



**INADVERTENT RETURN PLAN  
FOR  
HORIZONTAL DIRECTIONAL DRILLING (HDD)**

Trelina Solar Energy Center  
Seneca County, New York

**FACILITY OPERATOR:**  
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Juno Beach, FL 33408

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## 1.0 Introduction

Trelina Solar Energy Center, LLC (Trelina) is proposing to incorporate trenchless excavation techniques, otherwise known as horizontal directional drilling (HDD), on the Trelina Solar Energy Center Project (Project) to route 34.5-kilovolt (kV) collection circuits in select locations of the Project Area. HDD has proven to be a safe and efficient method of crossing roads, railroads, streams, wetlands, and other environmentally sensitive areas with minimal surface impact. Three HDD crossings are proposed for this Project. Two crossings are to avoid disturbance to an existing natural gas line right-of-way and the third is to avoid disturbance to a New York State Department of Environmental Conservation (NYSDEC)-jurisdictional wetland. Locations of each are shown on the Preliminary Design Drawings in Appendix 11-1 of the Application. A typical HDD equipment layout diagram is provided on Sheet C.604 of Appendix 11-1.

The HDD process involves the use of water and bentonite (a naturally occurring clay) slurry as a coolant and lubricant for the advancing drill head. The slurry also helps to stabilize the bore and aids in the removal of cuttings during the drilling process<sup>1</sup>. Bentonite is nontoxic; however, if released into waterbodies, has the potential to adversely impact aquatic flora and fauna. Therefore, to protect these natural resources, Trelina has prepared this Inadvertent Return Plan (Plan), which outlines operational procedures and responsibilities for the prevention, containment, and cleanup of inadvertent releases associated with the HDD process. The objectives of this Plan are to:

1. Minimize the potential for an inadvertent release of drilling fluids associated with HDD activities;
2. Provide for the timely detection of inadvertent returns;
3. Protect sensitive areas while responding to an inadvertent release;
4. Ensure an organized, timely and “minimum-impact” response in the event of an inadvertent return and release of drilling fluids; and
5. Ensure that all appropriate notifications are made immediately.

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<sup>1</sup> A Material Safety Data Sheet (MSDS) will be appended to this Plan once a specific product has been identified by the HDD contractor.

## 2.0 Site Personnel Responsibilities

The HDD Contractor will be responsible for execution of HDD operations, including actions for detecting and controlling inadvertent releases of drilling fluids. The Contractor is also responsible for understanding the contents of this Plan and ensuring that the appropriate personnel are familiar with its contents and the procedures identified in it for cleanup of an inadvertent release.

The Construction Supervisor will have overall responsibility for implementing the Plan and will be familiar with all aspects of the drilling activity, the contents of this Plan, and the conditions of approval under which the activity is permitted to take place. The Construction Supervisor will ensure that a copy of this Plan is available on-site and accessible to all construction personnel during HDD activities. The Construction Supervisor will provide the anticipated schedule of HDD operations to the Environmental Monitor (EM) responsible for environmental compliance monitoring prior to the commencement of work.

The EM will closely supervise the progress and actions of the HDD Contractor. The EM will be on site and available during HDD operations to consult with HDD personnel and conduct inspections. The Construction Supervisor will promptly notify the EM when an inadvertent release is suspected or detected. The EM will have the authority to stop work, evaluate the situation, and determine the appropriate measures necessary to address an inadvertent release. The EM will be responsible for notifying the appropriate regulatory agencies.

## 2.1 Training

Prior to the start of construction, the Construction Supervisor and EM will ensure that the crew members receive and understand the following:

- Provisions of this Plan;
- Site-specific permit and monitoring requirements;
- Locations of sensitive environmental resources at the HDD site;
- Procedures for inadvertent release prevention;
- Location and proper use of containment equipment and materials;
- Contractor/crew member obligation to immediately suspend drilling operations upon evidence of an inadvertent release;

- Requirement to immediately report any inadvertent releases to the Construction Supervisor and EM;
- Contractor/crew member responsibilities in the event of an inadvertent release; and
- Protocols for reporting observed releases and communication with appropriate regulatory agencies.

### **3.0 Measures to Prevent Inadvertent Release**

Although HDD has proven to be a safe and reliable method of crossing surface features with very minimal impact, the potential still exists for inadvertent releases of drilling fluid to the surface, which can have a detrimental impact on the environment. These releases typically occur as a result of seeps which can form when pressure in the drill hole exceeds the capability of the overburden to contain it, or when fluids find a preexisting fault in the overburden. The likelihood of these situations occurring can be minimized by taking into consideration the soil type and bedrock composition. Bore depth should be determined based on these site-specific factors; however, a minimum depth of 25 feet in sound soils is typically sufficient to prevent an inadvertent release.

Increased pressures in the drill hole can also be the result of excessively tight turns. The potential for increased pressures can be reduced simply by increasing the radius of bends in the profile.

A loss of drilling pressure is the most obvious indication of a seep; therefore, drilling pressure shall be monitored continuously for any loss of pressure which might indicate the presence of a seep.

Exit and entry pits will be enclosed by silt fences and straw bales. Barriers (straw bales or sedimentation fences) between the bore site and the edge of sensitive environmental resources will be constructed prior to drilling to prevent released drilling fluid from reaching them.

The Construction Supervisor will ensure a corridor centered on the drill path will be continuously monitored for any signs of inadvertent release. In addition, when crossing a stream, the downstream area will be continuously monitored for signs of an inadvertent release.

Water containing mud, silt, bentonite or other pollutants from equipment washing or other activities, will not be allowed to enter a wetland or waterbody. The bentonite used in the drilling process will either be recycled or disposed of at an approved facility.

### 3.1 Equipment and Containment Materials

The Construction Supervisor will ensure that:

- All equipment and vehicles are checked and maintained daily to prevent leaks of hazardous materials;
- Spill kits and spill containment materials are available on-site at all times and that the equipment is in good working order;
- Equipment required to contain and clean up an inadvertent release will either be available at the work site or readily available at an off-site location within 10 minutes of the drill site; and
- If equipment is required to be operated near a streambed, absorbent pads, and plastic sheeting for placement beneath motorized equipment will be used to protect the streambed from engine fluids.

At a minimum, the following containment, response, and clean-up equipment will be available at each HDD crossing location at the time such crossings occur and will be readily available for use in the event of an accidental release of drilling fluids:

- Spill kit;
- Straw bales;
- Silt fence;
- Plastic sheeting;
- Turbidity barriers;
- Sand bags;
- Shovels;
- Buckets;
- Push brooms;
- Squeegees;
- Pumps and suction hose;
- Discharge hose;
- Storage tanks; and
- Vacuum truck on 24-hour call.

The preliminary collector line route depicts the proposed HDD locations and is included in Appendix 11-1 of the Application.

#### **4.0 Response to an Inadvertent Release**

The Construction Supervisor will be on-site before, and during, any HDD activities. The Construction Supervisor will have a tailgate briefing at the beginning of each day of drilling to review appropriate procedures in the case of an inadvertent return. During the briefing, drilling crew or other Project staff questions and concerns will be addressed.

Once the drill rig is in place and HDD begins, the drill operator will immediately stop work whenever the pressure in the drill rig drops, there is a lack of returns in the entrance pit, or other evidence of an inadvertent release occurs. Upon evidence of an inadvertent release, the drill operator will immediately pull back the drill head to relieve pressure on the system.

If an inadvertent release is suspected, the Construction Supervisor and EM will be notified immediately to ensure appropriate response actions are taken and notifications are made. The Construction Supervisor and EM will conduct an evaluation of the situation.

If no inadvertent release is detected, the drill operator will attempt to re-establish returns through standard HDD practice and continue HDD activity.

If an inadvertent release is detected, the Construction Supervisor and EM will:

1. Cease all drilling activities.
2. Make appropriate initial notifications – see “Notifications” within this Plan. Notification of respective staffs of the New York State Department of Public Service (NYSDPS) and Region 8 of the NYSDEC if off-Project Area access is needed to clean up an inadvertent release.
3. Implement containment measures to minimize the affected area.
  - a. In upland or relatively dry wetland areas, containment techniques may include installation of earthen dams/ditches, or placement of sand bags or silt fence barriers to stem flow.
  - b. In a flowing stream, several techniques may be implemented including turbidity curtains, sand bags placed on the bottom of the stream to slow flow, pumping water from above the inadvertent release to below the inadvertent release, or

others which minimize or stop materials from flowing further downstream. This condition is not expected to be encountered at the Project unless the wetland feature being crossed is exhibiting directional surface water flow; e.g., resultant from occurring or antecedent rainfall.

- c. In wetlands, the EM and Construction Supervisor will direct containment of material consistent with the methods described above. In some cases, however, equipment and personnel activities associated with containment and recovery of the bentonite slurry may be deemed likely to cause more damage to the ecosystem. Under such circumstances, mitigation efforts may be suspended at the EM's discretion.
- 4. If the volume of a release is too small to be practically collected, it may be allowed to dry and dissipate naturally.
- 5. If the volume of a release is small and it is practical to do so, it can be collected by hand with shovels and soft bristled brooms. The area will be scraped down to bare soil without unnecessarily disturbing surrounding vegetation.
- 6. If the volume of a release is large, a vacuum truck or diaphragm mud pump will be employed.
- 7. Bentonite slurry, whether collected by hand or mechanical means, will be directed into buckets, tanks, a vacuum truck, or other containment device and stored outside sensitive environmental areas and recycled or disposed of in an approved manner.

#### 4.1 Notifications

The EM will be responsible for notifying NYSDPS and NYSDEC staff, if practicable, as soon as possible and within two hours of an inadvertent release to a state regulated wetland or protected stream.

**Table 1. Contact Information**

Agency	Contact	Address and Telephone Number
NYSDPS	Andrew Davis	3 Empire Plaza Albany, NY 12223-1350 <b>(518) 486-2853</b>



Agency	Contact	Address and Telephone Number
New York State Department of Environmental Conservation (NYSDEC)	Region 8 Permits	6274 East Avon-Lima Road Avon, NY 14414-9519 <b>(585) 226-5400</b>
	New York State (NYS) Spills Hotline	625 Broadway, 11 <sup>th</sup> Floor Albany, NY 12233 <b>1-800-457-7362</b>

Information to be documented shall include:

1. Time of loss of return;
2. Time of discovery of any drilling material to the surface of the ground;
3. Person who made the first discovery;
4. Physical location of release;
5. If release is in an upland area, stream, or wetland;
6. Estimated volume of material released;
7. Containment activity; and
8. Cleanup activity.

The EM is responsible for a log of all information pertaining to the event including names, times, contacts, and start and completion of remediation activities.

### 5.0 Clean Up and Restoration

Site-specific clean up and restoration measures will be developed by the Construction Supervisor and the EM in consultation with NYSDPS and NYSDEC staff as practicable. However, the following measures are considered appropriate:

- The Construction Supervisor will be responsible for ensuring that the recovered drilling fluid is either recycled or disposed at an approved facility. No recovered drilling fluids will be discharged into wetlands, streams, storm drains, or any other water source.
- All emergency excavation and clean-up sites will be returned to natural contours as necessary using clean fill.

- All containment measures (i.e., straw bales, turbidity barriers, etc.) will be removed, unless otherwise specified by the Construction Supervisor.
- The EM will notify and coordinate any necessary follow-up response with agency representatives.

## **5.1 Construction Restart**

The Construction Supervisor and EM will agree on plans moving forward. Options may include the industry standard practice of lower pressure/flow, changing viscosity of the slurry, using additives consistent with the geology, “pushing through” if the volume of inadvertent release is manageable and not impacting a stream or wetland, abandonment and relocation of the entry, or changing the drill path.

## **5.2 Documentation**

Inadvertent releases will be recorded in the Project daily log by the EM. The log will include the following:

- An estimate of the amount of drilling fluid released;
- Location and time of the release;
- Size of the area impacted;
- Notifications made;
- Summary of the response; and
- Success of the clean-up action.