

## Aerial Photo Review

12/19/2018

### Pipeline Compliance Surveillance Initiative (CSI)

The CSI is a program of the Allegheny-Blue Ridge Alliance (ABRA) and its member groups.



[abralliance.org](http://abralliance.org)

[pipelineupdate.org/csi](http://pipelineupdate.org/csi)

# Pipeline CSI

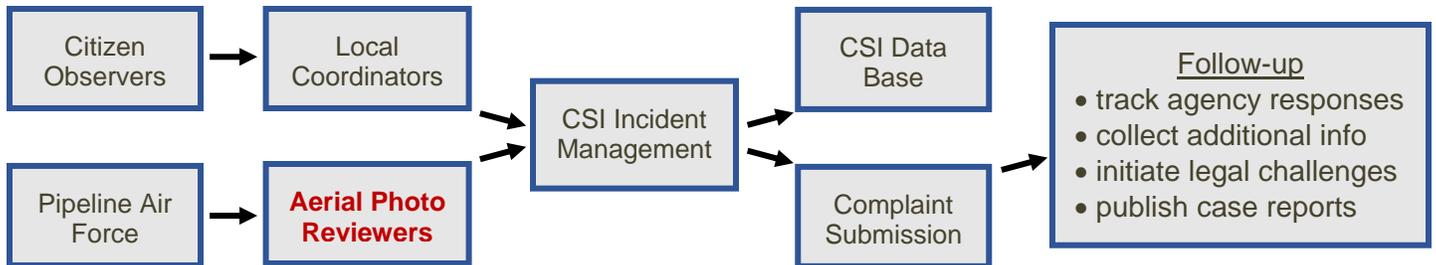
## Aerial Photo Review

The Pipeline Compliance Surveillance Initiative (CSI) is working to ensure strict application of environmental requirements to construction of Dominion Energy's Atlantic Coast Pipeline (ACP) in the mountains of Virginia and West Virginia. The need for a new level of public oversight is made clear by observations of recent pipeline projects and inadequate regulatory agency response to repeated violations and water resource harm. Assistance is requested from knowledgeable individuals who can participate as CSI Aerial Photo Reviewers. Although we especially seek the help of professionals with erosion and sediment control, stormwater management, and other water-resource backgrounds, the involvement of others is welcomed. Aerial Photo Reviewers will perform the specialized task of reviewing aerial imagery and other information related to ACP construction in order to evaluate both the performance of control measures and adherence to regulatory requirements. Aerial Photo Reviewers will be able to do this work from any location with access to the internet.



# Aerial Photo Reviewers and the CSI Process

The CSI incident investigation process generally begins with identification of construction problems by Citizen Observers and the Pipeline Air Force.



Citizen Observers, working with Local Coordinators, collect information that is important for documenting incidents of noncompliance with environmental requirements or failure of control measures during pipeline construction.

Direct observation of pipeline construction by Citizen Observers, however, is mostly limited to locations where the pipeline corridor crosses public roads.

Aerial imagery obtained by the Pipeline Air Force serves to document construction problems for extensive sections of the pipeline corridor that cannot be readily observed from the ground.

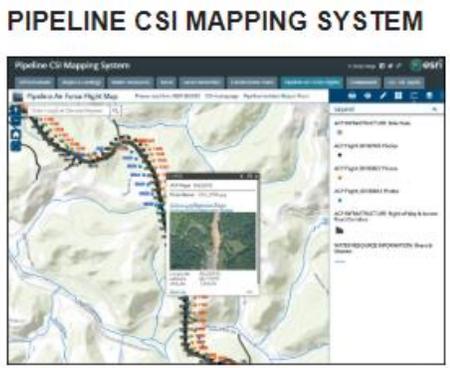
The primary job of Aerial Photo Reviewers is to document incidents of noncompliance and control failure based on this imagery.

As indicated in the above chart, the CSI Incident Management team (aka CSI Central) receives incident documentation, maintains an incident data base, and pursues formal complaints with the regulatory agencies as appropriate.



# Resources for Reviewers

Aerial Photo Reviewers can access information on ACP construction activity and environmental requirements through the CSI website: <http://pipelineupdate.org/csi>



**PIPELINE CSI MAPPING SYSTEM**

Pipeline CSI Mapping System 4.0  
CSI Mapping System User Guide  
Simplified Swipe Tool Demo

The CSI Mapping System is an online interactive map designed to provide high-quality geographic data regarding the Atlantic Coast Pipeline (ACP). The purpose of the CSI Mapping System is to support public oversight of ACP construction.

## The CSI website provides links to:

- The CSI Mapping System
- General rules and guidelines for pipeline construction
- ACP plans, reviews, and approvals
- Regulatory agency websites
- Regulatory agency inspection reports
- Weekly project status reports
- A Top-Ten listing of runoff control issues for pipeline construction

## The CSI website provides options for reporting noncompliance:

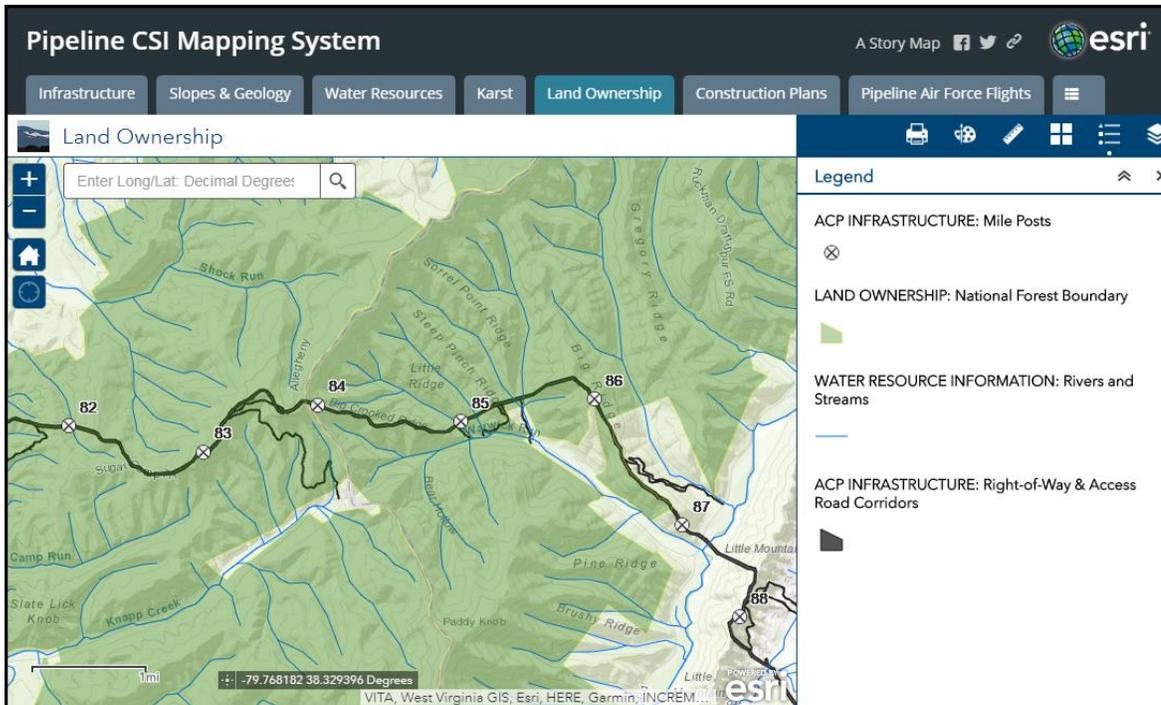
- CSI's Reporting Hotline (877-462-2272; 877-Go2ABRA)
- CSI's Email address (CSI@abralliance.org)
- CSI's online reporting form ([Pipeline Incident Report Form](#))

## CSI Central will respond to noncompliance reports, by:

- Working with Local Coordinators and First Responders to collect additional information
- Dispatching the Pipeline Air Force to collect additional incident-specific aerial photography
- Submitting complaints and inquiries to the regulatory agencies
- Following-up with Aerial Photo Reviewers concerning further analysis and incident resolution



# CSI Mapping System



The [CSI Mapping System](#) is an online geographic information system developed to support oversight of the ACP. It provides the primary means for accessing information on ACP construction, including environmental factors, construction plans, aerial photography, and compliance records.

The CSI Mapping System includes separate map pages for different map layer sets. For each of the pages, base maps can be changed and layers can be selected and re-ordered. A [User Guide](#) provides essential information for effective use of the mapping system. The map pages include:

- **Infrastructure** – Location of the corridor, access roads, etc.
- **Slopes and Geology** – Problematic geology, slopes of the corridor and access roads, and critical steep-slope areas.
- **Water Resources** – Rivers and streams, water crossings, and monitoring locations.
- **Karst** – Distribution of karst, springs, sinkholes, and other karst features.
- **Land Ownership** – Public and private lands in relation to the pipeline.
- **Construction Plans** – Georeferenced plan sheets.
- **Pipeline Air Force Flights** – Aerial photographs of ACP construction.
- **Compliance** – Documentation of noncompliance with environmental requirements and legal restrictions.

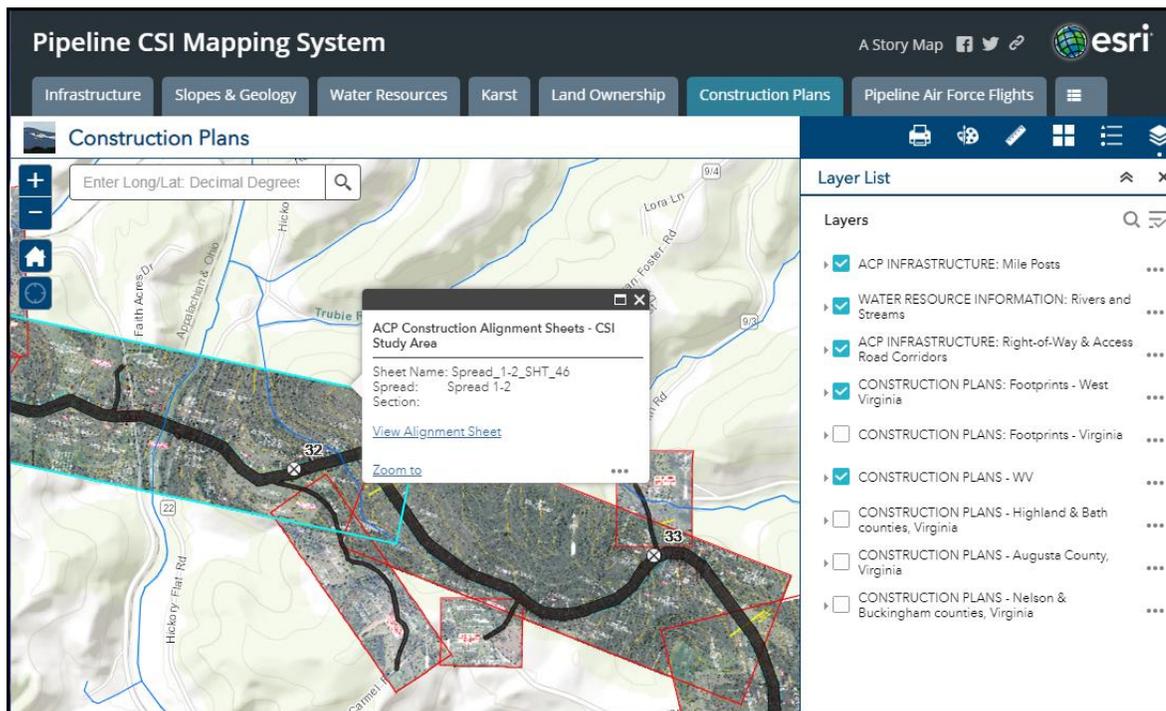
*The Construction Plans, Pipeline Air Force Flights, and Compliance Map Pages are described in more detail in the following sections.*

# Construction Plans Map Page

The Construction Plans Map Page provides access to approved design sheets for the ACP, including Construction Alignment Sheets for the pipeline right-of-way and access roads. During the environmental review process, these plan sheets were submitted to the regulatory agencies, including the W.Va. Department of Environmental Protection (WVDEP), and the Va. Department of Environmental Quality (VADEQ), the Federal Energy Regulatory Commission (FERC), and the Forest Service (USFS). The CSI geospatial analysis team has georeferenced the submitted design sheets and made them available as map layers.

*More-detailed design sheets have been provided to the VADEQ for the Virginia section of the ACP. These sheets will be included in an update of the CSI Mapping system.*

Note also that Dominion has developed what it calls a “Best in Class Program,” which provides a menu of options for construction in high-hazard locations (pipeline segments where slopes equal or exceed 30% for 100 feet or more). Although at least one third of the western mountainous region of the pipeline route exceeds the high-hazard criteria, detailed construction plans have been provided for only a small subset of these critical locations. See Access to Regulatory Documents, below, for more information on the “Best in Class Program.”



Clicking on map features opens popup windows, providing access to additional information. In this case, a link is provided to the pdf of the selected Construction Alignment Sheet. The pdf provides a map legend, profiles, and other details.



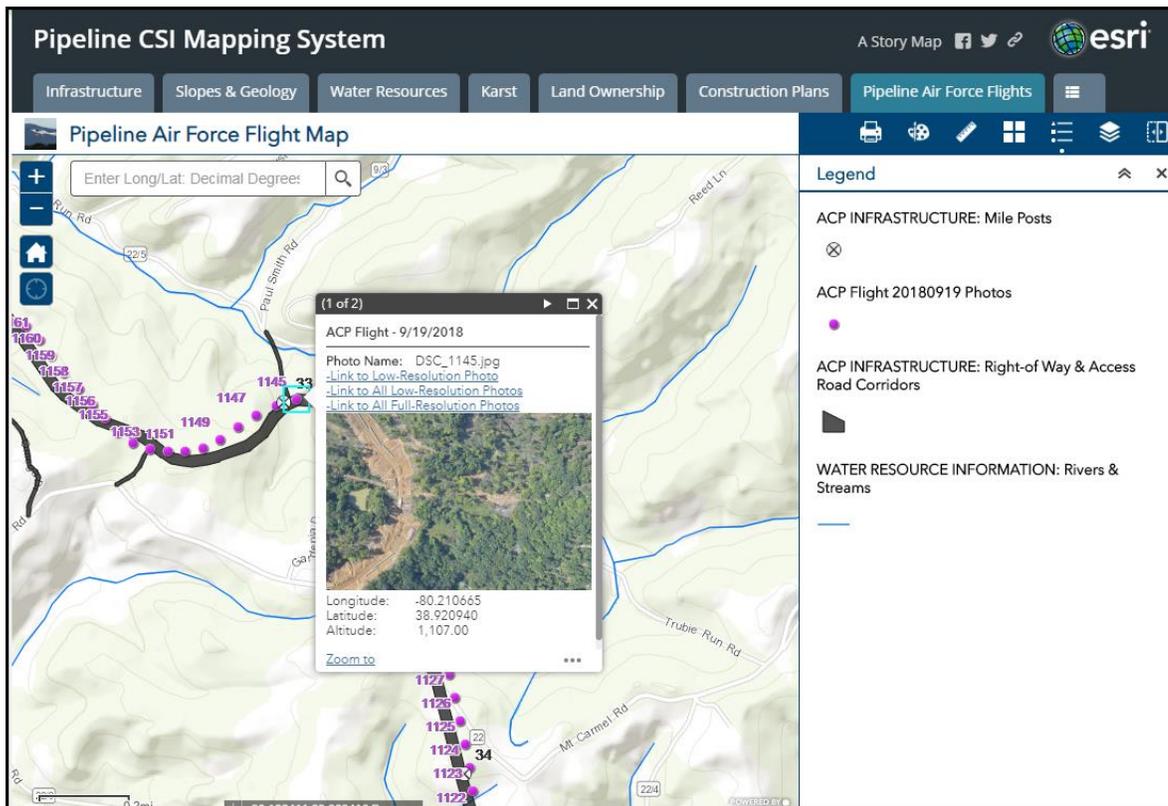
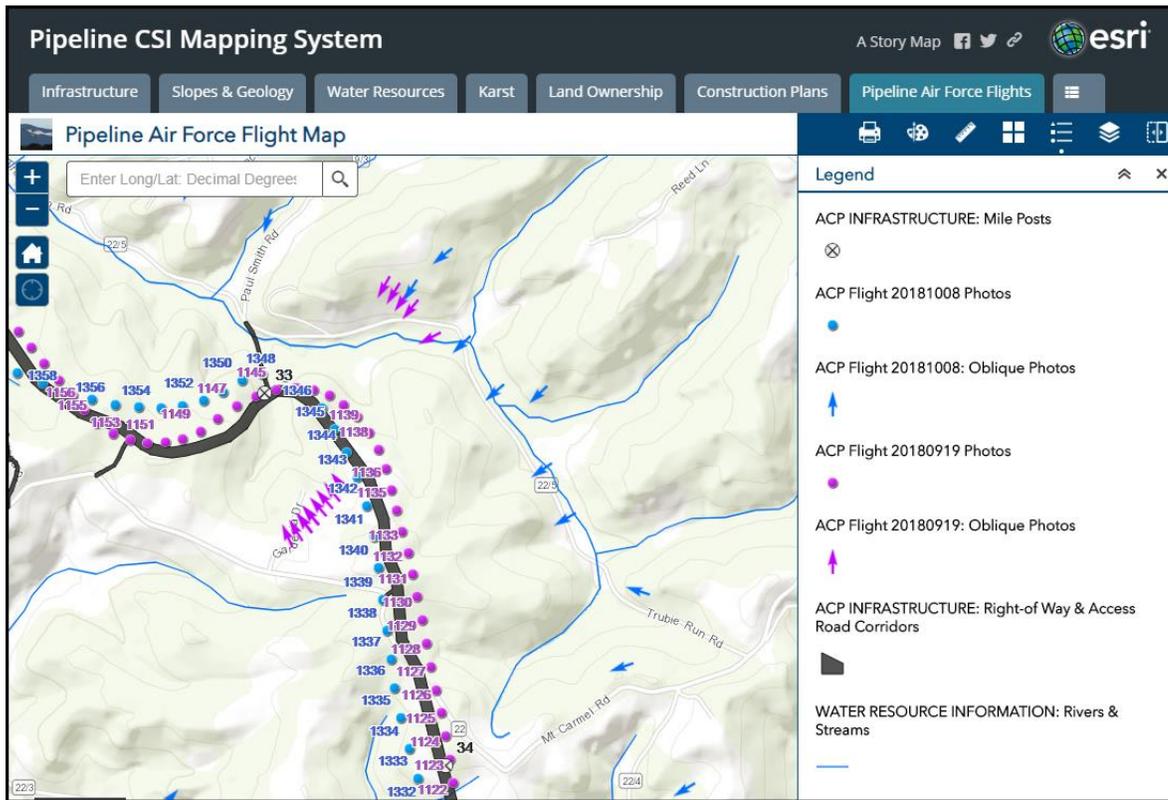
The details associated with the Construction Alignment Sheets can be viewed within the CSI Mapping System by zooming-in and panning.

## Pipeline Air Force Flights Map Page

An important objective for CSI Aerial Photo Reviewers is the timely examination of photographic imagery obtained during routine surveillance flights over ACP construction. Pipeline Air Force surveillance flights currently occur every one to two weeks, with high-resolution photos obtained at 3-second intervals at 3,000 feet AGL. The thousands of photos obtained on any single day's flight are typically posted on the same day for review via the Pipeline Air Force Flights Map Page.

In addition to nadir shots, obtained with a camera mounted in the bottom of the plane, oblique-angle shots are obtained from the plane's window. Drones (UAVs) are used to document construction issues at specific locations, such as horizontal direction drilling sites and river crossings. Photo mosaics of construction areas have also been prepared to facilitate review and direct comparison of construction status on different dates and of actual construction with approved construction plans.





Upper image: locations of photos obtained on 9/19/18 and 10/8/18 flights. Lower image: access to photos via popup window. Links are provided to a full-screen low-resolution version of the selected photo, to a zip file with all the low-resolution photos (allowing off-line scrolling through the photos), and to high-resolution versions of the photos.



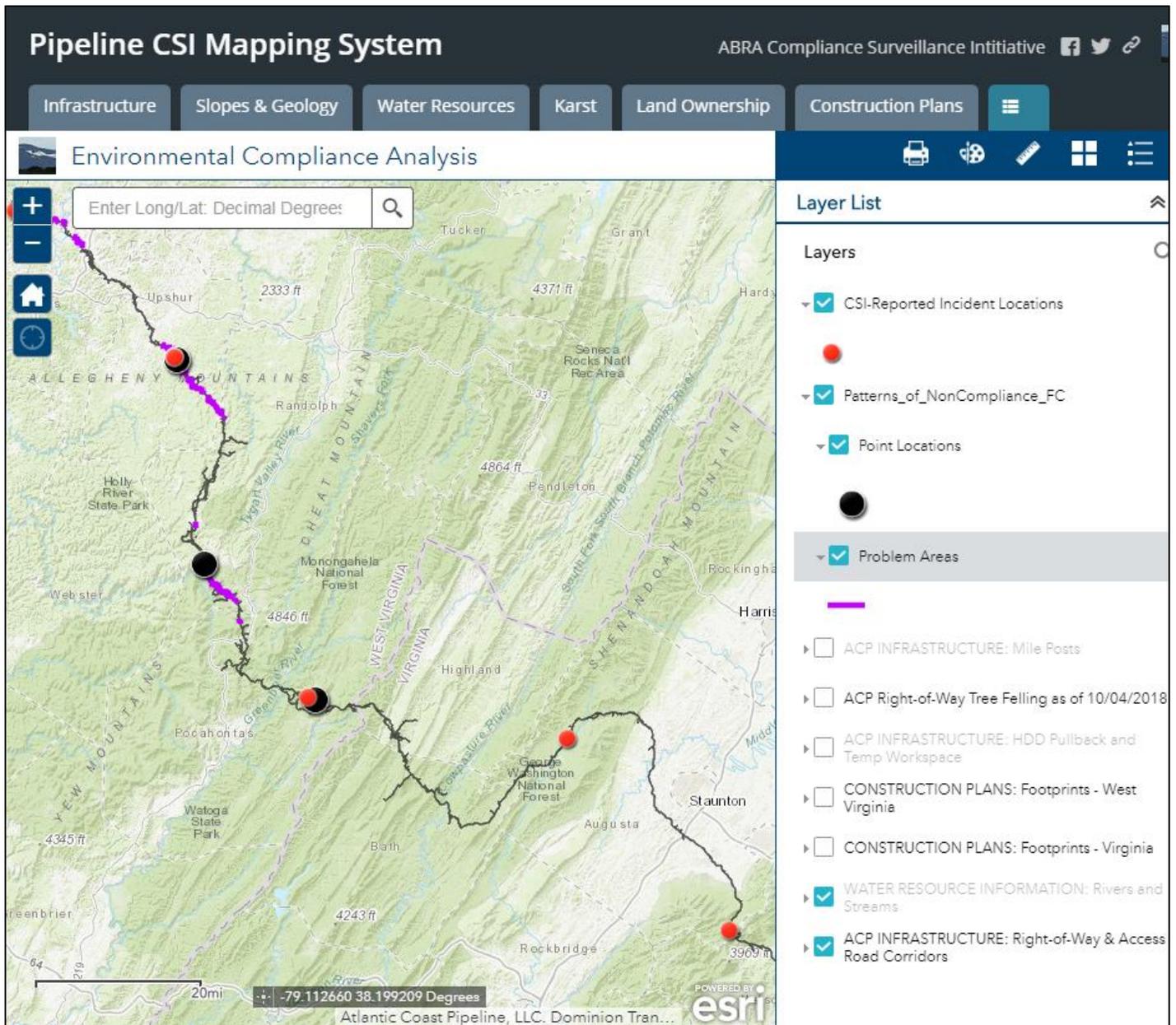
**Upper image: low-resolution photo of ACP construction corridor near Mile Post 33 on 9/19/18. Lower image: high-resolution photo section showing the shaded area of the low-resolution photo.**



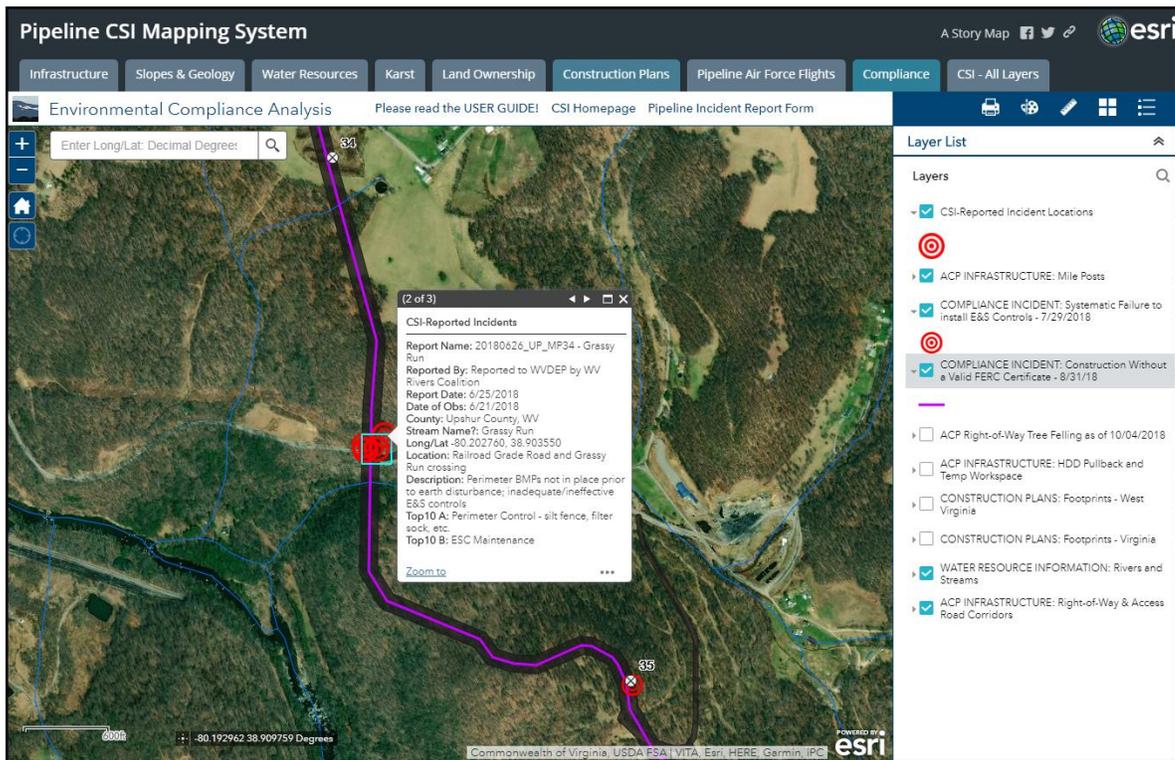


# Compliance Map Page

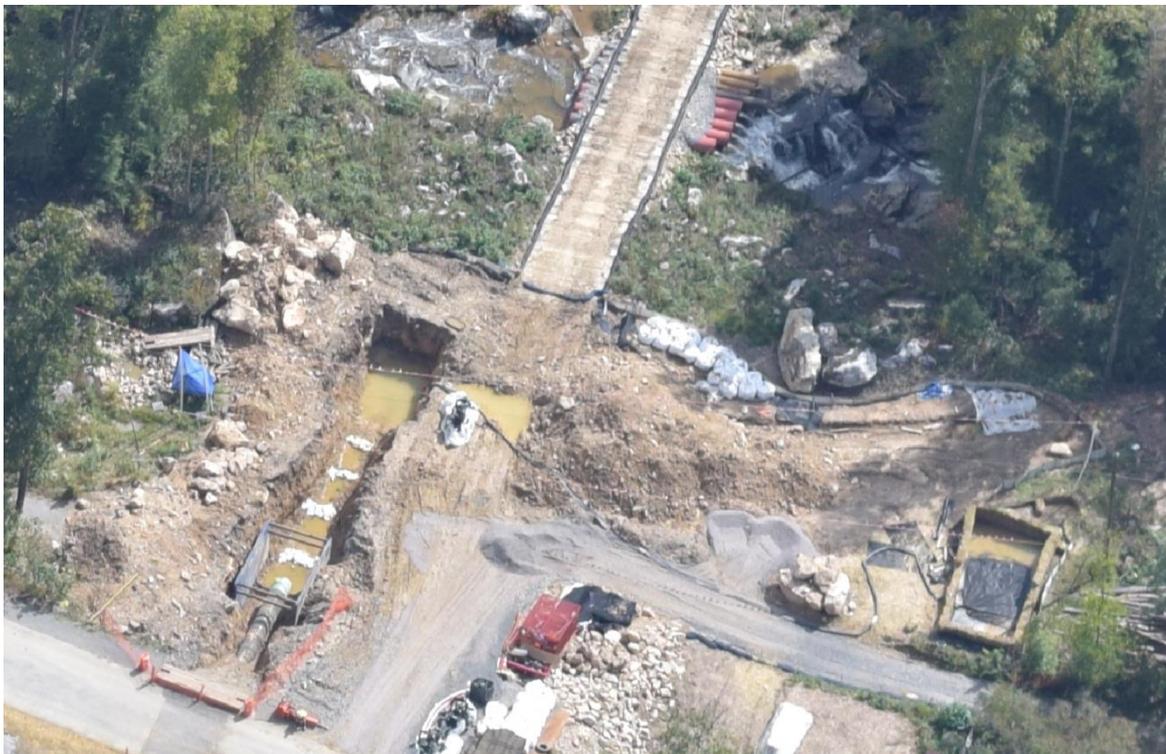
The Compliance Map Page provides access to noncompliance incidents documented by the CSI and reported to the regulatory agencies. Work is underway to add documentation of deficiencies identified in regulatory agency inspection reports.



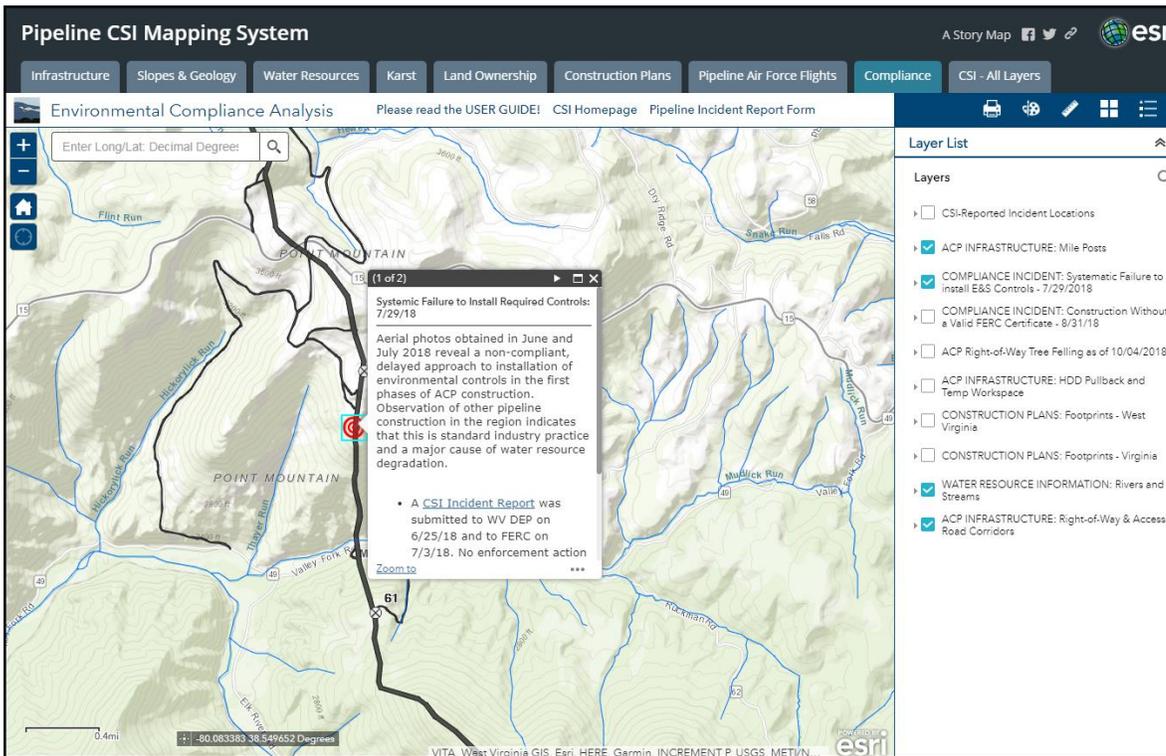
Locations of noncompliance incidents documented by the CSI. Noncompliance incidents include point locations for site-specific problems and linear pipeline sections associated with patterns of noncompliance. Popup windows for each mapped incident describe the problems and provide access to available related information, including photographs and descriptive reports.



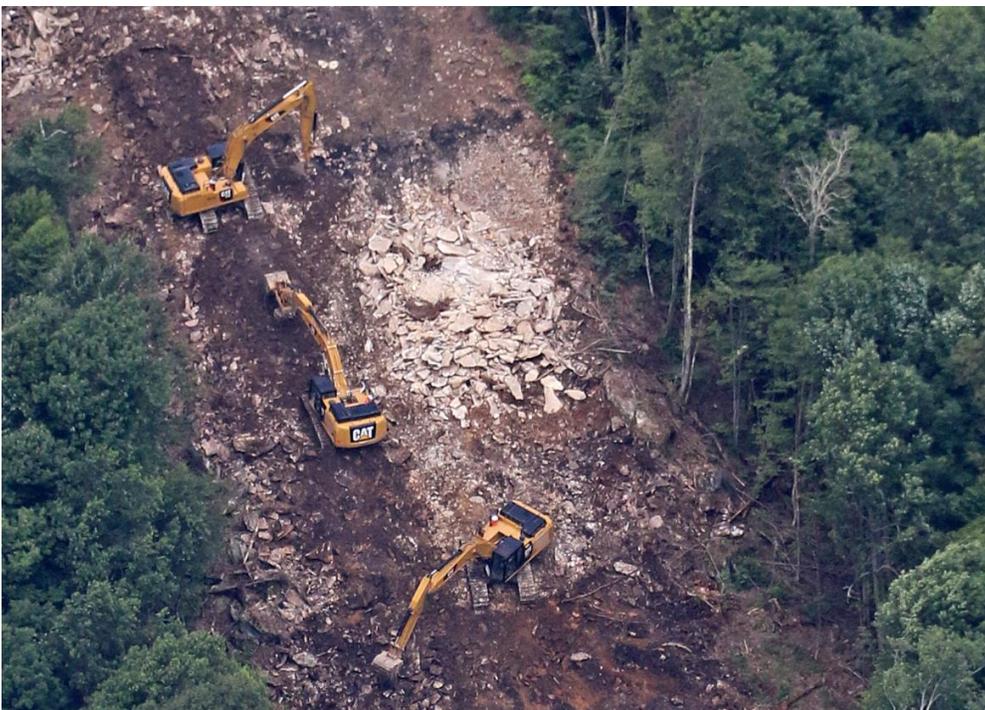
The Grassy Run area in Upshur County, WV has had multiple problems resulting in enforcement action by WVDEP. Problems have included improper installation and maintenance of control structures, resulting in excessive erosion and off-site sediment deposits in surface waters.



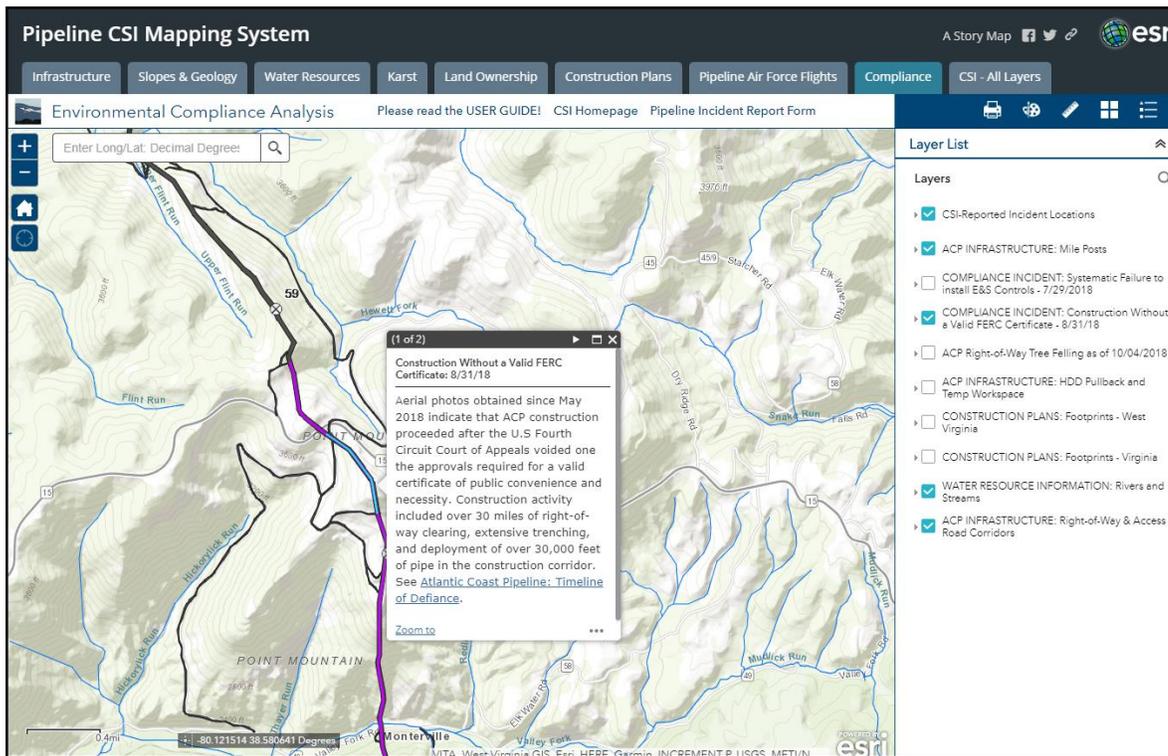
Oblique-angle photo obtained on 10/8/18 of the Grassy Run area showing a temporary bridge, water-filled drilling pit, and dewatering structure (in lower right corner).



**This location above Valley Fork in Randolph County is one of several points associated with a noncompliant delayed approach to installation of environmental controls in the first phases of ACP construction. Observation of other pipeline construction in the region indicates that this is standard industry practice and a major source of water resource degradation. The regulatory agencies have not responded to complaints.**



**Early-stage ACP construction activity in the Milepost 60-61 area up-slope of Valley Fork, a brook trout stream. Excavation is underway without installation of the perimeter controls shown on the Construction Alignment Sheet. Slopes range from 30% to greater than 60%. The Mauch Chunk bedrock in this area produces highly erodible and landslide-prone soils.**



**Aerial photos obtained between May and August of 2018 indicate that ACP construction proceeded after the U.S Fourth Circuit Court of Appeals voided one the approvals required for a valid FERC certificate. Construction activity included over 30 miles of right-of-way clearing, extensive trenching, and deployment of over 30,000 feet of pipe in the construction corridor.**



**Construction without a valid FERC certificate after one of the required approvals was voided. See [Timeline of Defiance](#), a CSI noncompliance report.**

# Regulatory and Environmental Documents

The [Environmental Review](#) page on the CSI website provides access to regulatory and environmental review information, including:

- **FERC, USFS, WVDEP, and VADEQ websites**

*The agency websites include permit and plan submissions and review documents, as well as access to inspection reports. Directions for accessing and searching the FERC docket for the ACP.*

- **General rules and guidelines for pipeline construction**

*Links to laws, regulations, management plans, and guidance documents affecting pipeline construction are provided for each of the regulatory agencies.*

- **ACP project-specific plans, reviews, and approvals**

*Links to key ACP environmental review documents, approvals, and construction plans are provided for each of the regulatory agencies.*

*ACP's Stormwater Pollution Prevention Plans (SWPPPs) are among the documents provided. The SWPPPs describe runoff-control measures and include the Construction Alignment Sheets, as well as a general description of the "Best in Class Program" (BIC) for extreme slope areas. The CSI has posted site-specific BIC plans for the small available subset of the numerous locations that meet the BIC criteria (slopes equal or exceed 30% for 100 feet or more). It appears that these plans have not been reviewed by the regulatory agencies. Pipeline segments that meet the BIC criteria are identified in the CSI Mapping System.*

*Note: VADEQ recently completed its review of the ACP Erosion and Sediment Control, Stormwater Management, and Karst Protection Plans. The CSI will obtain, and provide access to, these plans.*

- **ACP construction status reports**

*Dominion posts weekly status reports on the FERC docket that describe current construction status and work planned for the next reporting period. These reports are posted one or more weeks after the reporting period. The CSI compiles, and provides a single access point for, these reports.*

- **Agency inspection reports and notices of violation**

*The CSI compiles, and provides a single access point for, inspection reports and notices of violation, prepared or issued by WVDEP and VADEQ and FERC's third-party compliance monitors.*

- **Top-ten observable noncompliance issues**

*The CSI has prepared a [Top-Ten List](#) of observable noncompliance issues, including regulatory code citations and example photographs. (see below)*

- **Additional technical documents**

*Links are provided to a selection of documents related to pipeline construction and environmental issues.*



**Failed perimeter controls on ACP construction corridor in tributary of Back Fork of Elk River in Randolph County. Photo with annotation from WVDEP Notice of Violation, 7/30/18.**

## Top-Ten Observable Noncompliance Issues

1. Failure to install, or delayed installation of, erosion and sediment control (ESC) measures.
2. Deviation from approved ESC and construction plans.
3. Missing, failed, damaged, or improperly installed or maintained silt fences, filter socks, or other perimeter control devices.
4. Missing, failed, damaged, or improperly constructed right-of-way diversions (water bars or slope breakers) and outlet structures.
5. Formation of downslope gullies within or at the perimeter of the construction right-of-way.
6. Sediment deposition off-site or outside of the permitted limits of disturbance.
7. Sediment discharge into streams and wetlands.
8. Failure to stabilize construction areas, bare ground, and stockpiles of spoil or topsoil after active disturbance.
9. Failure to construct and properly maintain construction entrances at public roads.
10. Failure to contain petrochemicals.

See [Top-Ten-List](#) for additional information and example photos of Atlantic Coast Pipeline (ACP), Mountain Valley Pipeline (MVP), and other pipeline construction in the region.



## Reporting to CSI Central

As described above, there are three options for reporting apparent noncompliance incidents to CSI Central.

- CSI's Reporting Hotline (877-462-2272; 877-Go2ABRA)
- CSI's Email address (CSI@abralliance.org)
- CSI's online reporting form ([Pipeline Incident Report Form](#))

CSI's online reporting form provides the best means for providing the following information that is needed for effective and timely CSI follow-up.

### **Incident location(s):**

*Provide location information with narrative descriptions, as well as coordinates (decimal degrees preferred), mile post and/or station numbers, county, and relationship to access roads and named stream and/or road crossings. Most of this information can be obtained via the CSI Mapping System (refer to the [User Guide](#)). Station numbers and waterbody crossing identifiers are provided on the Construction Alignment Sheets, which can be accessed through the CSI Mapping System.*

### **Incident description(s):**

*Provide a narrative description of the apparent noncompliance, including appropriate reference to the Top-Ten Noncompliance Issues.*

### **Photographs and map images:**

*Aerial photographs accessed through the CSI Mapping System can be saved and annotated to indicate apparent noncompliance issues. Similarly map images can be captured and annotated. The CSI Mapping System also allows creation, annotation, and online sharing of maps (refer to the [User Guide](#)). On-the-ground photos, where available, are most useful if they provide both close-ups of the apparent noncompliance, as well as broader views that show the location in relation to the project, roads, streams, and other identifiable features.*