Pipeline Visual Assessment Webinar

Virginia Training

www.tu.org
WV/VA Water Quality Monitoring Project
What you will learn

• What are best management practices (BMPs)?

• What to look for during pipeline construction at construction sites, access roads, hydrostatic discharge sites and in streams.

• What to look for after pipeline construction.

• How to document pollution issues or failed BMPs.

• How to report documented issues.
What are Best Management Practices (BMPs)

Best Management Practices (BMP): Device, practice or procedure designed to control sediment.

Sediment Barriers

Photo: Cumberland CCD

Photo: Cumberland CCD
BMPs

Slope Breakers

Photos: Rick Webb
BMPs

Trench Plugs (aka Trench Breakers)

Photo: piedmontnashvillepipeline.com
BMPs

Mulching
BMPs

Mesh Matting
BMPs

Revegetation

BMP Resources

FERC Upland Erosion Control, Revegetation and Maintenance Plan


VADEQ Erosion and Sediment Control Handbook
Citizen Observers

Serve as eyes and ears on the ground, identifying pollution events if they occur, documenting them appropriately and reporting them.
What to look for in the stream

Sediment Plume
What to look for in the stream

Stream Water Discolored
What to look for in the stream

Sediment Deposition
What to look for in the stream

Dead Fish or Other Organisms
What to look for in the stream

Failing Streambanks
What to look for in the stream

Oily Film On Water Surface

Leicester Mercury

Jim Olexa/Sun News
What to look for in the stream

Bentonite Blowout (aka Frackout or Inadvertent Release)
What to look for at the work site

Earth Disturbance to Edge of Waterbody with No Erosion Controls
What to look for at the work site

Erosion Gullies
What to look for at the work site

Bare Soil: No mulch or mulch lost due to wind or water
What to look for at the work site

No Trench Plugs on Slopes Leading to Stream Crossing

Johnsonandjohnsonohio.com
What to look for at the work site

Failing Slopes

Photo: Rick Webb

Photo: Justin Raines
What to look for at the work site

Failing Slopes

Photo: Justin Raines
What to look for at the work site

Failed BMPs
What to look for at the work site

Failed BMPs
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Failed BMPs
What to look for at the work site

Failed BMPs
What to look for at the work site

Signs of Sediment Discharge Outside of Construction Area

Sediment laden water leaving site at UNT of Jockey Camp Run due to concentrated flow damaging controls.

Sediment laden water leaving site at UNT of Jockey Camp Run.
What to look for at the work site

Good
What to look for at the work site

Bad
What to look for at the work site

Worse
What to look for at stream crossings

• Streamflow Should Be Diverted Away From Disturbed Ground

• Compare downstream conditions with upstream conditions (is there muddier water downstream?)
What to look for at hydrostatic discharge sites

• Erosion Gullies

• Oily sheen, discoloration or chemical odor

• Is sediment flowing into the stream?
What to look for on access roads

Lack of Gravel
What to look for on access roads

Mud or Sediment on Main Road
What to look for on access roads

Erosion Gullies
What to look for after restoration

- Vegetation in right-of-way is not taking
- Failing Slopes
- Erosion Gullies
- Stream banks are undercut and eroding
- Stream substrate material at crossing differs from upstream and downstream reaches
What to look for after restoration
## Pipeline Visual Assessment Checklist

### In the Stream

<table>
<thead>
<tr>
<th>Description</th>
<th>Observed</th>
<th>Photos Taken</th>
<th>GPS Coordinates Recorded</th>
<th>Incident Report Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sediment plume</td>
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<tr>
<td>Stream water discolored</td>
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<tr>
<td>Increased sediment deposition on</td>
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<tr>
<td>the stream bottom</td>
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<tr>
<td>Dead fish or other organisms</td>
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<tr>
<td>Increased barotrauma</td>
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<tr>
<td>Oily film on water surface</td>
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<tr>
<td>Bankside blowout</td>
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### Stream Crossings

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Streamflow not diverted away</td>
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<tr>
<td>from disturbed ground</td>
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<tr>
<td>Bankside of crossing is</td>
<td></td>
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<tr>
<td>mudflatter than upstream</td>
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### Pipeline Work Site

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<tbody>
<tr>
<td>Bankside within view of water body</td>
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<tr>
<td>with no erosion zone</td>
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<tr>
<td>Erosion gullies</td>
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<tr>
<td>Bare soil: No mulch</td>
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<tr>
<td>No trench plugs or dikes leading</td>
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<tr>
<td>to stream crossing</td>
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<tr>
<td>Falling Gullies</td>
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<tr>
<td>Partial BMPs (erosion controls)</td>
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<tr>
<td>Signs of sediment discharge</td>
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<td>outside of construction area</td>
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### Hydrostatic Discharges

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<tbody>
<tr>
<td>Erosion gullies</td>
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<tr>
<td>Only shear, discolored or</td>
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<tr>
<td>chemical odor</td>
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<tr>
<td>Sediment flowing into stream</td>
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### Restoration

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<tbody>
<tr>
<td>Vegetation in right-of-way is not</td>
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<td>taking</td>
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<tr>
<td>Falling Gullies</td>
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<tr>
<td>Erosion gullies</td>
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<tr>
<td>Stream banks are undercut and</td>
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<tr>
<td>eroding</td>
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<tr>
<td>Stream subsurface material</td>
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<tr>
<td>from upstream and downstream</td>
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<tr>
<td>reaches</td>
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### Access Roads

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</thead>
<tbody>
<tr>
<td>Lack of gravel</td>
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<tr>
<td>Mud or sediment on main road</td>
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<td></td>
</tr>
<tr>
<td>Erosion gullies</td>
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</tbody>
</table>
When to Conduct Assessments

- During and after moderate to heavy rains
- Weekends and holidays are especially important as inspectors are less likely to be at sites
- Both during and after construction
- Until revegetation is complete and area seems stabilized
General Rules and Personal Safety Considerations

• Always be courteous to landowners, pipeline workers or others you meet on the stream. Avoid confrontation.

• **Respect Private Property.** Seek permission before entering private property.
• Do not enter active pipeline sites. Conduct visual assessments from roads or on properties you have permission to access.
• Do not place yourself in a physically dangerous situation (i.e. scaling a cliff or wading in extremely high water)
• If you see something that may create a public health or safety hazard, do not contact us, contact your local emergency management service.
I. Take Photos and/or Videos

• Take both wide angle photos and close up photos of issue

• Document the stream above and below the impacted area with photos and/or videos

• Travel downstream to document the extent of the issue

• Travel upstream to document the source of the issue
1. Take Photos and/or Videos

- If using a digital camera, ensure date stamp is correct
- Turn on “location services” if using smartphone
- Describe photos and videos
- A plume of muddy water entering an otherwise clear stream is an effective photo
- WQ violation with the source behind it is an effective photo
2. Record GPS Coordinates

• Can be measured with handheld GPS or cell phone applications
  
  

• Cell phone apps do not need cell coverage to work.

• Preferably record in decimal degrees (e.x. 38.416492, -80.070016)

• If you cannot record GPS coordinates write down detailed instructions to find location
3. Complete Your Incident Report Form

- Complete Incident Report Form
- Describe the issue you see
- Write description for each photo taken
Incident Report Form

Name: Jake Lemon Date: 3/9/18 Time: 12:47 pm

Stream Name: Laurel Run Pipeline Project: MVP

County: Ripley State: VA

Construction Status
☐ Pre-construction ☑ Active Construction ☐ Post-Construction

Latitude: 38.568629 Longitude: -79.170595

Issue Description:
Silt fence failed. Sediment-laden water flowing through torn silt fence into stream.

Photo Descriptions

Photo 1: Torn Silt Fence Close Up

Photo 2: Sediment-laden Water Running into Stream

Photo 3: Laurel Run Downstream of Pipeline Construction Site

Photo 4: Laurel Run Upstream of Pipeline Construction Site

Photo 5: Sediment-laden Water flowing into stream with torn silt fence in background

Photo 6:

Photo 7:
Reporting Process

• If you are utilizing our training and protocols we ask that you make reports through our reporting process, rather than contacting agencies directly.

• Please submit reports and pictures by email to the following email address. CSI@bralliance.org or via the Avenza app (coming soon).

• You can scan and email your incident report form, take a picture of it and email it or transcribe the info into the email message. Don’t forget to include your pictures!

• Use the email subject: PIPELINE REPORT: Stream Name
Reports will be reviewed by TU and/or Pipeline CSI to determine if it is a reportable incident.

If it is a reportable incident, we will submit the information to the appropriate agency.

We will follow up with you with the agency response.
Pipeline CSI Investigation

PIPELINE CSI
INCIDENT INVESTIGATION STEPS

(1) Initial Incident Observation
(2) CSI Central Reviews Incident Report
(3) Case File Opened
(4) CSI First Responders Dispatched
(5) Case Investigation Announced
(6) Case Info Added to CSI Mapping System
(7) Evaluation of Case Information by CSI Environmental and Forensic Review Teams
(8) Complaints Submitted to Regulatory Agencies
(9) Agency Responses Tracked
(10) Case Reports Published
Other Tools

Rite in the Rain Notebook

Avenza App