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SulTRAC

June 9, 2009

Mr. Sam Chummar
Remedial Project Manager
U.S. Environmental Protection Agency
77 West Jackson Boulevard (SR-6J)
Chicago, IL 60604

Subject: **Technical Review Comments on "Phase II Remedial Investigation Work Plan"**
Former Plainwell, Inc. Mill Property, Plainwell, Michigan
Contract No. EP-S5-06-02, Work Assignment No. 041-RSBD-059B

Dear Mr. Chummar:

SulTRAC has reviewed the above-referenced document as part of its oversight activities for the former Plainwell Mill property in Plainwell, Michigan. The document is dated May 20, 2009, and was prepared by Conestoga-Rovers & Associates for Weyerhaeuser Company (Weyerhaeuser), the responsible party for the site. The document contains the rationale for the proposed Phase II remedial investigation to be conducted at the site.

SulTRAC reviewed the document to assess its technical adequacy and to see if U.S. Environmental Protection Agency (EPA) comments in the attached letter to Weyerhaeuser, dated May 23, 2008, had been adequately addressed. SulTRAC's technical review comments on the document are enclosed.

If you have any questions about this submittal, please call me at (312) 201-7491.

Sincerely,

Jeffrey J. Lifka
Project Manager

Enclosure

cc: Norvelle Merrill-Crawford, EPA Contracting Officer (letter only)
Ron Riesing, SulTRAC Program Manager (letter only)
David Homer, SulTRAC Ecological Risk Assessor
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ENCLOSURE

TECHNICAL REVIEW COMMENTS ON
"PHASE II REMEDIAL INVESTIGATION WORK PLAN"
FORMER PLAINWELL INC. MILL PROPERTY
PLAINWELL, MICHIGAN

(Six Pages)

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FORMER PLAINWELL INC. MILL PROPERTY
PLAINWELL, MICHIGAN

SulTRAC has reviewed the above-referenced document as part of its oversight activities for the former Plainwell Mill property in Plainwell, Michigan. The document is dated May 20, 2009, and was prepared by Conestoga-Rovers & Associates (CRA) for Weyerhaeuser Company (Weyerhaeuser), the responsible party for the site. The document contains the rationale for the proposed Phase II remedial investigation (RI) to be conducted at the site. SulTRAC reviewed the document to assess its technical adequacy and to see if U.S. Environmental Protection Agency (EPA) comments in EPA's letter to Weyerhaeuser dated May 23, 2008, (Attachment A) had been adequately addressed. SulTRAC's general and specific technical review comments on the document are presented below.

GENERAL COMMENTS

1. In a letter dated May 23, 2008—from Sam Chummar, the EPA Remedial Project Manager, to Jennifer Hale, Weyerhaeuser—EPA requested incorporation of specific activities or elements into the Phase II RI (see Attachment A). Many of EPA's requests were not incorporated in the Phase II RI work plan prepared by CRA. Examples include collecting samples from multiple depths to native soil; biasing samples toward lithologic changes and any stained soil or residuals; analyzing samples for the full target compound list, target analyte list, polycyclic aromatic hydrocarbons (PAH), nitrogen compounds, phosphorus, and radionuclides; collecting soil samples in accordance with *Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria* (S3TM); and considering the morphing shapes of site lagoons and the aeration basin. The work plan should be revised to either incorporate the specific requests or provide a fully supported and documented discussion of why any of these elements is believed unnecessary.

2. The work plan describes the conceptual site model (CSM) and discusses migration and exposure pathways. The work plan should be revised to address potential ecological risks and to consider a wider range of current exposure pathways, as well as potential future exposure pathways. For example, the CSM does not consider potential current trespassers or potential future on-site residents or recreational receptors. See also Specific Comment 11.

3. The work plan states that the presence of several metals in site groundwater may be related to background and not a result of site impacts. Section 4 should include another subsection (4.3.6) that identifies the lack of soil and groundwater background data as a data gap.

SPECIFIC COMMENTS

1. **Section 1.0, Page 1, Paragraph 1**. The text refers to Operable Unit (OU) #4. The site is correctly identified as OU #7. Paragraph 1 should be revised accordingly.

2. **Section 1.0, Page 1, Paragraph 2**. The text states that the Phase II investigation "constitutes the final phase of the RI." Although it is believed that Phase II might address any remaining data gaps, this statement should be deleted because whether Phase II will indeed be the final phase of the RI is unknown at this time.

3. **Section 2.1.4, Page 5, Paragraph 4**. As noted in EPA's letter to Weyerhaeuser dated May 23, 2008 (Attachment A), fly ash may contain radionuclides. Section 2.1.4 should be revised to discuss whether the fly ash generated at the site did contain or may have contained radionuclides. If it is determined that the fly ash generated at the site did contain or may have contained radionuclides, the work plan should be revised appropriately to add radionuclides to the list of analytes for areas of the site potentially impacted by fly ash.

4. **Section 2.1.4, Page 6, Paragraph 1**. The text states that aboveground and underground storage tanks (AST/UST) containing "petroleum products such as No. 6 Fuel Oil, gasoline, diesel, and kerosene" likely fall under the Comprehensive Environmental Response, Compensation, and Liability Act's (CERCLA) petroleum exclusion, thus limiting consideration of them for this investigation. It should be noted that EPA has rendered no decision whether these ASTs/USTs are subject to the CERCLA petroleum exclusion. Also, the exclusion regards petroleum products defined as "hazardous substances." The exclusion does not limit or prohibit investigation of the nature and extent of medium-specific contamination that may have resulted from releases associated with the ASTs/USTs. Section 2.1.4 should be revised accordingly.

5. **Section 2.1.5, Page 6, Paragraph 4**. As stated in Section 2.1.4, PCBs may be present in wastewater sludge created during the papermaking process at the site. Section 2.1.5 should

reiterate this point and specify that wastewater sludge created at the site may also contain PCBs. Section 2.1.5 should also note that PCBs present in wastewater sludge would be regulated under the Toxic Substances Control Act (TSCA).

6. **Section 3.2, Pages 8 and 9**. Soil concentrations should be conservatively screened against direct contact residential Part 201 levels (in addition to screening against industrial and commercial levels specified here). That residential is a reasonable future land use is evident in development plans prepared to date and presence of the surrounding neighborhood.

7. **Section 3.2.2, Page 11, Paragraph 4**. The text states that PCBs did not exceed any selected Michigan Department of Environmental Quality (MDEQ) Criteria. The text should be revised to state whether PCBs were detected at concentrations below the MDEQ Criteria during the Phase I RI.

8. **Section 3.4, Page 15, Paragraph 5**. The text states that the mill buildings may be a potential source in Area 2. The text should be revised to state whether specific features such as floor drains, discharge pipes, chemical storage areas, etc., may be suspected sources within or near the buildings.

9. **Section 3.4, Page 15, Paragraph 6 and Figure 3.2**. The text discusses the "former transformer area." A former transformer area is not shown in Figure 3.2. Figure 3.2 should be revised to identify the former transformer area.

10. **Section 3.5, Pages 16 and 17 and Figure 3.4**. Section 3.5 discusses the migration and exposure pathways through which "plant and/or animal life" may become exposed to site contaminants and potentially harmed. Figure 3.4 is a CSM that presents "an exposure pathway analysis for the current and historical land use." Various problems with Section 3.5 and, by extension, Figure 3.4, were identified as discussed below.

    The text states that the exposure pathway analysis shown on Figure 3.4 and discussed in Section 3.5 is based on "current and historical land use." The CSM and related exposure pathway analysis should be based on current and potential future land uses, informed by historical land use. Historical land use provides information regarding location(s) and extent(s) of potential source areas at the sites, and operation(s) possibly associated with these. Current and potential

future land use provides information about actual and potential current and future receptors that may be exposed to site contaminants.

Section 3.5 and Figure 3.4 do not consider (1) potential current receptors such as trespassers and potential future onsite receptors such as residents, (2) recreators (future use of the site may include park or path or walkway areas), and (3) municipal employees working at and residents frequenting future onsite municipal offices. The text discusses potential exposure of the "remedial action team." The remedial action team should not be a primary focus of the CSM and exposure pathway analysis for the site. Members of this team are expected to perform their jobs subject to a health and safety plan. In order for the CSM and exposure pathway analysis to best inform RI decisions, such as the number and locations of future samples, the CSM and exposure pathway analysis should be revised to focus on actual and potential current and future receptors, not on members of the remedial action team. Section 3.5 and Figure 3.4 should be revised accordingly.

Section 3.5 and Figure 3.4 identify the primary sources of exposure at the site as soil and groundwater. Soil and groundwater are impacted media and are not primary sources. These media have become impacted due to site operations. These site operations, including waste management units such as lagoons, should be identified as sources. The CSM and text should display and discuss how primary sources may have impacted site media such as soil and groundwater through various primary and secondary release and transport mechanisms.

Section 3.5 discusses the potential for volatile organic compounds (VOC) present in site groundwater to be released to ambient air. This is appropriate. However, VOCs present in groundwater and soil may also impact indoor air. This may be especially relevant under a future land use scenario. Section 3.5 and Figure 3.4 should be revised to display and discuss the potential for VOCs in groundwater and soil to impact both ambient and indoor air.

Section 3.5 and Figure 3.4 reflect the assumption that groundwater exposure will occur only during sampling. Under a variety of future land uses, construction and utility workers may be exposed through direct contact and inhalation of VOCs that build up in trenches, and residents may be exposed through ingestion, dermal contact, and inhalation of VOCs via household groundwater use. Section 3.5 and Figure 3.4 should be revised to include these reasonable potential future exposures to groundwater.

11. **Sections 4.1 and 4.3, Pages 18 and 19**. Sections 4.1 and 4.3 discuss data gaps in the former wastewater sludge dewatering area lagoon and aeration basin area (Area 1) and the north central portion of the site (Area 3), respectively. EPA's letter of May 23, 2008, (Attachment A) specified collection of additional samples in the undeveloped areas of the site—including the undeveloped wooded area on the west side (part of Area 1) and the various parking lots on site (part of Area 3). Sections 4.1 and 4.3 should be revised to discuss the lack of sampling in these areas. The work plan as a whole should be revised to include additional sampling in the undeveloped parts of the site consistent with EPA's letter of May 23, 2008.

12. **Sections 5.1, 5.2, and 5.3, Pages 21 through 26**. Sections 5.1, 5.2, and 5.3 discuss additional Phase II RI samples to be collected in Areas 1, 2, and 3, respectively. EPA's letter of May 23, 2008, (Attachment A) requested sampling of the riverbank (present as part of Areas 1, 2, and 3) in accordance with *Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria* (S3TM). Sections 5.1, 5.2, and 5.3 should be revised accordingly.

13. **Section 5.2, Page 23, Paragraph 1**. Contrary to the proposed soil sampling, EPA's letter of May 23, 2008, (Attachment A) specified soil sampling in accordance with S3TM between the Mill buildings and the river, and between the Mill buildings and the Mill Race. Section 5.2 should be revised accordingly.

14. **Section 5.3.4, Page 25, Paragraph 3**. Section 5.3.4 discusses installation of eight soil borings (SB-303 through SB-310). However, the text does not specify the depths of these borings; the text should be revised to specify the depths of these eight borings. Also, according to Table 5.3, only one sample will be collected from each boring. As noted in General Comment 1, EPA's letter of May 23, 2008, specified collection of samples from multiple intervals until native soil material is reached. Section 5.3.4 should be revised to specify collection of multiple samples from each boring in accordance with EPA's letter (Attachment A).

15. **Section 5.3.5, Page 26, Paragraph 2**. The text states that "due to previous removal of soils surrounding the [200,000-gallon Fuel Oil] tank, it is assumed that the top 2 feet of the area will be fill." As a result, it is proposed to collect samples from beneath the fill. However, the fill may have become contaminated since its placement around the tank. Section 5.3.5 should be revised to propose collection of samples from the fill or to provide convincing evidence that the fill is

clean and uncontaminated. Also, the text states four soil borings will be drilled in the vicinity of the 200,000-gallon fuel oil tank; however, Figure 5.4 shows five proposed borings. The text should be revised to match Figure 5.4. Finally, it should be noted that EPA's letter dated May 23, 2008 (see Attachment A), required soil sampling consistent with S3TM in the area around the No. 6 Fuel Oil tank. Section 5.3.5 should be revised accordingly.

16. **Figure 3.4**. Figure 3.4 should be revised to include the potential exposure pathways discussed in General Comment 2 and Specific Comment 11.

17. **Tables 5.1, 5.2, and 5.3**. Tables 5.1, 5.2, and 5.3 summarize the proposed sampling activities for Areas 1, 2, and 3, respectively. However, consistent with General Comment 1, the proposed sampling may be significantly revised pursuant to comments in EPA's letter dated May 23, 2008 (Attachment A). Tables 5.1, 5.2, and 5.3 should be revised accordingly. Moreover, the following observations based on review of Tables 5.1, 5.2, and 5.3 also should be taken into account in developing the revised tables:

    - Groundwater samples should be specified as filtered or unfiltered. The human health risk assessment requires analytical results from unfiltered groundwater samples. Filtered groundwater samples may be needed for other purposes.

    - In contrast to the numbers presented in Table 5.1, field duplicates should be collected at a frequency of 1 per 10 investigative samples, and matrix spike/matrix spike duplicates should be collected at a frequency of 1 per 20 investigative samples.

    - Table 5.2 includes collection of surface water samples in the Mill Race and Kalamazoo River. However, Section 5.2 does not address collection of surface water samples in Area 2. Table 5.2 and Section 5.2 should be revised to remove any inconsistencies. Also, the discussion in Section 5.2 should justify analysis of surface water samples for only low-level mercury, methyl mercury, and hardness. Finally, Table 5.2 does not include any quality control (QC) samples associated with surface water sampling. Because this is a distinct medium, QC samples are required for surface water sampling.

    - Table 5.3 refers to upper and lower units. These are not adequately defined in the text or in Table 5.3. Table 5.3 and the text should be revised to clearly define "upper and lower units."

18. **Appendix B**. The first two borehole logs (SB/TW-5 and SB/TW-6) are included as Area 1 borehole logs, but in fact they are Area 3 borings. Appendix B should be rechecked for accuracy.

ATTACHMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY
LETTER DATED MAY 23, 2008, REGARDING
PLAINWELL MILL, OPERABLE UNIT #7,
ALLIED PAPER/PORTAGE CREEK/KALAMAZOO RIVER SITE
REMEDIAL INVESTIGATION/FEASIBILITY STUDY COMMENTS**

(Five Pages)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF: SR-6J

VIA ELECTRONIC AND CERTIFIED MAIL

May 23, 2008

Jennifer Hale
Weyerhaeuser Company
Environment Health & Safety, WTC 2G2
P.O. Box 9777
Federal Way, WA 98063-9777

RE: Plainwell Mill, Operable Unit #7, Allied Paper/Portage Creek/Kalamazoo River Site *Remedial Investigation/Feasibility Study* Comments

Dear Ms. Hale:

RMT, Inc. provided a copy of the *Draft Sampling and Analysis Plan* (SAP) for the *Remedial Investigation/Feasibility Study* (RI/FS) for Operable Unit 7 of the Allied Paper/Kalamazoo River/Portage Creek Superfund Site (the Site) on behalf of Weyerhaeuser to the Environmental Protection Agency (EPA). EPA is providing comments on the SAP.

Former Wastewater Sludge Dewatering Lagoons and Aeration Basin Area

The *Preliminary Site Conceptual Model and Exposure Potential Exposure Pathways* (CSP) identifies residuals to be the primary source of contamination in this area. From this primary source, contamination is suspected to have a complete pathway to a number of receptors through surface/subsurface soil and groundwater. The proposed sampling to characterize these pathways and determine the extent of contamination in this area consists of 22 borings, from which 14 samples would be acquired from the near-surface soil (0 to 1 foot bgs) and analyzed for metals, polychlorinated biphenyls (PCB), and poly-aromatic hydrocarbons (PAH). These borings would also be used to visually determine and/or confirm the thickness of overburden and underlying wastewater materials.

The CSP does not consider the purpose of the lagoons and aeration basin, and subsequently does not consider potential for resultant contamination. The lagoons and aeration basin were used for the separation and limited treatment of waste streams from the mill. During separation, the liquid phase most likely migrated to the soil under the solid phase before traveling into the river. During this journey to the river, wastewater may have contaminated subsurface soil under the residuals and subsurface soil it interacted with on its way to the river. Additionally, fly ash was often mixed with the

residual material, which brings about the possibility for the presence of radionuclides as well as metals.

EPA recommends completing the proposed 21 borings in the lagoon area, but in addition, requests samples be collected for analysis at multiple intervals until native soil material is reached. Samples should be biased towards lithologic changes and any stained soil or residuals. The analysis of samples taken from the various intervals would include the full target compound list, target analyte list, PAHs, nitrogen compounds, phosphorus, and radionuclides. In the aeration basin, EPA requests three to four borings or a statistical sampling method consistent *Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria* (S3TM), with samples taken at multiple intervals until native soil material is reached with a bias towards lithologic changes and any stained soil or residuals. These samples should be analyzed for the same analytes as the lagoon area. Additionally, the areas immediately adjacent to the lagoons and the aeration basin should be characterized due to the historic morphing of size and shape of the lagoons and aeration basin. A form of statistical sampling consistent with S3TM can be used to characterize soil contamination in the areas immediately adjacent to the lagoons and aeration basin, with samples taken at multiple intervals until native soil material is reached with a bias towards lithologic changes and any stained soil or residuals. These samples should be analyzed for the same analytes as the lagoon area. Additionally, consider the addition of the ingestion exposure to receptors for this area.

Northcentral Portion of Site

The CSP identifies coal fragments and the No. 6 Fuel Oil above ground storage tank (No. 6 Fuel Oil AST) to be the primary source of contamination in this area. From these primary sources, contamination is suspected to have a complete pathway to a number of receptors through surface/subsurface soil, groundwater, surface water, and wind (dust emissions). The proposed sampling to characterize these pathways and determine the extent of contamination in this area consists of 11-14 borings, from which near-surface soil samples would be acquired and analyzed for metals and PAHs. These borings would be used to determine the extent of the former coal pile storage area (FCP), subsurface fill area, and the spill near the No. 6 Fuel Oil AST. To characterize subsurface soil, 13 samples are to be taken and analyzed for metals and PAHs. Test pits are also planned in this area to assist in determining the extent of the FCP.

In the case of the No. 6 Fuel Oil AST, the *Phase 1 Environmental Site Assessment and Phase 2 Investigation* completed in 1997 reported stained soil with concentrations of semi-volatile and volatile petroleum constituents as well as lead. The report suggests the contamination is confined to an area of 150 square feet and a depth of less than six feet bgs. Recent walks of the area have shown stained soil, signs of historic leaks from the pipes leading from the tank to the pump house, and a strong petroleum odor inside the pump house. EPA requests the current size of stained soil be determined, followed

by a biased sampling effort consistent with S3TM. Also consider the addition of the ingestion exposure to receptors for this area.

The *Phase 1 Environmental Site Assessment and Phase 2 Investigation* completed in 1997 suggests coal to be the primary source of environmental concern at the FCP, with very small, if any, environmental impact, but later reports concentrations of PAHs under and between the FCP and the Kalamazoo River. EPA recommends completing borings in the locations, but in addition, requests samples be collected for analysis at multiple intervals until native soil material is reached. Samples should be biased towards lithologic changes and any stained soil or residuals. The analysis of samples taken from the various intervals would include the full target compound list, target analyte list, PAHs, nitrogen compounds, phosphorus, and radionuclides. EPA also requests borings be completed in the areas identified in the historic report to verify the conclusions of the report, but with the analyte list mentioned above. Also consider the addition of the ingestion exposure to receptors for this area.

Buildings

Buildings on site have seen much change: being built, razed and morphing with changing processes and terrain (a large portion of the Site has been filled in). The CSP identifies historic mill operations as the sole source of contamination and groundwater to be the only media affected. No borings or analysis of soil is planned in or near any buildings on site due to the lack of information regarding releases to subsurface/surface soil.

With a gap in knowledge regarding releases, a walk through of the buildings should be completed to identify areas which are suspect of release. Of particular concern are historic and current above ground storage tanks, historic and current underground storage tanks, filling stations, livery areas, railroad loading and unloading areas, storage areas, process rooms, drainage, piping and other underground conveyances. After a walk through, areas can be sampled consistent with S3TM. Also, over the course of the RI, underground piping and conveyances should be located, investigated for any material remaining within, and investigated for any releases to soil. Finally, a form of statistical sampling consistent with S3TM should take place in the area between the mill buildings and the river and the mill buildings and the mill race.

Undeveloped Areas on Site

The CSP does not take into account large parts of the Site that are currently undeveloped, and consequently no sampling is planned in these areas. These areas include the undeveloped area south of the lagoons and the multiple areas used as parking lots. EPA requests a form of confirmation or statistical sampling consistent with S3TM to be conducted in these areas. Any borings completed should extend down to native soil. Samples from these borings should be taken from multiple intervals and should be biased towards lithologic changes and any stained soil or residuals. The analysis of samples taken from the various intervals would include the full target

compound list, target analyte list, PAHs, nitrogen compounds, phosphorus, and radionuclides.

River Banks

The SAP does not call for any sampling of the river bank, but the discovery of PCBs and an oily sheen during the Emergency Action indicate there may be additional environmental concern on the river banks. EPA requests a form of statistical sampling consistent with S3TM take place along the river banks and the analysis of samples taken to include the full target compound list, target analyte list, PAHs, nitrogen compounds, phosphorus, and radionuclides.

Groundwater

In comparison to what is known about soil conditions at the Site, very little is known about the groundwater conditions. Historical sampling efforts have largely focused on soil contamination, and 1997 *Phase 1 Environmental Site Assessment and Phase 2 Investigation,* the only historic investigation to collect groundwater samples, only collected shallow groundwater samples from three locations. The SAP proposes 13 new monitoring wells and two staff gauges to characterize the Site groundwater conditions.

With so little knowledge about the condition of groundwater, EPA requests a phased investigation of the groundwater. Initially, a walk through of the Site to look for areas of concern, similar to the walk through to take place at the buildings; this would then be followed by installation of temporary wells to gather preliminary data (water levels, flow-direction, vertical aquifer profile (VAP), etc.). A broad spectrum of analytes, similar to that of the soil samples, should be used during the preliminary data collection phase. This preliminary data along with the soil data would provide insight into the number, location and screened intervals of monitoring wells and staff gauges to be installed for the second phase of the groundwater investigation. It is suggested that double cased wells be installed where appropriate. The data gathered from both phases of the investigation could be used to develop the RI and FS.

Air

Air as a media has been neglected in the SAP as well as historical sampling efforts, but with the Site's long history and analytical data documenting the presence of volatile organic compounds (VOC), EPA requests the inclusion of this media into the RI. A phased approach should also be adopted with this media; the initial step being the soil and groundwater investigations. The results of these investigations would indicate where, if at all, VOCs and semi-volatile organic compounds might be affecting soil gas and indoor air. Additionally, a membrane interface probe (MIP) could be used to detect areas of contamination (though this would have to be followed by the collection of samples to confirm the results of the MIP and to provide analytical data since the MIP

does not provide the identity or concentration of contaminants). The next phase would be to gather the appropriate soil gas, sub-slab gas, and indoor air samples.

Finally, EPA recommends a meeting between EPA, Weyerhaeuser, and the Michigan Department of Environmental Quality to discuss the comments above and the revision of the SAP. Please call me at 312-886-1434 to arrange this meeting, and thank you for your attention to this matter.

Sincerely,

Sam Chummar
Remedial Project Manager

cc: Eileen Furey, C-14J
James Saric, SR-6J
Michael Berkoff, SR-6J
Paul Bucholtz, MDEQ