DEPARTMENT OF AGRICULTURE

https://www.mda.state.mn.us/pesticide-fertilizer/spills-cleanup

Pre-Construction Soil Sampling Guidelines

Guidance Document 18

It is important for facilities to identify and clean up contaminated areas, within the proposed construction area, prior to construction. To ensure the integrity of the soil sampling results, samples should be collected using the recommended procedures provided in the Minnesota Department of Agriculture (MDA) guidance document GD11 Soil Sampling Guidance and the analyses should be completed by laboratories with quality assurance/quality control plans that have been approved by the MDA. A list of these laboratories is available from the MDA (GD23 Pre-approved Commercial Laboratories: Fixed Base and Mobile).

The MDA recommends that sampling be conducted by an individual who has been instructed in proper field sampling procedures. Soil sampling should follow the general guidelines below.

How many samples do I need to collect?

- For each construction area up to 500 square feet: collect 2 composite samples.
- For each additional 5,000 square feet of construction area or fraction thereof: collect 1 additional composite sample, up to a maximum of 6 samples for the construction area. [Exception: When soil is excavated before it is sampled, additional samples are necessary from the excavated soil pile (see "How do I collect the samples?" below).]

Where should I collect the samples?

- Choose sample areas where there is the highest potential for contamination within the proposed construction area.
- Contamination should be suspected in any area where pesticides or fertilizers have been handled. This would include previous mixing, loading, equipment parking, fertilizer impregnation tower areas, earthen dike interiors, bulk storage areas, equipment repair areas, areas with pesticide staining, dead or barren vegetation areas, scale pits, pesticide container burning areas, runoff ponding areas, water fill sites, along with any areas associated with previous spills.

How do I collect the samples?

- Each sample should be a composite sample, taken from an area no larger than 15 feet in diameter. Each composite sample should consist of no more than 6 subsamples from the same depth.
- If the planned construction will include significant excavation, collect the samples from below the excavated area. The samples should be collected from the 6-inch interval below the excavation. This could be completed through soil borings to the depth of the planned excavation and then sampling or by excavating the soil that needs to be removed and then sampling the bottom of the excavation. If you choose to excavate the area of construction first and then sample, please be aware that you will need to secure the excavated area and the soil pile while you are awaiting laboratory results and MDA review and approval.

  * Note, Minnesota statutes require written approval from the MDA for application of pesticide or fertilizer contaminated media. This means that you **MUST** have prior written approval from the MDA to spread or otherwise use any excavated soil which you know, or suspect, might be contaminated with pesticides or fertilizer.
- If significant excavation is not required for the structure(s), sample from the 0 - 6-inch interval, except in graveled areas where samples should be collected from the base of the gravel to 6 inches below the base of the gravel (gravel is loose gravel and/or stones).
- Additional composite soil samples are needed from the soil removed during excavation to determine the proper treatment for excavated soil. The soil pile should be mixed before collecting the samples. The following table illustrates the additional number of samples required to evaluate the excavated soil. Refer to MDA guidance document GD11 Soil Sampling Guidance for more information on stockpiling samples.

Volume of Soil (cubic yards)	Number of Samples
<200	1
200 – 500	2
500 – 1000	3
1000 – 2000	4

What should the samples be analyzed for?

We suggest samples be analyzed for Total Kjeldahl Nitrogen (TKN), nitrate+nitrite nitrogen, MDA List 1 Pesticides, and any other agricultural chemicals that, due to past practices, may be present in the construction area.

What happens if contamination is discovered?

If you observe any agricultural chemical contamination, such as stains or residue in soil, or if the laboratory analyses of soil or water samples detect contamination, you should immediately notify the MDA by contacting the Minnesota Duty Officer at (651) 649-5451 or 1-800-422-0798 to report the suspected incident. MDA staff may request that a pre-construction assessment report be submitted for review. The report should include all laboratory results, a map of the facility as it looks prior to construction with the sample locations noted on it, and a map of the facility as it is proposed to be constructed.

Based on the information provided in the report, you will be given the option to continue work in the pre-construction program, enter the Agricultural Voluntary Investigation and Cleanup (AgVIC) program or have the site prioritized (MDA will rank the site in priority order with other agricultural chemical contamination sites) for review by MDA's Comprehensive Program. The AgVIC program reviews sites in the order received and estimates a 30 to 45-day review time.

Initial sampling and analytical costs incurred in conducting a pre-construction assessment are not eligible for reimbursement through the Agricultural Chemical Response and Reimbursement Account Program (ACRRA). If contamination is discovered at your site and the MDA subsequently requests that it be further investigated and/or cleaned up, you may be eligible to receive partial reimbursement from ACRRA.

Please be advised that a pre-construction assessment may not address all areas of potential contamination at the facility and will not indicate whether the ground water beneath the site has been affected by agricultural chemicals.

Prior to sample collection, contact Stuart Orlowski at (651) 201-6148 for further guidance.