October 24, 2014

Ms. Jeannette DeBartolomeo
Maryland Department of the Environment (MDE)
Oil Control Program
1800 Washington Boulevard
Baltimore, Maryland 21230-1719

Re: Environmental Redevelopment Work Plan
Gasoline Fueling Station – Royal Farms #1
2620 Mountain Road
Joppa, MD
MDE Facility ID: 3965
MDE OCP Case No.: 2005-0357-HA
AEC Project # 05-056

Dear Ms. DeBartolomeo,

Advantage Environmental Consultants, LLC (AEC), on behalf of Royal Farms / Two Farms, Inc. (Royal Farms), is presenting this Environmental Redevelopment Work Plan for the Royal Farms Store No. 1, located at 2620 Mountain Road, in Joppa, Maryland (i.e., the Site). A Site Vicinity Map is included as Figure 1 in Attachment A. Specific redevelopment tasks discussed in this work plan include:

1. Underground storage tank (UST) removal oversight.
2. Petroleum impacted soil management.
3. Petroleum impacted groundwater management.
4. Installation of additional groundwater monitoring wells near the new UST field and dispensers and abandonment/replacement of existing wells damaged during construction.

UST REMOVAL OVERSIGHT

The Site currently operates one 20,000-gallon compartmentalized (14,000-gallon gasohol, 6,000-gallon gasohol) single-walled, composite [steel with fiberglass reinforced plastic (FRP)] UST and one 15,000-gallon compartmentalized (11,000-gallon diesel, 4,000-gallon kerosene) single-walled composite (steel with FRP) UST with the 4,000-gallon portion temporarily out of service. The product piping at the Site is pressurized, single-walled FRP. The vent and vapor recovery piping at the Site is single-walled FRP. The Site does not currently maintain containment sumps for the submersible turbine pumps (STPs), or under dispensers. The current UST system was installed in July 1996.

As part of the redevelopment of the Site, the current UST system will be taken out of service and a new UST system will be put into service. The UST field will be relocated from the northern portion of the Site to the western portion of the Site along Franklinville Road. The product dispensers will be relocated from the eastern portion of the Site to the northwest portion of the Site. Figures depicting the current Site features and the proposed Site features are included as Figures 2 and 3 in Attachment A.

Excavation monitoring will consist of on-call basis and the presence of an environmental technician only during times when the contractor is removing tanks and/or handling contaminated soil. The environmental technician will also be tasked with excavation oversight as it relates to impacted soil segregation. If practicable, over excavation may be performed in consultation with the MDE.

Soils will be evaluated based on the following: 1) Visual inspection for soil staining; 2) Detection of a petroleum-like odor from exposed soil; 3) Detection of elevated concentrations of volatile organic compounds (VOCs) using a photoionization detector (PID) and, 4) Other indicators of possible impact.

Following the completion of tank removal, AEC will collect and analyze confirmatory soil samples from the tank excavation area in accordance with Maryland Department of the Environment (MDE) directives. The samples will be collected from the bottom and/or sidewalls of the excavation. These samples will be analyzed for VOCs via U.S. Environmental Protection Agency (EPA) Analytical Method 8260 and Total Petroleum hydrocarbons (TPH) Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) via EPA Analytical Method 8015.

During excavation activities, it may be necessary to abandon some or all of the existing monitoring wells. If this is necessary, the wells will be abandoned by a Maryland licensed well driller in accordance with state regulations. If necessary, the abandoned wells will be replaced upon completion of construction.

IMPACTED SOIL MANAGEMENT

Prior to the commencement of UST removal activities, AEC will submit historical soil analytical results and associated documentation (i.e. Material Characterization (MCR) Form) to Soil Safe or similarly permitted facility in order to obtain approval to dispose of the soil at their Brandywine, Maryland facility. AEC will also perform additional soil characterization sampling throughout the project as necessary.

AEC will provide an experienced field technician to conduct soil screening and segregation during excavation activities on an as needed basis. AEC will conduct field oversight when necessary, based on activities planned by the general contractor (i.e., the Contractor).

The Contractor shall use materials, equipment, and procedures that are standard for soil excavation and removal activities, and that comply with specific construction specification requirements.

The Contractor shall prevent to the greatest extent possible the infiltration of surface water into excavated areas. This shall be accomplished by erecting silt fence and/or straw bales around the perimeter of the excavations and by attempting to not excavate impacted areas during rain events. In the event that surface water accumulates within the excavation, the water will be handled as discussed below.

The Contractor shall provide orange construction fence and warning signs to restrict entry into the designated work area(s). All excavations will be located within areas of the Site for which access is controlled (i.e., within the Site perimeter security fence). One or more of the following methods will be used to handle impacted soils.

Excavation and Loading of Trucks for Immediate Off-Site Disposal

Upon approval from the Soil Safe, the Contractor shall coordinate trucks for disposal of impacted soils in advance of soil excavation. Impacted soil will be removed from the Site by loading directly into trucks for transport as it is excavated. The Contractor shall prepare and provide the approved disposal facility with completed non-hazardous waste manifests. The Contractor shall submit a copy of all manifests to AEC for documentation purposes.

Excavation and Stockpiling for Future Off-Site Disposal

If direct loading and off-site transport is not feasible, it will be necessary to temporarily stockpile impacted soil on-site. Should stockpiling of impacted soil become necessary, the impacted soil will be placed in a designated on-site stockpile area. The Contractor shall use materials, equipment, and procedures that are standard for soil excavation and removal activities, and that comply with specific construction specification requirements.

The Contractor shall stockpile potentially contaminated soils upon 6-mil thick polyethylene sheeting. This sheeting shall also cover all stockpiled contaminated soils prior to departing the Site for the day. The cover shall be secured and weighted to prevent wind damage. A berm shall be placed around the stockpile to contain water from the soils, and to contain runoff in the event that an uncovered pile is rained upon.

The Contractor shall shape the piles and lap the cover edge to shed water. The Contractor shall promptly replace degraded or torn cover material. The soil must be covered at the end of each workday. The Contractor shall install silt fencing around each pile. The Contractor shall maintain the silt fencing to ensure its integrity. Public access to the stockpile area will be restricted. In addition, if stockpile capacity is being reached, the Contractor will take measures to ensure continuing capacity. Such measures can include: designation and Site preparation for a new stockpile area, compaction of the stockpile, or removal and transportation of the soil to an appropriate treatment or disposal facility.

The Contractor shall provide orange construction fence and warning signs to restrict entry into the designated soil stockpile area(s). All stockpiles will be located within an area of the Site for which access is controlled. That is, the stockpiles will be located within the Site perimeter security fence.

The Contractor shall prepare and provide the approved disposal facility with completed non-hazardous/hazardous waste manifests. The Contractor shall submit a copy of all manifests to AEC for documentation purposes.

IMPACTED GROUNDWATER MANAGEMENT

AEC anticipates that some dewatering will be required during the project. Prior to Site redevelopment, AEC will submit a Notice of Intent (NOI) to discharge. In the event that groundwater or storm water runoff is encountered or collected during the course of on-site excavation activities the Contractor shall arrange for removal of the standing water. Water will be removed by standard commercial grade sump pumps placed in the lowest laying areas of the excavation. All water removed will be containerized and treated on-site and discharged into the local storm water system.

Petroleum impacted groundwater will be treated via granular activated carbon (GAC) vessels in order to polish the discharged water to acceptable levels. The GAC will be sized to accommodate the expected flow rate, as necessary. If liquid phase hydrocarbons (LPH) are present, the treatment train will also include oil-water separation capacity.

MONITORING WELL INSTALLATION

Upon completion of the new UST system installation three two-inch diameter groundwater monitoring wells will be installed in the vicinity of the new UST field and dispensers in accordance with MDE regulations for UST located in High Risk Groundwater Use Areas (HRGUAs). In addition, any wells within the existing monitoring well network that are damaged during construction will be repaired or replaced using the methods described below.

Soil Boring Advancement and Sampling

AEC and a drilling subcontractor will mobilize to the Site for the installation of three soil borings with associated monitoring well installation. Monitoring well borings will be advanced using a combination of Geoprobe/hollow stem auger (HSA) methods. The Geoprobe system will be used to collect the soil samples using a macro-core approach. The borings will then be expanded using the HSA string. All drilling work will be performed under the direction of a State of Maryland-licensed well driller and appropriate well permits will be obtained from Harford County. Proposed boring locations are depicted on Figure 3 of Attachment A. Actual boring locations will depend on Site conditions and utility clearances, where necessary. All locations will be cleared to four feet below ground surface (bgs) using a hand auger.

Prior to arriving at the Site and between each soil boring, all hand augers, core barrels, cutting shoes, probe rods, tips, sleeves, pushrods, samplers, tools, and other down hole equipment will be washed using a water rinse. Fuel, lubricants, and other similar substances will be handled in a manner consistent with accepted safety procedures and standard operating practices. Public utility clearances will be obtained prior to the initiation of the

sampling program. This will entail contacting Miss Utility at least 72 hours prior to drilling activities.

An AEC Field Geologist will log the geologic conditions of the borings and field screen soil cores for VOCs using a photoionization detector PID. Soil samples will be collected from each boring. Based on the results of the PID/visual screening one sample will be collected from each borehole. Additional samples may be collected based on PID/visual observations. If no impact is apparent throughout the soil column then one sample will be collected from the zone immediately above the water table. The soil samples will be analyzed for TPH DRO and GRO using EPA Analytical Method 8015, and VOCs, including fuel oxygenates, via EPA Analytical Method 8260.

All samples will be collected and prepared using EPA Method 5035 via Terracore sampling. The Terracore sampler will be inserted directly into the soil core using a reusable T-handle until the sample chamber is full (approximately 5 to 10 grams of soil. The outside of the sampler will be wiped clean of any soil or debris. The soil plugs will be flush with the mouth of the sampler and any excess soil that extends beyond the mouth of the sampler will be removed. The plunger will be seated in the handle top 90° until it is aligned with the slots in the body. The sample cores will then be extruded into one methanol (5 milliliters) preserved 40 milliliter vial, two sodium bisulphate (5 milliliters) preserved 40 milliliter vials and a dry weight jar with a lid. The top and/or threads of the vials will be wiped clean and the lids quickly replaced on the vials. A clean pair of new, disposable nitrile gloves will be worn each time a soil sample is collected.

The analytical laboratory will provide the Terracore sample kits. The sample labels will be firmly attached to the container side, and the following information will be legibly and indelibly written on the labels: Facility name, Sample identification, Sample type, Sampling date and time, Preservatives added, and, Sample collector's initials. After the samples are sealed and labeled, they will be packaged on ice for transport to the laboratory.

Monitoring Well Construction

The monitoring wells will be constructed of 2-inch diameter polyvinyl chloride (PVC) well screen and casing. A 20 foot section of screen will be installed to a depth of approximately 25 feet bgs at each location. The remaining portion of the wells will be constructed of a five foot section of solid PVC riser. Based on depth to water measurements during the previous assessment it is anticipated that groundwater will be encountered at approximately 10 feet bgs. A sand filter pack will be placed to 1-foot above the top of the screen. A 1-foot thick bentonite seal will be placed above the sand by dropping bentonite pellets into the annular space and hydrating in place. The remainder of the annular space above the bentonite seal will be grouted to the surface. Each temporary monitoring well will be secured with a PVC cap and housed within an eight-inch diameter man-hole.

The wells will be developed using surge block and aggressive bailing techniques under the direction of a Maryland-licensed well-driller between three and five days after installation.

The development water will be containerized in a 5-gallon bucket and handled as discussed below.

The relative elevation of the monitoring wells' top of casing will be determined to within 0.01 feet using a rod and transit. This measurement will be taken relative to the existing monitoring well network. Groundwater levels within each monitoring well associated with the Site will be measured using an electronic water level indicator accurate to 0.01 feet. The groundwater levels will be correlated with the well head elevations for use in developing a groundwater gradient map.

Groundwater Sample Collection

The newly installed wells in the vicinity of the new tank field will be sampled between three and five days after development and annually in accordance with MDE HRGUA regulations and the existing oil control program (OCP) Case. The existing monitoring wells will continue to be sampled quarterly in accordance with the current groundwater monitoring schedule. Prior to the collection of groundwater samples, AEC will purge at least three well volumes from each temporary monitoring well. The purge water will be containerized in a 5-gallon bucket and handled as discussed below. New sections of nylon rope will be used for the pre-cleaned disposal bailers at each sample location. In addition, a clean pair of new, disposable nitrile gloves will be worn each time a groundwater sample is collected.

Sample bottles for VOCs will be filled so that there will be no headspace or air bubbles within the container and placed in a cooler on ice pending laboratory analysis. The analytical laboratory will provide pre-preserved sample containers where appropriate. Sample labels will be firmly attached to the container side, and the following information will be legibly and indelibly written on the labels: facility name; sample identification; sampling date and time; preservatives added; and, sample collector's initials. After the samples are sealed and labeled, they will be packaged for transport to the analytical laboratory. The following packaging procedures will be followed: samples will be packaged to prevent leakage or vaporization from the containers; samples will be cushioned to avoid breakage; and, ice will be added to the cooler to keep the samples cool.

The groundwater samples will be shipped to Maryland Spectral Services, Inc. of Baltimore, Maryland. The groundwater samples will be analyzed for TPH DRO and GRO using EPA Analytical Method 8015, and VOCs plus oxygenates via EPA Analytical Method 8260.

All development, sampling and gauging equipment will be disassembled (if appropriate) and properly cleaned and calibrated (if required) prior to use in the field. All portions of the sampling and test equipment that contact the sample will be thoroughly cleaned with a Liquinox (phosphate-free laboratory-grade) bath and triple rinse of potable water before initial use and between each sampling point.

Investigation Derived Waste Management

Investigation-derived, petroleum impacted soil will be containerized, labeled (date of generation, site name/address, source, and contents), staged on the Site and properly disposed. These materials will be staged no longer than 50 days before they are characterized, transported and disposed according to applicable United States Department of Transportation (USDOT), EPA, and MDE regulations. Materials which are not deemed to be petroleum impacted will be land spread within the site boundaries. All purge water and development water will be treated by granular activated carbon (GAC) and disposed of on-Site.

SCHEDULING

AEC will provide five days' notice prior to commencement of redevelopment activities which are tentatively scheduled to begin in early December 2014.

REPORTING

AEC will provide four hardcopies and one electronic copy of all reports on a labeled compact disc of the final report including all disposal manifests and laboratory data. This report will be submitted within 60 days of the completion of the field work.

If there are any questions regarding this work plan, please contact AEC at (301) 776-0500.

Sincerely,

Advantage Environmental Consultants, LLC

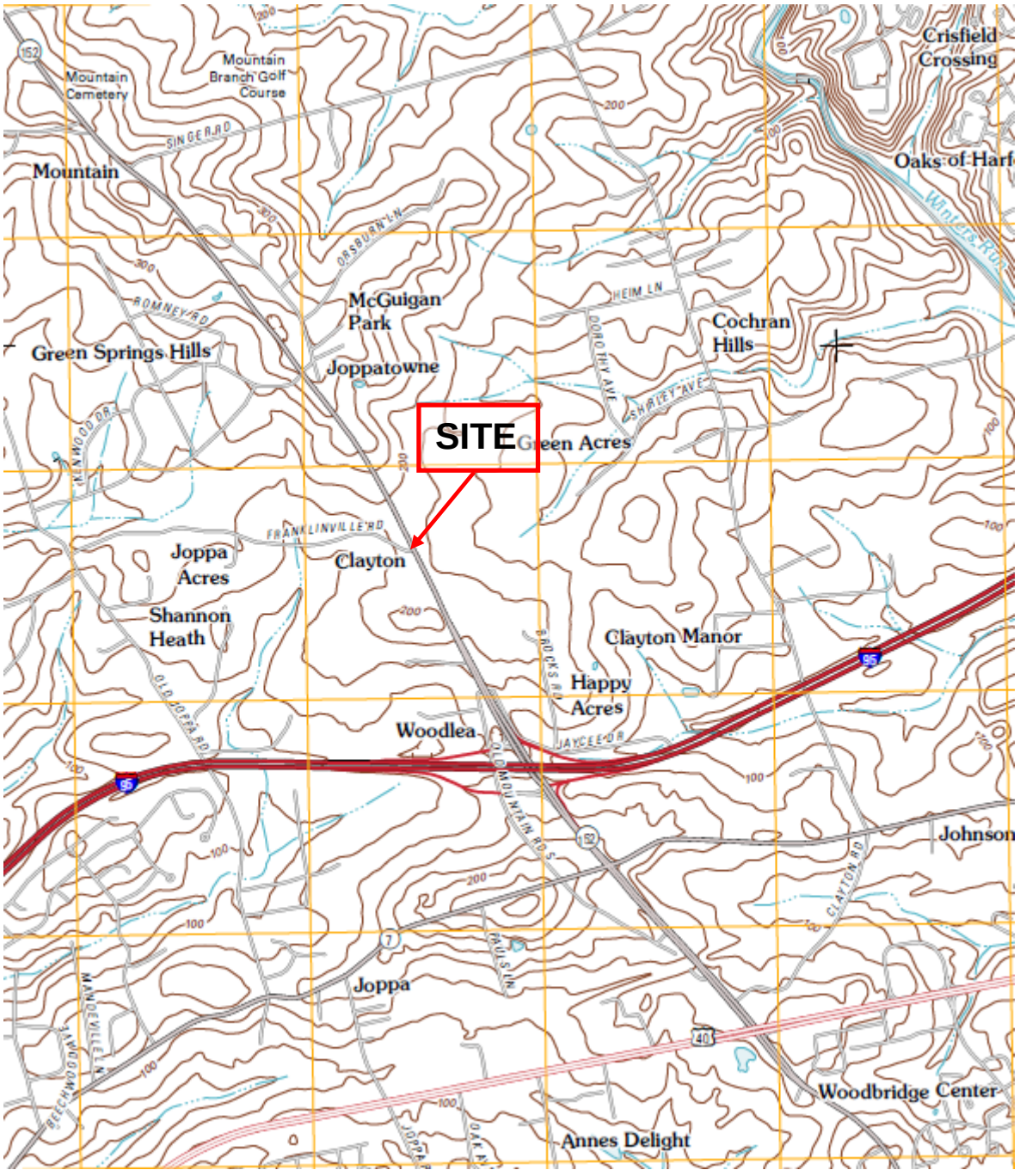
Jeffery Stein
Principal

Anthony B. Rubino, P.G.
Senior Project Manager

cc: T. Ruszin

Attachment

ATTACHMENT A
FIGURES



SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2

1000 500 0 METERS 1000 2000

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MILES

Advantage Environmental Consultants, LLC

8610 Washington Boulevard, Suite 217
Jessup, Maryland 20794
Phone: 301-776-0500 Fax: 301-776-1123

Figure 1 - Site Vicinity Map
USGS 7.5-Minute Series, Edgewood, MD Quad
Royal Farms #1
2620 Mountain Road , Joppa, MD

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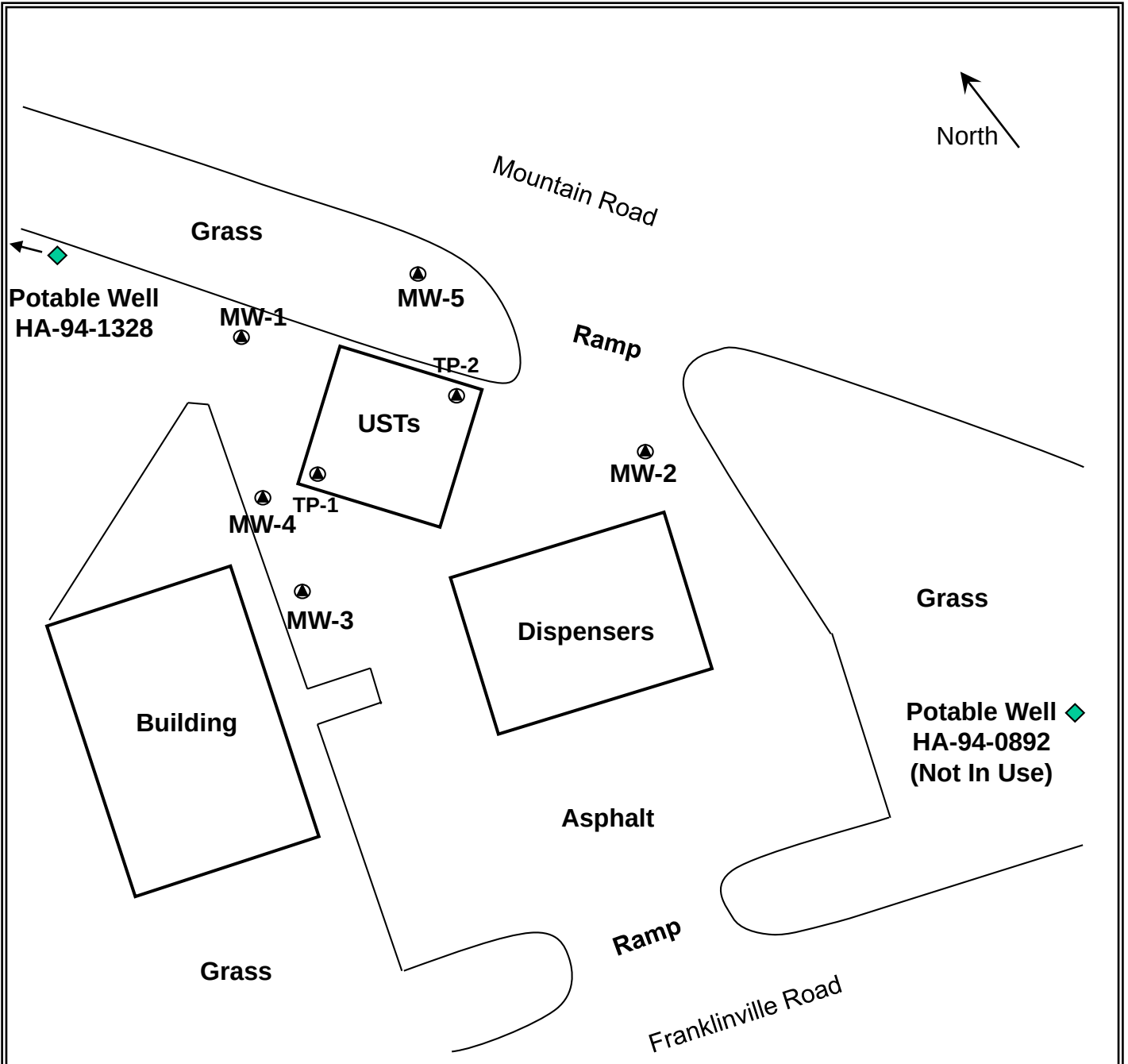
AEC Project No.:	Report Date:	Drawn By:
05-056-RF01	October 2014	RS



Advantage Environmental Consultants, LLC
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Figure 2 – Existing Site Features Map
Royal Farms Store #1
2620 Mountain Road
Joppa, Maryland

Work Order No.:	Report Date:	Drawn By:
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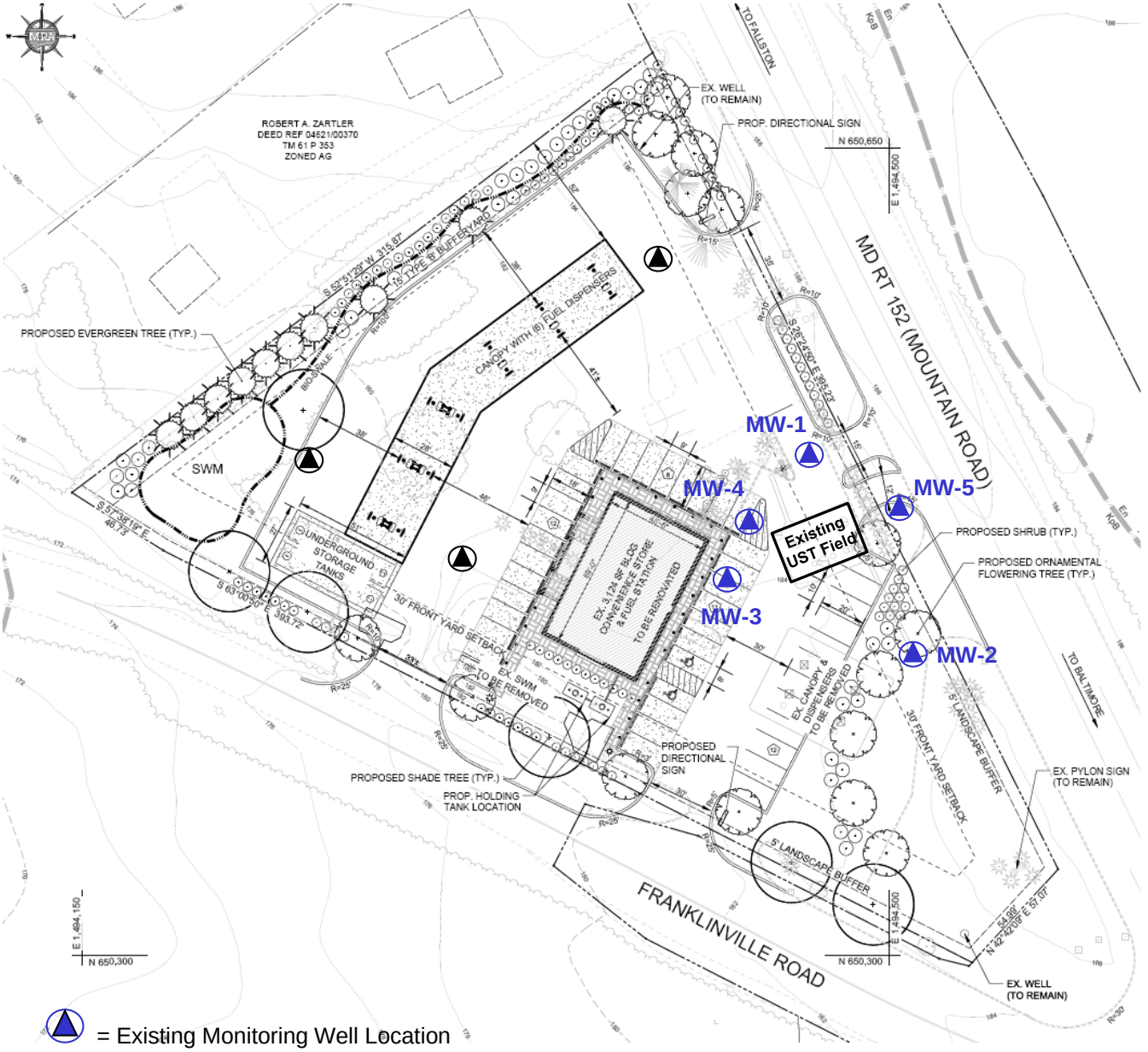

Approximate Scale

0 (feet) 110

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Figure 3 – Proposed Site Features Map
Royal Farms Store #1
2620 Mountain Road
Joppa, Maryland

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