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August 17, 2017

Sara Sparks
U.S. Environmental Protection Agency
Helena MT 59626

Keith Large
Montana Department Environmental Quality
Helena MT 59620

Delivered electronically
SUBJECT: 2017 Groundwater Monitoring Plan

Dear Sara and Keith,

Thank you for the opportunity to comment on the 2017 groundwater monitoring plan.

Peak and Low Seasonal Groundwater Monitoring

The groundwater monitoring plan proposes monitoring for contaminants during high and low groundwater, in June and December 2017. Static water level data obtained over the last several years should be used to determine representative high and low water sampling dates. Based on the limited groundwater elevation data available, it appears that static water levels may have been higher in December than in June in many wells at this site, perhaps due to irrigation ditch diversion schedules. The data available from the site includes groundwater elevations from different years for each season, so it is difficult to evaluate high and low water trends definitively. However, the County monitoring well on Lacasse Lane has typically had higher static water levels in late summer/fall, with lower levels in spring/early summer, probably due to the influence of the irrigation ditch. Seasonal peak groundwater elevations should be determined at the site based on more complete data, which will become available with expanded water level monitoring proposed in the 2017 plan. Samples for contaminants in groundwater should be collected near the projected peak in order to adequately assess potential impacts of rising groundwater at the waste and sludge dumps.

PCB monitoring

The 2017 monitoring plan calls for sampling of NFMW-11, NFMW-9 and NFMW-6 for PCBs. NFMW-6 has only been sampled for PCBs once, in April 2014, and NFMW-9 and NFMW-11 have not been sampled for PCBs. We support additional monitoring of PCBs in these wells in the 2017 groundwater monitoring plan. Results from these samples can be evaluated to determine whether any additional groundwater sampling or additional wells may be needed in the future. Many wells at the site have only been monitored once for PCBs, and many have never been sampled at high water conditions. Other wells have never been sampled for PCBs. We recommend that PCB sampling should include at least one low and high water sampling event from each well.

We recommend that additional samples be taken and preserved for each of the wells in the upcoming sampling event, and if any of the aroclors are detected in the wells, that congener analysis be performed.

While these comments focus on the 2017 groundwater monitoring plan, we continue to urge sampling of soils for PCBs and other contaminants near NFMW-2. The potential source areas not yet sampled near this well include the transformers near the paper building, portions of sludge pond 4 near NFMW-2, and in the ditches that run from the paper building and the pulp mill/recovery area. These ditches carried spills from the paper building and the pulp mill/recovery area to the ponds, passing near NFMW-2. These areas have not yet been sampled as part of the remedial investigation. I have attached a 1972 aerial photo labeled to show these areas and the location of tNFMW-2 in 2017. Several former workers have reported frequent and significant spills of hydraulic oil in these areas. Others have described potential PCB oil releases in these areas. Hydraulic oil and transformer oil used during the operation of the mill from 1957 to 1979 likely contained PCBs.

Metals, VOC and SVOC monitoring

We support the 2017 plan's inclusion of total metals monitoring for the June and December, 2017 sampling events. Metals sampling for 2014, 2015 and 2016 was reported for only dissolved metals in the monitoring plan document. Limited sampling for total metals has been conducted, particularly in 2014, but the total metals data is not reported on the tables in the sampling plan. EPA sampling in 2011 analyzed for both total and dissolved metals. The 2011 sampling results indicated much higher total metals concentrations in groundwater, including samples that detected 130-167 ug/l total chromium in wells near the waste dumps, compared to the 100 ug/l drinking water standard. It is not clear why the 2011 EPA total metals data should not be considered in the remedial investigation.

The 2017 Groundwater Monitoring Plan proposes to discontinue monitoring of total and dissolved metals, VOCs and SVOCs unless detected in the June, 2017 monitoring event above an applicable drinking water or groundwater standard. We do not support this recommendation. Several dissolved metals, including cadmium, mercury and chromium have been previously detected in groundwater samples, but at levels below applicable standards. Many wells have exceeded the MCL or DEQ-7 standard for dissolved arsenic, but others have detected dissolved arsenic at levels below the standard. The June, 2017 monitoring event will be the only data we have for total metals in groundwater. We do not agree that dissolved and total metals including arsenic, cadmium, chromium and mercury have been sufficiently monitored at this site to evaluate trends and resolve uncertainties in the data. Shifts in groundwater flow can cause variations in contaminants. The monitoring wells used for sampling are not at a sufficient density to determine the extent of contamination in groundwater, with wells placed at a density of about one per ten acres throughout much of the site. There is very limited data on total metals. We support monitoring for all metal constituents of concern where they have been detected previously.

Dissolved cadmium has been detected in three wells, and the highest concentration detected was 2.1 ug/l, compared to the 5.0 ug/l MCL drinking water standard. Dissolved chromium has been detected in many wells, particularly in OU3, with the highest level detected being 17.6 ug/l compared to the 100 ug/l drinking water standard.

Cadmium and mercury have been detected in soils at levels that exceed Montana background values and EPA migration to groundwater screening levels. The same metals have been detected in groundwater.

Most of the metals, including cadmium, chromium, mercury and lead are Contaminants of Potential Ecological Concern for risk assessment.

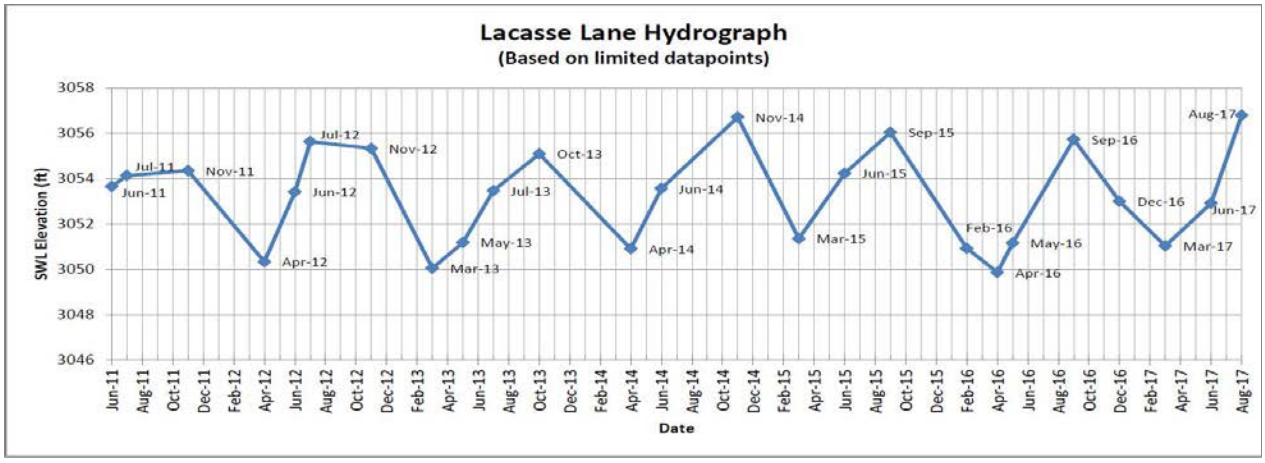
RCRA regulations for solid waste landfills require a groundwater monitoring program. CFR 258.54 requires a detection monitoring program at all landfills. CFR 258.55 requires an assessment monitoring program whenever a statistically significant increase over background has been detected in one or more of the constituents monitored. The assessment monitoring program must continue for 30 years. At the Smurfit-Stone landfills, several metals including arsenic, manganese, cadmium, chromium and mercury have been detected in groundwater samples at levels above background. Dioxins, furans and PCBs have also been detected above background. RCRA regulations and Montana Solid Waste Management regulations require an assessment monitoring program to continue for these parameters for 30 years. Monitoring wells at the site have been sampled for metals on at most three occasions. The proposal to discontinue monitoring for metals after such limited sampling is not consistent with federal or State solid waste regulations.

For these reasons we believe it is inappropriate to discontinue monitoring of metals in the second round of sampling in 2017.

VOCs and SVOCs should also be monitored where detected previously. Some constituents required to be sampled at landfill sites under RCRA regulations have not been sampled for, and others have not been sampled at all appropriate wells. These include p-cresol, or 4-methyphenol which was detected in soil samples collected by EPA in 2011 and has been detected in river sediments at St. Regis by the U.S. Geological Survey. P-cresol has not been analyzed for at this site. Phenol has been monitored at only eight wells in OU3 and nine wells in OU2. Phenol should be analyzed for additional samples taken in OU3 wells. A number of VOC and SVOC compounds were detected in the EPA 2011 investigation. It is unclear why this data should not be considered as part of this remedial investigation.

Water Level Monitoring

We support the plan's proposal to conduct quarterly monitoring of water levels at 56 wells, and monthly monitoring of an additional 22 wells during anticipated high water season. The plan proposes this monthly high water sampling to be conducted during the "spring and summer". Peak groundwater elevations at the County Lacasse Lane well typically occur in the fall. The figure below shows a hydrograph for the Lacasse well. We added a water level measurement for today, August 17. The water level today is about four feet higher than it was in June. So for this well, June sampling would not have represented peak groundwater elevation. It is possible that other wells that are farther away from the irrigation ditch and more subject to the river's influence will show a different pattern. Water level monitoring proposed in this plan will help determine the dates of peak seasonal groundwater.

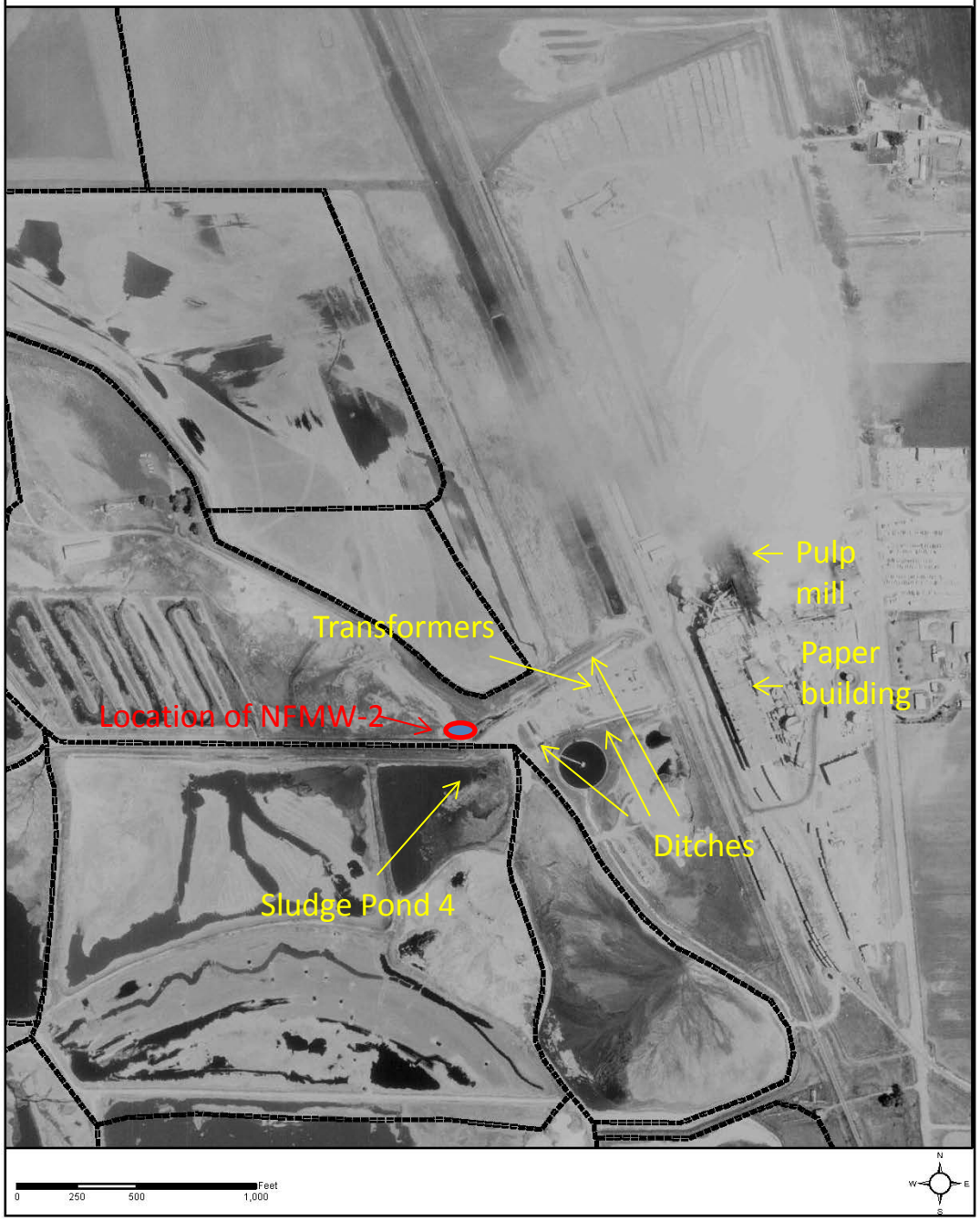


Other data from wells at the site indicate higher levels in December than in June or April. In some cases the groundwater elevation was several feet higher in December than in June or April. This calls into question whether monitoring conducted to date has assessed seasonal peak groundwater elevations. Instead of cutting off monthly monitoring of the 22 wells during the summer as proposed in the plan, we suggest continuing monthly monitoring into the fall or until a two month trend toward lower water levels is observed. This would better ensure detection of peak seasonal groundwater elevations. But continuous data loggers would provide the best data.

The 2017 monitoring plan proposes installation of pressure transducers for continuous groundwater elevation monitoring in wells. The text indicates that NFMW-9, SMW-16 and SMW-18 would be the wells used for the transducers. However, the table and figure show only NFMW-9 and SMW-17. The purpose is to evaluate whether peak seasonal groundwater elevations impact wastes in the dumps. We recommend use of NFMW-9, NFMW 8, NFMW1S and SMW-16 for the transducers, which would provide data needed to evaluate this concern. SMW-16 is needed to monitor groundwater near landfill 6, which may be the most vulnerable to groundwater impact. This well has had water levels about 5-6 feet below ground surface using data from the 2016 aerial imagery. The ground surface of landfill 6 appears to be partially at or below 100 year floodplain elevation according to this aerial imaging data. NFMW-8 and NFMW 1S are needed to evaluate peak groundwater elevations in the vicinity of sludge dump 5 and 4. NFMW-9 would evaluate groundwater elevations near the main dump A, where ground surface elevations are higher than other disposal areas. Transducer data collected over a period of a year will also show if there are variations in groundwater flow direction in the vicinity of the dumps, and whether future groundwater monitoring schedules should be modified to target low and high seasonal groundwater elevations.

Sincerely,

Peter Nielsen

Peter Nielsen
Environmental Health Supervisor

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