Visual Assessments…
Clear as

Agenda

- ✓ **What – Types of Required Monitoring**
- ✓ **Where – Monitoring Locations**
- ✓ **When – Monitoring Frequency**
- ✓ **Who – Qualified Personnel**
- ✓ **How – Qualitative Assessment**
- ✓ **Documentation**
- ✓ **Follow-Up Actions**
- ✓ **Best Practices**

- ✓ **Analytical Basics**
- ✓ **When - Monitoring Frequency**
- ✓ **What – Required Parameters**
- ✓ **Additional considerations**

Types of Required Monitoring

- **Visual Assessments**
- **Analytical Monitoring ***
  - Benchmark
  - Effluent Limitation Guideline (ELG) Monitoring
  - Impaired Waters Monitoring

* Only applies to certain industrial sectors or facility locations

Monitoring Locations

- **Perform Visual Assessments at Outfalls**
  - ***Where stormwater exits the facility*** *property (pipes, ditches, swales, and other structures that transport stormwater).*
  - *Collect stormwater discharges prior to the stormwater leaving your facility and at a location* ***downstream from all industrial materials / activities****.*
- ***Outfalls along property line***
- ***Internal Outfalls***
- **Consider potential for substantially identical outfalls**
  - *If there are* ***two or more outfalls*** *that discharge substantially identical pollutants, you can conduct visual assessments at just one of the outfalls and report that the results also apply to the substantially identical outfall(s).*
  - *Perform visual assessments of each substantially identical outfall on a rotating basis.*

Example Outfall Locations

WHERE

amec foster wheeler

Surface

Exposed Pipe

Sub-Surface

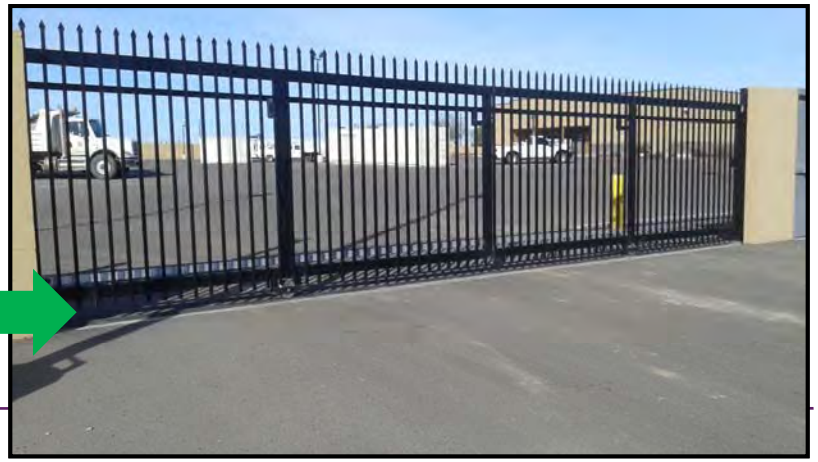
Monitoring Locations

WHERE

What about “non-discharging” facilities?

Not Outfalls!

Potential Outfall



Monitoring frequency

Twice / wet season

Visual Assessment Schedule	
Season	**Period**
Summer	**June 1 to October 31**
Winter	**November 1 to May 31**

Within the first
30 minutes of flow!

Qualifying Storm Events

- **Perform monitoring on a storm event that results in a discharge, and**
- **That follows the preceding measurable storm event by at least 72 hours**

Four visual assessments may be distributed during seasons when precipitation runoff occurs.

Qualified Personnel

WHO

But who's "Qualified"…

Qualified personnel are those (either employees or outside consultants) who:

- **possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility, and**
- **who can also evaluate the effectiveness of control measures.**

Visual Assessment Practices

HOW

- **Collect the stormwater sample in a clear glass or plastic jar for examination in a well-lit area.**
- **Collect the sample within the first 30 minutes of the discharge (or as soon as possible).**
- **Examine for visible indicators of pollution.**

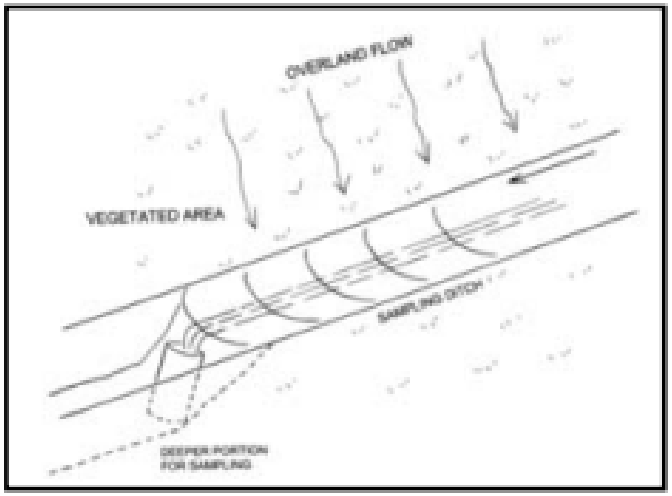
40 CFR 136 does not apply!

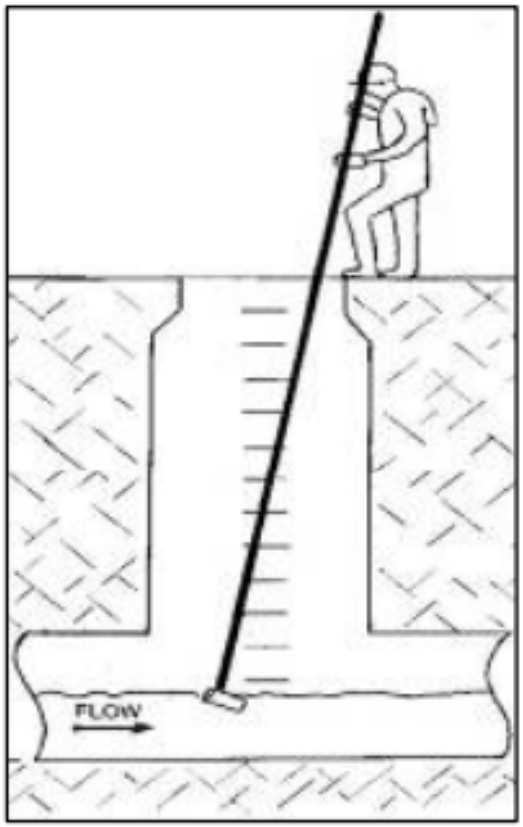
Sample Collection

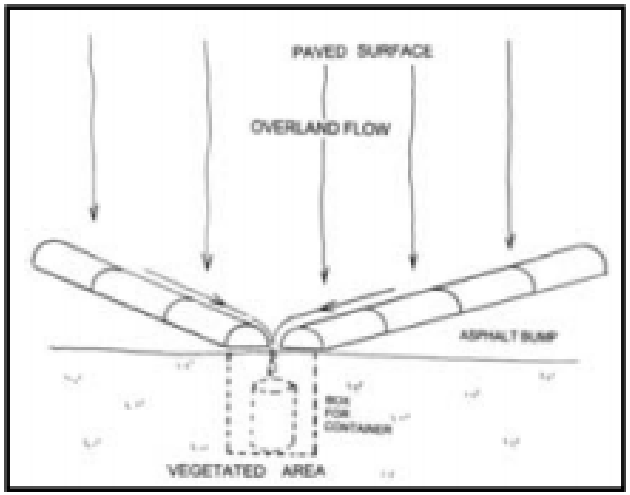
HOW

Grab Sample

Sheet Flow Sample







Visual Assessment Parameters

HOW

- ***Color***
- ***Odor***
- ***Clarity***
- ***Floating solids***
- ***Settled solids*** – wait about a half hour after collection
- ***Suspended solids***
- ***Oil sheen***
- ***Foam*** – shake gently!

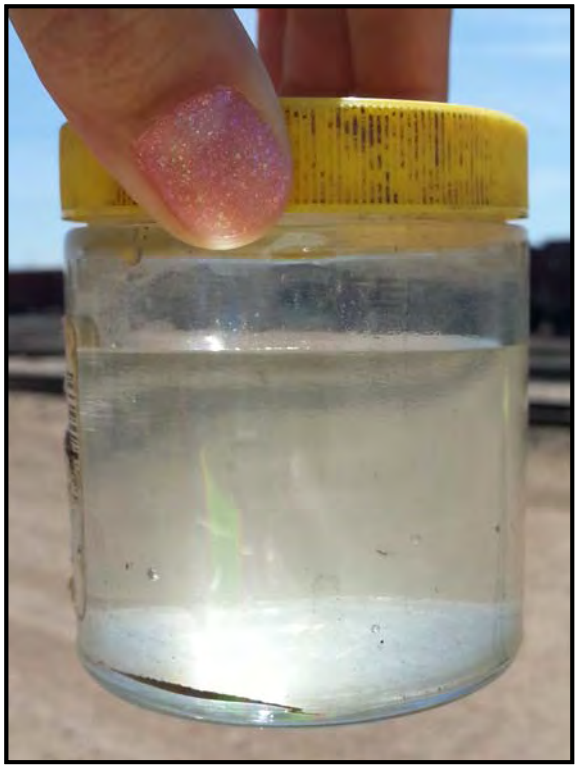
Color

Color	Potential Source
Green/Orange/Red	Automotive Fluid
Milky/White	Paint Rinsate
Tan/Brown	Sediment
Gray / Dark Brown / Black	Septic Discharge, Decaying Organic Matter
Foam	Washing activity
Dark Green / Light Green	Algae / Automotive Fluid / Dye
Blue	Lavatory fluid / Algaecide

Odor

Odor	Potential Cause
Rotten Eggs / Hydrogen Sulfide	Sewage
Musty	Sewage / Decaying Organic Matter
Gasoline / Petroleum	Oil / Gas
Chlorine	Onsite chemicals
Pungent Odor	Onsite chemicals
Sweet, fruity	Onsite chemicals

Clarity



Solids

Floating

Suspended

Settled

Follow-Up Activities

I. **Investigation (if needed)**

II. **Documentation**

III. **Control Measure Revisions / SWPPP Update**

Documentation

- **Location, Date, and Time**
- **Name and signature of personnel performing visual assessment**
- **Results of observations**
- **Probable sources of any observed stormwater contamination**
- **If applicable, why it was not possible to take samples within the first 30 minutes**
- **Date and estimated duration of the rainfall event**
- **Estimated rainfall total (in inches)**
- **Time since the previous measurable storm event**

Field Equipment and PPE

- Sample Jars
- Sampling Equipment
- Paper Towels
- Tap water
- Sponge
- Old tooth brush

- Field Inspection Form
- Flashlight or headlamp
- Camera

- Rubber/latex gloves
- Eye protection
- Steel toe boots
- Safety Vest

- Manhole hook/crowbar
- Sledgehammer

When not to sample

- *Insufficient flow*
- *Adverse Weather Conditions*
- *Inactive / Unstaffed Sites*
- *<72 hours from last storm event*

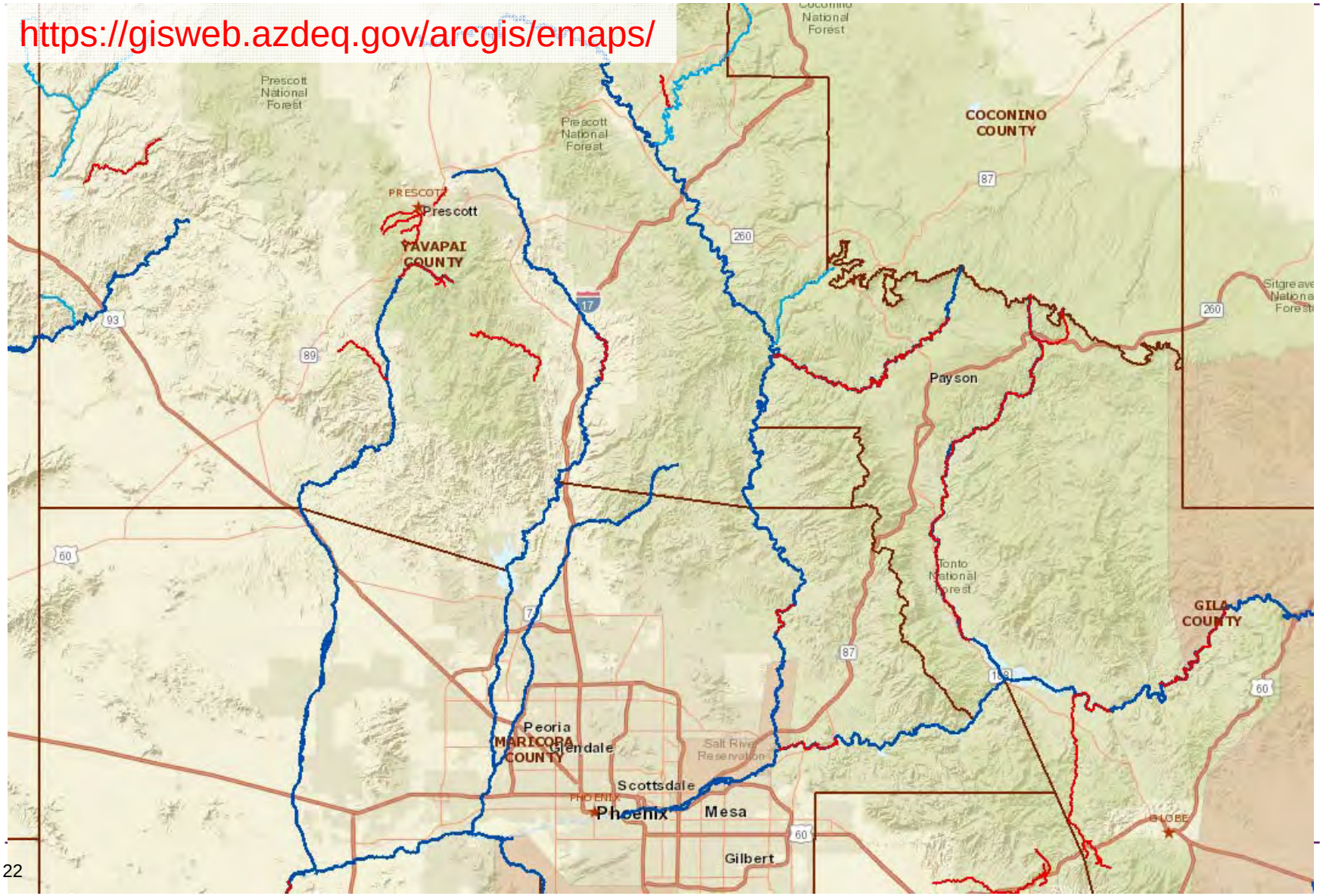
Visual assessments are only required if there is a documented discharge from the site. In the event that a discharge does not occur, the visual monitoring form must be completed, noting that a qualifying discharge did not occur. If the facility does not have two discharge events during any one monitoring wet season, this must be documented on the visual monitoring report and maintained with the SWPPP.

Benchmark (▲) & ELG (▼) Monitoring

Sector A – Timber Products ▲▼	Sector R – Ship and Boat Building and Repair Yards
Sector B – Paper & Allied Products ▲	Sector S – Air Transportation ▲
Sector C – Chemical & Allied Products Manufacturing, and Refining ▲▼	Sector T – Treatment Works
Sector D – Asphalt Paving & Roofing Materials and Lubricant Manufacturing ▲▼	Sector U – Food and Kindred Products ▲
Sector E – Glass, Clay, Cement, Concrete, and Gypsum Products ▲▼	Sector V – Textile Mills, Apparel, and Other Fabric Products)
Sector F – Primary Metals ▲	Sector W - Furniture and Fixtures
Sector K – Hazardous Waste TSDFs ▲▼	Sector X - Printing and Publishing
Sector L – Landfills, Land Application Sites, and Open Dumps ▲▼	Sector Y – Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries ▲
Sector M – Automobile Salvage Yards ▲	Sector Z - Leather Tanning and Finishing ▲
Sector N – Waste Recycling Facilities ▲	Sector AA – Fabricated Metal Products
Sector O – Steam Electric Generating Facilities ▲▼	Sector AB - Transportation Equipment, Industrial or Commercial Machinery Facilities
Sector P – Land Transportation and Warehousing ▲	Sector AC (Electronic and Electrical Equipment and Components, Photographic, and Optical Goods).
Sector Q – Water Transportation	

Impaired & OAW

https://gisweb.azdeq.gov/arcgis/emaps/



Analytical Monitoring

- **Develop a SAP**
- **Perform required monitoring**
- **Submit DMR**
- **Complete annual reporting**
- **Submit exceedance reports to ADEQ if exceeding a WQS**

40 CFR 136 applies!

Monitoring Tips

- **Coordinate with lab for properly prepared bottles**
- **Have ice available**
- **Assess outfalls before a storm event to assess site conditions**
- **Be aware of hold times!**

That's Visual Assessments

Clear as…

Rebecca Sydnor, PE, LEED-AP
Rebecca.Sydnor@amecfw.com
602-733-6051 (direct office)
623-628-7232 (mobile)