



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

September 18, 2017

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

Re: Big 7 Mine – Draft Letter Report
Neihart, Cascade, Montana
TDD: 1708-01
DCN: W0514.1A.01407
WO#: 20408.012.001.0514.00

Dear Ms. Dhieux

The United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc., (WESTON®) Superfund Technical Assessment and Response Team (START) under Technical Direction Document (TDD) 0001/1708-01 to support U.S. EPA's emergency response at the Big 7 Mine site (the Site) in Neihart, Cascade, Montana. The emergency response was initiated to determine whether there existed immediate threats to human health and the environment due to unknown chemicals on the Site.

SITE DESCRIPTION

The Site (46.948667° north and -110.705691° west) is located at an abandoned mine, located approximately 3 miles from the town of Neihart, Cascade County, Montana. The site is approximately 4.56 acres of land, and is surrounded by National Forest land (Attachment A, Figure 1). There are 16 buildings onsite that include an assay lab, mill, and a maintenance building. Items of concern inventoried during the walk-through include chemical containers, drums, and carboys. These items were found stored in the buildings, and in outdoor spaces throughout the Site.

BACKGROUND

The Neihart area was a major Silver producing mine between 1882 and 1929. Silver mining increased due to construction of the Great Falls Smelter, and the Belt Mountain branch of the Great Northern Railroad in 1981.

According to a 2012 Tetra Tech Sampling and Analysis Plan, typical hazards such as open and collapsed adits, mine shafts, mine chemicals, and electrical transformers were noted at the Site.

This document was prepared by Weston Solutions, Inc., expressly for U.S. EPA. It shall not be released or disclosed in whole or in part without the express, written permission of U.S. EPA.



Ms. Dhieux
U.S. EPA

-2-

Big 7 Mine
September 18, 2017

{Carpenter-Snow Creek Mining District NPL Site Supplemental Studies for the Remedial Investigation: Cascade County, Montana (Tetra Tech, 2013)}.

The assay lab was identified in the previous study (above) as having a number of unknown laboratory and other containers. The U.S. EPA conducted an initial site investigation of the assay lab, photo documenting approximately 20 containers with little labeling or other information to indicate what contents may be inside. The photographs indicate the containers contained liquids, dry (apparently) solids, and dried, crystallized material in a number of containers.

There are several other buildings on the site that had not been reconned. START was tasked with conducting a basic recon and inventory of the buildings to identify unknown containers and other potentially hazardous materials. START was not tasked with conducting intrusive work in the additional buildings.

EMERGENCY RESPONSE ACTIVITIES

On August 17, 2017, U.S. EPA On-Scene Coordinators Craig Myers and Craig Giggelman, and START members Eric Sandusky and Joe Rudi mobilized to the site to perform a rapid assessment of the site. Prior to entering the site, the land owner signed an access agreement allowing U.S. EPA and its contractors to access the Site, and conduct the necessary site assessment activities. The rapid assessment included air monitoring for hazardous gases and vapors, a radiation survey of the site, and a rough inventory of the number and condition of chemicals and containers onsite.

Air monitoring was conducted for volatile organic compounds (VOCs), carbon monoxide (CO), hydrogen sulfide (H₂S), lower explosive limit (LEL), oxygen (O₂), and gamma radiation. The results of air monitoring indicated no concentrations of hazardous gasses or vapors exceeding background concentrations. LEL and O₂ concentrations were within ranges for safe entry into the building with Level D personal protective equipment (PPE), and gamma radiation was not detected exceeding background levels.

START then conducted a rapid inventory of containers on-site. START conducted a visual assessment of each of the 16 structures within the site that were determined to possibly contain chemical containers. Within each structure, a rough count of the number of containers, their contents, and their estimated size was collected. An assessment was also made of the general condition of each container. Photographs were taken of each area, and the containers within. Photographs were also taken of any observed container labeling. OSC Giggelman and START observed 48 containers onsite, with container sizes ranging from approximately 250 milliliters to 55 gallons in volume. No hazard labels were initially observed. A photograph log is included as Attachment B, and the inventory of containers onsite is included as Attachment C.



Ms. Dhieux
U.S. EPA

Big 7 Mine
September 18, 2017

START sampled 43 unknown chemical containers in level B PPE. Four containers that were not sampled were deemed unsafe to open by START due to crystallization of the contents, or partial labels indicating the potential presence of reactive material. START sampled one of two containers of fire retardant “Chemical A”, used to recharge fire extinguishers that were found in their original containers. The table below shows the hazardous results of the 43 samples that were HazClassed by START. All results can be found in Attachment D.

Sample ID	Solubility	pH	Oxidizer	Cyanide	Sulfide	Flamibility	Chlorinated	Volume ¹
B7-08	Yes	3	No	N/A	N/A	No	No	500 mL
B7-09	Yes	0	No	N/A	N/A	No	Yes	1 L
B7-10	Yes	0	No	N/A	N/A	No	No	500 mL
B7-11	No	3	N/A	N/A	N/A	No	No	250 mL
B7-14	Yes	0	No	N/A	N/A	No	Yes	500 mL
B7-15	Yes	0	No	N/A	N/A	No	Yes	250 mL
B7-17	Yes	0	No	N/A	N/A	No	No	500 mL
B7-24	Yes	12	No	No	No	No	No	250 mL
B7-27	Yes	0	Yes	N/A	N/A	No	Yes	500 mL
B7-28	Yes	0	Yes	N/A	N/A	No	No	250 mL
B7-29	Yes	0	No	N/A	N/A	No	No	500 mL
B7-30	Yes	2	No	N/A	N/A	No	No	500 mL
B7-33	Yes	3	No	N/A	N/A	No	No	500 mL
B7-35	Yes	0	Yes	N/A	N/A	No	Yes	1 L
B7-36	Yes	10	No	No	No	No	Yes	500 mL
B7-40	No	4	N/A	N/A	N/A	No	Yes	1 L
B7-42	Yes	3	No	N/A	N/A	No	No	100 mL

¹- volumes are approximate

Prior to departing the site, the assay lab was wrapped in “Danger” tape, and START collected samples from one transformer. START also collected samples from one transformer and two pieces of machinery located at Moulten Yellow Jacket (MYJ) mine. The Moulten Yellow Jacket mine is located approximately 4 miles from the Big 7 mine, and 1 mile from Niehart, Cascade County, Montana. Oil samples were transported back to Denver, and run for PCBs using Chlor-N-Oil tests. Below are the results of the Chlor-N-Oil tests.

	MYJ Transformer	MYJ Machine 1	MYJ Machine 2
Result	>20 ppm	<20 ppm	<20 ppm

EPA and START demobilized from the site on August 18, 2017, at approximately 1800 hours.



Ms. Dhieux
U.S. EPA

-4-

Big 7 Mine
September 18, 2017

CONCLUSIONS

As a result of this rapid assessment, an estimate of the number, and contents of potential hazardous materials stored at the Big 7 Mine and the Moulten Yellow Jacket Mine Sites has been generated, and the overall condition of the site has been documented.

The preparation of this draft letter report precedes a final report to include the sample analytical data when they are available. The final report will be the final TDD deliverable, per the request of OSC Dhieux. If there are any questions or comments regarding this report, please do not hesitate to contact me at eric.sandusky@westonsolutions.com or 303-729-6132

Very truly yours,

WESTON SOLUTIONS, INC.

A handwritten signature in black ink, appearing to read "Eric Sandusky".

Eric Sandusky
START Project Leader



Ms. Dhieux
U.S. EPA

-5-

Big 7 Mine
September 18, 2017

Attachment:
A- Figures
B- Photo Log
C- HazClass Results

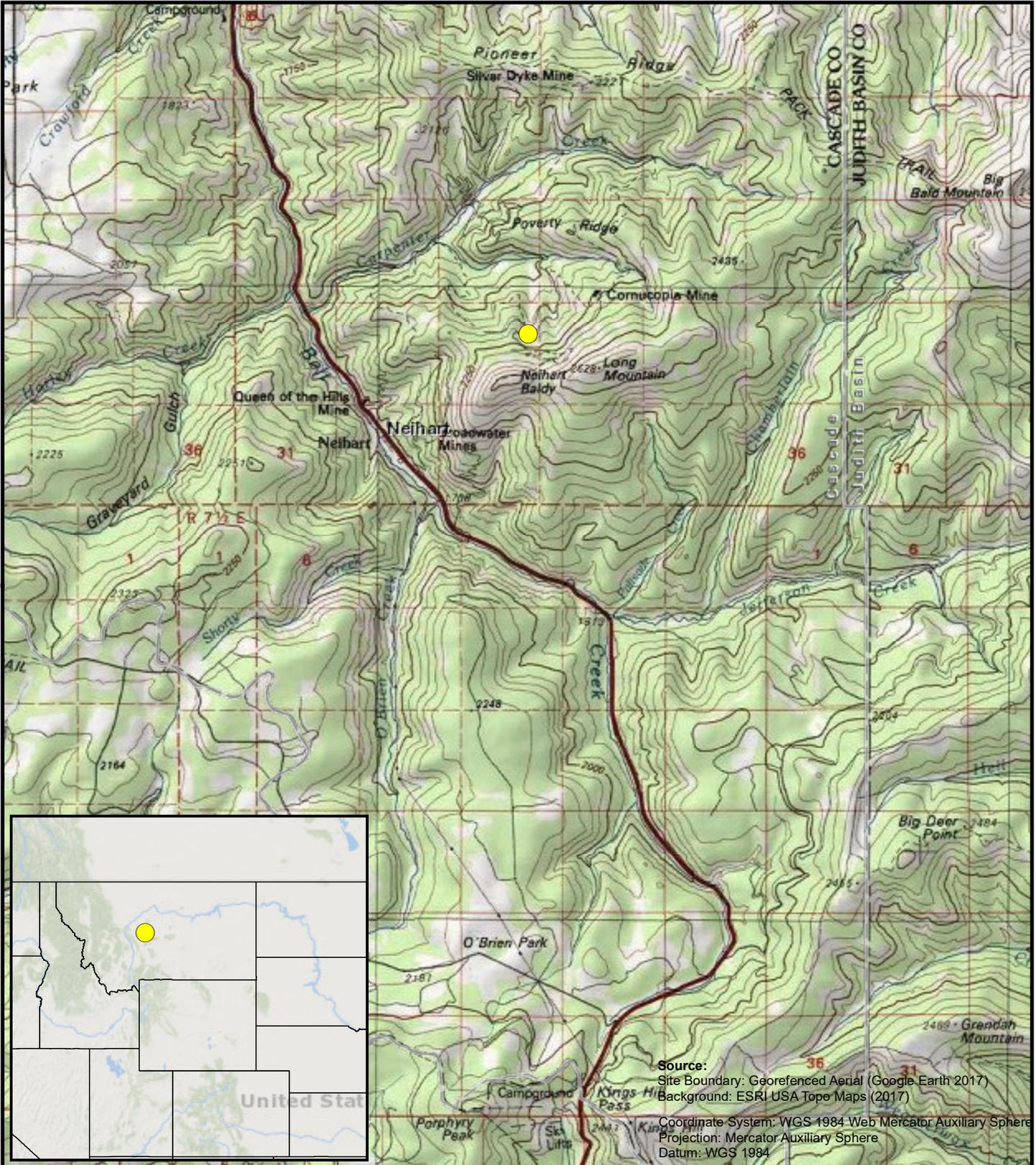
cc: Robert Reed, Project Manager
START DCN File



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

Attachment A

Figures



Legend:

 Site Location

Prepared for:
U.S. EPA - Region 8



Contract: EP-S8-13-01
TO/TDD: 0001/1708-01

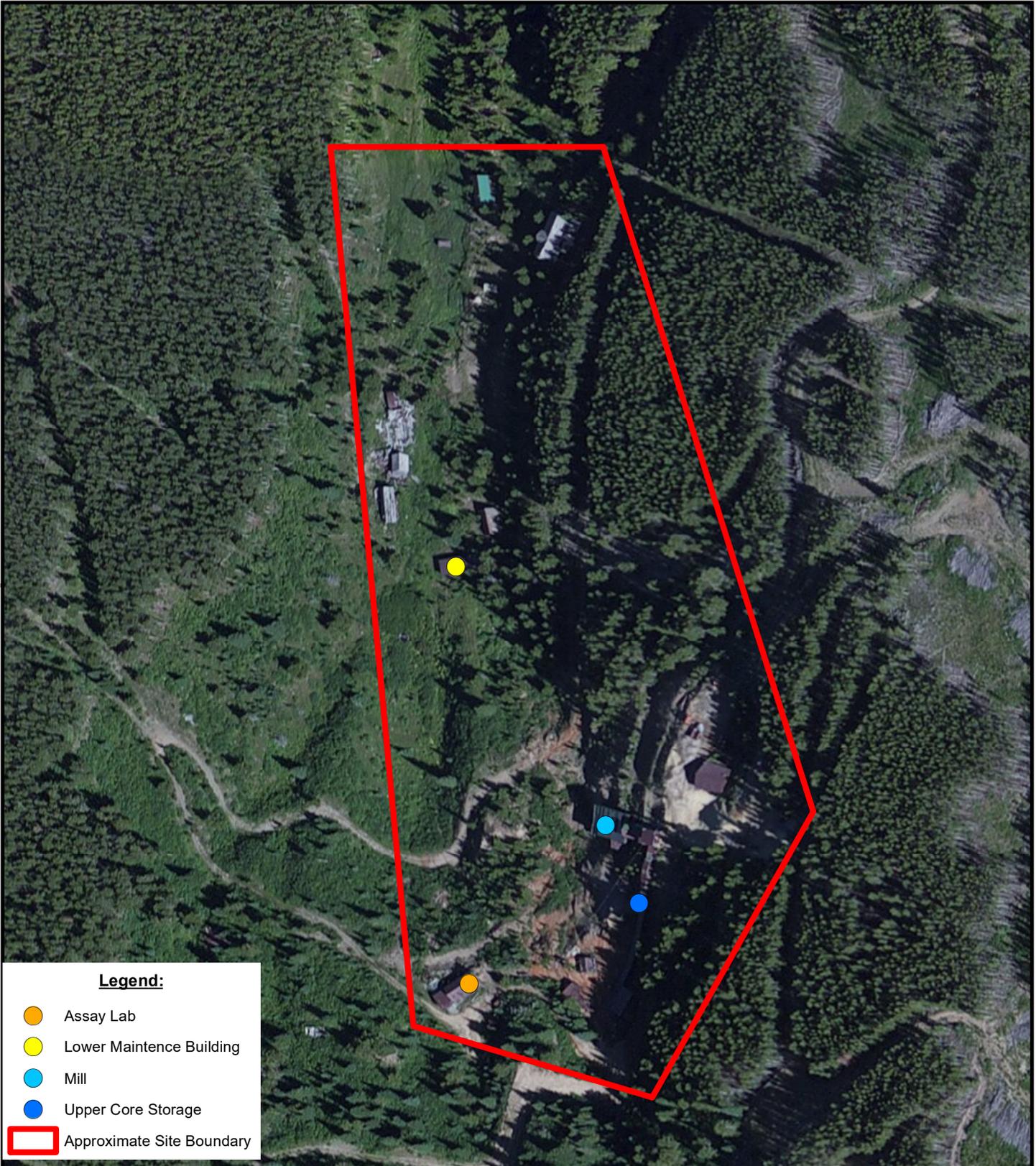
Prepared By:
Weston Solutions, Inc.
START IV
Suite 100
1435 Garrison St.
Lakewood, CO



**FIGURE 1
SITE LOCATION MAP
BIG 7 MINE
NEIHART, CASCADE COUNTY,
MONTANA**

Date: 8/23/2017





Legend:

-  Assay Lab
-  Lower Maintenance Building
-  Mill
-  Upper Core Storage
-  Approximate Site Boundary

Source:

Site Boundary: Georeferenced Aerial (Google Earth 2017)
Background: ESRI World Imagery (2017)

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere
Datum: WGS 1984

Prepared for:
U.S. EPA - Region 8



Contract: EP-S8-13-01
TO/TDD: 0001/1708-01

Prepared By:
Weston Solutions, Inc.
START IV
Suite 100
1435 Garrison St.
Lakewood, CO



**FIGURE 2
SITE VICINITY MAP
BIG 7 MINE
NEIHART, CASCADE COUNTY,
MONTANA**

Date: 8/23/2017





Legend:



Approximate Site Boundary

Source:

Site Boundary: Georeferenced Aerial (Google Earth 2017)
Background: ESRI World Imagery (2017)

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere
Datum: WGS 1984

Prepared for:
U.S. EPA - Region 8



Contract: EP-S8-13-01
TO/TDD: 0001/1708-01

Prepared By:
Weston Solutions, Inc.
START IV
Suite 100
1435 Garrison St.
Lakewood, CO



**FIGURE 3
SITE VICINITY MAP
MOULTEN YELLOW JACKET
NEIHART, CASCADE COUNTY,
MONTANA**

Date: 8/24/2017

0 70 140 280 Feet





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

Attachment B

Photo Log

Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 1	Date: 8/17/2017
------------------------------	---------------------------

Direction Photo Taken: South
--

Description: Lower Maintenance Building



Photo No. 2	Date:
------------------------------	--------------

Direction Photo Taken: Down

Description: Chemical "A" used to refill the inner container of a fire extinguisher. Found inside the Lower Maintenance Building.



Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 3	Date:
Direction Photo Taken: Northwest	
Description: Transformer #1. Hazclass results indicated water, and no PCB test was run.	



Photo No. 4	Date:
Direction Photo Taken: Down	
Description: Transformer #2. Empty, no oil was tested for PCBs.	



Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 5	Date:
Direction Photo Taken: Southwest	
Description: Transformer #3. Was not sampled due to potential spillage of PCB contaminated oil.	



Photo No. 6	Date:
Direction Photo Taken: Southeast	
Description: Upper Core house.	



Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No.: 20408.012.001.0514.00
------------------------------------	---	--

Photo No. 7	Date:
Direction Photo Taken: Down	
Description: Nitric Acid and glue found in the upper core house.	



Photo No. 8	Date:
Direction Photo Taken: Down	
Description: Starting fluids found in the guard house. White containers are approximately 1/2 full of rain water.	



Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 9	Date:
Direction Photo Taken: Northeast	
Description: Historic Mill	



Photo No. 10	Date:
Direction Photo Taken: Northeast	
Description: Two carboys found within the Mill.	



Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 11	Date:
Direction Photo Taken: Down	

Description:

55 gallon drums found within the Mill. Only the red drum contained any materials.

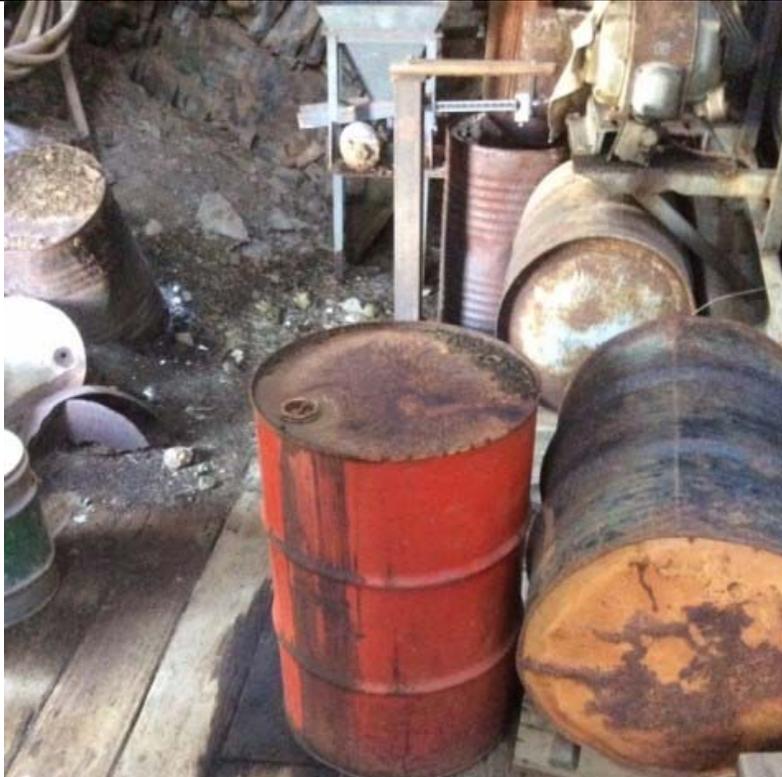


Photo No. 12	Date:
Direction Photo Taken: West	

Description:

Chemical Assay lab.



Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 13	Date:
Direction Photo Taken: Northeast	
Description: Inside the Assay labs main room.	

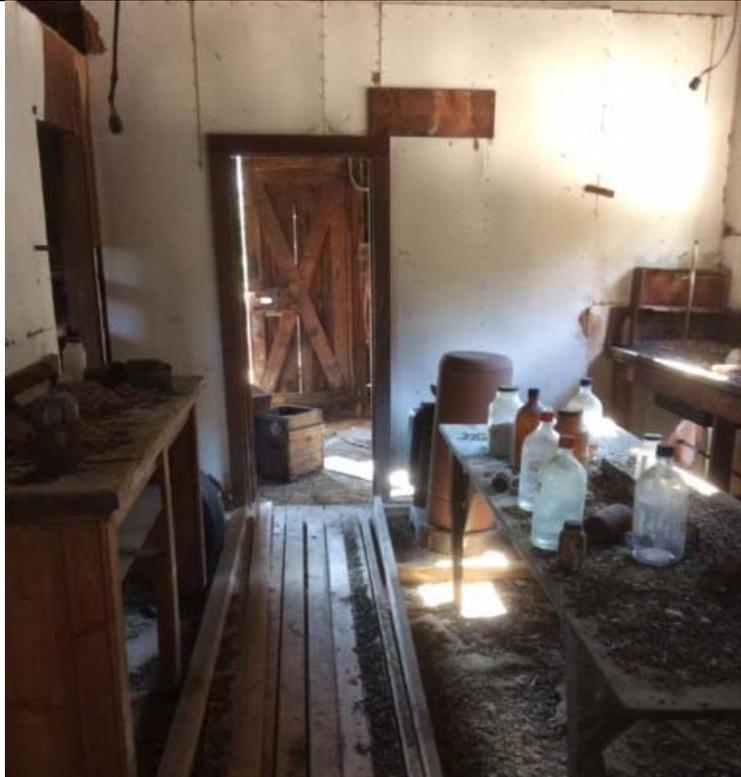


Photo No. 14	Date:
Direction Photo Taken: Down	
Description: Inside the Assay labs main room. Various unknown chemicals on a lab bench.	



Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No.: 20408.012.001.0514.00
------------------------------------	---	--

Photo No. 15	Date:	
Direction Photo Taken: Down		
Description: Inside the Assay labs main room. Various unknown chemicals on a lab bench.		

Photo No. 16	Date:	
Direction Photo Taken: Down		
Description: Inside the Assay lab storage closet. Various unknown chemicals on the shelf.		

Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 17	Date:	
Direction Photo Taken: Down		
Description: Inside the Assay labs front room. Various unknown chemicals in a crate on ground.		

Photo No. 18	Date:	
Direction Photo Taken: Down		
Description: Inside the Assay labs front room. Various unknown chemicals on the ground.		

Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 19	Date:	
Direction Photo Taken: Down		
Description: Inside the Assay labs front room. Unknown chemical on a work bench.		

Photo No. 20	Date:	
Direction Photo Taken: Down		
Description: Outside the Assay labs front room. Various unknown chemicals on the ground.		

Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 21	Date:
Direction Photo Taken: North	
Description: "Danger" tape around the Assay lab. Showing site conditions when EPA, START and ERRS departs the site.	



Photo No. 22	Date:
Direction Photo Taken: Southwest	
Description: "Danger" tape around the Assay lab. Showing site conditions when EPA, START and ERRS departs the site.	



Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 23	Date:
Direction Photo Taken:	
Description: "Danger" tape inside the Assay lab, and around the potentially explosive materials. Showing site conditions when EPA, START and ERRS departs the site.	



Photo No. 24	Date:
Direction Photo Taken: Northwest	
Description: Potentially explosive materials. Two ~ 250 mL "Sol. In Ether" bottles. Two ~ 250 mL bottles of unknowns containing large crystals in and around the threads on the bottles.	



Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 25	Date:
Direction Photo Taken: Northeast	
Description: Three transformers located on the outside of a machine room at the Moulten Yellow Jacket Mine. Chlor-N-Oil test from Transformer #1 (far left) confirms PCBs above 20 ppm.	



Photo No. 26	Date:
Direction Photo Taken: Northeast	
Description: Copper grounding wire holding up transformer #3. Transformer #2 is on the left of the photo, Transformer #3 is on the right.	



Project Name: Big 7 Mine	Site Location: Neihart, Cascade County, Montana	Project No. 20408.012.001.0514.00
------------------------------------	---	---

Photo No. 27	Date:	
Direction Photo Taken: Northwest		
Description: Transformer #3 located on the outside of a machine room at the Moulten Yellow Jacket Mine. Cribbing under transformer is completely rotten. The transformer is held in place by a copper grounding wire attached to transformer #2.		



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

Attachment C

HazClass Results

Sample ID	Matrix	Solubility	pH	Oxidizer	Cyanide	Sulfide	Flamibility	Chlorinated
B7-01	Liquid	No	7	N/A	N/A	N/A	No	No
B7-02	Liquid	No	4	N/A	N/A	N/A	No	No
B7-03	Liquid	No	5	N/A	N/A	N/A	No	No
B7-04		Yes	5	No	N/A	N/A	No	No
B7-05		No	6	N/A	N/A	N/A	No	No
B7-06		No	5	N/A	N/A	N/A	No	No
B7-07		No	5	N/A	N/A	N/A	No	No
B7-08	Liquid	Yes	3	No	N/A	N/A	No	No
B7-09	Liquid	Yes	0	No	N/A	N/A	No	Yes
B7-10	Liquid	Yes	0	No	N/A	N/A	No	No
B7-11	Solid	No	3	N/A	N/A	N/A	No	No
B7-12		Yes	6	No	N/A	N/A	No	No
B7-13		Yes	5	No	N/A	N/A	No	No
B7-14		Yes	0	No	N/A	N/A	No	Yes
B7-15		Yes	0	No	N/A	N/A	No	Yes
B7-16	Solid	No	5	N/A	N/A	N/A	No	No
B7-17		Yes	0	No	N/A	N/A	No	No
B7-18	Solid	No	6	N/A	N/A	N/A	No	No
B7-19	Solid	No	5	N/A	N/A	N/A	No	No
B7-20		No	6	N/A	N/A	N/A	No	No
B7-21	Solid	Yes	5	No	N/A	N/A	No	No
B7-22	Not sampled.							
B7-23		No	6	N/A	N/A	N/A	No	No
B7-24		Yes	12	No	No	No	No	No
B7-25	Solid	No	5	N/A	N/A	N/A	No	No
B7-26		No	5	N/A	N/A	N/A	No	No
B7-27	Liquid	Yes	0	Yes	N/A	N/A	No	Yes
B7-28	Liquid	Yes	0	Yes	N/A	N/A	No	No
B7-29	Liquid	Yes	0	No	N/A	N/A	No	No
B7-30		Yes	2	No	N/A	N/A	No	No
B7-31		Yes	5	No	N/A	N/A	No	No
B7-32	Liquid	Yes	4	No	N/A	N/A	No	No
B7-33	Liquid	Yes	3	No	N/A	N/A	No	No
B7-34		Yes	5	No	N/A	N/A	No	No
B7-35	Liquid	Yes	0	Yes	N/A	N/A	No	Yes
B7-36		Yes	10	No	No	No	No	Yes
B7-37		Yes	7	No	N/A	N/A	No	No
B7-38		Yes	4	No	N/A	N/A	No	No
B7-39		Yes	5	No	N/A	N/A	No	No
B7-40		No	4	N/A	N/A	N/A	No	Yes
B7-41	Liquid	No	5	N/A	N/A	N/A	No	No
B7-42		Yes	3	No	N/A	N/A	No	No
B7-43 Fire Retardent		No	4	No	N/A	N/A	No	No
B7-44 Glue		No	7	No	N/A	N/A	No	No

The transformer at the big 7 mine appeared to be all water during the hazclass analysis. From what we could sample, it was one phase and was soluble in water, therefore we did not analyze it for pcbs. The transformers outside of the Moulten Yellow Jacket mine have greater than 20 ppm of pcbs, and both of the samples collected from inside the building are negative for pcbs.

Let me know if you need anything else from me. The report will be ready shortly.

	MYJ Transformer	MYJ Machine 1	MYJ Machine 2
Result	>20 ppm	>20 ppm	>20 ppm