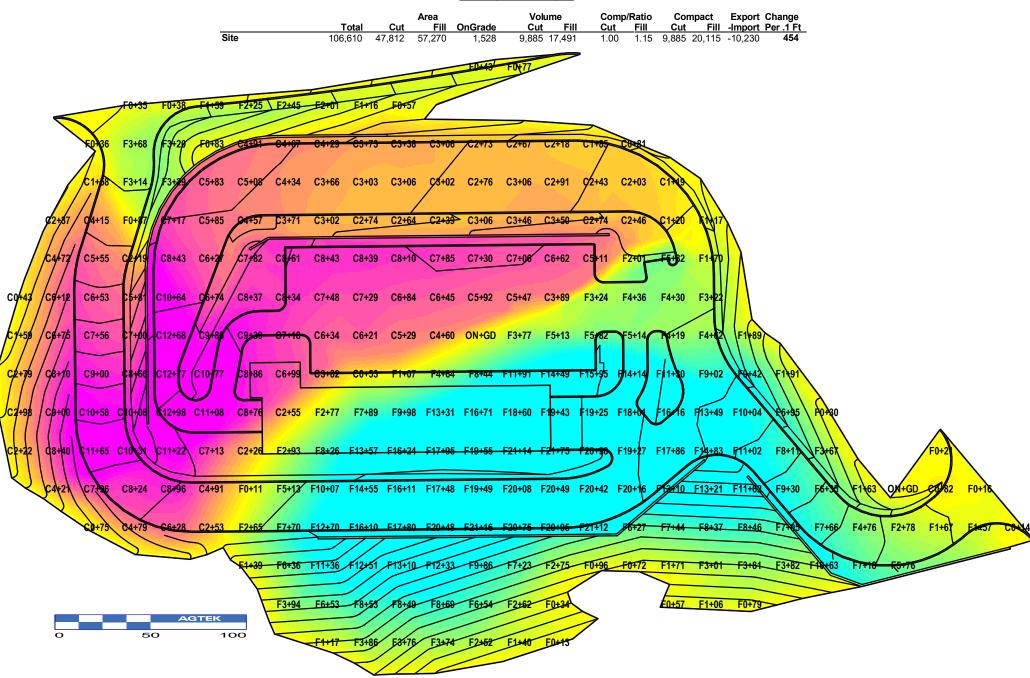
Job: 3-5 Car Wash Units: Ft-CY Fri Mar 5, 2021 11:21:40 Page 1

Volume Report Design vs. Existing





March 5, 2021

Mr. Darin Kapanjie DJ Car Wash I, LLC. 22 Oakmont Circle Glen Mills, PA 19342

Re: Nonintrusive Geophysical Subsurface Investigation: UST Search – Former Ennis Exxon and Fuel Oil Distributor – 106 Baltimore Pike, Glen Mills, PA

Dear Mr. Kapanie:

Enclosed is an electronic copy (PDF) of the Geo-Graf, Inc. Geophysical Investigation Report for the above referenced Project. In a separate attachment are the associated electronic mapping files (PDF and CAD).

Please contact me if you have any questions regarding this project or the deliverables. I appreciate the opportunity to be of service.

Sincerely,

Jay Graf

Ground Penetrating Radar Specialist

Call/Text (Cell): 610-316-2184 Email: jaygraf@geo-graf.com



GEOPHYSICAL INVESTIGATION REPORT UST SEARCH FORMER ENNIS EXXON & FUEL OIL DISTRIBUTOR 106 BALTIMORE PIKE GLEN MILLS, PENNSYLVANIA 5 MARCH 2021

Prepared for:

DJ Car Wash I, LLC. 22 Oakmont Circle Glen Mills, PA 19342

Project Manager: Darin Kapanjie

Prepared by:

Geo-Graf, Inc. 1138 Pottstown Pike West Chester, PA 19380-4138

Project Manager: Jamieson Graf

Project Number: 030221

GEO-GRAF, INC. DISCLAIMER

Services, data interpretation, and investigation findings provided by Geo-Graf, Inc., shall be performed with our best professional effort. The detectability and location accuracy of underground features; as well as, the geophysical instruments' signal penetration depths are dependent upon the electrical properties and site-specific characteristics of the ground, soils, and/or materials scanned. Thus, the resulting data interpretations and investigation findings provided by Geo-Graf, Inc. are opinions based on inference from the acquired geophysical data and should be considered for "Informational Purposes Only" unless said data is properly verified via ground-truthing or other intrusive efforts, and is reviewed and sealed by a licensed professional engineer (PE). Geo-Graf, Inc. cannot and does not guarantee the desired signal penetration depth or accuracy/correctness of our interpretations and investigation findings. The lack of detected subsurface features or targets-of-concern within an investigated area does not preclude the possibility that these features exist and have gone undetected. Geo-Graf, Inc. will not accept liability or responsibility for any losses, damages or expenses that may be incurred or sustained by any services, data interpretations or investigation findings provided by Geo-Graf, Inc.

Project Summary:

This report contains the findings of a nonintrusive geophysical subsurface investigation performed by Geo-Graf, Inc. (GGI) on March 2, 2021, at the site of the former Ennis Exxon and Fuel Oil Distributor, 106 Baltimore Pike in the Borough of Chester Heights, Delaware County, Pennsylvania. The Investigation was conducted in accordance with the GGI Nonintrusive Geophysical Subsurface Investigation Proposal Number 4455, dated February 26, 2021.

The accessible sections of the specified search area were investigated by GGI in an attempt to delineate the location, size, orientation, and depth of metallic underground storage tanks (USTs).

<u>Detected USTs</u>

UST-like data signatures indicating the locations of four tanks were delineated within the accessible sections of the investigated area.

- Data signatures indicative of a 2,000-Gallon UST were detected near the NE corner of the site.
- Data signatures indicative of two 550-Gallon USTs were detected near the NE corner of the site.
- A UST was unearthed via a test pit excavation that was performed just east of the former Service Station building.

Subsurface Anomalies

Subsurface metallic anomalies were detected throughout the accessible search area. One of these features is suspected to be a former potable well and another a septic feature associated with the former Service Station building. The remaining anomalies are suspected to be buried metallic debris.

Findings are presented on a color plan-view Subsurface Anomaly Map (SAM) that accompanies this report.

Scope of Work

Perform a nonintrusive geophysical subsurface investigation within the accessible sections of the specified search areas in an attempt to delineate the location, size, orientation, and depth of metallic USTs.

The nonintrusive geophysical delineation techniques utilized will include collection and interpretation of data from Ground Penetrating Radar (GPR), Electromagnetic (EM), Radio Frequency (RF) and Magnetic (MAG) instrumentation (where/when applicable). The collected site data will be analyzed and correlated with the findings presented on a *SAM*.

Specified Search Area

The specified search area totaled approximately 4.5 acres and included the accessible exterior sections of the subject property. The primary area-of-concern was the former Service Station located at the NE corner of the site. A secondary concern encompassed the proposed area of development. The densely wooded western part of the property was inaccessible for investigation.

Geophysical Investigation

On March 2, 2021, GGI performed a nonintrusive geophysical subsurface investigation as directed by Darin Kapanjie – DJ Car Wash I, LLC.

<u>Investigative Procedure</u>

GGI initially investigated the accessible sections of the specified search area using EM and MAG in an attempt to locate UST-like subsurface metallic anomalies. Detected anomalies were field-marked in white paint and their locations documented by GGI.

GPR profiles were subsequently completed over the detected EM and/or MAG anomalies in an attempt to delineate UST-like GPR data signatures typically associated with USTs. In addition sample GPR profiles were completed throughout the accessible search area. The GPR data was collected utilizing a 400 MHz antenna system. The GPR data profiles were recorded for subsequent review and post-processing at the GGI office. Possible tank locations observed from the field data were marked in white paint/flags and their locations documented by GGI.

Geophysical Instrumentation

The following is a list and brief description of the geophysical instrumentation utilized for this investigation.

GPR

GPR is a subsurface imagining system consisting of a control unit with interchangeable antenna systems. When a GPR antenna is moved along a surface a corresponding data image is generated and shown on the control unit's monitor. Understanding the resulting data image can seem difficult and counter-intuitive. Thus, the knowledge and experience of the GPR operator is critical in order to procure an accurate data interpretation.

Antenna Systems

GPR antennas operate with a center band frequency measured in megahertz (MHZ) or gigahertz (GHZ). A basic rule-of-thumb is the lower the antenna frequency the deeper the signal penetration

but at the cost of image resolution. Conversely, the higher the frequency the greater the resolution but at the cost of signal penetration. As a result, the antenna frequency utilized for a particular project is contingent upon the project's scope-of-work and/or the targets-of-concern.

Data Interpretation

GPR data is obtained and viewed in real time. The data is first evaluated for its quality and usefulness for detection of the project's targets-of-concern. GPR settings are adjusted as needed by the operator. For some projects, the data can be interpreted onsite by the operator. For other projects, the data is recorded for subsequent analysis and post-processing. Off-site data post-processing is utilized by GGI to improve image resolution and assist in the interpretation of the data. During this process each recorded GPR profile is individually viewed, subjected to various algorithms or modelling techniques, and then analyzed. The GPR data are then correlated with the data collected from the other geophysical instruments that were utilized in the investigation.

Applications and Limitations

GPR can be used as part of a nonintrusive geophysical investigation or structural scanning project and can delineate both metallic and nonmetallic subsurface features. The composition and moisture level of the soil will substantially impact and limit the maximum achievable GPR signal penetration depth. Also, small diameter nonmetallic piping are undetectable under most circumstances.

For this project, a Geophysical Survey Systems, Inc. (GSSI) Subsurface Interface Radar System 3000 (SIR-300) unit was used. A GPR profile(s) best representing the delineation of the project's target-of-concern was selected, post-processed, and annotated by GGI for inclusion in this report.

RF

RF instruments are used to locate underground metallic utilities. An RF instrument can consist of a separate signal transmitting unit and a signal receiving unit. The transmitting unit is placed near or physically connected to the utility to be traced. The hand-held receiver will then pick the signal as it is conducted along the utility. The indicated location of the metallic utility is then marked onsite by the RF operator using spray paint, flags, etc. When the signal transmitting unit is directly connected to the utility to be traced, accurate depth-of-cover data can be obtained.

A Vivax-Metrotech model VM-810, and/or a Radiodetection model CAT-4 instrument were used for this investigation.

Applications and Limitations

RF techniques can be used as part of a nonintrusive geophysical investigation and are capable of electrically tracing buried metallic pipes and cables. The RF signal will follow the path of least electrical resistance; thus, the signal can jump from one utility to another, making identification and tracking of a particular utility difficult in complex underground scenarios.

EM

EM is utilized to delineate the location and size of large subsurface metallic objects, areas of conductive subsoil, and/or metallic subsurface utility features. EM works by the generation of an electromagnetic field between the transmitting and receiving units of the instrument. As the instrument is moved over the ground subsurface features will interact with the electromagnetic

field providing interpretable data. The EM instrument used by GGI is a small, hand-held device designed for use in urban scenarios. The data obtained from GGI's EM device is interpreted by the operator in real time and the findings are marked onsite with spray paint, flags, etc.

A Vivax-Metrotech VM-480B was used for this investigation.

Applications and Limitations

EM techniques can be used as part of a nonintrusive geophysical investigation and can detect large metallic masses such as USTs, drum piles, reinforced concrete; areas of conductive subsoil; and subsurface metallic utility features. Limitations include the inability to positively identify the detected feature; no anomaly-depth data; and signal interference when in proximity to metallic surface features.

MAG

The MAG instrument used by GGI is technically a vertical field gradiometer. This small handheld device passively measures changes in magnetic fields. Buried ferromagnetic objects (anything that contains iron or energized cables, for example) naturally emit a magnetic field. The MAG instrument can detect and measure this magnetic field. The data obtained from GGI's MAG device is interpreted by the operator in real time and the findings are marked onsite with spray paint, flags, etc.

For this investigation, A Dunham and Morrow model MAG PRO II Magnetic Gradiometer was used.

Applications and Limitations

MAG techniques are used to detect buried valve and manhole covers, individual drums or drum piles and assist in the detection of utilities, USTs, and other ferromagnetic features. Limitations include the inability to positively identify the detected feature; no anomaly-depth data; and signal interference when in close proximity to ferromagnetic surface features.

Findings

Refer to the color plan-view *SAM* for the plotted findings.

Detected USTs

UST-like GPR data signatures were delineated within the accessible sections of the investigated area and are described below.

Tank Field – 3 USTs

UST-like GPR data signatures indicative of a 2,000-gallon (64" x 12') tank oriented east-west were delineated near the NE corner of the subject property. In addition, GPR data signatures indicative of two 550-Gallon USTs oriented north-south were also detected located immediately north of the larger tank. The tank locations were field-marked onsite in white paint. Estimated depths to the tops of the tanks based on GPR data approximations is 5' to 6' below grade.

Unearthed UST

As reported to GGI, the west end of a UST was partially unearthed during a Geotech test pit excavation located just east of the former Service Station building. GPR UST-like data signatures could not be conclusively delineated associated with the unearthed tank. A shallow, large utility trench was detected by GPR and likely extends over the tank location obscuring its detection by GPR. A strong EM and MAG metallic anomaly was detected in the area and based on these parameters, GGI estimates the size of the unearthed tank as a possible 550-gallon (4' x 6') oriented east-west. Depth to the top of this tank is estimated to be 4' to 5' below grade.

No other UST-like data signatures were detected within the accessible search area.

Subsurface Anomalies

A subsurface metallic anomaly was detected by EM and MAG off the SE corner of the former Service Station building and an anomaly was detected by MAG off the SW corner. GGI suspects these features are associated with a former potable well and a septic structure respectively.

Several additional EM and MAG anomalies were detected throughout the accessible sections of the investigated area. GGI suspects these features represent buried piping and/or isolated metallic debris.

GPR Anomalies

Typically, subsurface anomalies delineated by GPR could be associated with utilities, isolated debris, foundational remnants, buried concrete, or certain identifiable features such as USTs, septic tanks, drums, buried reinforced concrete, etc.

EM Anomalies

Typically, EM-detected subsurface anomalies can represent buried metallic features such as tanks, drums, foundations (containing rebar), utilities, and/or metallic debris. EM anomalies can represent areas containing conductive subsoil.

MAG Anomalies

Typically, MAG-detected subsurface anomalies are representative of buried iron-containing features such as tanks, drums, foundations (containing rebar), metallic debris, certain utilities, buried valve, manhole, and/or well covers, etc.

Subsurface Utilities

Subsurface utilities were detected by GGI through the course of the UST search. These utilities were field-marked. GGI did not perform a utility investigation at this site. Additional utilities may exist within the UST search area and were neither detected nor field-marked.

The estimated maximum GPR signal penetration achieved at this site is approximately 6' below grade. Thus, features existing at or below this depth will go undetected.

Limitations and Recommendations

GGI did not perform a utility investigation at this site. Utilities that may have been field-marked by GGI were detected through the course of the UST search. This in no way implies that GGI performed a utility investigation or that all site utilities were field-marked by GGI. Additional utilities may exist within the UST search areas and surrounding the detected anomalies. GGI strongly recommends that a utility investigation be performed in order to locate and field-mark underground utilities prior to any intrusive effort.

GGI always recommends careful ground-truthing to verify all investigative findings. GGI recommended ground-truthing methods are hand-digging or *Soft-Dig* air/vacuum excavating.

All services provided by GGI are performed under the disclaimer found on the cover page of this report. Also note, just because features or anomalies were not detected by the geophysical techniques, does not preclude the possibility that they exist and went undetected.

Respectfully submitted,

on Graf, President

March 5, 2021

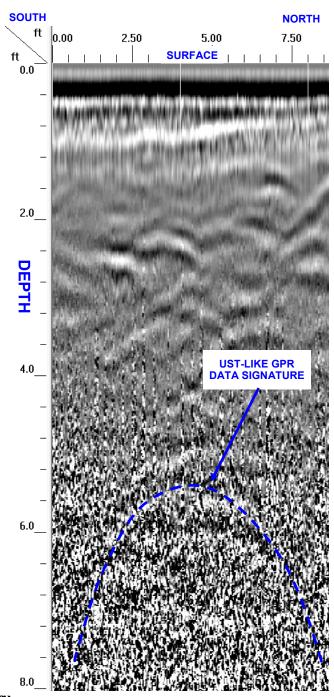


Figure 1-GPR Data Profile

Representative GPR data profile excerpt. The profile extends from south to north over the detected 2,000-gallon tank (refer to the *SAM*). Shown in this profile are the UST-like GPR data signatures indicating the location of a 64"-diameter tank oriented east-west. Depth to the top of the feature based on GPR data approximations is 5' below grade. 400 MHz GPR antenna system, edited from 50 ns.



Figure 2 – Site Photograph – Detected and Field-Marked Tank Field at NE Property Corner



Figure 3 – Site Photograph – Area of Proposed Development at Southern Half of Site



November 28, 2017

Equus Capital Partners, Ltd. 3200 Centre Square West 1500 Market Street Philadelphia, PA 19102

Attention: John P. Forde, Vice President - Development

RE:

104-106 Baltimore Pike, Chester Heights Borough, PA

Delaware County Folio #06-00-00014-00

Dear Mr. Forde:

This letter is intended to confirm information with respect to the above-referenced property (the "Property"), discussed at the November 27, 2017 meeting held at the Chester Heights Borough offices, attended by you, Greg Davis, Esquire and me. At the meeting, you advised that your employer and owner of Madison Glen Mills apartments on Valleybrook Road, Equus Capital Partners ("Equus"), is interested in purchasing the Property, removing the existing structures, and developing an approximately 4,000 square foot leasing office to serve the Madison Glen Mills apartment complex located adjacent to the Property to the south. You also noted that Equus would like to provide a pedestrian connection between the Property and the Madison apartment complex.

I hereby confirm that the Property is located entirely within Chester Heights Borough's B – Business zoning district, and that the use described above would be considered an "office" use, which is permitted by-right in the B – Business District per Zoning Ordinance section 185-72.E.

Please do not hesitate to contact me if you have any other questions.

Very truly yours,

Richard J. Jensen

Partal (6)

Zoning Officer

Chester Heights Borough

222 Llewelyn Road

Chester Heights, PA 19017