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Waste Management Division

Phase I Environmental Site Assessment

Dummer Yard Landfill

Hutchins Street

Berlin, New Hampshire

NHDES Site #: 198704035

Project Type: Environmental Site Assessment

Project #: 43617

PREPARED FOR

W.L. French Excavating Company

14 Sterling Road

North Billerica, MA 01862

(978) 663 2623

Jarrett Everton

jeverton@wlfrench.com

STATE OF NEW HAMPSHIRE
JAMES M. WIECK
No. 678
LICENSED PROFESSIONAL GEOLOGIST

Jennifer Milbury

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PREPARED BY

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GZA File No. 09.0026261.00

Date of Report: November 22, 2024

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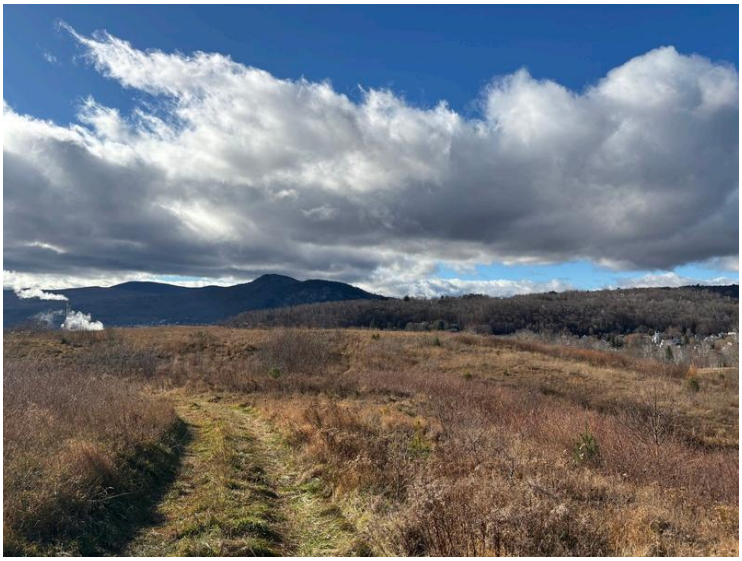
PHASE I ENVIRONMENTAL SITE ASSESSMENT

Dummer Yard Landfill
Hutchins Street
Berlin, New Hampshire

November 22, 2024
File No. 09.0026261.00



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November 22, 2024
File No. 09.0026261.00

W.L. French Excavating Company
14 Sterling Road
North Billerica, Massachusetts 01862

Attention: Jarrett Everton

Re: Phase I Environmental Site Assessment
Dummer Yard Landfill
Hutchins Street
Berlin, New Hampshire 03570

Dear Jarrett Everton:

Pursuant to our proposal dated October 29, 2024, GZA is pleased to submit the appended Phase I Environmental Site Assessment Report for the above-referenced Subject Property. GZA completed this Phase I Environmental Site Assessment in general conformance with the guidelines described in ASTM International's *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-21).

We hope this report satisfies your present needs. If you need additional information, please call Casey McGuffy at (862) 246-0480.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Casey L. McGuffy
Project Manager

Katherine McDonald
Consultant Reviewer

James Wieck, P.G.
Principal/Environmental Professional

Attachment: Report

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EXECUTIVE SUMMARY

W.L. French Excavating Company (also referred to herein as "Client" or "User") retained GZA GeoEnvironmental, Inc. (GZA) to perform a Phase I Environmental Site Assessment (ESA) of the target property located at Hutchins Street, Berlin, New Hampshire (hereafter referred to as the "Subject Property"). GZA performed this Phase I ESA in connection with the Client's planned purchase of the Subject Property.

This Phase I ESA was performed in general conformance with the scope and limitations of ASTM International's Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process – E1527-21 (ASTM E1527-21), and included our visual observation of the Subject Property; a review of historical information, environmental databases, and information provided by the User; and interviews with current Subject Property representative(s). Limiting conditions and/or deviations from ASTM E1527-21 are described in **Sections 1.4** of this Phase I ESA Report. GZA prepared this Phase I ESA Report in conformance with the limitations presented in **Section 14.0** and with the terms and conditions of our proposal dated October 29, 2024, which are included in **Appendix A**.

The Subject Property is located east of Hutchins Street in Berlin, New Hampshire and is identified as Map 133, Lot 105 by the City of Berlin Assessor's office. The lot is developed with two buildings along Hutchins Street. The reminder of the lot consists of a closed landfill and undeveloped land accessible to recreational vehicles via a network of trails including utility easements. The landfill portion of the property is accessible via a gated, unimproved road with signage off of Success Pond Road. At the time of GZA's site reconnaissance (**Section 6.0**), the gate was open. GZA did not observe dumping or evidence of vehicle access at the landfill during the time of the reconnaissance.

In 1852, a sawmill began operations adjacent to the Subject Property, on the western side of Hutchins Street under the name "H. Winslow and Company," which subsequently became the "Berlin Mills Company" and then the "Brown Company" (Brown Co.). Between the mid-1800s and the early 1900s, the Brown Co. rapidly expanded and diversified their production facilities building chemical, pulp, and papermaking mills.

Based on information obtained from available records (**Appendix C**), development of the Subject Property dates back to at least the late 1800s with the construction of the "Success Pond Railroad" owned by the "George W. Blanchard & Twitchell Company," which subsequently became "George W. Blanchard & Sons Company." The Success Pond Railroad traversed the central portion of the Subject Property (southwest to northeast) as early as 1893 and served as a logging railroad. The logging railroad, which likely served as a supply line of timber for the mill operations adjacent to the Subject Property, reportedly operated until 1907.

Landfilling operations at the Subject Property began in the early 1900s, when waste bark and other production-related wastes associated with the mill facilities at the west adjoining property were deposited on the central and southern portions of the property. During this time period, the northern and eastern portions of the Subject Property remained undeveloped. The landfill areas of the Subject Property were referred to as Dummer Yard. To segregate and manage mill waste streams, historically up to ten discrete disposal areas (Areas I through X) were developed at the Subject Property. Five of the ten landfill areas consisted primarily of bark and constituted nearly 50 percent of the total landfill area. The remaining five disposal areas included: Area I – Lime / Ash Pile; Area IIA –Sludge Landfill (lined sludge landfill beginning in 1981); Area IIB – Secured

Landfill Expansion (lined sludge landfill beginning in 1986); Area III – Bark and Sludge; and Area IV – General Mill Waste and Sludge (refer to **Figure 3** for a depiction of the locations of the five disposal areas). The landfilling operations at the Subject Property continued until 1995-1996, when the landfills were capped.

In 1928, a Finishing Mill and a lay-down area for "Bermico pipe" were constructed by the Brown Co. on the southern portion of the Subject Property. Bermico was a type of conduit made of a wood fiber pipe, impregnated with pitch. The actual Bermico Plant was located to the west of the Subject Property and was part of the larger mill complex. Operations on this portion of the Subject Property included finishing, cooling and temporary storage of the conduit. Production of Bermico pipes by the Brown Co. ended by the early 1970s and the Finishing Mill was demolished.

An expansive lumber storage area, which had been referred to as the "Dummer Lumber Yard" was situated on the north side of the Finishing Mill in the 1920s/1930s. Several railroad spurs had been constructed from the adjoining mill complex to the Finishing Mill building and surrounding lumber storage yards as well. By 1961, it appeared that the centralized lumber storage area had been relocated south of the Finishing Mill and then was phased out completely by the early 1970s.

In the 1920s, a 12-inch Public Main Gravity System was constructed across the central portion of the Subject Property. The main served as a water supply conduit from Berlin Reservoir (situated on the northeastern Site boundary) to the larger mill complex west of the Subject Property. It is unclear if this main still exists.

By 1931, a cement mill had been constructed to the northeast of the Finishing Mill on the south portion of the Subject Property. It is unclear as to when the cement mill operations ceased at the Subject Property, but it was no longer depicted on historical maps after 1931.

The area to the northwest of the Finishing Mill on the south portion of the Subject Property was used as a large "Coal Storage Yard" in the 1930s. The piles were estimated to include a "935,868 cubic feet hard coal and 169,500 cubic feet soft coal" in the 1930s. In 1961, large coal piles existed to the northeast of the service garage identified to be 15 to 20 feet high with railroad spurs terminating at the coal piles. Transition from coal-fired to oil-fired boilers occurred at the mill complex between the 1940s and 1960s. Coal storage at the Subject Property likely ended in the 1960s to 1970s. Coal ash and slag byproducts from the mill boilers may have been disposed of at the Subject Property; however, there is no information regarding coal ash and slag disposal practices.

A service garage building was constructed on the south portion of the Subject Property in 1953 for Brown Co. The garage was used as a central location to service all trucks, heavy logging equipment and machinery for the mill complex. The building included its own boiler room, gasoline and diesel underground storage tanks (USTs) and associated fuel pumps, and an office. Currently, the service garage building is being used for mixed commercial purposes, including Chapman Industrial Building, ML Flatwork, Berlin Public Schools bus garage, and an unknown occupant. In addition, a scale house for the nearby Mount Carberry Landfill is located on the south portion of the Subject Property. The landfill areas of the Subject Property are not in use. The east side of the Subject Property remains forested and is improved with recreational vehicle trails.

The first documented development of the Subject Property vicinity was identified as the construction of the sawmill to the west of the property in 1852. Between the mid-1800s and the early 1900s, the operations

to the west of the Subject Property expanded to include chemical, pulp, and papermaking mills. The mill operations continued until the 1990s, when the buildings were demolished. Based on the topographic maps, the residential areas to the northwest, south, and west of the Subject Property were first developed between 1896 and 1937. Land to the north, east, and southeast of the Subject Property has remained undeveloped since at least 1893.

Based on the findings of our Phase I ESA and on our professional judgment, GZA has identified the following in connection with the Subject Property:

Recognized Environmental Conditions (REC)

This Phase I ESA revealed the following evidence of RECs in connection with the Subject Property:

- **REC A:** The southern and western portions of the subject property operated as a landfill for the adjoining mills from the early 1900s through the mid-1990s. Waste streams included bark and wood, lime/ash, sludge, and general mill waste. Previous investigations at the subject property have identified concentrations of various hazardous substance including inorganic metallic constituents, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), and perfluoroalkyl and polyfluoroalkyl substances (PFAS) in the soil and/or groundwater. Based on the results of a 2012 Phase II ESA, it was determined that further assessment was needed to fully characterize the overburden groundwater system, particularly within the northwestern portion of the Subject Property and within nearby residential water supply wells. GZA reviewed the analytical data collected in 2011 and compared these data to current (2024) New Hampshire Ambient Groundwater Quality Standards[1] (AGQS). In addition to the exceedances of PAHs noted above, arsenic was present in one well at a concentration exceeding the current (2024) AGQS. Additionally, the most recent Post-Closure Biennial Monitoring Report (2017) identified the presence of manganese in groundwater samples at concentrations exceeding the AGQS. In 2018, groundwater sampling for PFAS analysis was conducted in three monitoring wells, and multiple PFAS were detected in the three wells sampled. Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) were detected in two downgradient wells at concentrations exceeding the AGQS. NHDES requested a second round of PFAS sampling; which, based on the information available from OneStop, does not appear to have occurred. Based on the observed exceedances of various compounds, including VOCs, PAHs, TPH, metals, and PFAS in groundwater and lack of additional PFAS sampling data, the historic operation of the landfill is considered a REC.

- **REC B:** One Subject Property building operated as a service garage for Brown Co. beginning in approximately 1953 and included gasoline and diesel USTs and associated fuel pumps. Monitoring wells screened in overburden (MW-800 and MW-802) were installed near the location of the USTs noted on the 1961 plan just west and east of the service garage. Based on the groundwater sample results from these locations, in 2012, GZA concluded that groundwater had not been adversely impacted from former fueling operations at the service garage in the locations drilled; however, in GZA's opinion, releases to soil above SRS cannot be ruled out. Therefore, this is considered a REC.

---

1. Defined in State of New Hampshire Code of Administrative Rules Env-Or 603.03, Table 600-1.

- **REC C:** Coal storage was identified at the Subject Property from at least the 1930s until approximately the 1970s. Coal ash and slag byproducts from the mill boilers may have been disposed of at the Subject Property; however, there is no information regarding coal ash and slag disposal practices. In GZA's opinion, releases related to the historic coal piles or possible coal ash and slag byproduct disposal is a REC.

- **REC D:** During the 2011 ESA, the following REC was identified: *Waste oil-like staining on the ground surface proximate to a 55-gallon drum off the northeast corner of the service garage. Several improperly stored 5-gallon pails and containers of discarded apparent waste oil on a wooden pallet off northeastern corner of service garage.* Cleanup and consolidation of the various improperly stored petroleum products was not conducted because the garage building was owned by another party at that time. Since this was not evaluated, this is considered a REC.

- **REC E:** During the 2012 Phase II ESA, GZA encountered fill material mixed with solid waste that included varying amounts of coal/wood ash with slag or coal clinkers, plastics, painted plywood, corrugated polyethylene pipe fragments, scrap metal, and wood waste were observed in test pits (TP-1 and TP-2) located west and northwest of the delineated Landfill Areas I and III/IV. In test pit TP-3, these materials were observed to a depth of 13 feet (bottom of the test pit). Analytical data for soil samples collected from test pits, particularly TP-1, identified exceedances of TPH, several PAHs, and arsenic. In an October 2012 memorandum/response to the Phase II report, NHDES requested that the extent of fill material containing PAHs at concentrations above the New Hampshire Soil Remediation Standards[2] (SRS) would need to be defined and a remedy to mitigate the risk was required. NHDES also requested additional investigation pertaining to the solid waste material observed in TP-3 at the middle western portion of the Subject Property, to determine the extent of the waste and potential impacts to overburden groundwater. Additionally, GZA observed numerous areas of solid waste throughout the Subject Property during the 2024 site reconnaissance. No additional information is available as to whether NHDES recommendations had been implemented; therefore, this is considered a REC.

- **REC F:** No remaining railroad tracks were observed at the Subject Property, save for some scattered railroad ties, spikes, and other small amounts of metal debris at the posterior of the industrial building. Localized areas of shallow soil contamination are often identified along railroad tracks. Semi-volatile organic compounds, heavy metals, and polychlorinated biphenyls that are often associated with railroad ballast are likely present at the Subject Property. Therefore, it is GZA's opinion that the likely railroad ballast at the Subject Property is a REC.

- **REC G:** The eastern adjoining property, 80 Hutchins Street (Mount Carberry Landfill) is listed on the NHDES PFAS database under Site Number 198706016. The property is listed as having had various PFAS detected in groundwater samples collected at concentrations exceeding the AGQS. Since samples collected from this property were located around the landfill, which is cross gradient from the Subject Property, it is possible that material migration of PFAS to the Subject Property has occurred. Therefore, this is considered a REC.

Controlled Recognized Environmental Conditions (CREC)

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2. Defined in State of New Hampshire Code of Administrative Rules Env-Or 609.19, Table 600-2.

This Phase I ESA revealed no evidence of CRECs in connection with the Subject Property.

Historical Recognized Environmental Conditions (HREC)

This Phase I ESA revealed no evidence of HRECs in connection with the Subject Property.

De Minimis Conditions

This Phase I ESA revealed no de minimis conditions in connection with the Subject Property.

Significant Data Gaps

This Phase I ESA identified the following significant data gaps in connection with the Subject Property:

- The middle two units of the Subject Property building were inaccessible at the time of GZA's assessment. These inaccessible areas are identified on **Figure 3**. Due to the unknown use of the units and GZA's inability to ascertain whether a release of hazardous substances or petroleum products is likely, the lack of access is a significant data gap.
- The Client requested that GZA not access the portion of the Subject Property occupied by the Mount Carberry Landfill Scale House and Mount Carberry Road; therefore, GZA was unable to observe these portions of the Subject Property for evidence of RECs. The areas excluded from the field reconnaissance are identified on **Figure 3**. The lack of access inhibited GZA's inability to ascertain whether a release of hazardous substances or petroleum products is likely in these areas and is therefore a significant data gap.
- According to the Client, since the current property owner is an LLC and its agent has never been to the Subject Property, it is unlikely that the current property owner representative can provide information pertaining to property history and conditions. Therefore, an interview with the current property owner was not conducted. This is considered a significant data gap and a significant deviation from ASTM E1527-21.

1.0 INTRODUCTION

This Phase I Environmental Site Assessment Report (Phase I ESA Report) presents the field observations, results, and opinions of a Phase I ESA conducted by GZA GeoEnvironmental, Inc. (GZA) for W.L. French Excavating Company (also referred to herein as "Client" or "User") at the target property identified as Dummer Yard Landfill, Hutchins Street, Berlin, New Hampshire (Subject Property). GZA prepared this Phase I ESA Report in conformance with the limitations presented in **Section 14.0** and with the terms and conditions of our proposal dated October 29, 2024, which are included in **Appendix A**. This Phase I ESA Report is subject to modification if GZA or any other party develops subsequent information.

1.1 REASON FOR PERFORMING THE PHASE I ENVIRONMENTAL SITE ASSESSMENT

GZA understands that this Phase I ESA was requested as part of environmental due diligence in support of the proximate purchase of the Subject Property. We understand that this Phase I ESA is not funded with a federal grant under the US Environmental Protection Agency (EPA) Brownfield Assessment and Characterization Program or the US Small Business Administration, and that an evaluation of controlled substances at the Subject Property is not required.

1.2 PROJECT OBJECTIVES

We designed the Scope of Services described below in general conformance with ASTM International's *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-21). The objectives of this Phase I ESA were:

- To render an opinion as to whether surficial or historical evidence indicates the presence of recognized environmental conditions (RECs) that could result in the presence of hazardous substances (including the recently CERCLA-designated compounds PFOA and PFOS) or petroleum products in the environment, as defined in ASTM E1527-21; and

- To permit the User of this Phase I ESA to satisfy the requirements for qualifying for certain Landowner Liability Protections under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Many states regulate additional polyfluoroalkyl substances (PFAS) beyond PFOA and PFOS. Therefore, unless directed otherwise, GZA's Phase I Environmental Site Assessment will include an evaluation of those PFAS which are considered hazardous or regulated substances under either federal or New Hampshire State law. Note that the inclusion of substances not specifically designated by CERCLA constitutes an intentional modification to the ASTM Standard Practice.

1.3 DEFINITIONS

As defined in ASTM E1527-21:

- A REC is "(1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment."

- A "Controlled REC" (CREC) is a REC "affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority…with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls…." This term applies to a site that has reached regulatory closure with the implementation of an engineering control, such as an impermeable cap, an institutional control, such as a deed restriction or activity and use limitation (AUL), and/or other property use limitation.

- An "historical recognized environmental condition" (HREC) is "a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities, without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations,)…"

- A "*de minimis* condition" is "a condition related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies." ASTM E1527-21 does not consider *de minimis* conditions to be RECs.

- A "data gap" is "a lack of or inability to obtain information required by [E1527-21] despite good faith efforts by the Environmental Professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice…" A data gap is only considered significant if other information and/or the Environmental Professional's experience raises reasonable concerns involving the data gap.

- A "business environmental risk" (BER) is "a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of commercial real estate, not necessarily limited to those environmental issues required to be investigated [under ASTM E1527-21]." BERs may involve one or more of the non-scope considerations outlined in ASTM E1527-21 including, but not necessarily limited to, asbestos-containing building materials, lead paint, lead and arsenic in drinking water, radon, wetlands, cultural and historical resources, regulatory compliance, industrial hygiene, health and safety, indoor air quality, and mold.

CERCLA defines a "release" or "threatened release" to mean "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers and other closed receptacles containing any hazardous substance, or pollutant or contaminant)." A threatened release means an imminent danger of a release.

The EPA has interpreted "into the environment" to apply to releases not wholly contained within buildings or structures. The environment includes the navigable waters, surface waters, groundwater, drinking water

supply, land surface or subsurface strata, or ambient air within or under the jurisdiction of the United States. Exclusions from the definition of a release generally include: (1) any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons; (2) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine; (3) a release of source, byproduct, or special nuclear material from a nuclear incident; (4) and the normal application of fertilizer.

1.4 SCOPE OF SERVICES

GZA's Scope of Services consisted of the following activities:

- A review of federal and State regulatory agency databases for the Subject Property and the minimum search distance from the Subject Property;
- Contact with certain local regulatory agencies to inquire about environmental conditions at the Subject Property and in its vicinity;
- A review of the Subject Property history through available Standard Historical Sources;
- A review of previous environmental reports prepared for the Subject Property;
- A site reconnaissance to observe current Subject Property conditions for evidence of recognized environmental conditions;
- The completion of a reconnaissance of the Subject Property vicinity;
- A review of adjoining properties to identify the use of hazardous substances or petroleum products;
- The preparation of this Phase I ESA Report of our findings.

Deviations of this Phase I ESA from ASTM E1527-21 include:

- ASTM identifies a title search for environmental liens as a User Responsibility and recommends that the User provide it to the Environmental Professional for review. The Client did not provide a title search for our review. In GZA's opinion, however, this is not a significant deviation .
- Past owners were not interviewed as part of this assessment. However, in GZA's experience, it is unlikely that the past owners would provide information not obtained from other sources. It is GZA's opinion that this is not a significant deviation.
- In some cases, historical sources were reviewed at intervals greater than 5 years. In GZA's opinion, based on the information provided, this is not a significant deviation.
- According to the Client, since the current property owner is an LLC and the current representative for the property owner has never been to the Subject Property, it is unlikely that the current property owner representative can provide information pertaining to property history and conditions. Therefore,

an interview with the current property owner representative was not conducted. This is considered a significant data gap and significant deviation from ASTM E1527-21.

Significant limitations to GZA's assessment include:

- At the time of GZA's assessment, portions of the Subject Property was heavily forested; therefore, the Subject Property reconnaissance was performed from less vegetated portions of the Subject Property in combination with recent aerial and satellite imagery. Due to the undeveloped and heavily vegetated nature of the Subject Property, in GZA's opinion this is not a significant data gap.
- The middle two units of the Subject Property building were inaccessible at the time of GZA's assessment. These inaccessible areas are identified on **Figure 3.**
- The Client requested that GZA not access the portion of the Subject Property occupied by the Mount Carberry Landfill Scale House and Mount Carberry Road; therefore, GZA was unable to observe these portions of the Subject Property for evidence of RECs. The areas excluded from the field reconnaissance are identified on **Figure 3**.

GZA made the following key assumptions while preparing this Report:

- Information obtained from the User(s), the interviews, the records review, and other sources is accurate, and no pertinent information was withheld from GZA. GZA has no evidence or reason to believe this information is not complete or reliable.
- GZA estimated property lines during the site reconnaissance from physical features (e.g., road rights-of-way [ROWs] and building location).
- GZA used the United States Geological Survey (USGS) topographic map and physical observations of topography to determine the presumed groundwater flow direction in the vicinity of the Site.

This Phase I ESA does not include an evaluation of environmental issues or conditions that ASTM E1527-21 considers non-scope considerations.

1.5 CONTINUED VIABILITY OF ENVIRONMENTAL SITE ASSESSMENT

The following components of AAI must be conducted or updated *within 180 days of and* prior to the date of transaction of the Subject Property.

Component	**Completion Date**
Interviews with past and present owners, operators, and occupants	Not Completed
Searches for recorded environmental cleanup liens[1]	Not Completed
Visual inspections of the facility and adjoining properties	November 7, 2024
The declaration by the environmental professional	November 22, 2024

1. Completion of an environmental lien and AUL search is the responsibility of the User unless added to the scope of the Phase I ESA by agreement of the User and the Environmental Professional.

After one year of the latest date given above, a new full Phase I ESA must be conducted prior to acquisition.

2.0 DESCRIPTION OF SUBJECT PROPERTY AND VICINITY

GZA obtained the following information resulting from our Subject Property reconnaissance, our research, and from interviews with people knowledgeable about the Subject Property. Photographs depicting Subject Property conditions during GZA's reconnaissance are presented in **Appendix B**.

2.1 SUBJECT PROPERTY LOCATION

The Subject Property is located east of Hutchins Street in Berlin, New Hampshire and is identified as Map 133, Lot 105 by the City of Berlin Assessor's office. The lot is developed with two buildings along Hutchins Street. The reminder of the lot consists of a closed landfill and undeveloped land accessible to recreational vehicles via a network of trails including utility easements. The landfill portion of the property is accessible via a gated, unimproved road with signage off of Success Pond Road. At the time of GZA's site reconnaissance (**Section 6.0**), the gate was open. GZA did not observe dumping or evidence of vehicle access at the landfill during the time of the reconnaissance.

Subject Property Information	
Subject Property Address	Hutchins Street Berlin, New Hampshire 03570
Subject Property Acreage	Approximately 400 acres
Tax Parcel ID	Map 133, Lot 105
Subject Property Inspection Date	November 7, 2024

A topographic map showing the location of the Subject Property is provided as **Figure 1**.

2.2 DESCRIPTION OF SUBJECT PROPERTY AND BUILDINGS

Information regarding the Subject Property buildings is provided in the tables below. GZA was not provided access to the Mount Carberry Landfill Scale House; therefore the building information was obtained from GZA's 2011 Phase I ESA (**Section 5.0**).

Service Garage Building	
Feature	**Description**
Year of Construction	1957
Square Footage	Approximately 26,500 square feet.
# Stories/Basement	One story The Property does not have a basement.
Heating/Cooling Systems	Propane

Service Garage Building	
Feature	**Description**
Vertical Conveyances	None
Other Relevant Building Features	There are no other relevant building features.

Mount Carberry Landfill Scale House	
Feature	**Description**
Year of Construction	Prior to 1976
Square Footage	Approximately 530 square feet.
# Stories/Basement	One story, no basement
Heating/Cooling Systems	Propane; window-mounted air conditioning unit
Vertical Conveyances	None
Other Relevant Building Features	None

The following entities provide utilities to the Subject Property:

Subject Property Utility Providers	
Service	**Provider**
Electricity	Electrical services are provided by Eversource.
Natural Gas	Natural gas is not provided to this Property.
Drinking Water	Drinking water is provided by the municipality.
Sanitary Sewer Services	Sanitary sewer services are provided by the municipality.
Other Services	There are no other utility services.

2.3 CURRENT SUBJECT PROPERTY USE

At the time of GZA's site reconnaissance, Chapman Industrial Building owned the Subject Property. The Site use consisted of the following:

- a multi-tenant/mixed use commercial building including large and heavy equipment storage (Chapman), ML Flatwork, Berlin Public Schools Bus Garage, and unknown lessee;
- undeveloped land accessible to recreational vehicles (snowmobiles and ATVs) via a network of trails including utility easements;
- a closed landfill (approximately 105 acres); and
- a scale house and truck turn-around currently owned and operated by Androscoggin Valley Regional Refuse Disposal District (AVRRDD) associated with the nearby adjoining Mount Carberry Landfill.

GZA was not able to access the Mount Carberry Landfill scale house or two middle units of the industrial building including Berlin Public Schools Bus Garage and an unknown lessee. In GZA's opinion, the lack of access to these building areas is a significant data gap.

2.4 ADJOINING PROPERTIES

The following table lists the properties that adjoin the Subject Property and describes their current use.

Direction	Street Address/Location	Name (as applicable) and Current Use
North	• Parcel 135-229 (No Address)	• Vacant/Undeveloped
	• Parcel 135-228 (16 Turcotte St)	• Residential
	• Parcel 135-227 (24 Turcotte St)	• Residential
	• Parcel 135-226 (32 Turcotte St)	• Residential
	• Parcel 135-219 (56 Pershing Ave)	• Residential
	• Parcel 135-218 (4 Verdun St)	• Residential
	• Parcel 135-216 (70 Pershing Ave)	• Residential
	• Parcel 135-215 (90 Pershing Ave)	• Residential
	• Parcel 135-214 (106 Pershing Ave)	• Residential
	• Parcel 135-213 (120 Pershing Ave)	• Residential
	• Parcel 135-212 (128 Pershing Ave)	• Residential
	• Parcel 135-211 (132 Pershing Ave)	• Residential
	• Parcel 135-210 (148 Pershing Ave)	• Residential
	• Parcel 135-209 (No Address)	• Vacant/Undeveloped
	• Parcel 135-208 (No Address)	• Vacant/Undeveloped
	• Parcel 135-207 (No Address)	• Vacant/Undeveloped
	• Parcel 137-135.10 (No Address)	• Vacant/Undeveloped
South	• Parcel 129-72 (No Address)	• Hutchins Street Park

Direction	Street Address/Location	Name (as applicable) and Current Use
	• Parcel 129-77 (324 Columbia Ave)	• Residential
	• Parcel 129-84 (747 Lancaster St)	• Residential
	• Parcel 129-85 (758 Lancaster St)	• Residential
	• Parcel 133-21 (359 Derrah St)	• Residential
	• Parcel 133-22 (365 Derrah St)	• Residential
	• Parcel 133-23 (375 Derrah St)	• Residential
	• Parcel 133-25 (389 Derrah St)	• Residential
	• Parcel 133-26 (395 Derrah St)	• Residential
	• Parcel 133-28 (409 Derrah St)	• Residential
	• Parcel 133-30 (417 Derrah St)	• Residential
	• Parcel 133-31 (419 Derrah)	• Residential
	• Parcel 133-32 (429 Derrah St)	• Residential
	• Parcel 133-36 (9 Wilson St)	• Residential
	• Parcel 133-49 (821 Kent St)	• Residential
	• Parcel 133-50 (834 Kent St)	• Residential
	• Parcel 133-70 (No Address)	• Vacant/Undeveloped
	• Parcel 133-71 (No Address)	• Vacant/Undeveloped
	• Parcel 133-78 (No Address)	• Vacant/Undeveloped
East	• Parcel 129-78 (713 Lancaster St)	• Residential
	• Parcel 129-79 (717 Lancaster St)	• Residential
	• Parcel 129-80 (733 Lancaster St)	• Residential
	• Parcel 129-81 (743.5 Lancaster St)	• Residential
	• Parcel 129-83 (745 Lancaster St)	• Residential

Direction	Street Address/Location	Name (as applicable) and Current Use
	• Parcel 1612-0007 (Success, NH, No Address) • Parcel 1612-0001 (Success, NH, 80 Hutchins Street)	• Vacant/Undeveloped • Vacant/Undeveloped and Mount Carberry Landfill
West	• Parcel 129-54.1 (1 Community St) • Parcel 129-55 (No Address) • Parcel 134-9 (No Address) • Parcel 134-8 (173 Perry St) • Parcel 134-7 (No Address) • Parcel 134-11 (No Address) • Parcel 134-5 (No Address) • Parcel 134-6 (No Address) • Parcel 135-206 (No Address) • Parcel 135-148 (No Address) • Parcel 135-147 (No Address) • Parcel 135-73.10 (86 Bemis St) • Parcel 135-73 (96 Bemis St) • Parcel 136-35 (59 Page Hill Rd)	• Burgess Biopower - Berlin Station • Vacant/Undeveloped • Vacant/Undeveloped • Residential • Vacant/Undeveloped • Vacant/Undeveloped • Vacant/Undeveloped • Vacant/Undeveloped • Vacant/Undeveloped • Vacant/Undeveloped • Vacant/Undeveloped • Residential • Vacant/Undeveloped • North Country Health Care (Hospital)

2.5 VICINITY PROPERTIES

As part of this Phase I ESA, GZA performed a reconnaissance of the immediate Subject Property vicinity. The Subject Property vicinity is primarily residential to the north and south, undeveloped and wooded to the east, and undeveloped cleared and low-growing vegetation to the west. Mixed commercial and residential uses are situated further west of the Subject Property across the Androscoggin River.

GZA did not observe the use of petroleum products or hazardous materials at vicinity properties from our viewing points. Refer to **Section 7.0** below for a review of the various federal and state databases.

3.0 PHYSICAL SETTING

The following subsections provide information regarding the general physiographic, geologic, hydrogeologic, and hydrologic conditions in the area of the Subject Property.

Setting	Description
Regional Physiographic Condition	Based on the U.S. Geological Survey (USGS) 7.5-minute topographic map of Berlin, NH, dated 2021, on the southern half of the Subject Property, elevation ranges from approximately 1,120 feet above mean sea level (msl) on the western side to a maximum of approximately 1,600 feet above msl on the eastern side. On the northern half of the Subject Property, elevation ranges from approximately 1,180 feet to 1,260 feet above msl on the western side to approximately 1,280 feet to 1,380 feet above msl on the eastern side. On the northern half of the Subject Property, relief slopes gradually downward to the northwest with topographic lows along Bean Brook. On the southern half of the Subject Property, relief slopes steeply downward from the east toward the center of the Subject Property and slopes more gradually from the center downward toward the west. Based on topography, surface water features, and Subject Property features, it is assumed Subject Property stormwater generally flows to the west.
Hydrology	According to the U.S. Fish and Wildlife Services National Wetland Inventory (USFWS-NWI), the nearest water bodies are Bean Brook, which transects the property east to west on the northern half of the Subject Property, and an unnamed tributary on the southern half of the Subject Property, which originates on the property and flows west into an unnamed freshwater pond on the southwestern side of the Subject Property. Bean Brook and the tributary flow west and discharge into the Androscoggin River, which is located approximately 860 west of the Subject Property.
Hydrogeology and Groundwater Flow	Based on local topography and surface water flow, the inferred general direction of groundwater flow beneath the Subject Property is to the west. Beneath the northern portion of the Subject Property, the local inferred direction of groundwater flow is to the northwest. The localized direction of groundwater flow beneath and near the Subject Property might vary because of underground utilities, subsurface preferential pathways, variations in weather or heterogeneous geological and/or anthropogenic conditions. We subsequently refer to upgradient and downgradient properties in this Phase I ESA Report based on the inferred direction of groundwater flow to the west.
Soil Type	Soils in the vicinity of the Subject Property are mapped by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey database. Several soil types are mapped

Setting	Description
	on the northern portion of the Subject Property, including: Madawaska very fine sandy loam (28A, 0 to 3 percent slopes), Becket fine sandy loam (57C, 8 to 15 percent slopes, very stony), Becket fine sandy loam (57D, 15 to 25 percent slopes, very stony), Tunbridge-Lyman-Rock outcrop complex (61C, 8 to 15 percent slopes), Monadnock fine sandy loam (143C, 8 to 15 percent slopes, very stony), Monadnock fine sandy loam (143D, 15 to 25 percent slopes, very stony), Sunapee fine sandy loam (169B, 0 to 8 percent slopes, very stony), Sunapee fine sandy loam (169C, 8 to 15 percent slopes, very stony), Lyme fine sandy loam (247B, 0 to 8 percent slopes, very stony), Moosilauke loam (415B, 3 to 8 percent slopes, very stony), Tunbridge-Peru complex (470B, 3 to 8 percent slopes, rocky), Peacham mucky peat (549A, 0 to 8 percent slopes, very stony), Skerry fine sandy loam (559B, 0 to 8 percent slopes, very stony), Skerry fine sandy loam (559C, 8 to 15 percent slopes, very stony), Tunbridge-Berkshire-Lyman complex (670C, 8 to 15 percent slopes), and Tunbridge-Lyman-Marlow association (919D, 15 to 35 percent slopes, very stony). Large portions of the southern side of the Subject Property are characterized by the following soil types: Dumps-bark (199, chips and organic material), Tunbridge-Lyman-Marlow association (919D, 15 to 35 percent slopes, very stony), and Tunbridge-Lyman-Marlow association (919E, 35 to 60 percent slopes, very stony). A portion of the property atop which the building sits is characterized by Tunbridge-Peru complex (470B, 3 to 8 percent slopes, rocky). The Becket fine sandy loam (57C and 57D), Tunbridge-Lyman-Rock outcrop complex (61C), Monadnock fine sandy loam (143C and 143D), Tunbridge-Peru complex (470B), Tunbridge-Berkshire-Lyman complex (670C), and Tunbridge-Lyman-Marlow association (919D and 919E) are classified as well-drained; the Madawaska very fine sandy loam (28A), Sunapee fine sandy loam (169B and 169C), and Skerry fine sandy loam (559B and 559C) are classified as moderately well-drained; the Lyme fine sandy loam (247B) and Moosilauke loam (415B) are classified as poorly drained; and the Peacham mucky peat (549A) is classified as very poorly drained. The Dumps-bark (199) does not have a drainage classification.
Bedrock	Based on the Bedrock Geologic Map of the Berlin 7.5' Quadrangle, New Hampshire (Eusden et. al, 2021), bedrock near the Subject Property is primarily mapped as the Ordovician oliverian biotite monzogranite (Oobg-Oam) with xenoliths of Oam Ammonoosuc Volcanics ranging in size from a few centimeters up to 10 meters in length. A small portion of the northeastern corner of the Subject Property is mapped as oliverian biotite monzogranite (Oobg). A small portion of the southeastern corner of the Subject Property is mapped as oliverian biotite monzogranite

Setting	Description
	(Oobkg), ammonoosuc volcanics felsic meta-tuff facies (Oamf), and ammonoosuc volcanics felsic meta-tuff facies (Oamdq).

4.0 HISTORICAL USE INFORMATION

The Subject Property history was developed from "Standard Historical Sources" as defined in ASTM E1527-21, available files at the City of Berlin, the 2011 Phase I ESA completed for the Subject Property, and interviews with knowledgeable parties. ASTM indicates that "all obvious uses of the property shall be identified from the present, back to the property's first developed use, or back to 1940, whichever is earlier." ASTM further indicates that "data failure is not uncommon" when trying to establish the historical use of a property. Specific information obtained from standard historical sources is contained in the following subsections, and **Appendix C** includes copies of relevant historical documents.

4.1 SUBJECT PROPERTY AREA HISTORY SUMMARY

The Subject Property history provided in this section is based on information obtained during our historical research including records described in **Section 4.2** through **Section 4.9** as well as prior reports summarized in **Section 5.0**.

In 1852, a sawmill began operations adjacent to the Subject Property, on the western side of Hutchins Street under the name "H. Winslow and Company," which subsequently became the "Berlin Mills Company" and then the "Brown Company" (Brown Co.). Between the mid-1800s and the early 1900s, the Brown Co. rapidly expanded and diversified their production facilities building chemical, pulp, and papermaking mills.

Based on information obtained from available records (**Appendix C**), development of the Subject Property dates back to at least the late 1800s with the construction of the "Success Pond Railroad" owned by the "George W. Blanchard & Twitchell Company," which subsequently became "George W. Blanchard & Sons Company." The Success Pond Railroad traversed the central portion of the Subject Property (southwest to northeast) as early as 1893 and served as a logging railroad. The logging railroad, which likely served as a supply line of timber for the mill operations adjacent to the Subject Property, reportedly operated until 1907.

Landfilling operations at the Subject Property began in the early 1900s, when waste bark and other production-related wastes associated with the mill facilities at the west adjoining property were deposited on the central and southern portions of the property. During this time period, the northern and eastern portions of the Subject Property remained undeveloped. The landfill areas of the Subject Property were referred to as Dummer Yard. To segregate and manage mill waste streams, historically up to ten discrete disposal areas (Areas I through X) were developed at the Subject Property. Five of the ten landfill areas consisted primarily of bark and constituted nearly 50 percent of the total landfill area. The remaining five disposal areas included: Area I – Lime / Ash Pile; Area IIA –Sludge Landfill (lined sludge landfill beginning in 1981); Area IIB – Secured Landfill Expansion (lined sludge landfill beginning in 1986); Area III – Bark and Sludge; and Area IV – General Mill Waste and Sludge (refer to **Figure 3** for a depiction of the locations of the five disposal areas). The landfilling operations at the Subject Property continued until 1995-1996, when the landfills were capped.

In 1928, a Finishing Mill and a lay-down area for "Bermico pipe" were constructed by the Brown Co. on the southern portion of the Subject Property. Bermico was a type of conduit made of a wood fiber pipe, impregnated with pitch. The actual Bermico Plant was located to the west of the Subject Property and was part of the larger mill complex. Operations on this portion of the Subject Property included finishing, cooling and temporary storage of the conduit. Production of Bermico pipes by the Brown Co. ended by the early 1970s and the Finishing Mill was demolished.

An expansive lumber storage area, which had been referred to as the "Dummer Lumber Yard" was situated on the north side of the Finishing Mill in the 1920s/1930s. Several railroad spurs had been constructed from the adjoining mill complex to the Finishing Mill building and surrounding lumber storage yards as well. By 1961, it appeared that the centralized lumber storage area had been relocated south of the Finishing Mill and then was phased out completely by the early 1970s.

In the 1920s, a 12-inch Public Main Gravity System was constructed across the central portion of the Subject Property. The main served as a water supply conduit from Berlin Reservoir (situated on the northeastern Site boundary) to the larger mill complex west of the Subject Property. It is unclear if this main still exists.

By 1931, a cement mill had been constructed to the northeast of the Finishing Mill on the south portion of the Subject Property. It is unclear as to when the cement mill operations ceased at the Subject Property, but it was no longer depicted on historical maps after 1931.

The area to the northwest of the Finishing Mill on the south portion of the Subject Property was used as a large "Coal Storage Yard" in the 1930s. The piles were estimated to include a "935,868 cubic feet hard coal and 169,500 cubic feet soft coal" in the 1930s. In 1961, large coal piles existed to the northeast of the service garage identified to be 15 to 20 feet high with railroad spurs terminating at the coal piles. Transition from coal-fired to oil-fired boilers occurred at the mill complex between the 1940s and 1960s. Coal storage at the Subject Property likely ended in the 1960s to 1970s. Coal ash and slag byproducts from the mill boilers may have been disposed of at the Subject Property; however, there is no information regarding coal ash and slag disposal practices.

A service garage building was constructed on the south portion of the Subject Property in 1953 for Brown Co. The garage was used as a central location to service all trucks, heavy logging equipment and machinery for the mill complex. The building included its own boiler room, gasoline and diesel underground storage tanks (USTs) and associated fuel pumps, and an office. Currently, the service garage building is being used for mixed commercial purposes, including Chapman Industrial Building, ML Flatwork, Berlin Public Schools bus garage, and an unknown occupant. In addition, a scale house for the nearby Mount Carberry Landfill is located on the south portion of the Subject Property. The landfill areas of the Subject Property are not in use. The east side of the Subject Property remains forested and is improved with recreational vehicle trails.

The first documented development of the Subject Property vicinity was identified as the construction of the sawmill to the west of the property in 1852. Between the mid-1800s and the early 1900s, the operations to the west of the Subject Property expanded to include chemical, pulp, and papermaking mills. The mill operations continued until the 1990s, when the buildings were demolished. Based on the topographic maps, the residential areas to the northwest, south, and west of the Subject Property were first developed between

1896 and 1937. Land to the north, east, and southeast of the Subject Property has remained undeveloped since at least 1893.

The historical information reviewed suggests the following RECs that have the potential to result in material migration of hazardous substances or petroleum products to the environment at the Subject Property:

- The southern and western portions of the subject property operated as a landfill for the adjoining mills from the early 1900s through the mid-1990s. Waste streams included bark and wood, lime/ash, sludge, and general mill waste. Previous investigations at the subject property have identified concentrations of various hazardous substance including inorganic metallic constituents, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), and perfluoroalkyl and polyfluoroalkyl substances (PFAS) in the soil and/or groundwater. GZA opines the hazardous substances and petroleum products concentrations identified at the Subject Property represent a REC (identified as **REC A**).

- One Subject Property building operated as a service garage for Brown Co. beginning in approximately 1953 and included gasoline and diesel USTs and associated fuel pumps. Since the maintenance operations occurred during a time when environmental regulations were limited and the UST conditions at closure are unknown, it is likely that there were releases of hazardous substances or petroleum products associated with the historical tanks and fueling operations. In GZA's opinion, this represents a REC (identified as **REC B**). Further information pertaining to this REC is included in **Section 5.0.**

- Coal storage was identified at the Subject Property from at least the 1930s until approximately the 1970s. Coal ash and slag byproducts from the mill boilers may have been disposed of at the Subject Property; however, there is no information regarding coal ash and slag disposal practices. In GZA's opinion, releases related to the historic coal piles or possible coal ash and slag byproduct disposal is a REC (identified as **REC C**).

4.2 AERIAL PHOTOGRAPH REVIEW

GZA consulted historical aerial photographs provided by Environmental Data Resources, Inc. (EDR). The table below contains GZA's description of the Subject Property and vicinity properties as shown in the aerial photographs.

Year	Scale	Description of Subject Property	Description of Vicinity
1960	1"=875'	The east side of the Subject Property is primarily undeveloped. A utility line is present crossing the Subject Property north to south and an unpaved road is present crossing the central portion of the Subject Property from east to west. Areas of landfilling and multiple railroad spurs appear across the west side of the Subject Property. Rows of stored	Industrial operations and railroad lines are located to the west. The areas to the north, east, and southeast consist of undeveloped land. Single-family residences are located to the south, west, and northwest of the Subject Property.

Year	Scale	Description of Subject Property	Description of Vicinity
		materials, the current building structure, and an additional building are present on the southwest portion.	
1965	1"=875'	Subject Property conditions appear to be consistent with the 1960 aerial photograph.	The Subject Property vicinity conditions appear to be consistent with the 1960 aerial photograph.
1976	1"=875'	The former railroad spurs appear to be removed from the Subject Property are inactive. The rows of stored materials on the southwest portion of the Subject Property are no longer present. The remaining Subject Property conditions appear consistent with the 1965 aerial photograph.	The Subject Property vicinity conditions appear to be consistent with the 1965 aerial photograph.
1978	1"=875'	Subject Property conditions appear to be consistent with the 1976 aerial photograph. However, a pond is located in the area of landfilling within the southern portion of the Subject Property.	The Subject Property vicinity conditions appear to be consistent with the 1976 aerial photograph.
1986	1"=875'	Additional portions of the Subject Property appear to be used for landfill purposes. The pond observed in the 1978 aerial photograph is not visible and additional roadways are visible within the southeastern portion of the Subject Property. A road traverses the southern portion of the Subject Property running west to east.	The Subject Property vicinity conditions appear to be consistent with the 1978 aerial photograph.
1994	1"=875'	The landfill operations appear to have ceased and the majority of the apparent landfilling areas appear to be covered with grass. The second building structure is demolished. The remaining Subject Property conditions appear consistent with the 1986.	The industrial operations to the west appear to have ceased and several of the railroad lines are vacant. The remaining vicinity of the Subject Property conditions appear to be consistent with the 1986 aerial photograph.
1999	1"=875'	Subject Property conditions appear to be consistent with the 1994 aerial photograph.	The Subject Property vicinity conditions appear to be consistent with the 1994 aerial photograph.

Year	Scale	Description of Subject Property	Description of Vicinity
2008	1"=875'	Subject Property conditions appear to be consistent with the 1999 aerial photograph.	The Subject Property vicinity conditions appear to be consistent with the 1999 aerial photograph.
2011	1"=875'	Subject Property conditions appear to be consistent with the 2008 aerial photograph.	The Subject Property vicinity conditions appear to be consistent with the 2008 aerial photograph.
2014	1"=875'	Subject Property conditions appear to be consistent with the 2011 aerial photograph.	The Subject Property vicinity conditions appear to be consistent with the 2011 aerial photograph.
2018	1"=875'	Subject Property conditions appear to be consistent with the 2014 aerial photograph.	The Subject Property vicinity conditions appear to be consistent with the 2014 aerial photograph.

4.3 FIRE INSURANCE MAPS

No historical fire insurance maps for the Subject Property vicinity were available through EDR.

4.4 PROPERTY TAX FILES

GZA consulted online property tax files available from the City of Berlin Assessing Department. The files identify the Subject Property as Parcel 133-105, the owner as Pulp of America LLC, and the co-owners as American Tissue Inc Corp SVC Co. The Parcel is located in an industrial/business zone (IB) and is approximately 400 acres in size. A tax map is provided as **Figure 2.**

There was no information available at the City of Berlin Assessor's office that indicated the presence of RECs at the Subject Property.

4.5 LAND TITLE RECORDS

The review of a title search helps to identify the historical use of the Subject Property, as well as applicable environmental liens and Activity and Use Limitations or Restrictions (AULs or AURs); ASTM identifies a title search as a User Responsibility.

No title information was provided by the Client as part of the User's Responsibilities, and the completion of a title search was not included in the scope of this assessment. A limited AUL review conducted by EDR (refer to **Section 7.0)** identified the property as a Brownfields site.

GZA reviewed the history of ownership records available online through the Coos County Registry of Deeds. The records indicate that Pulp of America LLC is the current property owner.

Other available ownership records are listed below.

Historical Ownership Table		
Year of Ownership	**Deed Book and Page**	**Owner(s)**
July 14, 1999-Present	Book 920, Page 413	Pulp of America LLC
Unknown-July 14, 1999	Unknown	Crown Paper Co

4.6 HISTORICAL USGS TOPOGRAPHIC MAPS

GZA reviewed historical USGS topographic maps provided by EDR. The table below contains GZA's description of the Subject Property and vicinity properties as shown on the historical topographic maps.

Year	Description of Subject Property	Description of Vicinity
1893; 1896	The Subject Property is vacant and undeveloped excluding the Success Railroad line that crosses the Site Property from east to west and the Concord & Montreal BR railroad line that crosses a portion of the northeast corner of the central portion of the Subject Property. An unnamed tributary to the Androscoggin River crosses the property east to west in the northeast portion of the Subject Property.	The Subject Property vicinity is undeveloped to the north, east, and south excluding the Success Railroad line that run east to west. The Androscoggin River is present to the west of the Subject Property. Railroad lines and streets are located west of the Subject Property and running adjacent to the Androscoggin River. The city center of Berlin is depicted to the southwest of the Subject Property and beyond the Androscoggin River and appears well-developed.
1937, 1942	The western portion of the Subject Property appears to be developed with one large building and one small building, and a railway terminus. The Success Railway previously present in the 1893 and 1896 maps crossing the property east to west is depicted as a trail. Bean Brook and a dirt road cross the property east to west in the northeast portion of the Subject Property. Pipe lines are depicted in the northeast portion of the Subject Property running north-south from Bean Brook to off the northern boundary of the Subject Property.	Additional development has occurred northwest, west, and south of the Subject Property and along the east and west sides of the Androscoggin River. Multiple railway terminus and commercial and/or industrial buildings are present west of the Subject Property and between the Subject Property and the Androscoggin River. The Berlin Reservoir is present along the Subject Property's northeastern border, the Anderson Dam is present northeast of the Subject Property, and wetland areas are present east of the Subject Property.
1970	The Subject Property is developed with one large building and a railway terminus at the western border of the Subject Property. A road	The areas located south of the Subject Property and west of the Subject Property beyond the Androscoggin river are

Year	Description of Subject Property	Description of Vicinity
	crosses the property east-west at the location of the former Success Railroad depicted in the 1893 and 1896 maps. An unnamed intermittent stream is depicted within the central portion of the Subject Property. The dirt road previously shown on the 1937 and 1942 maps crossing the property east to west in the northeast portion of the Subject Property near Bean Brook is no longer depicted. A Jeep trail is present crossing the northwest portion of the Subject Property. A utility line is present crossing the Subject Property north to south.	depicted as heavily populated urban areas. Additional residential and commercial and/ or industrial development has occurred along Hutchins Street located west of the Subject Property.
1989	Additional road development has occurred on the western and southern portions of the Subject Property. Several gravel pit areas are depicted in the western and southern portions of the Subject Property.	Additional development has occurred along Hutchins Street north and west of the Subject Property.
1995	The Subject Property is similar to the 1989 topographic map.	The vicinity of the Subject Property is similar to the 1989 topographic map.
2012; 2015; 2018; 2021	The topographic map does not depict any structures; it only shows current street configurations and topographic features.	The topographic map does not depict any structures; it only shows current street configurations and topographic features.

4.7 CITY DIRECTORIES

GZA consulted historical city directories provided by EDR. The table below contains GZA's summary of the Subject Property and adjoining properties as presented in the historical city directories.

Subject Property		
Year(s)	**Address**	**Site Occupant**
2020	1222 Hutchins St	Mt. Carberry Landfill Scale HSE

Adjoining Properties			
Year(s)	**Adjoining Property Direction**	**Address**	**Site Occupant**
2010; 2014; 2017	East	80 Hutchins St	Mt. Carberry Landfill

In addition, the City Directories contained the following listings for vicinity properties that are or might be associated with the use or storage of chemicals or petroleum products:

Property Name and Address	Year(s) of Listing	Distance and Direction from Site	Property Listing
1354 Hutchins Street	1961; 1965	West Adjoining	Chaloux Oil Co Inc
Between 1417-1747 Hutchins Street, Left side "Off" of Hutchins Street [traveling north]	1961; 1965	West Adjoining	B&MRR Roundhouse
1752 Hutchins Street	1961; 1965	741 Feet North (cross-and downgradient)	Morris & Co, Lumber; Morris Co Inc
1945 Hutchins Street	1965	2,900 Feet North	Leo J Landry Poultry Farm
1972 Hutchins St	1992; 1995; 2000; 2005; 2010; 2014; 2017; 2020	613 Feet North (cross- and downgradient)	McCosh Dan Light Trucking
1974 Hutchins St	2017; 2020	879 Feet North (cross- and downgradient)	Landscaping With Styles
1980 Hutchins St	2010	3,100 Feet North	White Mountain Lumber Co
653 Sullivan	1961; 1965	1,000 Feet Southwest (cross gradient)	Brown Company Hardwood Mill

4.8 MUNICIPAL DEPARTMENT RECORDS

GZA requested access to records available at the City of Berlin on November 1, 2024, through a Freedom of Information Act (FOIA) request. Records from the City of Berlin were not available within the timeframe allotted for this Phase I ESA.

4.9 OTHER HISTORICAL RECORDS

GZA requested access to records available at the New Hampshire Department of Environmental Services (NHDES) through a FOIA request. A response was not received within the timeframe of this ESA; however, GZA's experience is that NHDES typically refers such requests to their OneStop database. A summary of the OneStop Data Mapper records is provided in **Section 5.0.**

5.0 PREVIOUS INVESTIGATIONS

GZA reviewed previous Subject Property investigation reports available online at the NHDES OneStop Data Mapper. Due to the number of files available for the Subject Property, a summary is provided in **Appendix C.** Select reports are summarized below.

Phase I Environmental Site Assessment, prepared by Nobis Engineering, Inc., dated February 2006.

Background: Based on historical data reviewed by Nobis Engineering, Inc. (Nobis), the site operated as a saw mill/pulp mill from 1852 until the time of the ESA (2006). The site consisted of approximately 400 acres of land improved with a scale house, a cleared electrical utility and natural gas easement with electrical poles and lines, numerous dirt access roads and pathways, a closed landfill areas consisting of approximately 200 acres, and approximately 200 acres of undeveloped land.

Interview: Nobis interviewed Mr. Dave Marcotte, the former superintendent of the landfill. Other areas not included in the five main landfill areas (described below in the 2007 Post Closure Annual Report) were utilized for the disposal of bark and solid waste such as 55-gallon drums. Mr. Marcotte indicated that bark materials brought to the site were burned to the extent possible and bark materials and ash were then redistributed on the property. Mr. Marcotte indicated that during the 1970s, drums were brought over from the mill, staged at the landfill, and eventually many were recycled for scrap metal. Mr. Marcotte indicated that during the 1980s, drums were removed from the area east of the landfill and put into the lined landfill. Mr. Marcotte described tar material in the drums, which likely originated from Bermico piping. Bermico piping is a conduit product used for water transmission, sewer lines, and electrical lines. Bermico piping is made from ground cellulose (wood) fibers bound together with a water-resistant adhesive, and permeated with liquefied coal tar pitch. Bermico piping was manufactured on the western side of the Androscoggin River and brough to the Dummer Yard landfill by railcar, where it would cool.

Site Reconnaissance: Nobis observed evidence of possible soil staining/stressed vegetation on portions of the property. Nobis observed solid waste (drums, buckets, bermico piping waste, waste tires, automotive parts, construction debris, concrete waste, brick, roofing shingles, white goods (refrigerator, washing machines, dryers, microwaves, stoves), furniture, yard refuse, paint cans, household garbage, corrugated steel piping, a derelict vehicle, gasoline tanks, and other debris throughout the site.

Conclusions and Recommendations:

- The ESA identified evidence indicating past releases of oil and/or hazardous materials to the environment had occurred. Groundwater quality data reviewed by Nobis indicated that groundwater quality standards (manganese and sulfate) were typically exceeded in onsite bedrock monitoring wells. In addition, due to site history and observations of drums at the site during the reconnaissance, Nobis determined that it was possible that releases had occurred. The past history of the landfill use and possible surficial staining and stressed vegetation was identified as a REC.

- Nobis recommended that areas of apparent solid waste should be assessed for proper removal and disposal. Based on the REC, Nobis recommended a subsurface investigation be conducted. Nobis also identified a former UST facility at the service garage near the western boundary, and they recommended that an assessment of this area be conducted.

2007 Post-Closure Annual Report, prepared by Sevee & Maher Engineers, Inc. (Sevee & Maher), dated July 2007

Background:

Dummer Yard Landfill encompasses 105 acres and was used for the disposal of production-related wastes through 1997. At the time of the report in 2007, the property was bordered to the west by the Burgess Pulp Mill. The landfill was owned by Crown Vantage until 1999 when it was sold to Pulp & Paper of America. After financial difficulties, NHDES drew on the closure bond to continue environmental monitoring and maintenance. At the time of the 2007 report, the bond was held by Greenwich Insurance Company and administered by Cashin, Spinelli & Ferretti, LLC.

Dummer Landfill consisted of ten disposal areas. Five areas were used for the disposal of wastewater treatment sludge, ash, lime mud, general debris, and bark. Other areas were used for the disposal of bark. Five main landfill areas were:

- Area I (Lime/Ash Pile): used for the disposal of bark, ash, and lime mud. The majority of waste in this pile was ash produced from a bark boiler. The ash includes both bottom ash and fly ash and arrived at the site at about 15% organic content. Bark had been primarily in the northeast section and covered over with ash and lime mud. This area was not expected to produce significant gas due to decomposition and no gas venting system was installed in conjunction with the extended interim closure of the pile.

- Area IIA (Sludge Landfill): used for the disposal of paper mill wastewater treatment sludge from both the Cascade Paper Mill and the adjoining Burgess Pulp Mill. The Burgess sludge consisted of approximately 30% secondary and 70% primary sludge and was dewatered to approximately 30% solids prior to landfilling. The Burgess sludge was primarily wood fiber and had an ash content of about 20%. The Cascade sludge had a solids content of between 15-20% when landfilled and an ash content similar to the Burgess sludge. This landfill is expected to produce decomposition gases and has a gas venting system installed at the crown of the landfill.

- Area IIB (Secure Sludge Landfill): used for the disposal of sludge similar to that of Area IIA. A gas venting system was installed over the crown at this landfill.

- Area III (Bark/Sludge Pile): used for the disposal of bark and sludge. The pile was originally a bark stockpile and later was used for the disposal of sludge. The sludge disposed of in this pile are similar to those described in Area IIA and a gas venting system was installed.

- Area IV (General Mill Debris/Sludge Landfill): used for the disposal of general mill debris, bark, and sludge. The pile was originally a bark stockpile and later was used for the disposal of sludge. General

mill debris was later disposed of on top of the bark and sludge. This landfill has a history of fires from within the pile and two pipe stacks were installed to vent the steam at two known locations identified during closure activities. The sludge disposed of within this pile are similar to those described in Area IIA and a gas venting system was installed over the crown at this landfill.

Report Summary:

In June 1995, Crown Vantage contracted with H.E. Sargent, Inc. to construct the closure of the five landfill areas (Areas I, IIA, IIB, III, and IV) with extended interim closure. The closure work was implemented to comply with NHDES permits under permit DES-SW-TP-92-011. The interim work was completed by November 27, 1996. The extended interim closure consisted of installation of a 20-inch-thick glacial till soil cap; installation of a 6-inch-thick bark layer for cap protection; installation of a gas venting system on four of the five landfill areas; installation of a perimeter drain on one of the five landfill areas; and installation of stormwater and erosion control measures.

At the time of the report, the groundwater quality monitoring program consisted of sampling nine groundwater monitoring wells, three surface water locations, and the leachate, one time per year. The report outlines the results of the 2007 groundwater, surface water, and leachate monitoring. Sevee & Maher concluded that the results showed parameter concentrations were generally within historical ranges for monitoring wells and surface water points. Several locations showed slight improvements over time. Sevee & Maher recommended no changes to the groundwater quality monitoring program.

2008 Post-Closure Annual Report, prepared by Sevee & Maher Engineers, Inc., dated July 2008

Conclusions: The 2008 water quality results indicated that parameter concentrations were generally within historical ranges for groundwater and surface water. Several locations showed slight improvements over time. Leachate concentrations were significantly higher for several parameters, which was attributed to less leachate generation due to effectiveness of the cap and thus a more concentrated solution. Notable recommendations by Sevee & Maher included altering inspections to every other year, and discontinuing landfill gas monitoring from the vents and building drain and continuing to monitor at gas probes only for methane and on an annual basis. Sevee & Maher recommended no changes to the groundwater quality monitoring program.

2009 Post-Closure Annual Report, prepared by Sevee & Maher Engineers, Inc., dated July 2009

Conclusions: Gas concentrations remained below the reporting limit for methane. The 2009 water quality results indicated that parameter concentrations were generally within historical ranges for groundwater and surface water. Several locations showed slight improvements over time. Total Kjeldahl Nitrogen (TKN) in one monitoring well had an anomalously high value compared to historical data. Sevee & Maher recommended rechecking the data from the well to determine if the anomalously high value of TKN was indicative of changes in water quality or a laboratory error. Sevee & Maher recommended no changes to the groundwater quality monitoring program.

2010 Post-Closure Annual Report, prepared by Sevee & Maher Engineers, Inc., dated July 2010

Conclusions: Gas concentrations remained below the reporting limit for methane. The 2010 water quality results indicated that parameter concentrations were generally within historical ranges for groundwater and surface water. Several locations showed slight improvements over time.

Phase I Environmental Site Assessment Update, prepared by GZA, dated March 2011

Background: At the time of the 2011 Phase I ESA, approximately 105 acres of the property encompassed four closed landfills associated with the former Pulp and Paper Mill, historically located across Hutchins Street from the Subject Property. The area northeast and east of the landfill consisted of largely undeveloped land with several snowmobile/all-terrain vehicle trails as well as a police radio tower (former weather station) and cleared utility and natural gas easements. Success Pond Road traversed the property east to west within a northern portion of the parcel. The southwestern portion of the Subject Property was encumbered by two separate easements, which were improved with a scale house and truck turn-around owned and operated by the Androscoggin Valley Regional Refuse Disposal District (AVRRDD) and a former service garage owned by Perry Street, LLC, which operated as a multi-tenant/mixed use commercial building.

Site History: The area and Subject Property history summarized in the 2011 ESA was developed from ASTM standard historical sources and files obtained from the City of Berlin municipal offices, including the City Clerk, Assessor's Office, Building Codes, Health, Department of Public Works, Community Development Office, and the Fire Department. Additionally, GZA obtained information from the Moffett House Museum and Genealogy Center located in Berlin. Site history information has been included in **Section 4.1**.

Waste Streams: To segregate and manage mill waste streams, up to ten discrete disposal areas (Areas I through X) were developed at Dummer Yard. Five of these included bark, and the remaining five included lime/ash (Area I), lined sludge beginning in 1981 (Area IIA), lined sludge beginning in 1986 (Area IIB), bark and sludge (Area III), and general mill waste and sludge (Area IV). Over time, the waste streams being generated and disposed of at Dummer Yard changed as the pulp and paper industry changed. Three components to waste disposed of at Dummer Yard included lime byproducts, sludge, and ash; the following describes the timeframe for these changes in disposal:

- Beginning in the 1940s, technology for the conversion of wood into wood pulp changed from a 'sulfide pulping process' to a 'craft pulping process/sulfate process'. This included the use of quicklime and lime byproducts, which included lime mud precipitates referred to as 'lime dregs', crude sulfate turpentine, and tall oil soap. These materials were recovered in boilers to the maximum extent possible. The new waste streams were disposed of at Dummer Yard. Residual lime (scale, carbon, and silicate) was disposed of at Area I, and residual tall oil soap was disposed of within the 'lime mud pond/ earthen-lined lagoon' in the southern portion of Area IV. In 1988, the lime mud pond/lagoon area was excavated to the extent possible, stabilized with lime, and placed into Area I.

- In 1975, a sewer treatment system was constructed to manage wastewater at the mill complex. Sludge byproducts were disposed of at Dummer Yard beginning in 1975 in Areas III and IV, through 1986. Beginning in 1981 (Area IIA) and 1986 (Area IIB), sludge was landfilled in newly created lined landfill areas (Areas IIA and IIB).

- In 1981, a wood-fired boiler was installed at the mill complex, and, as a result, no bark was sent to Dummer Yard after 1981. At this time, waste bark was reclaimed from the landfill to fuel the new boiler. Bark was removed from the landfill and transported to the mill complex via rail and truck. This was done to create space for the lined landfill construction in these areas; and, once the boiler went online, ash was generated and subsequently disposed of at Dummer Yard.

- Areas III and IV received general mill waste including, but not limited to: bark, sludge, ash, paper, scrap metal, construction/demolition debris, and mill refuse. According to the former Environmental Director for prior site owner, Mr. Raymond Danforth, asbestos-containing materials (ACM) was also disposed of in Areas III and IV.

- According to Mr. Danforth, drums that were not reclaimed for scrap metal were disposed of at the landfill; however, he believed that the drums were washed at the mill complex first before being brought to Dummer Yard for disposal. Steel drums were crushed in the general area east of the service garage and subsequently disposed of in Area IV.

- During the 1960s, when active Bermico production occurred, excess waste tar was disposed of in 55-gallon drums. According to Mr. Danforth and information obtained by Nobis in their 2006 Phase I ESA, 'tar drums' were disposed of in the general area along the direct access road by Area V, east of the closed landfill area. As the drums corroded, solidified tar blocks remained. Mr. Danforth indicated that effort was made to remove the drum, drum fragments, and tar blocks in the 1980s, and the recovered materials were sent to the Mount Carberry Landfill. Remnants of the drums and tar blocks not recovered were observed along the access road by Nobis in 2006.

- The five landfill areas not exclusively bark (Areas I, IIA, IIB, III, and IV) were closed in 1995-1996. The landfill areas composed exclusively of bark (Areas VI through IX) were left as-is. The first Groundwater Management Permit (GMP) was issued by NHDES for the property in 1986. At the time of the 2011 Phase I ESA, the GMP required annual sampling of nine groundwater monitoring wells (MW-4, MW-305B, MW-307A, MW-307B, MW-315, MW-316A, MW-316B, MW-602, and MW-701), and three surface water locations (SW-1 through SW-3), for various field parameters and iron, manganese, chloride, potassium, sodium, sulfate, TKN-N, and drinking water metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver).

  Site Reconnaissance: In November and December 2010, GZA conducted a site reconnaissance of the property. The following is a list of observations and findings from the reconnaissance:

- Three aboveground propane tanks east of the service garage and two small propane tanks along eastern wall of the service garage.

- Several 5-gallon pails of discarded apparent waste oil at northeast corner of service garage, open container that appeared to have been used to change oil with waste oil in it, partially full 55-gallon drum that was leaking with staining on ground.

- Two sets of pole-mounted transformers (three on each pole) along southwestern property boundary and the Perry Street access to driveway with apparent creosote staining on ground surface beneath the poles.
- Stormwater detention basin in the middle of the westernmost edge of the property.
- Several groundwater and landfill gas monitoring wells associated with ongoing GMP.
- Solid waste disposal similar to that noted by Nobis in 2006 ESA.
- Municipal sewer and water were available. According to Mr. Danforth, prior to the mill wastewater treatment plant coming online in 1976, domestic sewage was discharged directly to the Androscoggin River. Leachate from the landfill was originally collected and subsequently treated at the mill facilities water treatment facility. The leachate collection system was connected to City's municipal sewer system in December 2007.
- Stressed vegetation was consistent with Nobis's 2006 ESA observations. Additionally, stressed vegetation was observed in the vicinity of MW-315 and along the drainage swale north of Area III. Along the dirt access road just north of the service garage, GZA noted an area of coal/slag with little vegetation growing. Other areas of poor vegetation were evident within the rear of the service garage and along the southern side slope of the capped landfill for Area IV.
- Stormwater managed by a stormwater detention basin located on the midwestern edge of the Subject Property to the northwest of the service garage. Drainage swales control runoff around the closed landfills and direct runoff to the detention pond.
- At the time of the reconnaissance, the interior included an unfinished garage area occupied by two tenants (Steel Elements and ATA), a smaller unfinished garage area occupied by WMCC, and a separate finished retail space with a second story mezzanine area occupied by IRS Sports.
- Small quantities of fuel and paints were observed in the service garage area occupied by Steel Elements. Personnel of ATA, which repaired and maintained recreational vehicles, small quantities of various petroleum products were used. GZA observed a "Clarke" 20-gallon self-contained parts wash station, and multiple 5-gallon containers of various petroleum products and two to five 55-gallon drums. In WMCC, three to five 55-gallon drums and smaller containers of waste oil/antifreeze were observed within secondary containment.
- A separate room off the northeastern corner of the space occupied by Steel Elements included signs that indicated "PCB Storage". Mr. Danforth indicated this space used to store large transformers and capacitors, as well as drums of "Askarels", which were fluids typically comprised of 40-80% PCBs and 20-60% trichlorobenzene. According to Mr. Danforth, the room used to have a door and a concrete berm across the opening to contain any spills that occurred. Additionally, no floor drains or pathways to the environment were observed in the room.
- A 1961 Brown Co. Plan indicated at least three gasoline pumps to be located inside the southwestern corner of the building near the old boiler room.

- GZA observed a trench drain within the concrete slab in the building running north to south. Heavy metal covers prevented GZA from inspecting drain interior. Mr. Danforth believed these were connected to the wastewater treatment piping network.

- GZA observed two parallel rectangular cuts in the concrete floor aligned with the southwestern corner bay door. Both were filled with concrete and Mr. Danforth indicated that these were former 5 to 6-feet deep grease pits that personnel used to enter to conduct repair work beneath equipment overhead.

Overall Findings: The following summarizes the findings of the 2011 Phase I ESA:

- HREC 1: AGQS exceedances in select wells for manganese. A GMP existed at the time of the 2011 ESA and the site was being monitored in compliance with the GMP.

- REC 2: History of general mill waste disposal in the unlined Area IV and possibly unlined Area III. No information was readily available regarding what constituted "general mill waste" but it is known to have received items including crushed drums, ACM, and lime mud. Although the lime mud was reportedly excavated to the extent possible, it is unclear the extent of what residual material was left in place. GZA noted a boring log for a piezometer (former PB-324) drilled in 1985 centrally within Area III, indicating that "black sand and gravel top of natural fill" was observed at a depth of 40 to 42 feet below ground surface (bgs). The note on the boring log indicated that the formation "left oil stain on ground surface". No other information was provided and it did not appear that this was investigated further. As outlined in **Section 4.1**, the former operations of the Subject Property as a landfill is considered a REC.

- REC 3: In 1993, NHDES had been notified that a "layer of unknown type oil had been discovered in monitoring wells MW-312A and MW-312B during the April 1993 sampling round", upgradient of Areas III/IV. Apparently these wells were not locked and it was concluded that this was a result of vandalism. The oil was pumped from the wells, which were subsequently abandoned. A replacement well (MW-601) was installed approximately 15 feet away from MW-312B; no free product had been observed in this well; however, it was unclear whether residual petroleum existed in the vicinity of the former wells.

- REC 4: Lack of documentation describing the limits of waste. Historical NHDES correspondence indicated that the limits of waste along the westerly side of Area I needed to be verified; no further documentation was available.

- REC 5: Well network current in 2011 did not appear to provide data to sufficiently understand potential groundwater impacts from the landfill.

- REC 6: Potential for leachate migration from the landfill to nearby residences.

- REC 7: Potential for impacts to private residential water supply wells located off of Bemis Street.

- REC 8: Solid waste observed in various areas across the property.

- REC 9: Historical presence of USTs, including the remnants of a fuel pump island east of the service garage.
- REC 10: Waste oil-like staining on the ground surface proximate to a 55-gallon drum off the northeast corner of the service garage. Several improperly stored 5-gallon pails of discarded apparent waste oil on a wooden pallet off northeastern corner of service garage. Open container used to change oil observed to have waste oil in it was also present on the pallet.
- REC 11: Historical use of the interior room located within the northeastern corner of the service garage as a hazardous materials storage area. Used for maintenance and storage of transformers and capacitors, as well as drums of "Askarels" or pure PCB oils.
- REC 12: Presence of floor drains and concrete-filled grease pits within the service garage. It was unclear whether the drains were still active or the location of the outlet.
- REC 13: Suspect ACM in poor and/or damaged condition.

Phase II Environmental Site Assessment, prepared by GZA, dated September 18, 2012

The Phase II ESA was performed to evaluate the following RECs:

- REC: Evaluate the limits of areas of on-site waste beyond the closed portion of the landfill.
- REC: Evaluate outlets of interior floor drain system in service garage.
- REC: Further characterize bedrock hydrogeology and evaluate potential for transport of contaminants in groundwater within bedrock. GZA's investigation focused on areas estimated to be downgradient of the landfill portion of the site, and the evaluation of the adequacy of the existing bedrock groundwater quality monitoring locations included within the GMP current at that time.
- REC: Further evaluate overall site groundwater quality relative to historical uses of the site and potential undocumented releases of petroleum and/or hazardous waste.

<u>Work Performed:</u>

- In November 2011, 18 test pits were conducted to maximum depths of 13 feet in areas proximate to the footprint of the capped landfill areas. Five soil samples were collected and analyzed for VOCs, PAHs, TPH, and 8 Resource Conservation and Recovery Act (RCRA) metals. VOCs were detected at concentrations below SRS. Soil samples collected from two test pits exhibited concentrations of TPH above the SRS. Soil samples collected from four test pits exhibited concentrations of PAHs above SRS. These included benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, fluoranthene, fluorine, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene. One metal (arsenic) exceeded the SRS in one test pit.
- A camera survey was conducted in December 2011 to attempt to locate the floor drain outlet(s). The survey showed the following:

- The floor drain system ran parallel with the long axis of the building for a total length of 190 feet beneath the concrete slab foundation at a distance of 48 feet off the eastern interior building well and flowed in a north/northeast to south/southwest direction.

- The northern end of the floor drain system appeared to terminate with an end cap beneath the concrete slab foundation while the southern end had a 90-degree turn to the east and exited the building.

- The floor drain system terminated at an apparent dry well structure situated approximately 39 feet east of the service garage off the southeastern corner of the building.

- Standing water was observed within the dry well structure. No obvious evidence of separate phase petroleum or sheens was observed in the survey video from within the pipe. From discussions with the City and building occupants, GZA determined that the floor drains were functional and actively drained the interior spaces.

- Hydrogeological Assessment: Based on historical studies associated with the landfill design and closure work, the overall conceptual site model developed by others was that groundwater flow was likely controlled by bedrock at the site with predominant flow within bedrock fractures to the west toward the Androscoggin River. In general, it appeared that there was little saturated overburden, which reportedly decreased toward the northwestern portion of the site. Investigation activities focused on areas estimated to be downgradient, and the evaluation of the adequacy of the existing bedrock groundwater quality monitoring locations included within the Groundwater Management Zone (GMZ).

  - Bedrock outcrop mapping performed by GZA was consistent with publicly available sources of information pertaining to bedrock lithology and structure. In general, the lithology observed indicated that the area surrounding the landfill is generally underlain metamorphosed volcanic and sedimentary rock of the Ammonnoosuc Volcanics including generally light grey gneisses and schist. In general, underlying and intruding the Ammonnoosuc Volcanics is a biotite granite or quartz monzonite that is generally pink in color. The results of the review of historical bedrock structural information for the site vicinity and results of bedrock mapping indicate a potential for northwest trending fractures dipping toward the southwest between 75-80 degrees and northeast trending bedding fractures dipping toward the southeast around 70 degrees.

  - An Earth Resistivity Imaging (ERI) survey was conducted in November 2011 to identify areas of relatively higher fracture density within bedrock as an indicator of potential preferential pathways relative to groundwater flow and landfill groundwater contaminants in bedrock.

  - GZA observed the advancement of four deep bedrock boreholes (MW-804D, MW-806, MW-807, and MW-808) in November and December 2011. Overburden fill materials generally consisted of black to brown fine to medium sand to silty sand with varying amounts of gravel, coal, coal/wood ash, bermico fragments, and slag or coal clinkers. During advancement of MW-804D, a petroleum/ tar like odor was observed and an apparent sheen was observed in groundwater returned to the surface. A shallow overburden well was installed here to assess groundwater quality. Bedrock was encountered between 18 to 40 feet bgs.

- GZA observed the advancement of four test borings completed with shallow overburden wells (MW-800, MW-801, MW-802, and MW-804S). MW-800 was installed proximate to the approximate location of the former UST, MW-801 was installed downgradient of the yard associated with the service garage and proximate to the interior former hazardous waste storage area, MW-802 was installed proximate to the dry well, and MW-804S was installed as a companion well with MW-804D.

- Groundwater sampling was conducted in April 2012. Samples were analyzed for VOCs, PAHs, and 8 RCRA metals. VOCs and metals were detected at concentrations below the AGQS. Concentrations of benzo(a)anthracene, benzo(b)fluoranthene, and benzo(b)pyrene were present in samples collected from one bedrock well sample (MW-807) above the AGQS.

- GZA reviewed an April 2011 data transmittal for the adjoining and downgradient Chlor-alkali site. Two bedrock wells located just west of the site were sampled; results indicated that VOCs were not detected above laboratory reporting limits with the exception of carbon tetrachloride which exceeded the AGQS. Carbon tetrachloride is a contaminant of concern at the Chlor-Alkali site and was not detected in groundwater samples collected from the Subject Property.

<u>Summary/Status of RECs following completion of Phase II ESA:</u>

- REC 1: *Historical Impacts to groundwater quality including exceedances of the AGQS for manganese in routine GMP monitoring.* GZA further assessed groundwater quality by sampling for various hazardous and petroleum constituents not currently included in routine GMP monitoring and concluded that impacts to the bedrock groundwater system that may be attributable to the landfilled material, other than the previously documented manganese and sulfate contamination, appeared limited based on the data results. Certain PAHs were detected in bedrock groundwater above the AGQS in one well (MW-807) but these data did not appear to be indicative of a widespread bedrock groundwater impact but rather possible sediment entrainment in the sample. GZA further concluded that additional assessment is needed to fully evaluate the overburden groundwater system, particularly within the northwestern portion of the Subject Property. Through the findings of the Phase II, it became clear that the initial assumption that bulk groundwater movement beneath the Subject Property was primarily through bedrock was not substantiated. Instead, a significant portion of the flow that was largely uncharacterized occurred in overburden over the top of the bedrock surface largely within the northwestern portion of the Subject Property. GZA reviewed the analytical data collected in 2011 and compared these data to current (2024) AGQS. In addition to the exceedances of PAHs noted above, arsenic was present in one well at a concentration exceeding the current (2024) AGQS. Based on the presence of several compounds in groundwater at concentrations above current (2024) AGQS, this is considered a REC (identified herein as **REC A**).

- REC 2: *The history of disposal includes general mill waste in the unlined Area IV and possibly the unlined Area III. A 1985 boring log from a well situated centrally within Area III indicated that "black sand and gravel top of natural fill" was observed at a depth of 40 to 42 feet bgs. The note on the boring log indicated that the "formation left oil stain on ground surface". No other information was provided and it did not appear that this observation was investigated further.* GZA assessed this REC through evaluation of bedrock groundwater quality as an overall indicator of overall gross impacts to the groundwater system from

the unlined landfills. Refer to REC 1 above for GZA's conclusions regarding groundwater quality. As outlined above, the presence of contaminants in groundwater at concentrations above AGQS is considered a REC (identified herein as **REC A**).

- REC 3: *In 1993, NHDES had been notified that a "layer of unknown type oil had been discovered in monitoring wells MW-312A and MW-312B during the April 1993 sampling round", which were situated upgradient of Areas III/IV. Although subsequent monitoring of the new MW-601 well did not identify free product, it was unclear whether or not residual petroleum existed in this vicinity.* GZA assessed this REC through evaluation of bedrock groundwater quality as an overall indicator of overall gross impacts to the groundwater system from the unlined landfills. Refer to REC 1 above for GZA's conclusions regarding groundwater quality. As outlined above, the presence of contaminants in groundwater at concentrations above AGQS is considered a REC (identified herein as **REC A**).

- REC 4: *Historical NHDES correspondence indicated that the limits of waste along the westerly side of Area I had not been confirmed. No further documentation was identified as to whether or not this was completed.* GZA concluded that solid waste and C&D debris exists outside of the footprint of the closed landfill area to the west of landfill areas I, III, and IV. However, while the extent of disposal in this area was not defined, this was the only location outside the landfilled areas where buried solid waste and C&D debris was discovered during this study. In addition, extensive areas of fill consisting of varying amounts of coal, coal/wood ash, slag or coal clinkers, bermico, and/or tar fragments and waste wood were observed west and northwest of the delineated landfill Areas I and III/IV. In general, GZA concluded that the fill materials observed, which were attributed to historical uses/disposal practices, may pose structural challenges associated with future development and would require management in terms of proper handling and disposal. As outlined previously, various compounds (TPH, various PAHs, and arsenic) were present in soil samples collected from five of the test pits advanced in 2011. This is considered a REC (identified as **REC E**).

- REC 5: *The current well network does not appear to provide data to sufficiently understand potential groundwater impacts from the landfill. Based on information available, it does not appear that sufficient structural bedrock characterization had been completed at the site to identify potential preferential pathways in bedrock.* GZA concluded that the bedrock structure beneath the landfill area includes northwest trending fractures dipping toward the southwest, as well as the presence of northeast trending bedding features dipping toward the southeast and located new bedrock wells in consideration of these trends. This information, combined with observations during drilling and a geophysical study conducted, led GZA to conclude that significant water bearing fractures of interest that would be considered preferential pathways for contaminant migration didn't exist within the bedrock boreholes drilled as part of this study. GZA further concluded that the bedrock did not appear to be highly conductive in the monitoring locations; however, GZA noted that the investigations completed to date had not fully characterized overburden groundwater, particularly within the northwest portion of the site. Refer to REC 1 above for GZA's conclusions regarding groundwater quality. This REC is identified herein as **REC A**.

- REC 6: *A complaint was made from a resident living in close proximity to the landfill in 1985 regarding the presence of "orange sludge" running through the basement of her house. No further documentation was*

identified as to whether or not the source of potential leachate was evaluated and if leachate migration from the landfill was occurring. In general, GZA did not observe active leachate seeps in areas assessed as part of the Phase II. The residential home in which the leachate was observed in 1985, was subsequently demolished as party of a roadway realignment project in the late 1980s-early 1990s. The five landfill areas that were not exclusively bark (Areas I, IIA, IIB, III, and IV) were closed in 1995-1996. As part of the closure, a leachate collection system was installed to intercept leachate downgradient of the landfill areas. The leachate management system was operated by the City at the time of the Phase II. While the home no longer exists, no additional complaints were identified as part of the research conducted by GZA. As such, GZA concluded that the engineered solution for leachate management had addressed the migration of leachate to these properties. Furthermore, GZA generally assessed the significance of this REC through evaluation of bedrock groundwater quality as an overall indicator of gross impacts to the groundwater system from the unlined landfills. Refer to REC 1 above for GZA's conclusions regarding groundwater quality. This REC is identified herein as **REC A**.

- REC 7: *The potential for impacts to private residential water supply wells that are located off Bemis Street should be considered as a precautionary measure. No follow-up documentation was identified by GZA that indicated whether or not these wells were assessed for potential impacts from the landfill.* GZA concluded that significant water-bearing fractures of interest that would be considered preferential pathways for contaminant migration were not observed within the bedrock boreholes drilled as part of the study. Based on groundwater quality data, it was concluded that widespread adverse impacts to groundwater from the landfill areas do not appear to have occurred, other than the previously reported manganese and sulfate downgradient of the landfill. The information in total does not suggest that a high risk of adverse impacts to water supply wells off Bemis Street existed based on the 2012 data results. However; as indicated in REC 1 above, GZA concluded that additional assessment is needed to fully evaluate the overburden groundwater system, particularly within the northwestern portion of the Subject Property. As such, this is considered a REC (identified as **REC A**).

- REC 8: *Solid waste observed in various areas across the property.* Consolidation and disposal of solid waste observed at the site was not conducted because at that time, the site was not secured and unpermitted dumping was possible. As such, this is identified as **REC E**.

- REC 9: *Historical presence of USTs at the site, including the remnants of a fuel pump island east of the service garage and lack of closure documentation.* Monitoring wells screened in overburden (MW-800 and MW-802) were installed near the location of the USTs noted on the 1961 plan just west and east of the service garage. Based on the groundwater sample results from these locations, in 2012, GZA concluded that groundwater had not been adversely impacted from former fueling operations at the service garage in the locations drilled; however, in GZA's opinion, releases to soil above SRS cannot be ruled out. Therefore, this is considered a REC and is identified as **REC B**.

- REC 10: *Waste oil-like staining on the ground surface proximate to a 55-gallon drum off the northeast corner of the service garage. Several improperly stored 5-gallon pails and containers of discarded apparent waste oil on a wooden pallet off northeastern corner of service garage.* Cleanup and consolidation of the various improperly stored petroleum products was not conducted because the garage building was owned by

another party at that time. Since this was not evaluated, this is considered a REC and is identified as **REC D.**

- REC 11: *Historical use of the interior room located within the northeastern corner of the service garage as a hazardous materials storage area. Used for maintenance and storage of transformers and capacitors, as well as drums of "Askarels" or pure PCB oils.* Evaluation of potential hazardous building materials, including PCB-impacted building materials within the garage building was not performed. Based on the 2011 interview with Mr. Danforth, the room used to have a door and a concrete berm across the opening to contain any spills that occurred. Additionally, no floor drains or pathways to the environment were observed in the room. Based on this information, it is unlikely that migration of hazardous materials has occurred to the environment from this room.

- REC 12: *There are documented floor drains and concrete-filled grease pits within the service garage. Based on information reviewed, it is unclear if the floor drains were still active and what the outlet was. In addition, no information was available regarding the condition of the concrete slab associated with the former grease pits that had previously been filled in.* From the camera survey, it was concluded that the floor drain system within the building discharged to an exterior dry well. Standing water was observed in the dry well but no evidence of separate phase petroleum or sheen was noted. Based on the data results from a newly installed well proximate to the dry well, GZA concluded that groundwater quality proximate to the dry well did not appear to have been adversely impacted based on the historical discharges to the floor drain system.

- REC 13: *Suspect ACM in poor and/or damaged condition.* Evaluation of potential hazardous building materials, including ACM within the garage building was not performed. Evaluation of ACM is considered an out-of-scope consideration per ASTM E1527-21 and was not evaluated as part of the Phase I ESA.

<u>Conclusions:</u>

- GZA recommended an additional investigation be performed west and northwest of the landfill to further evaluate overburden groundwater quality west and northwest of the landfill as this was not a focus of the Phase II.

- GZA recommended additional characterization to further define the nature and extent of solid waste and its potential adverse impact to overburden groundwater quality west of landfill Areas I, III, and IV.

- GZA recommended an additional round of groundwater sampling to confirm groundwater quality data results, in particular, to confirm PAH concentrations in bedrock groundwater at the MW-807 location.

- GZA recommended that the floor drain system be reported to the NHDES Drinking Water and Groundwater Bureau for closure by the property owner.

NHDES Response to Phase II Environmental Site Assessment, dated October 17, 2012

- <u>Recommendations/Requests:</u>

- Ensure the landfill caps are maintained. Continue to mow caps annually or biennially. Clean the detention pond periodically. Monitor the three soil gas probes along access road to Mr. Carberry landfill annually. Operate, sample, and maintain leachate capture system. Submit maintenance and inspection report to NHDES biennially.

- The extent of fill material containing PAHs at concentrations above SRS would need to be defined and a remedy to mitigate the risk would need to be proposed. Solid waste material observed in a test pit (TP-3) at the middle western portion of the site had exhibited solid waste material; NHDES requested additional investigation of this area to determine the extent of waste and any impacts to overburden groundwater.

- NHDES agreed with recommendation of additional investigation to evaluate overburden groundwater quality west and northwest of the landfill areas.

- No information was available that allowed GZA to evaluate whether NHDES recommendations had been implemented.

Post-Closure Annual Reports:

- **2013 Post-Closure Annual Report, prepared by Sevee & Maher Engineers, Inc., dated August 2013**
- **2015 Post-Closure Annual Report, prepared by Sevee & Maher Engineers, Inc., dated August 2015**
- **2017 Post-Closure Annual Report, prepared by Sevee & Maher Engineers, Inc., dated August 2017**
- **2018 Post-Closure Annual Report, prepared by Sevee & Maher Engineers, Inc., dated July 2018**

Gas concentrations remained below reporting limit for methane in 2013, 2015, and 2017. The 2013, 2015, and 2017 water quality results indicate that parameter concentrations were generally within historical ranges for groundwater and surface water. Several locations showed slight improvements over time. No groundwater sampling was completed in 2018.

Notice of PFOS Sampling, prepared by Sevee & Maher Engineers, Inc., dated February 1, 2019

- Notification to NHDES of PFOS groundwater sampling in December 2018, at NHDES request. Samples were collected from one upgradient well (MW-4), and two downgradient wells (MW-307B and MW-316B).

- PFOS were detected in the three wells at concentrations of 10.2 ng/L (MW-4), 708 ng/L and 740 ng/L (MW-307B sample and duplicate), and 102 ng/L (MW-316B). Two of the wells exceeded the NHDES standard of 70 ppt that was in effect at the time.

NHDES Response to PFOS Sampling, dated April 18, 2019

- NHDES reviewed all results (nine individual PFAS recommended by NHDES at that time).

- Multiple PFAS were detected in the three wells sampled. Relative to the established AGQS at that time, the PFOA + PFOS concentration in MW-307B was 1,164 ng/L (PFOA was 424 ng/L and PFOS was 740 ng/L) and

MW-316B was 457 ng/L (PFOA was 355 ng/L and PFOS was 102 ng/L), all of which exceeded AGQS. The results from MW-4 were below standards.

- Based on the results, NHDES requested a second round of PFAS sampling, which needed to include, at minimum, sampling the three monitoring wells MW-4, MW-307B, and MW-316B. Additionally, NHDES requested sampling any active water supplies within 500 feet of the GMZ boundary. There is no indication that this work has been completed.

Dummer Landfill Work Summary, prepared by Sanborn, Head & Associates, Inc., dated January 2024

- Sanborn, Head & Associates (SHA) completed an evaluation and installation of a leachate flow meter and control valve in December 2023. SHA indicated that the basin manhole had collapsed and required prompt attention. They also noted some differential settlement that occurred within the landfill that could have been affecting stormwater drainage.

- SHA recommended NHDES perform a post-closure inspection to confirm that the landfill cap was working as intended.

- SHA conducted CCTV inspection of the piping and it appeared that portions of the drainage infrastructure was compromised and/or clogged. There were discrepancies between provided documents and field observations; and Sanborn Head indicated that it was not fully understood how the entire stormwater/ leachate management system was intended to operate. They recommended NHDES perform an evaluation of the drainage infrastructure.

Dummer Landfill Summary Report, prepared by Sanborn, Head & Associates, Inc., dated June 28, 2024

- SHA provided several recommendations. This included preparing a GMP application renewal for groundwater and surface water monitoring. The GMP (GWP-198704035-B-008) was last issued on March 15, 2016, and expired on March 14, 2021. SHA also recommended an additional round of groundwater and surface water in accordance with the GMP.

- SHA recommended an additional one to two rounds of landfill gas monitoring at the gas probes and gas vents and use the results to evaluate the need to repair/replace damaged gas vents.

Summary of RECs identified in Historical Reports

The following table summarizes the RECs identified in the historical reports discussed above and their current status based on information discussed herein.

2011 Phase I ESA Finding	2024 Phase I ESA Findings/Conclusions
REC 1: *Historical Impacts to groundwater quality including exceedances of the AGQS for manganese in routine GMP monitoring.*	In 2012, GZA further assessed groundwater quality by sampling for various hazardous and petroleum constituents not currently included in routine GMP monitoring and concluded that impacts to the bedrock groundwater system that may be attributable to the landfilled material, other than the previously documented manganese and sulfate contamination, appeared limited based on the data results. GZA reviewed the analytical data collected in 2011 and compared these data to current (2024) NHDES AGQS. In addition to the exceedances of PAHs noted above, arsenic was present in one well at a concentration exceeding the current (2024) AGQS. Based on the presence of several compounds in groundwater at concentrations above current (2024) AGQS, this is considered a REC and is identified as **REC A.**
REC 2: *The history of disposal includes general mill waste in the unlined Area IV and possibly the unlined Area III. A 1985 boring log from a well situated centrally within Area III indicated that "black sand and gravel top of natural fill" was observed at a depth of 40 to 42 feet bgs. The note on the boring log indicated that the "formation left oil stain on ground surface". No other information was provided and it did not appear that this observation was investigated further.*	In 2012, GZA assessed this REC through evaluation of bedrock groundwater quality as an overall indicator of overall gross impacts to the groundwater system from the unlined landfills. As outlined above, the presence of contaminants in groundwater at concentrations above AGQS is considered a REC and is identified as **REC A.**
REC 3: *In 1993, NHDES had been notified that a "layer of unknown type oil had been discovered in monitoring wells MW-312A and MW-312B during the April 1993 sampling round", which were situated upgradient of Areas III/IV. Although subsequent monitoring of the new MW-601 well did not identify free product, it was unclear whether or not residual petroleum existed in this vicinity.*	In 2012, GZA assessed this REC through evaluation of bedrock groundwater quality as an overall indicator of overall gross impacts to the groundwater system from the unlined landfills. As outlined above, the presence of contaminants in groundwater at concentrations above AGQS is considered a REC and is identified as **REC A.**

2011 Phase I ESA Finding	2024 Phase I ESA Findings/Conclusions
REC 4: *Historical NHDES correspondence indicated that the limits of waste along the westerly side of Area I had not been confirmed. No further documentation was identified as to whether or not this was completed.*	In 2012, GZA concluded that solid waste and C&D debris exists outside of the footprint of the closed landfill area to the west of landfill areas I, III, and IV. However, while the extent of disposal in this area was not defined, this was the only location outside the landfilled areas where buried solid waste and C&D debris was discovered during this study. In addition, extensive areas of fill consisting of varying amounts of coal, coal/wood ash, slag or coal clinkers, bermico, and/or tar fragments and waste wood were observed west and northwest of the delineated landfill Areas I and III/IV. In general, GZA concluded that the fill materials observed, which were attributed to historical uses/ disposal practices, may pose structural challenges associated with future development and would require management in terms of proper handling and disposal. As outlined previously, various compounds (TPH, various PAHs, and arsenic) were present in soil samples collected from five of the test pits advanced in 2011. This is considered a REC and is identified as **REC E.**
REC 5: *The current well network does not appear to provide data to sufficiently understand potential groundwater impacts from the landfill. Based on information available, it does not appear that sufficient structural bedrock characterization had been completed at the site to identify potential preferential pathways in bedrock.*	In 2012, GZA concluded that the bedrock structure beneath the landfill area includes northwest trending fractures dipping toward the southwest, as well as the presence of northeast trending bedding features dipping toward the southeast and located new bedrock wells in consideration of these trends. This information, combined with observations during drilling and a geophysical study conducted, led GZA to conclude that significant water bearing fractures of interest that would be considered preferential pathways for contaminant migration didn't exist within the bedrock boreholes drilled as part of this study. GZA further concluded that the bedrock did not appear to be highly conductive in the monitoring locations; however, GZA noted that the investigations completed to date had not fully characterized overburden groundwater, particularly within the northwest portion of the site. This is considered a REC and is identified as **REC A.**

2011 Phase I ESA Finding	2024 Phase I ESA Findings/Conclusions
REC 6: *A complaint was made from a resident living in close proximity to the landfill in 1985 regarding the presence of "orange sludge" running through the basement of her house. No further documentation was identified as to whether or not the source of potential leachate was evaluated and if leachate migration from the landfill was occurring.*	In general, GZA did not observe active leachate seeps in areas assessed as part of the 2012 Phase II. The residential home in which the leachate was observed in 1985, was subsequently demolished as party of a roadway realignment project in the late 1980s-early 1990s. The five landfill areas that were not exclusively bark (Areas I, IIA, IIB, III, and IV) were closed in 1995-1996. As part of the closure, a leachate collection system was installed to intercept leachate downgradient of the landfill areas. The leachate management system was operated by the City at the time of the Phase II. While the home no longer exists, no additional complaints were identified as part of the research conducted by GZA. As such, GZA concluded that the engineered solution for leachate management had addressed the migration of leachate to these properties. Furthermore, GZA generally assessed the significance of this REC through evaluation of bedrock groundwater quality as an overall indicator of gross impacts to the groundwater system from the unlined landfills. Since there is no data to confirm that there is not residual contamination from the leachate outbreak, this is considered a REC and is identified as **REC A.**
REC 7: *The potential for impacts to private residential water supply wells that are located off Bemis Street should be considered as a precautionary measure. No follow-up documentation was identified by GZA that indicated whether or not these wells were assessed for potential impacts from the landfill.*	In 2012, GZA concluded that significant water-bearing fractures of interest that would be considered preferential pathways for contaminant migration were not observed within the bedrock boreholes drilled as part of this study. Based on groundwater quality data, it was concluded that widespread adverse impacts to groundwater from the landfill areas do not appear to have occurred, other than the previously reported manganese and sulfate downgradient of the landfill. The information in total does not suggest that a high risk of adverse impacts to water supply wells off Bemis Street existed based on the 2012 data results. However; as indicated above, GZA concluded that additional assessment is needed to fully evaluate the overburden groundwater system, particularly within the northwestern portion of the Subject Property. As such, this is considered a REC and is identified as **REC A.**
REC 8: *Solid waste observed in various areas across the property.*	Consolidation and disposal of solid waste observed at the site was not conducted because at that time, the site was not secured and unpermitted dumping was possible. As such, this is identified as **REC E.**

2011 Phase I ESA Finding	2024 Phase I ESA Findings/Conclusions
REC 9: *Historical presence of USTs at the site, including the remnants of a fuel pump island east of the service garage and lack of closure documentation.*	Monitoring wells screened in overburden (MW-800 and MW-802) were installed near the location of the USTs noted on the 1961 plan just west and east of the service garage. Based on the groundwater sample results from these locations, in 2012, GZA concluded that groundwater had not been adversely impacted from former fueling operations at the service garage in the locations drilled; however, in GZA's opinion, releases to soil above SRS cannot be ruled out. Therefore, this is considered a REC and is identified as **REC B**.
REC 10: *Waste oil-like staining on the ground surface proximate to a 55-gallon drum off the northeast corner of the service garage. Several improperly stored 5-gallon pails and containers of discarded apparent waste oil on a wooden pallet off northeastern corner of service garage.*	Cleanup and consolidation of the various improperly stored petroleum products was not conducted after the 2011 Phase I ESA because the garage building was owned by another party at that time. Since this was not evaluated, this is considered a REC and is identified as **REC D.**
REC 11: *Historical use of the interior room located within the northeastern corner of the service garage as a hazardous materials storage area. Used for maintenance and storage of transformers and capacitors, as well as drums of "Askarels" or pure PCB oils.*	Evaluation of potential hazardous building materials, including PCB-impacted building materials within the garage building was not performed. Based on the 2011 interview with Mr. Danforth, the room used to have a door and a concrete berm across the opening to contain any spills that occurred. Additionally, no floor drains or pathways to the environment were observed in the room. Based on this information, it is unlikely that migration of hazardous materials has occurred to the environment from this room.
REC 12: *There are documented floor drains and concrete-filled grease pits within the service garage. Based on information reviewed, it is unclear if the floor drains were still active and what the outlet was. In addition, no information was available regarding the condition of the concrete slab associated with the former grease pits that had previously been filled in.*	From the camera survey, it was concluded that the floor drain system within the building discharged to an exterior dry well. Standing water was observed in the dry well but no evidence of separate phase petroleum or sheen was noted. Based on the data results from a newly installed well proximate to the dry well, GZA concluded that groundwater quality proximate to the dry well did not appear to have been adversely impacted based on the historical discharges to the floor drain system.
REC 13: *Suspect ACM in poor and/or damaged condition.*	Evaluation of potential hazardous building materials, including ACM within the garage building was not performed. Evaluation of ACM is considered an out-of-scope consideration per ASTM E1527-21 and was not evaluated as part of this Phase I ESA.

6.0 SITE RECONNAISSANCE

The purpose of GZA's site reconnaissance was to observe current Subject Property conditions for evidence of recognized environmental conditions that could result in the presence of hazardous substances or petroleum products in the environment at the Subject Property. GZA Assistant Project Manager, Elizabeth Fulton and Engineer I, Abigail Farrin, conducted a site reconnaissance at the Subject Property on November 7, 2024. Bud Chapman of Chapman Industrial Building accompanied GZA during a portion of the site reconnaissance.

GZA documented its observations and photo-documented pertinent features and/or areas of environmental concern which we reference in this Phase I ESA Report. Selected photographs are included in **Appendix B**, and **Figure 2 - Subject Property Plan** depicts pertinent site features.

Limitations to GZA's site reconnaissance, if any, are noted in **Section 1.4**.

The following table discusses features of potential environmental concern that we observed at the Subject Property.

Item	Yes	No	Description
Aboveground storage tank (AST) systems	✔		GZA observed three 1,000-gallon propane tanks situated at the posterior of the industrial building and two 500-gallon propane tanks situated at the anterior of the industrial building. The three ASTs were observed to be in good condition, and no staining or evidence of a release was observed in the vicinity of the ASTs.
Underground storage tank (UST) systems		✔	None observed
Chemical or petroleum storage or handling areas	✔		GZA observed one 55-gallon drum of waste oil and two 55-gallon drums of general trash in the northern unit of the industrial building. GZA observed several 55-gallon drums in the posterior of the industrial building: one labeled "clean waste oil," one labeled "coolant/water/sludge," one labeled "anti/mix," and several unlabeled. GZA also observed one Intermediate Bulk Container (IBC) labeled "Amerfloc 425EP Polymer." No evidence of a release in relation to these drums was observed.
Chemical waste or petroleum waste storage or handling areas	✔		GZA observed three 5-gallon buckets of discarded apparent waste oil in the northern unit of the building next to the drum of waste oil on the concrete slab.
Dumpsters	✔		Three dumpsters were observed in the exterior of the industrial building and appeared to contain general trash or cardboard.

Item	Yes	No	Description
Floor drains, trenches, sumps and associated piping	✔		GZA observed a floor drain system within the concrete slab in the southern unit of the industrial building (ML Flatworks). It was unclear what the discharge point for these floor drains was during the reconnaissance and Mr. Bud Chapman reported the drains are not connected to the city sewer. During the 2012 Phase II ESA (**Section 5.0**), a camera survey revealed that the floor drain system within the building discharged to an exterior dry well. ML Flatworks is a concrete floor installation company and uses the space for storage and repair. Typical household cleaning chemicals and containers of antifreeze and motor oil for machinery is not stored near the floor drains. Evidence indicative of a petroleum release was not observed on the concrete slab surrounding the floor drains.
Oil/water separators		✔	None observed
Storm water drains, grates and associated piping	✔		A stormwater catch basin was observed at the southern junction of Perry and Hutchins Streets.
Drainage swales, culverts, impoundments, and surface water bodies	✔		A stormwater detention pond is located east of the storage garage along Hutchins Street. The pond was dry at the time of GZA's site reconnaissance. A second stormwater detention pond is located in landfill area IIB (**Figure 3**) and was observed to be dry at the time of GZA's site reconnaissance. Staining was not observed on the detention pond liner.
Septic systems, leach fields, seepage pits, and dry wells		✔	
Open pipe discharges		✔	None observed
Landfills and solid waste dumping	✔		A large portion of the Subject Property is a landfill. Outside of the landfill area, GZA observed solid waste behind the industrial building and included rail ties, car parts, tires, wires, tubing, pipes, drums, wooden poles, plastics and metal bottles and cans, and various other miscellaneous solid waste debris. Empty 55-gallon drums, empty 5-gallon buckets, broken culvert pieces, and miscellaneous trash such as soda cans and a television was observed throughout the Success Trail System.

Item	Yes	No	Description
			Staining was not observed beneath the observed empty buckets and plastic drum.
Historical fill or other fill material		✔	
Staining or stressed vegetation	✔		De minimis staining was observed on the concrete floor slab throughout the in the ML flatworks and Chapman units of the Subject Property building. The concrete floor slab was in satisfactory condition with no significant cracking or displacement observed.
Electrical transformers or capacitors	✔		One 4,272 gallon step-up transformer was observed in the posterior of industrial building on Subject Property. Three pole-mounted transformers were observed. There was no indication whether or not the transformers contained PCBs. Staining was not observed on the ground surface surrounding the transformers.
Hydraulic equipment, including lifts, elevators, and compactors	✔		Four propane powered forklifts were observed in the northern unit of the industrial building.
Active or inactive production wells		✔	None observed
Monitoring wells, former boreholes, or other evidence of environmental investigations	✔		GZA observed several groundwater and landfill gas monitoring wells at the Subject Property. Mr. Bud Chapman reported the wells are used for routine monitoring.
Other observations potentially indicative of the presence of RECs		✔	None observed
Observed *de minimis* conditions		✔	None observed

Site Reconnaissance Findings

The following summarizes the findings of GZA's site reconnaissance.

- No remaining railroad tracks were observed at the Subject Property, save for some scattered railroad ties, spikes, and other small amounts of metal debris at the posterior of the industrial building. Localized areas of shallow soil contamination are often identified along railroad tracks. Semi-volatile organic compounds, heavy metals, and polychlorinated biphenyls that are often associated with railroad ballast are likely present at the Subject Property. Therefore, it is GZA's opinion that the likely railroad ballast at the Subject Property is a REC.

- Numerous areas of solid waste including old vehicles, metal debris, scattered rail ties, multiple heavily rusted, empty, 55-gallon drums, and other plastic and metal containers were observed

throughout the Subject Property. Due to the amount, extent, and general unknown origins and previous contents of these items, GZA opines the areas of observed solid waste as a REC.

- The middle two units of the Subject Property building were inaccessible at the time of GZA's assessment. These inaccessible areas are identified on **Figure 3.** Due to the unknown use of the units and GZA's inability to ascertain whether a release of hazardous substances or petroleum products is likely, the lack of access is a significant data gap.

- The Client requested that GZA not access the portion of the Subject Property occupied by the Mount Carberry Landfill Scale House and Mount Carberry Road; therefore, GZA was unable to observe these portions of the Subject Property for evidence of RECs. The areas excluded from the field reconnaissance are identified on **Figure 3**. The lack of access inhibited GZA's inability to ascertain whether a release of hazardous substances or petroleum products is likely in these areas and is therefore a significant data gap.

7.0 REGULATORY DATABASE REVIEW

This section is based on publicly available information from various federal, state, and local agencies that maintain environmental regulatory databases.

7.1 FEDERAL AND STATE ENVIRONMENTAL RECORD SOURCES

Federal and state databases were searched by EDR, a professional data search company, and search results were provided to GZA in a report dated November 1, 2024. The following table indicates the databases searched by EDR, the minimum search distances from the Subject Property, and the number of properties that appear on the database within the minimum search distances used. Descriptions of the federal and state databases and the dates that EDR accessed the federal and state databases are provided in EDR's report (see **Appendix D**).

Federal and State List	Approximate Minimum Search Distance*	Subject Property and Adjoining Properties	# Sites Within Search Distance
NPL	1 mile	1	1 - Refer to **Section 7.2**
Delisted NPL	½ mile	0	0
SEMS	½ mile	1	1 - Refer to **Section 7.2**
SEMS ARCHIVE	½ mile	0	1
RCRIS CORRACTS	1 mile	0	0
RCRIS-TSD	½ mile	0	0
RCRIS-LQG/SQG	Subject Property and adjoining properties	0	0
Federal IC/EC Registries	Site only	0	0

Federal and State List	Approximate Minimum Search Distance*	Subject Property and Adjoining Properties	# Sites Within Search Distance
ERNS	Site only	0	0
State Equivalent NPL	1 mile	0	8
State Equivalent SEMS	½ mile	0	0
SWMF	½ mile	0	0
State Landfill and/or Solid Waste Disposal Site	½ mile	1	3 - Refer to **Section 7.2**
Leaking Underground Storage Tanks (LUSTs)	½ mile	0	3
Registered USTs	Subject Property and adjoining properties	1	1 - Refer to **Section 7.2**
State IC/EC Registries	Subject Property only	0	0
Voluntary/Brownfield Cleanup Program Sites	½ mile		5 - Refer to **Section 7.2**

* The approximate minimum search distance indicates the minimum distance measured from the nearest Subject Property boundary for which EDR performed the database review.

7.2 LISTINGS FOR SUBJECT PROPERTY AND ADJOINING PROPERTIES

Dummer Yard Landfill (Subject Property)

The Subject Property is listed on the following ASTM databases: Voluntary Cleanup Program (VCP), Brownfields, and Solid Waste Facilities/Landfill Sites (SWF/LF), and the following non-ASTM databases: Allsites, PFAS, Financial Assurance, Resource Conservation and Recovery Act Non-Generator/No Longer Regulated (RCRA NonGen/NLR), and E Manifest.

The property is listed on the VCP database under NHDES Site Number 198704035 with the participant listed as 'Berlin DevCo, LLC', and was listed as eligible on January 9, 2017. In email correspondence to NHDES from general counsel (Bernstein Shur) for the potential property owner (Berlin DevCo LLC), dated April 4, 2017, Berlin DevCo indicated that they had decided not to move forward with the Brownfields Program and they withdrew their application. The documentation outlining the withdrawal is provided in **Appendix C.**

Additional information pertaining to the regulatory database listings of this property is provided in **Section 5.0.**

80 Hutchins Street (Adjoining East, Upgradient)

The following non-ASTM databases list the eastern adjoining property, 80 Hutchins Street: Aboveground Storage Tanks (AST), Allsites, PFAS, and AIRS. Under the name 'Mount Carberry Landfill' and Site

Number 198706016, the property has a 5,000-gallon diesel AST that was installed in 2007 and is listed as 'active'.

The property is listed on the PFAS database under Site Number 198706016. The property is listed as having had various PFAS detected in groundwater samples collected at concentrations exceeding the AGQS. Concentrations of PFOA, PFOS, perfluorononanoic acid (PFNA), and perfluorohexane sulfonic acid (PFHxS) were detected in groundwater samples at maximum concentrations of 240 nanograms per liter (ng/l), 96.7 ng/l, 14.5 ng/l, and 88.4 ng/l, respectively. Since samples collected from this property were located around the landfill, which is cross gradient from the Subject Property, it is possible that material migration of PFAS to the Subject Property has occurred. Therefore, this is considered a REC (identified as **REC G**).

Former Chlor-Alkali Facility (Adjoining West, Downgradient)

The western adjoining property identified as the Former Chlor-Alkali Facility is listed on the following ASTM databases: National Priorities List (NPL) and Superfund Enterprise Management System (SEMS). The property is listed on the following non-ASTM databases: US ENG CONTROLS, US INST CONTROLS, Record of Decision (ROD), Potentially Responsible Party (PRP), Integrated Compliance Information System (ICIS), Facility Index System/Facility Registry System (FINDS), Enforcement & Compliance History Information (ECHO), and PFAS NPL.

The property is listed on the NPL list under EPA ID NHN000103313. According to notes for the property, from the late 1800s to the 1960s, chlorine and other caustic chemicals were produced using electrolytic cells. Diaphragm cells, and possibly mercury cells, produced chlorine for use in paper manufacturing at the adjoining paper mill. Most of the on-site structures were razed and buried on-site in the 1960s. By 1999, most of the property was capped. Residual wastes from former manufacturing processes included mercury, lead, dioxins, furans, various VOCs (trichloroethene, carbon tetrachloride, chloroform, and carbon disulfide), and polychlorinated biphenyls (PCBs) in groundwater and soils onsite and in sediments of the adjacent Androscoggin River at concentrations above NHDES standards. Elemental mercury has been observed in bedrock fissures along the Androscoggin River directly adjacent to the site. Between 1999 and 2004, NHDES removed approximately 135 pounds of mercury and mercury-containing sediment from the river and its banks.

EPA began a remedial investigation (RI) in 2009 and issued the RI in 2014. In 2015, Georgia-Pacific began additional investigation at the site and issued a supplemental RI in 2017. Beginning in 2018, Georgia-Pacific evaluated potential remedies in a Feasibility Study and in 2020, EPA selected a remedy from the Feasibility Study. A Record of Decision (ROD) was issued in September 2020, which consisted of a combination of excavation and off-site disposal of contaminated soil, *in-situ* treatment of groundwater, collection of mercury as it appeared in the river, land use and access restriction, and long-term operation, maintenance, and monitoring to address unacceptable exposure to these risks posed by the site. Remedial activities were expected to start in 2024.

The ROD for the site indicates that the contaminants of concern in groundwater beneath the Southern Facility Study Area (SFSA) and the Cell House Parcel Landfill (CHP) included the VOCs, dissolved metals, and mercury. Groundwater impacts to the Eastern Facility Study Area (EFSA) included PFAS and manganese;

however, NHDES concluded that these contaminants were present due to the adjacent Dummer Yard (Subject Property) upgradient of the site. The SFSA and CHP are located approximately 625 feet west (downgradient) of the Subject Property. Buonicore (2011) indicates that the area of concern for chlorinated vapor migration in the downgradient direction is 100 feet. Since the areas of the Chloro-Alkali Facility contaminated with VOCs are located at least 625 downgradient from the Subject Property, it is unlikely that material migration of vapor to the Subject Property has occurred.

1 Community Street (Adjoining West)

The western adjoining property at 1 Community Street is listed on the ASTM database of SWF/LF under the name 'Burgess Biopower Berlin Station'. The status is listed as 'operating'. No additional information is provided.

170 Perry Street (Adjoining West)

Located at address 173 Perry Street, the western adjoining property (170 Perry Street) is listed on the following non-ASTM databases: RCRA NonGen/NLR and E Manifest. Under the name 'White Mountains Community College' and EPA ID NHD510197700, the property was listed as a non-generator in 2022. The property was formerly a conditionally exempt small quantity generator of ignitable wastes in 2008 and a small quantity generator in 2021. The North American Industry Classification System (NAICS) description for the property was 'colleges, universities, and professional schools'. No violations are listed.

File Review

GZA reviewed files regarding the EDR listing for the Subject Property available online at the NHDES OneStop data mapper. A summary of the file review is provided in **Section 5.0** and **7.2.**

7.3 LISTINGS FOR OTHER VICINITY PROPERTIES

No properties were listed up gradient of the Subject Property within the approximate minimum search distance from the Subject Property, and with an open regulatory status with NHDES.

Other federal and state-listed sites were identified within the search distances used. Based on their distance from the Subject Property, closed regulatory status, or the anticipated hydraulic gradient, it is GZA's opinion that the remaining listed sites are unlikely to result in material migration of hazardous substances or petroleum products to the soil, groundwater, or soil vapor at the Subject Property.

7.4 EVALUATION OF UNMAPPED PROPERTIES

GZA also reviewed the list of "orphan" sites, which are properties with insufficient address information to allow the mapping software to plot a location. The "orphan" listings pertain to the Subject Property. No additional "orphan" properties are listed.

7.5 REGULATORY FILE REVIEW

GZA reviewed files regarding the Dummer Yard Landfill located at Hutchins Street, Berlin, New Hampshire available online from the New Hampshire Department of Environmental Services (NHDES) OneStop Data Mapper. A list of files obtained from OneStop is provided in **Appendix C**, and pertinent files are discussed in **Sections 5.0 and 7.2.**

8.0 INTERVIEWS

Elizabeth Fulton interviewed the Owner's representative, Bud Chapman, as part of this Phase I ESA. The information that Mr. Chapman provided is discussed and referenced within the text of this Phase I ESA Report.

According to the Client, since the current property owner is an LLC and its agent has never been to the Subject Property, it is unlikely that the current property owner representative can provide information pertaining to property history and conditions. Therefore, an interview with the current property owner was not conducted. This is considered a significant data gap and a significant deviation from ASTM E1527-21.

9.0 USER-PROVIDED INFORMATION

GZA requested information from the Client regarding title information, environmental liens, Activity and Use Limitations, and specialized knowledge or commonly known information regarding the Subject Property and, if applicable, the reason for a significantly discounted purchase price. The Client indicated that the purchase price being paid for the property reasonably reflects the fair market value of the property, considering the previously mentioned environmental impacts. These include impacts resulting from former unlined landfills and papermill wastes, including PFAS. The completed User Questionnaire is provided in **Appendix E**.

10.0 NON-ASTM E1527-21 CONSIDERATIONS

This Phase I ESA does not include an evaluation of environmental issues or conditions that ASTM E1527-21 stipulates as non-scope considerations.

11.0 FINDINGS AND CONCLUSIONS

GZA performed a Phase I ESA in general conformance with the scope and limitation of ASTM E1527-21 for the Subject Property located at Hutchins Street, Berlin, New Hampshire. Exceptions to, or deletions from, this practice are described in **Section 1.4** of this Phase I ESA Report.

11.1 RECOGNIZED ENVIRONMENTAL CONDITIONS

This Phase I ESA revealed the following RECs in connection with the Subject Property:

- **REC A:** The southern and western portions of the subject property operated as a landfill for the adjoining mills from the early 1900s through the mid-1990s. Waste streams included bark and wood, lime/ash, sludge, and general mill waste. Previous investigations at the subject property have identified concentrations of various hazardous substance including inorganic metallic constituents, PAHs, VOCs, TPH,

and PFAS in the soil and/or groundwater. Based on the results of a 2012 Phase II ESA, it was determined that further assessment was needed to fully characterize the overburden groundwater system, particularly within the northwestern portion of the Subject Property and within nearby residential water supply wells. GZA reviewed the analytical data collected in 2011 and compared these data to current (2024) New Hampshire Ambient Groundwater Quality Standards (AGQS). In addition to the exceedances of PAHs noted above, arsenic was present in one well at a concentration exceeding the current (2024) AGQS. Additionally, the most recent Post-Closure Biennial Monitoring Report (2017) identified the presence of manganese in groundwater samples at concentrations exceeding the AGQS. In 2018, groundwater sampling for PFAS analysis was conducted in three monitoring wells, and multiple PFAS were detected in the three wells sampled. Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) were detected in two downgradient wells at concentrations exceeding the AGQS. NHDES requested a second round of PFAS sampling; which, based on the information available from OneStop, does not appear to have occurred. Based on the observed exceedances of various compounds, including VOCs, PAHs, TPH, metals, and PFAS in groundwater and lack of additional PFAS sampling data, the historic operation of the landfill is considered a REC.

- **REC B:** One Subject Property building operated as a service garage for Brown Co. beginning in approximately 1953 and included gasoline and diesel USTs and associated fuel pumps. Monitoring wells screened in overburden (MW-800 and MW-802) were installed near the location of the USTs noted on the 1961 plan just west and east of the service garage. Based on the groundwater sample results from these locations, in 2012, GZA concluded that groundwater had not been adversely impacted from former fueling operations at the service garage in the locations drilled; however, in GZA's opinion, releases to soil above SRS cannot be ruled out. Therefore, this is considered a REC.

- **REC C:** Coal storage was identified at the Subject Property from at least the 1930s until approximately the 1970s. Coal ash and slag byproducts from the mill boilers may have been disposed of at the Subject Property; however, there is no information regarding coal ash and slag disposal practices. In GZA's opinion, releases related to the historic coal piles or possible coal ash and slag byproduct disposal is a REC.

- **REC D:** During the 2011 ESA, the following REC was identified: *Waste oil-like staining on the ground surface proximate to a 55-gallon drum off the northeast corner of the service garage. Several improperly stored 5-gallon pails and containers of discarded apparent waste oil on a wooden pallet off northeastern corner of service garage.* Cleanup and consolidation of the various improperly stored petroleum products was not conducted because the garage building was owned by another party at that time. Since this was not evaluated, this is considered a REC.

- **REC E:** During the 2012 Phase II ESA, GZA encountered fill material mixed with solid waste that included varying amounts of coal/wood ash with slag or coal clinkers, plastics, painted plywood, corrugated polyethylene pipe fragments, scrap metal, and wood waste were observed in test pits (TP-1 and TP-2) located west and northwest of the delineated Landfill Areas I and III/IV. In test pit TP-3, these materials were observed to a depth of 13 feet (bottom of the test pit). Analytical data for soil samples collected from test pits, particularly TP-1, identified exceedances of TPH, several PAHs, and arsenic. In an October 2012 memorandum/response to the Phase II report, NHDES requested that the extent of fill material containing PAHs at concentrations above the New Hampshire Soil Remediation Standards (SRS) would

need to be defined and a remedy to mitigate the risk was required. NHDES also requested additional investigation pertaining to the solid waste material observed in TP-3 at the middle western portion of the Subject Property, to determine the extent of the waste and potential impacts to overburden groundwater. Additionally, GZA observed numerous areas of solid waste throughout the Subject Property during the 2024 site reconnaissance. No additional information is available as to whether NHDES recommendations had been implemented; therefore, this is considered a REC.

- **REC F:** The eastern adjoining property, 80 Hutchins Street (Mount Carberry Landfill) is listed on the NHDES PFAS database under Site Number 198706016. The property is listed as having had various PFAS detected in groundwater samples collected at concentrations exceeding the AGQS. Since samples collected from this property were located around the landfill, which is cross gradient from the Subject Property, it is possible that material migration of PFAS to the Subject Property has occurred. Therefore, this is considered a REC.

- **REC G:** The eastern adjoining property, 80 Hutchins Street (Mount Carberry Landfill) is listed on the PFAS database under Site Number 198706016. The property is listed as having had various PFAS detected in groundwater samples collected at concentrations exceeding the AGQS. Since samples collected from this property were located around the landfill, which is cross gradient from the Subject Property, it is possible that material migration of PFAS to the Subject Property has occurred. Therefore, this is considered a REC.

11.2 CONTROLLED RECOGNIZED ENVIRONMENTAL CONDITIONS

In GZA's opinion, this Phase I ESA revealed no evidence of CRECs in connection with the Subject Property.

11.3 HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITIONS

In GZA's opinion, this Phase I ESA revealed no evidence of HRECs in connection with the Subject Property.

11.4 DE MINIMIS CONDITIONS

This Phase I ESA revealed no evidence of *de minimis* conditions in connection with the Subject Property.

11.5 SIGNIFICANT DATA GAPS

This Phase I ESA identified the following significant data gaps in connection with the Subject Property:

- The middle two units of the Subject Property building were inaccessible at the time of GZA's assessment. These inaccessible areas are identified on **Figure 3**. Due to the unknown use of the units and GZA's inability to ascertain whether a release of hazardous substances or petroleum products is likely, the lack of access is a significant data gap.

- The Client requested that GZA not access the portion of the Subject Property occupied by the Mount Carberry Landfill Scale House and Mount Carberry Road; therefore, GZA was unable to observe these portions of the Subject Property for evidence of RECs. The areas excluded from the field reconnaissance

are identified on **Figure 3**. The lack of access inhibited GZA's inability to ascertain whether a release of hazardous substances or petroleum products is likely in these areas and is therefore a significant data gap.

- According to the Client, since the current property owner is an LLC and its agent has never been to the Subject Property, it is unlikely that the current property owner representative can provide information pertaining to property history and conditions. Therefore, an interview with the current property owner was not conducted. This is considered a significant data gap and a significant deviation from ASTM E1527-21.

11.6 NON-ASTM E1527-21 CONSIDERATIONS

No non-ASTM E1527-21 considerations were evaluated as part of GZA's Scope of Services.

12.0 REFERENCES

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13.0 ENVIRONMENTAL PROFESSIONAL OPINION

I declare, to the best of my professional knowledge and belief, that I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312; that I have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property; and that I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312. The signature of the Environmental Professional is contained on the cover letter of this Phase I ESA Report. The qualifications of the Environmental Professional are provided in **Appendix F**.

14.0 LIMITATIONS

GZA prepared this Phase I ESA Report on the Subject Property on behalf of, and for the exclusive use of, W.L. French Excavating Company for the purpose indicated above. Use of this Phase I ESA Report, in whole or in part, at other locations, or for other purposes, might lead to inappropriate conclusions, and we do not accept any responsibility for the consequences of such use. Further, reliance by any party not identified in the agreement, for any use, shall be at that party's sole risk, and without any liability to GZA.

In conducting this Phase I assessment, GZA performed its services using that degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. We make no warranty, express or implied.
Our findings and conclusions are based on the work conducted as part of the Scope of Services set forth in this Phase I ESA Report and reflect our professional judgment. Our findings and conclusions should not be considered as scientific certainties or engineering certainties, but rather as our professional opinions based on the limited data gathered during the course of our work.

No environmental site assessment can eliminate the uncertainty of the possible presence of RECs. This Phase I ESA Report was prepared to help reduce, not to eliminate, such uncertainty. Consistent with ASTM E1527-21, we developed our opinions in light of the constraints imposed by time and budget.

As indicated within this Phase I ESA Report, we observed conditions at the Subject Property and at adjoining properties for evidence of RECs at the Subject Property. Where access to portions of the Subject Property or to structures on the Subject Property was unavailable or limited, GZA renders no opinion as to the presence of hazardous substances, hazardous waste, or petroleum products, or to the presence of indirect evidence relating to these materials, in those portions of the Subject Property or structures. In addition, GZA renders no opinion as to the presence of hazardous substances, hazardous waste, or petroleum products, or to the presence of indirect evidence relating to these materials, where direct observation of the interior walls, floors, and/or ceilings of a structure on the Subject Property was obstructed by objects and/or coverings on and/or over such surfaces. We based our opinions on such limited observations. Additionally, some activities or events impacting environmental conditions at the Subject Property or at adjoining properties might have been transient and not observable at the time of GZA's site reconnaissance.

We relied upon information made available by federal, state, and local authorities, the Key Site Manager, and others. We did not attempt to independently verify the accuracy or completeness of that information. To the extent we encountered inconsistencies in this information, they were identified within the Report.

The lender, seller, buyer, or other parties that might become involved with the Subject Property might develop additional opinions or information regarding the presence or absence of RECs at the Subject Property. Such additional opinions or information might not fully support the opinions provided in this Phase I ESA Report. In the event such additional opinions or information is developed, we recommend retaining GZA to review this material so that we have the opportunity to evaluate and modify, as necessary, the opinions provided in this Phase I ESA Report.

Unless otherwise specified within this Phase I ESA Report, we have rendered no opinion on the compliance of Subject Property conditions or activities with federal, state, and local codes, laws, or regulations.

GZA based the opinions expressed in this Phase I ESA Report on conditions observed during the course of our work on this Subject Property; these conditions might change over time. ASTM E1527-21 specifies that observations and opinions are only valid for 180 days from the date the underlying information is developed. After 180 days, portions of this Phase I ESA Report may need to be updated.