

# Hudson River Drinking Water Intermunicipal Council

Town of Esopus, Town of Hyde Park, Town of Lloyd, City of Poughkeepsie, Town of Poughkeepsie, Town of Rhinebeck, Village of Rhinebeck

## **Proposed Testing & Monitoring Protocols to Prepare for Cable Installation in the Hudson River near Drinking Water Intakes**

In 2013, Transmission Developers Inc. (TDI) received permits for its Champlain Hudson Power Express (CHPE) project. The project would include using a "jet plow" to install the electric transmission cable in the bed of the Hudson River in the stretch of the Hudson River that includes drinking water intakes that serve over 100,000 people. Consultation with the communities and their water operators during permitting was limited to identifying the location of intakes, and pre-dated the formation of the Hudson River Drinking Water Intermunicipal Council (Hudson 7 or Council). The Council is dedicated to protecting the Hudson River as the source of drinking water for the City and Town of Poughkeepsie, the Village and Town of Rhinebeck, and the Towns of Esopus, Hyde Park, and Lloyd. These municipalities rely on five drinking water treatment plants and six intakes. Water is also distributed to residential and commercial properties in the Town of East Fishkill via the Central Dutchess Water Transmission Line.

The Council and its member communities have expressed significant concerns about the project and its permits due to the potential for contamination of drinking water supplies during the construction of the CHPE project. The permit requires TDI to develop an Environmental Management and Control Plan (EM&CP) and to conduct pilot testing of the jet plow that would be used to install the cable.

This document outlines the Council's requests for pilot testing, sediment sampling, and EM&CP protocols that would satisfy the Council's primary concerns. The Council is seeking support from TDI and regulators to ensure that these requests are required and enforceable.

In summary, we request the following set of actions, leading to the development of the Environmental Management and Control Plan (EM&CP) for CHPE:

1. Sediment sampling to assess whether there are hotspots of pollution in the sediments in CHPE's route near the drinking water intakes.
2. Pilot testing with a full-scale jet plow in the vicinity of Rhinebeck's intake, with testing for an array of contaminants.
3. Use of the data from steps one and two to develop the EM&CP for our area. The EM&CP should include robust real-time testing and requirements to halt operations if contamination occurs. It should also include a thorough emergency response plan.

### **Sediment Sampling**

Prior to the development of the EM&CP, we request that TDI take sediment cores along its route in the vicinity of the intakes, including at the location of the closest point of the proposed cables to the intake. The distribution and density of sediment cores should be determined through consultation with Dr. Bob Chant, a consultant with expertise in pollution dispersion modeling on retainer with the Poughkeepsie Joint Water Board. The core shall be

nine feet deep to obtain sediment for the entire depth of the trench plus two feet. The core should be analyzed for the following:

- Dioxins
- Petroleum Compounds
- Polycyclic Aromatic Hydrocarbons (PAHs)
  - Benz(a)anthracene
  - Pyrene
  - Phenanthrene
  - Naphthalene
- Pesticides
  - 4,4 DDE
- PCBs
- Heavy Metals
  - Arsenic
  - Cadmium
  - Mercury
  - Copper
  - Lead

These pollutants are known to exist in the bottom sediments of the Hudson, with unknown "Hot Spots," so samples must be taken near all intakes and at a sufficient distribution and density along the proposed route of the cable to account for the potential for contaminants mobilized by jet plowing to reach one or more intake. If the concentration of any pollutant exceeds the state limits for Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6.8), the cable route shall be revised. TDI shall present the results of the analyses in a report to the Hudson 7, Public Service Commission (PSC), Department of Environmental Conservation (DEC) Department of Health (DOH), Dutchess County Department of Behavioral & Community Health (DCDBCH), and Ulster County Health Department of Health Environmental Services (UCDOH).

## **Pilot Testing**

Pilot testing of the jet plow shall be conducted at least 6 months before the start of the preparation of the EM&CP, and results shall be presented to Hudson 7, PSC, DEC, DOH, DCDBCH, and UCDOH. The Hudson 7 requests that the pilot testing be conducted near the Rhinebeck intake in coordination with the Rhinebeck water treatment plant operators. This will provide reliable data in the relevant section of the river. The Rhinebeck location was selected because its storage capacity makes it best suited to shut down if necessary.

The pilot testing shall start one-half mile upstream of the Rhinebeck intake and end one-half mile downstream of the intake. Two runs shall be made at 600 ft/hour and 300 ft/hour. The testing should be started, and grab samples for the baseline values should be taken four hours before high tide at the intake. Testing of the entire route shall be videoed underwater. Grab water samples shall be taken 100 ft upstream and downstream of the jet plow and no more than two feet above the river bottom and analyzed for total suspended solids (TSS) and turbidity. Grab water samples shall be taken at the raw water pump station and at the following locations during each run:

- One-half mile upstream of the intake before the jet plow starts for the baseline values

- One-quarter mile upstream of the intake
- At the closest point to the intake
- One-quarter mile downstream of the intake
- One-half mile downstream of the intake

Samples will be analyzed for the contaminants in NYS Drinking Water Standards listed 5-1.52 Tables of Subpart 5-1 of the NYCRR. The contaminant concentrations shall not exceed the concentrations of the samples before the start of the jet plow pilot test (baseline values). If the concentrations exceed the baseline values, TDI shall modify their operation and conduct additional runs with the jet plow until the requirements are met.

In addition to the grab samples, turbidity shall be measured continuously with online, real-time analyzers. Turbidity shall be analyzed continuously with the plant's turbidimeter and two analyzers on the boat for the jet plow. TDI shall provide the two turbidimeters on the barge, and turbidimeter probes shall be located 100 ft upstream and downstream of the jet plow and no more than two feet above the river bottom and analyzed for total suspended solids (TSS) and turbidity. If the difference in the turbidity is more than 100 NTU or the difference in the TSS is more than 100 mg/L, TDI shall modify their operation and conduct additional runs with the jet plow until the requirements are met. The water operator will also monitor raw water parameters continuously for total organic carbon (TOC), pH, and hydrocarbons. TDI shall provide online TOC and hydrocarbon analyzers for the water operator. TDI shall present the results of the analyses, a description of pilot testing, and recommendations for the EM&CP to PSC, DEC, DOH, Hudson 7, DCDBCH, and UCDOH for their consideration before preparation of the EM&CP.

### **Full-Scale Operation**

The results of the steps above shall be used in developing the EM&CP, and Hudson 7, PSC, DEC, DOH, DCDBCH, and UCDOH will be able to make specific recommendations based on the results of the sampling and pilot testing and shall be involved in the preparation of the EM&CP. The requests below relative to protocols to be included in the EM&CP are therefore provisional and subject to revision based on the results of sediment sampling and pilot testing.

Preliminary operational requests include the following:

TDI shall notify the water operators at least 30 days before jet plowing is within one-half mile from the intake. The specific timing of operations in the vicinity of water intakes should be coordinated with plant operators. The operation should be started, and grab samples for the baseline values should be taken four hours before low tide at the intake.

Continuous monitoring of the water upstream and downstream of the jet plow for turbidity and TSS shall be conducted. The water shall be taken 100 ft upstream and downstream of the jet plow and no more than 2 ft from the river bottom. In addition, grab samples shall be taken 100 ft upstream and downstream of the jet plow and no more than two feet above the river bottom at the following locations and analyzed for total suspended solids (TSS).

- One-half mile upstream of the intake
- One-quarter mile upstream of the intake
- At the closest point to the intake
- One-quarter mile downstream of the intake
- One-half mile downstream of the intake

If the difference in the turbidity is more than 100 NTU or the difference in the TSS is more than 100 mg/L, the speed of the jet plow shall be reduced from 600 ft/hr to 300 ft/hr. If the jet plow is operating at 300 ft/hr and turbidity and TSS limits are exceeded, in that case, the operation shall be shut down, and TDI shall develop an alternative plan, which Hudson 7, PSC, DEC, DOH, DCDBCH, and UCDOH shall approve.

The water operators will monitor raw water parameters continuously for turbidity, total organic carbon (TOC), pH, and hydrocarbons. TDI shall provide online TOC and hydrocarbon analyzers for the water operators, which shall be used at each plant. Water operators shall record the parameters at the raw water pump station two hours before the jet plow reaches one-half mile upstream of the intake. The results shall be reference values which shall be compared to values taken as the jet plow goes from one-half mile upstream to one-half mile downstream of the intake.

If the following parameters change more than the values below from the referenced values, in that case, the jet plow operation shall be shut down, and TDI shall modify the operation, which PSC must approve, DEC, DOH, Hudson 7 DCDBCH, and UCDOH.

- Turbidity increase of 50 NTU
- TOC increase of 1.5 mg/L
- pH increase or decrease of one unit
- Hydrocarbons increase of 1.0 mg/l

## **Emergency Response Plan**

An emergency response plan shall be included in the EM&CP. It shall consist of operation procedures, a communication plan, and pre-positioning potable drinking water for each Hudson 7 water district, and TDI shall coordinate the plan with each water district.

### **Communication Plan**

The communication plan shall include a list of contacts and notification procedures for routine and emergency notification.

Contacts – A preliminary list of contacts along with phone numbers and emails is attached. It should be reviewed by water treatment operators, regulatory agencies, and TDI, and any missing information should be provided. The water treatment plant in Hyde Park is owned and operated by the Dutchess County Water and Wastewater Authority. For Rhinebeck, Hyde Park, and Poughkeepsie, the Dutchess County Department of Behavioral & Community Health should be notified. For Esopus and Lloyd, the Ulster County Department of Health should be notified.

Routine Notification - The routine notifications will include advance, startup, operating, and completion.

1. Advance notification – 30 days before the jet plow reaches ½ mile from the intake, the TDI project manager will notify the PSC, DEC, DOH, Region 4 DEC, County DOH, water treatment operator, and the Hudson 7.
2. Startup notification – When the jet plow is within ½ mile of the intake, the TDI inspector will notify the TDI project manager, the Region 4 DEC, County

DOH, water treatment operator, and the Hudson 7. The operator will take the base values for the parameters at this time.

3. Operating Notification – Every two hours, when the jet plow is operating within ½ mile of the intake, the TDI inspector will notify the water treatment operator and report upstream and downstream turbidities and TSS. The water operator will report the parameters he is continuously taking at the intake.
4. Completion notification – When the jet plow reaches ½ mile downstream of the intake, the resident inspector will notify the TDI project manager, PSC, DEC, DOH, Region 4 DEC, County DOH, water treatment operator, and the Hudson 7. The sampling results from the resident inspector and water treatment operator will be provided within 30 days of reaching ½ mile downstream of the intake to TDI project manager, PSC, DEC, DOH, Region 4 DEC, County DOH, and the Hudson 7.

Emergency Notification – The emergency notifications will be made if any parameter at the jet plow or water treatment plant intake is exceeded.

1. Notification of an exceedance at the jet plow – The TDI inspector will notify the TDI project manager, PSC, DEC, DOH, Region 4 DEC, County DOH, water treatment operator, and the Hudson 7. The jet plow will immediately shut down, and the TDI project manager will determine an alternative method of jet plowing, which will be approved by PSC, DEC, DOH, and the Hudson 7 before the jet plowing is continued.
2. Notification of an exceedance at the intake – The water treatment operator will notify the TDI inspector, PSC, DEC, DOH, Region 4 DEC, County DOH, and the Hudson 7. The TDI inspector will notify the TDI project manager and immediately shut down the jet plow operation. TDI project manager will determine an alternative method of jet plowing, which will be approved by PSC, DEC, DOH, and the Hudson 7 before the jet plowing is continued.

### **Pre-positioning Potable Drinking Water**

Before the jet plow reaches ½ mile upstream of the intake, potable drinking water will be located at designated locations. Pre-packaged water, which is NYSDOH approved, will be located at Town Halls, nursing homes, assisted living facilities, and schools. Pre-package water can be provided in a container no larger than ½ gallon. Bulk water trunks will be used for hospitals and dialysis centers. The trucks should meet the NSF/ANSI Standard 61, and the bulk supplier shall be a licensed bulk water hauler. EPA Manual 600/R-11/054 entitled Planning for an Emergency Drinking Water Supply dated June 2011 was used to develop general requirements. In the manual, it is recommended that one gallon/person/day be provided. This amount should be used for municipal residents, colleges, nursing homes, and assisted living facilities. The number of residents served for each district was obtained from the water districts' Annual Drinking Water Quality Reports. The following amounts should be used for schools:

- Elementary Schools – 0.5 gallons/student
- Middle Schools – 0.75 gallons/student
- High schools – 1.00 gallons/student

Other documents recommend 315 gallons/day/bed for hospitals, and CDC recommends 11-22 gallons/patient/day for dialysis centers. For the hospitals, two

10,000-tankers will be pre-positioned, and the daily amount will be available at the hauler's facility. At each dialysis center, 4,000-gallon tankers will be pre-positioned and additional water will be provided as required. TDI will provide one day of water for the people served and these facilities. If water is not used in a water district, the water can be relocated to another district. The specific requirements for each water district will be determined with water district and municipal officials.

## Construction Contacts for CHPE Project

Name	Company	Job Title	Phone No.	E-mail
	Department of Environment Conservation Law Enforcement	Environmental Conservation Police Officers (ECOs)	1-844-332-3267	
Martin Townley	Department of Environment Conservation Region 3	ECO	1-845-256-3013	
	Department of Health	Duty Officer	1-866-881-2809	
	Department of Public Service		1-800-342-3365	
	Dutchess County Department of Behavioral & Community Health		1-800-426-4761 1-845-486-3400	
Alain Petit	Dutchess County Water & Wastewater Authority	Chief Water Treatment Plant Operator	1-845-229-2524	<a href="mailto:apetit@dutchessny.gov">apetit@dutchessny.gov</a>
Paul Malmrose	Hudson 7	Engineering Technical Advisor	1-860-895-7211	<a href="mailto:pemalmrose@tighebond.com">pemalmrose@tighebond.com</a>
Randy Alstadt	Poughkeepies' Water Treatment Facility	Water Plant Administrator	1-845-451-4173 X2003 1-845-625-3448	<a href="mailto:ralstadt@cityofpoughkeepsie.com">ralstadt@cityofpoughkeepsie.com</a>
Adam Litman	Town of Lloyd	Water and Sewer Administrator	845-691-2400	<a href="mailto:alitman@townoflloyd.com">alitman@townoflloyd.com</a>
Nicholas Butler	Town of Esopus	Superintendent	845-331-5900	
Bryan Alix	Town of Rhinebeck	Chief Water Plant Operator	845-876-7331 W 518-947-9500 M	<a href="mailto:water@villageofRhinebeckny.gov">water@villageofRhinebeckny.gov</a>
Project Manager	Transmission Developers, Inc			
Construction Inspector	Transmission Developers, Inc			
	Ulster County Health Depart Environmental Services		845-340-3010	