IU Compliance Evaluation Terminology

Aggregated Parameters

- **Total metals**, 40 CFR Part 413
  - ◊ The sum of the sampling results from copper (Cu), nickel (Ni), chromium (Cr), and zinc (Zn).

- **Combined metals**, 40 CFR Part 421, Subpart (X)
  - ◊ The sum of the sampling results from gold (Au), platinum (Pt), and palladium (Pd).

- **TTO**
  - ◊ Different definitions of TTO exist for different categorical standards.
  - ◊ The summation of all quantifiable values greater than 0.01 mg/l.
  - ◊ The public utility may require summation of sampling results reported as less than values (<) that are greater than 0.01 mg/l.
  - ◊ 40 CFR Parts 413 & 433
    - − Only those organic compounds reasonably expected to be present in the discharge need be analyzed.
    - − The public utility may allow certification in lieu of monitoring where a TOMP has been received.

  - ◊ 40 CFR Parts 464, 465, 467, 468
    - − The CIU may opt to demonstrate compliance with an Oil & Grease alternative limit instead of the TTO limit. Where the option is chosen, demonstrating compliance with the alternate limit is required in the BMR, 90-day compliance report, periodic compliance reports, and any permit issued by the public utility.
    - − 40 CFR Part 464 definition for TTO varies among and within subparts.

  - ◊ 40 CFR Part 469
    - − Certification may be allowed where a solvent management plan has been received.

Converting Types of Standards

- **Concentration-based (i.e., mg/l)**
  - ◊ Except for parameters such as pH, flashpoint, and temperature, laboratory test results are typically reported in µg/l or mg/l.

- **Mass-based (i.e., lbs/day)**
  - ◊ The corresponding flow volume for the sampling period is necessary for converting concentrations to mass equivalents.
  - ◊ Formula: Flow (MGD) x Result (mg/l) x Conversion Factor (8.345) = lbs/day

- **Production-based**
  - ◊ Where equivalent concentration or mass based limits have not been calculated, production-based units require limits be calculated for each sampling event.
  - ◊ Limits are calculated by: lbs (or kgs) of pollutant allowed to be discharge per unit of production (as detailed in the permit or regulation) x actual production volume during the sampling event as reported by the IU.

- **Other**
  - ◊ Concentration-based sampling results can be converted to mass-based equivalents, as described above, for evaluation against the production-based limit.
  - ◊ Temperature °F = (°C x 1.8) + 32.
  - ◊ Volume: 1 gallon = 3.785 liters (l)
  - ◊ Mass: 1 pound = 0.4536 kilograms (kg)

Averaging Results

- **General**
  - ◊ Not all parameters are subject to average limitations
  - ◊ All necessary conversions should be performed prior to calculating any averages.
- **Monthly**
  - ◊ Arithmetic mean of all acceptable sampling data collected in a calendar month for a specific parameter.
  - ◊ When a permit is reissued in the middle of the month, the public utility should consult with its legal staff to determine how to evaluate monthly averages.

- **4-day average**, 40 CFR Part 413
  - ◊ For a specific parameter, independent results collected from 4 consecutive sampling days evaluated against the 4-day average limitation in effect at the time the last independent sample was collected.
  - ◊ Each calculated 4-day average should not include sampling results used in any previous 4-day average.
  - ◊ Begins with the first acceptable sampling result for the specific parameter.

- **Exceptions**
  - ◊ **Grab composites -** Grab composites consist of a number of grab samples collected, then composited to create one sample for analysis. Where each grab sample is analyzed separately, the results for each parameter must be averaged prior to evaluation against any daily maximum limitation and prior to inclusion in any average.

◊ **Split composites -** Where one properly collected composite sample is split for analysis by two or more different laboratories, and where all sample handling and analyses are performed in accordance with required procedures and protocols, all results for each parameter must be averaged prior to evaluation against any daily maximum limitation and prior to inclusion in any average.

◊ **Side-by-side sampling -** A public utility and the IU may sample on the same day, but not split samples. The public utility has the discretion of averaging these two samples as one or counting these as two distinct samples.