Developing a Leachate Sampling Plan

12:45 to 1:15 PM, May 7, 2014 in Salina

Next Session: Landfill Gas

Sampling.

However, the **sampling principles**, which will be reviewed in this session, **are the same** in both cases; only, the **medium** is changed.

Also, note that the two types of samples should be taken as close to each other so that the resulting data can be better correlated.

Finally, review on the **BWM website** the following **support documents** for the best sampling results.

Available Support Documents

1. **Leachate Sampling Plan for Reduction and/or Termination of Postclosure Care**, Technical Guidance Document SW-2013-G3.
2. **A Basis for a Leachate Sampling Protocol: Comparison of Allen and Johnson County Landfill Leachate Sampling Results** (8-5-13).
3. **Recommended List of Leachate Parameters for Post Closure (PCC) Care Terminations** (3-27-12).
4. **Training Primer for Sampling of MSWLF Emissions for the Determination of Postclosure Care Reduction/Termination Plan** (4-1-14).
5. **Summary of Leachate Sample Collection, Storage and Distribution for Kansas Subtitle D Landfills** (5-29-13).

Where to start?

Let's begin with the **heart** of **Support Document No. 4**: **The Training Primer for Sampling of MSWLF Emissions** which **is based on** the taking of **representative leachate and LFG** samples.

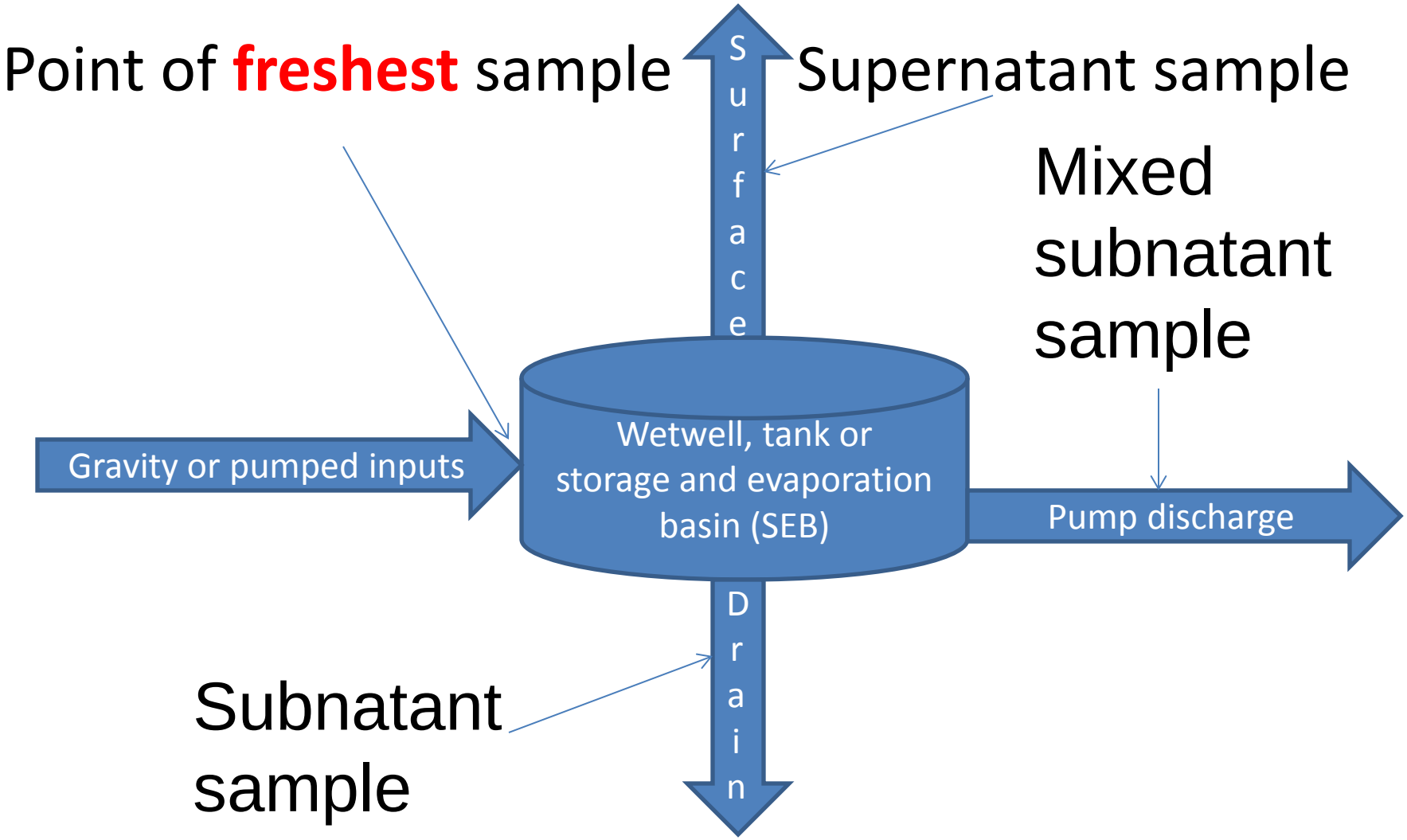
Then, we will focus on the **choosing the best leachate sampling location**.

Taking a Representative Sample:

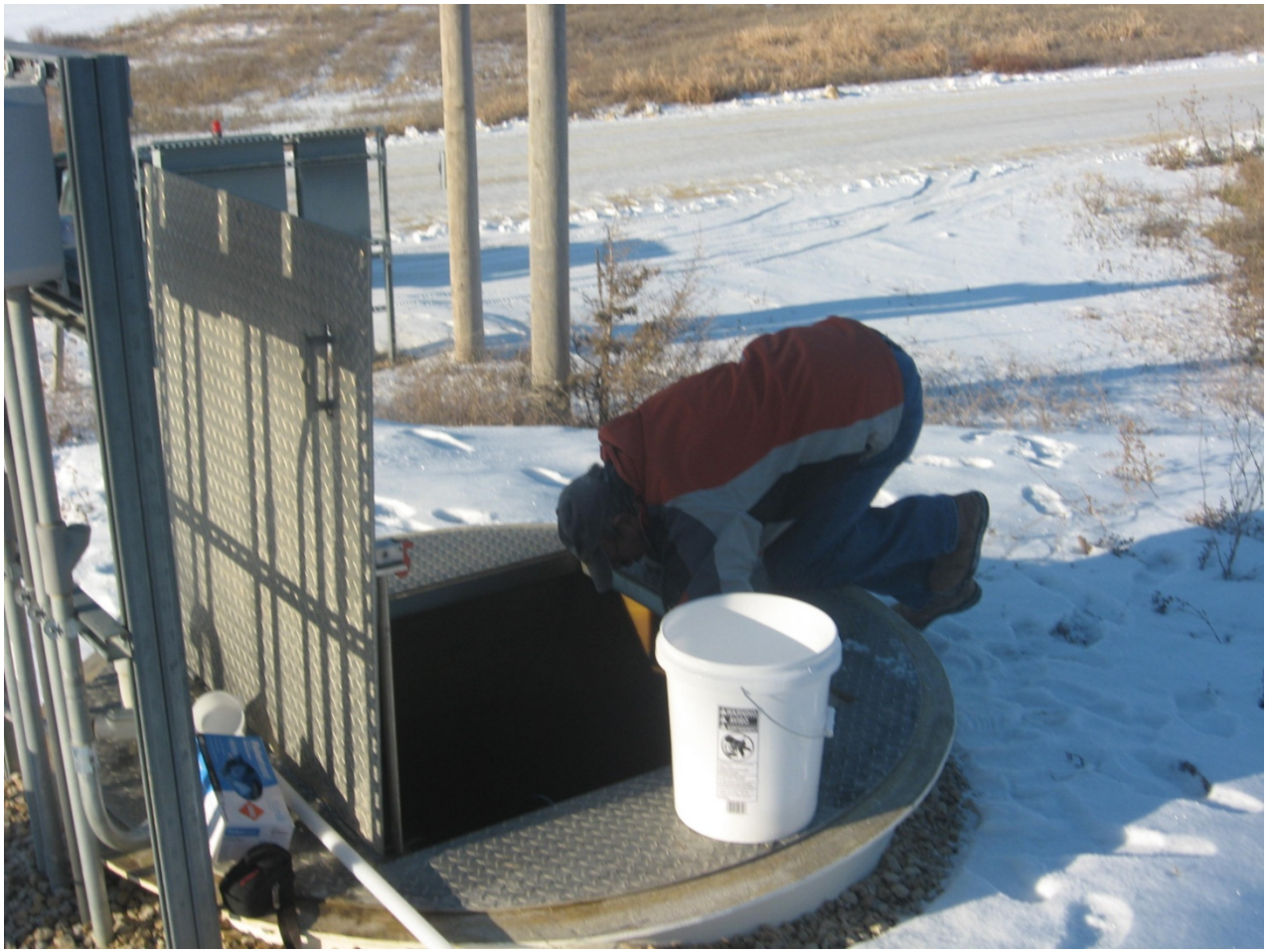
Of a **liquid (leachate)** medium. **How do you do this?**

Answer: You take an aliquot/portion of the whole regime so that it best represents the regime. The regime spectrum is from static/batch/stratified/unmixed (for a **wetwell, tank, or SEB**) **to** moving/flowing/mixed (for the **output of a phase**; **inputs and outputs for wetwell, tank or SEB**).

Leachate Sampling Options:



Wetwell Sampling

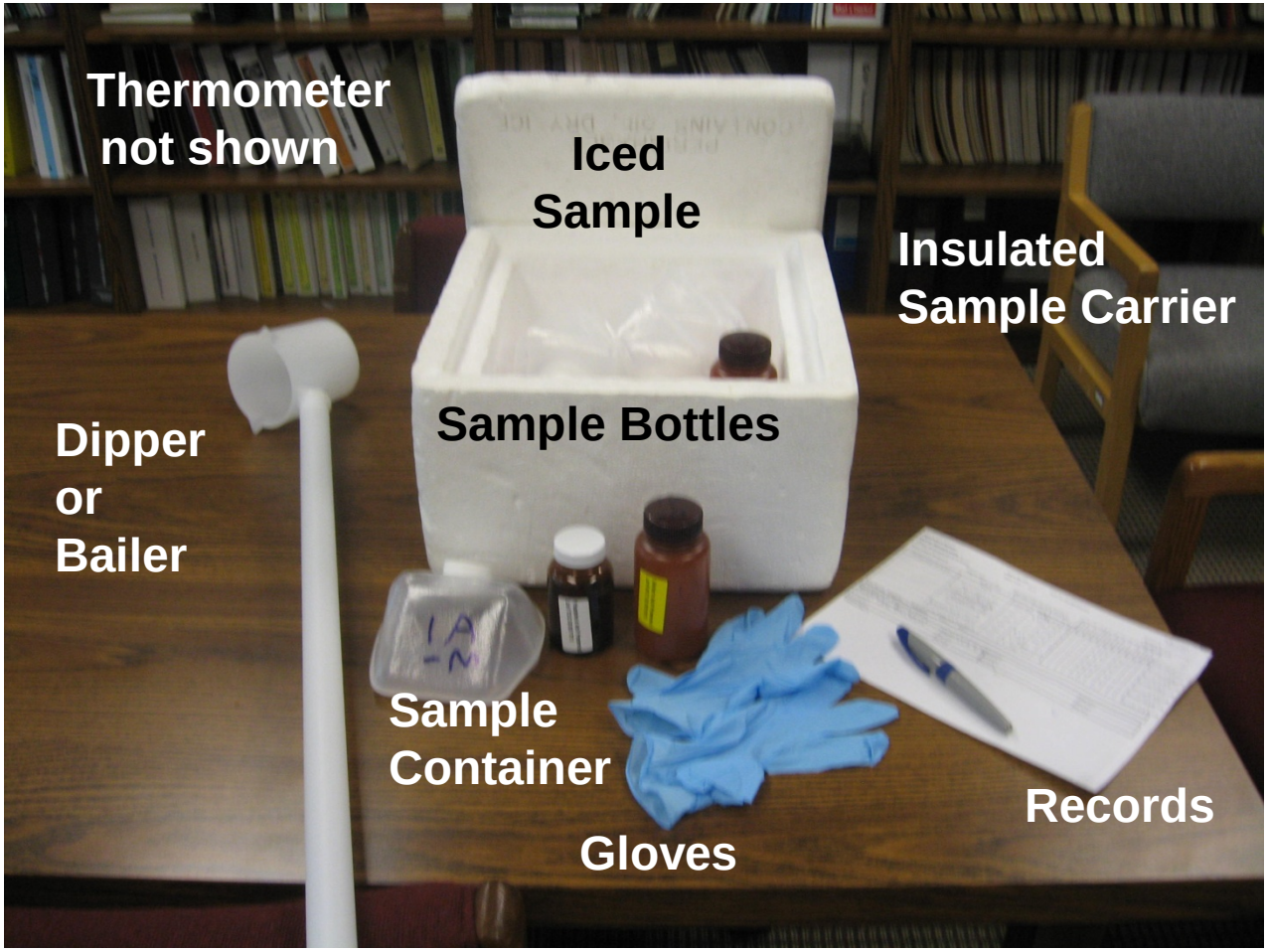


Tank Sampling

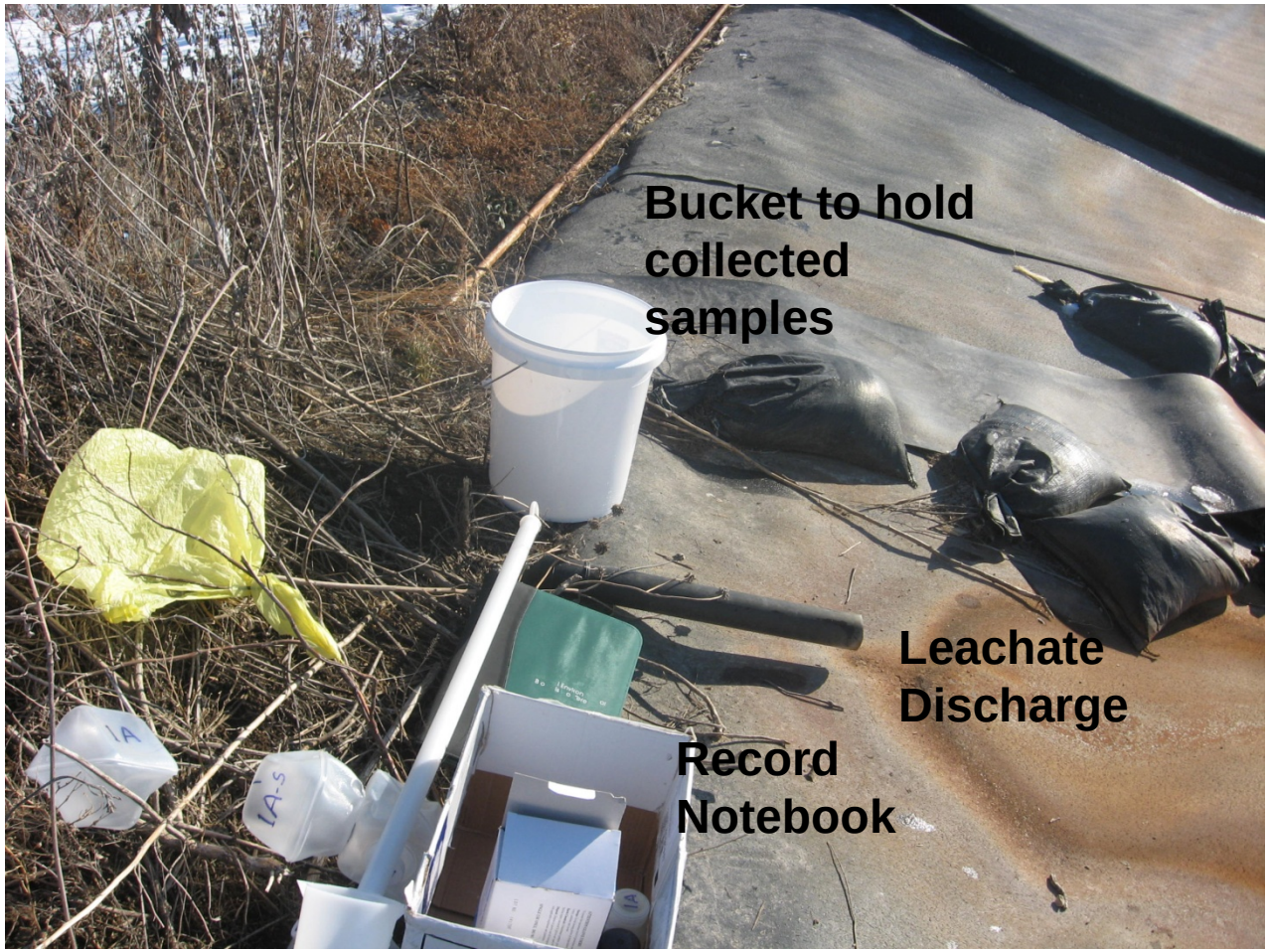
SEB Sampling

Gravity or Sump Pump Sampling

Discharge Sampling Equipment



Use of Sampling Equipment in Field



Sump Pump Sampling Considerations:

1. Allow time for sump leachate level to near low set point. Communicate with sampler time to sample.

Sump Pump Sampling Considerations (continued):

2. Flush sample collection device (dipper).
3. Collect needed sample(s) in labeled containers. Fill to top; but, don't overfill containers.
4. Measure and record temperature (or other field parameters of interest) of leachate.
5. Record other useful ambient information.
6. Store sample(s) for transportation to lab.
7. Send/take sample(s) to lab.

Summary of Subtitle D Leachate Collection, Storage and Distribution Survey

(Support Document No. 5)

- **Collection from**: 4 wetwells, 6 tanks, 4 SEBs; **and discharges by**: 3 gravity & 11 sumps.
- **Storage**: 11 tanks, 6 SEBs & 2 none.
- **Distribution**: 11 to POTWs, 1 deep well & 7 no discharge.

Key Leachate Stability Parameters

1. **Quantity**: Flow.
2. **Composition**: BOD_5, COD, NH_3, pH, TSS and temperature.
3. **Mass Flow** = Composition X Quantity **or** Total amount of biodegradable (BOD_5, NH_3 & TSS); non-biodegradable (COD – Ultimate BOD_5) material leaving phase/landfill.
4. **Leachate Conditions** = Temperature & pH.