



Missoula City-County Health Department

WATER QUALITY DISTRICT

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July 25, 2016

Joe Vranka, Superfund Branch Chief
EPA, Region 8, Montana Office, Federal Building
10 West 15th Street, Suite 3200
Helena, MT 59626

Tom Livers, Director
Montana Department of Environmental Quality
Helena MT 59620

Dear Mr. Vranka and Mr. Livers,

The Missoula Valley Water Quality District submits the following comments to the U.S. Environmental Protection Agency and Montana Department of Environmental Quality regarding the sludge impoundments/landfills at the former Smurfit-Stone mill site.

Please share these comments with the responsible parties conducting work at the site under the Administrative Order on Consent between the parties, EPA and DEQ. Please also share these comments with the EPA staff preparing the baseline risk assessment for the site.

To summarize, a review of the history and available data regarding the sludge and ash landfills at the Smurfit Stone site demonstrates that:

1. In 1992, when RCRA Subtitle D regulations were coming into effect, Stone Container requested a Class II landfill license from the Montana Department of Health and Environmental Sciences (DHES) pursuant to the Montana Solid Waste Management Act. DHES denied the license application because the wastes were located in proximity to groundwater and floodplain, and would be required to be moved to a properly designed Class II landfill with a liner and leachate collection system and properly designed cap. However, DHES subsequently failed to regulate the sludge landfills in compliance with the Solid Waste Management Act. It claimed that it would regulate the wastes under the facility's MPDES discharge permit, but no such regulation occurred. The landfills have remained unregulated since 1992 by the Montana DHES and its successor the Department of Environmental Quality (DEQ). Because the State of Montana (DEQ and previously DHES) is required to comply with the federal Resource, Conservation and Recovery Act (RCRA) in its administration of the Solid Waste Management Act, the State has failed to comply with federal law.
2. The sludge landfills meet the definition of landfill and the wastes in the sludge and ash landfills meet the definition of Group II wastes in the Montana Solid Waste Management Act and Administrative rules adopted pursuant to that statute. This Statute and regulations set forth requirements for licensing, design, operation and closure of landfills in Montana. Montana DHES and DEQ failed to

- comply with the Solid Waste Management Act and Administrative rules, and RCRA by failing to regulate, license, monitor and close the sludge and ash landfills at the former Smurfit- Stone site.
3. The sludge and ash landfills contain large volumes of sludge mixed with fly ash, disposed of from the mill. The landfills containing sludge and fly ash cover about 102 acres at the site.
 4. The sludge impoundments and mill waste landfills have not been fully characterized. However, data available from the URS investigation (2012) and the New Fields investigation (2014) indicate that the sludge contains a number of contaminants exceeding established risk based standards. These include cadmium, mercury, arsenic and selenium. Based on the EPA's Analytical data report, the sludge landfills contain other contaminants at levels of concern including dioxins, furans, arsenic, benzo (a) pyrene, 4-methylphenol, lead, zinc, manganese, phenanthrene and naphthalene.
 5. Sludge landfills at the site have not been closed with effective isolation from groundwater and surface water, liners, leachate collection and treatment, landfill gas collection, ongoing monitoring and maintenance. All landfills at this site are unlined. Wastes were disposed in or very near groundwater. Wastes were likely placed at or below floodplain elevation. Wastes are separated from Clark Fork River by uncertified, non-engineered gravel dikes composed of local alluvium. Some sludge impoundments have been inappropriately capped with wood waste and others flooded with water as a temporary measure to prevent dust emissions.
 6. The landfills containing sludge and fly ash have not been regulated or closed in accordance with federal or Montana laws and regulations.
 7. Closure of the landfills in accordance with state and federal laws and regulations must be required.
 8. Effective closure of the landfills should include removal of the materials from contact with groundwater and proximity to the Clark Fork River and its floodplain. The materials should be disposed in a properly designed landfill with cap, liner and leachate collection, isolated from groundwater and surface water.

Background

On July 22, 1992 Stone Container, predecessor to Smurfit-Stone Container, submitted an application to the Montana Department of Health and Environmental Sciences (DHES), predecessor to the Montana Department of Environmental Quality (DEQ), to license Class II landfills at the former Smurfit-Stone mill site (Attachment 1). Stone requested to license landfills containing general refuse, primary sludge, hog fuel ash, lime kiln grits, asbestos, ragger wire and wood yard waste. The area for solid waste disposal proposed for licensure covered a total of 200 acres. Ponds 2, 4, 5 and 17 were identified as containing primary sludge. The quantity of sludge produced was stated to be 54 tons per day.

On February 8 or 11, 1993 DHES wrote a letter to Stone Container responding to the landfill license application (attachment 2). In this letter DHES states that, "First, a major waste stream of your facility, primary sludge is produced by your effluent treatment process permitted under a Montana Pollution Discharge Elimination System (MPDES) permit. This primary sludge, if disposed of under a Solid Waste Management System license for a landfill, would be required to be removed from the wastewater treatment ponds and buried in a properly designed Class II landfill unit. This landfill unit would likely be required to have an engineered liner and leachate collection system. The SWMP staff believes that an alternative means of regulating disposal of the primary sludge may be possible under the MPDES permit administered by WQB." DHES further stated, "We have discussed this situation with WQB and have a general agreement with them for the regulated control of sludges to be handled by their permitting process." DHES declared Stone's landfill license application to be incomplete, based on factors including inadequate separation to groundwater, lack of a liner and leachate collection system, lack of methane recovery system, and lack of a closure plan.

A January 5, 1993 memo from James Wilbur of the DHES Solid Waste Bureau to Steve Pilcher of the DHES Water Quality Bureau described the regulatory status of solid waste disposal at the Stone mill (attachment 3). In this memo, it is stated that the Water Quality Bureau would handle regulation of sludge disposal in accordance with the 1991 amendments to the Montana Solid Waste Management Act. The memo states that the Bureau would include regulation of sludge disposal in the renewal of Stone Container's MPDES Discharge permit. The legal basis for this decision is not explained; however the memo clearly states the intent to regulate the landfills under the permit in accordance with the Solid Waste Management Act.

Attachment 4 is a copy of the 1995 MPDES discharge permit for the mill. A diagram showing the disposal of sludge in the sludge ponds is included. Attachment 5 is the Statement of Basis for the 1995 permit. No permit changes are noted related to the sludge ponds/landfills. Attachment 6 is the 2000 MPDES permit for the mill. No mention of sludge disposal is found in this permit. None of these permit documents address requirements of solid waste statutes or regulations regarding solid waste management systems, including engineered liners, leachate collection or capping. The permits include no guidance on design, monitoring, operation, landfill gas collection, or closure requirements for the landfills. The permits include no requirements to comply with the Montana Solid Waste Management Act or RCRA regulations.

Attachment 7 is the EPA's preliminary assessment for the former mill site dated September, 2011 (URS, 2011). Table 1 in this document provides a description of waste types and disposal locations at the mill. Primary sludge is noted to have been disposed in ponds 3, 4, 5, 17, 19 and 20. According to EPA's preliminary site assessment the sludge impoundments cover 91 acres, and received up to 20,000 tons per year from 1970-2011. Two other landfills, landfills 19 (D) and 20 contain sludge mixed with fly ash and cover and additional 11 acres.

Attachment 8 is a calculation of area occupied by various landfills at the site, including sludge landfills. This calculation was done by our Department based on the information provided in EPA's 2011 preliminary assessment, and the 2012 Analytical Data Report. The total area of landfills containing sludge at the site is approximately 102 acres.

Discussion

These landfills were created by filling lands at or below the 100 year floodplain elevation, and wastes were placed in or very near shallow groundwater. The landfills were constructed in areas originally used as wastewater storage ponds. The ponds were constructed by excavating below native ground elevation by 5-6 feet, and using the material removed to create gravel berms surrounding the impoundments (DNRC, 2010 - attachment 12). The location of some of the units is shown on an attached photo taken in 2011 (attachment 9), and the floodplain delineation is shown on attachment 10. The floodplain does not extend to the area in which the landfills are located is that they were created by placing fill in the floodplain, raising the elevation of the ground surface above base flood elevation, and the floodplain boundary currently recognizes some internal dikes as a boundary. This floodplain boundary is subject to modification upon review of more detailed topographic data for the site, based on communications between the Missoula County Floodplain Coordinator, Missoula Valley Water Quality District and the Federal Emergency Management Agency. Wastes were likely disposed of below flood elevation, and the landfills are separated from potential flood flows by uncertified, non-engineered gravel dikes. The stability of the sludge landfills is

questionable due to the liquefiable nature of the sludge, the lack of engineered structures to contain them and the draining of surrounding wastewater ponds. The landfills have not been capped or lined with a leachate collection system. Landfill gas has not been addressed. Sludge continued to be placed in these landfills from 1993 to 2011 after the mill closed and after Montana DHES determined that the landfills would be regulated through the MPDES permit. The volume and areal extent of wastes placed in the landfills increased after 1993. Some of the sludge landfills have had wood chips placed on them to reduce dust emissions. Others have been re-flooded to prevent fugitive dust. Neither of these measures is an appropriate long term measure for closure of solid waste landfills under RCRA or Montana Solid Waste Management statutes and regulations.

The landfills are immediately adjacent to former channels of the Clark Fork River and O'Keefe Creek, which were relocated or constricted by the mill when they constructed the outer dikes for the wastewater ponds.

Based on the EPA's Analytical data report (URS, 2012), the sludge landfills contain a number of contaminants including dioxins, furans, arsenic, benzo (a) pyrene, 4-methylphenol, arsenic, cadmium, lead, zinc, manganese, phenanthrene and naphthalene (attachment 11). Data submitted in 2014 by New Fields, consultant to International Paper, West Rock and M2 Green, also indicated the presence of mercury at levels exceeding the migration to groundwater soil screening level for Region 9 EPA. Groundwater downgradient of the site was found by URS to have dioxins and furans, arsenic, chromium, lead and manganese exceeding state and federal drinking water standards. Sediment or surface water in the Clark Fork River was found to have dioxins and furans, arsenic, chromium and manganese above background levels. EPA's preliminary assessment and data reports identify the sludge landfills as potential sources of airborne emissions that could affect human health. Measures taken to limit air emissions of contaminants from the sludge landfills, such as flooding or capping with wood waste, are not permanent, suitable measures protective of public health.

The February 2015 Record of Decision for the Missoula White Pine Sash Facility (MWPS Facility), Missoula, Montana establishes a Site Specific Cleanup Level (SSCL) for cadmium in soil of 1.82 mg/kg. This site is regulated by the Montana DEQ through its State Superfund (CECRA) program. An area of the MWPS Facility was used to landfill wood ash from on-site boilers. This wood ash is likely similar in content to the wood ash disposed of at the Smurfit-Stone mill site. Both facilities used wood fired boilers, and the wood was harvested from the same western Montana and surrounding region. The December 2012 Final Baseline Risk Assessment Addendum establishes numeric SSCLs for the MWPS Facility (CDM 2012). The SSCL for cadmium in soil was based on leaching to groundwater. The analysis is presented in Addendum 3 to the BRA Entitled "Technical Memorandum Fate and Transport Modeling at the Missoula White Pine Sash Facility" (CDM, 2011). Montana DEQ required the responsible party at the White Pine site to remove a wood ash landfill based on cadmium contamination, and the leaching to groundwater model. The depth to groundwater at this site is more than 60 feet, in contrast to the Smurfit site where wastes were buried in or very near shallow groundwater.

Data presented in Attachment A - C-1B of the Newfields Remedial Investigation Work plan shows concentrations of cadmium in soil. Most samples collected in Region III (Sludge Ponds) exceed the 1.82 mg/kg SSCL with the average of 11 samples collected in the sludge ponds being 3.83 mg/kg. Concentrations of other metals including mercury and selenium were also elevated in soil samples taken from the sludge pond areas.

Montana DHES made a decision more than 20 years ago to regulate the disposal of sludge in landfills at the site through the MPDES permit process, but permits were not revised to address requirements of the Montana Solid Waste Management Act and regulations and RCRA. Sludge and ash disposal continued without regulation until after the mill closed in 2011 in violation of the Montana Solid Waste Management Act and regulations and RCRA. The sludge landfills remain at the site and have now been identified as sources of contaminants in surface and subsurface soils, groundwater, and the Clark Fork River.

The Montana Solid Waste Management Act 75-10-202. Legislative intent, findings, and policy states that improper and unregulated disposal of solid wastes endangers the health and welfare of Montana citizens.

The Montana Solid Waste Management Act 75-10-203 (6) (a) defines a solid waste landfill as one that receives non hazardous sludge or industrial waste and 11 (a) defines solid waste as wastes including sludge from sewage treatment plants and wood byproducts. These definitions parallel those in RCRA.

The Montana Solid Waste Management Act 75-10-221 requires licensing of solid waste landfills. Montana Administrative Rules 17.50.410 require an annual operating license for solid waste landfills operated or maintained after July 1, 1991.

Montana Administrative Rules 17.50.502 define industrial solid waste as non hazardous waste, including wastes resulting from the pulp and paper industry. The Montana Solid Waste Management Act definition of Industrial solid waste parallels the definition in RCRA § 258.2. Montana Administrative Rule 17.50.503 defines Group II wastes as those including sewage treatment sludges, ashes, industrial solid wastes and industrial process wastes.

Montana Administrative Rule 17.50.1009 describes location restrictions for landfills, including adequate separation of wastes from ground water and surface water. The regulation also requires a location that does not allow discharge of pollutants in excess of state standards to state waters. The Department may impose additional restrictions for sole source aquifers. The Missoula aquifer underlying the Smurfit-Stone mill site is designated by EPA as a sole source aquifer. Montana Administrative Rule 17.50.1009 (d) requires drainage structures to control surface water runoff and run on. Montana Administrative Rule 17.50.1009 (e) requires location allowing for closure, post closure care and planned uses of the land post closure. Montana Administrative Rule 17.50.1009 (f) requires management of solid waste, landfill gas and leachate.

Montana Administrative Rule 17.50.1204 sets forth design criteria, monitoring requirements and closure requirements for landfills. Class II landfills must either be located where common landfill constituents will not exceed standards specified in the regulation, or must use a composite liner and leachate collection system. These requirements parallel those included in RCRA Subtitle D regulations § 258.2.

Montana Administrative Rule 17.50.1304 GROUND WATER MONITORING SYSTEMS (1) requires landfill owners and operators to install a groundwater monitoring system. Montana Administrative Rule 17.50.1403 CLOSURE CRITERIA (1) requires a Class II landfill to have a final cover system designed to minimize infiltration and erosion. These requirements parallel those of RCRA Subtitle D § 258.60.

Montana Administrative Rule 17.50.1404 POST-CLOSURE CARE REQUIREMENTS (1) requires Class II landfills to conduct post closure care for a period of 30 years, maintaining effectiveness of the final cover, preventing run-on and runoff, operating the leachate collection system, monitoring groundwater and maintaining the landfill gas monitoring system. These requirements parallel the requirements set forth in RCRA Subtitle D § 258.61.

RCRA regulations at 40 CFR Part 258.1 (g),(h) and (i) state that landfills failing to meet the criteria of the regulations are considered "open dumps" for purposes of State solid waste management planning under RCRA, are considered open dumps prohibited under section 4005 of RCRA, and those landfills failing to meet the criteria which contain sludge violate sections 309 and 405(e) of the Clean Water Act.

Conclusion

The sludge and ash landfills at the former Smurfit-Stone site have not been regulated pursuant to the Montana Solid Waste Management Act or RCRA Subtitle D regulations. The landfills contain contaminants of concern and pose a risk to human health and the environment. The landfills must be properly regulated, monitored, managed and closed in accordance with state and federal laws and regulations. The landfills constitute open dumps which violate federal and state regulations, including RCRA, the Clean Water Act, and the Solid Waste Management Act.

We request that the EPA and DEQ now require the landfills at the site be removed, and the contents disposed of in a properly sited, designed and regulated landfill with cap, liner and leachate collection system isolated from groundwater and surface water.

Thank you for consideration of these comments.

Sincerely,

A handwritten signature in black ink that reads "Peter Nielsen". The signature is written in a cursive, slightly slanted style.

Peter Nielsen
Environmental Health Supervisor
Missoula Valley Water Quality District

Cc: Doug Martin, Montana Natural Resource Damage Program
Mary Price, Confederated Salish and Kootenai Tribes