treatment (amalgamation) prior to its ultimate disposal. The subject wastes are proposed to be treated by a variety of methods as part of a treatability study to evaluate treatment options for other legacy wastes within the U. S. Department of Energy (DOE) complex.

DOE has requested a Determination of Equivalent Treatment for the treated treatability study samples and any newly generated >260 ppm Hg wastes that may result from these treatability studies (i.e., treatment residues). The proposed waste disposal location for the treatability study wastes that meet the assigned substitute treatment standard (and any other applicable LDR waste treatment standards) is the Envirocare of Utah, Clive, Utah, low level radioactive waste landfill. Alternatively, the DOE Hanford Site, Richland, Washington low level radioactive waste landfill

may be used. Other landfills that become available in the future and that meet all EPA and other agency requirements (e.g., NRC, DOE, or State) for disposal of such waste may also be considered. In the absence of the requested DET replacement standard, all treatment residues would have to be re-treated by retorting or roasting. Any recovered mercury would have to be amalgamated prior to disposal as low level radioactive waste.

EPA is requested to assign a replacement mercury treatment standard of 0.2 mg/kg TCLP to these treated treatability samples and any resulting newly generated treatment residues. The treated samples and newly generated wastes from the treatability study would still be required to meet applicable existing LDR treatment standards for underlying hazardous constituents other than mercury.

Previously Applicable Treatment Standard for Which Equivalency is Granted:

Waste codes of concern			Nonwastewater
D009	Non wastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues from RMERC (High Mercury Inorganic Subcategory	Mercury	RMERC

Replacement Treatment Standards:

Waste codes of concern			Nonwastewater
D009	Non wastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including	Mercury	0.20 mg/L TCLP

incinerator residues from RMERC (High Mercury Inorganic Subcategory

Compliance with these standards, as approved below, does not relieve the facility from compliance with any other applicable treatment standards associated with these wastes. This standard does not replace any other applicable federal, state, or local requirements as specified in the facility's waste analysis plan. Additionally, all wastes subject to this determination must be disposed at a facility permitted to accept the radioactive elements present in the waste.

Authorities and References:

A Determination of Equivalent Treatment is governed by 40 CFR 268.42(b), which states: "(b) Any person may submit an application to the Administrator demonstrating that an alternative treatment method can achieve a measure of performance equivalent to that achieved by methods specified in paragraphs (a), (c), and (d) of this section....The applicant must submit information demonstrating that his treatment method is in compliance with federal, state, and local requirements and is protective of human health and the environment. On the basis of such information and any other available information, the Administrator may approve the use of the alternative treatment method if he finds that the alternative treatment method provides a measure of performance equivalent to that achieved by methods specified in paragraphs (a), (c), and (d) of this section. Any approval must be stated in writing and may contain such provisions and conditions as the Administrator deems appropriate. The person to whom such approval is issued must comply with all limitations contained in such a determination."

The above provision was further clarified in the preamble for the Land Disposal Restriction for Third Third Scheduled Wastes: Final Rule, 55 FR at 22536, (June 1, 1990) as follows: "when EPA requires the use of a technology (or technologies), a generator or treater may demonstrate that an alternative treatment method can achieve the equivalent level of

performance as that of the specified treatment method [40 CFR 268.42(b)]. This demonstration is typically both waste-specific and site-specific and may be based on: (1) the development of a concentration based standard that utilized a surrogate or indicator compound that guarantees effective treatment of the hazardous constituents; (2) the development of a new analytical method for quantifying the hazardous constituents, and (3) other demonstrations of equivalence for an alternative method of treatment based on a statistical comparison of technologies, including a comparison of specific design and operating parameters."

Justification for the Equivalent Treatment Standard:

Generator: Brookhaven National Laboratory JLH
Generator # / Waste Stream #: ~~B008-22~~ 6-0146 01
Waste Stream Name: BNL Treated Mercury Soil

In the context of this treatability study situation, roasting or retorting and recovery of mercury (RMERC) from High Mercury-Inorganic nonwastewater wastes does not appear to be an appropriate treatment method if the wastes are also radioactive. This is because the recovered mercury is expected to be still classified as radioactive material and as such will not be recyclable but will require further treatment prior to its ultimate disposal. Therefore, the earlier recovery step appears not to serve a useful purpose in this particular mixed waste context, and would involve additional waste handling with the attendant concerns about potential exposure to radionuclides. The requested replacement standard for the limited quantity of waste to be subject to the treatability studies is the current LDR concentration-based treatment standard for Low Mercury-Inorganic nonwastewaters that have undergone RMERC, 0.20 mg/L TCLP. Therefore, the wastes will be subject to treatment standards equivalent to those for the residues of the RMERC process, but without having to first undergo a non-useful RMERC step. This is an appropriate measure of equivalent performance and is sufficiently protective of human health and the environment in this particular situation.

Based upon the information submitted, the factors identified above, and the conditions for treatment and disposal set out above, I have determined that the petition for Determination of Equivalent Treatment submitted by DOE on May 20, 1998 is hereby granted, effective upon my signature.

Dated:

Elizabeth A. Cotsworth, Acting Director
Office of Solid Waste

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Attachment I - Analytical Data for Wastes to be Subjected to the Treatability Studies

B-25 Container #1

Parameter	Concentration	
Mercury (total)		6750 mg/kg
Mercury (TCLP)		3.56 mg/L
Gross Alpha	4560 pCi/g	
Gross Beta	525 pCi/g	
Plutonium - 238		72.6 pCi/g
Plutonium - 239/240		19.7 pCi/g

Americium - 241		7140 pCi/g
Strontium - 90		2.15 pCi/g

B-25 Container #2

Parameter	Concentration	
Mercury (total)		18,000 mg/kg
Mercury (TCLP)		0.263 mg/L
Gross Alpha	24.9 pCi/g	
Gross Beta	35.9 pCi/g	
Plutonium - 238		7.06 pCi/g
Plutonium - 239/240		5.87 pCi/g
Americium - 241		28.67 pCi/g
Strontium - 90		35.5 pCi/g

Attachment 2- DOE Description of Treatment Technologies to be Included in Treatability Studies

The DOE Mixed Waste Focus Area (MWFA) Mercury Contamination Product Line Mercury Working Group (HgWG) is sponsoring demonstrations of alternative advanced technologies for treating toxicity characteristic mixed waste containing more than 260 ppm total mercury concentrations to determine which technologies can produce stable products for disposal that are acceptably protective of human health and the environment. The initial wastes and the final waste forms are to be tested using TCLP to determine if the final waste forms are no longer toxicity characteristic hazardous waste, meet the applicable replacement LDR treatment standard for mercury, and meet any other LDR waste treatment standards determined to be applicable for this waste. Informational testing to provide additional data for use by EPA will also be conducted, including measurement of mercury vapor pressure over the final waste forms, and selected additional leaching tests to be determined in coordination with EPA Office of Solid Waste. EPA's contractor Professor David Kosson (Rutgers University), Brookhaven National Laboratory (BNL), and the MWFA/HgWG.

Mercury Stabilization

A BNL sulfur polymer cement process will be one of the mercury stabilization processes demonstrated.
Commercial vendors will also be contracted to perform stabilization demonstrations. These vendors will
be selected by the HgWG through an open bidding process. Each stabilization process will have been
previously demonstrated on wastes or surrogates with less than 260 ppm total mercury concentration.

Mercury Separation

A mercury separation technology may be included in the demonstration tests. A candidate process uses a
potassium iodide/iodine leaching solution to solubilize and remove mercury. The mercury is recovered
as elemental mercury and amalgamated for disposal. The extractants are recovered and recycled. This
process has already been demonstrated for mercury levels below 260 ppm.

Mercury Retort and Amalgamation

For comparison with the results of the advanced separation and stabilization technologies, an additional
treatability study will be performed using a mobile commercial vacuum retort unit to thermally desorb
mercury, The recovered mercury will be amalgamated for disposal. This will be the baseline technology
to satisfy the existing LDR treatment standard (RMERC) for High Mercury Inorganic Subcategory waste
and the amalgamation (AMALG) treatment standard for
radioactive elemental mercury waste. Amalgamation will be by commercially available processes or by
an advanced sulfur-polymer-cement process developed and used at BNL.

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
REQUEST FOR A SITE-SPECIFIC TREATMENT VARIANCE
Energy*Solutions* LLC
May 12, 2016

What is the issue before the Board?	This is a request from Energy*Solutions* LLC for a site-specific treatment variance from the Utah Hazardous Waste Management Rules to dispose of waste containing hazardous constituents and PCBs as Underlying Hazardous Constituents.
What is the historical background or context for this issue?	This variance is being requested for up to approximately 50 tons of waste generated at the Clive Mixed Waste Facility (site-generated waste) that may be circumstantially contaminated with PCBs from operations at the site. Examples of site-generated wastes include baghouse dust, sump clean-out material, and decontamination sludges. Site activities involving PCBs include, but are not limited to, repackaging waste containers and shredding PCB capacitors. Analysis of site-generated waste over the last year has detected PCB concentrations up to 268 ppm (mg/kg). The UTS concentration for PCBs is 10 mg/kg. Over the past several years, approximately 13 tons of this type of waste were generated and treated at the Clive Facility. Analytical data demonstrated that all contaminants, except PCBs, met treatment standards in these treatment runs. Energy*Solutions* has many years of data demonstrating that the treatment formulas developed for site-generated waste has successfully treated the waste. PCB waste generated at the site which is greater than 50 ppm is regulated by the U.S. Environmental Protection Agency (EPA) as PCB remediation waste. The EPA has clarified the disposal of PCB remediation waste with a concentration greater than 50 ppm PCBs in 40 CFR 761.61 (a)(5)(i)(B)(2)(iii) as follows: "Bulk PCB remediation wastes with a PCB concentration >50 ppm shall be disposed of in a hazardous waste landfill permitted by EPA under section 3004 of RCRA or by a State authorized under section 3006 of RCRA" The Mixed Waste landfill is permitted by the State of Utah. Consequently, if the PCB waste did not contain RCRA hazardous waste codes, but contained the same PCB concentrations, it could be disposed in the landfill without additional treatment. Therefore, treatment of the PCBs within this waste stream is technically inappropriate and not required for final disposal of the waste form.

	A notice for public comment was published in the *Salt Lake Tribune*, the *Deseret News* and the *Tooele County Transcript Bulletin* on May 3, 2016. The comment period began May 3, 2016 and will end June 3, 2016.
What is the governing statutory or regulatory citation?	Variances are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act. This is a one-time site-specific variance from an applicable treatment standard as allowed by R315-268.44 of the Utah Administrative Code.
Is Board action required?	No. This is an informational item before the Board.
What is the Division Director's recommendation?	The Director will provide a recommendation at the next Board meeting.
Where can more information be obtained?	For technical questions, please contact Otis Willoughby (801) 536-0220. For legal questions, please contact Raymond Wixom at (801) 536-0290.

ENERGY*SOLUTIONS*

April 21, 2016

CD16-0086

Mr. Scott T. Anderson
Director
Division of Waste Management and Radiation Control
195 North 1950 West
Salt Lake City, UT 84114-4880

Subject: Request for a Site-Specific Treatment Variance for Mixed Waste Requiring Treatment with a PCB Underlying Hazardous Constituent

Dear Mr. Anderson:

Energy*Solutions*, LLC (EPA Id Number UTD982598898) hereby requests a variance that provides an exemption from 40 CFR 268.40(e) for waste generated at the Clive facility that carries characteristic and listed hazardous waste codes and also contains Polychlorinated Biphenyls (PCBs) as an Underlying Hazardous Constituent (UHC).

This request is submitted in accordance with Utah Administrative Code (UAC) R315-13-1 (40 CFR 268.44 incorporated by reference), which allows a site-specific variance from an applicable treatment standard provided the following condition is met:

> 40 CFR 268.44(h)(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible.

This request is submitted in accordance with the requirements of 40 CFR 260.20(b).

40 CFR 260.20(b)(1): This petition is being submitted by

> Energy*Solutions*, LLC
> 299 South Main Street, Suite 1700
> Salt Lake City, UT 84111

40 CFR 260.20(b)(2): Energy*Solutions* requests approval to treat waste containing hazardous contaminants and PCBs and dispose of the treated residual in Energy*Solutions*' Clive Facility Mixed Waste Landfill Cell (MWLC). The concentration of PCBs within the treated residual will not meet the Universal Treatment Standards (UTS) described in R315-13-1 (40 CFR 268.48 incorporated by reference). All actions requested in this variance will be performed in accordance with Energy*Solutions*' State-issued Part B Permit.

40 CFR 260.20(b)(3): Energy*Solutions* proposes that the waste be treated in accordance with permit requirements and disposed in the MWLC upon meeting the treatment standards for all hazardous waste constituents and UHCs, with the exception of PCBs.

40 CFR 260.20(b)(4): The need and justification for this action are as follows.

This variance is being requested for up to approximately 50 tons of waste generated at the Clive Mixed Waste Facility (site-generated waste) that may be circumstantially contaminated with PCBs from operations at the site. Examples of site-generated wastes include baghouse dust, sump clean-out material, and decontamination sludges. Site activities involving PCBs include, but are not limited to, repackaging waste containers and shredding PCB capacitors. Analysis of site-generated waste over the last year has detected PCB concentrations up to 268 ppm (mg/kg). The UTS concentration for PCBs is 10 mg/kg.

Over the past several years, approximately 13 tons of this type of waste was generated and treated at the Clive Facility. Analytical data demonstrated that all contaminants, except PCBs, met treatment standards in these treatment runs. Energy*Solutions* has many years' data demonstrating that the treatment formulas developed for site-generated waste has successfully treated the waste.

PCB waste generated at the site which is greater than 50 ppm is regulated by the Environmental Protection Agency (EPA) as PCB remediation waste. The EPA has clarified the disposal of PCB remediation waste with a concentration greater than 50 ppm PCBs in 40 CFR 761.61(a)(5)(i)(B)(2)(iii) as follows:

> "Bulk PCB remediation wastes with a PCB concentration ≥50 ppm shall be disposed of in a hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a State authorized under section 3006 of RCRA"

The MWLC is a permitted hazardous waste landfill permitted by the State of Utah. Consequently, if the PCB waste did not contain RCRA hazardous waste codes, but contained the same PCB concentrations, it could be disposed in the MWLC without additional treatment. Therefore, treatment of the PCBs within this waste stream is technically inappropriate and not required for final disposal of the waste form.

This variance was previously requested in letters dated November 17, 2011; March 7, 2013; and March 4, 2015. These variance requests were approved on February 9, 2012; April 11, 2013; and April 10, 2014, respectively.

Energy*Solutions* requests that a variance be granted to allow the land disposal of site-generated waste that will be treated to meet all treatment standards except the treatment standard for PCBs.

The name, phone number, and address of the person who should be contacted to notify Energy*Solutions* of decisions by the Director is:

Mr. Vern Rogers
Manager, Compliance and Permitting
Energy*Solutions* LLC
299 South Main Street, Suite 1700
Salt Lake City, UT 84111
(801) 649-2000

Should there by any questions to this request, please contact me at (801) 649-2144.

Sincerely,

Timothy L. Orton, P.E.
Environmental Engineer

cc: Don Verbica, DWMRC

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
Heckmann Woods Cross
May 12, 2016

What is the issue before the Board?	This is a proposed Stipulation and Consent Order (SCO) to resolve the failure of Heckmann Woods Cross to fully implement the facility closure plan required by its used oil processing permit (UOP-0068).
What is the historical background or context for this issue?	On June 17, 2014, the Director of the Division of Solid and Hazardous Waste approved the transfer of Thermo Fluids' used oil processor permit (UOP-0068) to Heckmann Woods Cross. As the Permittee, Heckmann was required to implement closure of the facility in accordance with the approved closure plan. On July 14, 2015, Heckmann notified the Director that it was not possible to fully implement the approved closure plan at the facility. The SCO includes a penalty of $75,000. The Permit will be terminated after all terms of the SCO have been completed.
What is the governing statutory or regulatory citation?	19-6-104 of the Utah Solid and Hazardous Waste Act directs the Board to review and approve or disapprove of settlements negotiated by the Director with a civil penalty over $25,000.
Is Board action required?	Yes.
What is the Division Director's recommendation?	The Director recommends approval by the Board to initiate public comment on the proposed SCO.
Where can more information be obtained?	For technical questions, please contact Deborah Ng at (801) 536-0218. For legal questions, please contact Raymond Wixom at (801) 536-0213.

DSHW-2016-008383
DSHW-2016-008520
DSHW-2016-008518
DSHW-2016-008395