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Secretary for
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Department of Toxic Substances Control

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Edmund G. Brown Jr.
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August 24, 2015

Mr. David G. Massengill
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SCOPING FOR THE OPERABLE UNIT E FEASIBILITY STUDY, FORMER GEORGIA-PACIFIC WOOD PRODUCTS FACILITY, FORT BRAGG, CALIFORNIA

Dear Mr. Massengill:

On August 19, 2015, the Department of Toxic Substances Control (DTSC) approved the Operable Unit E (OU-E) Baseline Human Health and Ecological Risk Assessment Report (BHHERA). Consistent with the conclusions of the BHHERA and data presented in the OU-E Remedial Investigation Report, DTSC has determined that the following areas require evaluation in the upcoming OU-E Feasibility Study.

1. **Terrestrial Lowland Area of Concern.** Presumptive remedies, for lead, polycyclic aromatic hydrocarbons (PAHs), and dioxin toxic equivalency (dioxin TEQ), have been identified for three Areas of Interest (AOIs), within the Terrestrial Lowland Area of Concern. Although presumptive remedies have been identified for these AOIs, these sites still require evaluation in the Feasibility Study.

The Terrestrial Lowland Area of Concern also include an area with diesel concentrations above remedial goals established for other areas of the Mill Site. This area of diesel contamination must be included in the OU-E Feasibility Study. Total Petroleum Hydrocarbons – diesel (TPH-d) at OUE-DP-025, exceed the TPH-d aliphatic remedial goal of 10,772 mg/kg proposed in the OU-C and OU-D Remedial Action Plan. Samples in the vicinity of OUE-DP-025 also exceed the *Leaching to Groundwater Criteria* based remedial goal of 2,730 mg/kg proposed in the OU-C and OU-D Remedial Action Plan. The data demonstrate that a

release of TPH-d has occurred in the vicinity of OUE-DP-025 and evaluation of remedial actions is necessary for this area.

2. **Pond 7.** Remedial Action is necessary for Pond 7. Alternative remedial actions and the preferred alternative must be evaluated against the nine evaluation criteria found in the NCP. The concentrations of arsenic and dioxin TEQ, and the calculated risk from these two chemicals, demonstrate that a release has occurred at Pond 7. Pond 7 received waste water from the Powerhouse via the dewatering slabs (Final Remedial Investigation Report, Section 3.1.2 Ponds, January, 2013).

The Pond 7 Excess Lifetime Cancer Risks for the recreator (ELCR), are 2×10^{-5} in both the 0 to 0.5 feet and 0 to 2.0 feet below ground surface (ft. bgs). Arsenic is detected in sediment ranging from 11 mg/kg to 103 mg/kg, with an Exposure Point Concentration (EPC) of 103 mg/kg. The arsenic background concentration at the Georgia-Pacific Mill Site was established at 10 mg/kg. Detection of dioxin TEQ ranges from 753 pico grams per gram (pg/g) to 1,688 pg/g, with an EPC of 1,227 pg/g in the 0 to 0.5 ft. bgs interval and 1,688 pp/g in the 0 to 2.0 ft. bgs interval.

3. **Ponds 1 – 4.** Remedial Action is necessary for Ponds 1-4. Alternative remedial actions and the preferred alternative must be evaluated against the nine criteria found in the NCP. The concentrations of arsenic and dioxin, and the calculated risk from these two chemicals, demonstrate that a release has occurred at Ponds 1- 4. These ponds were used as settling ponds and received effluent waste water, containing fly ash, from the Powerhouse via dewatering slabs and Pond 7 (Final Remedial Investigation Report, Section 3.1.2 Ponds, January 2013).

When an exposure frequency of 50 days per year is considered, ELCRs for the recreator for Ponds 1-4 in the 0 to 0.5 ft bgs and 0 to 2 ft bgs exposure intervals are 8×10^{-6} and 7×10^{-6} respectively. Arsenic (detected concentrations ranging from 4.1 mg/kg to 81.6 mg/kg; EPC = 53.6 mg/kg) and dioxin TEQ (detected concentrations ranging from 0.02 pg/g to 995.5 pg/g; EPC = 493 pg/g) are the primary risk drivers in 0 to 0.5 ft bgs interval via incidental sediment ingestion. In the 0 to 2 ft bgs interval, arsenic (detected concentrations ranging from 1.66 mg/kg to 98.9 mg/kg; EPC = 45.8 mg/kg) and dioxin TEQ (detected concentrations ranging from 0.02 pg/g to 1285 pg/g; EPC = 442 pg/g) are the primary risk drivers. EPCs of dioxin TEQ and arsenic are above concentrations considered acceptable for unrestricted use.

4. **Pond 6.** Remedial Action is necessary for Pond 6. Alternative remedial actions and the preferred alternative must be evaluated against the nine criteria found in the NCP. The concentrations of arsenic and dioxin TEQ, and the calculated risk from these two chemicals, demonstrate that a release has occurred at Pond 6.

The Pond 6 ELCR for the recreator is 4×10^{-6} in the 0 to 0.5 ft bgs exposure interval. Arsenic (detected concentrations ranging from 0.61 mg/kg to 37.2 mg/kg; EPC = 37.2 mg/kg) and dioxin TEQ (detected concentrations ranging from 3.7 pg/g to 175 pg/g; EPC = 175 pg/g) are the primary risk drivers in the 0 to 0.5 ft bgs interval via incidental sediment ingestion. In the 0 to 2 ft bgs interval, the ELCR for the occasional recreator is 3×10^{-6} . In the 0 to 2 ft bgs interval, arsenic (detected concentrations ranging from 0.61 mg/kg to 37.2 mg/kg; EPC = 28.2 mg/kg) and dioxin TEQ (detected concentrations ranging from 2.1 pg/g to 175 pg/g; EPC = 175 pg/g) are the primary risk drivers. EPCs for dioxin TEQ and arsenic are above concentrations considered acceptable for unrestricted use.

5. **North Pond.** Remedial Action is necessary for the North Pond. Alternative remedial actions and the preferred alternative must be evaluated against the nine criteria found in the NCP. The concentration and the calculated risk from arsenic demonstrate that a release has occurred at the North Pond.

North Pond recreator ELCRs are 2×10^{-6} for both 0 to 0.5 ft bgs and 0 to 2 ft bgs. Arsenic (detected concentrations ranging from 1.5 mg/kg to 103 mg/kg; EPC = 103 mg/kg) is the primary risk contributor in the North Pond. EPCs for arsenic are above concentrations considered acceptable for unrestricted use.

6. **Pond 8.** Remedial Action is necessary for Pond 8. Alternative remedial actions and the preferred alternative must be evaluated against the nine criteria found in the NCP. The concentrations of arsenic and dioxin TEQ, and the calculated risk from these two chemicals, demonstrate that a release has occurred at Pond 8.

Pond 8 recreator ELCRs are 2×10^{-6} for both 0 to 0.5 ft bgs and 0 to 2 ft bgs. Arsenic (detected concentrations ranging from 1.7 mg/kg to 27.6 mg/kg; EPC = 12.3 mg/kg) and dioxin TEQ (detected concentrations ranging from 4 pg/g to 231 pg/g; EPC = 118 pg/g) are the primary risk drivers in the 0 to 0.5 ft bgs interval via incidental sediment ingestion. In the 0 to 2 ft bgs interval, arsenic (detected concentrations ranging from 1.7 mg/kg to 27.6 mg/kg; EPC = 11.2 mg/kg) and dioxin TEQ (detected concentrations ranging from 4 pg/g to 231 pg/g; EPC = 110 pg/g) are the primary risk drivers.

7. **Riparian Area.** Remedial Action is necessary for the Riparian AOI. Alternative remedial actions and the preferred alternative must be evaluated against the nine evaluation criteria found in the NCP. The OU-C and OU-D Remedial Investigation (RI) Report concluded that contamination in the Riparian Area presents an unacceptable risk to human and ecological receptors. Concentrations of dioxin TEQ in the riparian ditch ranged from 23.2 pg/g to 315 pg/g.

The BHHERA did include a separate analysis of additional pore water data, and an assessment of ecological risk from chemicals in pore water. While the

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BHHERA concluded, that ecological risk in the riparian area are negligible (based on pore water analysis), the BHHERA did not reevaluate human health risk and does not provide any new information that would change the conclusion of the RI Report.

Please submit an outline of the OU-E Feasibility Study by September 21, 2015. Include in the outline all of the areas identified in this letter that require inclusion in the FS and a list of alternatives to be considered for each area. DTSC will schedule a meeting, to take place in October, for the discussion of the outline.

If you have any questions regarding this letter, please contact me at 510-540-3776 or at Tom.Lanphar@dtsc.ca.gov.

Sincerely,



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