

**SUMP 3 INVESTIGATION AND INTERIM REMEDIAL MEASURE WORK PLAN**  
**NORTHERN CIRCUITS (SITE # 734124)**  
**TOWN OF DEWITT, ONONDAGA COUNTY, NEW YORK**  
**AUGUST 2, 2019**

**INTRODUCTION**

At the request of the New York State Department of Environmental Conservation (NYSDEC), Arcadis CE, Inc. (Arcadis) has prepared this work plan to summarize the proposed Sump 3 investigation and interim remedial measure (IRM) at the former Northern Circuits facility (Site) located at 6 Adler Drive, Town of Dewitt, Onondaga County, New York. The IRM will include investigative and remedial services, anticipated to include both excavation and dewatering, outside of the site building adjacent to Sump 3 (the likely location of a historical release of halogenated volatile organic compounds [VOCs]). The Remedial Investigation / Feasibility Study (RI/FS) for the Site and the IRM described herein are being performed under a NYSDEC Standby Contract (#D007618-WA29.1). This IRM will include additional characterization of the Sump 3 discharge pipe extent and condition, and characteristics of the soil adjacent to that pipe.

**BACKGROUND**

The Site consists of a 1.3-acre lot with an approximately 11,400 square-foot building that is currently unoccupied. Prior operations included circuit board manufacturing, metal plating, and/or photograph development, from 1975 to 2010. A metals casting business operated at the Site from circa 2010 to 2017.

The geology at the Site generally consists of less than 1 foot of fill materials (top soil, asphalt, and/or concrete) that overlie lacustrine deposits composed of fine sand and silt. Groundwater flow is generally to the northeast, and an average hydraulic conductivity of  $9.1 \times 10^{-5}$  centimeters per second (cm/sec) has been estimated based on field testing. Groundwater is shallow, generally present between 2 and 3 feet below land surface (bls).

The primary constituents of potential concern (COPCs) at the Site are:

- tetrachloroethene (PCE) and its breakdown products;
- chlorofluorocarbons (principally dichlorodifluoromethane [CFC-12] and 1,1,2-trichloro-1,2,2-trifluoroethane [CFC-113]), and
- chlorinated ethanes and their breakdown products.

One potential source area for COPCs at the Site appears to be Sump 3 (Figure 1), as the highest concentrations of COPCs in groundwater have been detected in samples collected adjacent to and generally to the northeast of Sump 3. Previous non-intrusive investigative activities (including ground-penetrating radar [GPR], radio frequency [RF] and electromagnetic [EM] technology) performed concerning the Sump 3 have yielded the following results:

- The Sump 3 discharge pipe is a 6-inch diameter polyvinyl chloride (PVC) pipe that exits the sump in the eastern direction (i.e., into the eastern exterior wall of the building). Sump 3 is divided into two basins designed such that dense particles would have likely settled in the southern basin prior to

flowing into the northern basin, with the sump discharge originating from the PVC pipe in the northern basin.

- A gooseneck in the discharge pipe was removed and a steel tape advanced approximately 7.5 feet into the pipe until refusal was encountered.
- The depth of the steel tape at the refusal location could not be determined. The depth of the discharge pipe inside the building is approximately 2 to 3 feet below the floor (and exterior land) surface.

## **OBJECTIVE**

The overall objective of this IRM is to develop a better understanding of the fate and transport of COPCs originating from Sump 3. The objective will be achieved by: (1) exposing and tracing the Sump 3 discharge pipe from the point where it exits the site building (via excavation activities); and (2) evaluating soil conditions around the discharge pipe.

## **SOIL REMOVAL AND CHARACTERIZATION ACTIVITIES**

To evaluate the discharge pipe and soil conditions around the pipe, Arcadis and its remedial subcontractor will remove soil around the discharge pipe using conventional excavation methods. A shallow excavation will be completed during dry weather to assess the nature and extent of the pipe originating from Sump 3. The lateral extent of the excavation will be limited to the area between the building at 6 Adler Drive, the adjacent parking area at 8 Adler Drive, well MW-2, and well MW-5D. Excavation depth will be terminated once: (1) the pipe originating from Sump 3 is exposed within the entire planned excavation area; (2) dewatering becomes impractical with the planned 21,000 gallon frac tank; or (3) additional excavation could impact the integrity of the building foundation or adjacent wells.

Arcadis and the NYSDEC will coordinate access to the Site, including the adjacent property (8 Adler Drive), as necessary. Access to 8 Adler Drive will not include intrusive activities. Following conclusion of the work, the Site and adjacent property will be returned to pre-construction conditions.

The proposed excavation activities generally include site preparation, dewatering, soil excavation, soil staging, transportation and disposal, documentation soil sampling, excavation backfilling, equipment decontamination, waste management, site control, and air monitoring. Details of these activities are provided in the subsections below.

### **Site Preparation**

Work activities to be conducted in preparation for the soil removal activities include:

- Coordinating with Dig-Safe of New York and the local utility companies to identify, locate, mark, and verify (as necessary) subsurface utilities near the proposed excavation.
- Performing private utility location in the potential areas of excavation (i.e., geophysical and electromagnetic surveying).
- Mobilizing labor, equipment (including one 21,000-gallon frac tank), materials, and supplies necessary for implementing the removal activities to the Site. Due to the site configuration and the property boundaries, most of the support areas will need to be staged in the far northern end of the paved lot west of the site building.

- Constructing support areas, including, but not limited to, waste material staging areas and, as needed, decontamination areas for equipment and personnel.
- Placing plywood (or similar) on existing surfaces along heavy equipment access routes as needed to protect existing surfaces. Access to the work area via the parking lot directly east of the Site is anticipated. Following excavation activities, the parking lot will be returned to pre-construction conditions.
- Establishing an exclusion zone using orange-construction fencing and “do not enter” signs. Parking spaces on the property directly east of the Site that are adjacent to the exclusion zone will be blocked from use with channelizing traffic cones with flags and connected with caution tape.
- Installing erosion and sedimentation control measures, as required, to minimize potential migration of soil/sediment/debris beyond the work areas.
- Establishing dust suppression controls, as needed, to minimize dust generation.
- Establishing air monitoring devices as described in a later subsection.
- Preparing a Site-specific Health and Safety Plan (SSHASP) to address the protection of workers.

### **Dewatering**

Based on observations during the installation of bedrock boring BR-03 (located adjacent to the planned excavation area), Arcadis anticipates that groundwater may enter the excavation and that the excavation must be dewatered during soil removal. Groundwater entering the excavation will be pumped to a 21,000-gallon frac tank staged on the other side (western side) of the site building. Groundwater will be pumped at a rate to make visual inspection of the surrounding soil possible. The excavation will be terminated, regardless of the progress of the investigation and IRM, as needed to prevent the generation of more than 21,000 gallons of water.

A spill response kit and drum vacuum will be available to manage minor amounts of non-aqueous phase liquids encountered during dewatering and soil excavation activities. Additional spill response measures (e.g., use of a vacuum truck) will be taken as needed based on field observations, however costs associated with additional measures will be contemplated at that time.

### **Soil Excavation**

Soil will be excavated to expose Sump 3 discharge pipe using conventional excavation methods in accordance with requirements presented in 29 Code of Federal Regulations 1926, Subpart P: Excavations. The excavation area is not anticipated to extend beyond limits shown on Figure 1. The excavation will be sloped or benched, as determined by the construction subcontractor’s excavation-competent person, to achieve the required excavation depths. Excavation along the site building will not advance deeper than a 1.5 horizontal to 1 vertical (1.5H:1V) slope below the bottom of the building foundation.

The excavation will be advanced horizontally (within the limits shown on Figure 1) if soil is observed to be visibly stained, contains elevated PID readings, contains sheens, or exhibits obvious odors.

### **Soil Staging**

Excavated material is anticipated to be either stockpiled or placed into roll-off container(s) to be staged in the northern end of the paved area west of the Site building. A soil stockpile, if utilized, will be

constructed with a polyethylene sheet liner and cover, a perimeter berm, and a low spot to allow for collection of water that drains from excavated soil. Soil considered too wet for off-site transportation and disposal will be managed as necessary to reduce its moisture content (e.g., dewatering roll-off container, stabilization with lime, addition of saw dust, etc.). Water accumulated from soil dewatering will be managed with water pumped from the excavation. Excavated soil with visible staining or sheens will be staged separately for waste characterization purposes. Excavation equipment will be decontaminated following completion of soil removal activities.

### **Transportation and Disposal**

Soil and water generated by the IRM will be characterized and transported for off-site disposal in accordance with local, state and federal regulations. Waste characterization sampling of each waste stream will be performed to characterize soil and water in accordance with the permitted disposal facility requirements.

### **Documentation Soil Sampling**

Arcadis anticipates collecting up to six post-excavation soil samples from the excavation to document remaining soil conditions. One sample will be collected from each excavation sidewall (anticipated quantity of four) and one sample from the bottom of the excavation in the immediate area of the Sump 3 discharge pipe (and slightly below it). As feasible, these samples will be collected directly from an excavator bucket (to avoid manned entry into the excavation). Samples will be collected using the methodology previously used at the Site to collect VOC samples.

The documentation soil samples will be submitted for laboratory analysis of Target Compound List (TCL) VOCs using United States Environmental Protection Agency (USEPA) SW-846 Method 8260 as referenced in the most recent edition of the NYSDEC Analytical Services Protocol (ASP), and results will be reported with Category B analytical data deliverables. A Data Usability Summary Report (DUSR) of the laboratory data packages will be prepared, and the results from the DUSR will be incorporated into future data tables prepared for the Site. Analytical results for the documentation samples will be summarized in the RI Report and addressed in the forthcoming FS.

### **Cleanout Installation**

The extent of the Sump 3 discharge pipe is unknown. If the pipe is observed to extend beyond the excavation limits, two cleanout pipes (providing access in both directions) will be installed to allow for future investigation of the discharge pipe. This work plan assumes that the Sump 3 discharge pipe material is PVC; provisions for installing cleanouts for a different pipe material type will be made as necessary and changes in costs contemplated at that time.

### **Excavation Backfilling**

The excavation will be backfilled following collection of documentation soil samples. If it is necessary to leave the excavation open overnight, the excavation area will be cordoned off by orange construction fencing, and warning signs (e.g., Danger, Unauthorized Entry Prohibited) will be posted on the fence. The excavation will be backfilled according to the following steps:

- Step 1: Below water table, the excavation will be backfilled with American Association of State Highway and Transportation Officials (AASHTO) #57 stone. A separation fabric will be installed

both on the bottom of the excavation prior to, and after, placing the stone (i.e., both below and above the stone layer).

- Step 2: Above the water table, clean imported general fill material will be placed and compacted in 8-inch lifts up to approximately 6 inches from land surface.
- Step 3: 6 inches of topsoil will be placed, graded and seeded. If work is completed after the growing season, the grass seed will be applied in springtime. Erosion and sedimentation control will be removed after grass is established.

Before fill material is imported to the Site, representative samples will be collected to characterize the fill for VOCs via SW-846 8260B, semi-volatile organic compounds (SVOCs) via SW-846 8270C, TAL metals via SW-846 6010B/7470A/7471A, pesticides using SW-846 608/8081A and polychlorinated biphenyls (PCBs) using SW-846 8082 in accordance with the requirements of 6 NYCRR Part 375-6.7(d) for unrestricted use. General fill and top soil will also be tested for polyfluoroalkyl substances (PFAS) and 1,4-dioxane in accordance with the most recent Sampling for 1,4-Dioxane and Per- and Polyfluoroalkyl Substances (PFAS) Under DEC's Part 375 Remedial Programs NYSDEC guidance document (currently June 2019 version).

### **Air Monitoring**

The main objectives of the air monitoring and response actions are to protect the health and safety of onsite workers and the surrounding community and to address potential nuisance odors. Airborne monitoring for particulates (dust) and total organic vapors will be conducted during the intrusive IRM activities described above in accordance with a Community Air Monitoring Plan following the requirements of Appendix 1A of DER-10. Particulate and volatile organic vapor levels will be monitored at a designated upwind station, designated downwind station, and the worker breathing zone during work activities. Appropriate actions (e.g., work stoppage, water sprays, covering excavations) will be taken in response to the air monitoring results, where needed.

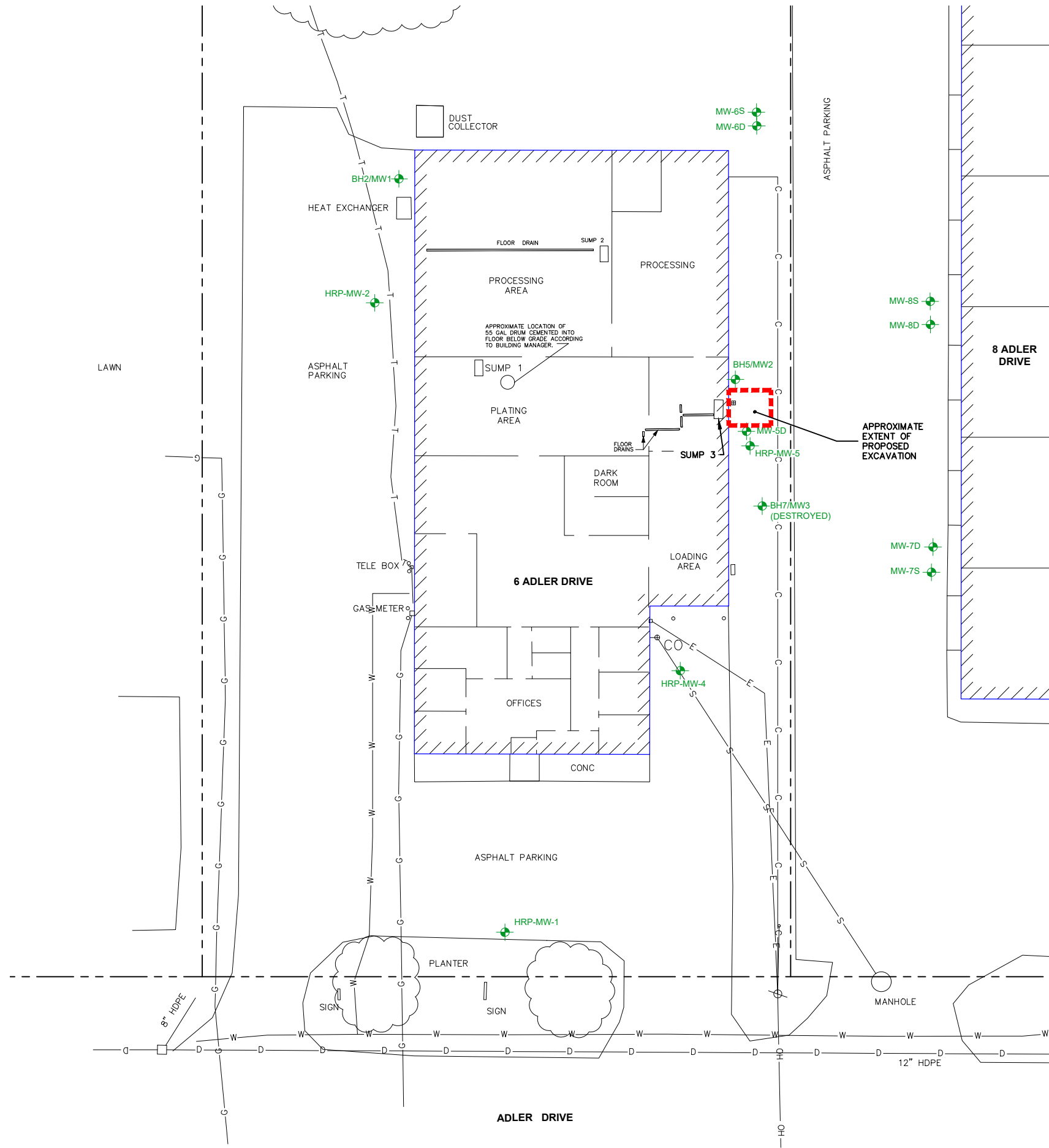
### **REPORTING**

The results of this investigation and IRM will be included in the site RI report, along with an interpretation of those results. That report will include a descriptive and analytical summary of the excavation results. Interpretation of the IRM results and data presented in prior reports will be used to develop a Feasibility Study that will evaluate possible site remedies.

The laboratory analytical results for the documentation soil samples will be validated and an electronic data deliverable (EDD) package will be generated to fulfill the NYSDEC's data reporting requirements. The validation packages and raw laboratory analytical data reports will also be attached to the RI Report.

### **SCHEDULE**

It is anticipated that the work for this assignment will be conducted in Fall 2019, preferably in September before substantial fall precipitation occurs. The primary soil removal and site restoration work activities are anticipated to be completed in one day with some site preparation and restoration activities occurring before and after the day of soil removal. The actual project schedule will be determined by Arcadis and the NYSDEC. Subcontracting and scheduling will begin after NYSDEC provides approval of this work plan.



LEGEND:	
	APPROXIMATE EXTENT OF PROPOSED EXCAVATION
	EXISTING MONITORING WELL
	EXISTING PROPERTY LINE
	EXISTING HYDRANT
	EXISTING OVERHEAD WIRE
	EXISTING GAS
	EXISTING WATER
	EXISTING VERIZON CABLE
	EXISTING TELEPHONE
	EXISTING STORM DRAIN
	EXISTING SANITARY SEWER
	EXISTING UNKNOWN UTILITY
	EXISTING UTILITY POLE
	EXISTING UTILITY POLE W/GUY WIRE
	EXISTING CATCH BASIN
	EXISTING CLEANOUT
	CONIFEROUS TREES
	DECIDUOUS TREES

- NOTES:
1. BASE MAP INFORMATION FROM A SURVEY BY YEC, INC. DATED AUGUST 2015 AT A SCALE OF 1" = 20'. ADDITIONAL BASEMAP DATA DIGITIZED FROM GOOGLE EARTH AERIAL PHOTO DATED 6/2/2011. UTILITY LOCATIONS ARE FROM FIELD MARKOUT ONLY AND ARE APPROXIMATE. PROPERTY LINES ARE APPROXIMATE ONLY FROM TAX MAPS. HISTORICAL BORING, HISTORICAL SOIL SAMPLE, HISTORICAL SOIL VAPOR/SUB-SLAB VAPOR SAMPLE AND HISTORICAL INDOOR AIR SAMPLE LOCATIONS TAKEN FROM LENDER CONSULTING SERVICES, INC., 2009 AND HRP ASSOCIATES, IC., 2012.
  2. APPARENT HORIZONTAL COORDINATE SYSTEM IS NAD83. APPARENT VERTICAL COORDINATE SYSTEM IS NAVD 88. COORDINATE SYSTEMS ARE FROM GPS OBSERVATIONS ONLY.
  3. INTERIOR FLOOR PLAN ADAPTED FROM HISTORICAL DRAWINGS FOR 6 ADLER DRIVE. WALLS WITHIN INDIVIDUAL UNITS AT 8 ADLER DR. ARE NOT SHOWN.



NEW YORK STATE DEPARTMENT OF  
ENVIRONMENTAL CONSERVATION  
NORTHERN CIRCUITS - SITE NO. 734124  
6 ADLER DRIVE, TOWN OF DEWITT, NEW YORK  
**INTERIM REMEDIAL MEASURE WORK PLAN**

**PROPOSED EXCAVATION EXTENT**