CLARK FORK COALITION

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Region 8, Montana Office
10 W. 15th Street, Suite 3200
Helena, Montana 59626

October 28, 2020

RE: Groundwater Conceptual Site Model Former Smurfit-Stone/Frenchtown Mill Site, Missoula County, Montana, Draft Version 3, Issued: June 26, 2020.

Ms. Archer,

On behalf of the Clark Fork Coalition (CFC), please accept the following comments on the Draft, Groundwater Conceptual Site Model for the former Smurfit Stone site. As you are well aware, the Groundwater Conceptual Site Model (GCSM) is a critical component of the Remedial Investigation process because it outlines the overarching picture of available groundwater data and summarizes the sources, fate and transport, and exposure pathways of contamination. This is particularly important at the Smurfit site, where for over 50 years, the shallow aquifer was used an active disposal system for enormous amounts of wastewater, sludge, refuse and other toxic materials associated with the mill's production. As existing data confirms, the site's discharge system continues to operate as it was intended, and buried contaminants continue to leach into the aquifer, and eventually into the surface waters of the Clark Fork River.

The Draft GCSM fails to provide an accurate or objective interpretation of existing groundwater data and accordingly draws several premature and misleading conclusions. As an overall theme, it appears that groundwater data observations that are inconsistent with the PRPs pre-conceived hypotheses are being either downplayed are ignored. This is troubling because where groundwater outliers are ignored or discarded, remedial actions aimed at controlling contamination plumes are likely to be ineffective, inefficient or simply fail. *See* Sutherson et. al. *Rethinking Conceptual Site Models in Groundwater Remediation* (2016). Instead, where they are present, data outliers should be viewed "as key clues to unraveling contaminant transport in groundwater systems that are always nonuniform and dynamic, leading toward flux-focused remedies that target the mass that moves." *Id.*

Therefore, the CFC requests consideration of the following comments/questions:

Executive Summary

Exec. Summary: The Executive Summary misstates the definition of OU3, which includes the Clark Fork River where hazardous substances from Site activities have come to be located. Please correct.

Exec. Summary, ¶ 2: This paragraph states that the purpose of the GCSM is to help stakeholders process *all* available information, but without explanation, the model does not incorporate any environmental data collected prior to 2014. Please explain.

Exec. Summary ES-3 at ¶ 4: This paragraph states that *"Arsenic is not present above background concentrations in the deeper Unit 3 or in the CFR."* Surface water monitoring to date is grossly insufficient to support this statement. Further, this statement ignores the impacts of discharges of arsenic and other contaminants during periods of high water, which have shown elevated levels of arsenic. The above statement should be removed from the GCSM.

Exec. Summary ES-4 at ¶ 2: This paragraph states that *"TEQ concentrations exceeding background are present at several locations in the central portion of OU3, and only within the water table aquifer (Unit 1). Of the 61 wells sampled for dioxins/furans from 2014 to 2019, only four monitoring wells have had consistent detections of TEQ (NFMW1s, NFMW9, NFMW16, and SMW17)."*

Have TEQ concentrations related to dioxins and furans been inconsistently detected at other groundwater monitoring wells? If so, which wells and what do these detections mean in terms of migration of contaminants into and around the shallow aquifer? What plans do the PRPs to further investigate the consistent sources of dioxins/furans at the four groundwater wells noted above and/or additional monitoring locations? Please respond.

Exec. Summary ES-4 at ¶3: This paragraph states that PCBs *"have not been detected on a consistent basis from 2014 to 2019,"* but have been consistently detected during high and low groundwater events at two separate wells: NFMW2 and NRMW15.

CFC recommends further PCB soil sampling and groundwater sampling in potential sources areas near NFMW-2, in which PCBs have been detected in groundwater. We further suggest that additional sites within OU2 be sampled for PCBs. The High Density Pulp Tank Foundation is just one of many locations in which PCB oil was used historically in electrical or hydraulic equipment in OU2. Paints, sealers or caulks are also common sources of PCBs at industrial sites, and likely to have been used on the tanks at the former mill. Other tank foundations may have similar levels of PCB contamination. The likely sources have been noted in previous stakeholder comments.

This paragraph also states that the *"Draft HH RA does not carry forward PCBs, VOCs or SVOCs for further risk evaluation."* The Draft HHRA is not finalized, and the CFC does not believe that existing data supports the elimination of PCBs, VOCs or SVOCs as potential contaminants of concern. In any event, this statement seems irrelevant to the purpose of the GCSM. Please revise.

Exec. Summary ES-4 at ¶4: This paragraph states that *"Dioxin and furans present in waste solids may be associated with the production of bleached linerboard over a limited time period at the Mill"*. Bleaching occurred at the site from 1960 to 1999, or 39 of the 53 years that the mill

was operational. Describing this timeframe, which represents 73% of the mill's operational history, as "limited" is unreasonably dismissive of the potential for dioxin in the mill's waste stream and should be eliminated.

Exec. Summary ES-5 at ¶1: This paragraph states *"[t]race concentrations of VOCs and SVOCs may be present in waste materials that contain general mill refuse and garbage, or in isolated areas of OU2 where petroleum products may have been used."*

Is it truly unknown whether petroleum products were used at the site and where? Initial site investigations at Smurfit noted that *"[s]ite assessments have apparently been performed at six of eight petroleum storage tank locations at the site. The assessments found evidence of leaks at three of the tanks."* What groundwater investigations have been conducted to characterize the presence of contaminants from leaking petroleum storage tanks? Please respond.

Exec. Summary ES-5 at ¶6: This paragraph concludes that *"[a] portion of the groundwater in Unit 1 ultimately migrates to Unit 3. Groundwater sampling indicates manganese is the only COPC that is found in Unit 3 above an MDEQ standard or EPA secondary standard. Both Unit 1 and Unit 3 groundwater discharge to the CFR; however, CFR surface water samples collected at locations upstream, adjacent to, and downstream of the Site in 2015 and 2018 indicate that the CFR does not contain elevated levels above background of any COPCs as a result of discharge from the Site."*

This statement is both unsupported by current data and overly broad in terms of its conclusions. The Missoula Water Quality District and the University of Montana have conducted independent research that has established groundwater recharge to the Clark Fork River adjacent to the mill site. Episodic surface water grab samples are not adequate for determining the chemical composition and potential pollutant loading from this recharge, nor is it appropriate to dismiss the impacts of these pollutants by relying on perpetual dilution by the Clark Fork River. Please revise.

The paragraph concludes that: *"[t]he quality of the CFR supports all beneficial uses of a Class I surface water body as defined by the MDEQ, including residential consumption."* This statement is irrelevant to the question of how current data characterizes ongoing discharge of COPCs into surface waters from the Site's groundwater. It also ignores current knowns and unknowns about acute levels of groundwater discharge during high/low water events. Finally, it falsely implies that the CFR's stream classification as Class I somehow conflates with the standard for remedial action at the site. This statement should be eliminated.

Exec. Summary Figure ES-3 and Figure 4: Figure ES-3 depicts and describes connectivity between the shallow aquifer and the waste management area. In contrast, Figure 4 shows them as separate. Please revise Figure 4 to indicate the connection.

Regulatory History

The GCSM repeatedly misstates the regulatory history of the site with respect to its waste management system. Several statements should either be corrected or eliminated. For example:

Summary of Historic Mill Operations, Pg. 8: *"[t]he Mill operated solid waste basins as part of the permitted WWTS and landfills. The basins received Class II (general household non-hazardous materials) and waste solids generated during the wastewater treatment process (see discussion in Section 3.3)."*

There were no licensed or permitted Class II landfills on site. The mill may have operated these areas as landfills and stored Class II waste in unlined dumps, but they were not permitted. In addition, there is no factual evidence to indicate these landfills were closed pursuant to existing regulations governing the disposal of solid waste. Please correct or remove.

Pg. 8: *"The Mill began to operate a WWTS in 1957. From 1957 to 1969, the Mill relied entirely on natural biological wastewater treatment (aerobic and anaerobic bacteria) in storage ponds."*

This statement is misleading. The mill had no wastewater treatment facilities other than storage ponds (infiltration) and direct discharge to the river until 1971. Regulatory discharge permits were not even required until 1975. Please correct or remove.

Pg. 12: *"All solid waste basins and spoils basins are outside of the 100-year floodplain and are protected from flooding by the CFR berm and an inner berm. All solid waste basins were permitted by the MDEQ predecessor (Montana Department of Health and Environmental Sciences)."*

The fact that wastewater basins, dumps and sludge ponds are behind a berm does not mean the wastes are "protected." The outer berm was designed to be permeable and it continues to act as a discharge mechanism for contaminated groundwater. It is not a flood-control structure. Again, Class II landfills were not permitted by any regulatory agency. Please correct or remove.

Groundwater Interaction with Buried Wastes

Page 17: This paragraph states: *"It is important to note that there is considerable uncertainty concerning whether wastes in SWBA and SWB6 actually come into contact with groundwater seasonally. Most of this uncertainty is associated with a limited number of explorations which intersect the bottom of waste materials in this area."*

What plans do the PRPs have to characterize the waste materials within the waste dumps and conduct further exploration to determine interaction between groundwater and the bottom of waste dumps in SWBA and SWB6?

Page 31 at ¶3: This paragraph states that *"Arsenic, iron, and manganese were not used in any form in the production of pulp and paper at the former Smurfit-Stone/Frenchtown Mill; however, these metals are present in wood and therefore presumably are in WWTS residual materials [….] . Note that the mean concentrations of arsenic and iron in WWTS residuals are below the Montana background mean, suggesting that Site groundwater is influenced by background concentrations and mill waste residuals are not the primary source of these metals on the Site."*

This statement is misleading and draws premature and unfounded conclusions. The highest concentrations of hazardous substances measured on the mill property are generally in the area of sludge and settling ponds and the holding ponds closest to these areas. This spatial distribution of elevated metals concentrations suggests that the mill wastewater stream is the source of contamination. Arsenic, iron and manganese should be compared to ***site-specific*** background concentrations from areas not impacted by contamination from the facility. Further, even if Montana background mean for COPCs were an appropriate measure of

contamination (which it isn't), manganese site mean levels are 15 times the mean averages statewide. Please correct these statements.

Figure 14: Even with limited data from the lost transducer CFR-1, it is clear that the elevation of the Clark Fork River is often higher than groundwater at the site, suggesting a more complicated interaction of surface and groundwater than is depicted in the report's groundwater elevation contour maps. Please revise or explain.

Sincerely,

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