



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region8

Ref: 8EPR-ER

DEC 11 2017

MEMORANDUM

SUBJECT: Approval and Funding for an Emergency Removal Action at the Bear Hollow Mercury Site, Park City, Summit County, Utah, pursuant to the On-Scene Coordinator's delegated authority under CERCLA Section 104.

FROM: Pete Stevenson
Federal On-Scene Coordinator

*Refer for
12/16/17*

THRU: Laura Williams, Unit Leader
Emergency Response

*Laura Williams
12/14/17*

David A. Ostrander, Director
Emergency Response & Preparedness Program

TO: Betsy Smidinger
Assistant Regional Administrator
Office of Ecosystems Protection and Remediation

Site ID# A8N6

I. PURPOSE

The purpose of this Action Memorandum is to document the decision to initiate emergency response actions described herein for the Bear Hollow Mercury Site (Site), located in Park City, Summit County, Utah, pursuant to the On-Scene Coordinator's delegated authority under CERCLA Section 104.

This emergency removal action involved the cleanup, treatment and disposal of contaminated materials from a mercury spill that occurred when a repairman was repairing an antique clock in the Park City residence. Conditions existing at the Site presented an endangerment to human health and the environment and met the criteria for initiating a removal action under 40 CFR 300.415(b)(2) of the National Contingency Plan (NCP).

This removal action involves no nationally-significant or precedent-setting issues. This emergency removal action will not establish any precedent for future response actions and will not commit the U.S. Environmental Protection Agency (EPA) to a course of action that could have a significant impact on future responses or resources.

II. SITE CONDITIONS AND BACKGROUND

Site Name: Bear Hollow Mercury Site
Superfund Site ID (SSID): A8N6
NRC Case Number:
CERCLIS Number:
Site Location: 2055 Bear Hollow Drive, Park City, UT, 84098
Lat/Long: 40.6960690/ -111.5510810
Potentially Responsible Party:
NPL Status Non NPL
Removal Start Date June 8, 2016

A. Site Description

1. Removal Site Evaluation

While repairing an antique clock at a family residence on Tuesday, June 7, 2016, approximately one-half cup of mercury was spilled onto a kitchen/eating area granite countertop and then fell beneath the counter onto the wood floor. Most of the mercury was collected from the countertop and the wood flooring, but some of the mercury entered a heating vent on the floor, and small beads of mercury were vacuumed. The family evacuated from the home, and the local fire department secured the area. Initial readings by the Utah Department of Environmental Quality (UDEQ) exceeded 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Other items that were contaminated included upholstered chairs, a dog pad, a back door mat, rugs, a vacuum cleaner, a baby high chair and clothing worn by occupants at the time of the spill (See attached Weston Solutions Trip Report)

2. Physical Location

The Site is a single family dwelling in a typical residential suburban neighborhood in Park City, Utah.

3. Site Characteristics

The Site is home to a single family including two toddler children, the parents, a nanny and two pet dogs. The mercury was spilled in the kitchen/eating area. On the first level, the home consists of a kitchen and hallway, a living room and entry way and stairs leading to a garage below the living space. The bedrooms are on different floors. The START contractor assessed mercury vapors within the house breathing zone and located "hot spots" where mercury had apparently accumulated on furniture items, flooring, counter tops, sink drains, etc. (see Attachment #2). Initial cleaning by the homeowners caused the mercury to be tracked throughout the residence, and vacuuming aerosolized the mercury. Most of the residual mercury was observed in the kitchen/dining/sitting area with the open floor plan on the main level of the home.

4. Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant, or Contaminant

The contaminant of concern at the Site was elemental mercury. Mercury is a hazardous substance, as defined by Section 101(14) of CERCLA. Mercury is the only metal that is liquid at room temperature. In its pure form (often called metallic or elemental), mercury is a shiny, silver-white, odorless liquid. At room temperature, mercury vaporizes into a toxic, colorless, odorless gas.¹ In its vapor form, mercury is easily inhaled and extremely toxic. For elemental mercury, the most important route of absorption is through inhalation. Because of the chemical nature of elemental mercury vapor, deposition and retention in the lungs are quite high (on the order of 80 percent in humans).²

In a 1997 mercury study report to Congress the EPA stated:

Effects on the nervous system appear to be the most sensitive toxicological endpoint observed following exposure to elemental mercury. Symptoms associated with elemental mercury-induced neurotoxicity include the following: tremors, initially affecting the hands and sometimes spreading to other parts of the body; emotional lability, often referred to as "erethism" and characterized by irritability, excessive shyness, confidence loss, and nervousness; insomnia; neuromuscular changes (e.g., weakness, muscle atrophy, muscle twitching); headaches; polyneuropathy (e.g., paresthesia, stocking-glove sensory loss, hyperactive tendon reflexes, slowed sensory and motor nerve conduction velocities); and memory loss and performance deficits in test of cognitive function. At higher concentrations, adverse renal effects and pulmonary dysfunction may also be observed.

EPA's 1997 mercury study, in reference to elemental mercury, concluded:

Neurotoxicity is the most sensitive indicator of adverse effects in humans exposed to elemental mercury and methylmercury.

An RfC for inhaled elemental mercury based on neurotoxic effects in exposed workers is $3 \times 10^{-4} \text{ mg/m}^3$ (300 ng/m^3).

Elemental mercury is a developmental toxicant in experimental animals. If the mechanisms of action producing developmental toxicity in animals occur in humans, elemental mercury is very likely to produce developmental effects in exposed human populations. U.S. EPA has made no estimate of dose response for developmental effects of elemental mercury.³

For this removal, the goal was to reach the EPA risk based screening level of 300 ng/m³.

5. NPL Status

This Site is neither on nor currently being considered for inclusion on the NPL.

¹ Agency for Toxic Substances and Disease Registry (ATSDR). 1999. [Toxicological Profile for Mercury](#). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service

² [Arch Environ Health](#), 1976 Nov-Dec; 31(6):302-9. Clearance of mercury (HG-197, HG-203) vapor inhaled by human subjects

³ Mercury Study Report to Congress, Volume V: Health Effects of Mercury and Mercury Compounds, December 1997, <http://www.epa.gov/mercury/report.htm>

6. Maps, Pictures, Other Geographic Representations

A diagram of the main living area of the home and sampling locations is provided as Attachment #1.

B. Other Actions to Date

1. Previous Actions

EPA has conducted no previous actions at the Site.

2. Current Actions

There are no current activities at the Site.

C. State and Local Authorities' Role

1. State and Local Actions to Date

The local fire department was initially involved. The department decontaminated the residents in the front yard and secured the home. Utah DEQ and the Summit County Environmental Health Department investigated the incident and then contacted the EPA. The OSC updated the DEQ and Summit County during removal operations.

2. Potential for Continued State/Local Response

No other local, state or federal agency is in the position or has the resources to independently implement a timely, effective response action to address the ongoing threat presented at the Site.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Site presented a threat to public health and the environment and met the criteria for initiating a removal action under 40 CFR §300.415(b)(2) of the NCP.

EPA has considered all of the factors described in 40 CFR §300.415(b)(2) of the NCP and determined that the following factors apply at the Site:

(i) "Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, or pollutants or contaminants;"

Elemental mercury was the contaminant of concern at this Site. For elemental mercury, the most important route of absorption is through inhalation. The extent of the contamination was to the lower level of the residential structure. The mercury contamination within the home posed an immediate concern to the family including two young children.

(vii) "The availability of other appropriate federal or state response mechanisms to respond to the release;"

No other local, state or federal agency was in the position or had the resources to independently implement a timely, effective response action to address the ongoing threat presented at the Site.

IV. SELECTED REMOVAL ACTIONS AND ESTIMATED COSTS

A. Planned Actions

1. Planned Action Description

Activities conducted in executing this removal are described below.

Contaminated items collected for disposal included five dining area upholstered chairs, a dog pad, back door mat, a baby highchair, carpet, throw rugs, clothing, a vacuum cleaner, a trash can and other miscellaneous items. Cleanup included a combination of three heat cycles, vacuuming with an equipped mercury vacuum, scrubbing with merc-X® cleaning solution, routine venting, and removal of highly contaminated items from the house. The contractor arranged transportation and disposal of the waste generated from the removal action to an appropriate facility.

2. Contribution to Remedial Performance

This action fully addressed all threats from this Site, requiring no further response actions.

3. Engineering Evaluation/Cost Analysis (EE/CA)

An EE/CA is not required for an emergency response action.

4. Applicable or Relevant and Appropriate Requirements (ARARs)

Removal actions conducted under CERCLA are required to attain ARARs to the extent practicable. In determining whether compliance with ARARs is practicable, the OSC may consider appropriate factors, including the urgency of the situation and the scope of the removal action to be conducted.

No ARARs have been identified for this removal action. RCRA requirements concerning waste analysis, manifesting, packaging, and transporting, while not ARARs, apply to off-site shipments of hazardous wastes.

5. Project Schedule

This removal action was conducted from June 8 through 9 with a final assurance check on June 9, 2016. The contaminated material was taken off site by ERRS and will be disposed of as determined by TCLP analyses. The recovered mercury will be managed through a subcontractor as a hazardous waste.

B. Estimated Costs*

START	\$20,000
ESAT	\$
ERRS	\$10,000
Contingency costs (20% of subtotal)	\$ 6,000
Total Removal Project Ceiling	\$ 36,000

*EPA direct and indirect costs, although cost recoverable, do not count toward the removal ceiling for this removal action. Liable parties may be held financially responsible for costs incurred by the EPA as set forth in Section 107 of CERCLA

V. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

A delay in action or no action at this Site would have increased the actual or potential threat to public health and/or the environment.

VI. OUTSTANDING POLICY ISSUES

None

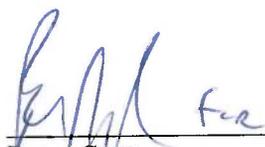
VII. ENFORCEMENT

An investigation to evaluate potential enforcement options will be undertaken. A separate Enforcement Addendum will be prepared if appropriate providing a confidential summary of potential enforcement activities.

VIII. APPROVALS

This decision document represents the selected removal action for the Bear Hollow Mercury Site in Park City, Summit County, Utah, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the administrative record for the Site.

Conditions at the Site met the NCP section 300.415(b) criteria for a removal action and, through this document, I am approving the selected removal action. The total project ceiling is \$36,000; this amount will be funded from the Regional removal allowance.



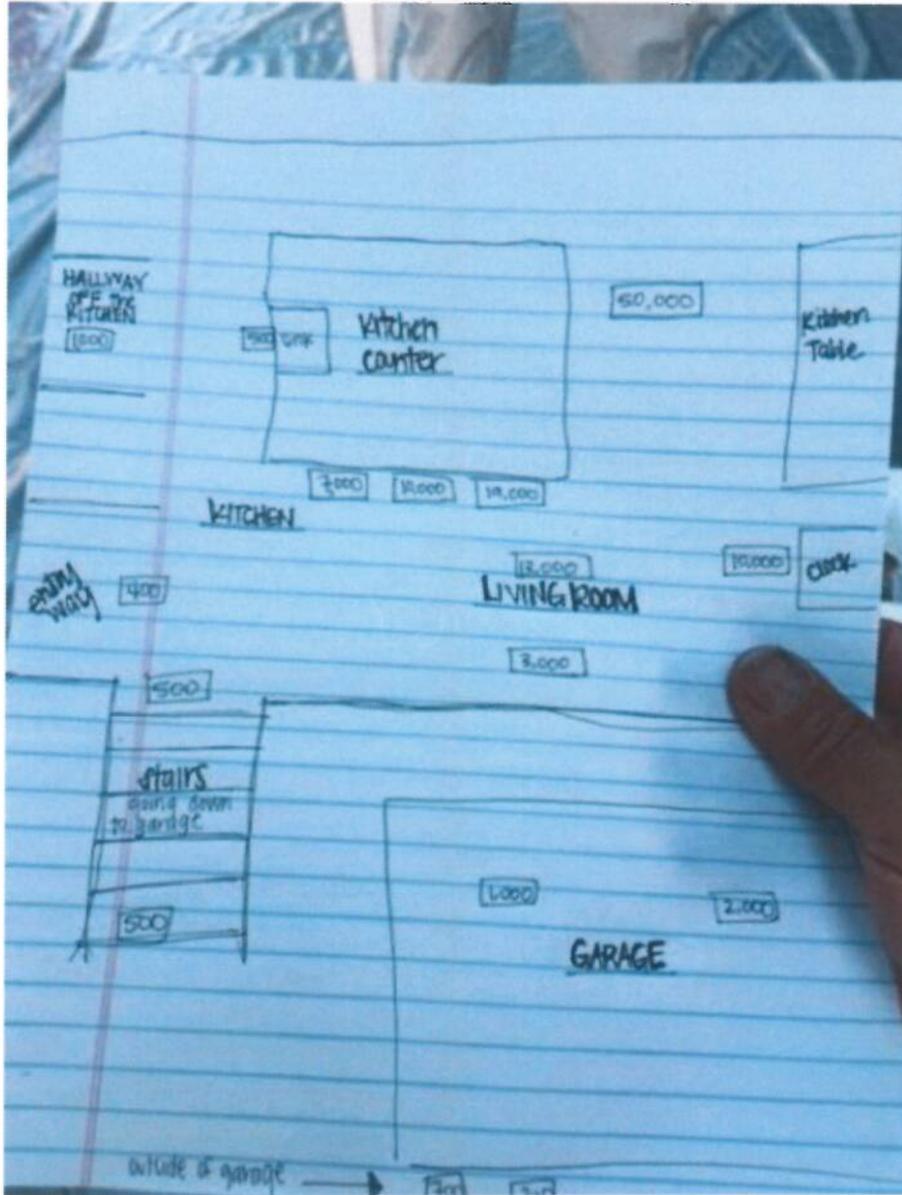
Peter Stevenson
Federal On-Scene Coordinator

12/11/2017
Date

Attachments:

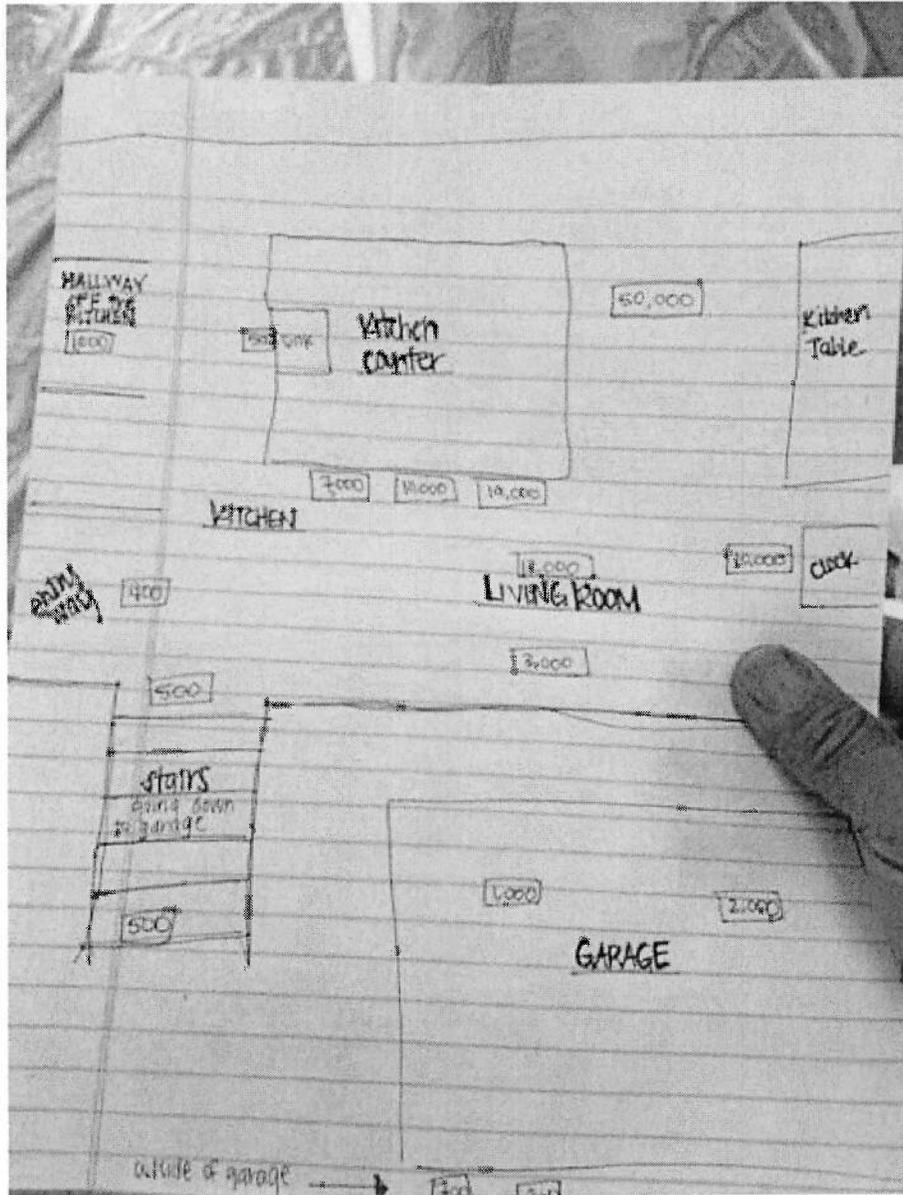
- Attachment 1.....Schematic of the Park City residence
- Attachment 2.....Weston Solutions Trip Report

Attachment 1
Schematic of Park City Residence



Attachment 2
Bear Hollow Trip Report

Attachment 1
Schematic of Park City Residence



Attachment 2
Bear Hollow Trip Report



Weston Solutions, Inc.
1435 Garrison Street, Suite 100
Lakewood, Colorado 80215
303-729-6100 • Fax: 303-729-6101
www.westonsolutions.com

September 2, 2016

Pete Stevenson
On-Scene Coordinator
United States Environmental Protection Agency, Region VIII
Mail Code: 8EPR-ER
1595 Wynkoop Street
Denver, CO 80202

Re: Bear Hollow Mercury – Draft Letter Report
Park City, Summit County, UT
TDD: 001/1606-15
DCN: W0384.1A.01081
WO#: 20408.012.001.0384.00

Dear Mr. Stevenson:

The United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc., (WESTON®) Superfund Technical Assessment and Response Team-4 (START-4) under Technical Direction Document (TDD) 001/1606-15 to support U.S. EPA's emergency response at the Bear Hollow Mercury site in Park City, Summit County, UT. The emergency response was initiated to determine if immediate threats to human health and the environment were present due to a release of mercury at a residence located at 2055 Bear Hollow Drive, Park City, Summit County, UT (the Site). START was tasked to perform mercury monitoring and provide photographic and written documentation of response activities. This report summarizes the response activities and includes:

Figure 1 Site Location Map
Table 1 Mercury Vapor Observations
Attachment A - Photograph Log
Attachment B - Log Book Notes

SITE DESCRIPTION

The Site is located in a residential neighborhood of Park City, Summit County, Utah, in a mountain community adjacent to the Park City Mountain Resort Ski Area. The residence is occupied by a family of four at 2055 Bear Hollow Drive (Figure 1). The residence includes three floors of living space, with the mercury spill occurring on the middle level. The mercury spill was related to the set-up of an antique grandfather clock recently brought to the house that employed mercury-weighted pendulum weights.



Mr. Pete Stevenson, OSC
U.S. EPA

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Bear Hollow Mercury Site
August, 2016

BACKGROUND

An antique grandfather clock was being placed into service at a residence by a professional clock technician. The clock employed a pendulum mechanism that included mercury-weighted glass vials that spilled inside the residence. The EPA was notified of the mercury spill at 2055 Bear Hollow Drive on June 7, 2016, after a clean-up attempt was performed by the family and professional clock technician. Reportedly, as the grandfather clock was being installed in the house, the technician placed the pendulum with glass vials containing mercury onto the kitchen/eating area granite counter top. The vials were not sealed and spilled onto the counter top and onto a wood floor beneath the counter. An estimated three cups of mercury was in the vials, and an unknown amount spilled onto the counter top and floor. The initial clean-up attempt by the home owners and clock technician was performed by collecting mercury onto sheets of paper and returning to it into the glass vials. Duct tape was used to lift small beads of mercury, followed by vacuuming the area with the household vacuum cleaner.

The local Fire Department, Summit County Health Department (SCH), and Utah Department of Environmental Quality (UDEQ) initially responded to the site and performed a site inspection, including an air quality survey inside the house with a Lumex[®] mercury vapor detection instrument. UDEQ reported mercury vapor observations exceeding 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$, i.e., parts-per-billion (ppb)). The Agency for Toxic Substances and Disease Registry (ATSDR) Suggested Action Level for Mercury is $<1 \mu\text{g}/\text{m}^3$ of air (ATSDR 2012). The Fire Department performed decontamination actions on the home occupants and their dog. The home was also vacated by the family until performance of EPA clean-up actions. Weather conditions during site activities included clear sunny skies, dry, with ambient temperature in the 80°s F.

EMERGENCY RESPONSE ACTIVITIES

START mobilized to the spill site on June 8, 2016, equipped with a Jerome[®] Mercury Vapor Analyzer, and a Lumex[®] Mercury Vapor Analyzer, each instrument with the ability to detect mercury vapor at milligrams per cubic meter (mg/m^3 , i.e., parts-per-million (ppm)), and nanograms per cubic meter (ng/m^3 , i.e., parts-per-trillion (ppt)), respectively. EPA On Scene Coordinator (OSC) Pete Stevenson and a response team from the Emergency and Rapid Response Services contractor, Environmental Restoration Company (ER), were present when START arrived at the site. ER performed clean-up actions at the site. START assessed mercury vapors within the house breathing zone and located "hot spots" where mercury had apparently accumulated onto furniture items, flooring, counter tops, sink drains, etc. Table 1 lists mercury vapor observations in chronological order as clean-up actions progressed. A photograph log of activities is included as Attachment A. Site activities were performed in personal protective equipment (PPE) level C, including air purifying respirator usage.



Mr. Pete Stevenson, OSC
U.S. EPA

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Bear Hollow Mercury Site
August, 2016

START's first entry to the house was performed to identify any "hot spots" where a focused clean-up effort could be employed to eliminate mercury sources. A high reading of $79 \mu\text{g}/\text{m}^3$ mercury was observed inside a floor heating vent located below the reported spill location within the main floor of the house (Table 1). Other mercury vapor observations on the main floor ranged from 0 to $56 \mu\text{g}/\text{m}^3$. Some contaminated furnishings were removed from the house by ER, wrapped in plastic sheeting, and placed onto a plastic sheet-lined back yard deck in order to allow the sun to heat the items and vaporize residual mercury. ER also vacuumed surface areas with a mercury recovery vacuum, and washed hot spot areas with a merc-X[®] cleaning solution to remove mercury. The main floor of the house was sealed from the rest of the house by placing plastic sheeting at (open) entrances, or closing doors as appropriate. The main floor was then heated for 9.5 hours overnight to 90° Fahrenheit (F) in an attempt to vaporize residual mercury which could then be vented to the outdoors. House venting was performed by opening all windows and doors to the outside, as well as employing a negative air machine on the main level of the house.

Day two site activities by START included mercury observations within the breathing zone throughout the entire house, as well as specific items and areas in the house. Breathing zone mercury observations within the house, post venting after overnight heating, ranged from 0 to $3 \mu\text{g}/\text{m}^3$ on the main floor, 0 to $1.2 \mu\text{g}/\text{m}^3$ on the upper floor, and 3 to $4 \mu\text{g}/\text{m}^3$ in the basement level. The garbage disposal drain at the main floor kitchen sink indicated $353 \mu\text{g}/\text{m}^3$ of mercury and the master bathroom shower stall drain on the upper level indicated $26 \mu\text{g}/\text{m}^3$ mercury. These drains required a focused effort by ER to reduce those mercury levels, presumably both outcomes of the initial mercury clean-up activities. ER performed additional cleaning with a merc-X[®] solution within the house, as well as within the sink and shower drains, placed a negative air machine on the main level of the house to assist with venting, and vacuumed portions of the main floor kitchen area and floor vent. Clothing stored in a plastic bag that was worn by the homeowners at the time of the mercury spill and initial clean-up indicated $>999 \mu\text{g}/\text{m}^3$ mercury. At mid-day the whole house was heated for 2.2 hours, after which additional mercury observations by START were observed to have decreased throughout the house. Note that some mercury observations on Table 1 appear to fluctuate and are likely an outcome of the heating/venting activities. The whole house was again heated overnight for 14.75 hours to 98°F .

An on-site conference was conducted by OSC-Stevenson to discuss site actions and observations. Attendees included the homeowners, START, UDEQ, SCH, and representatives from ATSDR via phone. Mercury levels observed in the house were discussed, along with ATSDR observations and recommendations. Consequently, the occupants of the house, i.e., both parents, two toddler children, a nanny, and two pet dogs were screened with the Lumex[®] instrument. Hair was the focus of the screening as mercury can reportedly persist within hair. All readings were background levels.



Mr. Pete Stevenson, OSC
U.S. EPA

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Bear Hollow Mercury Site
August, 2016

Breathing zone observations throughout the house by START on day three indicated mercury amounts to be less than $0.457 \mu\text{g}/\text{m}^3$. Mercury levels within the sink and shower drains mentioned above were reduced to 4 to $0.428 \mu\text{g}/\text{m}^3$, and $0 \mu\text{g}/\text{m}^3$, respectively, and will continue to drop with homeowner usage (kitchen breathing zone = $0.041 \mu\text{g}/\text{m}^3$, shower stall breathing zone = $0.045 \mu\text{g}/\text{m}^3$). Items that were bagged and placed outside to be warmed by the sun in an effort to vaporize mercury contamination, and were observed to still possess unacceptable mercury amounts, were removed from the property by ER for disposal. Items removed for disposal included:

- Five dining area upholstered chairs
- Dog pad
- Back door mat
- Clothing worn by occupants at time of spill
- Rug, 8ftx10ft
- Household vacuum cleaner
- Roll-away household trash bin
- Baby high chair
- Cleaning materials generated at time of spill
- Approximately 3 cups of mercury

Prior to departing the site ER replaced furnishings and OSC-Stevenson toured the house with the homeowners to discuss findings and to verify acceptable condition of the interior and possessions.

CONCLUSIONS

Mercury that was spilled inside the residence was spread into other areas of the house by tracking and aerosolizing via a vacuum cleaner at the time of initial cleaning by the homeowners. Most of the residual mercury was observed to be present on the main level of the house near the location of the initial spill that occurred in the kitchen/dining/sitting area within the open floor plan of the main level. Plumbing at the kitchen sink and upstairs shower had elevated mercury observations, likely indications that mercury had been washed into those drains during initial cleaning activities by the homeowners.

A combination of three heat cycles, vacuuming with an equipped mercury vacuum, scrubbing with merc-X® cleaning solution, routine venting, and removal of highly contaminated items from the house resulted in reducing mercury vapors to below ATSDR recommended levels and allowed for the reoccupation of the house.



Mr. Pete Stevenson, OSC
U.S. EPA

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Bear Hollow Mercury Site
August, 2016

The preparation of this draft letter report precedes a final report, to include additional sample analytical data when available. The final report will be the final TDD deliverable, per the request of OSC-Stevenson.

Very truly yours,

WESTON SOLUTIONS, INC.

Cordel Schmidt
START Project Leader

Attachment A– Photograph Log
Attachment B– Logbook Notes

cc: Robert Reed, Project Manager
START DCN File



Legend

 Site Location

0 30 60 120 Feet



Prepared for:
U.S. EPA Region 8



Contract No.:
EP-S8-13-01

TDD: 1606-15

The source of this map image is Esri, used by EPA with Esri's permission

TO:
0001



Prepared By:
Weston Solutions, Inc.
START IV

Suite 100
1435 Garrison Street
Lakewood, CO 80215

FIGURE 1
SITE LOCATION MAP
BEAR HOLLOW MERCURY
SUMMIT COUNTY
PARK CITY, UTAH

Date: 8/31/2016

DRAFT Table 1
 Bear Hollow Mercury Site
 Mercury Vapor Observations (ug/m3)

Sample Location	*Sampling Instrument:	Initial START entry	6/9/16, 17:30					6/9/16, 15:55		6/10/16, 08:56							
			House Vented	House Vented	House Vented	House Vented	House Vented	House Not Vented	House Vented	--	House Vented	House Vented	--	House Vented	House Vented	House Vented	House Vented
	Jerome	Jerome	Jerome	Jerome	Jerome	Jerome	Jerome	Lumex	Jerome	Lumex	Jerome	Lumex	Jerome	Jerome	Lumex	Lumex	
Main floor - Dog pad at sliding door		6															
Main floor - Leather couch		7															
Main floor - Coffee Table		4															
Main floor - Living area rug		3															
Main floor - Chaise Lounge		0															
Main floor - Living area chairs (2)		0															
Main floor - Fireplace hearth		4															
Main floor - Stairs up from main floor		6															
Main floor - Front door entry floor		0															
Main floor - Front door exterior steps		0															
Main floor - Kitchen granite counter spill area		3															
Main floor - Kitchen floor below granite counter spill area		56															
Main floor - Inside floor vent located below granite counter spill area		79															
Main floor - Floor at grandfather clock		14															
Main floor - Dining area table surface		3															
Main floor - High chair seat in dining area		11															
Main floor - Dining area upholstered chair seats		4															
Main floor - Floor at dining table		24															
Main floor - Inside grandfather clock housing		47															
Main floor - Butler pantry counter		0															
Main floor - Interior floor at sliding doors		7															
Main floor - Inside floor vent at sliding doors		4															
Main floor - Jogging trampoline																	
Main floor - Entry area breathing zone			0	.077 to .226					0	0.068			0.425				
Main floor - Kitchen breathing zone			0						0	0.597			0.041				
Main floor - Kitchen (north side) breathing zone				0.516					0								
Main floor - Kitchen (south side, spill area) breathing zone				1.581					0								
Main floor - Kitchen sink - inside middle drain (garbage dispose)			87						83				5	4	0.424		
Main floor - Kitchen sink - inside left drain													3	4	.200 to 0.428		
Main floor - Kitchen sink - inside right drain																	
Main floor - Living area breathing zone				0.426					0	0.263			0.457				
Main floor - Dining area breathing zone				0.361					0	0.34			0.054				
Main floor - Adjacent to Grandfather clock breathing zone				1.15					0								
Main floor - Butler pantry breathing zone				3					0								
Main floor - Nursery bathroom drain									0								
Main floor - Nursery bathroom breathing zone									0								
Main floor - Nursery left breathing zone										0.115			0.32				
Main floor - Nursery left breathing zone										0.617			0.242				
Main floor - Nursery crib																	
Main floor - Nursery changing table																	
Main floor - Nursery breathing zone									5	0.316			0.257				
Main floor - Office breathing zone									4	0.66			0.14				
Main floor - Bathroom breathing zone										0.548			0.295				
Main floor - Stairs up					0.596					0.817			0.261				

DRAFT Table 1
 Bear Hollow Mercury Site
 Mercury Vapor Observations (ug/m³)

Sample Location	*Sampling Instrument:	Initial START entry Jerome	6/8/16, 17:30					6/9/16, 08:05		6/9/16, 09:09		6/9/16, 09:34		6/9/16, 10:08		6/9/16, 11:32		6/9/16, 15:55		6/9/16, 16:16		6/10/16, 08:36		6/10/16, 09:40		6/10/16, 10:02		6/10/16, 10:36		6/10/16, 11:10		6/10/16, 11:50		6/10/16, 12:00					
			House Vented Jerome	House Vented Jerome	House Vented Lumex	House Vented Jerome	House Vented Jerome	House Not Vented Jerome	House Vented Lumex	--	House Vented Lumex	House Vented Jerome	--	House Vented Jerome	House Vented Lumex	House Vented Jerome	House Vented Lumex	House Vented Jerome	House Vented Lumex																				
Second floor - Hall breathing zone				0.669		0																																	
Second floor - Master bedroom breathing zone				0.485		0																																	
Second floor - Master bath breathing zone				0.534		0																																	
Second floor - Master bath shower stall breathing zone				1.234		0																																	
Second floor - Master bath shower stall inside drain						26																																	
Second floor - Closet (right) breathing zone				0.692		0																																	
Second floor - Closet (left) breathing zone				0.629		0																																	
Basement - Exterior door entry area breathing zone			3																																				
Basement - Living area breathing zone			4		0.196																																		
Basement - Kitchen area breathing zone			4		0.078																																		
Basement - Bathroom #1 breathing zone			4		0.119																																		
Basement - Office breathing zone			4		0.182																																		
Basement - Bedroom breathing zone			4		0.186																																		
Basement - Second bath #2 (off bedroom) breathing zone			4		0.169																																		
Basement - Stairs (up) breathing zone					0.397																																		
Outside - Background breathing zone					0 to .050																																		
Outside - Driveway breathing zone					0.06																																		
Outside - Backyard breathing zone																																							
Garage - Small (left) breathing zone						0																																	
Garage - Large (right) breathing zone						3	0																																
Clothes washer							0																																
Clothes dryer							0																																
Inside bagged (heated by sun) clothing items worn at time of spill							>999																																
Inside bagged (heated by sun) dining area upholstered chair seats, 5 chairs							25 to 153																																
Inside bagged (heated by sun) leather couch cushion							136																																
Inside bagged (heated by sun) high chair																																							
Inside bagged (heated by sun) trash can																																							
Inside bagged (heated by sun) metal pendulum frame with cork seat																																							
Inside bagged (heated by sun) glass mercury vials																																							
Removed from site:																																							
5 Dining area upholstered chairs																																							
Dog pad																																							
Back door door mat																																							
Clothing worn by occupants at time of spill																																							
Rug 8ftx10ft																																							
Vacuum cleaner used at time of spill																																							
Roll-away trash bin																																							
Cleaning materials generated at time of spill																																							
Baby high chair																																							
Approximately 3 cups of mercury																																							

*Note: Jerome instrument field units indicated in mg/m³, Lumex instrument field units indicated in ng/m³. All instrument units normalized to ug/m³ in table 1 for consistency.
 Agency for Toxic Substances and Disease Registry (ATSDR) suggested action level for mercury Indoor Air Concentration < 1.0 ug/m³ (ATSDR 2012).



Weston Solutions, Inc.
1435 Garrison Street, Suite 100
Lakewood, Colorado 80215
303-729-6100 • Fax: 303-729-6101
www.westonsolutions.com

Attachment A

Photo Log

Project Name: Bear Hollow Mercury	Site Location: Park City, Summit County, UT	Project No.: 001/1606-15
---	---	------------------------------------

Photo No. 1	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Driveway area used for staging. Main house entry via stairs on photo right.	



Photo No. 2	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Entry driveway from street.	



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No.
3

Date:
06/08/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Wood deck at rear of house. Visqueen placed on deck to protect. Sliding doors on deck are entry to kitchen/sitting area. Grandfather clock on immediate right of sliding door inside house.



Photo No.
4

Date:
06/08/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Panoramic 1 of 4. East side of sitting area opposite of kitchen.



Project Name: Bear Hollow Mercury	Site Location: Park City, Summit County, UT	Project No. 001/1606-15
---	---	-----------------------------------

Photo No. 5	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Panoramic 2 of 4. Sitting area. Kitchen in photo right background. Duct tape labels on items indicate mercury readings (mg/m3).	



Photo No. 6	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Panoramic 3 of 4. Sitting area. Kitchen in background. Grandfather clock visible at photo right. Duct tape labels on items indicate mercury readings (mg/m3).	



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No. 7	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Panoramic 4 of 4. Grandfather clock. Sliding door in photo right leads to rear deck. Duct tape labels on items indicate mercury readings (mg/m3).	



Photo No. 8	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Sitting area. Duct tape labels on items indicate mercury readings (mg/m3).	



Project Name: Bear Hollow Mercury	Site Location: Park City, Summit County, UT	Project No. 001/1606-15
---	---	-----------------------------------

Photo No. 9	Date: 06/08/2016	
Photo Coordinates		
Lat		
Long		
Direction Photo Taken:		
Description:		
<p>Sitting area. Duct tape labels on items indicate mercury readings (mg/m3).</p>		

Photo No. 10	Date: 06/08/2016	
Photo Coordinates		
Lat		
Long		
Direction Photo Taken:		
Description:		
<p>Sitting area. Duct tape labels on items indicate mercury readings (mg/m3).</p>		

Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No. 11	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Kitchen area. Duct tape labels on items indicate mercury readings (mg/m3).	



Photo No. 12	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Kitchen sink. Duct tape labels on items indicate mercury readings (mg/m3). Garbage disposal in center sink.	



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No.
13

Date:
06/08/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Kitchen counter, location of initial mercury spill. Duct tape labels on items indicate mercury readings (mg/m3).



Photo No.
14

Date:
06/08/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Kitchen floor below counter, location of initial mercury spill. Duct tape labels on items indicate mercury readings (mg/m3).



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No. 15	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Sitting area view toward the northeast. Duct tape labels on items indicate mercury readings (mg/m3). Bagging eating area upholstered chairs.	



Photo No. 16	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Dining area adjacent to kitchen. Baby high chair in foreground.	



Project Name: Bear Hollow Mercury	Site Location: Park City, Summit County, UT	Project No.: 001/1606-15
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Photo No. 17	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: High chair in dining area. Duct tape labels on items indicate mercury readings (mg/m3).	



Photo No. 18	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Dining area table/chairs. Duct tape labels on items indicate mercury readings (mg/m3).	



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No. 19	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Dining area table. Duct tape labels on items indicate mercury readings (mg/m3).	



Photo No. 20	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Dining area table and bench seat. Duct tape labels on items indicate mercury readings (mg/m3).	

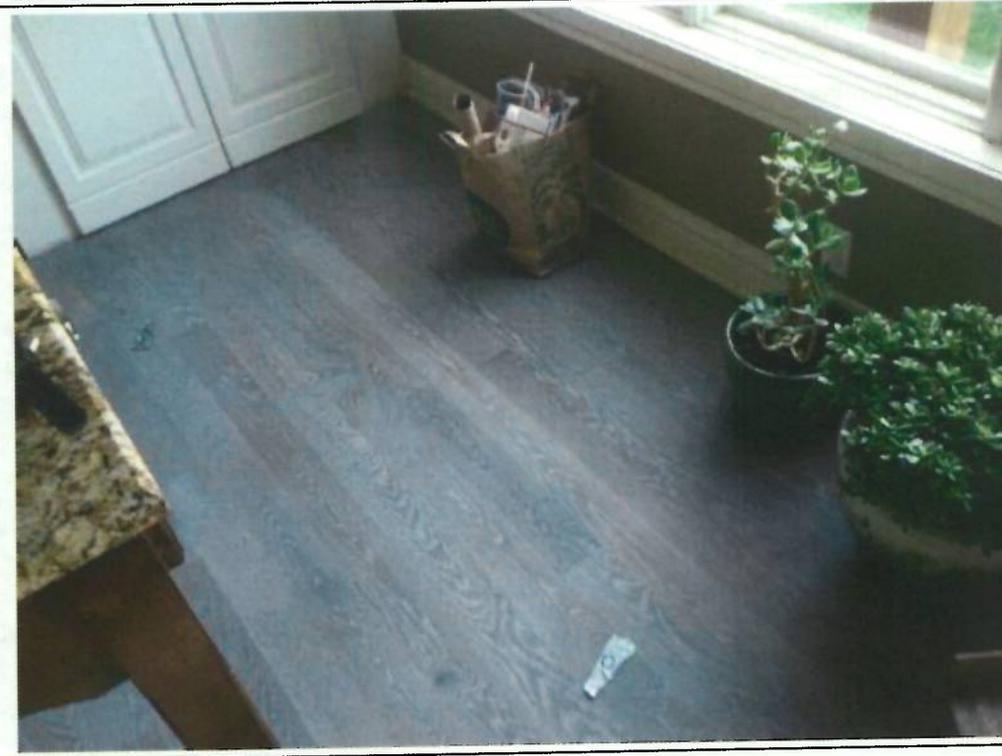


Project Name: Bear Hollow Mercury	Site Location: Park City, Summit County, UT	Project No. 001/1606-15
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Photo No. 21	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Kitchen area floor, initial spill location near floor vent in photo right. Duct tape labels on items indicate mercury readings (mg/m3).	



Photo No. 22	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Western-most floor area in kitchen. Duct tape labels on items indicate mercury readings (mg/m3).	



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No.
23 **Date:**
06/08/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Butler pantry off kitchen. Duct tape labels on items indicate mercury readings (mg/m3).



Photo No.
24 **Date:**
06/08/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Butler pantry off kitchen. Duct tape labels on items indicate mercury readings (mg/m3).



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No.
25

Date:
06/08/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Main entrance hall, front door. Duct tape labels on items indicate mercury readings (mg/m3).



Photo No.
26

Date:
06/08/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Stairway to upper floor from main floor sitting area. Duct tape labels on items indicate mercury readings (mg/m3).



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No. 27	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Sitting area fire place/hearth. Duct tape labels on items indicate mercury readings (mg/m3).	



Photo No. 28	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Grandfather clock. Pendulum weights visible on clock are the source of mercury related to the spill.	

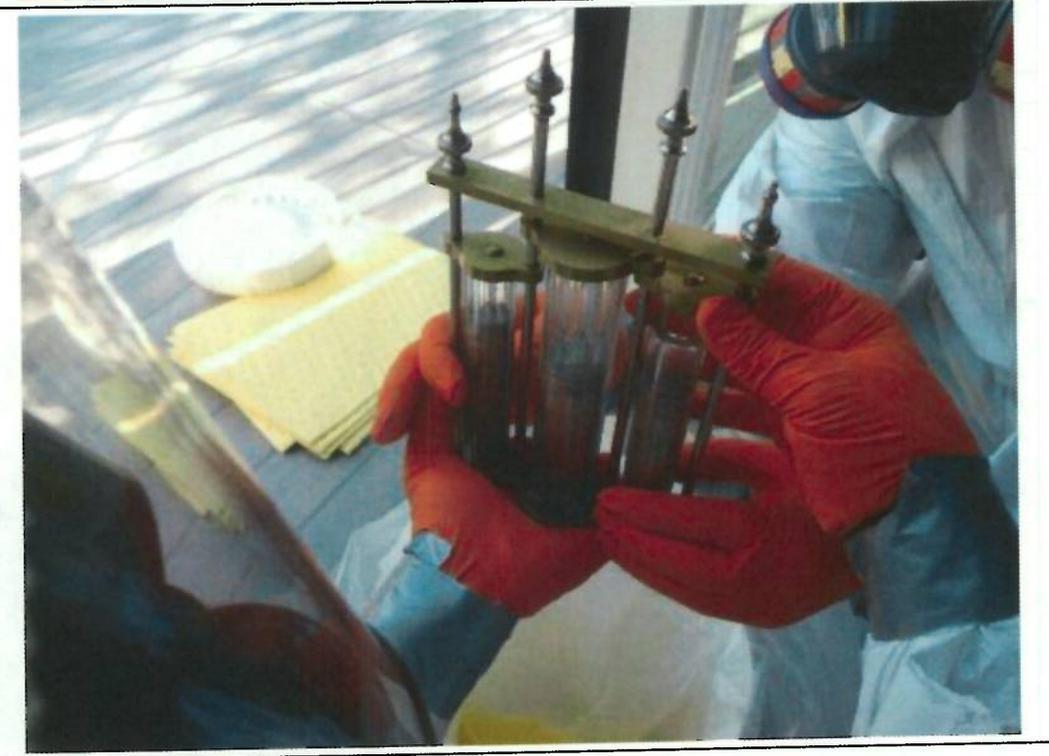


Project Name: Bear Hollow Mercury	Site Location: Park City, Summit County, UT	Project No. 001/1606-15
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Photo No. 29	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Grandfather clock. Pendulum weights on clock are the source of mercury related to the spill. Remaining mercury visible in the (antique) glass vials.	



Photo No. 30	Date: 06/08/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Pendulum weights removed from the grandfather clock. Approximately 2-3 cups of mercury removed from the weights for disposal.	



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No.
31

Date:
06/09/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Heating mercury-contaminated house items in the sun.



Photo No.
32

Date:
06/09/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Entry personnel, level C PPE.



Project Name: Bear Hollow Mercury	Site Location: Park City, Summit County, UT	Project No.: 001/1606-15
---	---	------------------------------------

Photo No. 33	Date: 06/09/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Heating mercury-contaminated house items in the sun.	



Photo No. 34	Date: 06/09/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Negative air machine exhausting air from House. Mercury vacuum in foreground.	



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No. 35	Date: 06/09/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Floor and counter areas where initial mercury spill occurred. Sprayer contains merc-x solution that aids in mercury treatment. Note the floor vent is removed, cleaned.	

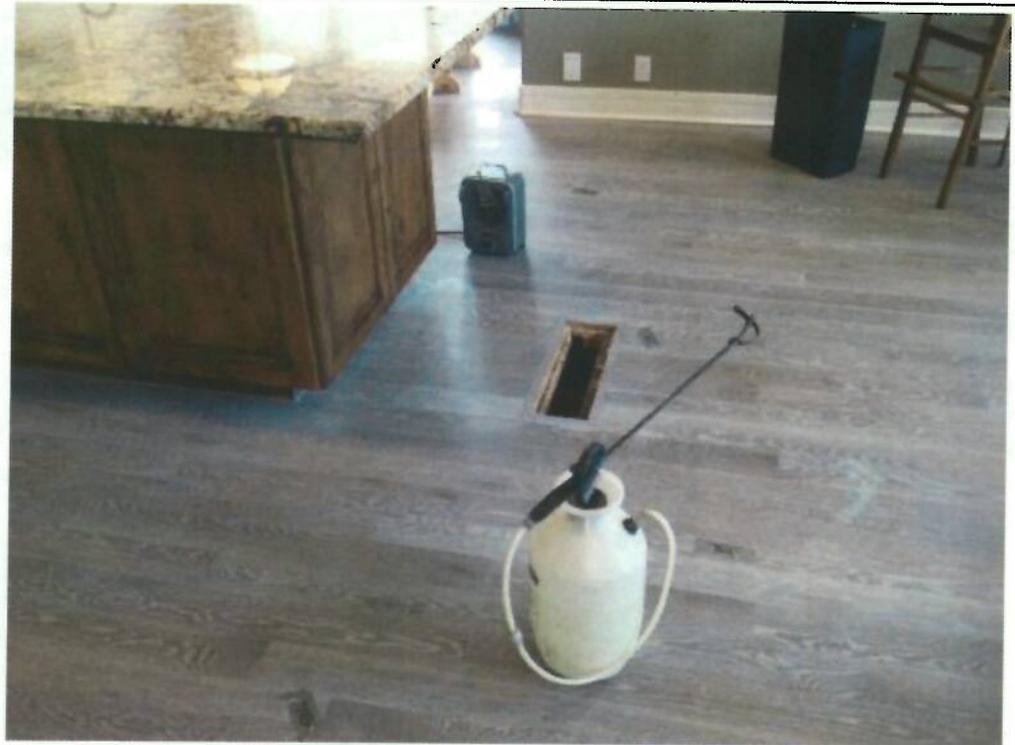


Photo No. 36	Date: 06/09/2016
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Kitchen sink showing drain piping (three sink drains).	



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No.
37

Date:
06/10/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Decontaminating grandfather clock pendulum apparatus.



Photo No.
38

Date:
06/10/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Mercury detection instruments used on site. Jerome instrument on left, Lumex instrument on right.



Project Name:
Bear Hollow Mercury

Site Location:
Park City, Summit County, UT

Project No.
001/1606-15

Photo No.
39

Date:
06/10/2016

Photo Coordinates

Lat

Long

Direction Photo Taken:

Description:

Seating area with kitchen area visible in background post mercury clean-up activities.





Weston Solutions, Inc.
1435 Garrison Street, Suite 100
Lakewood, Colorado 80215
303-729-6100 • Fax: 303-729-6101
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Attachment B

Logbook Notes

6-8-16 WEDNESDAY

0630 START CORDEL SCHMIDT AT WAREHOUSE TO OBTAIN EQUIPMENT TRAVEL IN SUBURBAN VEHICLE TO SITE. WEATHER CLEAR, DRY, SUNNY.

1655 ARRIVE AT SITE. PERS - J PETERSEN, CREW CHIEF STEVEN STROBY BRANDON FOLL

PETE STEVENSON ON SITE - DISCUSS SITE.

1730 C. SCHMIDT ENTER MAIN LEVEL OF HOUSE (3 LEVELS - 1 UP, 1 DOWN).

PRE-C. USE JEROME INSTRUMENT TO SURVEY THE KITCHEN, LIVING, DINING AREAS. RESULTS INCLUDED ON DIAGRAM PG 4, TABLE PG 5.

WEATHER ON SITE CLEAR, CALM, DRY. TEMP IN LOW 70°F.

PERS PLACE VISUALS ON ETC EXTERIOR DECK THAT WITH SLIDING DOOR OPENS ONTO, VACUUM INTERIOR, BAG CHAIRS, ETC AND MOVE TO DECK.

Schmidt

6-8-16 CONT

LOCAL FIRE DEPT - RAY HUNTER
UDEQ - NEIL TAYLOR
SUMMIT COUNTY HEALTH DPT - PHIL BONDURANT

ALL PRESENT AT SITE PRIOR TO START ARRIVAL

HOMEOWNERS NOT ON SITE.

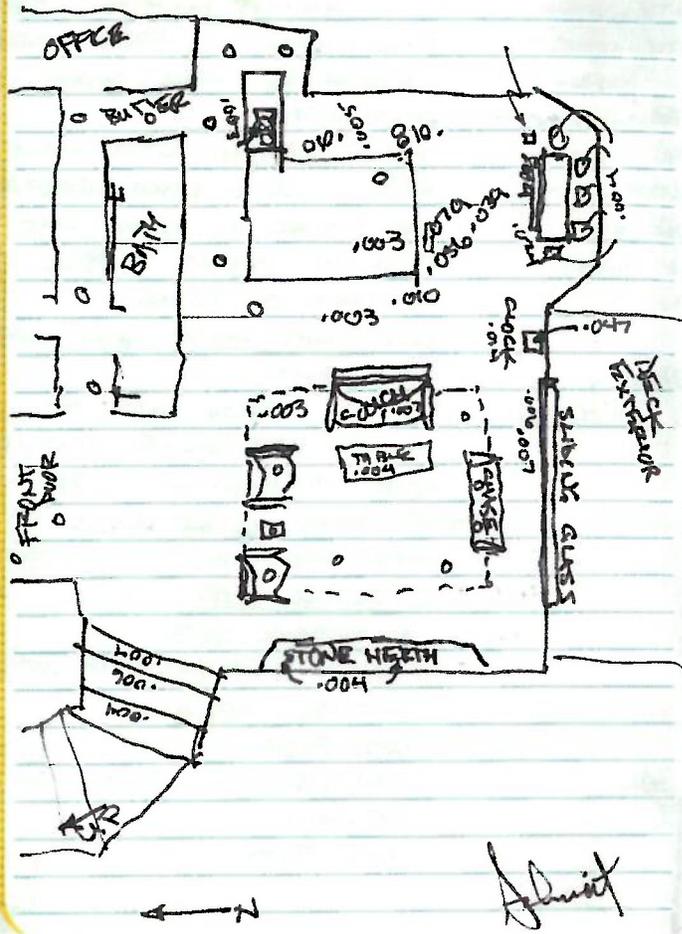
FIRE PLACED CAUTION TAPE AT HOUSE ENTRIES, DECORATED FAMILY AND DOG.

UDEQ SURVEYED MAIN FLOOR WITH LUMEX, HIGH READING 50,000 ng/m³ (THEIR LUMEX - NOT STARTS).

Foll

Peteresen

6-8-16 CONT



6-8-16 CONT.

INFORM (CS)
M²/M³

	INFORM (CS)
1730	
DOG PAD AT SLIDER	.006
LEATHER COUCH	.0061.007
COFFEE TABLE	.004
LIVING RUG	.003
CHASE LOUNGE	0
LIVING CHAIRS (2)	0
SAND STONE HEARTH	.004
STAIRS UP	.004 - .006
FRONT DOOR ENTRY	0
FRONT DOOR EXT STEPS	0
KITCHEN GRANITE (S) EDGE	.003
KIT FLOOR (S) SIDE GRANITE	.056
" " " "	.039
FLOOR VENT KIT FLOOR (S) GRANITE	.079
FLOOR AT CLOCK	.013-.014
DINING WOOD TABLE	.003
HIGH CHAIR SEAT	.011
5 UPHOLSTERED CHAIR AT DINING	.004
FLOOR AT DINING TABLE	.024
INSIDE CLOCK HOUSING	.047
BUTLER PANTRY	0
FLOOR AT SLIDER	.007
FLOOR VENT AT SLIDER	.004

1835 SCHMIDT EXT HOUSE.

Schmidt

6-8-16 CONT

2045 OWNER OF HOME AT SITE.

DISCUSS THERMOSTATS WITH
OSC STEVENSON.

2205 ALL PERSONNEL OFF SITE.

HEAT TO MAIN FLOOR IS ON,
SOME DOORWAYS SEALED WITH
VULCANITE TO HOLD HEAT ON
THAT LEVEL. CLEAR, CALM NIGHT.

DO NOT EXPECT ANY PRECIP.

2250 C. SCHMIDT PERFORMING

REGENERATION OF JEROME SENSOR,
CHECK OUT LUMEX INSTRUMENT.

C. Schmidt

6-9-16 THURSDAY

0730 C. SCHMIDT ON SITE. EPA -

PETE STEVENSON, ERRS CREW ON SITE
WEATHER IS CLEAR, SUNNY, DRY,
CALM WIND.

HOUSE HEATED LAST NIGHT TO
80°F. 2 OF 6 SPACE HEATERS THAT
WERE PLACED IN HOUSE LAST NIGHT
STILL ON. OTHERS TRIPPED THE
BREAKER ON HOUSE.

WILL VISIT HOUSE THEN SURVEY
WITH LUMEX.

DISCUSS SAFETY WITH ER.

PRIVATE RESIDENCE, TRIP/FALL.

NOTE ER WORKING IN PPE - C.

0805 CHECK LOWER LEVEL OF HOUSE
WITH SGRONZE.

BREATHING ZONE

AT GARAGE DOOR

COLUMN AREA (MULTIPLE HTS). 004

KITCHEN AREA .004

BATH ROOM .004

OFFICE .004

BED ROOM .004

2ND BATH .004

C. Schmidt

JEROME
mg/m³

6-9-16 CONT

0830 ER SET NEGATIVE AIR FAN ON MAIN LEVEL.

0847 OPEN HOUSE WINDOWS/DOORS TO OUTSIDE.

0903 SURVEY HOUSE WITH JEROME.

LOCATION/BREATHER ZONE (ppm) ng/m³

FRONT ENTRY 0

MAIN LIV 0

MAIN KIT 0

KIT MIDDLE DRAIN IN SINK .037

990⁷ - SMOKE NOT CLEARING. REGENERATE FILTRANT. RE-ZERO.

ER TO USE MERC-X IN DRAIN AS IT IS CONNECTED TO A GARBAGE DISPOSAL. THEREFORE AMALGAMATE AND WASH DOWN.

0932 LUMEX INSTRUMENT IS WARMED UP. BACKGROUND READING ≈ 0.250 ng/m³. INSTRUMENT CHARGED ALL NIGHT BUT THE "DISCHARGED BATTERY" LIGHT ON INSTRUMENT IS LIGHT. OTHERWISE APPEARS TO BE WORKING. CAL DUE 7/16. NOTE THAT ER REPORTED THE HOUSE TEMPERATURE LAST NIGHT TO BE 90°F.

Edmet

6-9-16 CONT

0934 ENTER HOUSE WITH LUMEX.

LOCATION (BZ) ng/m³

FRONT ENTRY 226

MAIN LIV 426

LOWER LEVEL STAIRS DOWN 397

LOW LEVEL BED 393

LOW BATH 2 169

LOW BATH 1 119

LOW KIT 78

LOW LIVING 136

LOW OFFICE 132

MAIN FLOOR STAIR UP 596

UPPER HALL 669

UPPER BED 475

UPPER BATH 534

* UPPER BATH SHOWER STALL 1234

UPPER HALL IN CLOSET - RIGHT 692

- LEFT 629

MAIN FLOOR DINING 361

MAIN KITCHEN ^{SOUTH SIDE} SIDE 516

* MAIN KIT SOUTH SIDE (PREV HOT ZONE) 1581

NEXT TO CUPB 1150

AT FRONT DOOR - RE CHECK 77

BUTLER PASTRY (STILL SEALED OFF) 3000

W05⁵ OUTSIDE IN DRIVEWAY 60

Edmet

6-9-16 CONT

1008 CHECK SMALL GARAGE WITH JEROME. 0 mg/m³

LARGE GARAGE = 0.003

INSIDE UPPER BAG OF DOUBLE BAGGED HOMEOWNERS CLOTHES WORN AT TIME

* OF SPILL, READING EXCEEDED JEROME LIMITS. SATURATED REGENERATE INSTRUMENT.

1132 JEROME REGENERATED TWICE.

APPEARS TO OPERATE PROPERLY.

ZERO = 0.

REENTER HOUSE TO CHECK HOT SPOTS WITH JEROME.

* KIT SINK DISPOSAL DRAIN (MIDDLE) ^{JEROME} .353 mg

FLOOR SPILL AREA IN KIT 0

CLOCK INTERIOR 0

FLOOR VENT AT SPILL AREA 0

GRANITE COUNTER AT SPILL AREA 0

NOTE INSTRUMENT DID CLEAR BACK TO

0 AFTER KITCHEN DRAIN HIT.

CLOTH DIPPING CHAIRS THAT WERE

BAGGED AND IN SUN OUTSIDE:

CHAIR 1 = .032 mg

2 = .033

3 = .033

4 = .153

5 = .025

} NOTE JEROME CLEARED TO AFTER EACH READING. (02)

(02)

6-9-16 CONT

LEATHER COUCH CUSHION = .136 mg

1202 CHILDRENS NURSERY BATH 0

NURSERY BATH DRAIN 0

NURSERY CRIBS 0

NURSERY CHANGING TABLE 0

MASTER BED 0

MASTER SHOWER STALL 0

* MASTER SHOWER DRAIN .026

LARGE GARAGE 0

CLOTHES WASHING 0

CLOTHES DRYER 0

KITCHEN SINK LEFT .011

KITCHEN SINK RIGHT 0

- NOTE THAT THE GARBAGE (MIDDLE)

DISPOSAL DRAIN AND LEFT SINK

DRAIN ARE CONNECTED ABOVE APT

P-TRAP.

1240 START OFF SITE - LUNCH

1334 ON SITE. BABY HIGH CHAIR

TO BE PLACED IN SUN, CLEANED.

ER TO TAKE MERCURY FROM SITE

AND DISPOSE. ER TO SAMPLE AS

APPROPRIATE.

Adrian

6-9-16 CONT

1345 IN HEAT CYCLE 2.

- 1) FER TAKE HQ, CLEAN VIALS FOR CYCLE AND GIVE TO HOMEOWNER.
- 2) AFTER HEAT CYCLE START TO OBTAIN BZ SAMPLES (~1400) TO CHECK DRAINS TOO. TRASH CAN, BATH CHAIR, ETC.
- 3) OPEN HOUSE/VENTILATE.
- HEAT CYCLE 3 OVER NIGHT.
- 4) START CHECK HOUSE AGAIN IN MORNING.

0441 ASADR CONFERENCE CALL

OSC - STRAINSON

CHRIS DELAY, ASADR ATSR

MICHELLE WATERS

HOME OWNERS: RYAN WALSH, LINDSAY C. SCHMIDT, STARR

1508 NELL TAYLOR UDEQ

MELISSA OTTLEY

PHIL BONDURANT, SUMMIT COUNTY H.

ON SITE. BRIEFED BY OSC - STRAINSON

1538 HOMEOWNERS RETURN TO SITE

TO BE SCREENED WITH LUMEX.

1553 BOTH PARENTS, 2 CHILDREN,

NAPPY, 2 DOGS. ALL BACKGROUND.

Adapt

6-9-16 CONT

0555 C. SCHMIDT ENTER HOUSE TO SCREEN FOR MERCURY. HEAT OFF, NOT VENTED.

FEROUME:

ALL HOUSE BZ = 0 EXCEPT:

MAIN NURSERY .005 mg/m³

MAIN OFFICE .004

MASTER STAIR DRAIN .013

KIT MID PUMP (OVERPAGE DSP) .083

(LEFT SIDE DRAIN

1616 SCREEN WITH LUMEX (HOUSE VENTED)

MAIN ENTRY	69 ng
LV	263
DINING	340
KITCHEN	597
OFFICE	600
NURSERY	316
NURSERY BATH	115
NURSERY LOFT	617
BATH	548
STAIRS UP TO MASTER	817
MASTER BED	459
CLOSET R	514
BATH	316
SHOWER	236

6-9-16 CONT.

STAIRS TO LOWER	129
LOWER BED	186
BATH 1	115
BATH 2	79
OFFICE	119
LIVING	556
KITCHEN	197
1631 OUTSIDE BACKYARD	113
1656 SPRING TRAMPOLINE =	0
LEATHER SOFA CUSHION =	.006
BABY HIGH CHAIR (IN BAG) - SATURATE	
REGENERATE JEROME.	

17:5 HOUSE SEALED, HEAT ON.
 MERC-X AGAIN PLACED INTO
 SHOWER DRAIN (UP STAIR) AND
 GARBAGE DISPOSAL. WILL HEAT
 HOUSE ALL NIGHT, CHECK IN
 MORNING.

1735 EPA, ER OFF SITE.
 1740 START OFF SITE.

Almet

6-10-16 FRIDAY

0730 @ 0800 START C. SCHMIDT ON SITE.
 ER, EPA ON SITE.
 ER OPENING HOUSE TO VENT.
 START TO SCREEN BREATHING ZONE
 AFTER VENT APPROX 1/2 HOUR.
 SAFETY MEET WITH ER. HEAT STRESS
 WEATHER MOSTLY SUNNY, DRY,
 CLEAR, TEMP CURRENTLY 64°F,
 EXPECT 80°F.

0840 THERMISTAT READING INSIDE HOUSE
 REPORTED BY ER TO BE 98°F.
 ER ENTRIES IN PAGE C.

0850 NOTE THAT THE JEROME IS
 RE-ZEROED AFTER EACH READEN.
 ALSO LUMEX RESPONSES ARE
 APPROPRIATE FOR BACKGROUND
 VERSUS CONTAM READINGS, I.E.
 THE INSTRUMENT APPEARS TO
 RESPONDING CORRECTLY. JEROME (20)

1656 BAGGED TRASH CAN = .024 mg/m³
 BAGGED LEATHER CUSHION = .039
 HIGH CHAIR BAGGED = .066
 BAGGED UPHOLSTERED TABLE CHAIRS
 .006 - .014 (5 CHAIRS)

Almet

6-10-16 CONT

0940 HOUSE VENTED VIA OPEN
DOORS, WINDOWS, NEG AIR VAC.
PERFORM SURVEY WHOLE HOUSE
WITH LUMEX, ng/m^3 . BKGD 20-317

MAIN ENTRY	425
LIV	457
DIN	54
KIT	41
OFFICE	140
NURSEY	257
URS BATH	320
NURS LOFC	242
BATH	295
STAIR TO MASTER	57 261
MASTER BED	43
CLOSET R.	24
BATH	52
SHOWER	45
STAIR TO LOWER	51
LOWER BED	19
BATH 1	31
BATH 2	16
OFFICE	17
LIV	52
KIT	42
LAUNDRY	21

6-10-16 CONT.

0950 EXIT HOUSE, RECHECK
BACKGROUND = 6-62,
1002 CHECK MASTER SHOWER DRAIN
WITH JEROME = 0
KIT CARBONATE DISPOSAL (TSPAWN) = .005
LEFT SIDE SINK = .003

1027 NOTE THAT, UPON RESEARCH, IT
WAS OBSERVED THAT AMMONIA
CAN REACT WITH THE JEROME
INSTRUMENT FILTER TO CREATE
AMMONIA ACIDS THAT DO INTERFERE
WITH THE JEROME READINGS TO
INDICATE A FALSE HIGH READING.
EVEN THOUGH JEROME READINGS
OF THE LEATHER COUCH RANGE FROM
.000 TO .007 mg/m^3 THE LUMEX
INDICATES BACKGROUND READINGS.
THEREFORE THE LEATHER COUCH
WILL REMAIN AT HOME.

1036 BAG TEST OF (CLEANED) GLASS ^{METAL FRAME -} ~~CS~~
^{BRASS/ALUMINUM} ~~CS~~ FROM THE PENDULUM THAT
HELD MERCURY, ALSO A CORK ^{CS}
SEALS IN BAG = .120 mg/m^3 JEROME
BAG TEST (CLEAN) GLASS VIALS = .196

Abundant

6-10-16 CONT

Q110	RESPONSE	LUMEX
AMPHANGE DIST	.004	424
LEFT SINK	.007 / .004	20-428
BLAD	0	8-200
GLASS VIAL	.014	2000 +
METAL FRAME	.243 -DTC CS	3000 +

RE-WASH GLASS VIALS, METAL FRAME WITH MERC-X, PLACE IN SUB TO DRY/HEAT.

1150 RESIDENTS RYAN AND LINDSAY WASH TOUR HOME WITH OSC. STEVENSON, FER HAS REMOVED ALL EQUIPMENT, MATERIALS FROM HOME. REPLACED FURNITURE,

1200 CHECK WITH LUMEX:

- GLASS VIALS ~~6000~~ 47,000 +
- METAL FRAME 1200
- BACKGROUND 6-98

1210 REMOVED FROM HOME:

- 8 UPHOL CHAIRS
- DOG BED
- DOOR MAT (BACK DOOR)
- CLOTHES - ALL FAMILY (FIRE DPT RUST) OR HEALTH DPT.
- RUG ~ 8 X 10

VACUUM (FIRE DPT F-851) OR HEALTH DPT.

6-10-16 CONT

MERCURY CLEANING MATERIALS
INITIAL TRASH CAN ROCK-AWAY
BABY HIGH CHAIR
APPROX 2-3 CUPS MERCURY
1217 ER AND START RELEASED
FROM SITE BY OSC. STEVENSON.
2400 - MIDNIGHT ARRIVE DENVER.

[Handwritten signature]