REMEDIAL ACTION REPORT

Phase 3

Bonner Mill Cooling Pond and Vicinity

Bonner, Montana

Submitted to:

Montana Department of Environmental Quality

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APPENDICES (copies on attached CD; no hardcopies attached)**:**

Appendix A Work Basis Documents:

- Administrative Order on Consent
- Work Plan and SAP
- Interim Action Memo
- Interim Action Memo Amendment
- Work Plan Addendum 1
- Pump House Amendment
- Road and Stockpile Amendment

Appendix B MW-15 Area Removal Action Report

(The MW-15 hydrocarbon removal action was conducted under the Petroleum Response Section, rather than under EPAs TSCA for PCBs)

Appendix C Photographs (selected hardcopies are attached; the full set is on the attached CD)

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1.0 INTRODUCTION

This document conveys the completed results of implementing the approved Phase 3 of the site remedial action pursuant to the "Addendum 1 to Final Cooling Pond Removal Work Plan Phase 3 Removal Activities", Envirocon, November 13, 2013, (Work Plan Addendum 1). During the course of the Phase 3 remedial action work, site conditions required two amendments to Work Plan Addendum 1: (i) a December 17, 2013 amendment addressing a new cell that had to be added in the MW-13 area based on results from the Pump House floor sampling results (PH Amendment) and (ii) a July 1, 2014 Phase 3 Road Clearance Work Plan that addressed completing impacted road and former stockpile area removal and confirmation sampling (Road and Stockpile Amendment). All of these work plans were approved by the Montana Department of Environmental Quality (DEQ).

The Work Plan Addendum 1 incorporates the requirements and presents methods for remediation of three separate areas at the former Bonner Mill:

(1) MW-13 area,

(2) SB-3 area, and

(3) MW-15 area.

The MW-13 and SB-3 areas contained polychlorinated biphenyls (PCBs), while the MW-15 area was impacted by extractable petroleum hydrocarbons (EPH). The site is located as indicated on Figure 1.0 – Site Location. The information contained herein describes implementation of the Work Plan Addendum 1, including modifications and deviations, and includes backup documentation as appendices. The three areas remediated during Phase 3 are depicted on Figure 2.0 – Site Layout, together with Phase 3 locations in relation to the Phase 1 and 2 areas, and the local monitoring well locations as Phase 3 began.

The Phase 3 work described here was conducted on behalf of Stimson Lumber Company (Stimson) to comply with the requirements of an Administrative Order on Consent (AOC), Docket SF 10-0001, with DEQ and the Montana Department of Justice. The work involved excavation and off-site disposal of materials containing more than 0.74 parts per million (ppm) PCBs, and excavation with on-site upland placement of near-riverbank (within 10 feet) soil containing between 0.22 and 0.74 ppm PCBs. The MW-13 and SB-3 area removals (PCBs) were conducted under the oversight of EPA's TSCA Division managed by DEQ's Remediation Division, while the MW-15 removal (EPH only) was overseen by DEQs Petroleum Technical Section's Ms. Katie Erny pursuant to DEQ Petroleum Release Clean-up Fund Action, Release No. 4161.

This general approach was selected by DEQ in an Interim Action Memorandum issued by DEQ in October 2009 (Action Memo). DEQ also approved a Sampling and Analysis Plan, PBS&J

and Envirocon, December 2, 2009 (SAP), to help further guide excavation planning. The work required under the AOC was originally described in the January 29, 2010 Final Cooling Pond Removal Work Plan (Original Work Plan). The Original Work Plan, attached to the AOC, addressed the remediation of three areas within Stimson's former Bonner Mill site: 1) the cooling pond sediments and related berm structure, 2) adjacent portions of the east log track area, and 3) the former fire pond lagoon area. The implementation of the Original Work Plan activities completed in these three areas is described in the Draft Remedial Action Report – Bonner Mill Cooling Pond and Vicinity, Envirocon, February 21, 2012 (Phase 1 and 2 RA Report). The completed work included the remediation of areas defined in the Final Design Proposal, Envirocon, August 18, 2010 (Final Design Proposal) and areas discovered beneath the northern third of the former Stud Mill, referred to as the Phase I removal action. Phase 2 of the removal action included additional removal activities in the Blackfoot River and expanding an on-site repository to receive additional low level waste excavated during Phase I. The work proposed in this Addendum 1 is therefore referred to as the Phase 3 RA.

The AOC and other work-basis documents are presented in Appendix A. Excavation work pursuant to the Work Plan Addendum 1 began on November 21, 2013, and was completed on July 16, 2014.

2.0 BACKGROUND

The former Stimson Bonner Mill is a closed sawmill and plywood manufacturing facility located in Bonner, Montana.

In 2006, DEQ had commissioned a PCB investigation specific to the Cooling Pond, which ultimately led to the Phase 1 Cooling Pond and Fire Pond Lagoon removal action. About halfway through the Phase 1 Removal Action, concern arose over the Stud Mill acting as a source of petroleum hydrocarbons, and possibly PCBs, to the Fire Pond Lagoon area. Subsurface soils beneath the northern portion of the Stud Mill and immediately to the west were then investigated, the northern third of the Stud Mill demolished to allow access, and EPH-impacted soils and materials excavated. Sidewall impacts to the east and south remained inaccessible due to overlying concrete slabs and the remaining intact portion of the Stud Mill building.

Soils beneath the Stud Mill had to be investigated due to the high PCB levels discovered in boring S-20 (S-20 was installed as part of the Fire Pond Lagoon delineation/assessment borings). Seven soil borings (SMB-1 through SMB-7) were then installed inside the Stud Mill building in December 2010 and January 2011.

The soil sample results from these borings determined that there were no significant PCB impacts below the Stud Mill, building but the EPH results prompted DEQ to require demolition and excavation beneath the northern portion (approximately one third) of the Stud Mill building. In April 2011, confirmation sampling within the Stud Mill excavation area documented that EPH impacts remained in inaccessible portions of cells SMB4 and SMB4-B. The Phase 3 MW-15 removal action in part addresses removal of that formerly-inaccessible material, once another third of the building had been demolished.

MW-15 Area

DEQ required monitoring well installations in October 2011 to assess whether impacted soil in this area was affecting groundwater. The monitoring wells that were installed around remaining impacts in the former Stud Mill area included monitoring wells MW-14, MW-15, MW-16, MW-17 and MW-18 (see Figure 2.0). Groundwater results from monitoring well MW-15 documented EPH impacts to groundwater in July 2012 that prompted DEQ to require that Stimson install additional borings around MW-15 to delineate impacted soil in the area.

In December 2012, eight borings were completed in the MW-15 area, and one boring was completed as a monitoring well (MW-15R) to replace MW-15, which had been damaged by the current land owner. The borings were drilled in stepwise fashion to delineate the horizontal and vertical extent of impacted soil in the MW-15 area; results indicated that the impacts were spatially limited. Phase 3 excavation of the MW-15 area was conducted from November 2013 through February. The MW-15 removal action documentation is presented in Appendix B, and is not discussed further in the body of this report.

MW-13 Area

DEQ required monitoring well installations in October 2011 to monitor groundwater quality after the completion of the Phase 1 and 2 removal actions (see Figure 2.0). Soil samples from the MW-13 boring and groundwater samples from the completed well both contained elevated levels of PCBs. DEQ then required additional borings to evaluate the extent of impacts in the MW-13 area. Eleven MW-13 area borings were installed in February 2012, as shown on Figure 3.0b; the soil sample results (see Table 1.0) associated with these and with the original MW-13 boring were used to project the lateral and vertical extent of the MW-13 Area Phase 3 removal action, as conveyed on Figures 3.1 through 3.1c.

SB-3 Area

As mentioned above, DEQ had required additional monitoring well installations/borings in October 2011. DEQ's Keith Large requested that a boring be installed at the SB-3 location based on historical use concerns. SB-3 boring soil samples contained somewhat elevated PCB concentrations in subsurface soils. Four step-out borings around SB-3 were drilled in May 2013 to determine the extent of local PCB impacts (see Figure 4.0 and Table 2.0). Boring NB-2, located approximately 15 feet northwest of SB-3, contained elevated PCBs in relatively shallow soils (less than 10 feet). Confirmation sidewall sampling in November 2013 necessitated an expansion of the originally-planned SB-3 area excavation. Post-excavation confirmation sample results are presented in Table 3.0, and the final extent of the SB-3 excavation is depicted on Figure 4.1.

3.0 OBJECTIVES

This Phase 3 Removal Action Report documents Stimson's completion of DEQ and TSCA requirements for the Phase 3 follow-up to the Phase 1 and 2 removal actions in accordance with the AOC and related work plans. Specifically, this report documents the excavation and disposal of identified PCB-impacted and EPH-impacted materials (soil, sediment, woody debris, and timber cribbing) in the MW-15 area, MW-13 area, and the SB-3 area and the restoration of a portion of the Blackfoot River bank impacted by the removal action. These areas are shown on Figure 2.0 – Site Layout.

The Final Work Plan's requirements for a final report are set out below:

"A Remedial Action Final Report, as required by Section VIII of the AOC, will be produced and submitted within 60 days of completing all work required by the AOC. The report will include a narrative of project activities, approved deviations from this work plan (with justifications for any deviations), As-Built drawings, graphs, copies of field log notes, confirmation sample results (both tabulated results and copies of lab reports), data validation, completed transportation and disposal manifests, and a summarized tabulation of disposal weight tickets…Following completion of the work, a report will be prepared and submitted to DEQ that documents the work conducted, quantities of impacted material disposed, confirmation sampling, and other pertinent information, as provided in Paragraph 82 of the Administrative Order on Consent."

This Phase 3 RA Report therefore includes the following components:

- Narrative of project activities,
- Approved modifications and deviations from the Work Plan Addendum 1 as amended (with justifications for any deviations),
- As-Built drawings,
- Photographs,
- Copies of field log notes,
- Excavation tracking logs,
- Geotechnical reports,
- Confirmation sample results (both tabulated results and copies of lab reports),

- Data validation,
- Completed transportation and disposal manifests of hazardous waste, and
- A summarized tabulation of solid waste landfill disposal weight tickets.

4.0 PROJECT ACTIVIES

Per the approved Work Plan Addendum 1, as amended, Section 3.1 – Scope of Work (SOW), the remedial action included the following tasks; some of the listed tasks are out of order from the Work Plan SOW):

1. Permit applications;
2. Facility production/fire suppression well replacement with a well located outside of the MW-13 excavation area;
3. Pump House demolition;
4. Mobilization;
5. Health & Safety;
6. Site preparation;
7. Delineate excavation limits;
8. Abandon monitoring wells to be impacted by the removal;
9. Excavation, stockpiling, and disposition;
10. Confirmation sampling;
11. Embankment removal;
12. Dust control;
13. Traffic control;
14. Transportation and disposal of excavated material;
15. River bank reclamation following soil and materials removal;
16. Final grading of the site following removal action;
17. Equipment decontamination;
18. Revegetation;
19. Weed control, and
20. Groundwater monitoring.

These activities are discussed below. Photographs taken throughout the removal action are presented in Appendix C – Photographs (a select few are attached to the report, the majority are on the attached CD).

4.1 Permit Applications

Permits necessary for executing the RA consisted of the following:

- Montana Natural Streambed and Land Preservation Act – **Section 310 Permit;**
- Montana Floodplain and Floodway Management Act – **Floodplain Development Permit;**
- Federal Clean Water Act – **Section 404 Permit**;
- Short-Term Water Quality Standard for Turbidity – **Section 318 Authorization;**
- Stormwater Discharge General Permit – Permit under Montana's General Permit Montana Pollutant Discharge Elimination System (**MPDES) Permit** revision; and
- Pump House **Demolition Permit**;
- **Toxic Substances Control Act – Risk-based Approval** under 40 CFR 761.61 (c) from the Environmental Protection Agency Region 8.

Copies of permit documentation are presented in Appendix D.

4.2 Mobilization

After the Addendum 1 to the Work Plan was approved by DEQ on November 13, 2013 and the required permits were obtained, mobilization of construction equipment and personnel began on November 18, 2013. The project staff included five Envirocon employees and a Superintendent. Two PC400 excavators, one with interchangeable demolition and excavating attachments, performed a majority of the work. The project was also supported with two off-road haul trucks, a water truck, a front-end loader, and a dozer.

4.3 Health and Safety

A Health and Safety Officer (HSO) was assigned to the project and served as the "site safety and health supervisor" as defined in the "HAZWOPER" regulations (29 CFR 1910.120/1926.65(b)). The HSO was authorized to administer the requirements of Stimson's and the Contractor's Health and Safety Program (HASP), together with ensuring compliance with applicable Occupational Safety and Health Administration (OSHA) regulations. The HSO implemented the provisions of the HASP, conducted training, PCB industrial hygiene monitoring, and daily site safety inspections. The HSO position was performed by Superintendent Brian Vibbert.

A HASP was prepared for the RA and is included in the Work Plan. The HASP, Activity Hazard Analysis, and site safety procedures to address site hazards (such as weather-related hazards, electrical hazards, work near water, and heavy equipment operation) were reviewed with all personnel working on site prior to them starting work. Training included daily morning safety briefings where employees reviewed safety issues relevant to the day's activities including changes in work zones, schedules, traffic routes, etc., and lessons learned from other projects.

The project team conducted Activity Hazard Analysis reviews of specific tasks on the project such as excavation, truck loading, and concrete breaking. Flagging and orange traffic control candles were utilized to prevent non-Envirocon employees from accessing the site. Site security from the public relied primarily on the Bonner Mill perimeter fence and Stimson security personnel. The Blackfoot River immediately upstream and downstream of the Site was closed to the public by order of the FWP Commission.

The H&S statistics for the Project included no first aid incidents, no OSHA Recordables, or Days Away from Work injuries.

4.4 Site Preparation

Site preparation involved:

- Replacing the production and fire suppression wells by installing a new well in a different part of the facility away from the cleanup areas,
- Establishing stormwater protection BMPs,
- Salvaging well pumps and pumping components from the Pump House,
- Demolishing the portion of the Pump House that overlay part of the Phase 3 excavation area,
- Plugging the 14" fire water supply line feeding the Pump House,
- Demolishing concrete retaining walls and other structures that obstructed the excavation,
- Clearing and grubbing areas to be excavated,
- Pioneering haul roads, and
- Establishing stockpile and laydown areas.

4.5 Follow-up Investigation of Soils Surrounding MW-13

Table 1.0 summarizes the Phase 3 MW-13 Area investigation borings soil samples results. The follow-up investigation is addressed in the Folder titled "Phase 3 Work Plan" contained in Appendix A.

4.6 Delineate Excavation Limits

The excavation limits were estimated using soil boring sample analytical results discussed in the previous section. During the course of the excavation, confirmation sampling results led to significant expansion of the originally-planned excavation (see PH Addendum).

4.7 Abandon Production Wells and Monitoring Wells Impacted by the Removal

Project activities were initiated after the installation and activation of a replacement fire suppression water well located outside of the boundaries of the removal action. Once this new well had begun operating, Project staff exposed and plugged the buried 14-inch diameter water line that had supplied fire-suppression water from within the pump house. The pump house was then demolished (see Appendix D for the demolition permit), and demolition of infrastructure at MW-15 and SB-3 followed.

Two production/fire suppression wells within the Pump House were abandoned prior to excavating the MW-13 area. These wells included the 10-inch diameter plywood plant process well and the 20-inch fire suppression well. Both well casings were completely filled with concrete slurry fed by a concrete truck. Each consumed approximately 10 cubic yards of concrete. Both wells were abandoned on January 21, 2014.

Monitoring wells that appeared to be within the footprint of the MW-13 excavation were abandoned prior to excavation. The monitoring wells were filled with 3/8-inch bentonite chips, the chips were hydrated, and the casings left to be removed during the excavation work, rather than pulled at the time of the well abandonment. The field log notes are included in Appendix E, and the locations of the abandoned monitoring wells are shown on Figure 6.0. Two replacement wells were installed between June 3 and 4, 2014: MW-13R and MW-22. The locations of these wells are shown on Figure 6.0, and the well construction details are presented in Appendix F.

4.8 Excavation, Stockpiling, and Disposition

The SB-3 area excavation was initiated on November 21, 2013 and the MW-13 area excavation began six days later. Lenses of material, pre-defined in terms of PCB concentrations and related disposal class/destination, were excavated from the MW-13 and SB-3 grid cells, temporarily stockpiled by class/destination, and then disposed of in accordance with the Work Plan Addendum 1.

Based on the Phase 3 investigation soil boring samples results, the excavation limits of each cell lens was controlled using GPS systems mounted on the excavators. The cells’ lateral location and each lens' elevation limits were programmed into the GPS unit to enable precise operator control while excavating.

The PCB-impacted material was removed within the programmed coordinates, staged, and then transported to its appropriate disposal destination. Plan views with related cross sections for 1) initial, 2) interim (as the planned excavation expanded), and 3) final view of the excavated cells is presented in Figures 3.1 through 3.3c. An Excavation Tracking Log was maintained on a daily basis, and lists the number of truck-loads removed from each cell, by date, together with the disposition of the material. The Excavation Tracking Log is presented in Appendix G.

4.9 Confirmation Soil Sampling

In accordance with the TSCA "characterization on an as-found" basis, post-excavation sampling of cell-specific removed materials was generally unnecessary. Once the full depth and lateral extent of the initially-planned excavated areas had been reached, soil confirmation sampling was conducted to ensure that materials with COCs exceeding site action levels had been removed. Where confirmation sample results exceeded the action levels, additional material was excavated and the new sidewall or base was resampled. However, in several instances where in-situ sampling was impractical due to time constraints in awaiting analytical results, the material was removed and placed in small stockpiles for sampling. These stockpile samples were treated as confirmation samples and the stockpiles disposed of accordingly.

Soil confirmation sampling was conducted to ensure that materials with COCs exceeding site action levels had been removed. Where confirmation sample results exceeded the action levels, additional material was again excavated and the new sidewall or base was resampled. This continued until confirmation sample results were acceptable.

Initially, confirmation sample subcomposites (generally five) were collected by hand and composited in a stainless steel bowl using a large stainless steel spoon. In instances where locations to be sampled were difficult/unsafe to access, the excavator bucket was used to collect the discrete subcomposite samples, which were then placed in a clean 5-gallon poly bucket for subsequent compositing. In either case, composited samples were placed in two 40-ounce amber glass pre-cleaned sampling jars. One of the two jars was submitted to Energy Laboratories in Billings, MT for analysis, and the second jar was archived and subsequently conveyed to the DEQ case manager. Disposable latex gloves were worn during all sampling activities, and non-disposable items in contact with the sampled material (for example, buckets or stainless steel implements) were decontaminated by removing all gross residue, and then washing with Algonox, as needed, followed by tap water and then by deionized water.

Figures 3.1 through 3.3c depict the excavation evolution, including failed sampled locations of both cell bases and sidewalls (none failed in the final analysis). The confirmation sample laboratory reports are presented in Appendix H, by area folder (SB-3 and MW-13), and these results are summarized on Tables 3.0 and 4.0, respectively. A copy of the Field Sampling Log is presented in Appendix E.

4.10 Embankment Removal

Remediation of the MW-13 area ultimately required the removal and rebuilding of approximately 160 feet of the Blackfoot riverbank. For the purposes of this report, the embankment is defined as the riverbank slope, between the river and defined upland grid cells within the MW-13 excavation. The affected embankment extended between cells S-81, S-67 and S-8 West, from the embankment crest down to the Blackfoot River shore. In this area, the embankment was comprised of a rock-filled timber crib structure. Removal of the embankment, per the initial work plan, was to be based on confirmation sample results for material located outside identified grid cells.

The removal of the river embankment next to the MW-13 area was not foreseen until the MW-13 area excavation was well underway and confirmation sampling, together with excavation laybacks determined that the embankment would need to be removed. On February 5, 2014 the base of the embankment was removed to its lowest elevation, excavating several feet below the groundwater surface down to an elevation of 3239 feet MSL.

As the MW-13 excavation progressed, sample results of sidewalls required that additional material be removed, moving towards the river. Materials were removed from the embankment in 6-foot lateral increments approximately 6-foot thick within the boundary of the particular cell. If follow-up confirmation sample results again failed, an additional 6-foot of material was removed from that particular sidewall. Based on confirmation sample results and on the inability to retain intermittent sections of “clean” embankment sidewalls, the entire embankment was finally removed.

The determination of final excavation elevation was largely delineated by groundwater in the bottom of the excavation. On February 3, 2014 the water surface elevation in the bottom of the excavation was 3243.6 feet. For safety reasons and to minimize sedimentation, the embankment was removed to four feet below water. Thus the final elevation of the embankment elevation was 3239.6 feet. During the final removal below river elevation, a 3-foot berm protected the excavation from river flooding and allowed reconstruction of the embankment.to commence.

Figure 5.0 depicts a plan view of the original embankment, overlain by the reconstructed embankment, and Figure 5.1 presents a schematic of reclaimed riverbank components.

4.11 Final Site Grading

Once the excavation and disposal work had been completed, disturbed areas of the project site were regraded, as necessary, to control stormwater drainage and prevent runoff into the Blackfoot River, as required by the Stormwater Pollution Prevention Plan.

4.12 Stockpile Management

Stockpiles were a necessary means of segregating, controlling, and managing the various materials excavated. A plan view (Figure 8.0) of stockpile locations conveys the various materials separated and stored. Table 5.0 includes stockpile sample results, together with miscellaneous materials sample results used in their disposal determination; the laboratory reports are presented in Appendix H – folder “Road Clearance”.

When loading out of the stockpiles, dust controls were applied, where necessary, as discussed in Section 4.14 - Dust Control, below.

Once the stockpiles were removed and disposed of, as discussed in Subsection 4.16, the areas beneath the former impacted material stockpiles were sampled to confirm that no significant residual impacted material remained pursuant to the Road and Stockpile Amendment. Table 6.0 summarizes these “clearance” sample results; the laboratory reports are presented in Appendix H – folder “Road Clearance”.

4.13 Dust Control

Dust was controlled throughout the project using water sprayed from a water truck. Haul roads, grid cells, and stockpiles were potential sources of airborne dust emissions, and were wetted-down as needed.

4.14 Traffic Control

Traffic control on site was coordinated to include Envirocon off-road haul truck traffic, on-road trucks hauling to the Missoula Municipal Landfill (formerly called Allied Waste, now Republic), and on-road trucks hauling to US Ecology’s landfill near Boise, Idaho. Trucks hauling to US Ecology were met at the main gate by Envirocon employees in order to review that days’ traffic route. Truckers hauling to the Missoula Landfill attended daily safety meetings. In addition, radios were used to alert and control vehicle traffic as site conditions and roadways or travel directions changed. Truckers hauling to the Missoula Landfill set their truck radios to Envirocon’s frequency, and trucks hauling to US Ecology were provided with site-dedicated portable radios.

The planned haul route to the Missoula Landfill is depicted on Figure 7.0, and was designed to avoid hauling impacted material through Missoula, or past the Bonner School. However, daily congestion at the log scale due to the facility's new log chipping and hauling operation, forced Project trucks to access Highway 200 at the Facility's main gate. No complaints were received, probably due to the relatively minor volume of Envirocon haul traffic during the Phase 3 operations.

4.15 Transport and Disposal of Excavated Material

Excavated material that was transported and disposed consisted of the following four categories:

- Materials containing low levels of PCBs (0.22 to below 0.74 ppm) or residential levels of petroleum hydrocarbons (below Tier I RBSLs);
- Materials containing PCB at concentrations above 0.74 and below 50 ppm;
- MW-15 area materials containing petroleum hydrocarbon concentrations above Tier I RBSLs, based on depth to groundwater; and
- Materials containing PCBs at or above 50 ppm.

These materials were transported and disposed as listed below:

On-site transportation only -

For on-site use as unimpacted non-hazardous material:

- Riprap salvaged for reuse; and
- Soils and other earthen materials that were relatively unimpacted by site contaminants.

Off-site transportation -

For transportation to the Missoula Landfill:

- Materials containing low levels of PCBs (0.22 to below 0.74 ppm) or residential levels of petroleum hydrocarbons (below Tier I RBSLs);
- Soils, concrete, and timbers containing PCB concentrations above 0.74 and below 50 ppm; and
- Soils, concrete and timbers containing petroleum hydrocarbon concentrations above Tier I RBSLs, based on depth to groundwater.

For transportation to the US Ecology Landfill:

- Materials containing PCB concentrations at or above 50 ppm (TSCA materials).

Appendix G contains a summary of the quantities of impacted materials excavated from each of the three areas, and includes quantities disposed at each of the two landfills.

4.15.1 On-site Transportation & Reuse

Riprap salvaged from un-impacted cells was transported by site-dedicated articulated dump trucks to temporary stockpiles, and later reused for erosion protection at the base of the new embankment. Un-impacted soils and earthen materials were also transported by articulated dump trucks to temporary stockpiles, and then used as backfill.

When all on-site transportation of impacted materials was complete, the road surfaces were scraped and sampled to confirm that they had not been significantly impacted. Sections of road with failing sample results (above 0.74 ppm PCBs) were recharacterized at a greater depth (approximately eight inches), scraped to that depth, and the recharacterization sample results accepted as clearance documentation by DEQ pursuant to the Road and Stockpile Amendment. Table 6.0 summarizes the road clearance sample results and Figure 8.0 depicts the road areas sampled. Laboratory reports are presented in Appendix H under folder “Road Clearance”.

4.15.2 Off-site Transportation & Disposal

All timber and concrete uncovered within defined grids were transported to the same location as the soils excavated from that grid. The remaining timber and cribbing from "clean" overburden or "clean" cells were landfilled.

Materials originally identified as containing PCB concentrations above 0.74 and below 50 ppm were stockpiled on an impervious concrete area, and then transported to the Missoula Landfill by tarped dump trucks following the DEQ-approved route depicted on Figure 7.0. A tabulated summary of the Missoula Landfill disposal weight tickets is presented in Appendix I.

Approximately 5379 tons of excavated TSCA materials were stockpiled on impervious concrete in a segregated area, and then transported to the US Ecology Landfill by DOT-certified truckers using dump trucks with tarps covering the material. Completed manifests for transportation and disposal of this TSCA material are presented in Appendix J.

4.16 River Bank Reclamation Following Removal Action

The MW-13 area excavation, including the embankment, was completed on February 5, 2014, leaving the disturbed/removed portion (approximately 160 feet) of the Blackfoot River bank ready for reclamation.

Backfill was initially placed to fill submerged locations of the MW-13 area. Off-site import material was then utilized to build the embankment up in 1-foot thick lifts. The embankment footprint was approximately 40 feet wide at the base, and 160 feet long and tied-in to existing up- and downstream riverbank topography, The new embankment was constructed using imported fill compacted in lenses, with erosion protection (large rock) placed at the toe of the new slope per design. Erosion control material was also placed on the slope surface, followed by a 1-foot thick layer of topsoil, which was then re-vegetated.

The import material was tested by Holman Consulting Engineers to determine gradation and proctor. Then the embankment was built back up in 1 foot thick lifts, with density tested every other lift. The lifts were placed by a dozer and were compacted using a smooth drum roller. Compaction testing was conducted to verify that the specified 95% of maximum dry density was achieved over the entire embankment. Geotechnical reports are contained in Appendix K.

When the embankment subgrade had been completed, 36-inch diameter boulders were placed along the slope toe, and smaller 24-inch diameter angular rock was added extending from the boulders up the slope per design. A 1-foot thick layer of topsoil was placed across the entire embankment surface, including over the angular rock. Jute erosion-control fabric was placed over the topsoil extending from beneath the large boulders up to the embankment crest, and the vegetation subcontractor planted shrubs and forbs and hydroseeded the slope. A plan view of the reclaimed riverbank alignment is presented on Figure 5.0, and Figure 5.1 depicts a cross-section schematic of the slope components.

The riverbank backfill was completed in mid-March, and matting, topsoil and vegetation were completed on May 16, 2014. The Project schedule is presented on Figure 9.0. Analytical report data validation results are presented in Appendix L.

4.17 Groundwater Monitoring

Groundwater will continue to be monitored semi-annually per DEQ-approved work plans.

5.0 Deviations from and Modifications to the Work Plan

See Section 1, above.

6.0 Quality Assurance / Quality Control

Excavation limits were controlled by GPS surveying, which was supervised and checked by a Montana-licensed Professional Land Surveyor. This surveyor was also responsible for producing the as-built drawings. Excavation, final grading, and riverbank re-restoration tolerances are +/- ½ foot (6 inches).

All sampling activities were conducted according to the SOPs included in the Work Plan's Appendix B. Samples were documented using a dedicated field sampling logbook; the sampling technician completed logbook entries as to date, time, sample location(s), unique sample number, and any unusual observations. Field duplicate samples were collected at a rate of 5% to evaluate data quality. Sample blanks and trip blanks were not considered relevant for this project. Laboratory QA/QC complied with Energy Laboratories' standard Quality Assurance Manual.

7.0 Conclusion

This Phase 3 RA Report, in conjunction with the Phase 1 and 2 RA Report, demonstrates that Stimson has completed all appropriate remedial actions as required by DEQ pursuant to the AOC and associated work plans. Stimson has properly abandoned all monitoring wells for which closure was approved by DEQ and will conduct all revegetation activities as provided in Section 4.20 of the Original Work Plan. All required post-remediation operation, maintenance, and monitoring activities will be performed by Stimson to ensure that land uses remain protective of human health and the environment.

8.0 Final Inspection

The final site inspection was conducted by DEQ on August 28, 2014. In attendance at this inspection were Keith Large with DEQ, Steven Petrin and Dan McFall with Stimson, Brent Sasser with International Paper Company (prior owner), and Dan McCaffery with Envirocon. The Phase 3 work was inspected and judged acceptable by Mr. Large. No follow-up Phase 3 work was required. Consequently, all remediation work required under the AOC has been completed.

9.0 Certification

Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of this report, the information submitted is 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.

Name: Steven Petrin

Title: Environmental Manager

Date: 12 September 2014

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