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July 18, 2006

Mr. Robert Day-Lewis
Pennsylvania Department of Environmental Protection
Southeastern Regional Office
2 East Main Street
Norristown, PA 19401

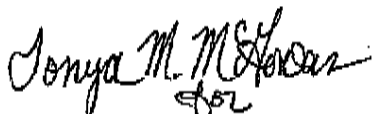
Re: Subsurface Investigation Report
Former Exxon Station #2-2551
6800 Quincy Street
Philadelphia, PA

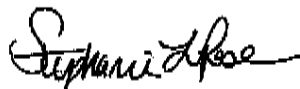
Dear Mr. Day-Lewis:

Enclosed please find the Additional Subsurface Investigation Report prepared by Groundwater & Environmental Services, Inc. (GES) on behalf of Exxon Mobil Corporation (EMC) for the above-referenced location. The Subsurface Investigation included intrusive activities to determine the environmental conditions of soil and groundwater in the vicinity of the former underground storage tank (UST) field and the former dispenser. In addition, one 500-gallon steel gasoline UST and one 1,000-gallon steel gasoline UST were abandoned in-place on February 21, 2006. Based upon analytical data collected during this investigation, this report demonstrates soil and groundwater are not media of concern for this site.

This report was developed in accordance with applicable sections of Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Title 25, Chapter 250). Please do not hesitate to contact the undersigned if you have any questions or comments regarding this report.

Respectfully submitted,
Groundwater & Environmental Services, Inc.


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Associate Geoscientist


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Enclosures

cc: GES Project File
Mr. John Hoban, EMC
Ms. Jerri Hanks, EMC
Ms. Rebecca West, CEP Development Corporation



SUBSURFACE INVESTIGATION REPORT

Former Exxon Station #2-2551
6800 Quincy Street
Philadelphia, Pennsylvania

June 26, 2006

Prepared for:

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By affixing my seal to this document, I am certifying that to the best of my knowledge the information is true and correct. I further certify that I am licensed to practice in the Commonwealth of Pennsylvania and that it is within my professional expertise to verify the correctness of the information.

Groundwater & Environmental Services, Inc.
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EXECUTIVE SUMMARY

Groundwater & Environmental Services, Inc. (GES), on behalf of Exxon Mobil Corporation (EMC), has prepared this Subsurface Investigation Report for Former Exxon Station #2-2551, located at 6800 Quincy Street, in the City of Philadelphia, Pennsylvania.

The scope of work for the Subsurface Investigation included intrusive activities to determine the site-specific conditions of both soil and groundwater quality at the site. The completed activities were designed to identify potential impact on the property via qualitative and quantitative methodologies.

- The site is currently vacant and contains one two-story parking garage.
- Three 500-gallon steel and one 1,000-gallon steel gasoline underground storage tanks (USTs) were located in 2005. Based on discussions with representatives of the property owner, one 500-gallon steel and one 1,000 gallon steel USTs were owned and operated by Exxon prior to 1979. The other two 500-gallon steel USTs are the possession of the property owner.
- Land use immediately surrounding the site is characterized by residential properties. Properties surrounding the site include multi-family housing to the southwest and single family housing surrounding the remaining area.
- Sensitive receptors include subgrade utilities and basements in the immediate vicinity of the site.
- According to soil analytical results, adsorbed-phase hydrocarbons were not detected at concentrations above the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS).
- According to groundwater analytical results, dissolved-phase hydrocarbons were not detected at concentrations above the PADEP SHS.



TABLE OF CONTENTS

1.0	OBJECTIVES	1
1.1	Terms and Conditions	1
2.0	SITE DESCRIPTION AND OPERATING HISTORY	2
2.1	Site Description	2
2.2	Regulatory Agency Database Review	2
2.3	Supply Well Search	3
3.0	ENVIRONMENTAL HISTORY	4
3.1	Environmental Investigation History	4
4.0	SUBSURFACE INVESTIGATION	5
4.1	Scope of Work	5
4.2	Field Explorations and Methods	5
4.2.1	Initial Investigation	5
4.2.2	Monitoring Well Installation	5
4.2.3	UST Abandonment	6
4.3	Sampling Methods	6
4.3.1	Soil	6
4.3.2	Groundwater	6
4.4	Evaluation and Presentation of Results	7
4.4.1	Geologic Setting	7
4.4.2	Hydrogeologic Setting	7
4.5	Analytical Data	8
4.5.1	Soil	8
4.5.2	Groundwater	8
5.0	DISCUSSION OF FINDINGS AND CONCLUSIONS	9
5.1	Affected Media	9
	REFERENCES	10



FIGURES

Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	Soil Sample Location Map (February 20-22, 2006)
Figure 4	Groundwater Monitoring Map (March 6, 2006)
Figure 5	Groundwater Monitoring Map (May 4, 2006)

TABLES

Table 1	Soil Analytical Data Summary
Table 2	Groundwater Analytical Data Summary

APPENDICES

Appendix A	Environmental FirstSearch™ Report
Appendix B	PAGWIS Well Search Summary Table and Location Map
Appendix C	Subsurface Drilling Logs
Appendix D	Operations Permit and UST Inspection and Backfill Approval Documentation
Appendix E	Soil Laboratory Analytical Reports and Chain-of-Custody Documentation
Appendix F	Groundwater Laboratory Analytical Reports and Chain-of-Custody Documentation



1.0 OBJECTIVES

The objectives of the subsurface investigation are to establish the baseline environmental conditions of the site (i.e., soil and groundwater quality).

The Subsurface Investigation included intrusive activities to determine the environmental conditions of soil and groundwater in the vicinity of the former underground storage tank (UST) field and the former dispenser. The soil borings were completed as monitoring wells to determine the quality and flow of groundwater on-site and off-site.

The borings/monitoring wells installed were intended to provide the necessary soil and groundwater quality data to complete the following objectives:

- Identify the presence or absence of contaminants in soil and groundwater through visual observations, field screening instrumentation, and laboratory analysis.

The findings and conclusions of this subsurface investigation are based upon the professional judgment of GES in light of the quality and quantity of data collected during the performance of this assessment. GES cannot offer a guarantee that the referenced site contains no hazardous materials, environmental degradation, or impacts beyond those detected or observed during the assessment. Neither does GES suggest the conclusions presented herein represent all areas covered by this assessment are the same quality as determined explicitly through the investigation methodologies.

1.1 Terms and Conditions

During fieldwork, GES personnel followed all appropriate guidelines as per the United States Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120, and EMC's Operations Integrity Management System (OIMS) procedures. All operations were conducted using Level D protection measures with proper respiratory protection equipment and additional protective clothing readily available if site conditions warranted an upgrade to Level C protection. A site-specific health and safety plan detailing applicable safety precautions, as well as specific emergency procedures, was prepared for this site. A copy of the site-specific health and safety plan is on file at GES and is available upon request.



2.0 SITE DESCRIPTION AND OPERATING HISTORY

2.1 Site Description

The subject site is located at 6800 Quincy Street, Philadelphia, Pennsylvania (40° 02' 60" N, 75° 11' 21" W). The site consists of one parcel, known as 223214600 (6800 Quincy Street) and is bound by residential housing to the north, south, east, and west.

Figure 1 is an annotated United States Geological Society (USGS) 7.5-minute topographic quadrangle (Germantown, Pennsylvania) illustrating the site location. According to Figure 1, the topography of the site is gently sloping to the south with an approximate elevation of 280 feet above mean sea level. The nearest surface water body that could be identified is a unnamed tributary of the Wissahickon Creek located approximately 3,600 feet west-southwest of the site. The Wissahickon Creek is located more than one mile southwest of the site.

This parcel contains approximately 0.326 acres. Current existing features at parcel 223214600 include a two-story building, two 500-gallon steel USTs, one 500-gallon steel UST that was abandoned in-place on February 21, 2006, and one 1,000-gallon steel UST that was abandoned in-place on February 21, 2006. Based on discussions with representatives of the property owner, one 500-gallon steel and one 1,000 gallon steel USTs were owned and operated by Exxon prior to 1979. The other two 500-gallon steel USTs are the possession of the property owner. The building is in poor condition. Approximately 90% of the site is comprised of the parking garage and the remaining portion of the site is covered with asphalt. There are numerous utility lines located on-site, including sub-grade sanitary sewer, water, gas, electric, and telecommunications. A generalized site map showing property boundaries and pertinent site features is included as Figure 2.

The public sewer and water services are provided to the site and surrounding area by the City of Philadelphia Water Department. The Delaware River is the point source for the potable water that is supplied to the site and surrounding area.

2.2 Regulatory Agency Database Review

GES retained the services of InfoMap Technologies, Inc. (InfoMap) to obtain various sources of information from federal and state agencies in order to evaluate areas of potential environmental concern within a 1.0-mile radius of the site. The Environmental FirstSearch™ Report produced by InfoMap searched the following databases: NPL (National Priority List), CERCLIS (Comprehensive Environmental Response Compensation and Liability Information System), RCRIS (Resource Conservation and Recovery Information System), ERNS (Emergency Response Notification System), SPL (State of Pennsylvania Priority List), SWL (Solid Waste List), UST (Regulated Storage Tank Listing), LUST (Confirmed Release Reports for underground and above ground storage tanks). It should be noted that not all of the properties identified in the FirstSearch™ Report have known directions and distances from the subject site. In the report, these properties are listed as non-geocoded and are listed as being within the same postal zip code.

One registered UST facility was identified in the database within ½-mile of the subject site:

- Society of Commodore John Barry USN, located 0.08 miles southwest of the subject site, has one heating oil UST, the current status is not listed.

Nine leaking underground storage tanks (LUST) were identified in the database within ½-mile of the site. These are described as follows:



- GEN Auto Repairs, located 0.25 miles northeast of the subject site, is listed as UST system containing petroleum, date of release is October 27, 2003, the status indicated that the interim remedial action has been initiated or is completed;
- SEPTA - Germantown Garage, located 0.26 miles northeast of the subject site, there was a substance release of unleaded gasoline, no other information is listed;
- SEPTA Germantown Garage, located 0.26 miles northeast of the subject site, is listed as a UST system containing petroleum, the date of the release is unknown, the status is low priority and cleanup has not been completed;
- Fire site, located 0.33 miles northeast of the subject site, is listed as a UST system containing petroleum with an unknown release date, and no reported amount or cleanup completion date;
- Fleet MGMT - Fire Site, located 0.35 miles northeast of the subject site, has had a reported release of diesel fuel, with no reported amount or cleanup completion date;
- Paganos AMOCO, located 0.35 miles northwest of the subject site, has had two reported releases of petroleum (October 3, 2001 and January 20, 2003), with no reported amount or cleanup completion date;
- Beans Service Station, located 0.36 miles northwest of the subject site, has had three reported releases of petroleum (May 23, 2001, and November 1, 2002), with no reported amount or cleanup completion date;
- Upsal Apartments, located 0.46 miles southeast of the subject site, has had one reported release of heating oil, with no reported amount or cleanup completion date; and
- Watlington residence, located 0.50 miles southeast of the subject site, has had one reported release of fuel oil, with no reported amount or cleanup completion date.

The regulatory agency database report is included as **Appendix A**.

2.3 Supply Well Search

GES reviewed the Pennsylvania Groundwater Information System (PAGWIS) version 3.1 software for information on potable, agricultural, or industrial supply wells within a ½-mile radius of the site. The search identified three wells within a 2,500-foot radius of the site. The closest identified well (30329) is located approximately 1,908 feet from the site. This well is owned by the German Steam Company and was destroyed. The second well (30560) is located approximately 1,946 feet from the subject site, is owned by the City of Philadelphia, and used for observation purposes. The third well (30328) is also owned by the Germantown Steam Company and has since been destroyed. The PAGWIS well search results and a well location map are included as **Appendix B**.



3.0 ENVIRONMENTAL HISTORY

3.1 Environmental Investigation History

On April 4, 2005, GES contacted the Pennsylvania Department of Environmental Protection (PADEP) to schedule a file review for the subject site. Subsequent to the request, it was determined that there was no information available regarding the environmental history of the subject site.



4.0 SUBSURFACE INVESTIGATION

4.1 Scope of Work

The scope of work performed to complete this most recent assessment included the installation of three monitoring wells (MW-1, MW-2, and MW-3), abandonment of two USTs (one 500-gallon and one 1,000-gallon steel UST), the collection of soil samples from beneath the abandoned USTs and from each of the boreholes, as well as groundwater samples from each of the wells. The locations of the monitoring wells were selected to determine if there was any impact to the subsurface from the former UST system.

4.2 Field Explorations and Methods

4.2.1 Initial Investigation

On May 4, 2005, a Ground Penetrating Radar (GPR) survey was conducted at the site under the supervision of GES. The extent of the survey included the entire entrance to the garage which is approximately a 30 foot x 40 foot area. The results indicate that there were approximately two to three USTs and associated product piping on-site. The exact location of the product lines could not be determined due to interference.

On May 13, 2005, the subsurface was hand-cleared via vacuum excavation and air knife to confirm the location and orientation of the USTs that were detected during the GPR survey. During the vacuum excavation activities, four USTs were uncovered and the associated product lines were identified. On-site subsurface utility lines were located and it was determined that they were no longer in use.

4.2.2 Monitoring Well Installation

In order to define groundwater flow direction, gradient, and quality at the site, two monitoring wells were installed on-site and one monitoring well was installed off-site in the street. On February 13 and 14, 2006, the boreholes for monitoring wells MW-1 through MW-3 were drilled to a total depth of 30 feet below ground surface (bgs) via hollow-stem auger drilling methods by a licensed driller. Monitoring well MW-1 was installed at 28 feet bgs, monitoring well MW-2 and MW-3 were installed to 29 feet bgs. As the soil was recovered, the composition, color, texture, and moisture content were recorded on subsurface drilling logs, which are included as Appendix C. Soil samples were screened with a photoionization detector (PID) to provide a preliminary indication of the presence or absence of volatile organic compounds (VOCs). During monitoring well installation activities, soil samples were collected and submitted for laboratory analysis of leaded and unleaded gasoline target parameters. The soil sampling methods are further discussed in Section 4.3.1.

The monitoring wells were constructed of two-inch diameter Schedule 40 poly-vinyl chloride (PVC) well screen (0.020-inch slot) and two-inch diameter Schedule 40 PVC solid well casing. The annular space between the borehole wall and the well was filled with a gravel filter pack, bentonite, and capped with a bentonite slurry to fill the remaining annular space to surface grade. The wells were completed with the installation of flush-to-grade protective well vaults and concrete pads. A locking well cap was installed on each well to prevent unauthorized access and to keep surface runoff from entering the well. Construction details for the monitoring wells are depicted on the subsurface logs (Appendix C). Top-of-casing (TOC) elevations for the wells were surveyed to an arbitrary 100-foot reference point to the nearest 0.01-foot.



4.2.3 UST Abandonment

On February 21, 2006, the USTs formerly owned and operated by Exxon, one 500-gallon steel UST and one 1,000-gallon steel UST, were abandoned in-place. Each of the USTs were uncovered via vacuum excavation, cut open, cleaned with a degreaser, and rinsed. The water generated during this process was removed from the tanks via a high-vacuum truck. The cleaned tanks were inspected and approved for backfill by the City of Philadelphia Department of Licenses and Inspections on February 21, 2006. A copy of the operations permit and the UST inspection and approval documentation is included as **Appendix D**. The USTs were filled with a concrete slurry, the excavated area was backfilled to grade, and completed with an asphalt patch.

On February 22 and 23, 2006, soil samples were collected around the perimeter approximately two feet below the bottom of the two USTs that were abandoned. Each sample was collected via vacuum excavation from an approximate depth of six to eight feet bgs. The soil sample locations are depicted on **Figure 3**. Due to the presence of the retaining wall and property boundaries, soil samples could not be obtained along the sidewall of the USTs. As the soil was recovered, the composition, color, texture, and moisture content were recorded on subsurface drilling logs, which are included as **Appendix C**. Soil samples were screened with a PID to provide a preliminary indication of the presence or absence of VOCs. Soil samples were collected at the bottom of each borehole and submitted for laboratory analysis of leaded and unleaded gasoline target parameters. The soil sampling methods are further discussed in Section 4.3.1.

4.3 Sampling Methods

4.3.1 Soil

Soil samples collected during the monitoring well installation (February 14 and 15, 2006) and the UST abandonment (February 20 and 22, 2006) were collected via PADEP-approved low level sampling methods, which included laboratory-provided containers for each boring to document soil conditions. Soil samples were screened with a PID to provide a preliminary indication of the presence or absence of VOCs. The samples with the highest PID readings were selected for laboratory analysis. If the presence of VOCs in the soil was not indicated by the PID, the sample collected from the bottom of the borehole was selected for laboratory analysis. Soil samples were submitted to Accutest Laboratories, Inc. (Accutest) of Dayton, New Jersey for analysis of leaded and unleaded gasoline parameters benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl *tert*-butyl ether (MtBE), isopropylbenzene, naphthalene, 1,2-dichloroethane (EDC), and 1,2-dibromoethane (EDB) via EPA Method 8260B, and total lead via EPA Method 6010B. The laboratory analytical reports and chain-of-custody documentation are included as **Appendix E**. A summary of the soil analytical data is included as **Table 1**.

4.3.2 Groundwater

On March 1, 2006, monitoring wells MW-1, MW-2, and MW-3 were developed via surge and pump technology to remove residual sediment and drill cuttings from the wells so that representative groundwater samples could be collected. Development water was treated on-site with a portable granular activated carbon (GAC) treatment system and discharged to the surface for infiltration in accordance with PADEP guidelines (Groundwater Monitoring Guidance, December 1, 2001).

Prior to monitoring well development, GES collected liquid-level data from each of the monitoring wells (MW-1 through MW-3). This provided information regarding groundwater flow and gradient for a specific time interval at the site.



On March 6, 2006 and May 4, 2006, monitoring wells MW-1, MW-2, and MW-3 were sampled in accordance with GES Standard Operating Procedures and Quality Control protocols using dedicated, disposable bailers. Groundwater samples were submitted to Accutest for laboratory analysis of leaded gasoline parameters BTEX, MtBE, isopropylbenzene, naphthalene, and EDC via EPA Method 8260B, EDB via EPA Method 8011, and dissolved lead via EPA Method 6010B. The laboratory analytical reports and chain-of-custody documentation are included as Appendix F. A summary of the groundwater analytical data is included as Table 2.

4.4 Evaluation and Presentation of Results

4.4.1 Geologic Setting

The elevation of the site is estimated at 280 feet above mean sea level based on a review of the USGS Germantown, Pennsylvania 7.5 minute topographic quadrangle. According to the Atlas of Preliminary Geologic Quadrangle Maps of Pennsylvania (1981) by the Pennsylvania Geological Survey, the site is underlain by the Wissahickon Formation.

According to the Engineering Characteristics of the Rocks of Pennsylvania (1982), the Wissahickon Formation in this area is oligoclase-mica schist which is described as more coarsely crystalline than albite-chlorite schist and excessively micaceous; feldspar is more abundant in the oligoclase-mica schist with an estimated thickness of the formation varying from 8,000 to 10,000 feet. Surface drainage is classified as good. The bedding is fissile to thin and steeply dipping in most places. Cleavage has a platy pattern; well developed, highly abundant; displays an even regularity; very closely spaced; open and steeply dipping. Joints are for the most part irregular, poorly formed, widely spaced, steeply dipping and open. The topography is undulating hills of medium relief; natural slopes are moderately steep and stable.

Materials encountered during drilling activities on-site consisted of approximately two to three inches of asphalt at the surface and a layer of gray brown silty sand at depths ranging from approximately two inches bgs to 18 inches bgs overlying highly weathered schist. Off-site the materials encountered during drilling activities consisted of concrete and sub-base gravel at the surface to approximately one foot bgs. Tan brown sand was encountered from approximately one foot to three and one half foot bgs overlying highly weathered schist. Competent bedrock was not encountered during drilling activities. The subsurface drilling logs are included as Appendix C.

4.4.2 Hydrogeologic Setting

The movement and storage of groundwater in bedrock is limited for the most part to fractures and the weathered layer in the upper portion in the Wissahickon Formation. Fractures are irregular, poorly formed, widely spaced, steeply dipping and open. The yield of bedrock wells is largely dependent on the number, size and degree of interconnection of the fractures and openings that are intersected. According to the Engineering Characteristics of the Rocks of Pennsylvania (1982), the median yield of groundwater in the Wissahickon Formation 20 gallons per minute (gpm); the highest yields have been obtained from fractured and weathered zones at the top of bedrock.

Site topography is relatively flat and surrounding area is characterized by gently rolling hills and slopes to the south. The Wissahickon Creek is located west of the site. Based on the topography of the general area, the assumed groundwater gradient is towards the southwest.

On March 6, 2006, liquid-level data and groundwater samples were collected from monitoring wells MW-1 through MW-3. Separate-phase hydrocarbons (SPH) were not detected in any of the



monitoring wells. Depth to groundwater ranged from 11.56 feet below TOC in monitoring well MW-3 to 12.51 feet below the TOC in monitoring well MW-1. A summary of liquid-level data is included in **Table 2**. Based on the liquid-level data collected on March 6, 2006, a groundwater monitoring map was generated and is included as **Figure 4**. The groundwater monitoring map indicates that the groundwater flow direction on-site is toward the south at a gradient of 0.01 feet per foot (ft/ft).

On May 4, 2006, liquid-level data and groundwater samples were collected from monitoring wells MW-1 through MW-3. Separate-phase hydrocarbons (SPH) were not detected in any of the monitoring wells. Depth to groundwater ranged from 12.45 feet below TOC in monitoring well MW-3 to 13.08 feet below the TOC in monitoring well MW-1. A summary of liquid-level data is included in **Table 2**. Based on the liquid-level data collected on May 4, 2006, a groundwater monitoring map was generated and is included as **Figure 5**. The groundwater monitoring map indicates that the groundwater flow direction on-site is toward the southeast and east at a gradient of 0.02 ft/ft to 0.03 ft/ft.

Based on groundwater depths encountered during drilling activities and static groundwater elevations measured during the sampling events, groundwater beneath the site is considered to be present under unconfined conditions.

4.5 Analytical Data

4.5.1 Soil

Soil analytical results do not indicate the presence of adsorbed-phase hydrocarbons at this site. The analytical data indicate that none of the target parameters were detected in any of the samples at concentrations above the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS). Soil analytical data are summarized in **Table 1**. The soil laboratory analytical reports and chain-of-custody documentation are included as **Appendix E**.

4.5.2 Groundwater

Liquid-level data and groundwater samples were collected from the monitoring wells (MW-1 through MW-3) on March 6, 2006 and May 4, 2006. None of the target parameters were detected at concentrations above the PADEP SHS. Groundwater analytical results and liquid-level data are summarized in **Table 2**. A copy of groundwater laboratory analytical reports and chain-of-custody documentation are included as **Appendix F**.



5.0 DISCUSSION OF FINDINGS AND CONCLUSIONS

Based on the results of this investigation and a review of historical information, the following is a summary of pertinent findings.

5.1 Affected Media

Soil samples were collected from each monitoring well boring. Analytical results indicated that none of the target parameters were detected in soil samples at concentrations above the PADEP SHS. Lead was detected in each of the soil samples at concentrations below the PADEP SHS. A summary of soil quality data is provided in **Table 1**.

Groundwater samples were collected from monitoring wells MW-1, MW-2, and MW-3. Analytical results indicated that ethylbenzene and total xylenes were detected in monitoring well MW-1 at concentrations below the PADEP SHS. The remaining parameters were not detected. SPH were not detected in any of the monitoring wells during this assessment. A summary of groundwater quality data and liquid-level gauging data is provided in **Table 2**.