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October 15, 2010

Via Hand Delivery

Ms. Renee Jenkins  
Administration/Docketing  
Ohio Power Siting Board  
180 East Broad Street, 11<sup>th</sup> Floor  
Columbus, Ohio 43215-3793

Re: **Dominion East Ohio Gas**  
**Case No. 10-1067-GA-BNR**

PUCO

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OCT 15 PM 12:15

Dear Ms. Jenkins:

On October 7, 2010, Counsel for Dominion East Ohio Gas ("DEO") erroneously filed in Case No. 09-1960-GA-BLN the following permits and authorizations in compliance with the Staff Investigation Report and Recommendation ("Staff Report") Condition No. 3:

- Cuyahoga Soil and Water Conservation District Approval
- Village of Brooklyn Heights Approval

Also, in Compliance with Condition No. 4 of the Staff Report, attached is a copy of the HDD Frac-out Contingency Plan.

This letter serves as an *Erratum* so that the attached letter and documents filed October 7, 2010, are now filed in Case No. 10-1067-GA-BNR. If you have any questions, please call me at the number listed above.

Sincerely,

  
Sally W. Bloomfield

Attachments

cc: Jim O'Dell (w/Attachments)

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October 5, 2010

RECEIVED-DOCKETING DIV

2010 OCT -7 AM 11:55  
Via Hand Delivery

PUCO

Ms. Renee Jenkins  
Administration/Docketing  
Ohio Power Siting Board  
180 East Broad Street, 11<sup>th</sup> Floor  
Columbus, Ohio 43215-3793

Re: **Dominion East Ohio Gas**  
**Case No. ~~09-1960-GA-BNR~~**  
**10-1067**

Dear Ms. Jenkins:

In compliance with the Staff Investigation Report and Recommendation ("Staff Report") Condition No. 3, Dominion East Ohio Gas ("DEO") submits the following permits and authorizations as required by federal and state entities:

- Cuyahoga Soil and Water Conservation District Approval
- Village of Brooklyn Heights Approval

Also, in Compliance with Condition No. 4 of the Staff Report, attached is a copy of the HDD Frac-out Contingency Plan.

If you have any questions, please call me at the number listed above.

Sincerely,

*Sally W. Bloomfield*  
Sally W. Bloomfield *T.D.*

cc: Jim O'Dell (w/Attachments)



## CUYAHOGA SOIL AND WATER CONSERVATION DISTRICT

6100 West Canal Road \* Valley View, Ohio 44125  
(216)524-6580 \* Fax: (216)524-6584

### Plan Review Recommendation of Approval

October 5, 2010

Ms. Judith Box  
Dominion East Ohio Gas  
320 Springside Drive  
Akron, OH 44333

Re: E. 49<sup>th</sup> St. Bore - PIR 174  
Plan Review - Submittal #1  
Plan Date - December 30, 2009

Dear Ms. Box:

A copy of the Storm Water Pollution Prevention Plan (SWP3) and/or associated information for the above referenced project was received on October 1, 2010 and has been reviewed by the Cuyahoga Soil and Water Conservation District (SWCD). The technical review of the SWP3 was performed by the Cuyahoga SWCD in accordance with the current edition of Ohio's "Rainwater and Land Development" standard guidance manual. A review of the design calculations has not been made. Please be advised that this review does not constitute approval by the local government. While the community is the final authority, the SWP3, in the opinion of this office, meets or exceeds the minimum standards listed above. Note that technical reviews made by the Cuyahoga SWCD are not intended to be regulatory in nature. Regulation and enforcement is the responsibility of local government, not the Cuyahoga SWCD.

Thank you for your cooperation with this SWP3 review process.

Sincerely,

Todd A. Houser, CPESC, CPSSc  
Storm Water Program Manager

October 1, 2010

Ms. Judith Box  
Dominion East Ohio Gas Co.  
Environmental Engineer  
320 Springside Dr., Suite 320  
Akron, Ohio 44333

Re: Storm Water Management Application – PIR 174 – E49th Street HDD Bore Project

Dear Ms. Box:

The above referenced Storm Water Management Application dated December 30, 2009 is approved by The Village of Brooklyn Heights, Ohio. Please note a review of the plans was not completed by this office for areas that fall outside the Village's jurisdiction.

Please contact me if you have any questions regarding this matter.

Sincerely,



Christopher S. Hartman  
Stormwater Permit Coordinator

Cc: Mike Henry, P.E., Consulting Village Engineer

# **HDD Frac-out Contingency Plan – Dominion East Ohio Gas**

**Last updated:** May 25, 2010

**Preface:** This document is the result of coordination between Dominion's East Ohio Gas Company (EOG) and the three U.S Army Corps of Engineers (USACE) Districts which have regulatory jurisdiction in the state of Ohio (Buffalo, Huntington, Pittsburgh). It is in response to EOG's initial inquiry regarding steps they should take in regards to coordinating with the USACE when encountering a frac-out in an area regulated by the USACE. EOG provided a "draft" frac-out contingency plan which serves as the foundation of this document. After review by the involved USACE Districts, modifications were incorporated into the submitted plan and Addendum A was added which includes identification of specific steps to be taken by EOG when encountering a frac-out in an area regulated by the USACE. The plan includes notification procedures and actions to be taken by EOG in the event of a frac-out.

## **Introduction**

EOG utilizes horizontal directional drilling (HDD) to install pipeline crossings on construction projects, depending on site specific conditions. HDD is a widely used trenchless construction method which accomplishes the installation of pipelines and buried utilities with minimal disturbance to the surface or streams and wetlands. However, HDD is not totally without impact. The primary environmental impact associated with HDD revolves around the use of drilling fluids. The purpose of this document is to present EOG's plan for minimizing environmental impact associated with drilling fluids that inadvertently escape to the ground surface (known as a frac out). This document may require additional site specific information depending on the sensitivity of the project and requests from the permitting agencies.

If a site specific contingency plan is developed for a particular bore the plan should be submitted to the appropriate USACE District as described in Addendum A of this document.

## **Background**

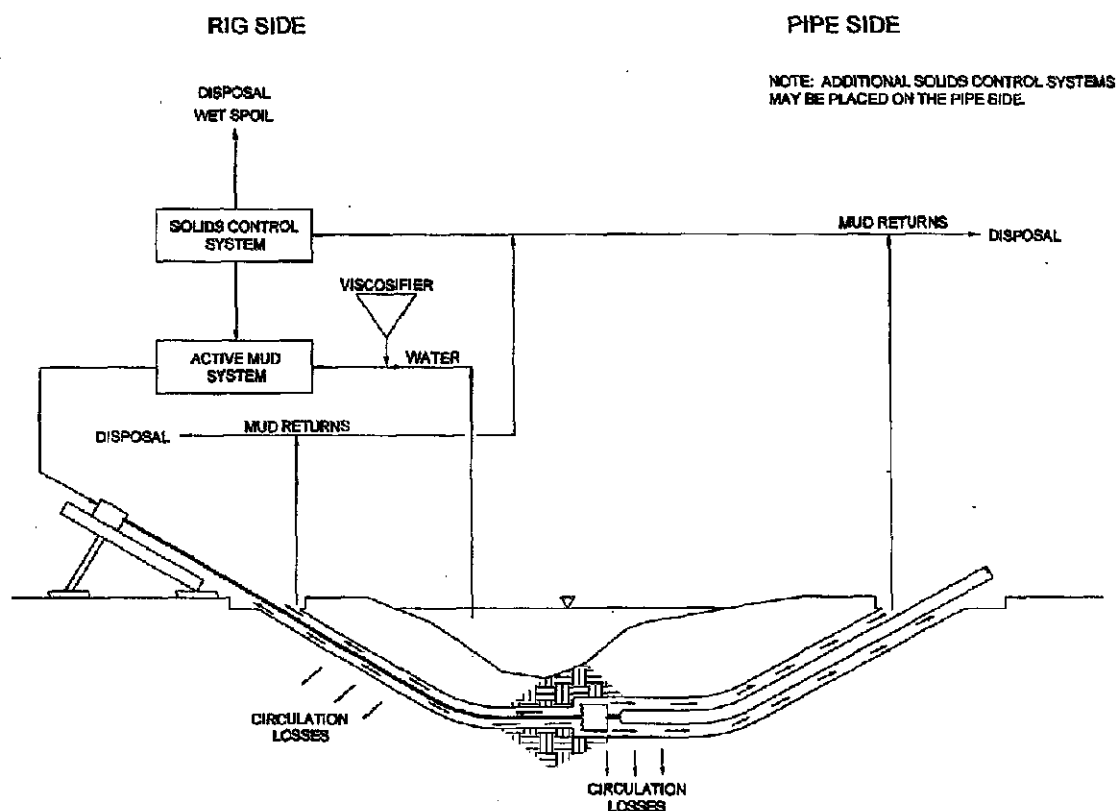
An awareness of the function and composition of HDD drilling fluids (also referred to drilling mud) is imperative in producing a permittable and constructable HDD crossing design. The principal functions of drilling fluid in HDD pipeline installation are listed below.

- **Transportation of Spoil.** Drilled spoil, consisting of excavated soil or rock cuttings, is suspended in the fluid and carried to the surface by the fluid stream flowing in the annulus between the bore hole and the pipe.
- **Cooling and Cleaning of Cutters.** Drilled spoils build-up on bit or reamer cutters. is removed by high velocity fluid streams directed at the cutters. Cutters are also cooled by the fluid.
- **Reduction of Friction.** Friction between the pipe and the hole wall is reduced by the lubricating properties of the drilling fluid.

- **Hole Stabilization.** Stabilization of the drilled hole is accomplished by the drilling fluid building up a "wall cake" which seals pores and holds soil particles in place. This is critical in HDD pipeline installation as holes are often in soft soil formations and are uncased.
- **Transmission of Hydraulic Power.** Power required to turn a bit and mechanically drill a hole is transmitted to a downhole motor by the drilling fluid.
- **Hydraulic Excavation.** Soil is excavated by erosion from high velocity fluid streams directed from jet nozzles on bits or reaming tools.
- **Soil Modification.** Mixing of the drilling fluid with the soil along the drilled path facilitates installation of a pipeline by reducing the shear strength of the soil to a near fluid condition. The resulting soil mixture can then be displaced as a pipeline is pulled into it.

The major component of drilling fluid used in HDD pipeline installation is fresh water, typically obtained at the crossing location. In order for water to be fully functional, it is generally necessary to modify its properties by adding a viscosifier. The viscosifier used almost exclusively in HDD drilling fluids is naturally occurring bentonite clay, which is principally sodium montmorillonite. It is not listed as a hazardous material/substance as defined by the U.S. Environmental Protection Agency's EPCRA or CERCLA regulatory criteria. If the product becomes a waste, it does not meet the criteria of a hazardous waste, as defined by USEPA (see attached MSDS).

All stages of HDD involve circulating drilling fluid from equipment on the surface, through a drill pipe, and back to the surface through a drilled annulus. Drilling fluid returns collected at the entry and exit points are stored in a steel tank and processed through a solids control system which removes spoil from the drilling fluid allowing the fluid to be reused. The cleaned fluid is trucked back to the entrance point for reuse. The basic method used by the solids control system is mechanical separation using shakers, desanders, and desilters. The excess spoil and drilling fluid are transported to, and disposed of, at an approved permitted solid waste landfill. A typical HDD drilling fluid flow circuit is illustrated schematically below.



Drilling fluid expended downhole will flow in the path of least resistance. In the drilled annulus, the path of least resistance may be an existing fracture or fissure in the soil or rock substrate. When this happens, circulation can be lost or reduced. This is a common occurrence in the HDD process, but does not prevent completion. However, the environment may be impacted if the fluid inadvertently returns to the surface at a location on a waterway's banks or within a waterway or wetland.

### **Frac out Minimization**

The risk of a frac out can be mitigated through profile design and implementation of specific measures throughout the installation process.

The HDD profile is designed to minimize the potential for the release of drilling fluid in sensitive areas. Cohesive soils, such as clays, dense sands, and competent rock are considered ideal materials for containment of drilling fluids. Case by case analysis of the overburden will be conducted to determine the depth of the bore to provide a margin of safety against frac outs in a sensitive area. In non cohesive soils, such as gravel, a greater depth of cover will be used.

During the design phase, substrate test bores if required, should be a minimum of 20' from the HDD centerline where practical. The bore holes should be filled with concrete prior to the HDD process.

Key preventative measures implemented during installation are geared toward keeping the drill fluid contained in the borehole and preventing its escape to the surface. This is accomplished through monitoring and management of drill fluid pressures and drill fluid volumes. A key to containing and controlling an inadvertent return is early detection and quick response by the HDD crew.

### **Minimization of Environmental Impact**

The most effective way to minimize environmental impact associated with HDD drilling fluids is to maintain fluid circulation to the extent practical. Maintenance of fluid circulation is the responsibility of EOG's HDD contractor. EOG's construction specifications defining this responsibility is presented below.

CONTRACTOR shall employ his best efforts to maintain full annular circulation of drilling fluids. Drilling fluid returns at locations other than the entry and exit points shall be minimized. In the event that annular circulation is lost, CONTRACTOR shall take steps to restore circulation.

However, it should be recognized that restoration of circulation may not be practical or possible, and that environmental impact will be minimized by completing construction as soon as possible. Therefore, absent a threat to public health and safety, drilling operations will continue in the event of lost circulation if deemed to reduce the duration of construction operations.

Drilling fluid is easily contained by standard erosion and sedimentation control measures within upland areas. Within the boundaries of the worksite drilling fluid is controlled through the use of pits at the crossing entry and exit points and typical fluid handling equipment such as trash pumps.

The environmental impact of a release of drilling fluid into a water body is a temporary increase *in local turbidity until the drilling fluid dissipates with the current and settles to the bottom.* In the immediate vicinity of a release, benthic organisms may be smothered if sufficient quantities of bentonite settles upon them.

### **Response to Frac out**

**Refer to Addendum A of this document for notification procedures to the USACE if a frac-out occurs in a water of the U.S (i.e. regulated wetland, stream, river, etc.).**

The HDD contractor shall immediately notify the lead Construction Inspector (CI) and Environmental Inspector (EI) of any sudden losses in returns or any inadvertent return to the surface. If a frac out is observed, the HDD contractor will take certain reasonable measures to eliminate, reduce, or control the release. The actions to be taken will depend on the location and time of release, site specific geologic conditions, and the volume of the release.

If a release occurs in an upland area, the HDD contractor will take appropriate reasonable actions to reduce, eliminate, or control the release. The actions shall include:

- constructing a small pit or sandbag coffer around the release point, installing a section of silt fence and/or straw bales to trap as much sediment as possible, and placing a pump hose in the pit to pump the drilling fluid back to the bore site
- reducing drilling fluid pressures
- thickening drilling fluid mixture

- adding pre-approved loss circulation materials to the fluid mixture, such as wood fibers or shredded paper.

The HDD contractor in consultation with the CI and EI, will determine which methods are the most appropriate to eliminate, reduce or control the release. Prior to the end of the shift, the EI or CI will notify the local Dominion Environmental Department concerning the frac out event. Drilling fluid that is recovered will be recycled and reused to the extent that is practical. Waste drilling fluid will be disposed of in a permitted solid waste landfill.

If inadvertent surface returns occur on a stream's bank or within a stream or wetland, it will be the responsibility of the HDD contractor to contain and collect drilling fluid, and ultimately restore the disturbed area, as practical. Drilling operations will be temporarily suspended to allow contractor to set up a containment and collection system. EOG's construction specifications defining this responsibility is presented below.

If inadvertent surface returns of drilling fluids occur, they shall be immediately contained with hand placed barriers (i.e. straw bales, sand bags, silt fences, etc.) and collected using pumps as practical. If the amount of the surface return is not great enough to allow practical collection, the affected area shall be diluted with fresh water and the fluid will be allowed to dry and dissipate naturally. If the amount of the surface return exceeds that which can be contained with hand placed barriers, small collection sumps may be used. If the amount of the surface return exceeds that which can be contained and collected using small sumps, drilling operations shall be suspended until surface return volumes can be brought under control.

If the release occurs in a wetland, or in close proximity to a stream, where there is imminent danger of the drilling fluid flowing into the body of water, then drilling operations will cease until the HDD personnel, CI and EI have had an opportunity to examine the site and evaluate the threat to the waterbody. If a release occurs in an area regulated by the USACE, within 24 hours of the release the USACE shall be notified as described in Addendum A of this document. Based on review of the information submitted, the action taken by EOG, and the aquatic resource impacted, the responsible USACE District will determine what the appropriate USACE response/action will be on a case by case basis. In addition, Dominion's local Environmental Department needs contacted immediately, or as soon as practical. A plan for avoiding additional impacts, which may include some or all of the action items listed above will be implemented. Efforts will be made to minimize ground disturbance in wetlands while accessing the frac out area by utilizing swamp mats and lightweight equipment, such as bobcats and pick-up trucks, and minimizing the travel into and out of the wetland. The cutting of shrubs and trees will be minimized, as much as practical, in order to reach the frac out area. The HDD activity may be resumed only after it has been determined with reasonable certainty that any additional release of drilling fluid will be minimal and can be adequately contained without posing additional impact to wetlands and streams. The release site(s) will be closely monitored for any additional frac out activity until the HDD work in the area is completed. For longer stretches of ROW that are not within site of the HDD personnel, the pipeline right-of-way will be walked at least on an hourly basis.

If a release occurs in a stream or river, then drilling operations will cease until the HDD personnel, CI and EI have had an opportunity to examine the site and evaluate the threat to the waterbody. Within 24 hours of the release the USACE shall be notified as described in Addendum A of this document. Based on review of the information submitted, the action taken by EOG, and the aquatic resource impacted, the responsible USACE District will determine what the appropriate USACE response/action will be on a case by case basis. In addition, Dominion's local Environmental Department needs contacted immediately, or as soon

as practical. A plan for avoiding additional impacts, which may include a pump or flume bypass with secondary secondary containment, in addition to all of the action items listed above will be implemented. The HDD activity may be resumed only after it has been determined with reasonable certainty that any additional release of drilling fluid will be minimal and can be adequately contained without posing further impacts to wetlands and streams. The release site(s) should continue to be closely monitored for any additional further frac out activity until the HDD work in the area is completed. For frac-out situations in stream and wetlands only, the Environmental Inspector may conduct stream monitoring/sampling such as pH and turbidity, comparing upstream conditions with downstream conditions. Also, the stream will be walked to verify the extent of drilling fluid sediment dispersal and settling.

One exception to ceasing drilling operations until containment is developed would be a release of drilling fluids during the pipe pullback process. Ceasing operations would pose significant risk of causing the pull to be stuck and not able to resume.

### **Containment & Clean-up Material and Equipment**

The HDD contractor will be required to have the necessary containment and clean-up equipment onsite and readily available to use. At a minimum, the following material and equipment should be on site and in ample supply depending on the extent of sensitive areas:

- Spill sorbent pads and booms
- Straw bales (certified weed-free)
- Wood stakes
- Sand bags
- Silt fence
- Plastic sheeting
- Corrugated plastic pipe
- Shovels
- Push brooms
- Centrifugal, trash and sump pumps
- Vacuum trucks
- Rubber tired or wide track back hoe
- Bobcat (if needed)
- Storage tanks (if needed)
- Floating turbidity curtain (may be considered for use on large streams)

If necessary, a 24 hour outside emergency response company may be called in for assistance.

Enviroserve – 1-800-642-1311

### **Agency Notifications**

Typically, the local Dominion Environmental Department personnel supporting EOG will make the necessary calls to any regulatory agency.

- Ohio EPA spill hotline – 1-800-282-9378 (not considered a spill, but unpermitted discharge)
- USACE – Refer to Addendum A of this document. (phone number will be provided per project location)

- Other agencies that may have to be notified dependent upon permit approvals and site conditions may include Ohio PSB, Ohio DNR and the USF&W Service.

#### **Frac out site restoration**

All areas impacted will be restored to pre-existing condition and contour. Impacted upland areas will be restored through normal right-of-way practices of seeding and mulching.

Restoration of wetlands will vary depending on the extent of disturbance to the upper soil layer and vegetation during the initial frac out response. Residual frac mud will be washed off the vegetation as much as practical. Upon review of the submitted information as identified in Addendum A of this document, the respective USACE District will review the restoration activities performed in any regulated wetland and determine if further action is warranted.

All perennial, intermittent and ephemeral streams will have as much residual frac out mud pumped out as is practical, so as not to disturb the original streambed. This may include a light wash of the streambed utilizing upstream water and collecting the wash water immediately downstream. Similar to frac outs occurring in wetlands, upon review of the submitted information as identified in Addendum A of this document, the respective USACE District will review the restoration activities performed in any regulated streams and determine if further action is warranted.

## Addendum A

### **Coordination Procedures between the U.S Army Corps of Engineers (USACE) and Dominion East Ohio Gas (EOG) for Frac-Outs:**

If specific frac-out contingency/corrective action plans have been developed for particular Horizontal Directional Drills (HDD), these should be provided to the appropriate USACE District prior to initiation of the HDD. Of particular importance is for EOG to identify any potential corrective actions that may require USACE authorizations to implement the corrective actions (i.e. temporary access roads to facilitate containment/clean-up in areas regulated by the USACE).

### **FRAC-OUT OCCURS:**

The procedures outlined below shall be implemented when a frac-out occurs in an area regulated the USACE in the state of Ohio:

1. Identify the responsible USACE District (Buffalo, Huntington, Pittsburgh) based on the geographical location of the frac-out.

2. Within 24 hours of the frac-out occurrence, notify the point of contact at the responsible USACE District.

-Harold Keppner (Buffalo): 716-879-4120, harold.t.keppner@usace.army.mil

-Mark Taylor (Huntington): 304-399-6903, mark.a.taylor@usace.army.mil

-Nancy Mullen (Pittsburgh): 412-395-7170, nancy.j.mullen@usace.army.mil

\*Notification shall occur via e-mail with potential phone contact as the situation warrants.

3. The notification shall include the following information:

- USGS location map depicting the frac-out location.
- Identify the regulated water of the U.S. and provide a brief description of that resource (i.e. stream/river name, forested wetland, etc).
- Characterize the scope of the frac-out. Identify the approximate quantity of material discharged and area impacted by that discharge.
- Provide the date the frac-out occurred and status of the situation (i.e. stopped, on-going).
- State corrective actions and restoration measures taken or to be taken by EOG to address the situation. This should include but is not limited to any "washing", earthwork and/or seeding/plantings performed to restore the area to pre-existing condition and contour.
- Representative photos of the area impacted by the frac-out and representative photos of the area after corrective/restoration efforts.
- Identify the potential for any additional USACE authorizations required to perform corrective actions (i.e. temporary access road in areas regulated by the USACE).

Based on review of the information submitted, the action taken by EOG, and the aquatic resource impacted, the responsible USACE District will determine what the appropriate USACE response/action will be on a case by case basis. Action taken by the USACE District may

include, but is not limited to issuance of a "cease and desist" order and/or permit suspension/modification/revocation.

**NOTE:** The USACE may update this guidance at any time based on an assessment of the situations which are encountered and how they are handled by EOG.