OU I

INVESTIGATION WORK PLAN

FORMER DARBY DRUGS DISTRIBUTION CENTER
80-100 BANKS AVENUE
ROCKVILLE CENTRE, NEW YORK 11570
NYSDEC BROWNFIELD CLEANUP PROGRAN ID: C130140

PREPARED FOR:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
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JUNE 6, 2024
LAUREL PROJECT # 12-190

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LAUREL ENVIRONMENTAL GEOSCIENCES, DPC.
ENVIRONMENTAL CERTIFICATION

***LAUREL* Project No.: 12-190**

NYSDEC Site: **C130140**

Report: OU I Remedial Investigation Work Plan

Report Date: June 6, 2024

Site: 80 – 100 Banks Avenue, Rockville Centre, New York 11750

Client: AvalonBay Communities, Inc
135 Pinelawn, Rd., Suite 130S
Melville, NY 11747

Report Prepared By:

Brian McCabe
Senior Geologist

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Environmental Scientist III

ENVIRONMENTAL PROFESSIONAL CERTIFICATION

I, Scott Yanuck, P.G., certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Remedial Investigation Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Scott A. Yanuck
Principal

June 6, 2024
Date

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REPORT SPECIFICATIONS

This report contains (8) pages of text.

Copies and circulation of this report are as follows:

- One electronic copy to NYSDEC, Division of Environmental Remediation, Remedial Bureau B, Section A, Robert Bellotti
- One electronic copy to New York State Department of Health, Bureau of Environmental Exposure Investigation, Steven Berninger
- One electronic copy to Avalon Bay and Darby Group and their attorneys and consultants
- One electronic copy in the confidential client file at ***Laurel Environmental Geosciences, DPC.***

1.0 INTRODUCTION

Laurel Environmental Geosciences, DPC. ("Laurel") has prepared this OU I Investigation Work Plan ("Work Plan") for the New York State Department of Environmental Conservation ("NYSDEC") in accordance with the Brownfield Cleanup Agreement for Site #C130140, for the property referred to as Former Darby Drugs Distribution Center, located at 80 – 100 Banks Avenue Rockville Centre, New York ("Site"), identified as Operable Unit (OU) I. A Site location is presented in Figure 1.0.

The purpose of this Work Plan is to address the investigation requested by the NYSDEC in their April 15th, 2024, letter regarding elevated contaminant levels identified in several groundwater monitoring wells located at OU I. The NYSDEC noted historically high volatile organic compounds ("VOC") contamination levels were detected in on-site (OU I) monitoring wells 2010-02D and 2010-03D, which are installed to a depth of 25 feet (ft) below the ground surface (bgs) and in off-site (OU II) monitoring wells MW-11R, MW-12R, MW-13R and MW-14R. As a result of this anomalous increase in contaminant concentration, the NYSDEC requested that a groundwater elevation study be performed across OU I and OU II in an effort to identify possible causes for the observed increases in VOC contamination. In 2018, the NYSDEC collected and analyzed groundwater samples from three (3) off-site (OU II) monitoring wells (MW-2, MW-11 and MW-12) for emergent compounds per- and polyfluoroalkyl substances (PFAS), 1,4 dioxane, and perfluorooctanic acid (PFOA). Measurable levels of these compounds were detected in all three (3) wells. As a result of these detections, the NYSDEC has requested that a site wide round of groundwater sampling be performed for the presence of PFAS compounds.

In order to address the concerns of the NYSDEC, the following Work Plan has been developed. A separate work plan for OU II will submitted by Envirotrac Ltd ("EnviroTrac").

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION AND HISTORY

The OU I portion of the Site currently consists of three (3) multi story residential apartment buildings, with the area of concern located on the southwest portion of the Site identified as Section 38, Block 539 and Lots 27 and 30 on the Nassau County Tax Map and is approximately 7.1 acres in area.

The chlorinated solvent tetrachloroethylene (PCE) was identified during a Phase II investigation performed at the Site in November of 2003. It is believed that the PCE and related chlorinated solvent contamination occurred during the time frame when the Site was leased by Downen Zier Knits, Inc. (textile company) between 1972 and 1978. The Site was then purchased by Darby Drug Company, a drug distribution warehouse.

The nature and extent of chlorinated volatile organic compounds (CVOCs) was investigated and delineated for OU I and OU II. Through the process of excavation and in situ chemical treatment with potassium permanganate the identified CVOC source area remediation was performed and completed for OU I under a modified Brownfield Cleanup Agreement (BCA) with a Certificate of Completion (COC) issued on December 19, 2011. According to the Site Management Plan (SMP) dated November 4, 2011, management of the residual CVOCs present at OU I is the responsibility of the current property owner. Under a Order on Consent, Darby Group Companies, Inc. (Darby Group) agreed to assume responsibility for the off-site, OU II investigation and any remediation required, that resulted from the former property owners (Downen

Zier Knits, Inc.) textile operation.

2.2 SITE HYDROGEOLOGY

Nassau County is located in the Atlantic Coastal Plain physiographic province that is characterized by low hills of unconsolidated sands, gravel, and silt. According to Franke (1972), regionally, the near-surface sediments consist of the Upper Glacial deposits that are characterized by southward sloping deposits of sand, gravel, and silt. The Upper Glacial deposits have a maximum thickness of 600 feet. They are underlain by the Magothy, Raritan, and Lloyd Formations. The Gardeners clay and the Jameco gravel separate the Upper Glacial deposits and the Magothy Formation along the southwest portion of Long Island. Due to less surficial contamination and higher yielding wells, the Magothy aquifer is the main supply for drinking and industrial water. Consequently, the USEPA has identified the aquifer system beneath Nassau and Suffolk Counties as a Sole Source Aquifer. The Site overlies the Upper Glacial aquifer. Pump test data suggests hydrogeologic conductivity between the Magothy and Upper Glacial aquifers. However, discontinuous clay lenses may prevent this interaction in some areas.

Based upon soil borings installed during the Supplemental Remedial Investigation (RI) and during the Interim Remedial Measure (IRM), a clay layer beneath the Site appears to extend from approximately 15 feet bgs to approximately 35 feet bgs. Soils above the clay consist primarily of unconsolidated sands and gravel, while the material underlying the clay is generally medium to fine sands with trace deposits of gravel. In addition to the shallow clay layer, deep soil borings at the Site have encountered an additional deeper clay layer, approximately three to five feet thick from 55 feet bgs to 60 feet bgs, with tightly packed fine to medium sand underlying it. The three groundwater formations above, between, and below the two confining clay layers appear to consist of tightly packed sands and silts. The deepest water bearing zone consists of tightly packed silt and fine sand followed by silty sand. The upper most water bearing zone is under water table conditions with the saturated zone from approximately 5 feet to 15 feet bgs. Flow direction prior to the intallation of a flood wall, located west of the Site, has been calculated as ranging from south to south-southeast.

A flood wall was installed between OUI and OUII and the effects on groundwater flow direction are unknown.

3.0 PROPOSED SCOPE OF WORK

The scope of work under this Work Plan will include a professional survey of the existing groundwater monitoring wells located in OU I, creation of a regional groundwater flow map, and collection of groundwater samples from shallow groundwater monitoring wells in OU I for PFAS analysis. Additional details for each of these activities are described in the sections below.

3.1 SAMPLING RATIONALE

This groundwater sampling scope of work has been developed to address the data gaps at OU I. According to the Elevated Contaminant Levels letter dated April 15, 2024 issued by NYSDEC, PFAS contaminants were detected in off-site wells located down-gradient of the Site. Subsequently, NYSDEC is requesting a full PFAS analysis of groundwater monitoring wells at the Site.

3.2 GROUNDWATER MONITORING WELL SURVEYING

There are four (4) clusters of wells located throughout OU I and each cluster is comprised of four (4) wells that are screened from 10 to 15 feet bgs, 40 to 50 feet bgs, 60 to 70 feet bgs, and 90 to 100 feet bgs. All groundwater monitoring well locations on OU I are shown on Figures 2.0.

Groundwater elevation readings will be collected at all permanent monitoring well locations for use in the creation of a site-specific localized groundwater flow contour map and regional groundwater flow map using the OU I and off-site (OU II) monitoring wells. The groundwater contour map will be developed relative to a permanent surface structure with the data provided in an acceptable format (e.g. North American Datum 83 [NAD83]) for review. The groundwater elevation study will be performed across OU I and OU II to determine what impact the floodwall has had on groundwater flow and whether the floodwall has caused the observed increase in VOC contamination. To assist with the groundwater flow map, data loggers will be installed in select monitoring wells at OU I and OU II. Using the data loggers, groundwater elevation across OU I and OU II can be evaluated and a groundwater elevation flow map will be generated.

Laurel will coordinate with Envirotrac to create a comprehensive regional groundwater flow map across both OU I and OUII.

3.3 GROUNDWATER SAMPLING

A total of 4 groundwater samples from OU I (2010-01D, 2010-02D, 2010-03D, and 2010-04D) will be collected during the proposed work. The samples to be collected, and the rationale for sampling, is summarized in Table 1 on the following page.

Prior to sampling, the groundwater monitoring wells will be purged of three (3) well-volumes of water. Following completion of the purging, three (3) rounds of groundwater quality readings, spaced approximately 5 minutes apart, including pH, temperature, conductivity, and turbidity (less than 50 NTU), will be recorded to demonstrate that connection to the surrounding aquifer has been established and representative groundwater quality samples are collected. All samples to be analyzed for PFAS/PFOS will be sampled using low-flow procedures via non-Teflon tubing and sampling equipment. A minimum of one (1) blind duplicate, one matrix spike ("MS"), and one matrix spike duplicate ("MSD") will be collected from groundwater samples.

The groundwater samples will be collected from all shallow groundwater monitoring wells in OU I and submitted for laboratory analysis of Per- and Polyfluoroalkyl Substances (PFAS) by USEPA Method 537.1M.

Groundwater analytical results will be compared against the United States Environmental Protection Agency (USEPA) National Primary Drinking Water Regulation (NPDWR), which has standards of 4.0 parts per trillion (ppt) for PFOA and PFOS, with other PFAS compounds compared to a standard of 10 ppt.

Table 1
Proposed Sampling Summary

Medium	No. of Samples	Analysis	Analytical Methods	Rationale
Groundwater	7*	PFAS	537.1M	Assessment of PFAS

*Includes three QA/QC samples

3.4 DATA REVIEW AND REPORTING

The data packages received from the laboratory will be reviewed upon receipt by ***Laurel*** and compared against the following applicable NYSDEC and USEPA standards:

- Part 375 PFAS Remedial Program Water Oct 2020
- Final PFAS National Primary Drinking Water Regulation

The laboratory data packages will be submitted to a third-party, independent data validator for review, assessment, and validation. The results of the data validation process will be documented in a Data Usability Summary Report (DUSR).

4.0 REPORTING AND SCHEDULE

An OU I Investigation Report ("the Report") will be prepared following completion of the investigation activities. The Report will provide detailed summaries of the Site conditions and document all applicable observations made during the groundwater sampling and a regional groundwater flow map. In addition, the report will include a description of the sampling procedures, tabulated sampling results, an assessment of the data, conclusions, and recommendations for follow-up activities, as warranted. Laboratory data packages and DUSR will be included with the report as appendices. The Report will include any deviations from this Work Plan and include figures, tables, and laboratory analytical reports.

It is estimated that the groundwater monitoring well survey and groundwater sampling scope of work presented in this Work Plan can be completed within two (2) calendar days. The laboratory results, with an ASP Category B data package, will take an additional estimated two (2) weeks to receive. The data validation and DUSR preparation are anticipated to take four (4) weeks to complete upon receipt of the data. Based on these time frames, it is expected that the project activities will be completed within eight (8) weeks after the Work Plan is approved by the NYSDEC. As a result, the following project schedule has been developed:

Table 2
Project Schedule

Task	Estimated Duration (business days)	Total Duration (business days)
Work Plan approval by the NYSDEC	-	-
Groundwater sampling	2	2
Laboratory analysis	10	12
Data Validation and DUSR	20	32
Data review and reporting	10	42

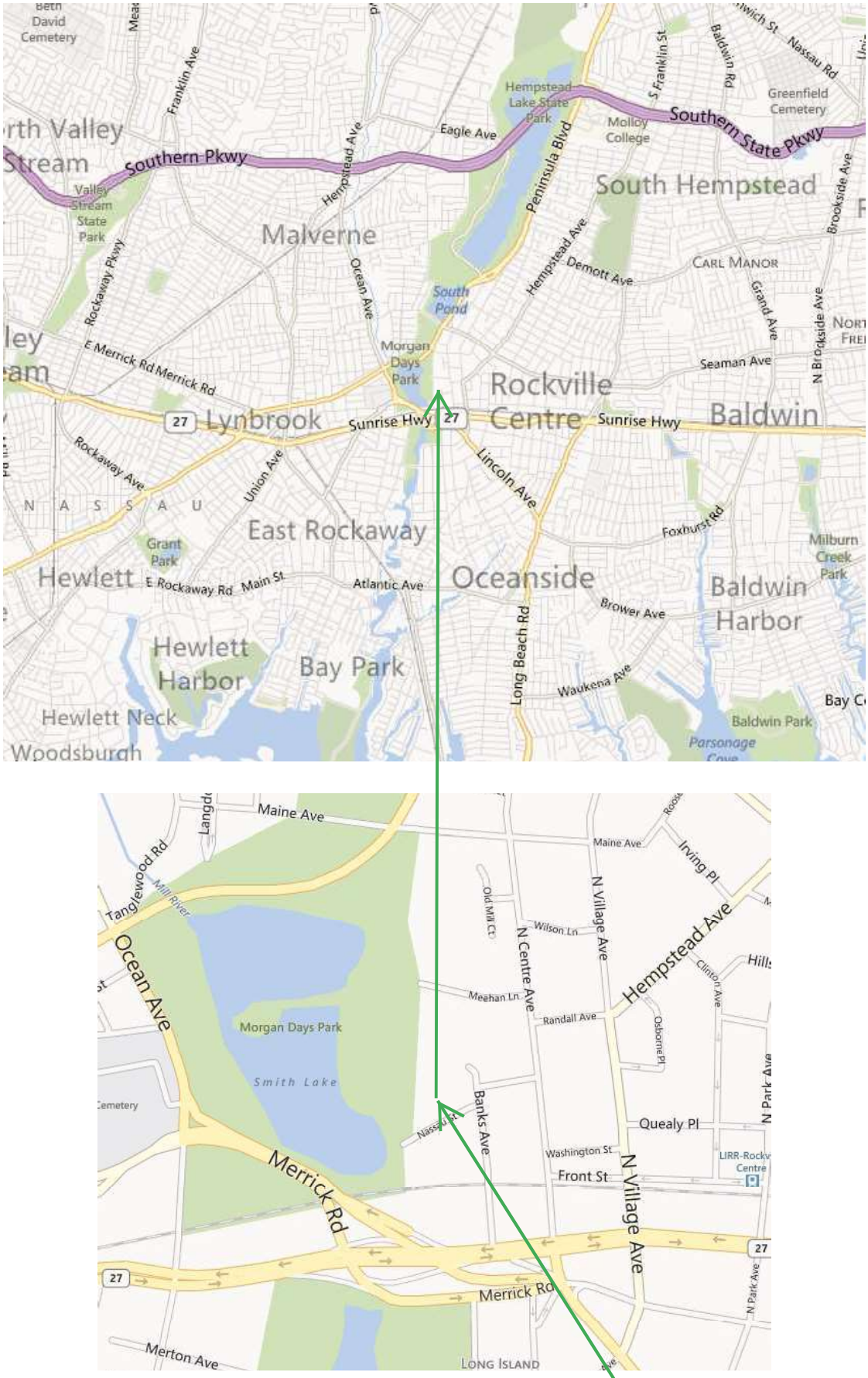


Figure 1.0 Site Location
80 Banks Avenue
Rockville Center, New York



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FIGURE 2.0
MONITORING WELL
LOCATION MAP - OU I

80 Banks Avenue
Rockville Centre, New York

Laurel makes no guarantees as to the accuracy of this drawing and it should only be used for informational purposes.

PROJECT #: 12-190
DRAWING DATE: 5/7/24
DRAWN BY: LG
CHECKED BY:BMC
REVISIONS: DS

KEY

- Building
- MW Monitoring Well
- MW Abandoned Monitoring Well
- PZ Piezometer
- Sump

N W E S

0 40' 80'
Scale: 1" = 40'