

Historical Investigation Report - Former Cedar Street Works MGP Site (Site #V00570)

New Rochelle, New York

Prepared by:

**The RETEC Group, Inc.
1001 W. Seneca St., Suite 204
Ithaca, NY 14850-3342**

RETEC Project Number: CECN1-15957-400

Prepared for:

**Consolidated Edison Company of New York, Inc.
4 Irving Place
New York, NY 10003**

January 20, 2003

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Prepared by:

Sherry Adams, Staff Geologist

Reviewed by:

Bruce Coulombe, P.G., Project Manager

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Executive Summary

The RETEC Group, Inc. (RETEC) has prepared this historical investigation report for Consolidated Edison of New York, Inc. (Con Edison). This report is part of a comprehensive program to research and assess the history of sites formerly used by Con Edison and its predecessor companies for the manufacture and/or distribution of gas, and documents the historic and current conditions of the sites.

The purpose of this historical investigation program is to support Con Edison in its negotiations with the New York State Department of Environmental Conservation (NYSDEC), to support Con Edison's efforts to rank manufactured gas plant (MGP) site investigation priorities, and to provide a starting point for future site investigations. This report presents the summary of the research and findings for the former New Rochelle - Cedar Street Works site located between Cedar and River Streets in the City of New Rochelle, Westchester County, New York (Site #V00570).

As part of its historical investigation, RETEC reviewed a number of sources to assess the historical ownership and operations of the MGP, subsequent site uses, and current site conditions. These sources included historical records obtained from private and public repositories, a chain-of-title search, tax and zoning records, and geologic reports for the general area.

RETEC visited the former MGP site on May 29, 2002 in order to:

- assess current site environmental conditions and property use;
- perform a visual inspection for the presence of potential MGP structures and residuals on the site and surrounding properties; and
- identify potential receptors that may be at risk if MGP residuals or other by-products are present.

From our records review and site reconnaissance, RETEC was able to determine the following about the former New Rochelle - Cedar Street Works MGP site:

- The site included property located along the southeast corner of Cedar Street (formerly Centre Street) and Palmer Avenue (formerly Spring Street) and extended east along the southern side of Palmer Avenue, and south along the eastern side of Cedar Street.
- The site is currently located in a mixed residential/commercial area. The site is zoned manufacturing. The site is currently occupied by a Toyota car dealership. The dealership includes a two-story showroom. Attached to the showroom is a three-story building with the first story slightly below grade. Attached to this building is a one-story

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automotive service center. East of the service center is a separate detached office building.

- There are no visible indications of any MGP structures or MGP residuals on the site.
- There are no surface water bodies in the vicinity of the Cedar Street Works MGP site property. The closest surface water body is Echo Bay of the Long Island Sound, located 1,700 feet southeast of the site.
- Gas was manufactured at the site from sometime between 1863 and 1868 until sometime between 1908 and 1911. The site was then used for gas storage until sometime between 1925 and 1931. The first utility owner, New Rochelle Gas Light Company, purchased the site property in 1863. The last utility owner, Consolidated Edison Company sold the property in 1953.
- The former MGP produced gas via both coal carbonization (up to 1888) and carbureted water gas processes (from 1888 on). Residuals associated with these processes include tar (containing volatile compounds, PAHs, and phenolics), purifier residuals, ammonia residuals, clinker, coke, gas purification residues, tar/water emulsions, and wastewaters. Subsurface structures containing residuals may remain at the site; however, there is no available information regarding decommissioning of the site or disposition of residuals from MGP operations.
- Other site uses after the MGP operations ceased include a car dealership. It is not known if cars are currently fueled and serviced at this location. Residuals associated with the current site use include waste oils, lubricants, gasoline, paint, and other automotive maintenance related products. The EDR database identified underground storage tanks (USTs) at the site location under the name of the former owner, Crabtree Toyota. There was no record of removal of these tanks, however, the current owner of the property (Metro Toyota) is not listed as having USTs in the UST database [EDR Report]. There may be residuals in the subsurface associated with the USTs.
- Given the past uses of the site, there may be residuals remaining on the surface, or residuals in the subsurface either in subsurface structures or in soil or groundwater underlying the site.
- Potential receptors to residuals remaining on the site include primarily site employees, groundskeepers and visitors. Direct contact with residuals in surface soil may occur, however, employees/visitors are

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not expected to be in contact with subsurface soils given the nature of the site. Excavation workers may be exposed to residuals in subsurface soil, should excavation be necessary.

- In addition, groundwater containing residuals has the potential to migrate to offsite downgradient properties. Groundwater is not used on the site; however, wells do exist within a one mile radius of the site. There are no known groundwater users for potable purposes downgradient of the site.

1 Objective

The RETEC Group, Inc. (RETEC) has prepared this historical investigation report for Consolidated Edison of New York, Inc. (Con Edison). This report is part of a comprehensive program to research and assess the history of sites formerly used by Con Edison and its predecessor companies for the manufacture and/or distribution of gas, and to report on the historic and current conditions of the sites. These sites are located in New York City and Westchester County. The purpose of this historical investigation program is to support Con Edison in its negotiations with the New York State Department of Environmental Conservation (NYSDEC), to support Con Edison's efforts to rank manufactured gas plant (MGP) site investigation priorities, and to provide a starting point for future site investigations. This report presents the summary of the research and findings for the former Cedar Street Works MGP site in the City of New Rochelle, Westchester County, New York.

The report consists of eleven sections and seven appendices:

- Section 1 provides an introduction to the report objective, the investigative methodologies and processes, and a summary of limiting conditions of this report.
- Section 2 presents a property description.
- Section 3 provides a summary of the current site use and site reconnaissance.
- Section 4 presents the site setting, including site geology, topography, zoning, demography, and neighboring property description.
- Section 5 presents a summary of the past site ownership according to the chain-of-title and tax records, and supplemented by historical records as appropriate.
- Section 6 presents a summary of past site operations, including potential residuals associated with site use and any significant reconstruction or excavation activities that took place on the site.
- Section 7 provides a summary of the environmental and regulatory agency database searches for the site and surrounding areas.
- Section 8 discusses potential exposure pathways based on past site operations and human and environmental receptors to residuals from the site.

- Section 9 provides a discussion of the accuracy and completeness of the research conducted and offers conclusions to this historical component of investigative activities at the site.
- Section 10 summarizes the findings of the historical investigation and presents the information in a manner that can be used for further assessment of the site.
- Section 11 presents a list of references used in this report.
- Appendices A through G provide the documentation that was gathered during this historical investigation.

RETEC reviewed a number of sources to assess the historical ownership and operations of the MGP, subsequent site uses, and current site conditions. These sources include historical records obtained from private and public repositories (e.g., Con Edison resources, federal, state, and local agencies), a chain-of-title search, tax and zoning records, review of geologic reports for the general area, and site reconnaissance. A report checklist summarizing the review requirements and our findings is provided in Appendix A. A detailed list of the sources reviewed and the findings are provided in Sections 5, 6, and 7 of this report.

The findings presented in this historical investigation report are based on the scope of work agreed to by Con Edison and the data that RETEC was able to obtain in the course of this process. The availability of historical records may be limited by a number of factors including the size and duration of MGP activities at the site, the record keeping practices of the time, and local interest in the property. An assessment of the current site conditions may be limited by current site ownership and access, the ability to assess only general geologic conditions and lack of site-specific data, and availability of public records.

The opinions presented in this report are in accordance with currently accepted hydrogeologic and engineering standards and practices. This report may be based, in part, on unverified information supplied to RETEC by third-party sources. While efforts have been made to substantiate this third-party information, RETEC cannot guarantee its completeness or accuracy.

This historical investigation report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations, or policies of federal, state, or local governmental agencies. Any use of this historical investigation report constitutes acceptance of the limits of RETEC's liability. RETEC's liability extends only to its client and not to any other parties who may obtain the report.

2 Property Description

This section includes a description of the property based on the furthest extent of the MGP boundaries, the site size, and the current tax map designations for parcels located within the former MGP boundaries.

2.1 Site Location and Property Boundaries

The Cedar Street Works site was located between Cedar and River Streets in the City of New Rochelle, Westchester County, New York. The site location is illustrated in Figure 2-1. The property is located along the southeast corner of Cedar Street (formerly Centre Street) and Spring Street and extended east along the southern side of Spring Street, and south along the eastern side of Cedar Street (Sanborn Maps). The coordinates for the site are approximately N 40°54'54.4" latitude and W 73°46'46.2" longitude. The layout of the former MGP site encompassed approximately 1.1 acres [1896 Sanborn Map], however, the full extent of the property owned by Con Edison's predecessor is approximately 1.6 acres.

2.2 Tax Designation

Based on the current Tax Maps (Figure 5-3) and the layout of the gas works on the 1896 Sanborn Map (Appendix E), the former MGP was located on the western portion of the current lot:

- 247 Cedar Street Section 1, Block 247, Lot 15

It should be noted that Block 247 was subdivided by a new street, Ramada Plaza, as part of the construction of the Sheraton Hotel (now Ramada), sometime after 1951 and before 1990.

In Appendix D, the chain of title search summary results contains an index map that identifies the lots (highlighted in gray) that were identified by the title search as having belonged to the New Rochelle Gas Light Company and its successors. Following the index map are the ownership summaries for the lots that were formerly the location of the gas plant.

Presently, the entire block is mapped as Block 247, Lot 15. All or portions of three older lots (40, 41, and 47) composed the gas company holdings, with the plant located on Lots 40 and 41 along the western side of the block. (Note that two lots were identified at different times as Lot 40). Lots 40 and 41 were later consolidated to form Lot 19, Lot 47 became Lot 39, and the northeast corner of the gas company property (Lot 39) was subdivided and identified as a new Lot 40. The old lot numbers and lines have been drawn onto the current tax map for reference. Note the current tax map shows that the northern corners of the block have been removed from the lot; these areas were taken by the city during the construction of the current roadway system in the 1960s.

3 Current Site Use

This section provides a summary of the current site use and the site reconnaissance conducted by RETEC for the former Cedar Street Works MGP site in New Rochelle, New York.

3.1 Site Use

According to the chain-of-title search, the site is owned by Donnybrook Realty Corp, and based on the site visit the site is currently occupied by a Toyota car dealership. The dealership includes a two-story showroom. Attached to the showroom is a three-story building with the first story slightly below grade. Attached to this building is a one-story service center. East of the service center is a separate detached office building. A paved parking lot and grassy areas cover the rest of the site. The current site layout is illustrated in Figure 3-1.

3.2 Site Reconnaissance

A team of RETEC geologists visited the location of the former MGP site on May 29, 2002. The purpose of the reconnaissance was to a) assess current site environmental conditions and property use, b) perform a visual inspection for the presence of potential MGP residuals on the site and surrounding properties, and c) identify potential receptors which may be at risk if MGP residuals or other by-products are present. During the site reconnaissance the inspection team documented their observations in a bound field notebook, and took photographs of the site. A photographic log of the site reconnaissance is provided in Appendix B. The car dealership is gated, however RETEC was able to walk around and on the current site. Figure 3-1 illustrates the property and adjoining streets.

The area around the former Cedar Street MGP has been developed extensively, including expanded and new streets and new commercial buildings. The current site surface is approximately 90% covered by buildings and parking lots, while the other 10% is grassy areas (Figures 1-18 in Appendix B). The former MGP site is currently occupied by a Toyota car dealership and onsite structures include a showroom, a service building, and an office building. The first floor of the main building is slightly below current grade. The remainder of the site is paved parking areas and grassy areas. The asphalt parking lot is slightly cracked in areas.

There were no visual indications of MGP residuals on the surface of the property and there were no visual indications of MGP remnants or other past operations on the property.

There are no overhead utility lines in the car lot. It is unknown if subsurface utility lines exist on the site, however subsurface lines are likely to be present

in association with the building and the lights in the parking lot. Storm drains are located in the paved parking areas and at the curblin around the site.

Off-site structures include a Sunoco gas station and Taco Bell to the east located along River Street. Expo Design Center and the junction to Interstate 95 are located to the north along Palmer Avenue. Post Marine Supply is located to the west along Cedar Street. Pizza Hut, Enterprise Rent-A-Car, Italiana Restaurant, Ramada Inn (having a first floor below grade), and residential property (an apartment building) are located to the south and southeast of the site.

There are no surface water bodies in the vicinity of the Cedar Street MGP site property. The closest surface water body is the Echo Bay of the Long Island Sound, located 1,700 feet southeast of the site.

The site reconnaissance also identified the following schools and day care centers within ¼ mile of the former MGP site.

SCHOOLS

Japanese Weekend School (.16 mi.)
56 Harrison Street # 204
New Rochelle, NY 10801-6559

DAY CARE CENTERS

Royal Child Care Center (.26 mi.)
32 Lecount Place
New Rochelle, NY 10801-6416

4 Site Setting and Demography

This section provides the current zoning characteristics for the Cedar Street former MGP site and surrounding area and a description of the physical setting of the site, including geological and hydrogeological characteristics.

4.1 Characteristics of Site and Neighboring Properties

The neighboring properties are currently used for commercial and residential purposes and include the following:

- Sunoco gas station and Taco Bell to the east;
- Expo Design Center and Interstate 95 to the north;
- Post Marine Supply to the west; and
- Pizza Hut, an apartment building, Enterprise Rent-A-Car, Italiana Restaurant, and Ramada Inn to the south and southeast.

The site is zoned manufacturing. The areas around the site are zoned commercial, public utility, and two-family residences.

The U.S. Census Bureau's records from the 2000 Census were used to determine the demographics for the site and surrounding area. The census showed that New Rochelle had a population of 72,182 people. The area surrounding the site was identified in the 2000 Census as Census Tract 60, Westchester County, New York (see Figure 4-1). The population for this Tract is 3,011 people.

4.2 Physical Setting

4.2.1 Site Topography and Surface Drainage

The 1966 U.S. Geological Survey (USGS) topographic map for the Mount Vernon, New York Quadrangle [USGS 1966, photorevised 1979] was reviewed to provide information about the topography of the site (Figure 2-1). The map shows that the site is sloped to the southeast from Cedar Street (83 feet above MSL) to River Street (58 feet above MSL) with an overall change in elevation of 25 feet.

Surface water runs off the site to the southeast via sheet flow. The nearest surface water body is the Echo Bay of the Long Island Sound, located 1,700 feet southeast of the site. According to the database search completed by Environmental Data Resources, Inc. (EDR), the site is not located within a mapped Federal Emergency Management Agency (FEMA) flood zone. The

nearest flood zone is the area of Echo Bay of the Long Island Sound to the southeast of the site. A map of the site location and the flood zone area is provided in a map in EDR's report in Appendix C.

The site itself is not mapped as a designated wetland area. The closest wetland is the shoreline area of Echo Bay southeast of the site.

The nearest surface water body in the vicinity of the former MGP site is the Echo Bay and is designated as Class SB saline surface water. Class SB surface water is defined as follows: "Best usages are primary and secondary contact recreation and fishing. Waters shall be suitable for fish propagation and survival."

4.2.2 General Site Geology

The Surficial Geology Map of New York – Lower Hudson Sheet [Cadwell, 1989] was reviewed to obtain information about the surficial deposits at the site. The map shows that a thin layer of glacial till material is likely to be present at the site. The formation is comprised of silty clay with occasional boulders. According to information presented on the map, the till can be expected to have low permeability.

The Geologic Map of New York published by the New York State Museum of Science [Fisher, 1970] was reviewed to provide information about the bedrock geology at the site. The site is located in the Manhattan Prong, which is a geologic sub-province of the New England Upland physiographic region of New York that encompasses most of Westchester County. The bedrock at the site is the Hartland Formation, which is Cambrian in age. This formation is a metamorphic rock comprised of a basal amphibolite, which is overlain by pelitic schists.

4.2.3 General Site Hydrogeology

Groundwater flow direction is assumed to mimic the surface topography that slopes from the northwest to the southeast. It is likely that groundwater discharges to the Echo Bay to the southeast of the site; however, the flow direction of groundwater was not directly tested during the site reconnaissance. The depth to groundwater at the site is expected to be approximately 8 to 15 feet below ground surface, based on the information for two wells near the site identified by a Federal and State well database search completed by EDR (Appendix C).

A map entitled "Unconsolidated Aquifers of Westchester County, New York" [Keneally, June 2001] was reviewed to determine if the site is located within the footprint of a significant unconsolidated groundwater aquifer. No unconsolidated aquifer is mapped in the footprint of, or in the vicinity of the site.

A well search of both Federal and New York State databases was completed to determine if water wells are present in the vicinity of the site. A total of seven wells were identified within a one-mile radius of the site. The locations of the wells are provided on the Physical Setting Source Map in the EDR database search results in Appendix C. As shown on the map, three of the wells are present within a $\frac{1}{4}$ mile radius of the site at higher elevations (upgradient). Two of these wells are used to withdraw water for industrial (cooling) and commercial purposes, and the third is unused. Three wells are present within a distance of between $\frac{1}{4}$ and $\frac{1}{2}$ mile from the site to the northwest and to the southwest (upgradient). Of these wells, one well is a drinking water supply well, and two wells are used for commercial or industrial purposes. Another well is located between $\frac{1}{2}$ and 1 mile from the site. This well is used for commercial purposes.

Records for several wells drilled in the vicinity of the site were found in The Ground Water Resources of Westchester County [Asselstine and Grossman, 1955]. A bedrock well was installed for a laundry about 400 feet north-northeast of the former MGP site. The well was drilled 750 feet into schist bedrock. The water table was listed at 15 feet below the ground surface, with the thickness of the overburden listed as 200 feet, but with a question mark following the citation. The well yielded 90 gallons per minute (gpm), with a drawdown of 145 feet after 8 hours of pumping. According to the remarks in the report: "Well abandoned: reported too oily and hard for laundry." The date that this well was drilled is unknown, other than it was drilled sometime before the publication of the Asselstine and Grossman report.

Another bedrock well was installed about 800 feet north of the site, just across the railroad tracks. This well was drilled 1,000 feet deep into the schist bedrock. At this location the overburden was reported as 15 feet thick; therefore, the 200 feet thickness cited for the other well described nearby is possibly erroneous. The water level in the well was 45 feet below the ground surface, with a 75-foot drawdown after pumping at 65 gpm for 8 hours. The well was reported to be used for cooling.

Groundwater in the vicinity of the site is classified as GA - fresh groundwater with best usage as a source of potable water supply. However, this area is not classified as a primary water supply aquifer or a principal aquifer.

5 Past Site Ownership

The ownership history of the former MGP site in New Rochelle was established using historical and current records from the earliest record of the site, through the time of the MGP operations, to the present time. A list of the records reviewed and a description of each is provided below, followed by a summary of site ownership as established using all the resources that were identified.

5.1 Records Reviewed

5.1.1 Brown's Directory of American Gas Companies

Brown's Directory of American Gas Companies (Brown's Directory) began publication of gas companies' statistics in 1887 and continues into recent times to provide information on currently operating gas companies. RETEC reviewed Brown's Directories for the years 1887 through 1957, which covers the operational period of most MGPs, to determine site ownership and operational information for the Cedar Street Works. Several years are unavailable in the public domain, and RETEC does not have Brown's Directories for the years 1888, 1895 through 1898, 1952 and 1953. It is noted that Brown's Directory may not distinguish between two or more sites, if they were operated simultaneously by the same company.

The results of the Brown's Directory search are provided in Table 5-1. The first entry in the Brown's Directory states that the Cedar Street former MGP site operated a coal gas process in 1887 under the name New Rochelle Gas Works. The directory also shows that the site operated water gas processes (Lowe by McKay-Critchlow and Peter English patent) from 1889 until at least 1894 as the New Rochelle Gas and Fuel Company. In 1899 and 1900, the New Rochelle Gas and Fuel Company consolidated into the New York Suburban Gas Co., and used a Lowe water gas process. In 1901, the New York Suburban Gas Co. merged into the Westchester Lighting Company and the gas production from all Westchester Lighting Company plants were combined together; therefore further site-specific information on the Cedar Street works was not compiled.

As early as 1905, the Consolidated Gas Company (predecessor to Con Edison) secured financial control of the Westchester Lighting Company of Mount Vernon, New York; however, the Westchester Lighting Company still continued to operate as an affiliate. In 1936, Consolidated Gas Company became Consolidated Edison Company, and the affiliation with the Westchester Lighting Company of Mount Vernon continued. In 1951, the Westchester Lighting Company was fully merged into Consolidated Edison as the Westchester Division.

5.1.2 Public Service Commission Reports

The New York Public Service Commission (PSC) Reports for the years 1907 to 1968 were reviewed to determine the ownership and operational history of the Cedar Street Works. No operational information was found; however, the PSC reports provided information on the ownership history of the plant's owner. On March 30, 1899, the New Rochelle Gas and Fuel Company was consolidated into the New York Suburban Gas Company. On December 1, 1900, the New York Suburban Gas Company was merged into the Westchester Lighting Company.

5.1.3 Chain-of-Title Search

A deed chain-of-title search was performed by Commonwealth Land Title Insurance Company of White Plains, New York on behalf of Con Edison for the Cedar Street site. The chain-of-title search was conducted to establish the ownership history of the site from the time immediately prior to gas plant operations to the present day. The results of the chain-of-title search are included in Appendix D, and a summary of the property ownership is provided in Table 5-2.

The first utility to own the site property was the New Rochelle Gas Light Company of New Rochelle, which bought the property in 1863. The last utility to own the site property was Consolidated Edison Company of New York Inc, which sold the property in 1953. According to the chain-of-title search the current owner of the property is Donnybrook Realty Corp, who obtained the property on August 17, 1992. Table 5-2 shows a summary of site ownership and the complete results of the chain-of-title search are included in Appendix D.

5.1.4 Historical Maps

Historical Sanborn Fire Insurance Maps (Sanborn Maps) were obtained from Con Edison for the New Rochelle Cedar Street Works site. Sanborn Maps were available for the years of 1887, 1892, 1896, 1903, 1911, 1931, 1951, and 1990 through 1996. A copy of the Sanborn Maps are included in Appendix E and were used to compile a composite historical site layout map as illustrated in Figure 5-1.

Additionally, the *Atlas of New York and Vicinity* [Beers, 1868], the *Atlas of the Hudson River from New York City to Troy* [Beers, 1891], and the *Atlas of Westchester County, Volume 2* [Hopkins, 1930] were reviewed to determine if additional historical maps were available for the site location. Historical maps are included in Appendix F.

- The Beers Atlas of 1868 shows a property described as a “gas works”, containing a single rectangular building and no gas holder. The block on which the site is mapped is surrounded by three unnamed roads to the east, west and north. The southernmost road is labeled “Boston

Post Road” which will be later renamed as Huguenot Road. The lot identified as the gas works is located immediately east of what is identified as the MGP site on the Sanborn Maps (historical lot 48) and in the 1863 deed for the New Rochelle Gas Light Company. A title search of the lot on which the gas works is mapped did not indicate any record of utility company ownership. Based on the title search results, it is assumed that the Beers Atlas erroneously located the gas works on the wrong side of the block.

- The 1887 Sanborn Map shows an inset diagram of the MGP site, identified as the New Rochelle Gas Light Co., along Little Center Street (currently Cedar Street). Several buildings and one 10,000 cubic foot capacity gas holder are depicted on the map. The buildings adjacent to Little Center Street are labeled Coal & Coke Shed, “Off.” (office space), and Purifier House. Just east of the purifier house is the gas holder, with the “Meter House” north of the holder. A Coal Tender and Repair Shop is depicted south of the holder, along with a Retort House. Fuel for the site is listed as coke and coal. (Note that the fuel types, along with the mapping of a retort house, indicates the production of coal gas.) Although not depicted on the map, a second gas holder may have been present at this time to the east of the holder shown. A note along the eastern margin of the figure reads “Gas Holder Beyond”, implying a structure was present to the east.
- The 1892 Sanborn map shows the site on a full-scale map. The site is shown as the “American Gas Co. of New Rochelle, N.Y.”. The site resides on the corner of Spring Street to the north, and Centre Street (currently Cedar Street) to the west. Several other changes can be seen on the map. The buildings formerly shown adjacent to Little Center Street are not present, except for the purifier house, which has been turned into a storage building. New structures were built north of the gas holder shown on the 1887 map and east of the old structures (away from the street), in the northwest corner of the site. These structures contain a new purifying house and what appears to be a scrubber and generator house. The meter house is not present, and the coal tender, repair shop and retort house are now storage spaces. A second gas holder, with a capacity of 30,000 cubic feet, is shown on the north end of the site, with a new coal shed constructed just south of it. A dwelling is shown in the southwest corner of the site that appears to be associated with the MGP. The 1892 map also shows a rail yard to the west and northwest across Centre Street with a freight depot. A locomotive roadhouse is shown to the northwest, approximately 200 feet from the MGP site. A tank is also shown on the north side of the roundhouse, but its capacity and use cannot be read from the maps.
- The 1896 Sanborn Map shows three significant changes to the site. The site is now called the “New Rochelle Gas and Fuel Co.” A third

new gas holder, with a capacity of 230,000 cubic feet, is shown to have been constructed on the south end of the site, and the storage building south of the first holder, has been separated into two buildings. An expansion of the rail yard is shown, with a new freight depot located approximately 250 feet due east of the MGP site.

- The 1903 Sanborn Map indicates that the first gas holder is no longer present, and there is an unlabelled building constructed adjacent to the third gas holder. It also indicates an expansion of the on-site dwelling located west of the third gas holder and the storage building that was broken up into two buildings has changed. All other site features, including the site name, are the same as was depicted on the 1896 Sanborn Map; however, directly north across Spring Street a Standard Oil Company oil terminal is shown with two iron tanks and two buildings.
- The 1911 Sanborn Map indicates that the site is now called the “Westchester Lighting Co.” and Centre Street is now called Cedar Street. A note in the margin of the map indicates that “gas pumped from works at Town of Pelham, buildings used for storage & repairs”. Several other changes can be seen. The buildings in the northwest corner of the site are now two storage areas, a meter house and a shop. The coal shed located in the center of the site is now divided into a shed and another storage building. The unlabelled building adjacent to the third holder is now a governor house. There is another building, which could possibly be labeled engine house constructed on the south end of the site. The rail yard to the west shows continued expansion with the addition of additional rail sidings. A new structure within the yard approximately 200 feet west of the site is labeled “Indianapolis Abattoir Co.”. (An abattoir is a slaughterhouse.) The oil terminal to the north of the site continues to be shown, however a number of other commercial structures are also shown on this block and on the next block to the north. These commercial structures are labeled as part of a woodworking company. Multiple railroad tracks are shown approximately 400 feet north of the MGP site, with additional manufacturing buildings beyond.
- The Hopkins Westchester County Atlas of 1930 contains a map called the Cedar Street Works Site New Rochelle, New York. The “Westchester Lighting Co.” is identified on the map, but only the dotted outline of holder at the south end of the site is shown. The site seems to include an eastern parcel that stretches across the block to the corner of Spring and River Streets, where two structures are present. Of the two structures, only one is identified. The “Amer. Rwy. Express Co.” building is located in the northeast corner of the site.

- The 1931 Sanborn Map shows significant changes to the site. There are no longer any gas holders shown on the site, which is still called the “Westchester Lighting Co.”. A private garage has been constructed in the southwest corner of the site, taking the place of the former dwelling. There is a stove warehouse in the easternmost portion of Lot and a larger structure is built in the northeast corner. The name of this structure cannot be discerned from the Sanborn Map, but is in the same location as the “Amer. Rwy. Express Co.” shown in the 1930 Hopkins Westchester County Atlas. Two warehouses and a “meter dep’t” are found in place of the former shed and storage buildings. The building in the northwest corner of the site is now replaced by a machine shop, blacksmith, and various other structures. Within the rail yard to the west, the area identified as the Indianapolis Abattoir Company is now identified as the Rosa Coal & Ice Co., and there is a coal shed. The locomotive roundhouse is no longer shown and has been replaced by a smaller building labeled R.R. storage. North of the site the oil terminal is no longer present, with its location shown as a lumber shed (part of the surrounding woodworking facilities).
- The 1951 Sanborn Map shows changes to the “Westchester Lighting Co.” site. The warehouses, meter department, and blacksmith are gone, as well as the stove warehouse. The building in the northeast corner of the site is labeled “electroplating”. Within the rail yard to the west, the tank formerly associated with the roundhouse is no longer present, and a coal pile is shown at the former location of the coal shed at the Rosa Coal & Ice Co.
- Significant changes to the site are shown in the 1990 Sanborn Map. The site has been changed into a “used auto sales” facility, with five structures built to support that facility. All other buildings and structures are gone, and a new road called Sheraton Plaza (Cross) cuts across the block just south of where the private garage used to be located. Spring Street is shown as Palmer Ave Ext’d. To the west, the rail yard and all of its associated structures are no longer shown. A Con Edison transformer yard and control building are shown just to the southwest of the former roundhouse location. An office building and parking area are shown due west of the site across Cedar Street within the former rail yard. The woodworking facility to the north of the former MGP site is no longer shown, with the block on which it stood bisected by a new roadway.
- The 1991 Sanborn Map is the same as the 1990 Map, except that the Sheraton Plaza road is now called Ramada Plaza.
- The 1992, 1993, 1994, 1995, and 1996 Sanborn Maps are identical to the 1991 edition.

5.2 History of Site Ownership

The history of site ownership was compiled using the chain-of-title search, Brown's Directory, PSC reports, and Sanborn Maps. A site ownership chronology is provided in Table 5-2.

- The New Rochelle Gas Light Company was incorporated on July 2, 1863 [Chain-of-Title]. The Chain of Title shows that New Rochelle Gas Light Company owned the property in 1863 and the 1868 Beers map shows that there is a gas works on the property.
- In 1887, the New Rochelle Gas Works was operational at the "Little Center" (later called Centre Street, then Cedar Street) location [Brown's Directory].
- The company became known as the New Rochelle Gas and Fuel Company by 1889 [Brown's Directory].
- The 1892 Sanborn Map indicates that the site was operated by the American Gas Company of New Rochelle, New York, although Brown's Directory continued to indicate that the plant was operated by the New Rochelle Gas and Fuel Company through 1899 [Chain-of-Title, Sanborn Map, 1892 and Brown's Directory]. The MGP operated only on the western half of the block along Centre (now Cedar) Street. The eastern half of the block along River Street was either residential or undeveloped.
- On March 30, 1899, the New Rochelle Gas and Fuel Company was consolidated with the New York Suburban Gas Company, a consolidation of a number of other companies incorporated on March 9, 1899 [PSC Reports and Brown's Directory].
- On December 1, 1900, the New York Suburban Gas Company merged into the Westchester Lighting Company [PSC Reports and Brown's Directory].
- The 1911 Sanborn Map indicates the gas plant structures were still present on the property and the site was being used for storage by the Westchester Lighting Company [Sanborn Map, 1911].
- By 1931, Westchester Lighting Company expanded the property further east to include the one parcel adjacent to River Street.
- In 1951, the former MGP site is still owned by the Westchester Lighting Company [Sanborn Maps]. In 1951 the Westchester Lighting Company was fully merged into Con Edison as the Westchester Division [Brown's Directory].

- In 1953, Con Edison sold the property to R.E.C. Realty Corp [Chain-of-Title].

A Con Edison real estate record from 1970 (amended through 1980) indicated that Con Edison purchased a parcel of land from the City of New Rochelle in 1969. This property, Section 1, Block 251, Lot 30 was supposed to be the location of a gas distribution plant that was in service. As far as it can be discerned from available records, this property was not associated with the former MGP site, although the Sanborn Maps that cover the former MGP site area do not extend this far to the southeast.

6 Past Site Operations

The operational history of the former MGP site in New Rochelle was established using historical and current records from the earliest record of the site, through the time of the MGP operations, to the present time. A list of the records reviewed and a description of each is provided below, followed by a summary of the MGP site operational history and subsequent site uses as established using all the resources that were identified. For each site use, potential residuals associated with the process are identified.

6.1 Aerial Photograph Review

Aerial photographs were available for the years 1925, 1940, 1947, 1954, 1960, 1970, 1976, 1980, 1986, 1990, 1995, and 2000 at the Westchester County Planning Department. An additional photograph, dated 1924, was provided by Con Edison. A summary of the aerial photograph review is provided below, and copies of selected aerial photographs are included as Appendix G. Sanborn Maps were used to help identify structures shown on the aerial photographs.

The 1924 aerial photograph showed two gas holders and a number of structures, all located on the western half of the block. The supporting superstructure of the northern holder is visible, but the bell is fully retracted into a subsurface pit. The southern holder bell is raised above what appears to be an above-ground tank, indicating that this was an above-grade holder. The property to the east of the MGP site, which was acquired later by Westchester Lighting Company, is shown as vacant except for a building at the northeast corner of the block.

In 1925, the larger above-ground gas holder was present on the southern portion of the property. An outline of the smaller above-ground holder pad appears to be present northwest of the larger holder although whether this is actually the holder's pad could not be discerned. There were MGP buildings on the property to the west and southwest along Cedar Street.

The 1940 photograph no longer shows the above-ground gas holders and the property was not very developed at that time. The 1947 photograph shows that the buildings had changed. The 1954 photograph shows a parking lot and buildings present. The 1960 photograph shows no changes since the 1954 photograph.

The 1970 photo shows the Ramada Plaza right-of-way, and new buildings were present west and southwest along Cedar Street. Also present were vacant lots north and southeast of the buildings. The 1976, 1980, and 1986 photograph shows no changes since the 1970 photograph. The 1990 photograph shows the vacant areas as parking lots. The configuration of the property appears to have stayed the same until 2000.

6.2 Site Operational History

The records identified in Section 6.1 were used to compile a comprehensive operational history of the Cedar Street former MGP site, including gas production at the site (including capacity, equipment, and residuals produced), MGP site closure activities (including structures remaining, converted to other uses, dismantling), other site uses, and any general changes to the site over time.

6.2.1 History of Gas Production

Operational History

A comprehensive operational site history was developed for the Cedar Street Works former MGP site using Brown's Directory, PSC Reports, chain of title, historical maps (Sanborn Maps and Atlas Maps), aerial photographs, and information provided by Con Edison.

The exact construction and starting date for gas production at the site is not known based on the available information. The earliest record of operations of the New Rochelle former MGP site is identified in the chain of title search results, which shows a transaction on July 2, 1863 between Westchester Turnpike Road and the New Rochelle Gas Light Company (Appendix D). The 1868 *Atlas of New York and Vicinity* [Beers, 1868] shows a Gas Works located between Centre (Cedar) and River Streets, slightly south of Spring Street, although the plant is shown to be located on the eastern parcels adjacent to River Street rather than Centre (Cedar) Street. It is likely that this is the former Cedar Street Works. Based on these references, the start of gas production at the site was sometime between 1863 and 1868.

According to PSC Records, the New Rochelle Gas and Fuel Company was incorporated on December 1, 1887. In 1887, the first year that Brown's Directory was published, the New Rochelle Gas Works produced coal gas [Brown's Directory]. According to the 1887 Sanborn Map (earliest available for the site), the Cedar Street Works former MGP consisted of coal gas manufacturing structures located along Centre (Cedar) Street including two gas holders (only one is shown, other is referred to on the map), a retort house, repair shop, coal storage, purifier house, meter house, office, a coal and coke shed, and several small buildings or rooms that can not be identified. The gas holder located adjacent to Centre (Cedar) Street is a 10,000 cubic foot capacity holder, and is likely to have been a below-ground holder since it is the original gas holder.

By 1889, the plant had been converted to water gas production (Brown's Directory). Several additional buildings were constructed in the northwest corner of the site to house the scrubbers and exhausters [1892 Sanborn Map]. A 30,000 cubic foot gas holder is shown to the northeast of the original holder, and a coal shed replaced the former meter room. The 30,000 cubic foot

holder may also have been a below-ground holder, since it was constructed prior to 1887 [1887 Sanborn Map], and the 1924 aerial photograph shows it fully retracted to ground level. The former coal gas production buildings had been converted to storage by 1892. The 1896 Sanborn Map indicates that the smaller holder was no longer in use and a larger 230,000 cubic foot holder had been constructed to the southeast of the gas plant buildings. A holder of this size constructed in the 1890s is likely to have been an above-ground holder, although the foundation may have been below-grade. The production building was also expanded to the south. A residence was located in the southwest corner of the site, likely for the site foreman or other site personnel.

Gas production was only cited for the years 1890 through 1900 in Browns Directory. Production was 6 million cubic feet in 1889 [1890 Brown's Directory], and rose to 37 million cubic feet in 1899 [1900 Brown's Directory].

In 1899, the New Rochelle Gas and Fuel Company consolidated with the New York Suburban Gas Company. In 1900, the New York Suburban Gas Company was merged into the Westchester Lighting Company (of Mt. Vernon, New York) [1900 Brown's Directory and PSC Reports]. After that time, Brown's Directory reports combined gas production for all the plants operated by the Westchester Lighting Company under either the Mt. Vernon, New York or Yonkers, New York listing, therefore, it is impossible to distinguish among the different plants or to determine if certain plants were no longer used. At some point prior to 1905, the Consolidated Gas Company of New York gained financial control of the Westchester Lighting Company, although gas production was still reported under the Mt. Vernon listing [1905 Brown's Directory, under financial information for Consolidated Gas Company].

The 1903 site configuration remained essentially unchanged, although the 10,000 cubic foot holder was no longer shown [1903 Sanborn Map]. Until 1908, Brown's Directory maintained a listing for the Westchester Lighting Company in New Rochelle, although it referred to Mt. Vernon for details. After this time, Brown's Directory did not have a listing under New Rochelle. This may be an indication that the gas plant was no longer being operated. The 1911 Sanborn Map confirms that the New Rochelle MGP was no longer in operation and the buildings were used for storage and repairs. At that time, gas was pumped to the site from the works in the Town of Pelham [1911 Sanborn Map]. This indicates that the gas holders were used for gas storage and distribution at this time. The 30,000 cubic foot (northern) holder and the 230,000 cubic foot (southern) holder (southern) were removed by 1931.

The property was expanded to the east by Westchester Lighting Company in 1924 (Chain-of-Title Search), with buildings on the site used for warehousing and a machine shop. A garage was also constructed at the site sometime prior to 1931 (Sanborn Map). The property was sold by Con Edison in 1953.

Residuals Associated with MGP Site Use

The former MGP at New Rochelle produced gas via coal carbonization and carbureted water gas processes. The gas manufacturing processes generated a variety of residuals including tar, ammonia liquor, coke, clinker, gas purification residues, tar/water emulsions, and wastewaters. The following provides a general overview of the residuals produced and used at a typical MGP site, and it is not specific to the New Rochelle MGP site except where it is noted.

Coke is a solid material that is primarily carbon (typically 80 to 90%). It is the remnant of bituminous coal that has been subjected to high temperature destructive distillation. The non-carbon portion of the coke contains metals in varying concentrations.

Tar produced during gas manufacture was a complex mixture of hydrocarbons that could range from a viscous liquid to a gummy solid depending on its water content, origin, age, storage conditions, and temperature. Tar contains hundreds of compounds with the ones of primary environmental interest being volatile aromatics and polynuclear aromatic hydrocarbons (PAHs). Tar produced during coal carbonization also contained tar acids, such as phenols. For the most part, tar and water were immiscible, being readily separated by gravity settling. However, at intermittent and unpredictable times, some carbureted water gas processes produced tar/water mixtures that were miscible and not readily separable by gravity settling methods. These tar/water mixtures were called tar/water emulsions. Tar is the most likely residual to be found on MGP sites, and may be found in subsurface structures remaining on the site. Two gas holders that were likely to have been below-grade (10,000 cubic foot holder and 30,000 cubic foot holder) were shown on the Sanborn Maps [1896 Sanborn Map]. Another holder, with a capacity of 230,000 cubic feet, was shown on the southern parcel of the site. It is not certain whether the holder on the southern parcel was partially below-ground. The holder was known to have an above-ground portion that was clearly visible in the 1925 aerial photograph, however, a below-ground portion could not be discerned.

As produced at the time, ammonia was generally in the form of an ammonia-water solution. Typically, ammonia was collected in ammonia wells; however, the Sanborn Maps did not indicate the presence of these structures.

For the most part, gas purification residues were solid materials generally made up of woodchips, corn cobs, or a similar fluffing agent impregnated with iron salts. During gas purification, these materials absorbed hydrogen sulfide and, in the case of coal carbonization, cyanide from the gas. These purification materials were generally regenerated and reused several times, but when the sulfur content reached approximately 30 to 40% of the material, the purification materials were no longer useable and became "spent." Prior to the use of iron salts, lime was used as a purifying agent and may be present at MGP sites as a purification residual. The Sanborn Maps of the former MGP

site at New Rochelle show two purifier houses at different times located along Centre Street (Cedar Street) [1887 and 1892 Sanborn Maps].

Clinker was a granular solid material resulting from the coke or coal reaction in the water gas generator vessel. The material was the fused ash remaining after the carbon had been reacted to form gas.

Wastewater was the water overflow from tar separators. A major portion of this overflow was recycled as cooling water. Excess overflow was wastewater.

Wastewater was universally considered a waste at the time of operation. Other materials were considered useable as by-products or fill. Coke, tar, and ammonia were sometimes sold to generate revenue, thereby reducing the cost of gas to the consumer. Coke and tar were sometimes used in gas making as feedstock or fuel. Gas purification residues (e.g., spent oxides) and clinker were sometimes used as fill materials at MGP sites and elsewhere.

In addition to residuals produced, feedstocks to the process, including gas oil used in the carbureted water gas process, have the potential to remain in the subsurface.

There are no available records to indicate how residuals or feedstock at the site may have been managed, stored, or disposed (including potential sale of by-products) during and subsequent to MGP operations. Table 6-1 summarizes potential MGP residuals that may be remaining at the site.

6.2.2 Other Site Uses

Westchester Lighting Company continued to operate on the property at least into the 1950s [Sanborn Maps]. By 1931, the property had been expanded to the northeast to include the parcel adjacent to the site along Spring and River Streets. Two structures were constructed on this portion of the property. Some of the former MGP production buildings remained and were used for warehouses, a meter shop, and a machine shop, although the two gas holders were no longer shown. A large parking garage had been constructed in the southwestern portion of the property, where the residence had been located [1931 Sanborn Map]. The 1951 configuration remained essentially the same although, some of the buildings had been removed [1951 Sanborn Map].

Sometime between 1951 and 1970 the configuration of the site and the surrounding area was changed during an area-wide urban renewal project conducted by the City. New buildings were constructed on the west and southwest portion of the former site along Cedar Street [Aerial photographs]. Based on the aerial photographs, the buildings are located on property that was part of the former MGP, as well as property to the south of the site between the former site and the Ramada Plaza. North and southeast of the buildings were vacant lots [Aerial photographs]. The 1990 photograph shows the vacant areas as parking lots and the 1990 Sanborn Map indicates that a

used auto sales shop is located in the northeast corner of the property [Aerial photograph and Sanborn Maps]. The current site use is for a Toyota car dealership.

Residuals Associated with Other Site Uses

The Westchester Lighting Company operated what appeared to be a maintenance facility that included storage, a meter shop, and a machine shop subsequent to the MGP. Mercury could be associated with meter servicing and lubricants and waste oils could have been associated with the machine shop. Additionally, storage may have included transformers that contained polychlorinated biphenyls (PCBs). The garage located on the southern portion of the property may have been used for automotive maintenance and potential residuals associated with this site use include waste oils, lubricants, and gasoline. It is not known if any of these activities took place at the site.

The property development following Westchester Lighting Company use includes a car dealership. It is not known if cars are currently fueled and serviced at this location, though the EDR report cited two gasoline tanks on the property. Residuals associated with the current site use potentially include waste oils, lubricants, gasoline, paint, and other automotive maintenance related residuals.

The EDR database identified underground storage tanks (USTs) at the site location under the former owner, Crabtree Toyota. There was no record of removal of these tanks, however, the current owner of the property (Metro Toyota) is not listed as having USTs in the UST database [EDR Report]. There may be residuals in the subsurface associated with the USTs.

6.2.3 Previous Site Investigations

No records of previous site investigations were identified.

7 Environmental and Agency Records Review

A review of information available in public and private databases and records was conducted to collect information related to the site and the surrounding properties. An EDR database records search was provided to RETEC from Con Edison and was reviewed to establish the history of environmental actions involving the site or nearby properties. Additionally, RETEC searched public agency records to obtain information about the site. The results of each of these searches are provided below.

7.1 Environmental Records

7.1.1 Database Searches

An environmental records search for the Cedar Street site was conducted by Environmental Data Resources, Inc. (EDR) on behalf of Con Edison. This report was provided to RETEC for review and incorporation into the historical investigation report. The EDR report includes the results of searches of federal, state, and EDR proprietary databases for listings of the target property (site) and any other properties within up to a 1-mile radius of the site. The report also includes a physical setting summary as performed by EDR. A copy of the EDR report is included in Appendix C.

The New Rochelle Gas Company was listed in the EDR proprietary database of former manufactured gas plant sites. The exact address was given as 53 Cedar Street, located at the southeast corner of Spring and Cedar Streets.

Surrounding properties within one-mile of the site were identified on several federal and state databases. The results are summarized according to lower elevation or higher elevation to the target property, which may be an indication of properties that are upgradient (higher elevation) or downgradient (lower elevation) from the target property.

The Resource Conservation and Recovery Act (RCRA) Corrective Action Activity database (CORRACTS) is a list of handlers that have had a nationally-defined corrective action core event. The CORRACTS database indicates one site located at an equal or higher elevation within approximately one-mile of the target property.

The Federal Resource Conservation and Recovery Information System (RCRIS) 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 United States Environmental Protection Agency (USEPA). The EDR review of the RCRIS-LQG (large quantity generator) list dated June 21, 2000, identified two large quantity generator sites located within 0.125-mile

from the target property at an equal or higher elevation, and one site located between 0.125 and 0.25-mile from the target property at an equal or higher elevation. The EDR review of the RCRIS-SQG (small quantity generator) list dated June 21, 2000, identified two small quantity generator sites located within 0.125-mile from the target property at an equal or higher elevation and one site located between 0.125 and 0.25-mile from the target property at an equal or higher elevation. One of the small quantity generator sites is Metro Toyota, the current site occupant (47 Cedar Street). The second RCRIS-SQG site within 0.125-mile is the Sheraton Plaza Inn, located directly southeast of the Site, across what is currently Ramada Plaza. The current occupant of this property, Ramada Plaza Inn, is not listed in the database.

The State Hazardous Waste Sites (SHWS) records are the states' equivalent to the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). 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. The data came from the Department of Environmental Conservation's Inactive Hazardous Waste Disposal Sites in New York State. EDR's review of the SHWS list revealed that there is one SHWS site located at a lower elevation within approximately 0.5-mile of the target property. This property is a Con Edison parcel located southeast of the former MGP site that is indicated in the database as being formerly owned by Westchester Lighting Company and acquired by Con Edison in the 1930s. The site was the location of a substation, and does not appear to be related to the former MGP site.

The State Leaking Storage Tank Incident Reports (LTANKS) database includes an inventory of reported leaking storage tank incidents reported from April 1, 1986 through the most recent update. A review of the LTANKS lists dated October 1, 2001, as provided by EDR, revealed that there are 35 LTANK sites at equal or higher elevation within approximately 0.5-mile of the target property. Thirty-two of these sites are located between 0.125 and 0.5-mile from the target property, and three of these sites (two at Mutual Biscuit Co. Inc., 65 River St., and one at Plastic Works, 115 Cedar St.) are located within 0.125-mile of the target property. The LTANKS list indicated that there are nine LTANK sites at lower elevation within approximately 0.5-mile of the target property.

The State Underground Storage Tank (UST) database contains registered USTs. The data come from the Department of Environmental Conservation's Petroleum Bulk Storage (PBS) Database. EDR's review of the UST lists dated October 1, 2001, has revealed that there are 11 UST sites at equal or higher elevation within approximately 0.25-mile of the target property, and three of these sites (Crabtree Toyota, 47 Cedar Street; Mutual Biscuit Co. Inc., 65 River Street; and Emergency Beacon Corporation, 15 River Street) are located within 0.125-mile of the target property. Crabtree Toyota (47 Cedar Street) is the former site occupant prior to Metro Toyota. Note that Crabtree Toyota no

longer operated at the property at the time the database was updated; therefore, it is not known whether the tanks are still present. The current owner, Metro Toyota, is not listed in the UST database.

Additional Environmental Records Searches

RETEC conducted searches of additional records to provide the most comprehensive collection of current and historical records regarding the site. A Freedom of Information Law (FOIL) request was made to the NYSDEC for any information regarding the Cedar Street former MGP site. No information was obtained; NYSDEC indicated that no information was available for the site.

7.2 Public Agency Searches

Several public agencies were visited to determine the availability of historic or current information for the site. In the City of New Rochelle, a search was conducted at the building department and planning department. In Westchester County, a search was conducted at the historical society and planning department.

7.2.1 City Directories

City directories for New Rochelle could not be obtained; therefore, a review was not conducted.

7.2.2 Public Library

The public library of the New Rochelle was visited. No information was found pertaining to the New Rochelle Cedar Street Works site.

7.2.3 Building Department

The building department of New Rochelle was visited. On November 19, 2002, RETEC obtained information from the building department of New Rochelle. The reports are mostly certificates of different installations and occupancy expiration documents. There is no mention in the reports of the construction or removal of the New Rochelle Cedar Street Works site.

7.2.4 Real Estate Records

Real estate records were searched to determine real estate transactions regarding the former MGP property. A Con Edison records search did not identify any previous environmental assessments or reports for the Cedar Street site.

8 Potential Exposure Pathways and Receptors

This section will discuss the imminent or potential risks to human health or the environment based on an evaluation of potential residuals on the site, potential exposure pathways and receptors.

8.1 Potential Residuals

Past uses of the Cedar Street site may have impacted soil and groundwater and residuals may be present in the subsurface. Additionally, offsite properties that may have or may in the future contribute to the health and environmental hazards of the area include those properties identified in the EDR database search.

A discussion of potential residuals that may be at the site based on past and current site use was presented in Section 6.0. To summarize, MGP residuals include tarry residuals containing volatile compounds, PAHs, and phenolics that may be present in subsurface structures and surrounding soils and may impact soil and groundwater quality. Purifier residuals containing lime, iron oxides, and cyanide may be present on the site. Ammonium sulfate crystals and clinker may also be MGP residuals remaining in the site soils. Lastly, gas oil used in generation of carbureted water gas could be present on the site in subsurface structures or surrounding soils.

Other site uses after the MGP operations ceased may have contributed petroleum products, automotive paints, PCBs, or metals to the residuals present at the site. Spills on offsite properties, as recorded in the EDR database, have the potential to impact groundwater quality at the site.

8.2 Potential Exposure Pathways and Receptors

The current and anticipated future use of the New Rochelle former MGP site is commercial. The majority of the site is covered with buildings or pavement (90%), with the remainder consisting of grassy lawn areas. Employees, groundskeepers, and visitors to the property are potential receptors who could experience direct contact exposures with soil. However, since the majority of the site is covered, direct contact exposures by these receptors would be minimal.

A potential route of exposure to building occupants may be vapor intrusion from volatile constituents in soil or groundwater under the buildings. The main building has a first floor that is below-grade and available historical maps and drawings show that a portion of this building has been constructed

over the location of the former 230,000 cubic foot above-ground and is near the location of two former below-ground holders.

Construction workers or subsurface utility workers may be exposed to constituents in subsurface soil if performing subsurface excavation work (e.g., utility line maintenance or replacement).

Since 90% of the site is covered, leaching of constituents from soil to groundwater is not expected to be a significant pathway, although cracks in the pavement were observed. Additionally, constituents already present in subsurface soil or groundwater have the potential to migrate offsite to downgradient properties. Since the area is highly commercialized, there are a number of potential offsite sources of groundwater impacts including the Sunoco station located directly downgradient of the former MGP site, as well as a number of spill or leaking tank sites located upgradient from the site. The low permeability silty clay till that regionally underlies the area may prevent extensive migration of MGP constituents horizontally and vertically, although the extent of this unit underlying the site has not been directly assessed via investigation.

Groundwater at the site is expected to be shallow. There are no known wells on the site; however, wells do exist within a one-mile radius of the site. The area is supplied by municipal water and groundwater from these wells appears to be for industrial purposes; therefore, there are no known groundwater users for potable purposes in the vicinity of the site. Groundwater likely discharges to Echo Bay, which is approximately 1,700 feet downgradient of the site. Due to the distance from the site to the river, it is unlikely that the river would be an environmental receptor to potentially impacted site groundwater. Surface water runoff from the site is likely captured by the site drains and nearby storm drains that connect to the city stormwater collection system.

Given the current site use, its urban surroundings, and its distance from Echo Bay, it is not likely that there are any significant environmental habitats (i.e., endangered species, wetlands, etc.) that would be affected by the site.

The site reconnaissance identified one school and one day care center within 0.25-mile of the former MGP site. These facilities can be placed into two groups: those which are located upgradient or side/cross gradient from the former MGP site and therefore are not within a zone which is likely to be impacted by potential offsite migration of MGP residuals in groundwater, and those which are hydraulically downgradient of the site.

The school and day care center identified in the records search were not identified as upgradient or cross-gradient of the former MGP site. Therefore, facilities that are potentially downgradient from the MGP site include the following:

SCHOOLS

Japanese Weekend School (.16 mi.)

56 Harrison St. # 204

New Rochelle, NY 10801-6559

DAY CARE CENTERS

Royal Child Care Center (.26 mi.)

32 Lecount Pl.

New Rochelle, NY 10801-6416

9 Discussion and Conclusions

9.1 Summary of Findings

The New Rochelle former MGP operated from 1863 until 1888 as the New Rochelle Gas Light Company. Coal gas was produced at the site until 1888, at which time the plant was converted to carbureted water gas production. Water gas was produced until sometime between 1908 and 1911. Note that the exact date the MGP started and ceased operations could not be established from the available records. Following the end of gas production the site was used for gas storage until sometime between 1925 and 1931.

The New Rochelle Gas and Fuel Company history consolidated with the New York Suburban Gas Company in 1899. This company then merged into the Westchester Lighting Company in 1900. There are no records of when the gas plant was dismantled, although the 1931 Sanborn Map no longer showed some of the gas plant buildings or the gas holders. The site was expanded by the Westchester Lighting Company in 1924 and the property was used for maintenance and storage at least into the early 1950s.

During an urban renewal program between 1951 and 1970 the configuration of the property was changed, and the above-ground portions of former MGP structures were removed. The surrounding roadways were modified at this time, and new commercial buildings were constructed on the site.

The former MGP site and the adjacent surrounding property are now the location of a Toyota car dealership. The site reconnaissance indicated the property (currently encompassing a larger area than the former MGP or the area occupied by Westchester Lighting Company) is approximately 90% covered with buildings or pavement. There were no visual indications of MGP residuals on the surface of the property. The first floor of the building is partially below the current grade.

Given the past uses of the site, there may be residuals remaining in the subsurface either in subsurface structures or in the soil or groundwater underlying the site. A thin layer of glacial till material is likely to be present at the site. The formation is comprised of silty clay with occasional boulders, and represents a low permeability unit that may help to mitigate potential subsurface migration both vertically and horizontally. Groundwater is not used on the site. A drinking water supply well is reported to be $\frac{1}{4}$ to $\frac{1}{2}$ -mile upgradient of the site and is not expected to be impacted by potential site residuals. There are numerous potential offsite hydrocarbon sources in the vicinity of the site.

Potential receptors to residuals remaining on the site include primarily employees, visitors, and excavation workers. Since most of the site surface is covered, direct contact with residuals in surface soil is very limited and site

users are not expected to be in contact with subsurface soils given the nature of the site as car dealership. Vapor intrusion into buildings on the site is a potential exposure pathway, particularly since the first-floor of the building is partially below current grade and the building is located over the former 230,000 cubic foot above-ground holder, and near two smaller former below-ground holders. Excavation workers may be exposed to residuals in subsurface soil, should excavation be necessary.

9.2 Limitations of Findings

9.2.1 General

The completeness and accuracy of the historic information presented in this report are limited by the records that are readily available including Brown's Directory, PSC Records, Sanborn Maps, chain-of-title search, other historic maps, aerial photographs, and other sources. The coverage offered by these records may not be complete and there are data gaps in the historic information available pertaining to MGP site ownership and operational periods.

To the extent reasonable, additional records searches were conducted to gather as much information regarding the site as possible. Certain records were not readily available and could not be reviewed including:

- city directories;
- library records; and
- building department records for portions of the site.

Information regarding the procedures for handling residuals at the site, the dismantling and decommissioning of the gas plant equipment, and subsequent site activities that may have involved removal of soil or subsurface equipment were also not available.

An assessment of the current site conditions was made during the site reconnaissance, although inspections inside the current site buildings were not conducted.

9.2.2 Roadways

RETEC's interpretation of the relationship between historical MGP operation areas and modern roadways is based on available historical and modern maps. Land surveying and subsurface investigations have not been performed to attempt to mark-out the location of modern and historical features. Because the subsurface environmental conditions at the former MGP sites are currently unknown, our interpretation of roadway relationships and conditions are subject to change based on the acquisition of new data.

The following changes to the streets surrounding the former MGP have occurred since the end of gas production:

- Cedar Street was widened to include a portion of the former MGP. The exact amount of overlap between the current street and the former gas production buildings and gas holder is uncertain. Subsurface investigations and surveying have not been performed to determine the amount of overlap.
- Spring Street (Palmer Avenue Extended) and River Street may have been widened slightly onto former gas company property, especially at the northeast corner of the block.
- Ramada (formerly Sheraton) Plaza was constructed across the center of the block; however, none of the roadway property was owned or operated by the gas company.

9.2.3 Mapping of Property Use

Note that the spatial relationship between the historic MGP property and gas production structures and facilities, and the present-day property could not be exactly determined. The property descriptions from the 1800s deeds were not based on landmarks and references that could be accurately located and compared with the current descriptions of the area.

10 Summary of Historical Research Findings

This section presents a summary of findings of the historical research conducted for the New Rochelle former MGP site.

- The MGP site operated from between 1863 and 1868 until some time between 1908 and 1911. At least one gas holder at the site continued to be used for gas storage and distribution until sometime between 1925 and 1931.
- The MGP site produced coal gas and carbureted water gas. Residuals associated with these processes include tar containing volatile compounds, PAHs, and phenolics, purifier residuals, ammonia residuals, clinker, and gas oil.
- Subsurface structures containing residuals may remain at the site. Information regarding decommissioning of the site or disposition of residuals from MGP operations is not available.
- Other site uses after the MGP operations ceased may have contributed petroleum products, paints, PCBs, or metals to the residuals present at the site.
- The site is currently used for commercial business and surrounding properties are mostly commercial, with one residential apartment building.
- Surficial deposits at the site are expected to consist of glacial till material comprised of silty clay with occasional boulders.
- Groundwater at the site is expected to be at a depth of approximately 8 to 15 feet below ground. Groundwater flow direction is predicted to be from the northwest to the southeast. The closest surface water body is Echo Bay on the Long Island Sound, located approximately 1,700 feet southeast of the site.
- Potential receptors include primarily commercial establishment employees and visitors to the site. The potential for direct contact of receptors with residuals in surface soil is very limited, however, vapor intrusion into buildings on the site is a potentially complete exposure pathway. Excavation workers may be exposed to residuals in subsurface soil, should excavation be necessary. Groundwater containing residuals has the potential to migrate to offsite downgradient properties. There are numerous offsite sources of potential impacts to groundwater.

11 References

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Tables

Table 5-1 Brown's Directory Summary - New Rochelle, New York

Year	Company Name	Process	Annual Gas Production (cf)	Gas Holder Capacity (cf)	Byproducts Made/Sold	Service Area Population	Operating Information	Holding and Operating Companies	Financial Reports	Other Brown's Information	Reference Page(s)
New Rochelle	Cedar Street										
1887	New Rochelle Gas Works	Coal				8,000					40
1889	New Rochelle Gas and Fuel Co.	McKay-Critchlow				8,000					50
1890	New Rochelle Gas and Fuel Co.	Lowe (by McKay-Critchlow)	6,000,000			8,000					80
1891	New Rochelle Gas and Fuel Co.	Peter English patent	10,000,000			7,500					73
1892	New Rochelle Gas and Fuel Co.	Peter English patent	10,000,000			7,500					79
1893	New Rochelle Gas and Fuel Co.	Peter English patent	19,000,000			10,000					82
1894	New Rochelle Gas and Fuel Co.	Peter English patent	18,000,000			12,000					87
1899	New Rochelle Gas and Fuel Co.	Lowe	28,000,000 (C.P., 24)			12,000 (1898 pop.)				No. consumers-1000	82
1900	New York Suburban Gas Co.	Lowe	37,000,000				Also see Mt. Vernon			New York Suburban Gas Co. is a consolidation of the East Chester Gas Light Co., Mt. Vernon, New Rochelle Gas and Fuel Co., New Rochelle, Pelham Gas Light Co., Pelham, Westchester Gas and Electric Co., Port Chester. No. consumers-1,464. Branch works - includes Pelham, see Mt. Vernon	92
1901	Westchester Lighting Co.						See Mt. Vernon - production information reported in Brown's is for all plants of Westchester Lighting Co. lumped together			Listed under New Rochelle, but refers to Mt. Vernon. Westchester Lighting Co. is a consolidation of the Yonkers Gas Light Co., Yonkers; Municipal Gas Co., Yonkers; The Westchester Gas Light Co., Yonkers; New York Suburban Gas Co., Mt. Vernon [including East Chester Gas Light Co., Mt. Vernon; New Rochelle Gas and Fuel Co., New Rochelle; Pelham Gas Light Co., Pelham; Westchester Gas and Electric Co., Port Chester]; Westchester Gas & Coke Co., Mt. Vernon; East Chester Electric Co., New Rochelle; Larchmont Electric Light Co., New Rochelle; Port Chester Electric Lighting Co., Port Chester; Pehlman Electric Light and Power Co., City Island; and Mt. Kisco Lighting Co., Mt. Kisco	94, 95
1902	Westchester Lighting Co.						See Mt. Vernon				99
1903	Westchester Lighting Co.						See Mt. Vernon				106
1904	Westchester Lighting Co.						See Mt. Vernon				111
1905	Westchester Lighting Co.						See Mt. Vernon	Controlled by Consolidated Gas Co., NY	First year financial reports are provided in Brown's Directory is 1905 - Consolidated Gas Company of New York, New York was organized Nov. 11, 1884 as an consolidation of the New York Gas Municipal, Metropolitan, Harlem. Knickerbocker, and Manhattan Gas Light Companies. Since 1899 acquired control of the New Amsterdam Gas, New York Edison, Mutual Gas Light, Standard Gas Light, and the United Electric Light and Power Companies, giving Con. Gas Co. entire control of the power and lighting supply of the borough of Manhattan. Also secured control of the Westchester Lighting Co.		115
1906	Westchester Lighting Co.						See Mt. Vernon	Controlled by Consolidated Gas Co., NY	same as above		121
1907	Westchester Lighting Co.						See Mt. Vernon	Controlled by Consolidated Gas Co., NY			123
1908	Westchester Lighting Co.						See Mt. Vernon	Controlled by Consolidated Gas Co., NY			129
1909-	No listing after 1908 for New Rochelle										

Table 5-2 Site Ownership Summary - New Rochelle (Cedar Street Site), New York

Block	Lot	Former Lot(s)	Utility Owner	Purchased	Sold	Current Owner	Purchased	Other Industrial Activity
247	15	19 (old 40 & 41)	New Rochelle Gas Light Company	7/7/1863	4/2/1866	Donnybrook Realty Corp.	8/17/1992	United Enterprises Estree Co Tristar Automotive Group, Inc.
			Westchester Lighting Company		7/12/1904			
			New York and Westchester Lighting Company	7/12/1904	10/20/1904			
			Merger: Westchester Lighting Company with New York and Westchester Lighting	10/20/1904	_____			
			Consolidated Edison Company of New York Inc.	_____	9/10/1953			
247	15	39 (old 47)	Westchester Lighting Company	6/27/1924 & 6/28/1924	_____	Donnybrook Realty Corp.	8/17/1992	United Enterprises Estree Co Tristar Automotive Group, Inc.
			Consolidated Edison Company of New York Inc.	_____	9/10/1953			

Comments: Tax lots 19 and 39 merged prior to 9/10/1953. NYSDOT appropriated part of property in 1968.

Table 6-1 Summary of Potential Residuals Associated with Site Use and Off-Site Sources

Potential MGP Residuals

- Coal tar and carbureted water gas tar or tar/water mixtures in structures (Volatile Organic Compounds, particularly Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX); Polynuclear Aromatic Hydrocarbons (PAHs))
- Solid constituents (BTEX, PAHs) or non-aqueous phase liquids (NAPLs) in subsurface (from leaks or spills)
- Purifier residuals (cyanide and lime)
- Metals in soil or groundwater
- Fuel oil (used in carbureted water gas process)
- Coke/Clinker

Potential Residuals from Other Site Uses

- Former use by Westchester Lighting Company:
 - Oil and grease
 - Petroleum products
 - PCBs
 - Metals
- Residuals associated with current and past commercial car dealership use:
 - Petroleum products including lubricants, waste oil, gasoline
 - Anti-freeze, Brake fluid, transmission fluid
 - Paints

Potential Residuals from Off-Site Sources

- Petroleum products including gasoline (leaded and unleaded), diesel fuel, and fuel oil from leaking USTs in vicinity of site – some noted as affecting groundwater [EDR Database]

Figures

Appendix A - History Research Report Checklist

Appendix B - Site Reconnaissance Photographic Log

Appendix C - EDR Radius Map Report

Appendix D - Chain-of-Title Search Results

Appendix E - Sanborn Maps

Appendix F - Historical Maps

Appendix G - Aerial Photographs