

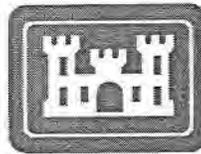
FORMER NIKE SITE CL-59
PARMA, CUYAHOGA COUNTY, OHIO
FUDS PROJECT NUMBER G05OH005301

PRELIMINARY ASSESSMENT

Final
Revision 0

March 2002

PREPARED FOR



U.S. ARMY CORPS OF ENGINEERS, LOUISVILLE DISTRICT
Contract Number: DACA27-98-D-0031
Delivery Order 0005

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CONTRACTOR STATEMENT OF TECHNICAL REVIEW

Plexus Scientific Corporation has completed this Preliminary Assessment report for Former Nike Site CL-59, Parma, Ohio. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project, as defined in the Quality Control Plan. During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions was verified. This included review of assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing Corps policy.

Review documentation identifying any specific concerns identified during the technical review and their resolution is maintained in the project file.



Geoffrey Carton, Project Manager

3/11/2002



for Harry Windecker, QA/QC Manager or his designee

3/11/2002

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Plate 1 4-Mile Radius Map

LIST OF ACRONYMS

ASCS	Agricultural Stabilization and Conservation Service
ASTM	American Society for Testing and Materials
AST	Above ground storage tank
DERP	Defense Environmental Restoration Program
GSA	General Services Administration
HEW	Department of Health, Education and Welfare
HHB	Headquarters and Headquarters Battery
ICBM	Intercontinental ballistic missile
IRFNA	Inhibited red fuming nitric acid
LCT	Launch control trailer
LOPAR	Low power acquisition radar
LUST	Leaking underground storage tank
MSL	Mean sea level
MTR	Missile tracking radar
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
PA	Preliminary Assessment
PCB	Polychlorinated biphenyl
Plexus	Plexus Scientific Corporation
SALT	Strategic Arms Limitation Talks
SI	Site Inspection
TTR	Target tracking radar
UDMH	Unsymmetrical dimethyl hydrazine (1,1-dimethyl hydrazine)
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
UST	Underground storage tank
USGS	U.S. Geological Survey
VA	Veterans Administration



1. INTRODUCTION

Plexus Scientific Corporation (Plexus) has been contracted by the United States Army Corps of Engineers (USACE), Louisville District (Contract Number DACA27-98-D-0031, Delivery Order 0005), to conduct a Preliminary Assessment (PA) at former Nike Site CL-59, Parma and Parma Heights, Cuyahoga County, Ohio (Figure 1-1). The PA was conducted in accordance with the U.S. Environmental Protection Agency (USEPA) *Guidance for Performing Preliminary Assessments Under CERCLA* (USEPA, 1991). The Nike Site consisted of two geographically separated areas: the Control Area and the Launch Area. The purpose of this investigation was to collect information concerning conditions at the Former Nike Site sufficient to assess the threat posed to human health and the environment and to support the planned Launch Area Site Inspection (SI). The scope of this investigation included review of available file information, collection and review of historic aerial photographs, and a site reconnaissance (August 7-8, 2000 and May 31 through June 1, 2001).

Records were obtained from Cuyahoga Community College, Parma, Ohio and the Records Office, Cleveland, Ohio. Historic aerial photographs were obtained from the United States Geological Survey (USGS), and the Agricultural Stabilization and Conservation Service (ASCS).

Contact was made with Ft. McCoy (by Louisville District personnel), and the Chief Historian of the Corps of Engineers in an attempt to obtain site-specific information. The office of the Chief Historian of the Corps of Engineers contacted the National Archives in College Park, Maryland; and the Records Centers in East Point, Georgia; and Chicago and none identified records relating to this site. No information was obtained from Ft. McCoy. In addition, USACE Huntington District, which was responsible for construction of the site, was contacted but no relevant records were found. The holdings of the Library of Congress Historic Architectural Engineering Record were reviewed and no drawings relating to this site were found. A list of persons and offices contacted for information is included as Appendix C.



FIGURE 1-1
SITE LOCATION MAP

FORMER NIKE MISSILE
SITE CL-59

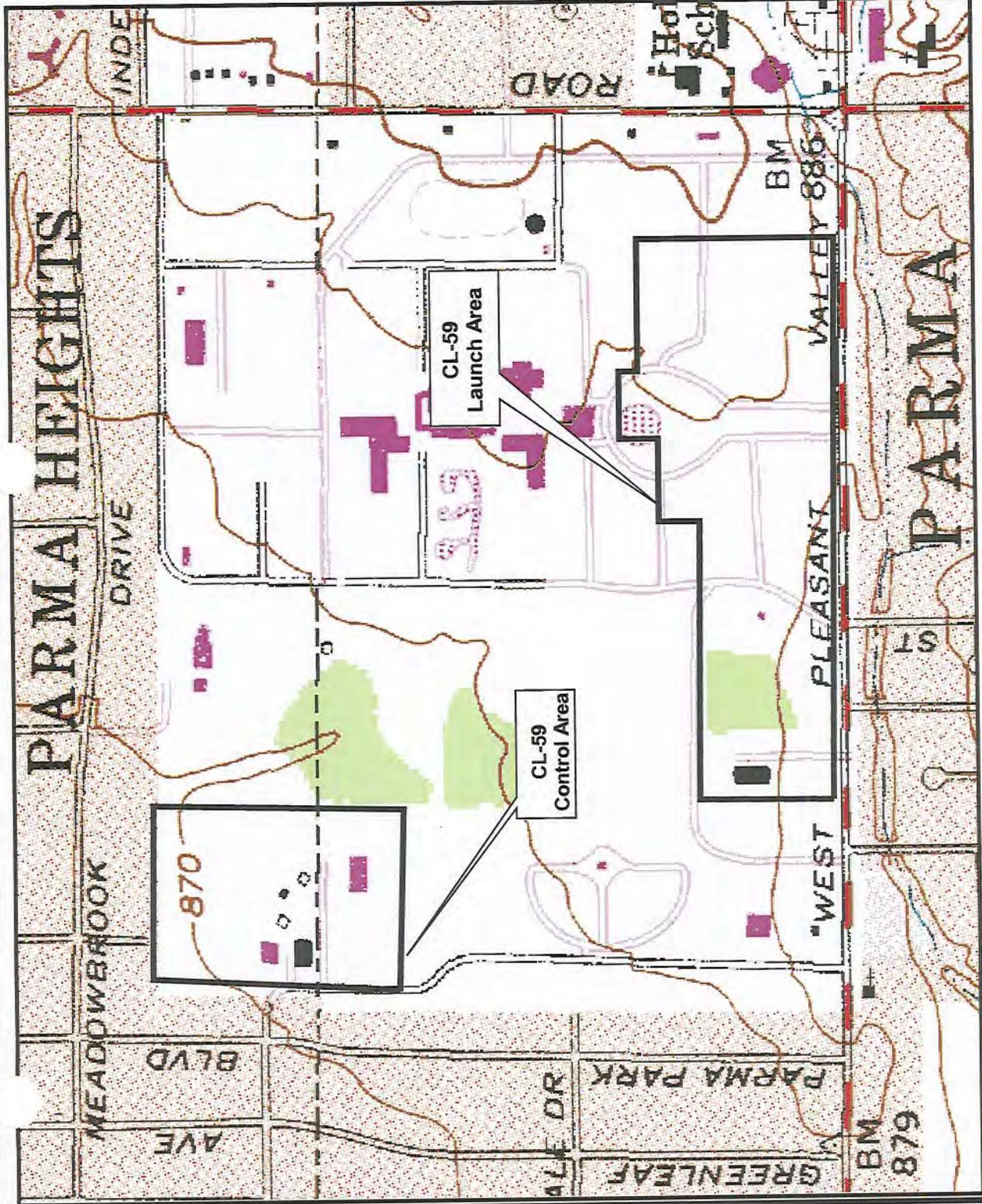


PARMA, CUYAHOGA COUNTY OHIO
U.S. ARMY ENGINEERS DISTRICT LOUISVILLE
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY



PROJECT NO.
0012-0068

FILE NO.
CL-59 APR



Source: 7.5 MINUTE QUADRANGLE BEREA, OHIO, 1963 (PHOTOREVISED, 1984).

2. SITE DESCRIPTION, HISTORY, AND WASTE CHARACTERISTICS

2.1 Location

The former Nike Site CL-59 Launch Area is located at the entrance of the Cuyahoga Community College off of West Pleasant Valley Road within the City of Parma, Cuyahoga County, Ohio. The Launch Area also extends to the west of the community college into Nike Park. The geographic coordinates of the site are 41° 21' 49.4" north latitude and 81° 45' 56.9" west longitude (USGS, 1963a). To reach the Launch Area, take State Route 71 to Bagley Road east which becomes West Pleasant Valley Road. The Control Area located in the City of Parma Heights (Cuyahoga County, Ohio) is approximately ½ mile northwest of the Launch Area and is now known as Nathan Hale Park (USGS, 1963a; Sebesta & Associates, 1998). The geographic coordinates of the Control Area are 41° 22' 12" north latitude and 81° 46' 34" west longitude (USGS, 1963a).

The Launch Area lies on the property of Cuyahoga Community College and the City of Parma. The site is bordered to the north by the college, to the west by Nike Park, by residential areas to the south and a commercial area to the east (USGS, 1963a; Sebesta & Associates, 1998; Plexus, 2001). The site elevation varies from 900 feet mean sea level (MSL) in the northeast corner to 880 feet MSL in the southwest corner of the site (USGS, 1963a).

The Control Area lies within Nathan Hale Park. The site is bordered to the north and west by residential areas, to the south by Nike Park, and to the east by a wooded area. The site is currently used as athletic fields and is relatively flat (USGS, 1963a; Plexus, 2001). The site elevation is approximately 890 feet MSL (USGS, 1963a).

The mean annual precipitation in the area is approximately 34 inches, while mean annual lake evaporation is 31 inches (U.S. Department of Commerce, 1968). The 1-year, 24-hour rainfall is 2 inches (U.S. Department of Commerce, 1961).

2.2 Site Description and History

Former Nike Missile Site CL-59 was activated in July 1956 and was deactivated in 1961 (Lonnquist and Winkler, 1996; Morgan and Berhow, 1996). After deactivation, the site was briefly used to support Army Reserve training and other Army activities (Genetti, 1992).

The units assigned to the site were the Headquarters and Headquarters Battery (HHB) of the 351st Army and Battery B of the 351st Army from July 1956 through September 1958. From September 1958 through August 1961 the assigned units were the HHB and Battery B both of the 1st Battalion of the 68th Army (Morgan and Berhow, 1996).

The Army acquired 187.2 acres in fee and 12.8 acres by permit from the Veteran's Administration (VA) by letter transfer in 1957. On August 29, 1960, 0.69 acres were excessed to the General Services Administration (GSA) which disposed of the property to the City of Parma on October 27, 1961 for use as a fire station. On January 2, 1968, 186.51 acres were reported

excess to GSA. On July 22, 1969, 11.4121 acres that had been assigned to the Department of Health, Education, and Welfare (HEW) for disposal were transferred to the Parma City Board of Education. On January 19, 1971, HEW transferred 57.641 acres to the Board of Trustees of the Cuyahoga Community College District. On April 22, 1971, the Secretary of the Interior transferred two adjacent tracts to the cities of Parma (92.5681 acres) and Parma Heights (124.8905 acres). These properties became Nike Memorial Park and Nathan Hale Memorial Park, respectively (Genetti, 1992). The discrepancy between the start of operations and the date when the Army acquired the property could not be resolved at the time of this report.

The Nike CL-59 Launch Area was built south of Crile General Hospital. The hospital was built in 1943 and in 1946 the hospital was transferred to the newly created VA. In 1947, it was selected to research the use of radioisotopes for the treatment of cancers (reportedly only short-lived isotopes were utilized). The Crile Hospital was closed in 1964. Cuyahoga Community College was created in 1965 and moved into the vacated Crile Hospital facility (Sebesta & Associates, 1998). The Nike CL-59 Launch Area was not constructed on any area actively utilized by the hospital and thus the hospital property is not addressed by this study.

The CL-59 Launch Area had three underground missile magazines (Lonnquest and Winkler, 1996). Although one was a design modified to handle both Ajax and Hercules missiles and was 49 feet long by 60 feet wide, no Hercules Missiles were ever housed at the site. The other two magazines were designed for the Ajax missile only, and were 42 feet long and 63 feet wide. Both types of magazine had the capability of launching a missile from the elevator (Morgan and Berhow, 1996; Lonnquest and Winkler, 1996; Carlson et al., 1996). The site was equipped with 30 Ajax Missiles and 12 Ajax type launchers (Morgan and Berhow, 1996; Lonnquest and Winkler, 1996). Ajax Missiles had a solid fueled booster, a liquid fueled sustainer motor, and three high-explosive warheads (Carlson et al., 1996). Other facilities at the Launch Area included a Barracks, a Missile Assembly and Test Building, a generator building, and an Acid Fueling Station (Figure 2-1)(Sebesta & Associates, 1998; Carlson et al., 1996).

Cuyahoga Community College demolished some of Crile Hospital to make room for new buildings in 1972. During the hospital demolition, the western most of the three underground Nike missile magazines was also demolished. In the late 1970's, the other two missile magazines were filled in with soil from an unknown source (Sebesta & Associates, 1998; USACE, 2000). The buildings at the Launch Area were demolished as part of the school development. The college has no records available to indicate if any tanks were removed as part of the demolition or if any contamination was encountered. The College never used either the missile magazines or any other Launch Area building (USACE, 2000).

Only four buildings relating to the Nike site activity still remain. They are a former Nike Maintenance Building located about 1800 feet west of the former Launch Area, and a guardhouse, administrative building and motor pool building in the Control Area. The maintenance building is in Nike Park and is in use by the City of Parma Service Department (Sebesta & Associates, 1998; USGS, 1963a).

Presently, the entrance road to the college off Pleasant Valley Road is about 400 feet west of the former entrance road to the Launch Area and the college entrance crosses the former Launch

Area (Plexus, 2001; USGS, 1963a; Sebesta & Associates, 1998). The former Nike Site Launch Area is well vegetated with little evidence of the facility. There are some scattered areas where pavement presumably from the site are visible (Plexus, 2001). An overlay of the Launch Area features on a 1994 orthophoto quadrangle is presented as Figure 2-5.

The Parma City Engineer's office reported that their records do not indicate whether the site was served by the municipal sewer system. However, the sewer line on West Pleasant Valley Road was installed in the 1920s or 1930s and it is likely that the site was connected to the sewer system (Wangler, 2001).

The Control Area consisted of the various tracking and acquisition radars, a barracks, a mess hall, a motor pool building, guard shacks, and an administration building. Baseball and soccer fields, a playground and a cell phone tower currently occupy the site (Plexus, 2001). The original layout of the Control Area is shown on Figure 2-2. An overlay of the Control Area features on a 1994 orthophoto quadrangle is presented as Figure 2-6.

A veteran who served in the CL-59 Launch Area was interviewed. According to the interviewee, the site was well kept and "housekeeping" practices were good. He reported that the missiles were cleaned with alcohol. He believes that the scarring evident in the aerial photographs was related to construction of the berms around the Acid Fueling Station. Although he believes there were underground storage tanks (USTs) on site, he did not know where they were located. He described the maintenance building in Nike Park as being used by the ordnance maintenance crew (Rigney, 2001).

A veteran, who served at CL-59 until it closed, reported that oil was applied along the fence lines to control vegetation. He was unable to provide any further details on the nature of the oil (Fisher, 2001). A veteran who served at several Nike sites reported that the computers in the Control Area used large vacuum tubes that may have contained radioactive materials. Elaborate procedures were utilized to replace and clean up broken tubes. Another worker reported that at some sites unsymmetrical dimethyl hydrazine (UDMH) used in Ajax Missile fueling might have been disposed of on-site. He reported that if UDMH were buried, it would probably be within several hundred feet of the Acid Fueling Station, maybe in the earthen mounds (Fisher, 2001).

Attempts were made to locate additional former CL-59 workers through Nike site employee lists available on the internet (<http://ed-thelen.org/ppl-o.html#Ohio>). These attempts were unsuccessful. As is typical of Nike installations, very little site specific information was found for CL-59.

2.3 Background of Nike Missile Installations

2.3.1 Nike Program and Missile Overview

Nike missiles provided the last line of defense for the U.S. population and its industrial centers against advancing technology in air warfare. The U.S. Army built the first Nike missile batteries in 1953. This effort produced three generations of Nike missiles: Nike Ajax, Nike Hercules, and Nike Zeus (Carlson et al., 1996). Former Nike Site CL-59 housed only the Nike Ajax missiles (Morgan and Berhow, 1996; Lonquest and Winkler, 1996).

Nike Ajax missiles used a two-stage propulsion system. The first stage consisted of a solid-fuel booster, which would separate and fall away after the first 2.5 seconds of ignition. The second stage of propulsion consisted of a liquid-fuel sustainer motor. The Ajax weighed over 2,455 pounds, had a speed of Mach 2.3, and a range of 30 miles (Carlson et al., 1996).

The booster motor was a cast double-base propellant monolith. The propellant contained nitroglycerine and nitrocellulose with burn modifiers and stabilizers distributed in a plastic matrix (Davie, 2000). The liquid-fuel sustainer motor used UDMH or aniline/furfuryl alcohol as the starting mixture. The fuel was a mixture of JP-4 and UMDH with inhibited red fuming nitric acid (IRFNA) acting as an oxidizer. The liquids for the sustainer motor were shipped to the site in drums with the missile (Army, 1958; Carlson et al., 1996). The Each Nike Ajax carried three high explosive warheads mounted in the nose, center and aft sections of the missile. The warheads weighed 12, 179, and 122 pounds, respectively (Carlson et al., 1996).

The Nike system was created in response to the former Soviet Union's efforts to design and deploy long-range bombers. However, fearing that their manned aircraft would be too vulnerable to attack by American interceptor aircraft, the Russians focused on developing Intercontinental Ballistic Missiles (ICBMs) against which there existed no effective defense (Bender, 1999). In response the Nike Zeus, the final Nike Missile, was developed with the goal of intercepting ICBMs. After limited success during testing and development, the system was terminated in 1963. The Nike Zeus was never produced or deployed as a part of the United States anti-aircraft defense network (Carlson et al., 1996).

The shifting nature of the Soviet threat meant that the air defense role, for which the Nike system was originally intended, became relatively less critical as time passed. Accordingly, beginning in the mid-1960s, the total number of operational Nike bases within the continental U.S. was steadily reduced on an almost annual basis (Bender, 1999).

The 1972 signing of the Strategic Arms Limitation Treaty (SALT I) limited the number of missiles with anti-ballistic missile capabilities, including the Nike Hercules. In 1974, the remaining U.S. sites in the Nike air defense system were deactivated. Shortly thereafter, the Army Air Defense Command, which administered the system, was dissolved (Bender, 1999).

2.3.2 Nike Site Layout and Waste Characterization

The buildings and structures on a typical Nike base were organized into two geographically separate areas: the Integrated Fire Control Area (Control Area) and the Launch Area. Occasionally, there was also a third area for housing. The Control and Launch Areas were separated by between 0.5 and 3.5-miles. Technical limitations of the guidance system required the two facilities to be separated by at least 3,000 feet (Bender, 1999; Carlson et al., 1996). At CL-59, the radar towers in the Control Area and the magazines in the Launch Area were separated by approximately 3,000 feet (USGS, 1963a). Control Areas were typically constructed on high ground to improve radar coverage of the area and were usually located between the area being defended and the Launch Area (Bender, 1999; Carlson et al., 1996).

The Control Area contained the ground-based radar and computer systems designed to detect and track incoming enemy aircraft and to guide the missiles to their target (Bender, 1999; Carlson et al., 1996). The Control Area also contained housing, administration buildings, mess halls, barracks, and recreational facilities (Carlson et al., 1996).

The Launch Area contained a Launch Control Trailer, a Missile Test and Assembly Building, a Warhead Building, Underground Storage Magazines and Launcher-Loader Assemblies, a Generator Building, and a Canine Kennel Area (Carlson et al., 1996). At CL-59, there was also a barracks at the Launch Area (See Section 2.5.1). The missiles were stored horizontally in heavily fortified underground magazines. An elevator brought the missiles to the surface where site personnel would manually push the missiles along rails to the launchers. The missiles were then attached to the launchers, which were erected to a near-vertical position for firing. The near-vertical firing position was used to ensure that the missile's booster would not land on the missile site when spent, but would land within a predetermined "impact area" (Bender, 1999).

Four operations were carried out in the Launch Area that potentially resulted in contamination. These operations included: missile assembly and disassembly, missile warheading, missile maintenance and testing, and general launcher and magazine maintenance. Based on previous studies at Nike facilities, wastes potentially present on-site include solvents, diesel fuel, hydraulic fluid, oils and lubricants. Solvents were used for cleaning and degreasing, and fuels were stored for electric power generation. Fuel tanks were typically buried underground. Lead and chromium may also be present on-site. Possible contaminant sources include washout sumps, leaching fields, underground fuel storage tanks, miscellaneous disposal or release areas (Law, 1986), and surface discharge from buildings. Some sites had seepage systems that probably consisted of drainage tiles and/or seepage pits for disposal of wastes such as material collected in the magazine sumps. The construction of the seepage system varied from site to site depending on local conditions; in some, cases sump discharges were directed to surface water drainages (Law, 1986).

The variety and quantity of chemicals used at the Control Area were significantly less than that in the Launch Area. The operations that may have resulted in contamination include vehicle maintenance at the motor pool building and fuel storage (Law, 1986).

Nike missile sites across the nation utilized standardized buildings and structures. These buildings served the same purpose from site to site; a characterization of the waste produced as well as a correlation to nearby buildings is possible. Although there were some variations, most buildings were one-story structures with cinder-block walls and slanted metal roofs. Also, Nike missiles were designed to be mobile, thus much of the equipment designed to control the missiles and radars was housed in trailers that had been adapted for use at permanent facilities. Many bases also had their own water treatment and sewage facilities, which might include wells, pump houses, sewage lagoons, holding tanks, and/or septic tanks (Carlson et al., 1996). Note that the numbers of buildings and the structure types did vary from base to base and the following building descriptions are generalized.

2.3.1.1 Control Area

The Control Area consists of the various elements required to track incoming targets and track and control the missile to the target. The support elements for personnel such as barracks, offices and a mess hall were also generally present here. The various elements in the Control Area were interconnected by a cabling system. The following provide generic descriptions of the facilities at CL-59.

Sentry Guardhouse: Small, square buildings of cinder block construction located at the entrances of all Nike sites. Nike sites had secured perimeters encompassed by two lines of fencing and a firebreak (Carlson et al., 1996). Law (1986) did not identify any environmental concerns associated with this structure.

Barracks: Large, L-shaped buildings of cinder block construction with slanted roofs. Typically, there were two barracks, one for the battery control personnel and the other for the launch crewman (Carlson et al., 1996). The barracks contained restrooms and shower facilities. Law (1986) did not identify any environmental concerns associated with this structure.

Mess Hall: Moderately sized buildings of cinder block construction with slanted roofs and two entry vestibules. This building contained a kitchen, dining area, and boiler room and served as the common eating area for all base personnel (Carlson et al., 1996). Law (1986) did not identify any environmental concerns associated with this structure.

Paint and Oil Shed: Small, square buildings with a design and construction similar to the guardhouses (Carlson et al., 1996). These buildings were used to store small amounts of paints, thinners, and solvents. Law (1986) did not identify any environmental concerns associated with this structure.

Battery Control Trailer: This mobile trailer was the heart of the Nike missile system. It contained the computer equipment, displays, and controls for the acquisition of targets and the firing of the missiles. The trailer contained the acquisition radar cabinet assembly, the battery control console assembly, the computer equipment, an early warning plotting board, an event recorder, and switchboard cabinet (McMaster et al, 1984; Carlson et al., 1996). Law (1986) did not identify any environmental concerns associated with this structure.

Radar Control Trailer: This trailer housed the target console assembly, the missile console assembly, the radar power assembly and the radar range and receiver cabinet assembly. This trailer was commonly positioned back to back with the Battery Control Trailer. This trailer contained the controls and displays required for the missile tracking radar (MTR) and target tracking radar (TTR) operators (McMaster et al, 1984; Carlson et al., 1996). The close proximity allowed for easy access by the personnel manning both trailers. The maximum distance separating these buildings was 25 feet (Carlson et al., 1996). Law (1986) did not identify any environmental concerns associated with this structure.

Low-Power Acquisition Radar (LOPAR): The acquisition radar was used to detect, observe, identify, and designate a target (McMaster et al, 1984). The target once selected was then

transferred to the Target Tracking Radar. This radar was composed of T-shaped acquisition antenna that rotated constantly and was either mounted on a concrete pad or mounted atop a tower assembly. This system was primarily used with the Nike Ajax Missile (McMaster et al, 1984; Carlson et al., 1996). In addition to the antenna this was also composed of a receiver, and transmitter. The components were used to detect, observe, identify and designate a selected target. The controls were located in the battery control trailer (McMaster et al, 1984). Law (1986) did not identify any environmental concerns associated with this structure.

Target-Tracking Radar (TTR): This radar tracked the designated target and provided data on the targets position to the computer. The radar was composed of a cone-shaped radar assembly, a receiver, and a transmitter that tracked the flight path of incoming enemy aircraft (McMaster et al, 1984; Carlson et al., 1996). The radar was mounted on a drop bed antenna trailer. The three operator controls and displays for azimuth, elevation, and range, were at the target console in the Radar Control Trailer (McMaster et al, 1984). Law (1986) did not identify any environmental concerns associated with this structure.

Missile-Tracking Radar (MTR): This radar was composed of the missile tracking antenna, receiver, and transmitter (McMaster et al, 1984). The MTR was similar in shape, construction, and function to the TTR. The MTR tracked the flight path of the intercepting missiles (McMaster et al, 1984; Carlson et al., 1996). The operator controls and displays were at the target console in the Radar Control Trailer. This radar tracked the missile, supplied the computer with missile position data, and provided the communications link for transmitting commands from the computer to the missile (McMaster et al, 1984). Law (1986) did not identify any environmental concerns associated with this structure.

Radar Collimation Mast Assembly: Typically a 60 foot tall radar collimation mast, it was used for testing and adjusting the Missile-Tracking and Target Tracking Radars (McMaster et al, 1984; Carlson et al., 1996). Spatially, the two tracking radars and the mast assembly formed a large triangle with the control trailers located in the middle of the triangle (Carlson et al., 1996). Law (1986) did not identify any environmental concerns associated with this structure.

Maintenance and Spares Trailer: Portable test equipment, spare components, and parts were stored in this trailer. During "march orders," components of the acquisition radar were stored here (McMaster et al, 1984).

Generator Building: This building housed the diesel-driven generators that powered the radars and Control Area equipment when commercial power was unavailable. Transformers were mounted on a concrete pad adjacent to the cinder block building; diesel fuel for the generators was stored either in above ground storage tanks (ASTs) or in USTs near the generator buildings (Carlson et al., 1996). Environmental concerns associated with the generator building relate to the storage of fuel for the generators and the possible use of polychlorinated biphenyls (PCBs) in the transformers at the building (Law, 1986).

Motor Pool: Some sites housed motor pool buildings. These buildings were used for limited maintenance. Individual Nike batteries were not have responsible for vehicle maintenance. Instead, vehicles were delivered to the battalion for maintenance (Law, 1986).

Basketball Court: A level paved surface with associated 10-foot high backboards. It was used for recreational purposes and for physical fitness maintenance of the crewman (Carlson et al., 1996). Law (1986) did not identify any environmental contaminants associated with this structure. The court is distinctive in the aerial photographs as it had a bituminous surface while the ends were concrete.

2.3.1.2 Launch Area

The various missile components were assembled, maintained, and prepared for firing in the Launch Area. The majority of routine maintenance and testing activities for the missiles to ensure flight readiness were conducted here. However, missiles were periodically returned to the Battalion support shop for more extensive maintenance and testing (Law, 1986). The following provide generic descriptions of the facilities at CL-59.

Launch Control Trailer (LCT): Mobile and similar in construction and appearance to the Radar and Battery Control Trailers. This trailer contained the launching control panel, the launching control switchboard, and the test responder. The controls, displays, and communications equipment required to supervise and monitor the launching sections during an engagement were on the control panel. This trailer functioned as the relay station and control center between the Launch and Control Areas (McMaster et al, 1984; Carlson et al., 1996). Law (1986) did not identify any environmental concerns associated with this structure.

Missile Test and Assembly Building: A large, cinder block building with two large garage-like doors, one at each end of the building, which allowed the missiles to be easily rolled in and out of the building. Missiles were assembled and tested in these buildings before warhead assembly. Older Nike sites that handled the Nike Ajax had a concrete walkway connecting the Missile Test and Assembly Building to the Acid Fueling Station (Carlson et al., 1996). Ethylene oxide used in the missile accessory power supply system was both reactive and volatile and would not be persistent in the environment (Law, 1986). Missile assembly and maintenance involved the use of various solvents, anticorrosion products, and paints, as the missiles were assembled and disassembled. The buildings were typically equipped with a full-length drainage system. In most cases, the drainage system was gravity fed and discharged to a small seepage pit or a small system consisting of perforated tile. The construction of the seepage system varied from site to site depending on local conditions. In some cases, sump discharges may have been directed to surface water drainages (Law, 1986).

Acid Fueling Station: Only used at bases with Nike Ajax missiles, this station consisted of a concrete slab with two mounds and two small depressions. A hoist and platform were used to lift a cask of IRFNA fuel above the missile and allow it to gravity feed into the missile sustainer prior to its mating with the booster. This operation was performed on a concrete walkway surrounded by an eight to ten foot high earthen berm (Carlson et al., 1996). IRFNA was both reactive and volatile and would not be persistent in the environment (Law, 1986).

Acid Storage Shed: A small metal storage shed with a nearby emergency shower in case of accidental contact with the dangerous chemicals and fuels. This shed was located near the Acid

Fueling Station. Law (1986) did not identify any environmental concerns associated with this structure.

Warheading Building: Typically constructed of cinder block with garage-like doors and also located within the earthen berm area. Arming devices, warheads, and detonation cord were installed on the missiles at this building. The Warheading Building was commonly present at Nike Hercules installations and was absent at Nike Ajax installations where warheading operations would be performed at the Acid Fueling Station (Carlson et al., 1996). The Warheading area had a drainage system; however, the system is considered to present a lower potential for contamination than other areas (Law, 1986). Limited quantities of ethylene oxide were handled in this area for missile electrical systems, but the chemical is not persistent. Battery electrolyte solutions were also handled in this area; some lead contamination may have resulted from this operation but other sources of lead (e.g., paint) were of a greater consequence (Law, 1986).

Underground Storage Magazines and Launchers: Underground magazines were standard and were commonly found in groups of three. Each underground magazine had an associated launch pad and large elevator doors that opened downward. The underground magazines had a large elevator to carry missiles to the surface (Carlson et al., 1996). The hydraulic system for each elevator had oil tanks and sumps with a capacity of 271 to 311 gallons (Army, 1959). The launching control cabinet was located in a room in the magazine (or in a revetment in above ground installations) and contained the necessary controls, indicators, and communications facilities to allow the launching section to control the preparation and firing of its missiles. The cabinet was also used to coordinate the activities of the launching section with the launching control panel operator in the launching control trailer (McMaster et al, 1984).

The magazines typically had a floor drainage system that permitted waste materials to be washed to a central sump under the missile elevator. A pump would deliver the water and waste to a seepage system or ground surface. Solvents, paints, and hydraulic fluid may have been washed into the sump. Volatile organics (i.e., benzene, carbon tetrachloride, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene) were used in the cleaning and maintenance of the missiles (Law, 1986).

Kennel: Small, metal buildings surrounded by chain link and barbed wire fence. The kennel housed dogs that were an important part of a Nike base's security (Carlson et al., 1996). Law (1986) did not identify any environmental concerns associated with this structure. It is not clear if kennels were present at Nike Ajax sites.

Generator Building: This building housed diesel-driven generators that powered the elevators and launch area equipment when commercial power was unavailable. Transformers were mounted on a concrete pad adjacent to the building. Diesel fuel for the generators was stored in either ASTs or USTs near the generator buildings (Carlson et al., 1996). Environmental concerns associated with the generator building relate to the storage of fuel for the generators and the possible use of PCBs in the transformers at the building (Law, 1986).

2.4 Environmental Activities

In 1998, a Limited Phase I Environmental Site Assessment of the land formerly occupied by the Crile VA Hospital and Nike Site CL-59 was conducted for Cuyahoga Community College. The assessment concluded that “there is no evidence that the site may have been extensively contaminated by the operation of either Crile Hospital or the Nike Missile Site but there is some potential for localized environmental impairments directly associated with specific work and research operations including the use of degreasers and solvents, operations related to petroleum underground storage tanks and hydraulic elevators, battery maintenance operations and incinerator ash disposal [incinerator was associated with hospital operations].” The report recommended that documents be reviewed to determine the status of all underground and aboveground storage tanks that may have been located at the site. If documents could not confirm the removal of all underground storage tanks from the site, the report recommended that a magnetometer survey, soil borings and other site assessment studies be conducted to locate the tanks and measure any site-related contamination (Sebesta & Associates, 1998).

Am Tech Engineering, Inc. under contract with the USACE removed two USTs at the former Control Area of Nike Site CL-59 in October 2000. A 5,000-gallon gas UST was removed from the Nathan Hale Park parking lot and a 6,000-gallon diesel UST was removed from the Park’s soccer field. A total of 23 and 54 cubic yards of petroleum-affected soil were removed from the gas and diesel USTs, respectively. Laboratory analytical results of the confirmation samples indicate that all of the petroleum-affected soils, from both UST locations, were satisfactorily removed. One sample collected from the excavation from which the gasoline tank was removed was analyzed for lead which was detected at 12.1 mg/kg (Am Tech, 2000).

In 1990, a 6000-gallon UST adjacent to the former Nike maintenance building (11828 Pleasant Valley Road) in Nike Park was removed. The Ohio Bureau of Underground Storage Tank Regulations concluded that a release from the tank had occurred and assigned incident number 1801424-00 (Rahman, 1991).

2.5 Review of Historic Aerial Photographs

Historic aerial photography covering the period from 1952 through 1994 was obtained from readily available government archives: the USGS (Sioux Falls, South Dakota), and ASCS (Salt Lake City, Utah). Additional photographic coverage is likely available from commercial vendors. The five years of photography were examined under a stereoscope to identify any significant areas of disturbance. The potentially significant environmental findings are presented below. Each of the findings is annotated on the photographs (Figures 2-3 and 2-4).

The photographs reviewed are as follows:

Date	Agency	Mission Code/Frame Number	Scale
April 17, 1952	USGS	GS-PI/2-146 through 148	1:24,000
July 13, 1959	ASCS	PZ/2W-28 & 29	1:20,000
May 3, 1962	USGS	GS-VALP/4-6 & 7	1:24,000
April 5, 1970	USGS	GS-VCLJ/1-98 through 100	1:24,000
April 20, 1994	USGS	NAPP/7934-96 & 97	1:40,000

Graphical line work delineating particular Areas or significant features has been employed in order to focus the readers attention to features or locations that may not be readily discernable in this small scale collection of photography of the former Nike Site. The Launch and Control Areas are discussed separately below.

2.5.1 Launch Area

1952 The future site of the Nike missile Launch Area is an open, undeveloped tract of land located south of the military-style hospital. The tract appears to be a fallow field, which may be part of the larger hospital property. No unusual man-made features or natural conditions are evident in or around the vicinity of the future "footprint" of the Area.

1959 The Launch Area appears operational; two missiles are staged on the missile magazines at this time. No obvious evidence of waste disposal activity is observed in this area; however, two unusual ground scars situated within the fenced confines of the security perimeter warrant mention. The first, identified for purposes of this discussion as scar #1, can be described as having a crescent-shaped configuration and is located north of what is presumed to be the missile assembly and test building. This scar measures approximately 200 feet long (east to west extremes) and approximately 60 feet wide at its greatest width. A faintly visible linear feature runs from the corner of a concrete and asphalt pad on the west side of the building to ground scar #1. The scarred area shows no evidence of being caused by vehicular activity; however, it may have resulted from the release of liquids.

The second scar (#2) is situated north of the missile magazines and east of the Acid Fueling Station in an open, grass-covered field. This scar exhibits a generally mottled, disturbed appearance; evidence of vehicular activity is also noted. A portion of this area appears to be mounded and darker in appearance. Vegetative cover that differs from the surrounding grass-covered grounds may be the cause of this darkened condition. This roughly circular scar occupies an area estimated to measure approximately 50 feet in diameter.

1962 The two ground scars remain readily identifiable, as is seen in Figure 2-3. Scar #1 remains devoid of vegetative cover; the linear feature previously observed linking this area to the probable Missile Assembly and Test Building is very distinct. This feature now appears to be a shallow ditch. Numerous narrow containers or trailer-like vehicles are currently situated on the pad to which this ditch leads.

Scar #2 appears topographically uneven, suggesting that additional mounds of fill or other materials have been deposited in the area since 1959. No evidence of any recent vehicular activity is apparent in this area; vegetative cover also appears to have gained a firm hold in this localized area.

An unusual ground disturbance is evident for the first time in the area north of the installation's administrative support building and parking area. The cause of this condition is unclear.

- 1970 The Launch Area no longer appears operational. The missile launcher-loader system that supported the missiles when above ground has been removed; the missiles themselves appear to be lying in an orderly, prone position along the edge of the pad. The conditions observed in this coverage suggest that the site is undergoing a demilitarization process.

The ground scars and disturbed area previously observed have become overgrown by vegetative cover (e.g., grasses) and are only faintly discernable. Some surficial discoloration of the pad associated with the Missile Assembly and Test facility is seen; this signature appears to have been created by a liquid. Whether this signature is the result of the flow of precipitation or some prior release of a substance cannot be determined from the photography.

- 1994 Considerable change has occurred at the Launch Area and on the adjacent grounds since 1970. The entire Launch Area has been removed to make way for improvements to the institutional facility that has been constructed at this site. A large parking lot and an expansive vehicle entrance and lawn/reflecting pool "mall" currently occupy the footprint of the former Launch Area. Portions of the former Nike site have been excavated and re-contoured to enhance the mall's appearance. All surface expression of the Launch Area has been completely removed to permit the infrastructure changes seen in this coverage. Only faint ground scarring associated with the vehicle entrance apron onto West Pleasant Valley Road marks the location and former presence of the CL-59 Launch Area.

2.5.2 Control Area

- 1952 The site of the Nike Control Area is currently an open, undeveloped parcel of land that appears to be part of a larger military-style hospital. The only features of note situated within the "footprint" of this Area are a possible liquid retention basin/reservoir and a small disposal site. The basin/reservoir (or similar liquid retention unit) has a darkened appearance, possibly due to the presence of liquids. The walls of the basin do not appear compromised and it is presumed that the basin remains operational. The unusually remote location of this feature and the lack of any visible supporting systems (e.g., piping, buildings) makes a determination of the actual use of this feature difficult. It is presumed to be associated with hospital operations - an earthen vehicle track links the basin with support facilities on the western flank of the hospital - and might, among other possibilities, serve as a sewage retention pond or water reservoir. It is also possible that it is associated with some unidentified historical operation or activity that preceded the establishment of the present hospital facility. The position of this basin is illustrated in Figure 2-4 of this report.

Evidence of disposal activity is also noted along the south side of the vehicle track that serves the aforementioned basin. Unidentifiable materials have been deposited in what appears to be a shallow depression. This site is likely used by the hospital as a landfill for wastes generated at the facility. The physical location of this disposal site, when compared to subsequent coverage of the Area shows that it is situated just east of the future perimeter security fence for the Nike installation. This disposal area remains

active during most of the study period and is the subject of further discussion in subsequent Area discussions.

1959 The Control Area has been constructed and appears to be operational. The Area is comprised of four separate centers of activity, three of which appear in the main compound. This compound contains: 1) Missile guidance/targeting facilities; 2) administrative buildings, living quarters (residential), and related support facilities; and, 3) motor pool/vehicle support facilities. The fourth activity is located separately along the long service road that provides access to the Area from West Pleasant Valley Road. This site, which is not captured in the visual field of the accompanying figure, may be a communications facility. It contains several small structures and three objects that may be small, dish-shaped communications antenna. This possible communications facility does not appear to be fenced; no visible evidence of any waste disposal activity is observed.

The only remarkable portion of the Control Area, as seen in this year of photo coverage, is the motor pool. The motor pool is situated in a large, open yard that contains a single, multi-vehicle bay shop, an outdoor vehicle maintenance rack (sometime identified on military facilities as a "wash rack"), and a fueling station. A small number of large vehicles and/or trailers are also seen within the yard. Evidence of limited surficial discoloration, which measures approximately 10 feet long and 5 feet wide, is apparent on the ground immediately east of the vehicle bay; however, no obvious source or cause of this condition can be identified.

No evidence of any solid waste disposal sites (e.g., trench disposal areas, burning grounds, landfills) or weapons training facilities (e.g., firing ranges) is observed within the fenced confines of this approximately 30-acre site.

The square-shaped basin previously observed within the confines of the present Control Area is no longer present. Surficial scarring in and around the location of this former feature suggests that it has been physically removed (e.g. bulldozed) or possibly filled in with soil.

The disposal site previously identified appears larger than it had in 1952. A possible trench is evident within this site, adjacent to the Area's security fence. This possible trench measures approximately 40 feet long, has a north/south orientation, and is partially open. An earthen road leading to/from the disposal site and the motor pool area suggests that the disposal site is being utilized by the Nike facility. Although the disposal site is located outside (east of) the Area's perimeter security fence, it appears that a gate in the fence line permits vehicles to pass to and from the disposal site.

Unusual linear scars in the northern and eastern portions of the Area appear to be associated with drainage conveyances. The scars, two of which lead to/from the compound, appear to terminate in and around a low-lying area that may be a wetland. The mottled appearance of this low-lying area suggests it contains liquid and is subject to fluctuations in its areal configuration.

1962 The darkened roadbed, visible in Figure 2-4, that leads between the disposal site and the motor pool clearly illustrates the access and presumed current and historical use of the disposal area by the missile installation. The disposal site exhibits a somewhat less disturbed appearance than previously observed in 1959. Additionally, it is unclear whether the trench previously observed in this area has been filled in. The poor resolution of the photography, coupled with the uneven surface and vegetative cover that appears to have established itself in the area, preclude a clear view of the presence (or absence) of the trench.

A contributing factor to the apparently reduced use of the disposal area may lie with the changing waste management practices of the neighboring hospital. The aforementioned earthen road leading eastward towards the hospital also leads to what appears to be a growing open dump that is situated near the banks of a small drainage ditch (this area is not captured in the visual field of the accompanying figure). A small amount of material was observed in this location in the 1959 photography; however, substantially more material has been deposited in this location during the intervening years. It appears likely that the hospital now disposes of its solid wastes in this single location.

A second feature of note observed within the confines of the Control Area is a darkened linear feature situated north of the main compound. This feature is a ground scar, possibly darkened by the presence of moisture. The scar exhibits general trench-like characteristics; however, it is not open (i.e., the scar does not exhibit any depth when viewed stereoscopically) and it does not exhibit vehicular scarring typical of trench-style disposal operations. Generally, vehicle tracks like those associated with this feature do not lead directly into (along the axis of) trenches but, instead, approach a trench from a perpendicular angle. The particular cause or use, if any, of this ground scar is unclear from the analysis of the aerial photography.

No activity of note is observed in the main portion of the installation; however, the possible communications facility located south of the Area (not captured in the visual field of the figure) has been disbanded and removed. Surface scarring resulting from the former presence of this facility is visible; however, no evidence of disposal activity in this locale is observed in the photography. The present day (1994) "footprint" of this former installation is situated in the outfields (2) of a cluster of baseball fields that have been constructed in the area.

1970 This coverage of the Control Area shows the Area to be extremely neat and in orderly condition. No features of note are observed in the motor pool area or the surrounding built-up areas of the installation. Similarly, vegetative cover has all but concealed the disposal area and the darkened trench-like ground scar noted in earlier coverage of the Area. The overall appearance of the Area suggests that it is no longer operational.

An unusual surface disturbance is visible just south of the Control Area in an open, undeveloped parcel of land. This parcel does not appear to be part of the CL-59's property, but its proximity to the Area is noteworthy. The disturbance was actually

present in the 1962 coverage of the Area but was not clearly discernable. The 1970 coverage, however, provides a better view of this feature, which appears to be a shallow excavation surrounded by quantities of unidentifiable, light-toned materials. These light-toned materials might be soil overburden from the excavation of the site, but their actual composition cannot be discerned from this series of photographs. In any case, it is unclear why any activity would be conducted in this area. This disturbance is not visible in the 1994 coverage of the Area.

1994 Significant changes to the site of the long-abandoned Control Area have occurred since 1970. Most of the structures and infrastructure of the Area have been removed and replaced with parking lots and athletic fields. The administrative and motor pool buildings are the only structures to survive the transition from military to civilian use. Large amounts of fill appear to have been placed around the perimeter areas of this site to elevate and establish the playing fields presently found there.

The only additional observation of note within the former Control Area is a large pile of unidentifiable material that has been staged on the west side of the motor pool building. This material has a highly mottled appearance and appears to be comprised of earthen materials or large quantities of small-sized objects/materials.

2.6 Site Reconnaissance

The first site reconnaissance of the CL-59 Launch Area was conducted on August 7, 2000. The Cuyahoga Community College Chief Engineer, Chip Hoffner provided a tour of the college, as well as a tour of the former CL-59 Launch Area. Mr. Hoffner displayed old maps of the Crile Hospital, and an aerial photograph taken of the Community College. The field where the former Launch Area was located was walked and observed for power lines, any signs of hazardous waste/spillage, storm drains, stressed vegetation, fire hydrants, manholes, playgrounds, signs of the former launch area, underground storage tanks, wells, and anything else significant to the PA study. There was no indication of underground storage tanks in the area nor were there any signs of hazardous waste/spillage. There were no original launch area buildings left on the site nor were there any visible indications that the launch area had existed. The former launch area consisted of a grassy field with sporadic placement of various trees. The former entrance to the launch area was located via crumbled concrete/pavement about 400 feet west of the current entrance into the community college (Plexus, 2001).

A second site reconnaissance of Nike Site CL-59, including both the Launch and Control Areas, was performed on May 31, 2001 after the USACE broadened the scope of work to include the Control Area. The Cuyahoga Community College Chief Engineer (Mr. Hoffner) was able to provide Plexus personnel with a drawing of the magazine demolition plans (Plexus, 2001). These plans show the western most magazine was to be demolished and the remaining two magazines were to have the cylinder for the elevator in-filled with sand. The plans also show the floor of the magazines were "broken up" to provide drainage (Madison, 1972). Several long employees of the college and neighbors were interviewed. None was able to provide any additional information on the operation or closure of the site (Plexus, 2001).

A Schonstedt Magnetic Locator, Model Number GA-52Cx, was employed during the site reconnaissance in attempt to locate the magazine foundations, the Acid Fueling Station, the Generator Building, evidence of dumping, and any remaining USTs. Audible signals from the Schonstedt indicate the magazine foundations were in the approximate locations depicted on Figure 2-4. A lack of audible signal in the area of the Acid Fueling Station may indicate the foundations have been removed. Sporadic and non-sustained audible signals around Ground Scar # 1 were interpreted to indicate that buried waste from dumping was not likely in that area. Sporadic and non-sustained audible signals were also detected near the approximate location of the Generator Building. These signals were interpreted to indicate a UST does not remain near the Generator Building. It is important to note that the magnetic locator employed during this reconnaissance does not provide visual imagery or conclusive data. The conclusions drawn from the use of the Schonstedt Model Number GA-52Cx are subject to individual interpretations (Plexus, 2001).

The perimeter of the site as well as the community college was studied, noting drainage, schools, residences, playgrounds, parks, and the location of the CL-59 Control Area. There are several recreation areas surrounding the site, including baseball fields and soccer fields. There is a playground area, Nike Site Park, located approximately ½ -mile west of the site. Gas stations were located on the northwest and northeast corners of the intersection of York Road and West Pleasant Valley Road approximately 700 feet from the Launch Area. There were residences on the south side of Pleasant Valley Road. On the northeast perimeter of the community college was a high school, which is on higher ground than the community college (Plexus, 2001).

The site reconnaissance of the former Control Area, currently Nathan Hale Park, was performed on May 31, 2001. The Control Area was walked and observed for power lines, signs of hazardous waste/spillage, storm drains, stressed vegetation, fire hydrants, manholes, playgrounds, signs of the former Control Area, USTs, wells, and anything else significant to the PA study. There was no indication of USTs in the area nor were there any signs of hazardous waste/spillage (Plexus, 2001).

Of the original Control Area buildings, the Administration Building, the Motor Pool, and a Guardhouse remain on the site. The paved areas of the park generally mirror the layout of the former Control Area and the soccer and baseball fields of the park are located in the former grassy areas of the site. The City of Parma Heights maintains the park and uses the area behind the Motor Pool for storing piles of earthen materials and asphalt. Piles of debris and garbage overgrown with weeds were located outside the eastern perimeter of the property. The pavement has been noticeably patched in the area near the former fuel island (Plexus, 2001). Surface water drainage was observed to follow the approximate pathways depicted in Figure 2-3.

Parma City Hall was visited to gather information held by the city on CL-59. Mr. Tony Vanello did not have any information regarding the location of the silos and explained that the city did not have any site plans of the former Launch Area, or any information regarding public water distribution.

The Cleveland Water Department was visited on August 8, 2000. Mr. Guy Singer provided information on Parma's public water distribution. Mr. Singer reported that almost the entire

population of Parma is on the public water system. He showed the waterline distribution map for the area displaying only one small section of road between Skyview and East Ridgewood road that did not have a water line along it. He provided electronic copies of these drawings. Mr. Singer did not know anything about the storm drains in the area. Title Permits for the former Launch area were obtained from the Map Room of the Records Office in Cleveland, Ohio on August 8, 2000 (Plexus, 2001).

All relevant information from the site reconnaissance is included in the appropriate sections of the PA. Photographs from the site reconnaissance are presented in Appendix A.

2.7 Database Search

A search of readily available records (state and federal environmental databases) was conducted to identify documentation of environmental concerns relating to the former Nike Missile Site CL-59 or nearby properties which may impact the site. The search was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments (E 1527-97); a search of reasonably ascertainable government records for the site and within the ASTM specified radii was conducted. Table 2-1 lists the databases searched. The site (presumably the Launch Area) is listed in the Ohio Division of Emergency & Remedial Response's database. Table 2-2 presents a list of the facilities identified within a one-mile radius of the Launch and Control Areas. The full results of the database search are presented as Appendix B.

**TABLE 2-1
 ENVIRONMENTAL RECORDS INCLUDED IN DATABASE SEARCH
 FORMER NIKE MISSILE SITE CL-59, PARMA, OHIO**

Database	Date of Government Version
Federal ASTM Standard Records	
National Priority List (NPL)	06/13/00
Delisted NPL	06/13/00
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	02/14/00
CERCLIS-No Further Remedial Action Planned (NFRAP)	02/14/00
Corrective Action Report (CORRACTS)	4/20/00
Emergency Response Notification System (ERNS)	5/30/00
Resource Conservation and Recovery Information System (RCRIS)	5/18/010
Federal ASTM Supplemental Records	
Biennial Reporting System (BRS)	12/31/97
Superfund Consent Decrees (CONSENT)	N/A
Records of Decision (ROD)	01/31/99
Facility Index System (FINDS)	10/13/99
Hazardous Materials Information Reporting System (HMIRS)	06/30/99
Material Licensing Tracking System (MLTS)	4/23/00
Mines Master Index File (MINES)	08/01/98
Federal Superfund Liens (NPL LIENS)	10/15/91
PCB Activity Database System (PADS)	01/01/00
RCRA Administrative Action Tracking System (RAATS)	04/17/95
Toxic Chemical Release Inventory System (TRIS)	12/31/97
Toxic Substances Control Act (TSCA)	12/31/98
State of Ohio ASTM Standard Records	
Master Sites List (SHWS)	03/01/99
Licensed Solid Waste Facilities (LF)	05/15/00
Leaking UST File (LUST)	05/17/00
UST Tank File (UST)	05/05/00
State of Ohio ASTM Supplemental Records	
Emergency Response Database (SPILLS)	12/31/98
Division of Emergency & Remedial Response's Database (DERR)	06/01/00
Historical, Proprietary and Other Databases	
Former Manufactured Gas (Coal Gas) Sites	--
Oil/Gas Pipelines/Electrical Transmission Lines	--
Sensitive Receptors	--
Flood Zone Data	--
National Wetlands Inventory (NWI)	--
National Inventory of Dams	--



**TABLE 2-2
 LISTED SITES WITHIN A 1-MILE RADIUS
 FORMER NIKE MISSILE SITE CL-59, PARMA, OHIO**

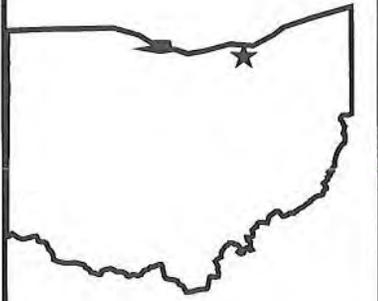
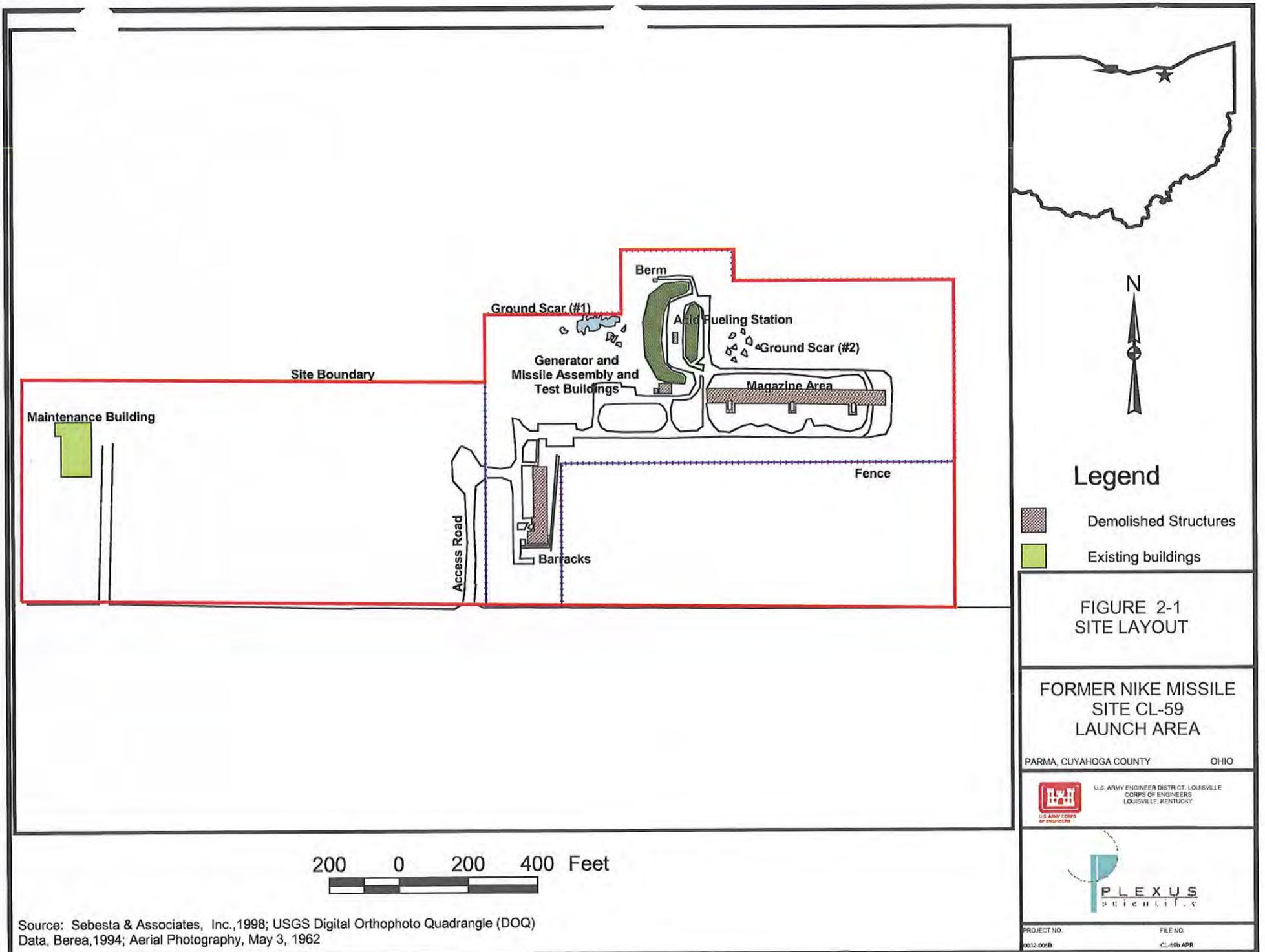
Site Name	Listing	Site Address
Launch Area		
Shell Oil Co. #23464291436	LUST, UST	10602 Pleasant Valley, Parma, OH
Former Mobil 05-HF2	LUST	10601 Pleasant Valley, Parma, OH
SIRLS Automotive Inc.	LUST	7541 York Rd., Parma, OH
Nike Site (City of Parma Nike Park)	LUST RCRIS – SQG	11828 Pleasant Valley Road, Parma, OH
Cuyahoga Community College	RCRIS-SQG UST LUST FINDS	11000 Pleasant Valley Road, Parma, OH
Control Area		
Nike Site (City of Parma Nike Park)	LUST RCRIS – SQG	11828 Pleasant Valley Road, Parma, OH
Nike Site CL-59	DERR	West Pleasant Valley Road, Parma, OH

LUST – leaking underground storage tank

UST – underground storage tank

RCRIS – SQG – Resource Conservation and Recovery Information, Small Quantity Generator

FINDS – Facility Index System



Legend

-  Demolished Structures
-  Existing buildings

**FIGURE 2-1
SITE LAYOUT**

**FORMER NIKE MISSILE
SITE CL-59
LAUNCH AREA**

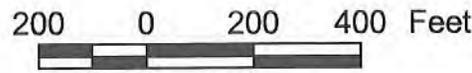
PARMA, CUYAHOGA COUNTY OHIO



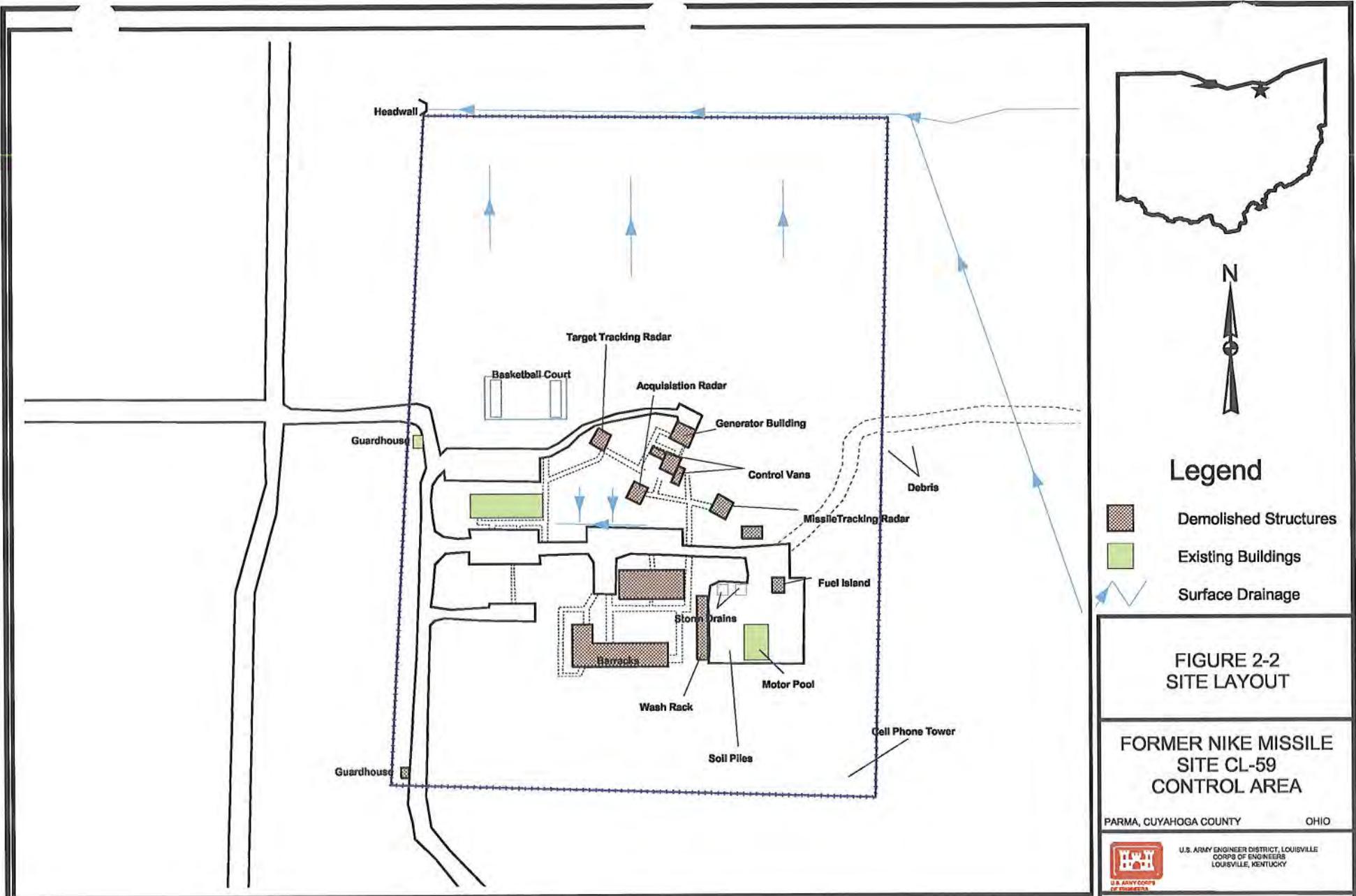
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY



PROJECT NO. 0012-005B FILE NO. CL-59B APR



Source: Sebesta & Associates, Inc., 1998; USGS Digital Orthophoto Quadrangle (DOQ) Data, Berea, 1994; Aerial Photography, May 3, 1962



Legend

-  Demolished Structures
-  Existing Buildings
-  Surface Drainage

**FIGURE 2-2
SITE LAYOUT**

**FORMER NIKE MISSILE
SITE CL-59
CONTROL AREA**

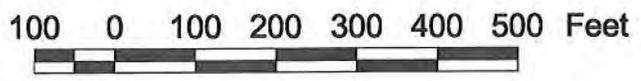
PARMA, CUYAHOGA COUNTY OHIO



U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY



PROJECT NO. 0032-0056 FILE NO. CL-59 APR



Source: Sebesta & Associates, Inc. 1998; USGS Digital Orthophoto Quadrangle (DOQ) Data, Berea, 1994; Aerial Photography, May 3, 1962

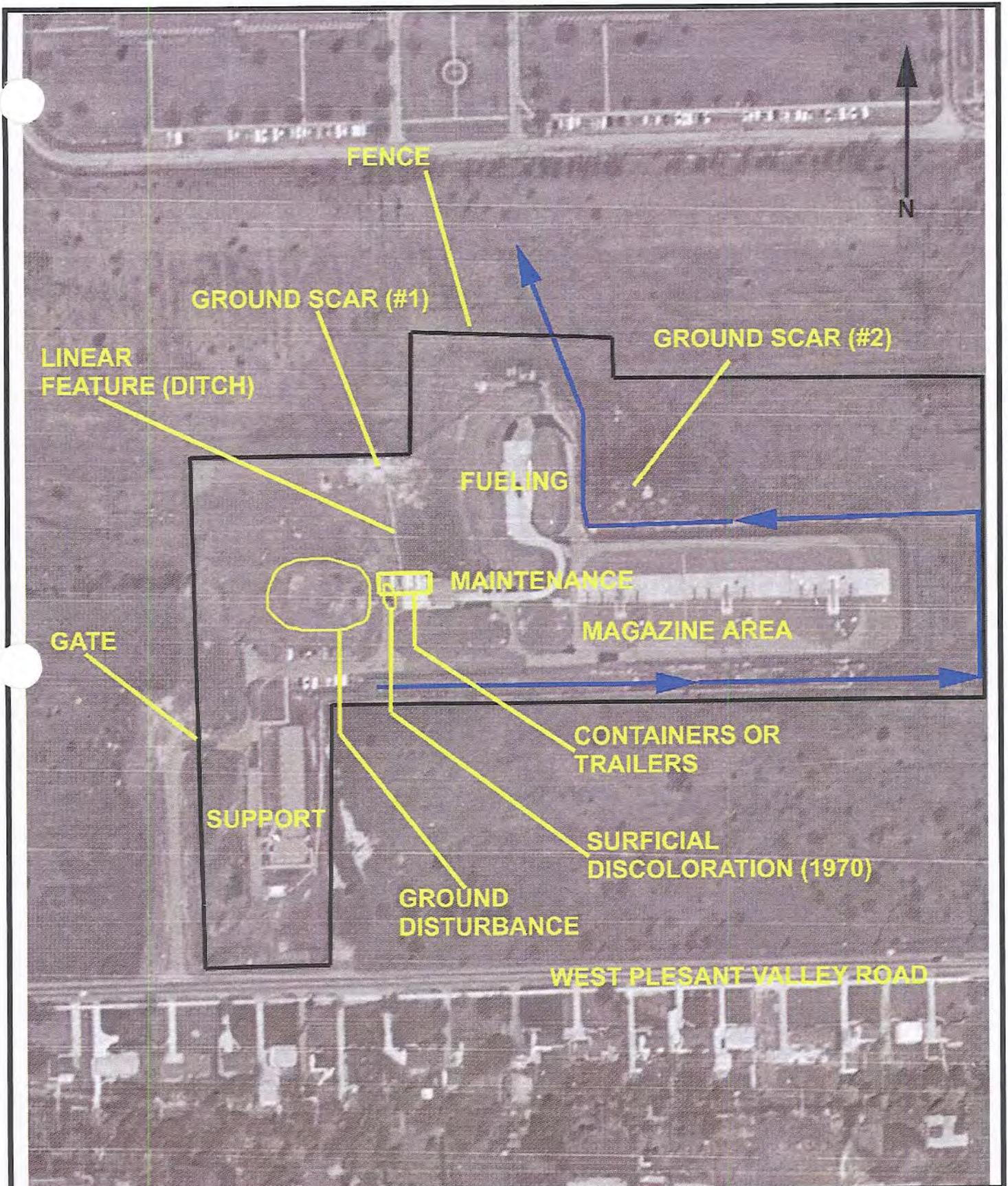


FIGURE 2-3
 ANNOTATED AERIAL PHOTOGRAPH OF NIKE MISSILE SITE CL-59
 LAUNCH AREA
 MAY 3, 1962
 PARMA, CUYAHOGA COUNTY, OHIO



U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
 CORPS OF ENGINEERS
 LOUISVILLE, KENTUCKY

PROJECT NO.
 0032-0058

FILE NO.
 CL-59 APR

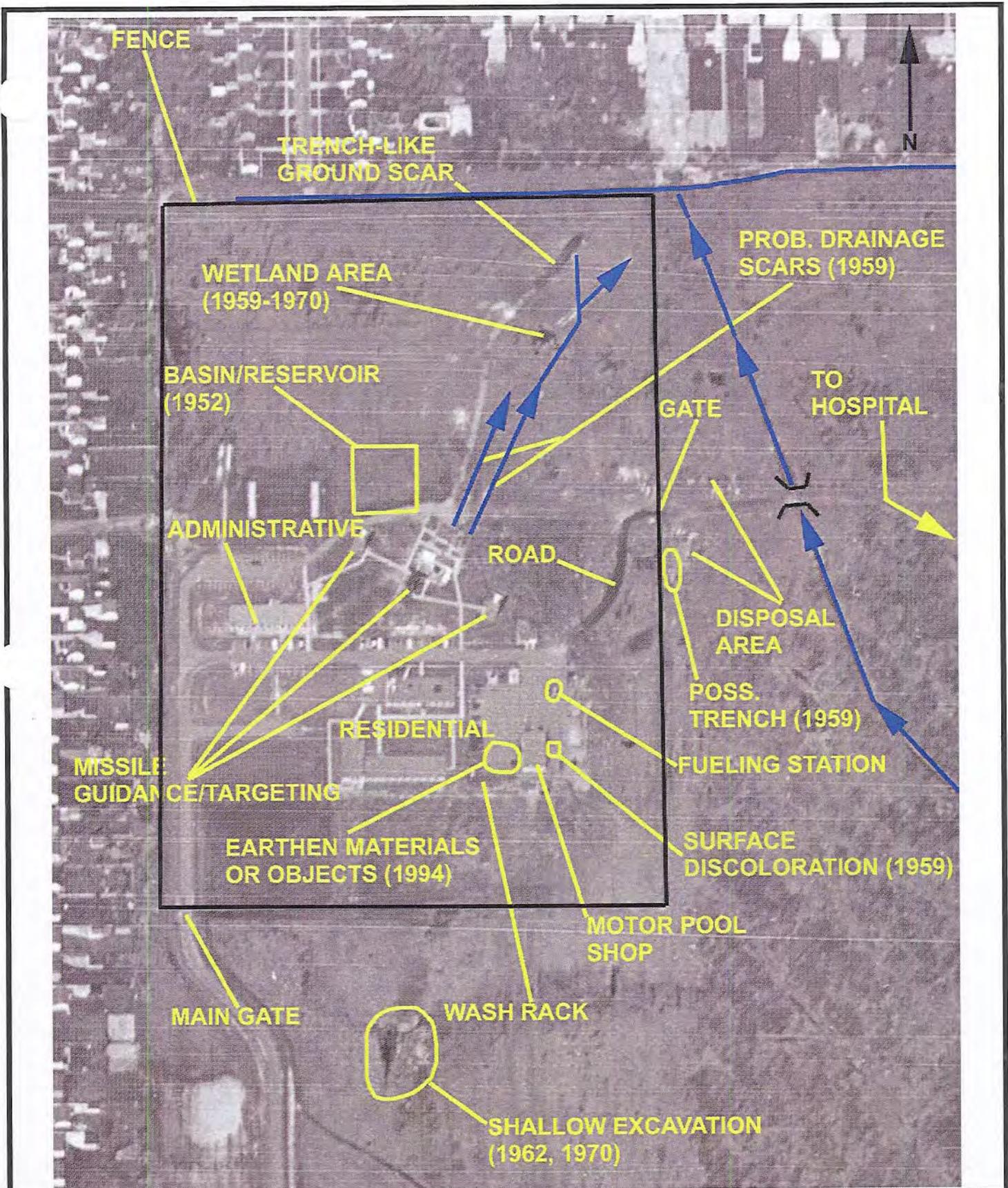
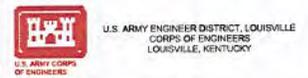
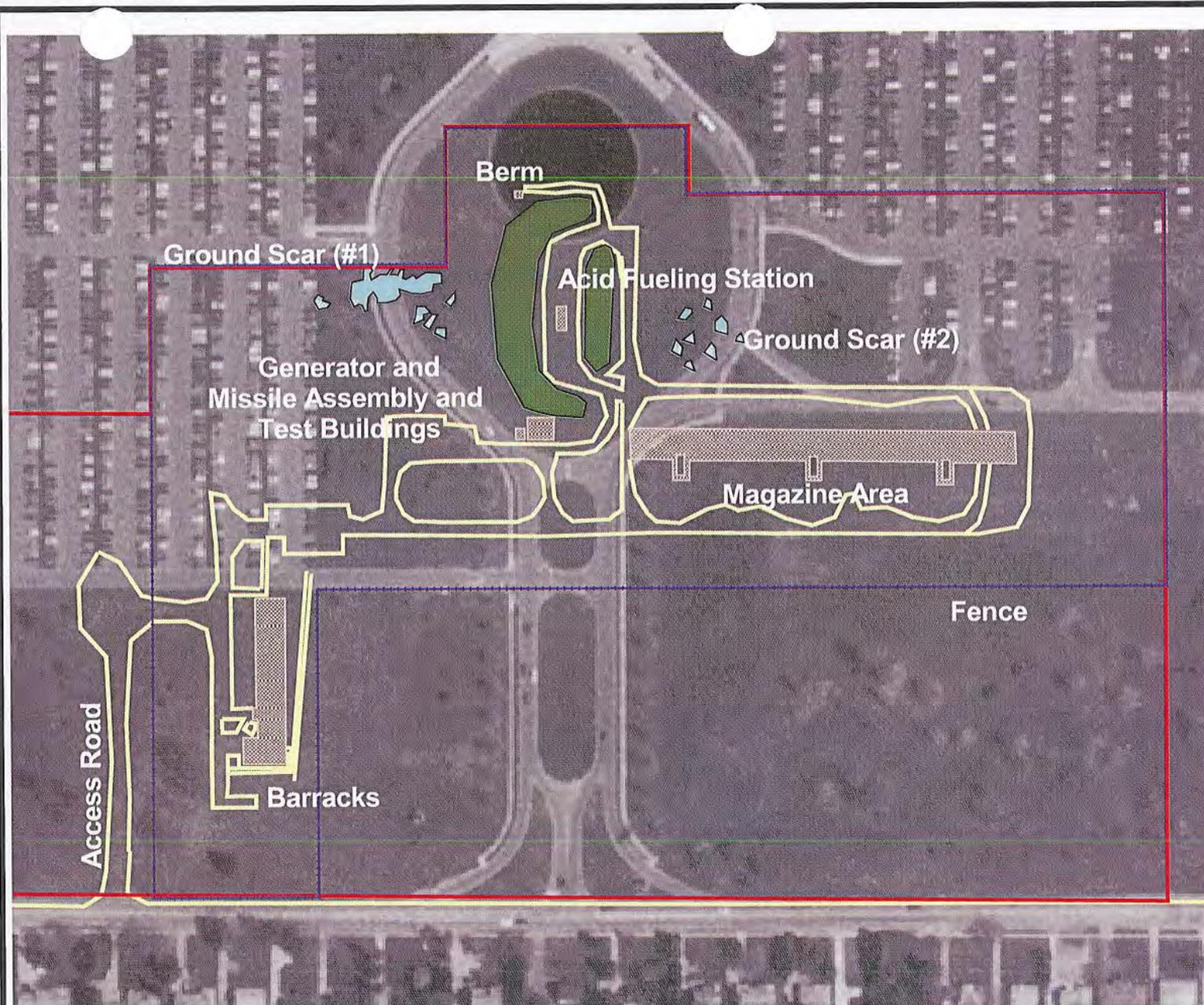


FIGURE 2-4
 ANNOTATED AERIAL PHOTOGRAPH OF NIKE MISSILE SITE CL-59
 CONTROL AREA
 MAY 3, 1962
 PARMA, CUYAHOGA COUNTY, OHIO



PROJECT NO. 0032-005B FILE NO. CL-58APR



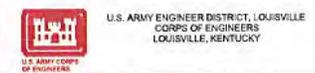
Legend

-  Demolished Structures
-  Fenceline

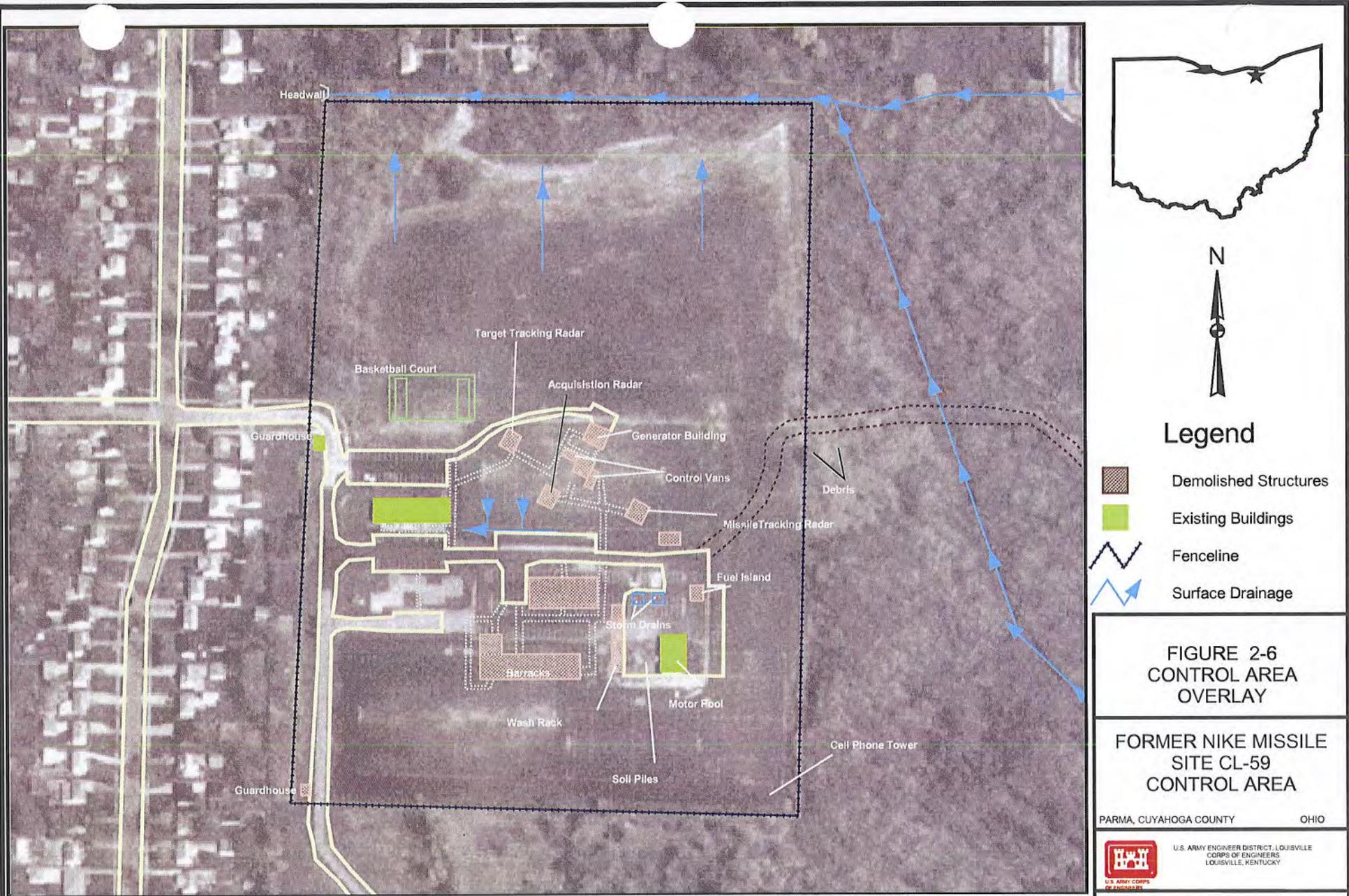
**FIGURE 2-5
LAUNCH AREA
OVERLAY**

**FORMER NIKE MISSILE
SITE CL-59
LAUNCH AREA**

PARMA, CUYAHOGA COUNTY OHIO



Source: Sebesta & Associates, Inc., 1998; USGS Digital Orthophoto Quadrangle (DOQ) Data, Berea, 1994; Aerial Photography, May 3, 1962



Legend

-  Demolished Structures
-  Existing Buildings
-  Fenceline
-  Surface Drainage

**FIGURE 2-6
CONTROL AREA
OVERLAY**

**FORMER NIKE MISSILE
SITE CL-59
CONTROL AREA**

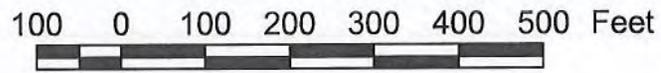
PARMA, CUYAHOGA COUNTY OHIO



U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY



PROJECT NO. 0032-005B FILE NO. CL-59 APR



Source: Sebesta & Associates, Inc. 1998; USGS Digital Orthophoto Quadrangle (DOQ) Data, Berea, 1994; Aerial Photography, May 3, 1962

3. GROUNDWATER PATHWAY

3.1 Hydrogeologic Setting

The former Nike Missile site lies in the Appalachian Plateaus physiographic province. Within this province, the site lies in the Killbuck-Glaciated Allegheny Plateaus (ODGS, 1998). The soils in the area are the Mahoning Series. Mahoning is made up of deep soils that are somewhat poorly drained and slowly or very slowly permeable. These soils were formed in glacial till plains and on higher parts of Lake Plains that do not have a lacustrine mantle. Mahoning is made up of silt loam between 0-7 inches, silty clay loam, clay loam, silty clay from 7-39 inches, and clay loam, silty clay loam from 39-60 inches (USDA, 1980).

The surficial geology is mapped as ground moraine, flat to gently undulating. These moraine deposits consist mostly of clayey till (ODGS, 1999). Nearby monitoring well logs (0.5 miles east of the site) encountered clay and sandy clay with lesser amounts of sands and gravel within 15 feet of the ground surface. Groundwater was found to be between 7 and 8 feet below the ground surface. Evaluation of shallow groundwater flow direction and continuity across the site was beyond the scope of this investigation and will be considered in future studies (ODNR, 1996 1997a,b, c).

Bedrock in the area is mapped as the Cuyahoga Formation. The Cuyahoga Formation consists of gray to brown shale and interbedded sandstone and siltstone. The bedding is thin to thick, planar to lenticular. The thickness of the formation ranges from 0 to 180 where mapped in portions of northern Ohio (ODGS, 1996).

3.2 Groundwater Targets

The majority of the population within a 4-mile radius of the Launch and Control Areas relies on municipal water provided by the Cleveland Water Department. The system obtains its water from Lake Erie (Rogers, 2002). There are no municipal groundwater sources within a 4-mile radius of the site.

The Cuyahoga County Board of Health reports that there are no wells in use within a mile of either the Launch or the Control Area. However, there are some wells in use within the four-mile radius (Seifert, 2001).

3.3 Groundwater Conclusions

There are no municipal groundwater sources located within a 4-mile radius of the site. Although some private groundwater usage exists within 4-miles of the site, there are no private wells within one-mile. There is no evidence to indicate that hazardous materials were disposed of on-site but hazardous chemicals are known to have been used at former Nike Sites and were likely used at CL-59. The potential for a release of contamination to shallow groundwater exists.

4. Surface Water Pathway

4.1 Hydrologic Setting

Surface water runoff from the Nike Launch Area flows south. It is captured by storm water drains along West Pleasant Valley Road which are discharge to a small unnamed creek located about 150-feet south of the site (Wangler, 2001; Plexus, 2001; USGS, 1963a). The creek flows west for 1-mile and enters Baldwin Creek (USGS, 1963a, c, d, e). Baldwin Creek winds west for 5.1 miles passes Coe Lake. When needed, stream flow from Baldwin Creek is diverted into Coe Lake, which is used as a backup water supply for the city of Berea (OEPA, 2000a). Coe Lake drains into Baldwin Creek which flows for 0.5-miles until its confluence with the East Branch Rocky River. The river winds northerly for 5-miles to its confluence with the West Branch Rocky River where the river becomes Rocky River. Rocky River winds northward to the extent of the 15-mile surface water migration pathway (USGS, 1963a, c, d, e).

Surface water from the Control Area is captured by a 42-inch diameter storm drain in the northwest corner of Nathan Hale Park. The storm drain flows north and east for approximately 1¼ miles and discharges to Big Creek. Big Creek flows in a generally northerly and then easterly direction for approximately 10 miles to its confluence with the Cuyahoga River where the 15-stream mile pathway ends. A very small portion of the storm water run off from the Control Area may be captured by a 36-inch storm drain at the end of Orchard Boulevard (Neff, 2001).

Under Ohio Administrative Code (OAC) 3745-1-20, Baldwin Creek and the Rocky River (river mile 12.1 to the mouth) are state resource waters with the following use designations:

- Aquatic life habitat – warm water habitat
- Water supply – agricultural and industrial water supplies (Rocky River and Baldwin Creek) and public water supply (Baldwin Creek only)
- Recreation – primary contact recreation (OAC, undated).

The use designations are based on the results of a biological field assessment performed by OEPA (OEPA, 2000b; OEPA, 1999).

Altered habitat and urban runoff largely mask impacts to Baldwin Creek from wastewater treatment plants. Habitat impairments in Baldwin Creek are caused by habitat alterations, flow alteration, nutrients, and to a lesser extent by pathogens. The sources of impairments are urban runoff, channelization/development, stream bank destabilization and to a lesser extent by municipal point sources (OEPA, 2000b). Two wastewater treatment plants discharge to Baldwin Creek, one upstream of influence from the Nike site and one downstream (OEPA, 2000a). Coe Lake (water body ID# OH87 05-090) is 23 acres and listed as usable for water supply and recreation. Coe Lake has been identified as impaired due to agriculture, urban runoff, land development, highway maintenance and runoff, and municipal point sources (OEPA, 2000a). The East Branch Rocky River is impacted from upstream of the confluence with Baldwin Creek to the mouth of the river by the Strongsville B wastewater treatment plant. The causes of impairment in the East Branch Rocky River are mainly nutrients and flow alteration with a smaller contribution from pathogens. The sources of the impairments are municipal point

sources and other urban runoff. Sediment sampling in the East Branch Rocky River found cadmium, copper, and zinc at highly elevated levels. The Rocky River is largely in an urban watershed and the cumulative effects of a high proportion of treated effluent and impacts associated with urban runoff have prevented the limit of full attainment of the warmwater habitat use. Sediment sampling in the Rocky River found copper, iron, and zinc at highly elevated levels (OEPA, 2000b).

Under Ohio Administrative Code (OAC) 3745-1-26, Big Creek and the Cuyahoga River (river mile 7.2 to the mouth) have the following use designations:

- State resource water – Big Creek in Cleveland Metro Park
- Aquatic life habitat – warm water habitat (Big Creek and a portion of Cuyahoga River)
- Water supply – agricultural and industrial water supplies (Big Creek and a portion of Cuyahoga River)
- Recreation – primary contact recreation (Big Creek and a portion of Cuyahoga River) (OAC, undated).

In the early 1980s, grossly polluted conditions were documented in Big Creek. Since this time water quality has improved but the biological communities have still not attained the warmwater habitat criteria. Urban runoff and spills are a major problem within the basin. Contamination from the Research Oil Company facility may contribute to impacts near the mouth of the creek. Habitat impairments are caused to a large extent by organic enrichment and to a lesser degree by flow alteration, oil and grease, and other unknown causes. The sources of impairment are combined sewer overflow, urban runoff, non-industrial permitted discharges, and spills. Biological communities in the Cuyahoga River remain in the poor to very poor range as a result of severe habitat limitations associated with dredging of the stream channel. Habitat impairments in the river are caused to a large extent by ammonia and habitat alterations and to a lesser degree by organic enrichment and zinc. The sources of impairment are dredging, contaminated sediments, combined sewer overflow, spills, and major industrial point sources (OEPA, 2000b).

Based on the historic aerial photographs, it appears that surface water from the Launch Area was previously conveyed away from the site by a ditch around the perimeter that discharged to an open area to the north (refer to Figure 2-2). The ditch was not noted during the site reconnaissance is believed to have been graded over.

4.2 Surface Water Targets

As stated previously, the population within a 4-mile radius relies on municipal water provided by the Cleveland Water Department, which obtains its water from Lake Erie (Rogers, 2002). The intakes are not along the 15-mile surface water pathway (USGS, 1963a,b,c,d). The Cuyahoga County Board of Health reports that they know of no intakes along the surface water pathway (Siefert, 2001).

There are seven species along the Launch and Control Area 15-mile surface water migration pathways with special status. The Bigmouth Shiner (*Notropis dorsalis*) is an Ohio threatened special animal and inhabits Baldwin Creek, approximately 4.2-stream miles from the Launch Area. The Canadian Buffalo-Berry (*Shepherdia canadensis*) is an Ohio potentially threatened

special plant and is found in three portions of the East Branch Rocky River; approximately 10.5-stream miles, 12.1-stream miles, and 12.3-stream miles from the Launch Area. Round-Leaved Dogwood (*Cornus rugosa*) is an Ohio potentially threatened special plant and inhabits a portion of the East Branch Rocky River approximately 10.5-stream miles from the site. Ground Juniper (*Juniperus communis*) is an Ohio endangered special plant and inhabits the East Branch Rocky River approximately 10.5-stream miles from the launch area. Bewick's Wren (*Thryomanes bewickii*) is an Ohio endangered special plant and inhabits a portion of the Rocky River approximately 12.7-stream miles from the launch area. The Solitary Vireo (*Vireo solitarius*) and the Wood Turtle (*Clemmys insculpta*) are listed as special animals by the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, but are not legally recognized by the state of Ohio as a potentially threatened, threatened, or endangered animal. The bird and the turtle inhabit portions of the Rocky River, approximately 12.5 and 12.65-stream miles from the launch area, respectively (ODNR, 2000)

The Rocky River is used for fishing (Siefert, 2001).

The Rocky River and Big Creek portions of the surface water pathway lie within reservations of the Cleveland Metro Park District. A portion of Baldwin Creek flows through the Big Creek Reservation (ODNR, 2000).

4.3 Surface Water Conclusions

There are no indications of a release of contaminants to surface water from either the Launch or Control Areas. Surface water is not used for potable purposes along the surface water migration pathway. Some of the water bodies along the surface water pathway are inhabited by species with special status and surface water is likely used for recreational purposes.

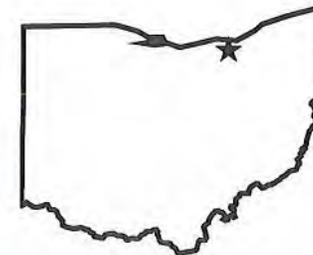
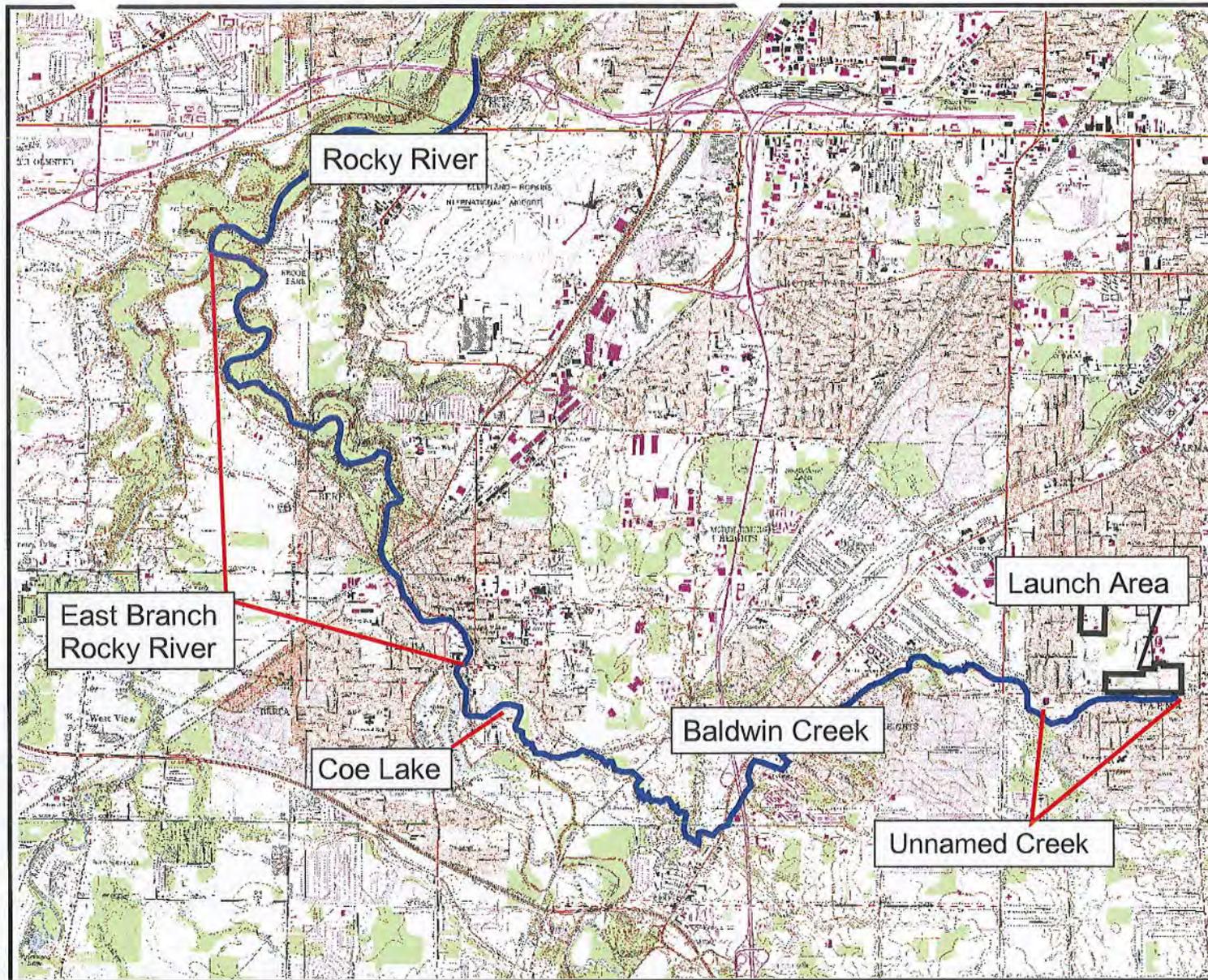


FIGURE 4-1
15-STREAM MILE
SURFACE WATER
PATHWAY

FORMER NIKE MISSILE
SITE CL-59
LAUNCH AREA

PARMA, CUYAHOGA COUNTY OHIO



U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY



PROJECT NO.
0032-0018

FILE NO.
PATHWAY APR



Source: 7.5 MINUTE QUADRANGLE BEREA, OHIO, 1963 (PHOTOREVISED, 1984); LAKEWOOD, 1963 (PHOTOREVISED, 1985); NORTH OLMSTED, 1963 (PHOTOREVISED, 1985); WEST VIEW, 1963 (PHOTOREVISED, 1985).

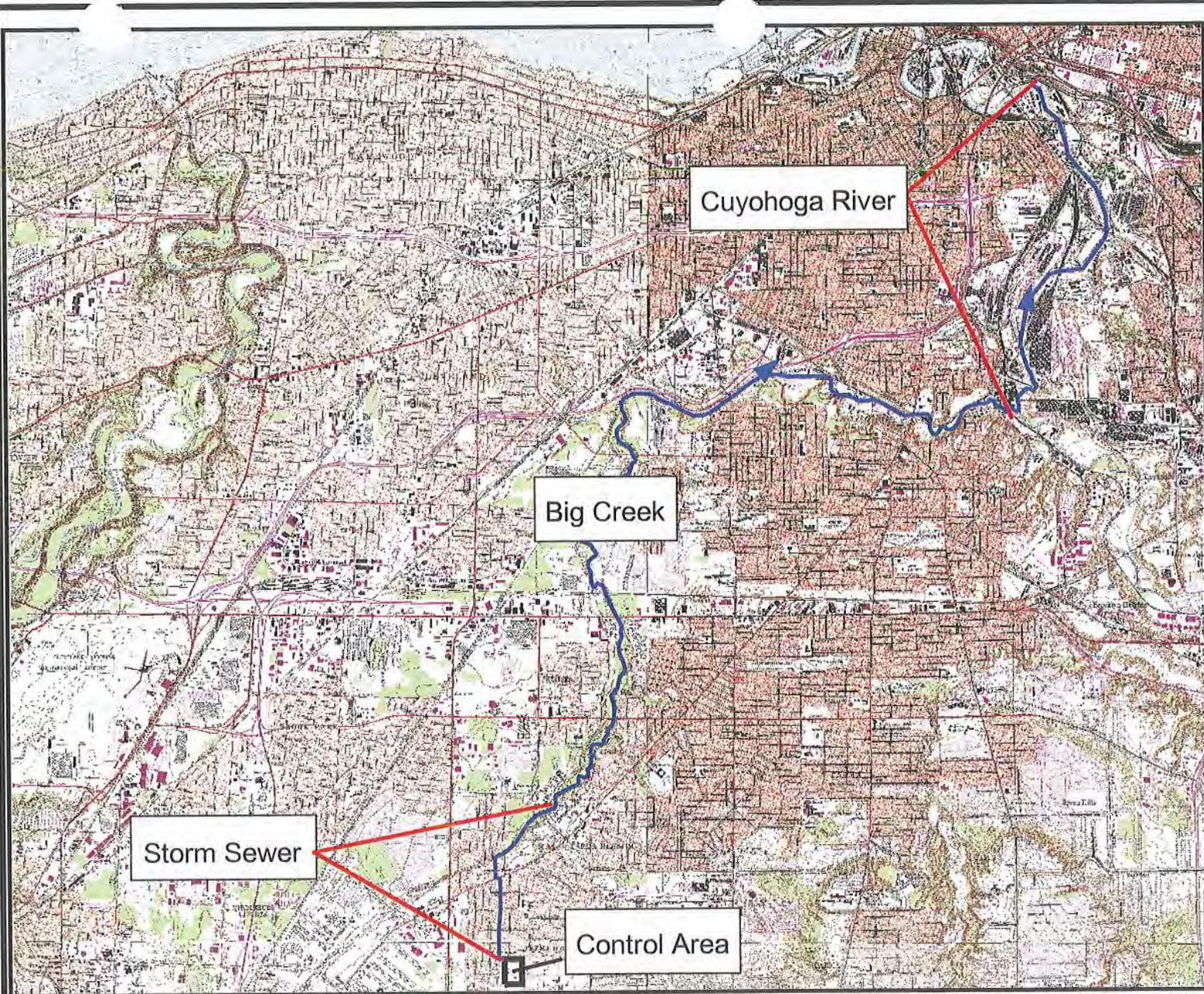


FIGURE 4-2
15-STREAM MILE
SURFACE WATER
PATHWAY

FORMER NIKE MISSILE
SITE CL-59
CONTROL AREA

PARMA, CUYAHOGA COUNTY OHIO



U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
LOUISVILLE, KENTUCKY



Source: 7.5 MINUTE QUADRANGLE BERE A, OHIO, 1963 (PHOTOREVISED, 1984); BROADVIEW HEIGHTS, OHIO, 1994;
CLEVELAND SOUTH, 1963 (PHOTOREVISED, 1984); LAKEWOOD, 1963 (PHOTOREVISED, 1985).

PROJECT NO. FILE NO.
0032-005B path-way APR

5. SOIL EXPOSURE AND AIR PATHWAYS

5.1 Physical Conditions

The Launch Area is well vegetated and all of its related structures have been demolished or filled. The site is fairly flat with no evidence of the Launch Area remaining. The site is open with no restriction to access by the public. No blowing dust, odors, stressed vegetation, debris or exposed waste was noted during the August 2000 site reconnaissance or the May 2001 site reconnaissance (Plexus, 2001).

A former maintenance building in Nike Park is used as a garage by the City of Parma. A very small amount of concrete and metal debris was observed in the wooded areas on the northern portion of Nike Park (Plexus, 2001).

The Control Area is also well vegetated and the three remaining buildings are maintained and used by the City of Parma Heights. The site is open with no restriction to access by the public. No blowing dust, odors, stressed vegetation, debris or exposed waste was noted inside the fenced area during the May 2001 site reconnaissance. Building debris and a slag-like material were observed just east of the fenced Control Area (Plexus, 2001).

5.2 Soil and Air Targets

The Launch Area is used as open space. No workers except for those performing grounds maintenance are present on-site. The Control Area is now parkland containing playgrounds, baseball and soccer fields (Plexus, 2001).

The total population within a 4-mile radius of the Launch Area is 124,658. The nearest residence is south of the Launch Area on West Pleasant Valley Road within 200 feet of the subject site (USGS, 1963a; Plexus, 2001). Population within ¼ mile is approximately 652 between ¼ and ½ mile 1,978, ½ and 1 mile is 7,427, between 1 and 2 miles is 25,852, 2 and 3 miles is 52,552, between 3 and 4 miles is 72,106 (USEPA, 2000).

The total population within a 4-mile radius of the Control Area is 129,322 people. The nearest residence is west of the Control Area on Parma Park Boulevard within 500 feet of the subject site (USGS, 1963a; Plexus, 2001). Population within ¼ mile is approximately 516 between ¼ and ½ mile 2,264, ½ and 1 mile is 8,770, between 1 and 2 miles is 24,717, 2 and 3 miles is 45,540, between 3 and 4 miles is 47,511 (USEPA, 2000).

There are approximately 293-acres of scattered wetlands within a 4-mile radius of the Launch and Control Areas. The nearest is about 0.7-acres and lies approximately 500 feet north of the Launch Area and borders the east perimeter of the Control Area. The distribution of wetlands is approximately as follows: 10 acres between ½ and 1 mile; 22 acres between 1 and 2 miles; 40 acres between 2 and 3 miles; and 218 acres between 3 and 4 miles (USFWS, 1977a, b, c, d).

The Launch and Control Areas lie within the range of the Indiana bat (*Myotis sodalis*) and the piping plover (*Charadrius melodus*) both are Federally listed endangered species. The presence of the piping plover is not expected due to the location of the sites. The sites also lie within the

range of the eastern massasauga (*Sistrurus catenatus catenatus*), a docile rattlesnake that is a federal candidate species (Lammers, 2001). The Fish and Wildlife Service did not identify either Indiana bat or the eastern massasauga as being present on the sites; only that the sites lie within the range of the species.

The Cleveland Metro Park's Big Creek Reservation lies about one mile north of the Control Area and the Rocky River Reservation lies about 3.5 miles southwest of the Nike Site (ODNR, 2000). In addition, portions of the former Nike Site lie on the current Nathan Hale and Nike Parks (Plexus, 2001).

5.3 Soil Exposure and Air Pathway Conclusions

The soil exposure pathway appears to pose a minimal threat at the Former Nike CL-59 Launch and Control Areas. As there is no evidence that any waste was deposited at the surface in the past, or is exposed at the surface currently (except for small amounts of building debris), a release to the air is not suspected. In addition, no odors were detected, there was no indication of any blowing dust or soil during the site reconnaissance, and the areas appear to be regularly maintained.

6. SUMMARY AND CONCLUSIONS

Former Nike Site CL-59 was operated by the U.S. Army from 1956 through 1961. After deactivation, the site was briefly used to support Army Reserve training and other Army activities. The CL-59 Launch Area had three underground missile magazines. The site was equipped with 30 Ajax Missiles and 12 Ajax type launchers. Ajax Missiles had a solid fueled booster, a liquid fueled sustainer motor, and three high-explosive warheads. Other buildings at the Launch Area included a barracks, a Missile Assembly and Test Building, and a Generator Building.

Cuyahoga Community College occupies the former Launch Area. The college demolished the western most of the three underground Nike missile magazines in 1972. In the late 1970's, the other two missile magazines were filled in with sand from an unknown source. The buildings at the Launch Area were demolished as part of the school development. The college has no records available to indicate if any tanks were removed as part of the demolition or if any contamination was encountered. However, no indication of the presence of USTs was noted during the site reconnaissance. The college used neither the missile magazines nor the other Launch Area buildings.

Nathan Hale and Nike Parks now occupy the Former Control Area. In October 2000, two USTs and associated soil contamination were removed by USACE. Historic aerial photographs identified possible disposal areas immediately east of Nathan Hale Park. During the site reconnaissance several small piles of debris and a slag-like material were observed immediately east of the Former Control Area. A very limited amount of scattered debris was observed in Nike Park.

No documentation was found indicating disposal of hazardous substances at the former Nike CL-59. However, studies at other Nike sites have found that activities at Launch Areas can result in environmental contamination. The following compounds were identified as being used in significant quantities and as being of potential concern on Nike sites: volatile organics (benzene, carbon tetrachloride, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene), petroleum hydrocarbons, chromium, and lead. The volatile organics are associated with cleaning operations and petroleum based fuels (diesel and JP-4). The petroleum hydrocarbons can be present from diesel, JP-4, and hydraulic fluids used on site. The chromium and lead were associated with metal preparation, paint, and battery electrolyte solutions. PCBs may also be present if leakage from transformers occurred. Some Nike sites had seepage pits or a seepage system that would receive liquids from within the buildings and could present a source of contamination.

Analysis of historic aerial photographs was performed as part of the PA. Two ground scars were identified on the northern portions of the site. One scar has a crescent-shaped configuration and is located north of what is presumed to be the Missile Assembly and Test Building. This scar measures approximately 200 feet long (east to west extremes) and approximately 60 feet wide at its greatest width. A faintly visible linear feature runs from the corner of a concrete and asphalt pad on the west side of the building to the scar. The scarred area shows no evidence of being

caused by vehicular activity; however, it may have resulted from the release of liquids. The second scar is situated north of the missile magazines and east of the Acid Fueling Station in an open, grass-covered field. This scar exhibits a generally mottled, disturbed appearance; evidence of vehicular activity is also noted. A portion of this area appears to be mounded and darker in appearance. Vegetative cover that differs from the surrounding grass-covered grounds may be the cause of this darkened condition. This roughly circular scar occupies an area estimated to measure approximately 50 feet in diameter.

If wastes were disposed of on-site, shallow groundwater quality is likely to be affected. However, groundwater use in the area is very limited and there are no wells within one mile of the site.

There is no indication of a release to surface water from site activities. Surface water is not used for potable purposes along the surface water migration pathway. Seven species with special status have been identified along the 15-mile surface water pathway.

Because the Launch Area is well vegetated, no exposed waste or staining was observed during the site reconnaissance, the likelihood of human exposure to contaminated soils is considered minimal. The Control Area is also well vegetated and some debris was noted just east of Nathan Hale Park on school board property, due to the heavy use of the park contact with the debris is considered possible but is not likely to pose a long term exposure risk. Due to the vegetation covering most of the site, the lack of any odors or blowing particulates during the site reconnaissance, no release of contaminants to the air is suspected.

Samples collected should be analyzed for the contaminants usually associated with operations at nearby buildings.

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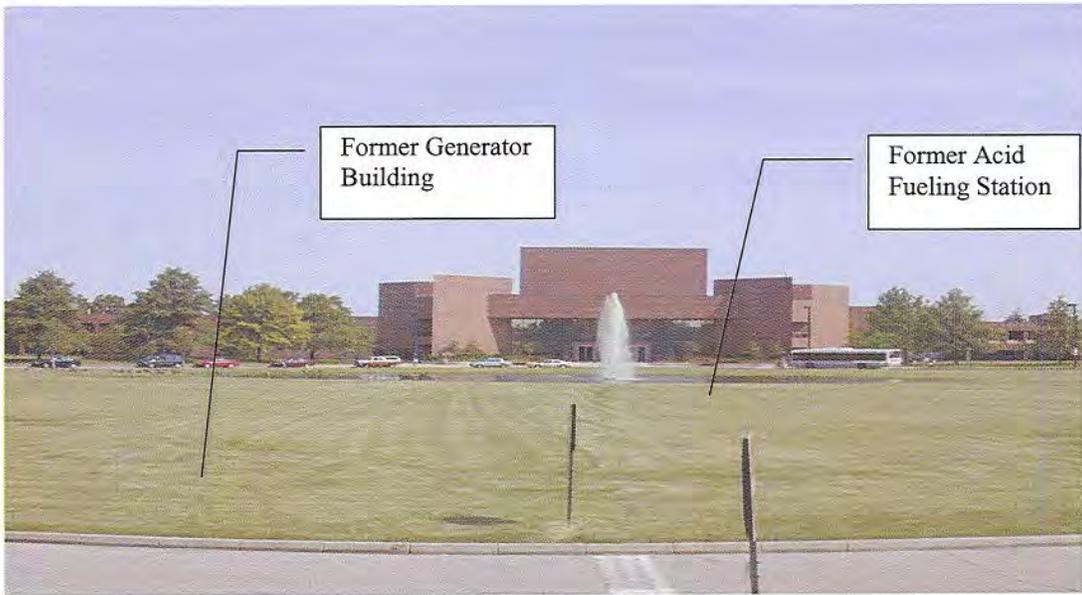
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Appendix A

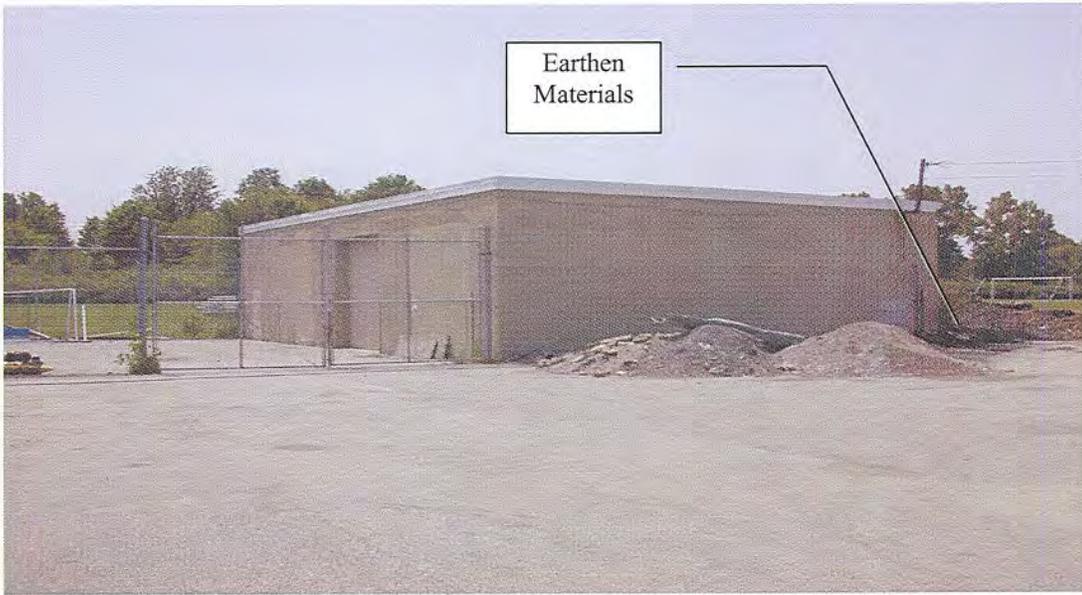
Site Photographs 2001



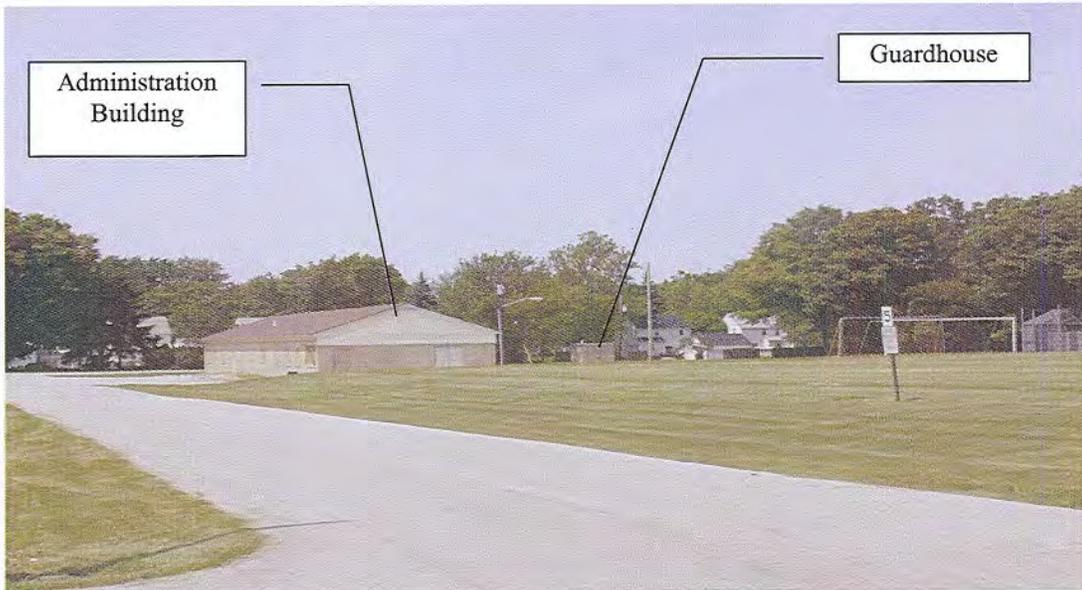
1. Facing north, this is a view of the main entrance of the Cuyahoga County Community College. The Fueling Station, earthen berm, and Generator Building were located within the traffic circle, south of the fountain.



2. Facing west, the field beyond the trees contains the remaining 2 magazine structures at Cuyahoga Community College. The underground structures have been in-filled and buried. The western most magazine, which was demolished, was in the area of the trees, sidewalk and street of this photograph.



3. Facing southeast at Nathan Hale Park, this is a view of the former motor pool building of CL-59. Parma Heights stores the piles of earthen material on site.



4. Facing northwest, this is a view of the former Administration Building and Sentry Guardhouse of CL-59. The entry to Nathan Hale Park is located to the north (right) of the guardhouse. The residential properties located along Parma Park Boulevard can be seen in the background.



5. Facing northwest, this is a view of a debris pile overgrown with weeds. This debris pile is located outside of the fence along the east perimeter of Nathan Hale Park.



6. Facing east, this is a view of the parking lot and fields as one enters Nathan Hale Park.

Appendix B

Database Search Results



The EDR-Radius Map with GeoCheck[®]

**Former NIKE Missile Site CL59
11000 West Pleasant Valley Rd
Parma, OH 44130**

Inquiry Number: 523518.3s

August 01, 2000

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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<u>SECTION</u>	<u>PAGE</u>
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GEOCHECK ADDENDUM

Physical Setting Source Addendum.....	A-1
Physical Setting Source Summary.....	A-2
Physical Setting Source Map.....	A-6
Physical Setting Source Map Findings.....	A-7
Physical Setting Source Records Searched.....	A-10

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer and Other Information

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

11000 WEST PLEASANT VALLEY RD
PARMA, OH 44130

COORDINATES

Latitude (North): 41.363720 - 41° 21' 49.4"
Longitude (West): 81.765810 - 81° 45' 56.9"
Universal Transverse Mercator: Zone 17
UTM X (Meters): 435947.8
UTM Y (Meters): 4579205.0

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: 2441081-C7 BEREA, OH
Source: USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following government records. For more information on this property see page 5 of the attached EDR Radius Map report:

<u>Site</u>	<u>Database(s)</u>	<u>EPA ID</u>
CUYAHOGA COMMUNITY COLLEGE 11000 PLEASANT VALLEY RD PARMA, OH 44130	RCRIS-SQG FINDS UST LUST	OHD980824064

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Delisted NPL..... NPL Deletions
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS..... Corrective Action Report
RCRIS-TSD..... Resource Conservation and Recovery Information System
RCRIS-LQG..... Resource Conservation and Recovery Information System
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

SHWS..... State Haz. Waste

EXECUTIVE SUMMARY

SWF/LF..... Licensed Solid Waste Facilities

FEDERAL ASTM SUPPLEMENTAL

CONSENT..... CONSENT
ROD..... ROD
HMIRS..... Hazardous Materials Information Reporting System
MLTS..... Material Licensing Tracking System
MINES..... Mines Master Index File
NPL Lien..... NPL Liens
PADS..... PCB Activity Database System
RAATS..... RCRA Administrative Action Tracking System
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act

STATE OR LOCAL ASTM SUPPLEMENTAL

OH Spills..... OH Spills
DERR..... Division of Emergency & Remedial Response's Database

EDR PROPRIETARY DATABASES

Coal Gas..... Former Manufactured gas (Coal Gas) Sites.

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS 1 degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the target property includes a tolerance of +/- 10 feet. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

RCRIS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRIS-SQG list, as provided by EDR, and dated 05/18/2000 has revealed that there is 1 RCRIS-SQG site within approximately 0.25 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
<i>PARMA CITY OF</i>	<i>11828 W PLEASANT VALLEY</i>	<i>1/8 - 1/4 W</i>	<i>A3</i>	<i>7</i>

EXECUTIVE SUMMARY

STATE ASTM STANDARD

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Commerce Division of State Fire Marshal's List of Reported Petroleum Underground Storage Tank Release Incidents.

A review of the LUST list, as provided by EDR, and dated 05/17/2000 has revealed that there are 4 LUST sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
NIKE SITE	11828 PLEASANT VALLEY R	1/8 - 1/4 W	A2	6
SHELL OIL CO. #23464291436	10602 PLEASANT VALLEY	1/4 - 1/2 E	B4	7
FORMER MOBIL 05-HF2	10601 PLEASANT VALLEY	1/4 - 1/2 E	B5	9
SIRLS AUTOMOTIVE INC	7541 YORK RD	1/4 - 1/2 SE	6	10

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

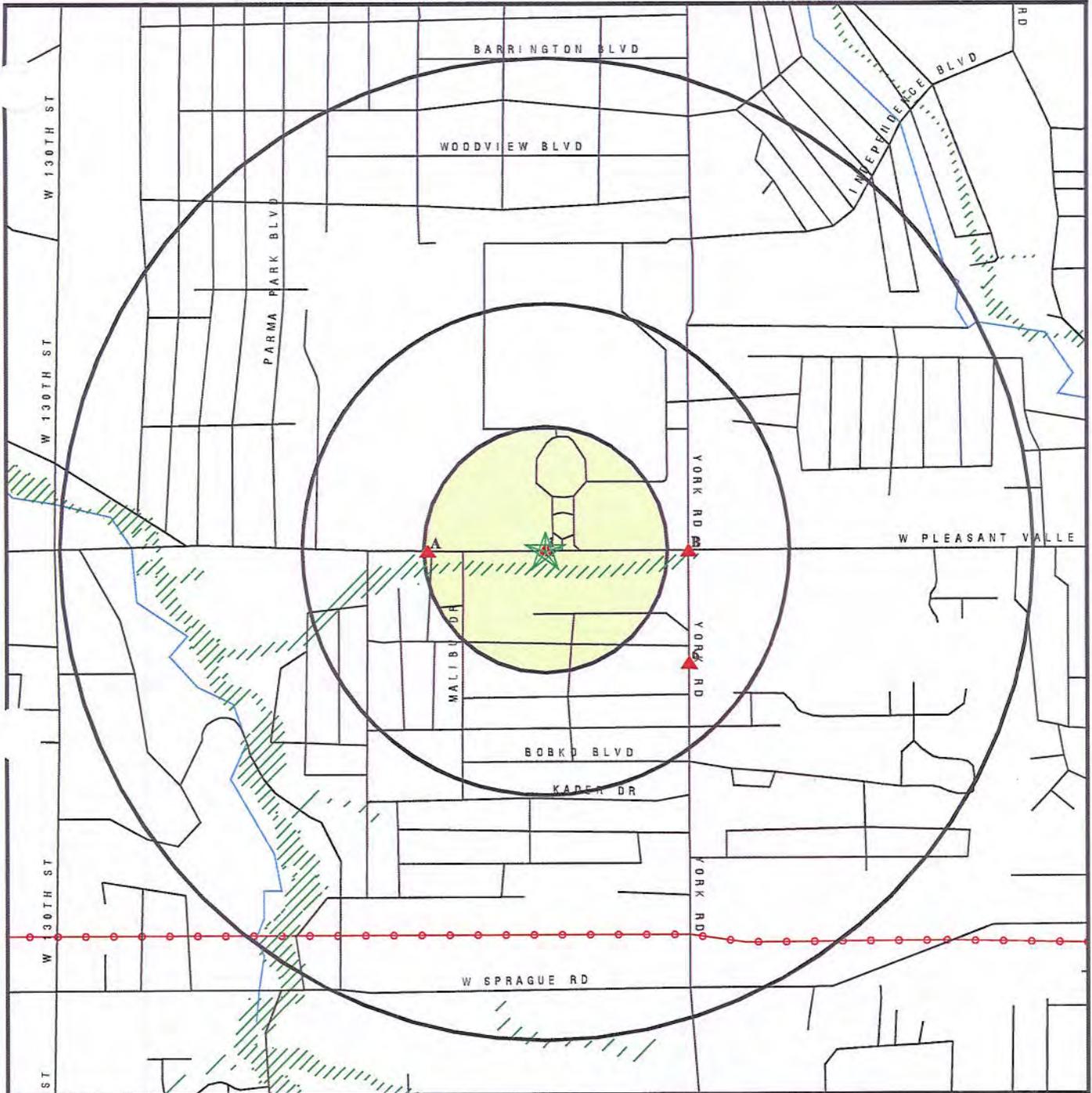
Site Name

PLEASANT VALLEY NURSING HOME
WJW - FOX 8 TRANSMITTER
NIKE SITE CL-59

Database(s)

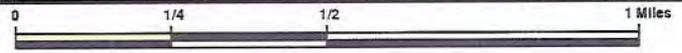
LUST
LUST
DERR

OVERVIEW MAP - 523518.3s - Plexus Scientific Corp.



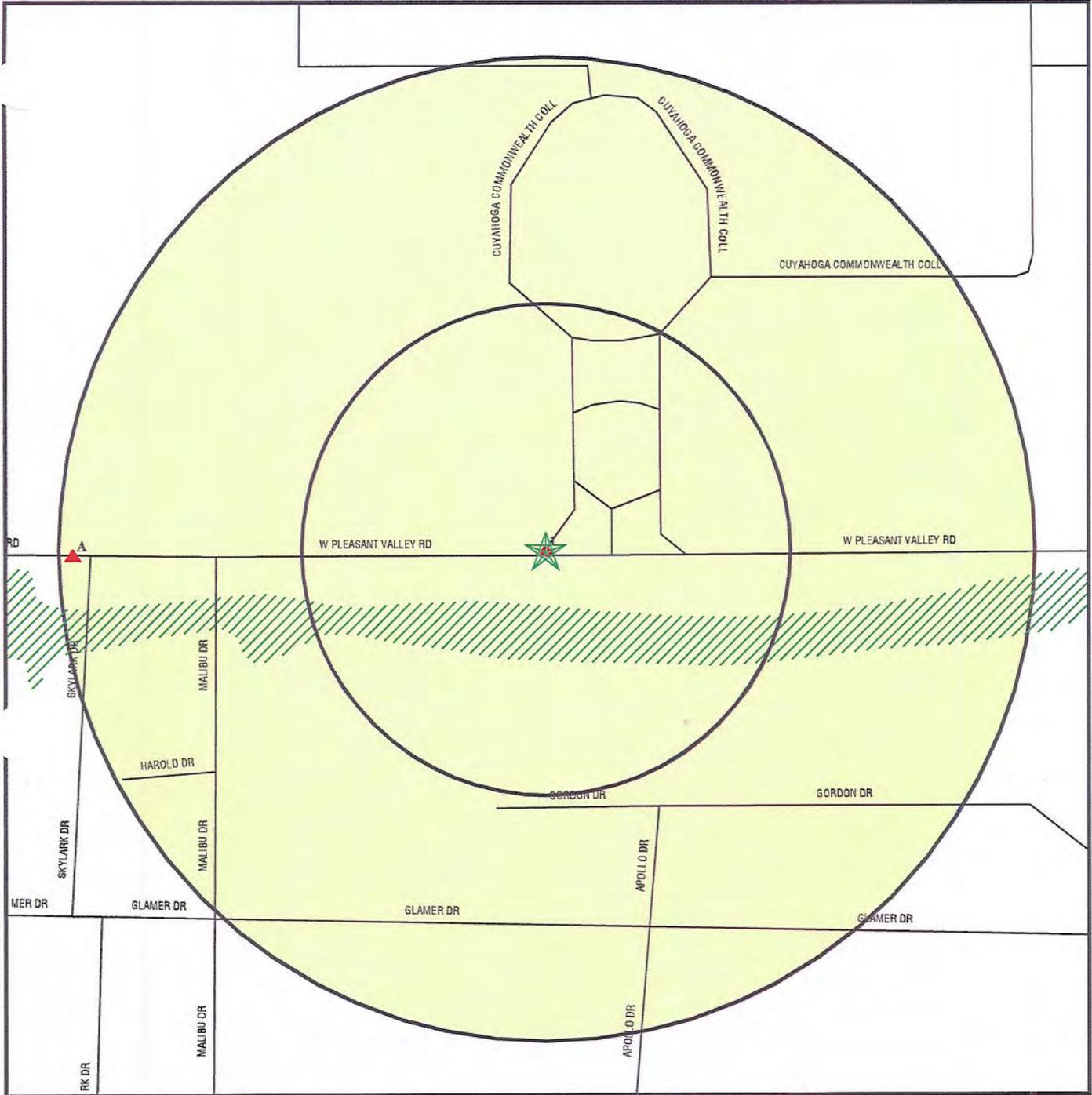
- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Coal Gasification Sites (if requested)
- National Priority List Sites
- Landfill Sites

- ⚡ Power transmission lines
- ⚡ Oil & Gas pipelines
- ▨ 100-year flood zone
- ▨ 500-year flood zone



TARGET PROPERTY: Former NIKE Missile Site CL59 ADDRESS: 11000 West Pleasant Valley Rd CITY/STATE/ZIP: Parma OH 44130 LAT/LONG: 41.3637 / 81.7658	CUSTOMER: Plexus Scientific Corp. CONTACT: Ms. Christine Clegg INQUIRY #: 523518.3s DATE: August 01, 2000 2:17 pm
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------

DETAIL MAP - 523518.3s - Plexus Scientific Corp.



★ Target Property
▲ Sites at elevations higher than or equal to the target property
◆ Sites at elevations lower than the target property
▲ Coal Gasification Sites (if requested)
▫ Sensitive Receptors
▫ National Priority List Sites
▫ Landfill Sites

— Power transmission lines
— Oil & Gas pipelines
▨ 100-year flood zone
▨ 500-year flood zone

0 1/16 1/8 1/4 Miles

N

TARGET PROPERTY: ADDRESS: CITY/STATE/ZIP: LAT/LONG:	Former NIKE Missile Site CL59 11000 West Pleasant Valley Rd Parma OH 44130 41.3637 / 81.7658	CUSTOMER: CONTACT: INQUIRY #: DATE:	Plexus Scientific Corp. Ms. Christine Clegg 523518.3s August 01, 2000 2:17 pm
---------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	-----------------------------------------------------	----------------------------------------------------------------------------------------

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Target Property</u>	<u>Search Distance (Miles)</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
<u>FEDERAL ASTM STANDARD</u>								
NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.	X	0.250	0	1	NR	NR	NR	1
ERNS		TP	NR	NR	NR	NR	NR	0
<u>STATE ASTM STANDARD</u>								
State Haz. Waste		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST	X	0.500	0	1	3	NR	NR	4
UST	X	0.250	0	0	NR	NR	NR	0
<u>FEDERAL ASTM SUPPLEMENTAL</u>								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
FINDS	X	TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
<u>STATE OR LOCAL ASTM SUPPLEMENTAL</u>								
OH Spills		TP	NR	NR	NR	NR	NR	0
DERR		TP	NR	NR	NR	NR	NR	0
<u>EDR PROPRIETARY DATABASES</u>								
Coal Gas		1.000	0	0	0	0	NR	0
AQUIFLOW - see EDR Physical Setting Source Addendum								

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

1 Target Property	CUYAHOGA COMMUNITY COLLEGE 11000 PLEASANT VALLEY RD PARMA, OH 44130	RCRIS-SQG FINDS UST LUST	1000146457 OHD980824064
-------------------------	---------------------------------------------------------------------------	-----------------------------------	----------------------------

RCRIS:
 Owner: CUYAHOGA COMMUNITY COLLEGE
 (312) 555-1212
 Contact: THOMAS SOMERVILLE
 (216) 241-5966
 Record Date: 07/18/1983
 Classification: Small Quantity Generator
 Used Oil Recyc: No
 Violation Status: No violations found

LUST:
 Facility ID: Not reported
 Report No: 1800693
 Facility Tel: Not reported
 Owner: CCC
 Owner Address: OH
 Owner Phone: Not reported
 Operator: TOM SUMERVILLE
 Operator Addr: OH
 Operator Phone: 216-987-4440
 Inspector: Not reported
 Fiscal Track: F900
 Facility Status: No Further Action letter issued
 Classification: Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.
 Trust Fund: Incident eligible for LTF oversight and/or spending - a suspected or confirmed release of petroleum from a regulated UST.
 Emerg Response: 2
 Authorized By: HODNETT
 Added Date: 3/20/90
 Response Srch: Not reported
 Vacant: Not reported
 Remarks: Not reported
 Summary: Not reported
 Incident ID: 180069300
 Facility Track: 0
 Responsibility: Not reported
 Revised Date: 12/24/90
 Coordinator: Northeast Office Corrective Actions
 Response By: Not reported
 Authorize Date: 12/24/90
 Entry By: UNGER
 Priority: 2

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

Database(s)
 EDR ID Number
 EPA ID Number

CUYAHOGA COMMUNITY COLLEGE (Continued)

1000146457

UST:

Facility ID:	0-180589	Tank ID:	1
Capacity:	6,000	Tank Status:	Curr
Tank Age:	11	Material:	Fiberglass
Product:	Gasoline		
Owner:	CUYAHOGA COMMUNITY COLLEGE		
Owner Address:	700 CARNEGIE AVE CLEVELAND, OH 44115		

Piping Material:	Galvanized Steel	Piping Type:	Suction -- No Valve
Facility Mangr:	THOMAS K. SOMERVILLE	Telephone:	(216) 987-4440
Tanks Removed:	Not reported		
Piping Removed:	Not reported		

Facility ID:	0-180589	Tank ID:	2
Capacity:	600	Tank Status:	Curr
Tank Age:	7	Material:	Fiberglass
Product:	Diesel		
Owner:	CUYAHOGA COMMUNITY COLLEGE		
Owner Address:	700 CARNEGIE AVE CLEVELAND, OH 44115		

Piping Material:	Galvanized Steel	Piping Type:	Suction -- No Valve
Facility Mangr:	THOMAS K. SOMERVILLE	Telephone:	(216) 987-4440
Tanks Removed:	Not reported		
Piping Removed:	Not reported		

A2
West
1/8-1/4
1282
Same

NIKE SITE
11828 PLEASANT VALLEY RD
PARMA, OH 44129

LUST

S104518081
N/A

LUST:

Facility ID:	180866	Incident ID:	180142400
Report No:	1801424	Facility Track:	0
Facility Tel:	216-524-5544	Responsibility:	Not reported
Owner:	CITY OF PARMA		
Owner Address:	6611 RIDGE RD PARMA, OH 44129		
Owner Phone:	Not reported		
Operator:	Not reported		
Operator Addr:	OH		
Operator Phone:	Not reported		
Inspector:	Not reported		
Fiscal Track:	F900	Revised Date:	7/27/99
Facility Status:	Initial Corrective Action Program Report		
Coordinator:	Central Office Corrective Actions		

Classification: Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.

Trust Fund: Incident eligible for LTF oversight and/or spending - a suspected or confirmed release of petroleum from a regulated UST.

Emerg Response:	2	Response By:	Not reported
Authorized By:	ZEPP	Authorize Date:	7/26/99
Added Date:	6/27/90	Entry By:	UNGER
Response Srch:	Not reported	Priority:	2
Vacant:	Not reported		
Remarks:	Not reported		
Summary:	Not reported		

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)
Elevation

Site

Database(s) EDR ID Number
EPA ID Number

A3
West
1/8-1/4
1282
Same

PARMA CITY OF
11828 W PLEASANT VALLEY DR
PARMA, OH 44130

RCRIS-SQG **1000294686**
FINDS **OHD986978518**

RCRIS:

Owner: PARMA CITY OF
(312) 555-1212

Contact: ALAN WENZ
(216) 885-8151

Record Date: 04/02/1990

Classification: Small Quantity Generator

Used Oil Recyc: No

Violation Status: No violations found

B4
East
1/4-1/2
1541
Higher

SHELL OIL CO. #23464291436
10602 PLEASANT VALLEY
PARMA, OH 44130

UST **U003129695**
LUST **N/A**

LUST:

Facility ID:	180598	Incident ID:	185004300
Report No:	1850043	Facility Track:	0
Facility Tel:	Not reported	Responsibility:	Not reported
Owner:	Not reported		
Owner Address:	OH		
Owner Phone:	Not reported		
Operator:	Not reported		
Operator Addr:	OH		
Operator Phone:	Not reported		
Inspector:	Not reported	Revised Date:	Not reported
Fiscal Track:	FY95	Coordinator:	Northeast Office Corrective Actions
Facility Status:	Suspected		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Incident eligible for LTF oversight and/or spending - a suspected or confirmed release of petroleum from a regulated UST.		
Emerg Respnse:	2	Response By:	Not reported
Authorized By:	HODNETT	Authorize Date:	1/23/95
Added Date:	1/24/95	Entry By:	UNGER
Response Srch:	Not reported	Priority:	2
Vacant:	Not reported		
Remarks:	CLOSURE REPORT RECEIVED 7/20/98. 2 PRODUCT LINES REMOVED FROM GASOLINE USTS ON 4/23/98.		
Summary:	Not reported		

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

MAP FINDINGS

Database(s)
EDR ID Number
EPA ID Number

SHELL OIL CO. #23464291436 (Continued)

U003129695

Facility ID: 180598 Incident ID: 185004301
Report No: 1850043 Facility Track: 1
Facility Tel: Not reported Responsibility: Not reported
Owner: Not reported
Owner Address: OH
Owner Phone: Not reported
Operator: Not reported
Operator Addr: OH
Operator Phone: Not reported
Inspector: Not reported Revised Date: 5/5/00
Fiscal Track: FY00 Coordinator: Central Office Corrective Actions
Facility Status: TR1
Classification: Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.
Trust Fund: Incident eligible for LTF oversight and/or spending - a suspected or confirmed release of petroleum from a regulated UST.
Emerg Response: 2 Response By: Not reported
Authorized By: ZEPP Authorize Date: 5/4/00
Added Date: 11/8/99 Entry By: NMS
Response Srch: Not reported Priority: 2
Vacant: Not reported
Remarks: Not reported
Summary: Not reported

UST:

Facility ID: 0-180598 Tank ID: 1
Capacity: 8,000 Tank Status: Curr
Tank Age: 28 Material: Fiberglass
Product: Gasoline
Owner: EQUILON ENTERPRISES LLC
Owner Address: PO BOX 20264
DAYTON, OH 45420
County: Montgomery
Piping Material: Fiberglass Piping Type: Pressure
Facility Mangr: MIKE HORVATH Telephone: Not reported
Tanks Removed: Not reported
Piping Removed: Not reported
Facility ID: 0-180598 Tank ID: 2
Capacity: 9,500 Tank Status: Curr
Tank Age: 31 Material: Fiberglass
Product: Gasoline
Owner: EQUILON ENTERPRISES LLC
Owner Address: PO BOX 20264
DAYTON, OH 45420
County: Montgomery
Piping Material: Fiberglass Piping Type: Pressure
Facility Mangr: MIKE HORVATH Telephone: Not reported
Tanks Removed: Not reported
Piping Removed: Not reported

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

SHELL OIL CO. #23464291436 (Continued)

U003129695

Facility ID:	0-180598	Tank ID:	3
Capacity:	9,500	Tank Status:	Curr
Tank Age:	31	Material:	Fiberglass
Product:	Gasoline		
Owner:	EQUILON ENTERPRISES LLC		
Owner Address:	PO BOX 20264 DAYTON, OH 45420 County: Montgomery		
Piping Material:	Fiberglass	Piping Type:	Pressure
Facility Mangr:	MIKE HORVATH	Telephone:	Not reported
Tanks Removed:	Not reported		
Piping Removed:	Not reported		
Facility ID:	0-180598	Tank ID:	4
Capacity:	1,000	Tank Status:	Curr
Tank Age:	13	Material:	Fiberglass
Product:	Used Oil		
Owner:	EQUILON ENTERPRISES LLC		
Owner Address:	PO BOX 20264 DAYTON, OH 45420 County: Montgomery		
Piping Material:	Fiberglass	Piping Type:	Pressure
Facility Mangr:	MIKE HORVATH	Telephone:	Not reported
Tanks Removed:	Not reported		
Piping Removed:	Not reported		

**B5
 East
 1/4-1/2
 1548
 Higher**

**FORMER MOBIL 05-HF2
 10601 PLEASANT VALLEY
 PARMA, OH 44129**

LUST

**S100029537
 N/A**

LUST:

Facility ID:	180497	Incident ID:	180284500
Report No:	1802845	Facility Track:	0
Facility Tel:	Not reported	Responsibility:	Not reported
Owner:	Not reported		
Owner Address:	OH		
Owner Phone:	Not reported		
Operator:	Not reported		
Operator Addr:	OH		
Operator Phone:	Not reported		
Inspector:	Not reported	Revised Date:	4/6/00
Fiscal Track:	FY91	Coordinator:	Central Office Corrective Actions
Facility Status:	Site Assessment Submitted		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Incident eligible for LTF oversight and/or spending - a suspected or confirmed release of petroleum from a regulated UST.		
Emerg Response:	2	Response By:	Not reported
Authorized By:	ZEPP	Authorize Date:	4/4/00
Added Date:	Not reported	Entry By:	UNGER
Response Srch:	Not reported	Priority:	2
Vacant:	Not reported		
Remarks:	Not reported		
Summary:	Not reported		

MAP FINDINGS

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation

Site

Database(s)
 EDR ID Number
 EPA ID Number

6
 SE
 1/4-1/2
 1967
 Higher

SIRLS AUTOMOTIVE INC
 7541 YORK RD
 PARMA, OH 44130

LUST

S101424212
 N/A

LUST:

Facility ID:	181270	Incident ID:	185021500
Report No:	1850215	Facility Track:	0
Facility Tel:	Not reported	Responsibility:	Not reported
Owner:	Not reported		
Owner Address:	OH		
Owner Phone:	Not reported		
Operator:	Not reported		
Operator Addr:	OH		
Operator Phone:	Not reported		
Inspector:	Not reported	Revised Date:	9/8/95
Fiscal Track:	FY95	Coordinator:	Northeast Office Closure
Facility Status:	No Further Action letter issued		
Classification:	Known suspected or confirmed source and responsible person is voluntarily, or under an informal enforcement action, proceeding with investigation of corrective actions.		
Trust Fund:	Closure of an underground storage tank.		
Emerg Respnse:	2	Response By:	Not reported
Authorized By:	HODNETT	Authorize Date:	9/1/95
Added Date:	3/1/95	Entry By:	UNGER
Response Srch:	Not reported	Priority:	2
Vacant:	Not reported		
Remarks:	Not reported		
Summary:	CLOS RPT RECD		

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID
PARMA	S104517662	NIKE SITE CL-59	WEST PLEASANT VALLEY ROAD	44130	DERR	
PARMA	S104265312	PLEASANT VALLEY NURSING HOME	C/O PLEASANT VALLEY / RIDGE		LUST	-0-
PARMA	S104265069	WJW - FOX 8 TRANSMITTER	4501 PLEASANT VALLEY RD		LUST	189331

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List

Source: EPA

Telephone: N/A

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC).

Date of Government Version: 06/13/00

Date Made Active at EDR: 07/06/00

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 06/27/00

Elapsed ASTM days: 9

Date of Last EDR Contact: 05/09/00

DELISTED NPL: NPL Deletions

Source: EPA

Telephone: N/A

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 06/13/00

Date Made Active at EDR: 07/06/00

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 06/27/00

Elapsed ASTM days: 9

Date of Last EDR Contact: 05/09/00

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

Source: EPA

Telephone: 703-413-0223

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/14/00

Date Made Active at EDR: 03/15/00

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/02/00

Elapsed ASTM days: 13

Date of Last EDR Contact: 05/31/00

CERCLIS-NFRAP: No Further Remedial Action Planned

Source: EPA

Telephone: 703-413-0223

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 02/14/00

Date Made Active at EDR: 03/15/00

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/02/00

Elapsed ASTM days: 13

Date of Last EDR Contact: 05/31/00

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CORRACTS: Corrective Action Report

Source: EPA

Telephone: 800-424-9346

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 04/20/00

Date Made Active at EDR: 08/01/00

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 06/12/00

Elapsed ASTM days: 50

Date of Last EDR Contact: 06/12/00

RCRIS: Resource Conservation and Recovery Information System

Source: EPA/NTIS

Telephone: 800-424-9346

Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 05/18/00

Date Made Active at EDR: 08/01/00

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 06/01/00

Elapsed ASTM days: 61

Date of Last EDR Contact: 06/19/00

ERNS: Emergency Response Notification System

Source: EPA/NTIS

Telephone: 202-260-2342

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 05/30/00

Date Made Active at EDR: 07/06/00

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 06/02/00

Elapsed ASTM days: 34

Date of Last EDR Contact: 05/16/00

FEDERAL ASTM SUPPLEMENTAL RECORDS**BRS:** Biennial Reporting System

Source: EPA/NTIS

Telephone: 800-424-9346

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/97

Database Release Frequency: Biennially

Date of Last EDR Contact: 06/19/00

Date of Next Scheduled EDR Contact: 09/18/00

CONSENT: Superfund (CERCLA) Consent Decrees

Source: EPA Regional Offices

Telephone: Varies

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A

Database Release Frequency: Varies

Date of Last EDR Contact: N/A

Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision

Source: NTIS

Telephone: 703-416-0223

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/31/99

Database Release Frequency: Annually

Date of Last EDR Contact: 07/12/00

Date of Next Scheduled EDR Contact: 10/09/00

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report

Source: EPA

Telephone: N/A

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/13/99

Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/13/00

Date of Next Scheduled EDR Contact: 10/09/00

HMIRS: Hazardous Materials Information Reporting System

Source: U.S. Department of Transportation

Telephone: 202-366-4526

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/30/99

Database Release Frequency: Annually

Date of Last EDR Contact: 07/25/00

Date of Next Scheduled EDR Contact: 10/23/00

MLTS: Material Licensing Tracking System

Source: Nuclear Regulatory Commission

Telephone: 301-415-7169

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/23/00

Database Release Frequency: Quarterly

Date of Last EDR Contact: 07/10/00

Date of Next Scheduled EDR Contact: 10/09/00

MINES: Mines Master Index File

Source: Department of Labor, Mine Safety and Health Administration

Telephone: 303-231-5959

Date of Government Version: 08/01/98

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 07/06/00

Date of Next Scheduled EDR Contact: 10/02/00

NPL LIENS: Federal Superfund Liens

Source: EPA

Telephone: 205-564-4267

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91

Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/22/00

Date of Next Scheduled EDR Contact: 08/21/00

PADS: PCB Activity Database System

Source: EPA

Telephone: 202-260-3936

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/01/00

Database Release Frequency: No Update Planned

Date of Last EDR Contact: 05/15/00

Date of Next Scheduled EDR Contact: 08/14/00

RAATS: RCRA Administrative Action Tracking System

Source: EPA

Telephone: 202-564-4104

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95

Database Release Frequency: No Update Planned

Date of Last EDR Contact: 06/12/00

Date of Next Scheduled EDR Contact: 09/11/00

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TRIS: Toxic Chemical Release Inventory System

Source: EPA

Telephone: 202-260-1531

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/97

Database Release Frequency: Annually

Date of Last EDR Contact: 07/21/00

Date of Next Scheduled EDR Contact: 09/25/00

TSCA: Toxic Substances Control Act

Source: EPA

Telephone: 202-260-1444

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/98

Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 07/25/00

Date of Next Scheduled EDR Contact: 10/23/00

STATE OF OHIO ASTM STANDARD RECORDS**SHWS: Master Sites List**

Source: Ohio Environmental Protection Agency

Telephone: 614-644-2068

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 03/01/99

Date Made Active at EDR: 04/21/99

Database Release Frequency: Annually

Date of Data Arrival at EDR: 03/29/99

Elapsed ASTM days: 23

Date of Last EDR Contact: 06/13/00

LF: Licensed Solid Waste Facilities

Source: Ohio Environmental Protection Agency

Telephone: 614-644-2621

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/15/00

Date Made Active at EDR: 06/27/00

Database Release Frequency: Annually

Date of Data Arrival at EDR: 05/22/00

Elapsed ASTM days: 36

Date of Last EDR Contact: 07/25/00

LUST: Leaking UST File

Source: Department of Commerce

Telephone: 614-752-7924

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 05/17/00

Date Made Active at EDR: 07/24/00

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 05/30/00

Elapsed ASTM days: 55

Date of Last EDR Contact: 05/22/00

UST: UST Tank File

Source: Department of Commerce

Telephone: 614-752-7938

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 05/05/00

Date Made Active at EDR: 06/14/00

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 05/22/00

Elapsed ASTM days: 23

Date of Last EDR Contact: 06/19/00

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STATE OF OHIO ASTM SUPPLEMENTAL RECORDS

SPILLS: Emergency Response Database

Source: Ohio EPA

Telephone: 614-644-2084

All reported incidents, spills or releases to the environment.

Date of Government Version: 12/31/98

Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 06/13/00

Date of Next Scheduled EDR Contact: 09/11/00

DERR: Division of Emergency & Remedial Response's Database

Source: Ohio EPA, Div. of Emergency Response

Telephone: 614-644-3538

Sites that may or may not have contamination.

Date of Government Version: 06/01/00

Database Release Frequency: N/A

Date of Last EDR Contact: 06/13/00

Date of Next Scheduled EDR Contact: 09/18/00

EDR PROPRIETARY DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

HISTORICAL AND OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 1999 from the U.S. Fish and Wildlife Service.

GEOCHECK® - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

FORMER NIKE MISSILE SITE CL59
11000 WEST PLEASANT VALLEY RD
PARMA, OH 44130

TARGET PROPERTY COORDINATES

Latitude (North):	41.363720 - 41° 21' 49.4"
Longitude (West):	81.765808 - 81° 45' 56.9"
Universal Transverse Mercator:	Zone 17
UTM X (Meters):	435947.6
UTM Y (Meters):	4579205.0

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property: 2441081-C7 BEREA, OH
Source: USGS 7.5 min quad index

GENERAL TOPOGRAPHIC GRADIENT AT TARGET PROPERTY

Target Property: General West

Source: General Topographic Gradient has been determined from the USGS 1 Degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u>	<u>FEMA Q3 Flood Data Electronic Coverage</u>
CUYAHOGA, OH	YES
Flood Plain Panel at Target Property:	3901230004B / CBPP
Additional Panels in search area:	3901240001B / CBPP
	3901240002B / CBNP
	3901170003B / CBPP
	3901210001B / CBPP

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Coverage</u>
BEREA	NO

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

AQUIFLOW®

Search Radius: 2.000 Miles.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
1	1/4 - 1/2 Mile East	W
A2	1/2 - 1 Mile SSE	NW
A3	1/2 - 1 Mile SSE	N
5	1 - 2 Miles SW	ESE
6	1 - 2 Miles NE	NE
B7	1 - 2 Miles NW	SW
B8	1 - 2 Miles NW	SW
9	1 - 2 Miles NE	NW

For additional site information, refer to Physical Setting Source Map Findings.

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Geologic Code: M
Era: Paleozoic
System: Mississippian
Series: Mississippian

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Somewhat poorly. Soils commonly have a layer with low hydraulic conductivity, wet state high in profile, etc. Depth to water table is 1 to 3 feet.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

Soil Layer Information						
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)
	Upper	Lower		AASHTO Group	Unified Soil	
1	0 inches	9 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60
2	9 inches	36 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.20 Min: 0.00
3	36 inches	60 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.20 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: silty clay loam
loam

Surficial Soil Types: silty clay loam
loam

Shallow Soil Types: loam
silt loam

Deeper Soil Types: stratified
clay
unweathered bedrock

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

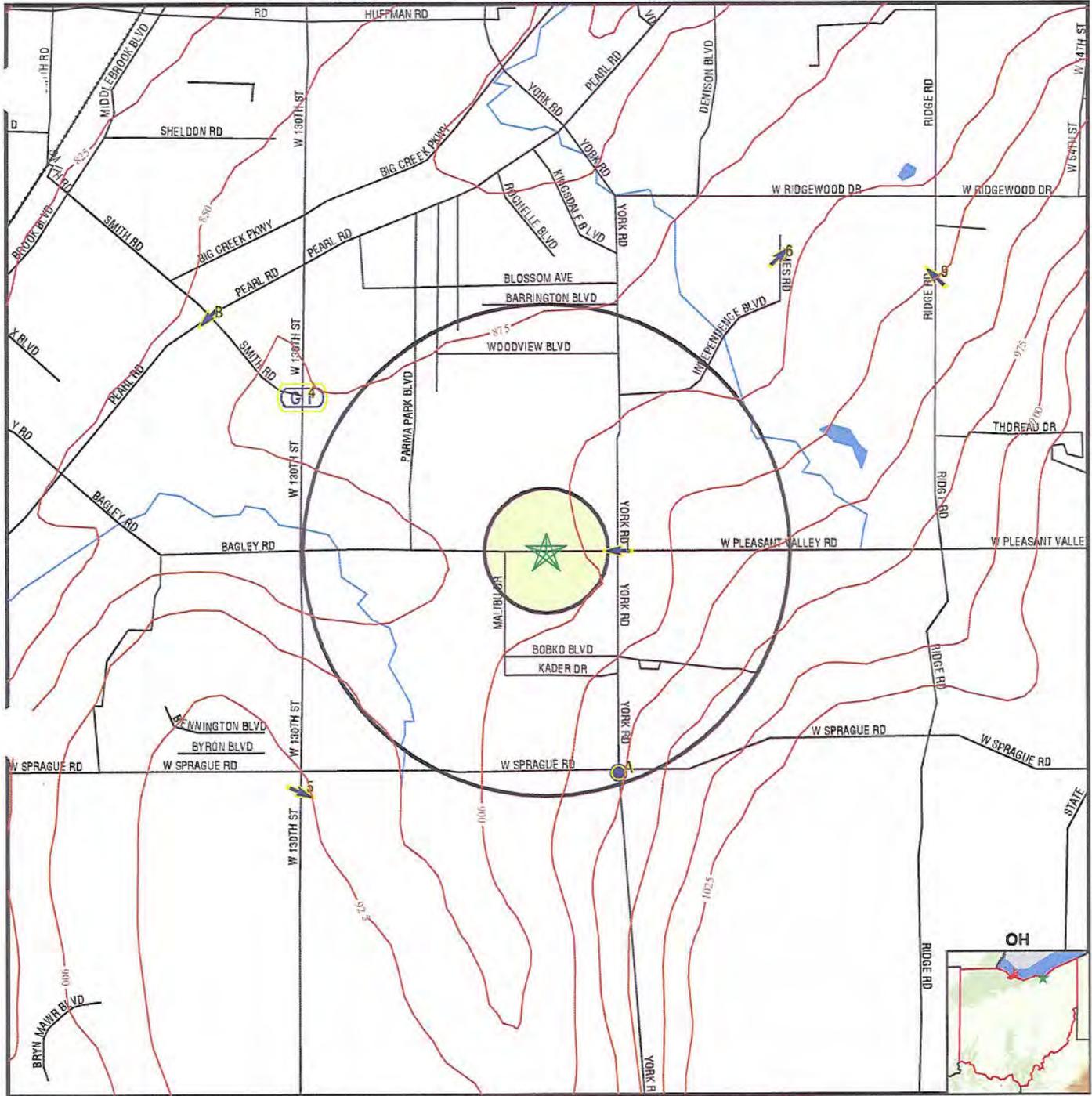
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 523518.3s



- Major Roads
- Contour Lines
- Water Wells
- Public Water Supply Wells
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Cluster of Multiple Icons
- Earthquake epicenter, Richter 5 or greater

TARGET PROPERTY: Former NIKE Missile Site CL59 ADDRESS: 11000 West Pleasant Valley Rd CITY/STATE/ZIP: Parma OH 44130 LAT/LONG: 41.3637 / 81.7658	CUSTOMER: Plexus Scientific Corp. CONTACT: Ms. Christine Clegg INQUIRY #: 523518.3s DATE: August 01, 2000 2:18 pm
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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

1 East 1/4 - 1/2 Mile Higher	Site ID: 1802845-00 Groundwater Flow: W Shallow Water Depth: 6.74 Deep Water Depth: 8.05 Average Water Depth: Not Reported Date: 2/92	AQUIFLOW 14744
A2 SSE 1/2 - 1 Mile Higher	Site ID: 1800486-00 Groundwater Flow: NW Shallow Water Depth: 5.46 Deep Water Depth: 8.74 Average Water Depth: Not Reported Date: 9/95	AQUIFLOW 12659
A3 SSE 1/2 - 1 Mile Higher	Site ID: 1812875-00 Groundwater Flow: N Shallow Water Depth: 5.71 Deep Water Depth: 7.50 Average Water Depth: Not Reported Date: 1/93	AQUIFLOW 12351
4 WNW 1 - 2 Miles Lower	Site ID: 1840182-00 Groundwater Flow: NOT REPORTED Shallow Water Depth: 0.40 Deep Water Depth: 7.00 Average Water Depth: Not Reported Date: 10/15/96	AQUIFLOW 14986
5 SW 1 - 2 Miles Higher	Site ID: 1860779-00 Groundwater Flow: ESE Shallow Water Depth: 7.31 Deep Water Depth: 9.64 Average Water Depth: Not Reported Date: 10/96	AQUIFLOW 11964
6 NE 1 - 2 Miles Higher	Site ID: 1822947 Groundwater Flow: NE Shallow Water Depth: 3 Deep Water Depth: 6 Average Water Depth: Not Reported Date: 4/1994	AQUIFLOW 12549
B7 NW 1 - 2 Miles Lower	Site ID: 1801575-00 Groundwater Flow: SW Shallow Water Depth: 0 Deep Water Depth: 13.61 Average Water Depth: Not Reported Date: 1/98	AQUIFLOW 14942

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database EDR ID Number

B8	Site ID:	1801575-01-00		
NW	Groundwater Flow:	SW	AQUIFLOW	14477
1 - 2 Miles	Shallow Water Depth:	2		
Lower	Deep Water Depth:	6		
	Average Water Depth:	Not Reported		
	Date:	5/1996		

9	Site ID:	1802296-00		
NE	Groundwater Flow:	NW	AQUIFLOW	14884
1 - 2 Miles	Shallow Water Depth:	4.05		
Higher	Deep Water Depth:	8.88		
	Average Water Depth:	Not Reported		
	Date:	3/93		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for CUYAHOGA County: 2

- Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Zip Code: 44130

Number of sites tested: 3

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.000 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	1.733 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 1999 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[®] Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the national Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

Ohio Public Water Systems

Source: Ohio EPA, Division of Drinking and Groundwater
Telephone: 614-644-2752

RADON

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones: Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration



The EDR Radius Map with GeoCheck[®]

**Nike Missile Site CL-59
Parma Park Blvd
Parma, OH 44130**

Inquiry Number: 625828.1s

May 01, 2001

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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Thank you for your business.
 Please contact EDR at 1-800-352-0050
 with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

PARMA PARK BLVD
PARMA, OH 44130

COORDINATES

Latitude (North): 41.370100 - 41° 22' 12.4"
Longitude (West): 81.772600 - 81° 46' 21.4"
Universal Transverse Mercator: Zone 17
UTM X (Meters): 435386.0
UTM Y (Meters): 4579918.5

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: 2441081-C7 BEREA, OH
Source: USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following government records. For more information on this property see page 5 of the attached EDR Radius Map report:

<u>Site</u>	<u>Database(s)</u>	<u>EPA ID</u>
NIKE SITE 11828 PLEASANT VALLEY RD PARMA, OH 44129	LUST	N/A
NIKE SITE CL-59 WEST PLEASANT VALLEY ROAD PARMA, OH 44130	DERR	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRIS-TSD..... Resource Conservation and Recovery Information System
RCRIS-LQG..... Resource Conservation and Recovery Information System

EXECUTIVE SUMMARY

RCRIS-SQG..... Resource Conservation and Recovery Information System
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

SHWS..... Master Sites List
SWF/LF..... Licensed Solid Waste Facilities
UST..... Underground Storage Tank Tank File

FEDERAL ASTM SUPPLEMENTAL

CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
Delisted NPL..... National Priority List Deletions
FINDS..... Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS..... Hazardous Materials Information Reporting System
MLTS..... Material Licensing Tracking System
MINES..... Mines Master Index File
NPL Liens..... Federal Superfund Liens
PADS..... PCB Activity Database System
RAATS..... RCRA Administrative Action Tracking System
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

OH Spills..... Emergency Response Database

EDR PROPRIETARY DATABASES

Coal Gas..... Former Manufactured Gas (Coal Gas) Sites

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS 1 degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the target property includes a tolerance of +/- 10 feet. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

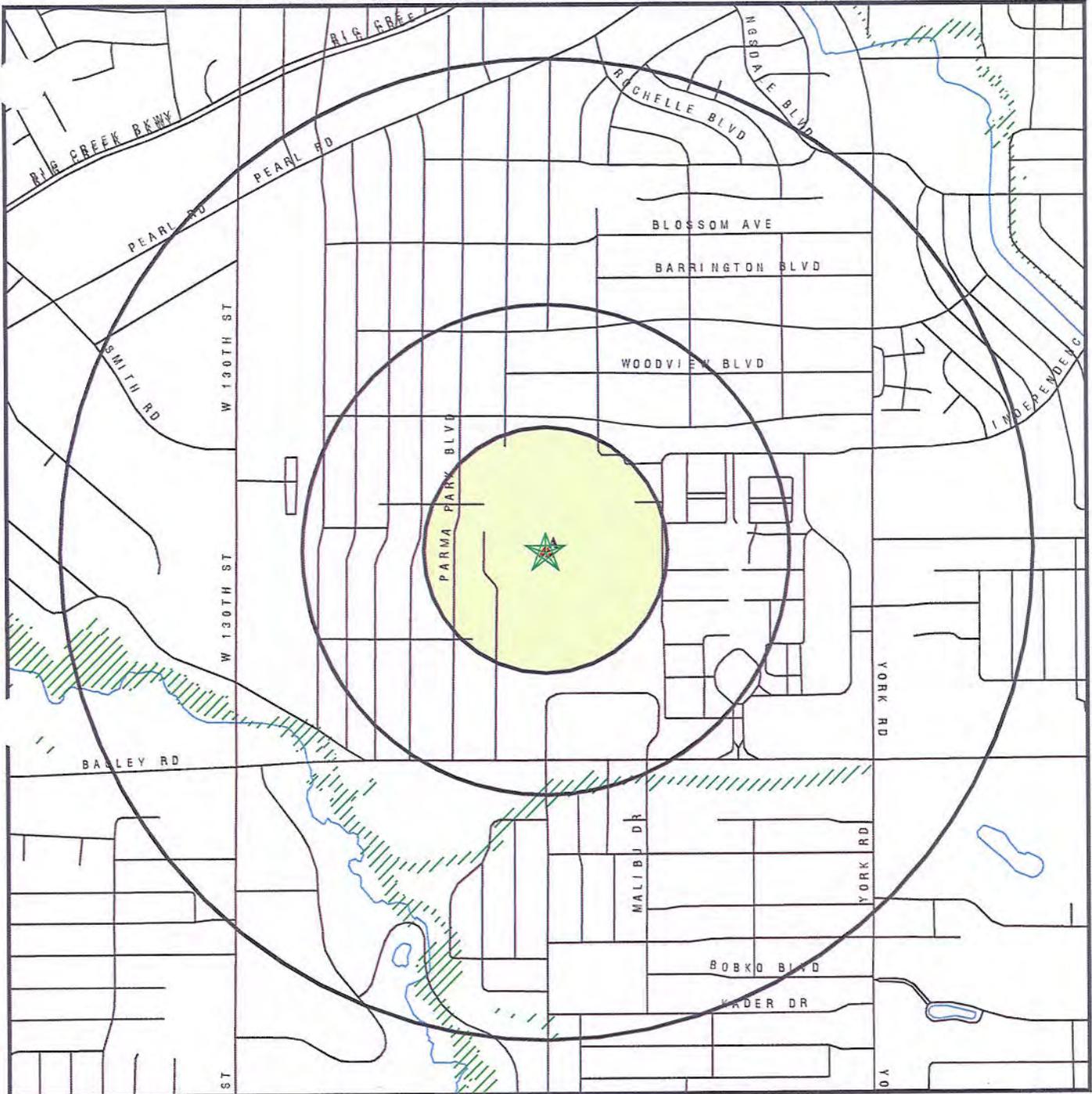
Site Name

Database(s)

WJW- FOX 8 TRANSMITTER
PLEASANT VALLEY NURSING HOME
FORMER NIKE CL-59 SITE

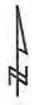
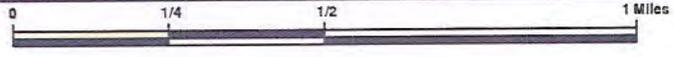
LUST
LUST
LUST

OVERVIEW MAP - 625828.1s - Plexus Scientific Corp.



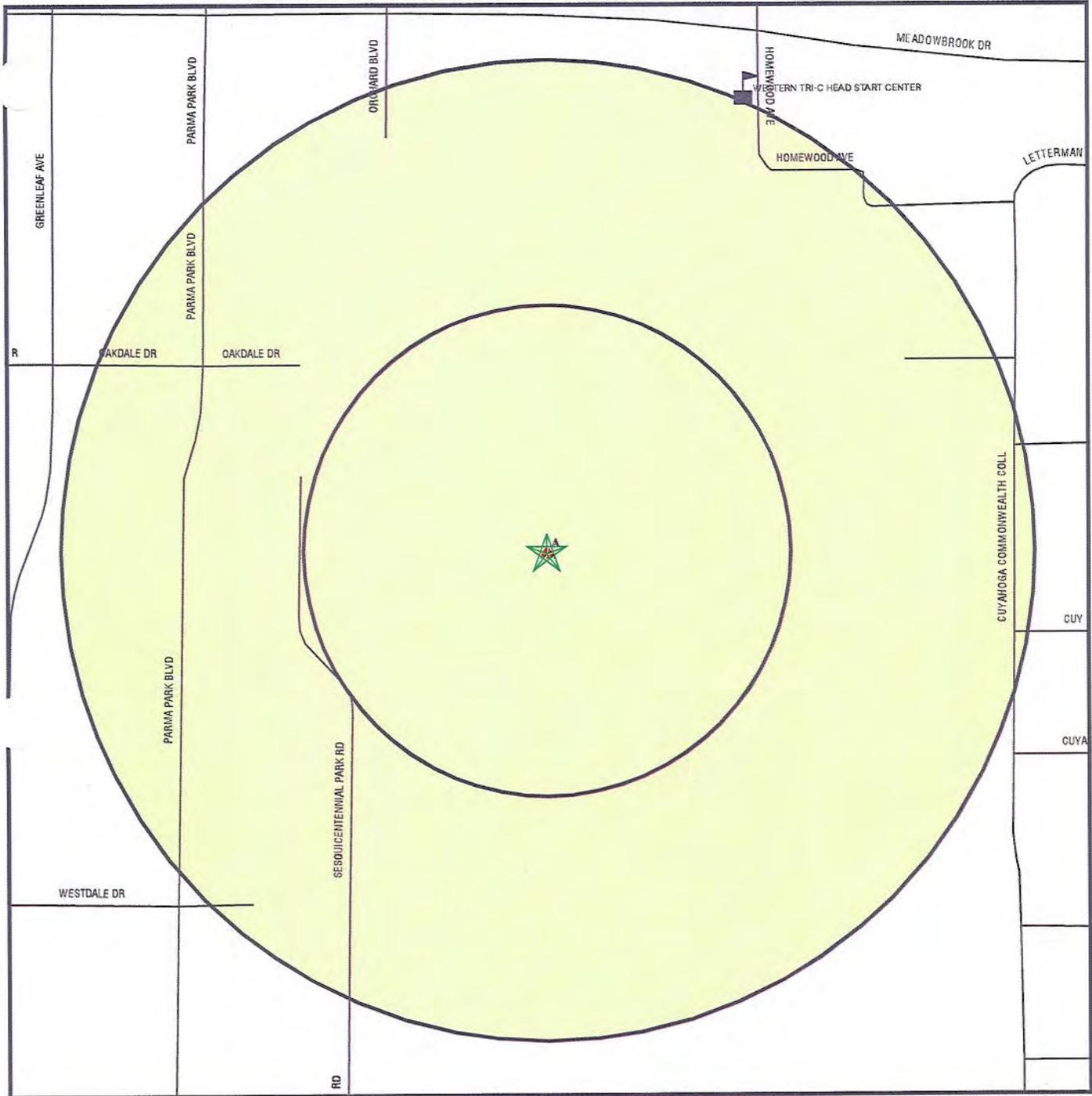
- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Coal Gasification Sites (if requested)
- ☒ National Priority List Sites
- ☒ Landfill Sites

- ⚡ Power transmission lines
- ⚡ Oil & Gas pipelines
- ▨ 100-year flood zone
- ▨ 500-year flood zone



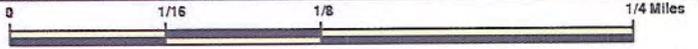
TARGET PROPERTY:	Nike Missile Site CL-59	CUSTOMER:	Plexus Scientific Corp.
ADDRESS:	Parma Park Blvd	CONTACT:	John Coughlin
CITY/STATE/ZIP:	Parma OH 44130	INQUIRY #:	625828.1s
LAT/LONG:	41.3701 / 81.7726	DATE:	May 01, 2001 9:36 am

DETAIL MAP - 625828.1s - Plexus Scientific Corp.



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Coal Gasification Sites (if requested)
- Ⓜ Sensitive Receptors
- 🚚 National Priority List Sites
- 🗑️ Landfill Sites

- ⚡ Power transmission lines
- 🛢️ Oil & Gas pipelines
- 🌊 100-year flood zone
- 🌊 500-year flood zone



TARGET PROPERTY: Nike Missile Site CL-59 ADDRESS: Parma Park Blvd CITY/STATE/ZIP: Parma OH 44130 LAT/LONG: 41.3701 / 81.7726	CUSTOMER: Plexus Scientific Corp. CONTACT: John Coughlin INQUIRY #: 625828.1s DATE: May 01, 2001 9:36 am
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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<u>FEDERAL ASTM STANDARD</u>								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.250	0	0	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRIS-TSD		0.500	0	0	0	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
<u>STATE ASTM STANDARD</u>								
State Haz. Waste		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST	X	0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
<u>FEDERAL ASTM SUPPLEMENTAL</u>								
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
<u>STATE OR LOCAL ASTM SUPPLEMENTAL</u>								
OH Spills		TP	NR	NR	NR	NR	NR	0
DERR	X	0.500	0	0	0	NR	NR	0
<u>EDR PROPRIETARY DATABASES</u>								
Coal Gas		1.000	0	0	0	0	NR	0
AQUIFLOW - see EDR Physical Setting Source Addendum								

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

MAP FINDINGS

Map ID
Direction
Distance
Distance (ft.)
Elevation Site

Database(s) EDR ID Number
EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A1 Target Property	NIKE SITE 11828 PLEASANT VALLEY RD PARMA, OH 44129	LUST S104518081 N/A
---------------------------------	-----------------------------------------------------------------	--------------------------------------

Site 1 of 2 in cluster A

LUST:
Owner: NIKE SITE
Facility Status: Active
LTF Status: 1 SUS/CON from regulated UST
Release Number: 18010677-N00001
Owner Address: 11828 PLEASANT VALLEY RD
 PARMA, OH 44129
FR Status: Initial Corrective Action Program Report
Old Facility Id: 0
Former Lust Release Number: 18010677-N00001

A2 Target Property	NIKE SITE CL-59 WEST PLEASANT VALLEY ROAD PARMA, OH 44130	DERR S104517662 N/A
---------------------------------	------------------------------------------------------------------------	--------------------------------------

Site 2 of 2 in cluster A

DERR:
Facility Id: 218-1958
Lat/Long: Not reported
EPA ID: Not reported
Voluntary Action Program: False

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID
PARMA	S104265069	WJW- FOX 8 TRANSMITTER	4501 PLEASANT VALLEY RD	44130	LUST	
PARMA	S104265312	PLEASANT VALLEY NURSING HOME	C/O PLEASANT VALLEY / RIDGE		LUST	
PARMA HEIGHTS	S104876609	FORMER NIKE CL-59 SITE	NATHAN HALE PARK	44130	LUST	

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List

Source: EPA

Telephone: N/A

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC).

Date of Government Version: 01/23/01

Date Made Active at EDR: 02/16/01

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 02/05/01

Elapsed ASTM days: 11

Date of Last EDR Contact: 02/05/01

Proposed NPL: Proposed National Priority List Sites

Source: EPA

Telephone: N/A

Date of Government Version: 01/23/01

Date Made Active at EDR: 02/16/01

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 02/05/01

Elapsed ASTM days: 11

Date of Last EDR Contact: 02/05/01

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

Source: EPA

Telephone: 703-413-0223

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/28/00

Date Made Active at EDR: 02/28/01

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/29/00

Elapsed ASTM days: 61

Date of Last EDR Contact: 03/26/01

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Source: EPA

Telephone: 703-413-0223

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 12/28/00

Date Made Active at EDR: 02/28/01

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/29/00

Elapsed ASTM days: 61

Date of Last EDR Contact: 03/26/01

CORRACTS: Corrective Action Report

Source: EPA

Telephone: 800-424-9346

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/20/00
Date Made Active at EDR: 08/01/00
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 06/12/00
Elapsed ASTM days: 50
Date of Last EDR Contact: 03/14/01

RCRIS: Resource Conservation and Recovery Information System

Source: EPA/NTIS

Telephone: 800-424-9346

Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 06/21/00
Date Made Active at EDR: 07/31/00
Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 07/10/00
Elapsed ASTM days: 21
Date of Last EDR Contact: 01/30/01

ERNS: Emergency Response Notification System

Source: EPA/NTIS

Telephone: 202-260-2342

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 08/08/00
Date Made Active at EDR: 09/06/00
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 08/11/00
Elapsed ASTM days: 26
Date of Last EDR Contact: 02/02/01

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System

Source: EPA/NTIS

Telephone: 800-424-9346

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/97
Database Release Frequency: Biennially

Date of Last EDR Contact: 03/19/01
Date of Next Scheduled EDR Contact: 06/18/01

CONSENT: Superfund (CERCLA) Consent Decrees

Source: EPA Regional Offices

Telephone: Varies

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: N/A
Database Release Frequency: Varies

Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision

Source: NTIS

Telephone: 703-416-0223

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/30/99
Database Release Frequency: Annually

Date of Last EDR Contact: 04/10/01
Date of Next Scheduled EDR Contact: 07/09/01

DELISTED NPL: National Priority List Deletions

Source: EPA

Telephone: N/A

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/23/01
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 02/05/01
Date of Next Scheduled EDR Contact: 05/07/01

FINDS: Facility Index System/Facility Identification Initiative Program Summary Report

Source: EPA
Telephone: N/A

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/07/00
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/09/01
Date of Next Scheduled EDR Contact: 07/09/01

HMIRS: Hazardous Materials Information Reporting System

Source: U.S. Department of Transportation
Telephone: 202-366-4526

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 05/31/00
Database Release Frequency: Annually

Date of Last EDR Contact: 01/23/01
Date of Next Scheduled EDR Contact: 04/23/01

MLTS: Material Licensing Tracking System

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/30/01
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/09/01
Date of Next Scheduled EDR Contact: 07/09/01

MINES: Mines Master Index File

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 08/01/98
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/02/01
Date of Next Scheduled EDR Contact: 07/02/01

NPL LIENS: Federal Superfund Liens

Source: EPA
Telephone: 205-564-4267

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 02/20/01
Date of Next Scheduled EDR Contact: 05/21/01

PADS: PCB Activity Database System

Source: EPA
Telephone: 202-260-3936

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 01/01/00
Database Release Frequency: Annually

Date of Last EDR Contact: 02/12/01
Date of Next Scheduled EDR Contact: 05/14/01

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RAATS: RCRA Administrative Action Tracking System

Source: EPA

Telephone: 202-564-4104

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95

Database Release Frequency: No Update Planned

Date of Last EDR Contact: 03/13/01

Date of Next Scheduled EDR Contact: 06/11/01

TRIS: Toxic Chemical Release Inventory System

Source: EPA

Telephone: 202-260-1531

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/97

Database Release Frequency: Annually

Date of Last EDR Contact: 03/26/01

Date of Next Scheduled EDR Contact: 06/25/01

TSCA: Toxic Substances Control Act

Source: EPA

Telephone: 202-260-1444

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/98

Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 03/30/01

Date of Next Scheduled EDR Contact: 06/12/01

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA/Office of Prevention, Pesticides and Toxic Substances

Telephone: 202-564-2501

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/00

Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/26/01

Date of Next Scheduled EDR Contact: 06/25/01

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Source: EPA

Telephone: 202-564-2501

Date of Government Version: 08/10/00

Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/26/01

Date of Next Scheduled EDR Contact: 06/25/01

STATE OF OHIO ASTM STANDARD RECORDS

SHWS: Master Sites List

Source: Ohio Environmental Protection Agency

Telephone: 614-644-2068

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/01/99
Date Made Active at EDR: 04/21/99
Database Release Frequency: No Update Planned

Date of Data Arrival at EDR: 03/29/99
Elapsed ASTM days: 23
Date of Last EDR Contact: 03/13/01

SWF/LF: Licensed Solid Waste Facilities

Source: Ohio Environmental Protection Agency
Telephone: 614-644-2621

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/09/01
Date Made Active at EDR: 03/16/01
Database Release Frequency: Annually

Date of Data Arrival at EDR: 02/20/01
Elapsed ASTM days: 24
Date of Last EDR Contact: 02/09/01

LUST: Leaking Underground Storage Tank File

Source: Department of Commerce
Telephone: 614-752-7924

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 12/17/00
Date Made Active at EDR: 01/22/01
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/19/00
Elapsed ASTM days: 34
Date of Last EDR Contact: 03/19/01

UST: Underground Storage Tank Tank File

Source: Department of Commerce
Telephone: 614-752-7938

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 03/11/01
Date Made Active at EDR: 04/17/01
Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/19/01
Elapsed ASTM days: 29
Date of Last EDR Contact: 03/19/01

STATE OF OHIO ASTM SUPPLEMENTAL RECORDS

SPILLS: Emergency Response Database

Source: Ohio EPA
Telephone: 614-644-2084
All reported incidents, spills or releases to the environment.

Date of Government Version: 12/31/98
Database Release Frequency: Varies

Date of Last EDR Contact: 03/13/01
Date of Next Scheduled EDR Contact: 06/11/01

DERR: Division of Emergency & Remedial Response's Database

Source: Ohio EPA, Div. of Emergency Response
Telephone: 614-644-3538
Sites that may or may not have contamination.

Date of Government Version: 12/01/00
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 03/20/01
Date of Next Scheduled EDR Contact: 06/18/01

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR PROPRIETARY DATABASES

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

HISTORICAL AND OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 1999 from the U.S. Fish and Wildlife Service.

GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

NIKE MISSILE SITE CL-59
PARMA PARK BLVD
PARMA, OH 44130

TARGET PROPERTY COORDINATES

Latitude (North):	41.370098 - 41° 22' 12.4"
Longitude (West):	81.772598 - 81° 46' 21.4"
Universal Transverse Mercator:	Zone 17
UTM X (Meters):	435386.0
UTM Y (Meters):	4579918.5

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property: 2441081-C7 BEREA, OH
Source: USGS 7.5 min quad index

GENERAL TOPOGRAPHIC GRADIENT AT TARGET PROPERTY

Target Property: General NW

Source: General Topographic Gradient has been determined from the USGS 1 Degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County
CUYAHOGA, OH

FEMA Q3 Flood
Data Electronic Coverage
YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:
Additional Panels in search area:

3901230004B / CBPP
3901240001B / CBPP
3901240002B / CBPP
3901170003B / CBPP

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property
BEREA

NWI Electronic Coverage
NO

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

AQUIFLOW®

Search Radius: 2.000 Miles.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
2	1/2 - 1 Mile SE	W
A3	1 - 2 Miles WNW	SW
A4	1 - 2 Miles WNW	SW
B5	1 - 2 Miles SSE	NW
B6	1 - 2 Miles SSE	N
7	1 - 2 Miles ENE	NE
8	1 - 2 Miles SSW	ESE
9	1 - 2 Miles NNW	SE

For additional site information, refer to Physical Setting Source Map Findings.

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

GEOLOGIC AGE IDENTIFICATION

Geologic Code: M
 Era: Paleozoic
 System: Mississippian
 Series: Mississippian

ROCK STRATIGRAPHIC UNIT

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Component Name: MAHONING

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Somewhat poorly. Soils commonly have a layer with low hydraulic conductivity, wet state high in profile, etc. Depth to water table is 1 to 3 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 7.30 Min: 4.50
2	9 inches	36 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.20 Min: 0.00	Max: 7.80 Min: 4.50
3	36 inches	60 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.20 Min: 0.00	Max: 8.40 Min: 7.40

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: silty clay loam
loam

Surficial Soil Types: silty clay loam
loam

Shallow Soil Types: loam
silt loam

Deeper Soil Types: stratified

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

clay
unweathered bedrock

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

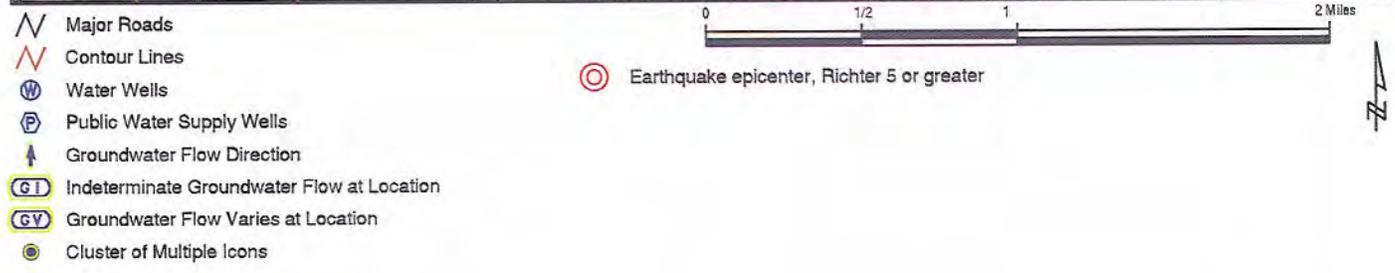
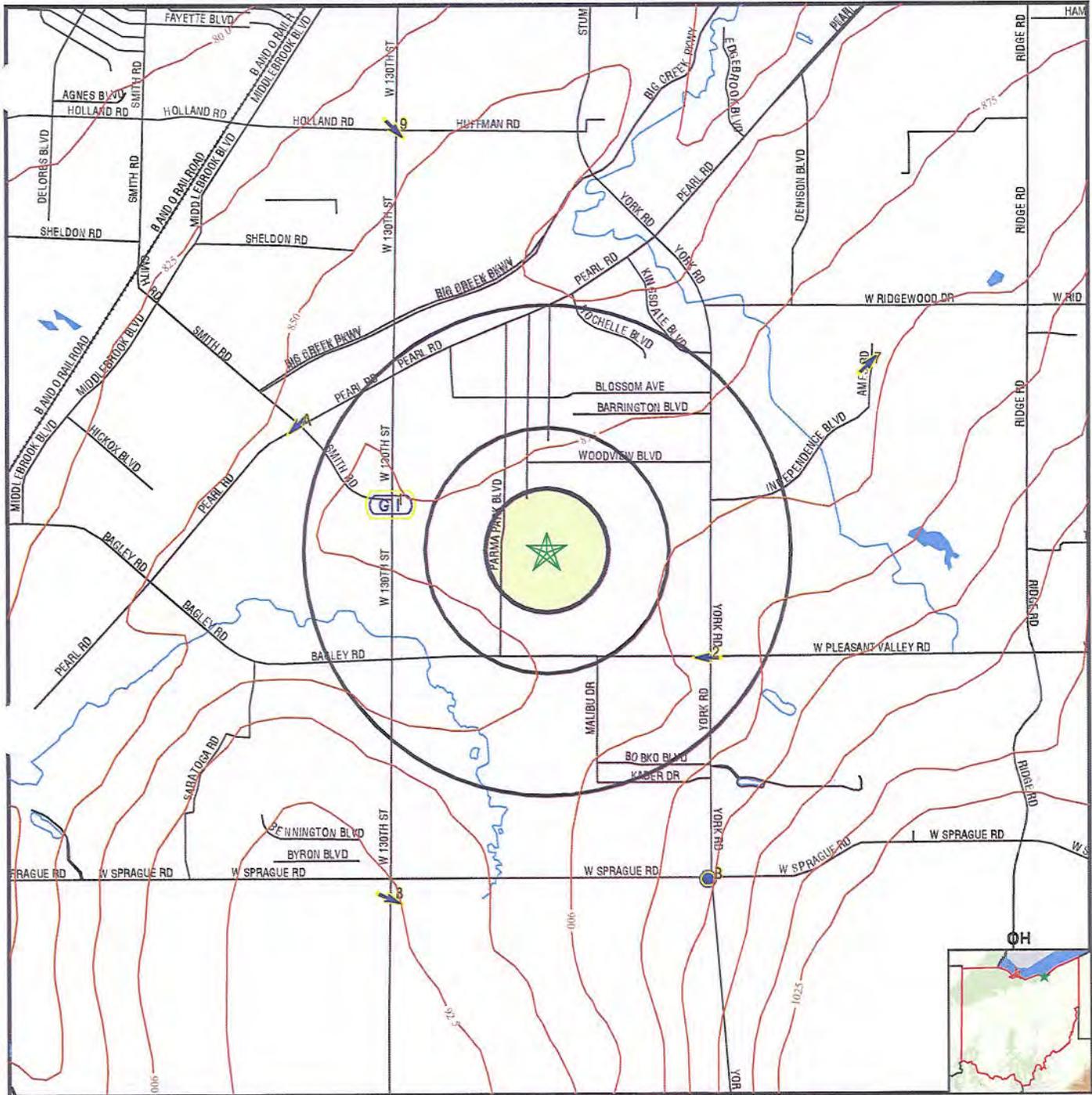
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 625828.1s



TARGET PROPERTY:	Nike Missile Site CL-59	CUSTOMER:	Plexus Scientific Corp.
ADDRESS:	Parma Park Blvd	CONTACT:	John Coughlin
CITY/STATE/ZIP:	Parma OH 44130	INQUIRY #:	625828.1s
LAT/LONG:	41.3701 / 81.7726	DATE:	May 01, 2001 9:36 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
1 WNW 1/2 - 1 Mile Lower	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	1840182-00 NOT REPORTED 0.40 7.00 Not Reported 10/15/96	AQUIFLOW	14986
2 SE 1/2 - 1 Mile Higher	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	1802845-00 W 6.74 8.05 Not Reported 2/92	AQUIFLOW	14744
A3 WNW 1 - 2 Miles Lower	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	1801575-00 SW 0 13.61 Not Reported 1/98	AQUIFLOW	14942
A4 WNW 1 - 2 Miles Lower	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	1801575-01-00 SW 2 6 Not Reported 5/1996	AQUIFLOW	14477
B5 SSE 1 - 2 Miles Higher	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	1800486-00 NW 5.46 8.74 Not Reported 9/95	AQUIFLOW	12659
B6 SSE 1 - 2 Miles Higher	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	1812875-00 N 5.71 7.50 Not Reported 1/93	AQUIFLOW	12351
7 ENE 1 - 2 Miles Higher	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	1822947 NE 3 6 Not Reported 4/1994	AQUIFLOW	12549

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

			Database	EDR ID Number
8 SSW 1 - 2 Miles Higher	Site ID: 1860779-00 Groundwater Flow: ESE Shallow Water Depth: 7.31 Deep Water Depth: 9.64 Average Water Depth: Not Reported Date: 10/96		AQUIFLOW	11964
9 NNW 1 - 2 Miles Lower	Site ID: 1821041-00 Groundwater Flow: SE Shallow Water Depth: 8.4 Deep Water Depth: 9.1 Average Water Depth: Not Reported Date: 5/93		AQUIFLOW	12200

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for CUYAHOGA County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
 : Zone 3 indoor average level < 2 pCi/L.

Zip Code: 44130

Number of sites tested: 3

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.000 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	1.733 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 1999 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[®] Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the national Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

Ohio Public Water Systems

Source: Ohio EPA, Division of Drinking and Groundwater
Telephone: 614-644-2752

RADON

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones: Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Appendix C

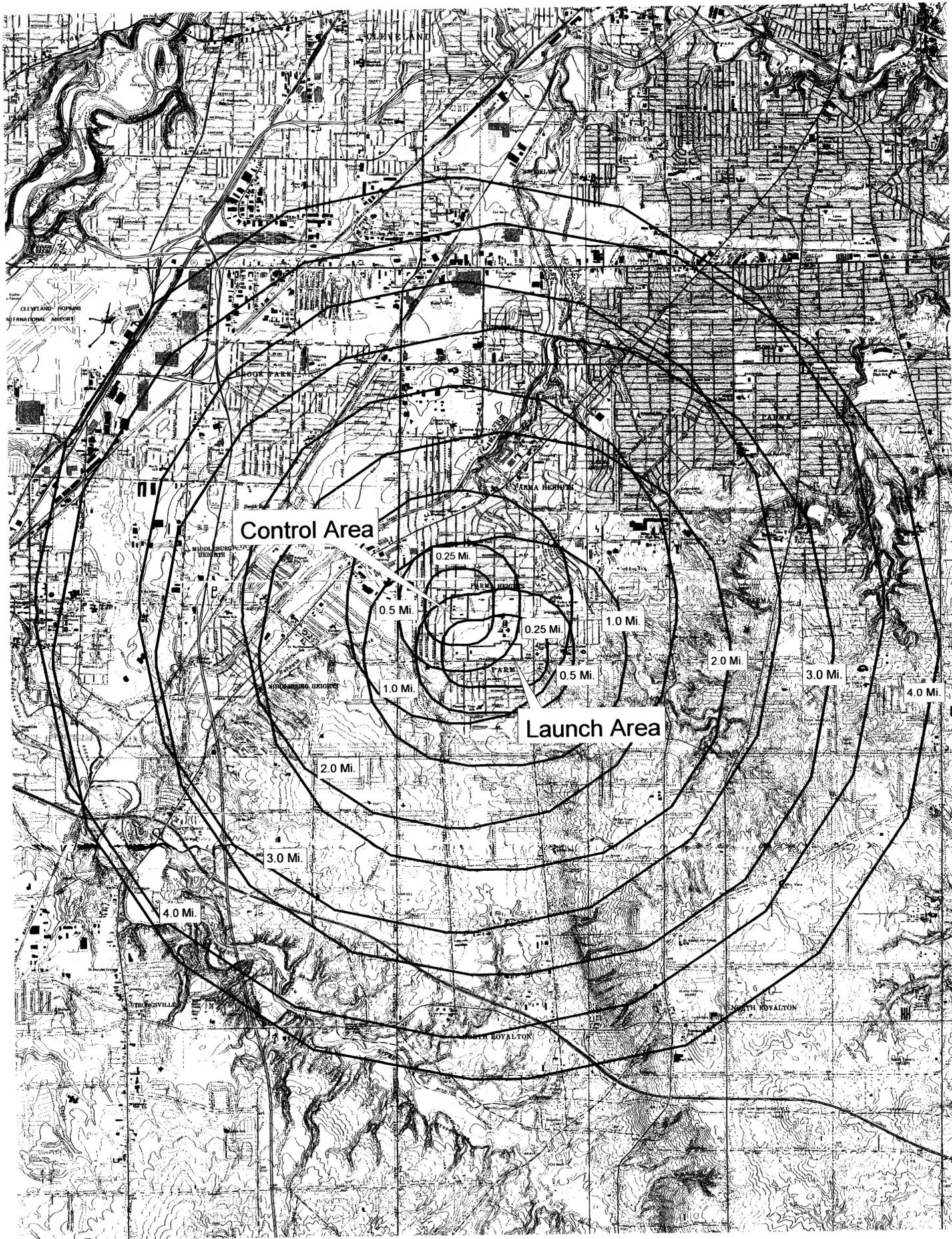
Individuals And Organizations Contacted

Table C-1 Contacts for Development of Nike Site CL-59 PA

Affiliation	Contact	Reason	Comment
Cleveland Water Department	Guy Singer	Public water supply	
Cuyahoga Community College	Andrew Shella	Discuss Nike Site work and study plans	
Cuyahoga Community College	Charles Hoffner	Discuss Nike Site	Files are very limited
Cuyahoga Community College	Harry Wesloh	Interview for information on site	
Cuyahoga Community College	Tom Somerville	Discuss Nike Site work and study plans	
Cuyahoga Community College & neighbor on Meadowbrook Road	Robert Sollberger	Interview for information on site	Had little information, worked security for college prior to demolition of site
Cuyahoga County Health Department	Mark Siefert	Well use in the area	No wells within a mile
Cuyahoga County Health Department	Marty Byer	Well use in the area	
Cuyahoga County Public Library, Parma Regional Branch	Reference Librarian	Historical information on site	No clipping files, reviewed history books on Parma and Cleveland
Environmental Data Resources		Search of state and federal databases	Attached to PA
Former Launch Area employee	Orien Rigney	Information on site activities	
Law Engineering	Staff	References to 1986 document	Not available
Library of Congress		Historic American Buildings Survey (HABS) and the Historic American Engineering Record (HAER)	Site not documented
Neighbor on Parma Park	Doug Schreiber	Could see missiles on ride to school in morning	Responded to USACE advertisement in local paper

Affiliation	Contact	Reason	Comment
Neighbor on Parma Park	Dale Simmerly	Interview for information on site	Had no knowledge as he and nearby neighbors have not been in area long
Neighbor on Pleasant Valley Road	Lou Oniga	Interview for information on site	Moved in after it was closed and has no knowledge of operations
ODNR		Custom well search	Ordered
ODNR	Al Luczyk	Registered water withdrawals	
ODNR, Heritage Department	Treva	Threatened, endangered, and protected species in area	Ordered study
OEPA, Division of Emergency and Remedial Response	Todd Fisher	Contents of OEPA files	
OEPA Division of Surface Water	Darlene Saxton	Studies of nearby water bodies	305b report only available on-line
OEPA Division of Surface Water	Ed Rankin	Identified studies on water bodies	All are on-line
OEPA, Division of Water	Jeff Davidson	Public water systems	
OEPA, GIS system	Dick McClish	Requested files containing public water supplies	Sent four shape files
Office of Parma City Engineer	Scott Wangler	Nike drawings and storm water control	They have no Nike drawings but provided storm water information
Ohio Environmental Protection Agency	Todd Fisher	Contents of OEPA files	
Parma City Fire Department #5		UST files	Directed to Station 3
Parma City Fire Department #3, Fire Prevention Office	Sandy Heidrick	UST files	No additional information found
Parma City Hall	Tony Vanello	Request information on Nike site	No files available
Parma City Service Office	Debbie Allen	Request drawings or information on site	No information available
Parma City Maintenance Facility	Staff	Request information on site	Directed to Parma City Service Office

Affiliation	Contact	Reason	Comment
Parma Heights City Engineer	Dan Neff	Stormwater drainage from Nathan Hale Park	Carried north to Big Creek
Project Information Retrieval System, Rock Island District, US Army Corps of Engineers (http://pirs.mvr.usace.army.mil/default.htm)		Obtain information relating to ordnance investigations	Site not listed
Radford Army Ammunition Plant	Rob Davie	Composition of Nike booster motor	Sent data sheet
Tax Assessor		Obtain tax maps	
U.S. Army Corps of Engineers, Office of the Chief Historian	John Longquest	Requested historical information on Nike sites	Have nothing site specific for CL-59 but some general information
US Fish and Wildlife Service	Keith Lammers	T&E species near the site	Letter response
USACE Huntington District	Frank Albert	Nike as built drawings	None were located



Source: 7.5 Minute Quadrangle Berea, Ohio, 1963 (Photorevised, 1984); Broadview Heights, Ohio, 1994; Cleveland South, Ohio, 1963 (Photorevised, 1984); Lakewood, Ohio, 1963 (Photorevised, 1985).



Legend

-  Launch Area Radius
-  Control Area Radius

PLATE 1 4-MILE RADIUS	
FORMER NIKE MISSILE SITE CL-59	
<small>PARMA, CUYAHOGA COUNTY</small>	<small>OHIO</small>
<small>U.S. ARMY ENGINEER DISTRICT, LOUISVILLE CORPS OF ENGINEERS LOUISVILLE, KENTUCKY</small>	
	
<small>PROJECT NO. 0032-0058</small>	<small>FILE NO. RADIUS APR</small>