



**INTERIM PHASE II ENVIRONMENTAL PROPERTY ASSESSMENT**

**THIS REPORT IS INCOMPLETE IN SUPPORT OF A  
NO FURTHER ACTION LETTER FOR THE  
VOLUNTARY ACTION PROGRAM**

**LAZARUS DISTRIBUTION CENTER PROPERTY,  
AND SOUTHERN PORTIONS OF KOCH ASPHALT AND CUNARD-LANG PROPERTIES,  
COLUMBUS, OHIO**

**PREPARED FOR**

**COLUMBUS & FRANKLIN COUNTY  
METROPOLITAN PARK DISTRICT  
WESTERVILLE, OHIO**

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**AUGUST 2004**

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## 1.0 INTRODUCTION

### 1.1 General

Burgess & Niple, Inc. (B&N) was retained by the Columbus & Franklin County Metropolitan Park District (Metro Parks) to conduct a Phase II Environmental Property Assessment (Phase II) following the Ohio Environmental Protection Agency (EPA) Voluntary Action Program (VAP) protocol for a portion of the Whittier Peninsula containing the former Lazarus Distribution Center property, and southern portion of the Koch and Cunard-Lang Properties (Property). The location of the Property is presented on Figure 1.

### 1.2 Purpose of the Phase II Property Assessment

The purpose of this project was to conduct a Phase II to assess the potential environmental impacts of the Identified Areas (IAs) reported in the Phase I Property Assessment (Phase I). The Phase I was conducted by B&N under the direction of Mr. Thomas J. Mignery, VAP Certified Professional (CP) No. 125, and Mr. Larry S. Smith, VAP CP No. 133, and was completed in August 2004. The Phase I concluded that “...*there was reason to believe that a release of hazardous substances or petroleum has or may have occurred on, underlying, or emanating from the property.*”

B&N performed the Phase II consistent with the requirements of the Ohio Environmental Protection Agency (EPA) Voluntary Action Program (VAP) protocol outlined under the Ohio Administrative Code (OAC) 3745-300-07, and in accordance with the format and procedures outlined by the American Society for Testing and Materials (ASTM) in its Practice E1903-97.

This report is termed “interim” and represents the Phase II Property Assessment based on the data gathered to date. Additional sampling may be warranted in response to an ecological risk assessment yet to be completed. In addition, a Bureau of Underground Storage Tank Regulations (BUSTR) groundwater exceedance needs to be addressed prior to finalizing the Phase II.

### 1.3 Eligibility for the VAP

Generally, VAP properties cannot be under the jurisdiction of another environmental program or under a consent order. A property is ineligible for participation in the VAP program if it is subject to one or more of the following programs:

- National Priorities List (NPL) pursuant to Comprehensive Environmental Response, and Compensation Liability Act (CERCLA),
- Underground injection control (UIC) program,
- Hazardous substance underground storage tank (USTs) systems,
- Federal or state permit obligations under Resource Conservation and Recovery Act (RCRA),
- Polychlorinated Biphenyls (PCBs) requirements of assessment, removal or remediation under Toxic Substance Control Act (TSCA),
- Federal enforcement,
- Closure under Ohio solid waste or hazardous waste laws and regulations,
- Petroleum USTs,
- Oil and gas assessment, removal or remediation,
- State enforcement, or
- Any property subject to UST regulations.

Eligibility under the VAP was evaluated after reviewing the Phase I documentation, and additional information collected during the Phase II. Based on the information evaluated, the Property has two potential eligibility issues. These involve a BUSTR issue, and RCRA Large Quantity Generator (LQG) issue.

The Property is subject to a BUSTR closure. There is an incident on file with BUSTR in relation to USTs on the Lazarus property. Metro Parks is seeking a No Further Action (NFA) letter with BUSTR concurrent with the VAP NFA letter for this Property. Therefore, the BUSTR NFA letter will be in place prior to an NFA letter being written for the Property. Currently, a BUSTR Phase II site assessment is being conducted around the UST system, and a remediation plan will be developed and implemented in the next three to six months.

Ohio EPA records indicate a RCRA LQG designation for the Columbus Public Schools at the Lazarus Distribution Center. Columbus Public Schools leases the Property from the City of Columbus. There is no documentation that a generator closure was conducted in accordance with OAC Chapter 3745-52.

Ohio EPA is currently evaluating this issue. The representative from Columbus Public Schools, Mr. Ken Stark, Manager of Health and Safety Department, does not have documentation or knowledge of the generation of hazardous waste by Columbus Public Schools as a LQG at the property. The only knowledge he has of disposal of hazardous waste from the property was June 2, 2003, when the property was listed as a Small Quantity Generator (SQG) on a hazardous waste manifest, where hazardous waste (D001, D002, D008, and U211) was disposed at the Clean Harbor's facility in Cincinnati, Ohio. Mr. Stark said the material, which was copier fluid, chemicals from high school laboratories, and cleaning supplies from various schools, was brought to the property and stored until it was decided to discard the material. At that time, the material was declared a waste, and a "one-time" RCRA hazardous waste disposal event was conducted.

Mr. Stark does recall that hazardous waste was disposed from the Columbus Public School's 52 Starling Street, Columbus, Ohio facility, possibly as a LQG. Again, school materials were transferred, accumulated and stored at the Starling facility until the material was declared a waste, and then disposed.

#### **1.4 Special Terms and Conditions**

Performance of the Phase II activities was granted in an Agreement between the Columbus & Franklin County Metropolitan Park District and B&N. The Agreement for Professional Services between Metro Parks and B&N was signed on June 24, 2004, under Metro Park's Purchase Order No. 4P00461.

## 1.5 Methodologies Used and Limiting Conditions

The following summarizes the activities, methodologies, and protocols performed or followed throughout the Phase II.

- A subsurface investigation was conducted from June to August 2004, which included advancing 46 Geoprobe® borings throughout accessible areas of the Property. Geoprobe® drilling services were provided by Envirocore, Limited (Envirocore). Soil samples were collected during the subsurface investigation. Selected soil samples were submitted for analysis to American Analytical Laboratories, Inc. (AAL), a VAP-certified laboratory. The subsurface investigation was performed in accordance with protocols outlined in *Technical Guidance Manual for Hydrogeologic Investigations and Groundwater Monitoring* (Ohio EPA, February 1995).
- Eight new monitoring wells were installed concurrently with the Geoprobe® investigation. Selected soil samples collected from each of the monitoring well borings were submitted for analysis to AAL as a supplement to the Geoprobe® soil samples. Boring advancement, soil sampling, and monitoring well installation were performed in accordance with protocols outlined in the *Technical Guidance Manual for Hydrogeologic Investigations and Groundwater Monitoring* (Ohio EPA, February 1995).
- Monitoring wells installed at the Property during the Phase II were developed and sampled in accordance with the *Technical Guidance Manual for Hydrogeologic Investigations and Groundwater Monitoring* (Ohio EPA, February 1995). All groundwater samples were submitted to AAL for analysis.

Due to overhead clearance constraints, no monitoring wells were installed within any of the structures included in this Phase II investigation. However, 16 Geoprobe® borings were completed within the Lazarus Distribution Center building. Additionally, designated boring locations were moved based on previously unknown site data, location of underground

obstructions located throughout the Property, location of subsurface utilities, and inaccessibility of the sampling units.

#### **1.6 Limitations and Exceptions of Assessment**

The Phase II was based on a scope of services including the evaluation of potential release data gathered by B&N from various sources, including, but not limited to, the B&N Phase I (August 2004). B&N cannot discount the possibility that releases may have occurred and impacted subsurface conditions that are not documented in available records. The age of the Property and the longevity and variety of historical operations prevent the possibility of identification of all releases that may have occurred on the Property.

The findings, conclusions, and recommendations presented herein are based on the level of effort and investigative techniques defined under the Scope of Services. B&N has conducted this investigation in a manner consistent with sound engineering practices and with professional judgment. No other warranty or guarantee, expressed or implied, is made, except as set in the Agreement for Consulting Services between B&N and Metro Parks. This report does not attempt to evaluate past or present compliance with federal, state, and local government or land use laws and regulations, except to the extent the compliance relates to releases of hazardous substances or petroleum and to factors which may affect the eligibility of the Property under the VAP. B&N makes no guarantee regarding the completeness or accuracy of any information obtained in review of public or private files.

## 2.0 BACKGROUND

### 2.1 Property Location and Legal Description

The Property is situated within an area identified as the Whittier Peninsula that is located southwest of downtown Columbus. The Property is located along the east side of West Whittier Street approximately 250 feet east of the Scioto River. A legal description of the Property is located in Appendix A. Location of the Property is shown on the Southwest Columbus U.S. Geological Survey (USGS) site location map presented as Figure 1.

### 2.2 Setting

The Property is located in a mixed-use warehouse/light industrial area southwest of downtown Columbus. The area shown on Figure 2 constitutes the Property. The site is specifically situated on the west central portion of the Whittier Peninsula. The property is bisected by Furnace Street, which is oriented in an east to west configuration, north of the Lazarus Distribution Center. Furnace Street also bisects the northwestern portion of the property in a north to south configuration between the Koch Asphalt and Cunard-Lang properties.

An off-site warehouse building located to the east/northeast of the Property is identified as the Columbus Properties Inc. (south half) and the Maier Foundation warehouse (north half). The Columbus Scrap Company is located on the adjacent property to the southeast. This property is currently owned by the City of Columbus, and was previously owned by CSX Transportation, Inc. The northern portion of Cunard-Lang property, now a vacant lot, is located adjacent to the northwest. The northern extension to the City of Columbus' impound lot (formerly Universal Concrete), is located to the south of the Lazarus Distribution Center. With the exception of the Maier Foundation/Columbus Properties, Inc. warehouse site, these adjacent and surrounding properties are now vacant with all buildings demolished and ancillary facilities having been removed within recent years.

#### 2.2.1 Topography and Surface Drainage

A portion of the USGS, Southwest Columbus, Ohio, 7.5-minute series topographic quadrangle map, showing the Property and surrounding Whittier Peninsula area, is presented as

Figure 1. According to the map, the Property is located on relatively level ground at an approximate elevation of 710 feet above mean sea level (amsl). Based on surface topography near and within the Property, the expected natural direction of surface water flow is southwest toward the Scioto River, which subsequently flows south into the Ohio River. However, due to the presence of numerous catch basins across the Property, it is believed that the majority of surface drainage is through storm water sewers.

### 2.3 **Physiography**

The Property is located within Columbus Lowland District of the Till Plains Section of the Central Lowlands Physiographic Province (Brockman, 1998). The Columbus Lowland is surrounded in all directions by relative uplands, with a broad regional slope toward the Scioto Valley. In general, the Columbus Lowland is characterized by moderately low relief and is dissected by many large streams. Geology consists of Wisconsinan-age till and outwash deposits overlying Devonian limestone and shale bedrock.

### 2.4 **Regional Geology**

#### 2.4.1 **Glacial Geology**

Glacial geology throughout Ohio is complex. Several times during the Pleistocene Epoch, Ohio was partially covered by continental ice sheets. In Ohio, evidence exists for two glacial periods: the Illinoian (beginning approximately 120,000 years ago) and the Wisconsinan (beginning approximately 70,000 years ago). The most recent advance, the Wisconsinan, deposited a mantle of unconsolidated material consisting primarily of clay, silt, sand, and gravel. These periods of Pleistocene glaciation brought about significant changes in the topography and drainage of the region, scouring, filling, and covering the bedrock surface.

As the Pleistocene glaciers advanced, they covered the region with till. Till is an unsorted, unstratified low permeability material consisting primarily of clay with varying amounts of silt, sand, gravel, and boulders. Most of the County is covered with till, which has an average thickness of 50 feet.

When the glaciers receded, meltwaters rushed away from the ice front through bedrock valleys. The meltwaters carried with them outwash – silt, sand, gravel, and boulders – contained within the melting ice. The larger valleys in Franklin County, particularly south of Columbus, are filled with extensive sand and gravel outwash deposits.

The channel of the Scioto River was partially formed by the pre-glacial Teays River. When the Pleistocene glaciers advanced, the north flowing Teays River was blocked, and flow was reversed. As the glaciers melted, the Teays River valley was filled with outwash, primarily sand and gravel, in Franklin County. Today, the top of these deposits form terraces that lie 10 to 20 feet above the Scioto River bottom. Much of southwest Columbus, including the Whittier Peninsula, is located on a terrace; numerous quarries, past and present, have used the terrace as a source of sand and gravel. The similarity of the elevation of terrace deposits on opposite sides of the valley indicates that the surfaces were at one time continuous across the valley. As time has passed since the Pleistocene, the Scioto River and its tributaries have removed about half of the original surface sand and gravel.

#### 2.4.2 **Bedrock Geology**

A stratigraphic sequence for the consolidated rocks in Franklin County is presented in Table 1. The bedrock formations underlying Franklin County are sedimentary in origin and were deposited during the Paleozoic Era. Bedrock ranges in age from late Silurian to early Mississippian (between approximately 410 million years ago to 340 million years ago) and consists of beds of dolomitic limestone, black shale, and alternating shale and sandstone. During the time the sediments were deposited, a relatively shallow sea covered Ohio. Calcareous muds deposited in shallow, clear water during this period eventually became the Silurian and Devonian limestones. Clay and sand deposited in slightly deeper waters developed into the Devonian and Mississippian shales and sandstones.

The bedrock in central Ohio dips slightly to the east/southeast. This is the result of a structural high to the west, comprised of the Cincinnati and Findlay Arches, and the Appalachian structural basin to the east. In general, older rocks are exposed to the west, and younger rocks are exposed moving eastward.

Silurian age rocks in Franklin County consist of the Bass Islands Dolomite. The rocks are exposed only in the valleys of the Big Darby and Little Darby creeks in western Pleasant township.

Devonian formations in Logan County consist of the Columbus Limestone, the Delaware Limestone, the Olentangy Shale, and the Ohio Shale. The contact between the overlying Devonian and underlying Silurian represents a prolonged period of non-deposition. The basal part of the Columbus Limestone is conglomeratic, containing of pebbles of Bass Islands Dolomite imbedded in brown Columbus Limestone.

The lower part of the Columbus Limestone consists of porous, massive, brown limestone containing a high percentage of magnesium. The upper part, which comprises roughly two-thirds of the formation, consists of light blue-gray limestone that is over 80% calcium carbonate. The Columbus Limestone is an economically important formation that is mined extensively in an outcrop band extending from south of Columbus up to the Lake Erie islands.

The Delaware Limestone forms the top of the economically important limestone beds of Ohio as described above. The Delaware Limestone has a maximum thickness of 32 feet in Franklin County, and has variable lithology. The Delaware Limestone grades from thin, shaly, cherty layers to massive limestone layers with little shale or chert.

The Olentangy Shale is classified with the underlying Delaware Limestone rather than the overlying Ohio Shale. The Delaware Limestone and Olentangy Shale together represent successive stages in a general change from conditions favoring pure limestone formation (Columbus Limestone) to those favoring clastic sediments (Ohio Shale, Cuyahoga Formation). The Olentangy Shale is soft, argillaceous, blue-gray shale that weathers to blue clay. Argillaceous limestone concretions are distributed near the base of the Olentangy Shale, and thin layers of impure limestone are interspersed throughout the middle and upper portions of the formation.

The Ohio Shale is black or brown, carbonaceous, and grades from a massive structure to thinly laminated and fissile. The Ohio Shale is the youngest Devonian unit and forms the bedrock surface beneath the north central to southeastern portion of Franklin County. Sections of

the Ohio Shale are exposed along the Olentangy River and its tributaries north of Columbus, and along Alum Creek and Big Walnut Creek in the eastern part of the County.

Mississippian rocks can be found in Plain, Jefferson, Blendon, Truro, and Madison Townships within Franklin County. The Mississippian formations in Logan County consist of the Bedford Shale, Berea Sandstone, Sunbury Shale, and Cuyahoga Formation. The contact separating the Devonian and Mississippian formation is a conformable contact, indicating that deposition of the formations was a continuous process uninterrupted by erosion.

The Bedford Shale is the oldest Mississippian formation in Franklin County, and overlies the Devonian Ohio Shale. The Bedford Shale is gray- or brown-colored, soft, gritless, laminated, argillaceous shale that weathers to red or yellow clay. The thickness of the Bedford Shale ranges from 60 to 90 feet in Franklin County.

The Berea Sandstone overlies the Bedford Shale. The thickness of the Berea Sandstone varies considerably, ranging from approximately 55 feet in northern Franklin County to 5 feet in southern Franklin County. The Berea Sandstone in Franklin County is a fine-grained, gray- to buff-colored rock deposited in layers of varying thickness that become more massive towards the top of the formation.

The contact between the Berea Sandstone and overlying Sunbury Shale is an exceptional horizon marker within Franklin County. The contact between the layered sandstone and black, fissile shale is distinctly sharp. The Sunbury Shale has an approximate thickness of 36 feet in Franklin County.

The contact between the Sunbury Shale and overlying Cuyahoga Formation is indistinct. The Sunbury Shale is a black fissile shale, and the basal portion of the Cuyahoga Formation is a bluish gray shale. The formation is ranges in thickness from 120 to 165 feet within Franklin County. The Cuyahoga Formation in Franklin County consists of an alternating series of thin-layered, gray sandy shales, and thin to massive, fine-grained, blue to gray sandstones.

## 2.5 **Regional Hydrogeology**

The saturated glacial outwash deposits underlying the course of the Scioto River form a buried valley aquifer. The buried valley is an excellent groundwater resource when sufficient

thickness and lateral extent are present. According to the Ohio Department of Natural Resources (ODNR) publication *Ground Water Resources of Franklin County* (Schmidt, 1993), yields of up to 500 gallons per minute (gpm) may be obtained from large diameter wells completed in the glacial outwash deposits surrounding the Whittier Peninsula. It should be noted that the City of Columbus utilizes the buried valley aquifer underlying the Scioto River in the southern end of Franklin County as a potable water resource. The City of Columbus obtains an average of 19 million gallons per day (mgd) from water supply wells completed in the buried valley aquifer. The closest City of Columbus well is approximately 6.7 miles south of the Property.

The Silurian and Devonian limestone bedrock also forms an excellent groundwater resource. This aquifer is part of a large regional aquifer comprised of both Devonian and Silurian bedrock that is known as the Silurian-Devonian aquifer. In general, the Silurian-Devonian aquifer extends from central Ohio to central Indiana, and from the Ohio River to Lake Erie. In Ohio, the Silurian-Devonian aquifer lies beneath Upper Devonian shale and/or unconsolidated Quaternary deposits, and is underlain by Upper Ordovician Shale.

The Silurian-Devonian aquifer is composed primarily of Silurian rocks, as much of the lower sections of the Devonian rocks (Columbus Limestone, Delaware Limestone) have been eroded away. The Devonian rocks are present only in narrow bands around the fringes of the aquifer, coinciding with the down sloping edges of the regional structural arches. In Franklin County, the Devonian limestone is present in a north-south trending band. The Silurian-Devonian aquifer is not present east of a north-south trending boundary formed by the Olentangy and Scioto Rivers.

Much of the Silurian-Devonian aquifer contains freshwater suitable for potable use from land surface to the base of the aquifer. Underlying Ordovician shale impedes downward movement of freshwater from the Silurian-Devonian aquifer. In areas where Upper Devonian shale overlies the aquifer, freshwater depth in the aquifer is limited as the overlying shales impede freshwater recharge.

Groundwater within the Silurian-Devonian aquifer is generally under semi-confined to confined conditions. The groundwater is transmitted in the aquifer through fractures, joint, bedding planes, and solution channels within the limestone and dolomite. The aquifer is locally recharged in areas where the formation is exposed at ground surface, and where overlying glacial

aquifers have groundwater levels higher than those in the Silurian-Devonian aquifer. Water discharges to the glacial aquifers in areas where water levels are higher in the Silurian-Devonian aquifer, typically to the buried valleys incised in the bedrock.

According to *Ground Water Resources of Franklin County* (Schmidt, 1993), groundwater yields of up to 500 gpm can be obtained from wells completed in the Silurian-Devonian aquifer at depths ranging from 300 to 400 feet below ground surface (bgs). Residential supply can generally be obtained at depths ranging from 65 to 175 feet bgs.

The Property is not located within a wellhead protection area (WHPA). The Columbus daily water demand of 131 million gallons is supplied primarily by 3 surface water reservoirs (Griggs, Hoover, and O'Shaughnessy) located north of the City. Groundwater from the South Wellfield, discussed above, supplies about 15% of the total daily demand. The delineated 1- and 5-year Wellhead Protection Areas for the Columbus South Wellfield are approximately 4 miles south of the Property, and are also hydraulically downgradient.

Based on information in ODNR well log files, one water supply well is located within approximately 0.5 mile of the Property. This well, belonging to the Herman Falter Packing Company (Falter) at 384 Greenlawn Avenue, is located roughly 0.5 mile south of the Property on the south side of the Scioto River. The well is 47 feet deep, is completed in the glacial outwash aquifer, and yields approximately 350 gpm. According to conversations with Falter personnel, water from this well is used for washing meats as part of their meat packing operation, with an average daily pumpage of approximately 55,000 gallons.

## 2.6 **Property History**

### 2.6.1 **History of Buildings on the Property**

Franklin Furnace, a Division of National Steel, previously operated a foundry on the southwest end of the Property from the late 1890s through the 1920s. The area of the site was subsequently used for a sand and gravel operation and then a quarry in the 1920s and 1930s. Historic documentation reviewed depicts several buildings, presumably engaged in the historic foundry operations.

The Lazarus Distribution Center, a two-story warehouse building, was constructed in 1947 and subsequently expanded in 1955. The building consists of steel column-and-beam construction with concrete floors on the first and second levels. The entire first floor is concrete with no basement areas. The exterior of the building is brick throughout with the original building walls containing metal-framed windows on the second floor. The building was used as a warehouse/sales and distribution center throughout its history.

The Boiler House, a separate building for heating of the Distribution Center, was constructed in 1947 and expanded in 1955. The boiler house building matches the original two-story warehouse construction with brick exterior walls. Inside elements included a high-bay room containing two boilers and a separate two-story room with six boilers, three on each floor. There is no basement in the boiler house.

The 514 Furnace Street building constitutes the third building of the Property. The building is a concrete block building with a concrete floor and roof structure. The 514 Furnace Street building has no basement.

The 514 Furnace Street building has been vacated for several years, but contained a considerable amount of debris and appears to have been occupied on occasion by vagrants. The facility contained numerous drums including several labeled glycerin, coconut oil, and Mackadet BSC, as well as empty plastic bottles, paper and cardboard debris. The interior area of the building contained no equipment, but was strewn with drums, boxes of plastic bottles and other debris. Pro-Terra Environmental Contracting Company (Pro-Terra) removed the drums and debris on July 21, 2004.

Historically, structures were located on the southern portion of the Cunard-Lang property. These structures appeared to be used for storage of finished product. No structures are currently present on this portion of the property.

The presence of asbestos materials within the Distribution Center and Boiler House buildings was investigated in previous environmental studies by DLZ Ohio, Inc. DLZ identified asbestos in floor tile on the first and second floors at the west end of the Distribution Center. DLZ also identified asbestos in caulking on the metal frame windows at the west end of that building.

During the May 24, 2004 site walkthrough, asbestos-containing materials (ACMs) were not observed in thermal insulation on first floor or second floor warehouse piping runs or on piping runs within the boiler house. Asbestos materials appear to have been removed from heating system distribution piping within the Distribution Center and the Boiler House and replaced with fiberglass insulation. No friable thermal system asbestos material currently exists in either building. However, ACM floor tile in poor condition exists in areas on both the first and second floors within the western section of the Distribution Center building.

No suspect ACMs were observed within the structure located on the southern Koch Property. No structures are present on the southern Cunard-Lang Property.

#### **2.6.2 Summary of Historical Land Use**

A review of historical information concerning the Property was conducted to identify past land use that may have contributed to environmental concerns. To determine the historical use of the Property, city directories, publications, historic plot plans, Sanborn Fire Insurance Maps, and aerial photographs were reviewed.

Franklin Furnace, a Division of National Steel, previously operated a foundry on the southwest end of the Property from the late 1890s through the 1920s. The site was subsequently used for a sand and gravel operation and then a quarry in the 1920s and 1930s. The Lazarus Distribution Center building and the Boiler House were constructed on the site in 1947 and expanded in 1955. Property use and historic documentation confirmed building construction and property development on the Property during the late 1940s. Expansions to the facility are observed on various maps and aerials for the period. The F & R Lazarus & Co./Federated and Rich's Department stores subsequently used the Property for warehousing and distribution.

#### **2.7 Current Land Use**

The only portion of the Property currently in use is the Lazarus Distribution Center building (southern portion). The eastern third of the building is used for miscellaneous storage by the City of Columbus. The City of Columbus Public School District uses the middle third of the

building for storage of school furniture, desks, bookcases, equipment and records. The western third of the building is vacant.

The southern portions of the Koch and Cunard-Lang properties are vacant. The only structure present is that identified to be at the 514 Furnace Street address. Equipment used in previous operations within the Distribution Center and the 514 Furnace Street buildings have been removed. The eight boilers in the Boiler House are no longer operational and have been stripped of insulation and controls. The 514 Furnace building is vacant, and had been filled with drums and debris. These were removed on July 21 and 22, 2004 by Pro-Terra.

## **2.8 Future Intended Land Use**

The intended future use of the area surrounding and including the Property is for a mixed use urban park, nature preserve, and commercial/office use. Metro Parks currently intends to raze the western two-thirds of the Distribution Center building and the Boiler House as well as the 514 Furnace Street building. The eastern one-third of the Distribution Building is planned for commercial use.

## **2.9 Phase I and II Property Assessment Personnel**

Mr. Thomas J. Mignery, Hydrogeologist and Ohio EPA VAP-CP No. 125, served as overall Project Director and was responsible for approval of work plans and the final Phase I and Phase II reports. Mr. Larry S. Smith, Professional Engineer (PE) and Ohio EPA VAP-CP No. 133, served as Project Manager for both the Phase I and Phase II Property Assessments.

Mr. James Ridgeway, PE, served as the Project Engineer for the Phase I Property Assessment, and was responsible for the site inspections and evaluation of the data. Additional personnel included Mr. Joseph Christopher. Mr. Ridgeway and Mr. Christopher were the primary authors of the Phase I Property Assessment report.

Mr. Christopher R. Everett served as the Project Hydrogeologist for the Phase II Property Assessment, and was responsible for work plan preparation and data evaluation. Additional personnel included Mr. Michael Akins, Ms. Julie Carpenter, and Mr. David Walker. Mr. Everett and Mr. Smith were the primary authors of the Phase II.

Resumes for each of the B&N personnel listed above are included in Appendix B.

## 2.10 Previous Site Assessments

Previous environmental investigations that have been completed for the Property include the following:

- ATEC Consultants Final Report on Lazarus BSB1 Site in 1989 (UST Closure)
- Dodson-Stilson - Limited VAP Property Assessment in 1998 (Phase I ESA)
- DLZ Ohio, Inc. (DLZ) - Phase II ESA Preliminary Report in 2002
- Review of VAP – Ohio EPA Technical Assistance Memo in 2004.

B&N reviewed the previous environmental assessments and preliminary reports during preparation of the Phase I Property Assessment. These include review of the Limited VAP Phase I Environmental Property Assessment prepared by Dodson-Stilson and the Preliminary Phase II ESA prepared by DLZ for the Property. The following sections summarize these reports.

### 2.10.1 1998 – Dodson-Stilson Limited VAP Phase I Property Assessment

Dodson-Stilson determined that the Property warranted a Phase II environmental assessment due to the potential presence of polynuclear aromatic hydrocarbons (PAH) compounds, asbestos and heavy metals as a result of past operations on the Lazarus and Koch Asphalt properties. Asbestos containing materials (ACMs) were observed during this Phase I ESA. Significant environmental concerns associated with the Cunard-Lang property were not evident; however, access to the property was limited during the 1998 study.

Areas adjacent to, or off-site of the Property were identified by this Phase I ESA to pose an environmental risk to the Property. These included the Columbus Scrap operation to the southeast, the Columbus Impound Lot to the south, and the Maier/City properties building to the northeast.

### 2.10.2 2002 –DLZ Preliminary Phase II Environmental Site Investigation

DLZ conducted a Preliminary Phase II Environmental Site Investigation for most of the Whittier Peninsula, including the Property. A study of the Property around the Lazarus Distribution Center building was completed by drilling numerous borings around the building and installing four monitoring wells, two each located downgradient from the two former USTs. The Phase II Environmental Site Investigation was prepared for the City of Columbus with the monitoring performed during June through August 2002. Findings of the field investigation presented in the DLZ report are as follows:

Field investigations conducted on the southern portion of the Property included Geoprobe® soil borings to a depth of 20 feet below the existing ground surface. The borings were installed around the perimeter of the existing warehouse building. Two, three boring clusters, 5-SB-1 through 5-SB-3 and 5-SB-12 through 5-SB-14 were located in former USTs locations. Several borings encountered refusal at depths varying from 5 to 12 feet below the existing ground surface. Refusal was attributed to concrete from old foundations associated with the past foundry operations and/or the concrete saddles/foundations of the UST systems.

Minimal odors and no unusual subsurface features were identified during the boring process. Soil borings 5-SB-12 through 5-SB-14 exhibited a noticeable “reddish” color in the silts and sands encountered at depths between 4 and 8 feet below the existing ground surface. Field screening numbers in 5-SB-13 recorded 405 ppm in the 12- to 14-foot depth interval. Most samples from this area were collected from 0 to 8 feet below the existing ground surface.

Volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and total petroleum hydrocarbons (TPH) were detected in the soil samples. However, no compounds and/or analytes analyzed were detected above the Ohio VAP residential and/or industrial standards. With the exception of arsenic, metals were detected in all 14 borings at concentrations below the Ohio VAP standards. Arsenic was detected above the Ohio VAP residential standard of 6.80 mg/kg in 5-SB-6, 5-SB-7, 5-SB-8, 5-SB-9, 5-SB-10, 5-SB-11, 5-SB-13, and 5-SB-14 at concentrations ranging from 9.15 mg/kg to 21.7 mg/kg. Tables and figures in the DLZ document summarized the findings of the analysis of samples taken from the soil borings.

No borings were conducted within the Lazarus Distribution Center or the Boiler House. Also, no borings were conducted in or around the building on the northeast corner of the Property (514 Furnace Street).

Groundwater impacts were identified in samples from MW-12 on the Property from the release of USTs. Groundwater remediation in the vicinity of MW-12 was recommended.

The Phase II also identified elevated concentrations of semi-volatile organic compounds (SVOCs) on the northern Koch property, just north of the Property.

### **2.10.3 VAP Phase I Property Assessment - Lazarus Distribution Center Property, and Southern Portions of Koch Asphalt and Cunard-Lang Properties, Columbus, Ohio**

B&N conducted a Phase I Property Assessment (Phase I) following the Ohio EPA VAP protocol for the Property. A VAP Phase I Property Assessment report was prepared (August 2004). Based on the results of the Phase I, a Phase II Property Assessment was conducted as documented in this report because it was determined that there is reason to believe that a release of hazardous substances or petroleum has or may have occurred on, underlying, or is emanating from the Property Phase II Property Assessment” (OAC 3745-300-06(B). These areas of releases or potential releases are called Identified Areas.

The VAP Phase I determined that there are nine Identified Areas on the Property that must be addressed under the Phase II Property Assessment. The Identified Areas are discussed in the next section of the report.

Two potential eligibility issues exist at the Property. There is a Bureau of Underground Storage Tank Regulations (BUSTR) incident number for two underground storage tank (UST) locations, one north of the Lazarus Warehouse, and the other at the southwest corner of the Lazarus Warehouse. A BUSTR No Further Action (NFA) letter is currently being pursued and will be obtained prior to writing a VAP NFA letter for the Property. The other eligibility issues relates to Columbus Public Schools, who leases the central portion of the Lazarus Warehouse, and supposedly has Large Quantity Generator (LQG) status under RCRA. This issue is currently being pursued with Ohio EPA, and may not be an issue. If it is, generator closure will be performed prior to issuance of a VAP NFA letter.

## **2.11 Identified Areas**

The Identified Areas for the Property are shown on Figure 3, and are described as follows:

1. **Identified Area 1:** National Steel/Franklin Furnace Foundry and Boilers – potential release from historic operations.
2. **Identified Area 2:** Coke and iron ore storage – potential release from historic operations.
3. **Identified Area 3:** Debris and drum storage on floor at 514 Furnace Street Building – releases from drum storage and other debris in building.
4. **Identified Area 4:** Leaking Underground Storage Tank (LUST), north parking lot of Lazarus Warehouse – release from UST containing gasoline.
5. **Identified Area 5:** LUST, southwest parking lot of Lazarus Warehouse – release from UST containing gasoline and diesel fuel.
6. **Identified Area 6:** Fleet Maintenance Garage – potential release from southeast corner of Lazarus Warehouse from maintenance of vehicles.
7. **Identified Area 7:** Drum storage in Boiler House – potential release from drums containing boiler treatment chemicals.
8. **Identified Area 8:** Southern Portion Koch Asphalt – potential release from historic operations at Koch plant.
9. **Identified Area 9:** Southern Portion of Cunard-Lang – potential release from historic operations at Cunard-Lang.

## 5.0 COMPLIANCE WITH VAP APPLICABLE STANDARDS

### 5.1 Overview

Table 8 provides a summary of how the VAP applicable standards for the Property could be met, broken down by complete pathway, and providing possible strategies for meeting the standards. A preliminary human health risk assessment and preliminary ecological risk evaluation were performed using the maximum concentrations of COCs in soil and groundwater across the site. Default soil characteristics, such as bulk density, porosity, etc., and exposure values were used in this preliminary evaluation. The following discussion on compliance with applicable standards is based on the results of the preliminary risk assessment evaluation and preliminary ecological risk evaluation. Additional data and site-specific characteristics could change the outcome of the preliminary risk evaluation.

For the Property, the complete exposure pathways for the human health based risk assessment are:

1. Dermal contact with and ingestion of soil,
2. Inhalation of vapors (indoors and outdoors) from soil,
3. Inhalation of fugitive dusts from soil,
4. Dermal contact with and ingestion of groundwater,
5. Inhalation of vapors (indoors and outdoors) from groundwater
6. Dermal contact with and ingestion of calculated leach-derived groundwater, and
7. Inhalation of vapors (indoors and outdoors) from calculated leach-derived groundwater.

The receptors for the Property involve the following:

1. Commercial/industrial worker on the Property, or in this case, the potential adult park visitor,
2. The potential child park visitor, and
3. The construction/excavation worker on and off the Property

The following presents a discussion demonstrating compliance with VAP applicable standards by complete exposure pathway.

## 5.2 Soil

### 5.2.1 Dermal Contact and Ingestion

As discussed in Section 4.0, MCSs were evaluated because there are multiple COCs in the soil in all the IAs. Following the MCS evaluation, it was determined that MCSs were not needed for any of the IAs based on comparison with the commercial/industrial and construction and excavation worker scenario standards.

For the commercial/industrial worker and the potential child park visitor, based on the review of the VAP applicable standards for soil, all the IAs meet the standards at the 2-foot POC, except in the area of IA-3, 514 Furnace Street building. Lead was detected in two soil samples above the commercial/industrial worker standards and above the construction/excavation worker scenario standards. Benzo(a)pyrene and arsenic were also found in one of those borings at a depth of 0 to 2 feet, and when combined, are above direct contact standards after considering the child exposure for the park visitor. Since these soils do not meet SCGDCS, it is proposed that soils surrounding these sampling locations be removed to an approximate depth of 2 ft bgs. Elevated concentrations of lead were not detected in the samples below the 2 ft POC. It is estimated that an area of 125 feet x 75 feet x 2 feet in depth will mitigate the exposure.

### 5.2.2 Inhalation of Vapors (indoors and outdoors) and Fugitive Dusts

A preliminary risk evaluation was made of the inhalation of vapors by the commercial/industrial worker, the potential child park visitor, and construction/excavation worker to understand if this complete pathway may present a compliance problem. Based on the evaluation, it appears that the inhalation of vapors pathway for both indoor and outdoor air do not pose a risk for the three receptor populations.

## 5.3 Groundwater

### 5.3.1 Dermal Contact and Ingestion

Groundwater was detected at an approximate elevation of 14 ft bgs across the site. Groundwater does not meet UPUS in the area surrounding the LUST located in the north parking

area of the Lazarus building (IA-4). Therefore it does not meet the dermal contact and ingestion pathway. The LUST will be addressed under BUSTR regulations, and the groundwater will be remediated per BUSTR standards. In addition, a groundwater-use restriction will be implemented for the Property.

The groundwater classification for this zone is Critical Resource with no USD, and therefore the response requirements as established in OAC 3745-300-10(F)(2) apply. These measures involve the following.

1. Restoring or remediating groundwater to UPUS, or protecting receptors from been exposed to groundwater that does not meet UPUS.

**Response:** A groundwater-use restriction on the Property will be implemented, and groundwater remediation may be conducted to meet the BUSTR and VAP risk based standards.

2. Protecting receptors being exposed to the groundwater that does not meet UPUS when used for nonpotable purposes.

**Response:** A groundwater-use restriction on the Property will be implemented to protect the receptors.

3. Protecting important ecological resources on the Property from being exposed to groundwater with concentrations above UPUS.

**Response:** Metro Parks is concurrently assessing the ecological risks. . It is expected that after a more comprehensive ecological risk assessment is conducted, that most of the Property, if not all, will meet the applicable VAP standards.

4. Ensure that groundwater leaving the Property meets UPUS.

**Response:** The area in question is relatively centrally located. Groundwater samples surrounding this area do not appear impacted. However, to ensure that

the groundwater leaving the Property meets UPUS, groundwater at IA-4 will be remediated to BUSTR and VAP action levels and the surrounding wells will be monitored to ensure migration is not occurring.

5. Take measures to ensure that contaminated groundwater that has left the Property does not exceed UPUS when it reaches wells currently used for potable purposes.

**Response:** Groundwater samples collected from wells surrounding IA-4 do not appear impacted; therefore, this does not apply.

6. Take measures to protect receptors off the Property from being exposed to groundwater with that does not meet UPUS when used for nonpotable purposes.

**Response:** Off-site migration does not apply since groundwater leaving the Property meets UPUS.

7. Protecting important ecological resources off the Property from being exposed to groundwater with concentrations above UPUS.

**Response:** This is not applicable as the groundwater meets UPUS at the Property boundary.

To eliminate exposure to this groundwater zone, groundwater-use restrictions and remediation to BUSTR action levels will be considered to meet VAP applicable standards for this exposure pathway.

### 5.3.2 Inhalation of Vapors (Indoor and Outdoor)

A preliminary risk evaluation was made of the inhalation of vapors by the commercial/industrial worker, the potential child park visitor, and construction/excavation worker from the saturated zone to understand if this complete pathway may present a compliance problem. Based on the evaluation, it appears the groundwater at the Property will meet risk-based standards for this pathway for all three receptor populations.

## 5.4 **Calculated Leach-Derived Groundwater Concentrations**

### 5.4.1 **Dermal Contact and Ingestion**

Using maximum concentrations of COCs in the entire soil column (from ground surface to the water table), a calculated groundwater concentration as the result of leaching from soils was derived. The leach-derived groundwater concentrations meet UPUS, and therefore does not pose a direct contact issue. When reviewed in the preliminary risk evaluation, the leach-derived groundwater concentrations will meet risk-based standards for this pathway for all three receptor populations.

### 5.4.2 **Inhalation of Vapors (Indoor and Outdoor)**

A preliminary risk evaluation was made of the inhalation of vapors by commercial/industrial workers, the potential child park visitor, and construction/excavation worker using the calculated leach-derived groundwater concentrations. Based on the evaluation, it appears that the calculated leach-derived groundwater concentrations would meet VAP risk-based standards for this pathway for all three receptor populations.

## 5.5 **Preliminary Ecological Risk Assessment**

Based on the preliminary ecological risk assessment, further ecological investigation is needed for the Property based upon the suspected presence of ecological stressors, the exceedance of ecological screening benchmarks, the potential presence of important ecological resources, and the identification of potential ecological exposure pathways.

## 6.0 RECOMMENDATIONS

### 6.1 Cleanup Objectives and Approach

The following remedial actions are recommended for Metro Parks to meet the VAP applicable standards for the Property. Redevelopment plans are conceptual at this time, and therefore these recommended remedial actions may change to fit the final redevelopment plans. In addition, remedial actions may vary depending on the results of the completed human health and ecological risk assessments. However, the recommended remedies and selected remedial actions will meet the VAP applicable standards within 30 months of Metro Parks signing an agreement with ODOD.

The cleanup of the Property will involve asbestos abatement of the buildings on the Property, demolition of most of the buildings, possible groundwater remediation, and limited soil remediation. As discussed in Section 5.0, the receptor populations for the future use of the Property are the park visitor, park workers, utility workers, and ecological. Land use of the Property under the VAP will be modified commercial, where the risk assessment exposure scenarios generally will be for commercial workers, with the addition of a child visitor exposure. Complete exposure pathways for COCs involve only direct contact to soil and potentially groundwater. The risk evaluation has eliminated the vapor inhalation exposure and leaching of soil contaminant to groundwater. Deed restrictions will be in place at the Property for groundwater use, and may also limit access to certain areas of the park.

The groundwater contamination beneath the Property is the result of a release from underground storage tanks (USTs), and therefore the remediation will be addressed initially under the Bureau of Underground Storage Tanks Regulations (BUSTR) to obtain a BUSTR NFA letter. Active groundwater remediation has been included, which is actually a conservative approach to meeting the BUSTR and VAP standards because groundwater remediation may not be required after the risk is evaluated under BUSTR. (The BUSTR Site Assessment is currently being completed, after which a BUSTR Tier 2 Risk Evaluation will be conducted to evaluate remediation requirements).

As discussed in Section 4.0, the groundwater impact is limited to approximately a 50-foot diameter within the old UST cavity. The impact is not in jeopardy of breaching the downgradient

Property boundary (at least 200 feet away), which is the point of compliance (POC) under BUSTR and VAP. In addition, Metro Parks may seek an Urban Setting Designation (USD) for the Property, which will then extend the POC 0.5 mile outside the Property boundaries.

Soil contamination on the Property is limited to two of the nine Identified Areas designation in the Phase I and Phase II Property Assessments. Identified Area 3 is from the historic operations on the former Koch portion of the Property, and appears to be limited to near surface soil contamination (less than 3 feet) of lead. Identified Area 4 is the release from the gasoline UST on the northern side of the Lazarus Distribution Center.

## 6.2 **Recommended Remedial Approach**

### 6.2.1 **Soil Remediation**

Remove and replace soil in Identified Area 3 – Southeastern Section of Koch Asphalt Facility. Lead was found in two borings at a depth of 0 to 2 feet at concentrations that are above direct contact standards for commercial workers and/or excavation worker. Benzo(a)pyrene and arsenic were found in one of those borings at a depth of 0 to 2 feet, and when combined, are above direct contact standards after considering the child exposure for the park visitor. Because of this, soil to a depth of approximately 2 feet in area around the 514 Furnace Street building approximately 125 feet by 75 feet, should be excavated and disposed at a landfill. It is estimated that 1,100 tons of soil (1.6 tons/cubic yard) will need to be landfilled.

Remove and replace soil Identified Area 4 – Former LUST North of the Lazarus Distribution Center. - A limited groundwater plume has been defined in the area of this former UST, although the source of the contamination has not been identified in the soil. It is recommended to remove the source by over-excavating the area of the former UST, approximately 25 feet by 40 feet by 15 feet deep. The soil will be landfilled. Groundwater will then be remediated, if necessary, as discussed below. It is estimated that 900 tons of soil will be landfilled.

Cover the Property with 2 feet of clean fill. Based on a cursory evaluation, it appears that the Property may need to be covered with at least 2 feet of clean fill to meet ecological risk-based standards. This was based on screening soil sample results; comparing the

results to EDQLs. This screening is suggesting that a more comprehensive ecological risk assessment be conducted. As a conservative approach, and to meet the VAP applicable standards, it is currently recommended to cap the entire Property with 2 feet of soil. It is expected that after a more comprehensive ecological risk assessment is conducted, that most of the Property, if not all, will meet the applicable VAP standards.

In addition, if a proposed stream/wetland area is to be constructed by pumping Scioto River water through parts of the Property, a geotextile liner be used to line the stream to help eliminate exposure of existing soils (future stream bed) to ecological and human health receptors. It is estimated that 3 acres may need to be lined with the geotextile materials. In addition, if Scioto River water will be pumped onto the Property as part of the final redevelopment plan, an exposure evaluation of river water will be added to the human health risk assessment.

#### **6.2.2. Groundwater Remediation**

Remediate groundwater around IA 4 – Former LUST North of the Lazarus Distribution Center. If needed, groundwater remediation should be conducted in Identified Area 4 around the former UST system. Initially, and as discussed above, approximately 900 cubic yards of petroleum contaminated soil will be removed from the former UST area to remove remaining source areas. A Tier 2 Risk Assessment under BUSTR will then be conducted and used to determine if an NFA letter can be written for the BUSTR site. Based on the limited groundwater plume as confirmed by the monitoring wells around the former UST area, and the fact that the wells along the property boundary meet BUSTR and VAP standards, it appears that a BUSTR NFA letter can be written without groundwater remediation.

If groundwater remediation is necessary, an in-situ bioremediation system will be implemented. This may involve using the Regeneration Oxygen Release Compound (ORC) to degrade the benzene, toluene, ethyl benzene, xylenes, (BTEX), and other petroleum compounds in the groundwater.

#### **6.2.3 Deed Restrictions**

Institutional controls will be implemented at the Property to limit groundwater and land use. Use of groundwater for potable and non-potable purposes will be restricted. Also, the use of the land

may be restricted to recreational use other than the eastern 3 acres, which comprises the Lazarus Warehouse, which will remain.

