Ahead of the blast, field seismographs will be placed at several locations, both on and off site. Exact monitoring locations are being determined by the project team and will be identified in **Appendix C** when finalized. The monitoring stations include field seismographs that measure peak particle velocity vibration levels on horizontal, longitudinal and transverse channels. A fourth channel will measure air overpressure. A report summarizing the vibration data observed during the demolition event will be prepared by Protec after the event.

5.0 POTENTIAL DUST GENERATION EVALUATIONS AND CONTROL MECHANISMS

Predictive Evaluation

Dust can be generated during explosive demolition of concrete chimneys from two primary sources. One is ground dust "pushed" into the air from the force of the structures hitting the ground. The other source is from the breaking of the concrete by the explosives and by the chimneys hitting the ground. At the request of the Trust, ERM performed air dispersion modeling to assess potential impacts to ambient air quality at the site property boundaries. Applicable site-specific compounds were evaluated. The approximate ambient air concentration of each modeled compound was compared against the compound's defined National Ambient Air Quality (NAAQS) standard or TCEQ Effects Screening Level (ESL) limit, as applicable. The model will be revised based on analytical data from concrete cores collected from each chimney. The modeling summary report is included in **Appendix D**. Based on the modeled conditions, there are no exceedances expected at the property boundaries of the NAAQS or ESL limits for the evaluated constituents.

Blast Event Monitoring

On the day of the blast, ambient air dust monitoring will be conducted at the perimeter of the site. This approach is similar to the ongoing ambient air monitoring program that was established when field work began in 2011. Visible dust from the event will be monitored and Brandenburg response crews will be deployed as necessary to address areas where significant dust cloud movement is observed off-site.

Dust Control Mechanisms

Several redundant dust control measures are being implemented before and during the blast event to reduce the potential for dust generation during the blast. This cautious "belt and suspenders" approach to dust control is outlined below and several components of this approach are depicted in **Figure 2:**

- Removal of the accumulated dust within and at the base of each chimney. This has already been done for the 828-foot chimney. Dust from the 612-foot chimney is being removed and will be completed prior to demolition. This material will be staged on site for future disposal in the on-site waste cell.

- Insulation material on the outside of the interior chimney for the 828-foot chimney will be removed. The insulation consists of 3-inch thick fiberglass material extending from the ground surface to approximately 110 feet upward from the base of the chimney. This material will be staged on site for future disposal in the onsite waste cell.

- Application of tackifier (adhesive-like material) on the inside surface of each chimney. Based on ground observations and pictures from recent visual observations of the chimneys, the inside walls do not have significant visible accumulations of dust. However, the application of a tackifier, where safely possible, will further reduce the potential for dust from being dispersed into the air. The tackifier will be applied by positioning a water mist applicator at the bottom of the chimney to spray the mixture around the inside surfaces.

- Construction of berms along the target fall zones is designed to reduce the lateral extent of the dust cloud and contain dust in the fall zone.

- Construction of berms and a hardened "backstop" around the sides and back side of the chimneys to reduce the potential for fly-rock generation and redirect generated dust toward the site.

- Installation of a cover over approximately a 400-foot section of the American Canal near the site. This cover is designed to prevent small fly-rock fragments and gross dust from landing in the canal.

- Installation of a three-part ground cover dust control system in the target fall zone that consists of:

    1. Installing a geotextile liner on top of the existing site soil.

    2. Placing one-foot of imported clean soil fill over the target fall zone. Coverage will be from the inside of each berm extending approximately 30% beyond the length of each chimney's height (e.g., for the 828-foot chimney, imported soil fill will extend out to approximately 1076 feet from the base)

    3. Spraying a soil binder on top of the imported soil fill. A similar material is used by the US military to reduce dust at helicopter landing zones.

- Installation of one of the largest water mist dust control applications attempted for a chimney fall. As shown in **Figure 2**, a minimum of 18 articulated water mist application units will be installed around the target fall zones. These units provide a fine mist of water at a rate of about 140 gallons/minute/unit for a distance of up to 300 feet. This "mist curtain" is designed to reduce the amount of dust particulates in the air.