WORKPLAN FOR SITE ASSESSMENT

MARYLAND OIL CONTROL PROGRAM (OCP)

North Point Governmental Facility
1747 Merritt Boulevard/7701 Wise Avenue
Dundalk, Baltimore County, Maryland
MDE OCP Case No. 2016-0467-BA

Apex Job Number: AMORT-004

June 16, 2016

Submitted To:

Mr. Andrew B. Miller, Chief and Ms. Ellen Jackson, Central Regional Section Head
Oil Control Program
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Prepared for:

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c/o Mr. Stephen Jerrick, Senior Project Manager

1.0 INTRODUCTION

Apex Companies, LLC (Apex) has prepared this Work Plan, on behalf of Baltimore County Government for site assessment activities at the North Point Government Facility addressed as 1747 Merritt Boulevard – 7701 Wise Avenue in Dundalk, Baltimore County, Maryland (subject property or site). This work plan has been prepared in accordance with the Maryland Department of the Environment (MDE) Request for Work Plan dated May 18, 2016. The MDE Request for Work Plan is associated with Oil Control Program (OCP) Case 2016-0467-BA, which was opened following a confirmed release from a supply line associated with an underground storage tank (UST) located at the subject property. The MDE Request for Work Plan identified the following requirements: 1) Submit a work plan for assessment activities to delineate the vertical and horizontal extent of contamination detected along the product piping run; 2) submit prior environmental investigation reports completed at the subject property; 3) perform follow up inspections of all storm drain manways impacted from the release; and 4) collect water samples from the storm drain manway located near the former piping run and from the storm drain outfall.

The planned scope of work includes the collection of up to 10 subsurface soil samples from the area surrounding the former piping run and UST field; the development of three previously installed monitoring wells and, assuming the monitoring wells are viable, subsequent collection of groundwater samples from the three wells; collection of groundwater samples from three temporary groundwater monitoring wells; the inspection of all storm drain manways impacted from the release; and the collect of water samples from the storm drain manway near the former piping run and storm drain outfall. A Site Layout is provided on **Figure 1**.

2.0 SCOPE OF WORK

The following sections detail the scope of work proposed to achieve the above objectives. Apex will prepare a site-specific health and safety plan (HASP) for the work. The plan will outline the risks associated with this scope of work and the health and safety measures that will be implemented. Additionally, as the inspections of the storm drain manways require physical entry into a permit required confined space, as part of the job hazard analysis for this task, Apex will incorporate a permit required confined space entry into the health and safety plan.

As the scope of work will include subsurface borings, as part of its HASP and as legally required prior to initiating any subsurface investigation, underground utilities in on-site areas of investigation will be located. The "Miss Utility" system will be contacted to locate underground utilities. The Miss Utility system will locate underground utilities in public spaces and on easements. Apex Health and Safety Standard Operating Procedures (SOP) for soil boring completion requires contracting a private utility locator service to identify locations of utilities in the areas not identified by Miss Utility. Available as-built drawings and site plans (ALTA Land Title Survey Plat) will also be reviewed in order to identify known subterranean features, and boring locations will be approved by site personnel prior to progression into the subsurface.

2.1 Direct Push (DP) Soil Sampling

To evaluate the vertical and horizontal extent of the contaminated area originating from the product piping run, Apex will complete 10 borings, identified as SB-1 through SB-10 on the subject property. Proposed boring locations are presented in **Figure 2.** Borings will be advanced using direct push methodology (Geoprobe™) to a maximum depth of 30 feet below ground surface, the water table or to refusal, whichever is encountered first. Based on a review of an MDE Report of Observations dated February 24, 2016, monitoring well MW-1 was dry at 23.5 feet. Therefore, Apex has selected a maximum depth of 30 feet to encounter groundwater. Apex assumes that Geoprobe™ will be sufficient to access the desired depth of the borings.

At each location, soil samples will be collected continuously from the surface to the terminus of the borings. Apex will field screen soil samples using a calibrated PID. The on-site geologist will document field observations including PID readings, soil lithology, as well as visual and olfactory observations. Apex will collect a soil sample from the depth exhibiting the highest PID readings or from directly above the groundwater/soil interface if no elevated PID readings are observed. The investigation will begin at the former product piping run area and borings will be offset from this area based on observations obtained during the investigation.

Samples from borings collected during the investigation will be submitted to a laboratory for analysis consistent with the concern being investigated (fuel oil release) and will include total petroleum hydrocarbons (TPH) diesel range organics (DRO) using EPA Method 8015, and polynuclear aromatic hydrocarbons (PAHs) using EPA Method 8270. Additionally, as concern has been expressed regarding the potential for releases from nearby off-site gasoline stations to have impacted the site and commingled or contributed to the site impact, Apex will select certain samples for analysis of gasoline related constituent, methyl-t-butyl ether (MTBE) using EPA Method 8260.

If groundwater is encountered, three borings will be converted to temporary one-inch monitoring wells and groundwater samples will be collected. Given the concerns being investigated, groundwater samples collected will be analyzed for TPH-DRO using EPA Method 8015B, PAHs using EPA Method 8270, and select locations for MTBE using EPA Method 8260. After samples have been collected, and the elevation survey described below has been completed, Apex will abandon the temporary monitoring wells/borings and restore the area by filling the borings with soils recovered during sampling and finishing the surface with asphalt cold patch or concrete. **Table 1** summarizes the proposed soil sampling and analysis plan.

To minimize the risk of cross-contamination (e.g. asphalt particles in a soil sample analyzed for PAHs), samples will be collected carefully from the only the targeted media. Sampling equipment (e.g., drill rods, macrocores) will be decontaminated between sampling locations using Alconox wash, tap water rinse, distilled water rinse and air dry. Disposable nitrile gloves will be used during sample collection, and decon procedures. Soil cuttings generated during soil boring completion will be replaced back into each boring for backfill with the exception of the monitoring well locations. Dedicated and disposable sampling items will be placed in trash bags and transported off site for disposal.

2.2 Groundwater Sampling

Using the existing three monitoring wells in addition to the three proposed temporary monitoring wells described above, Apex will collect groundwater samples from the subject property. The approximate locations of the three monitoring wells are depicted on **Figure 1.** Apex has assumed that these monitoring wells are suitable for sampling purposes. As no information regarding the monitoring wells is readily available, Apex's initial tasks for groundwater sampling will be to evaluate the condition of the wells, and to develop the wells. Monitoring wells will be developed using the methodology prescribed in the Environmental Protection Agency (EPA) 1992 Groundwater Forum *Monitoring Well Development Guidelines for Superfund Project Managers.* Monitoring well development for each well will consist of:

1. Initially recording the static water level and depth to bottom of the well;
2. Set a pump, record pumping rate and turbidity; pump until turbidity stabilizes;
3. Discontinue pumping and surge the well;
4. Measure depth to the well bottom, if more than 10% of the bottom well screen is occluded by sediment, remove the sediment by bailing or vacuum;
5. Reset the pump, record pumping rate and turbidity, pump until turbidity stabilizes;
6. Repeat until the well yields acceptable turbidity at the beginning of the pumping cycle.

Development water and any other investigation derived waste generated during this project will be containerized into 55-gallon drums, characterized by laboratory testing, and disposed properly.

Representative groundwater samples will be collected using low-flow purging and sampling methodology. Well purging will be conducted using a variable speed low flow air bladder pump or peristaltic pump. Groundwater quality parameters pH, specific conductivity, dissolved oxygen (DO), turbidity, and oxidation reduction potential (ORP or Eh) will be measured through a flow cell using a multi-parameter water quality meter for stabilization. Following well purging and stabilization, water samples will be transferred directly into pre-preserved laboratory glass containers with Teflon-lined lids, labeled and stored on ice at a temperature of approximately 4 degrees Centigrade pending delivery to the laboratory. The monitoring well samples will be submitted to the laboratory under proper chain of custody (COC) procedures and analyzed for TPH-DRO using EPA Method 8015B, PAHs using EPA Method 8270, and select locations for MTBE using EPA Method 8260. Sampling equipment (e.g., meters, pumps) will be decontaminated between sampling locations using Alconox wash, tap water rinse, distilled water rinse and air dry. Disposable nitrile gloves will be used during purging, sample collection, and decontamination procedures. **Table 1** summarizes the proposed groundwater sampling and analysis plan.

Apex will conduct a groundwater elevation survey and plot the existing monitoring well locations on a scaled site plan using coordinates determined by portable GPS equipment. Water table elevations will be determined from static water level measurements at each surveyed well location and the elevation data will be utilized to develop a groundwater flow contour map.

2.3 Storm Drain Manway Inspection and Sampling

The MDE Request for Work Plan requires follow up inspections of all storm drain manways impacted by the release. Additionally, sampling water from the storm drain manway located near the piping run and storm drain outfall are also required. Performing these

inspections and sampling will require physical entry into the manways. As these are permit required confined spaces, for this task, Apex has contemplated using confined space trained and certified personnel and a confined space entry to physically inspect and sample. Assuming that the atmosphere is safe for human entry in Level D protection equipment (i.e. no hazardous atmosphere is identified during monitoring), Apex will perform the required inspection and document the inspection photographically. In addition, the MDE Request for Work Plan requires the collection of water samples from the storm drain manway located near the former piping run and from the storm drain outfall. These water samples will be analyzed for TPH-DRO using EPA Method 8015. The approximate location of the storm drain water samples are depicted on **Figure 1** and **Figure 2**. **Table 1** summarizes the proposed storm drain water sampling and analysis plan.

2.4 Site Assessment Report

Following completion of field investigation tasks, Apex will prepare a summary report of field activities, the data obtained, and conclusions. The report will include scaled site drawings that depict the sample locations, soil boring logs and well construction logs, well locations, soil and groundwater concentration maps, and the laboratory data reports. The report will also include any additional findings and data that were collected at the subject property.

TABLE 1

Site Assessment – Sampling Plan
North Point Government Facility

SOIL

Sample Location[1]	Description	Sample Depths[2]	Analytical Parameters – Methods By Fixed Laboratory
Former UST area	10 subsurface soil sample (SB1 through SB-10)	Various	TPH-DRO by EPA 8015 PAHs by EPA 8270
	3 subsurface soil sample (select locations)	Various	MTBE by EPA 5035/8260
	3 groundwater samples (select locations)	DTW est. at 20 to 30 ft bgs	TPH-DRO by EPA 8015 PAHs by EPA 8270 MTBE by EPA 8260
Groundwater Monitoring Wells	3 groundwater samples (previously identified wells, MW1 – MW3)	DTW est. at 20 to 30 ft bgs	TPH-DRO by EPA 8015 PAHs by EPA 8270 MTBE by EPA 8260
Storm drain system	1 water sample from storm drain manway near former piping run (SW1)	DTW est. at 10 ft bgs	TPH-DRO by EPA 8015
	1 water sample from storm drain outfall (SW2)	Surface	TPH-DRO by EPA 8015

Notes:

1 – Refer to attached **Figure 1** and **Figure 2** for proposed soil and water sample locations.
2 – Refer to Section 2 of the Work Plan for detailed scope of work.

TABLE 2

Site Assessment – Sampling Plan

QA/QC Parameters

SOIL

Sample Location[1]	Description	Sample Depths[2]	Analytical Parameters – Methods By Fixed Laboratory
One blind duplicate soil sample (SB1 through SB10)	Selected subsurface sample location	Subsurface	TPH-DRO by EPA 8015 PAHs by EPA 8270

GROUNDWATER

Sample Location[1]	Description	Analytical Parameters – Methods By Fixed Laboratory
One blind duplicate groundwater sample (MW1 through MW8)	One Blind duplicate water sample	TPH-DRO by EPA 8015 PAHs by EPA 8270

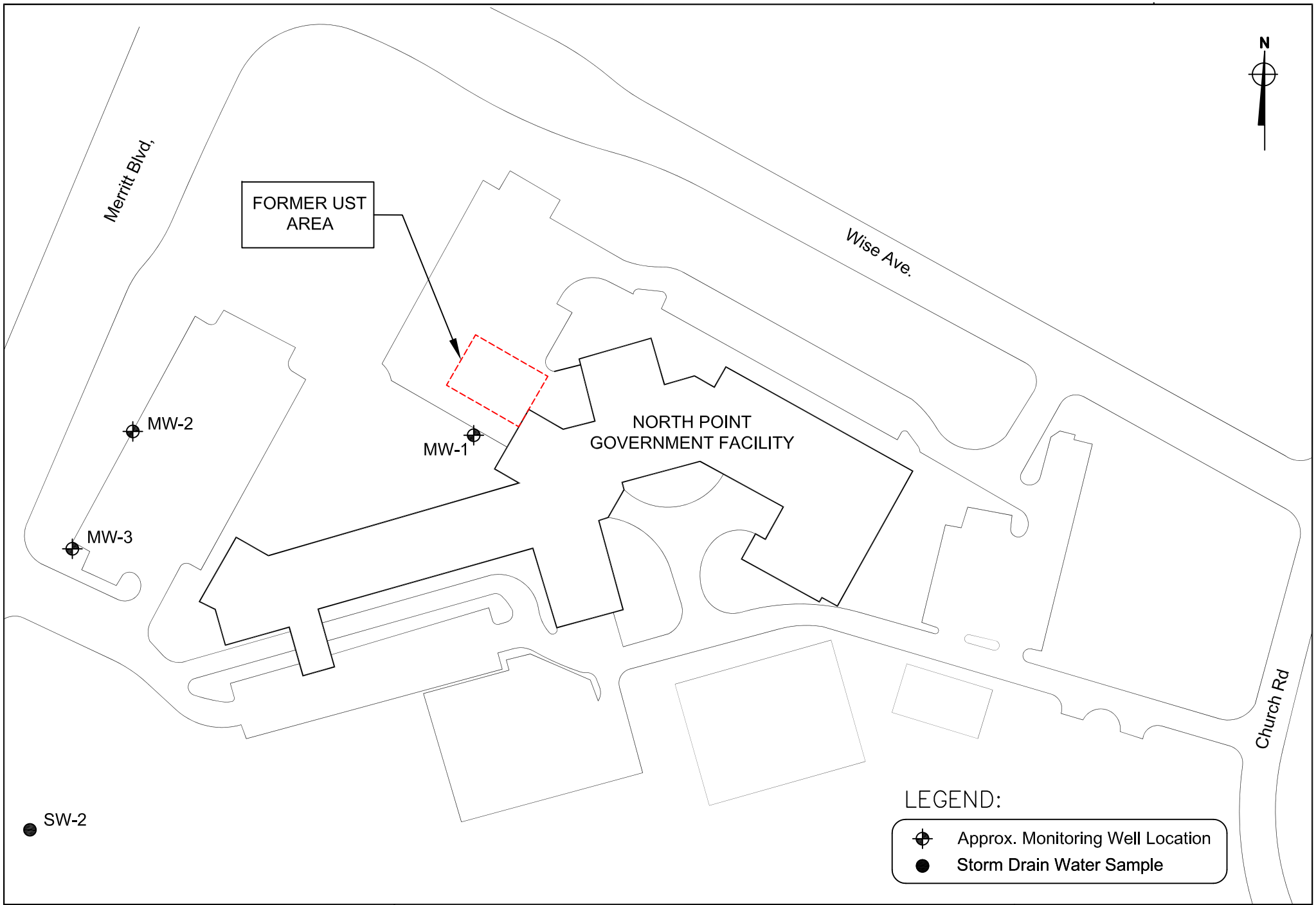

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FIGURE 1
SITE LAYOUT

Date: 6-7-16	Project Title: NORTH POINT GOVERNMENT FACILITY 1747 MERRIT BLVD-7701 WISE AVE DUNDALK, MD		
Drawn By: MJO			
Project Number: AMORT-004	CAD File: AMORT-004	Approx. Scale: 1"=120'	Client: A MORTON THOMAS

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FIGURE 2
PROPOSED SAMPLE LOCATIONS

Date:	Project Title:		
6-7-16	NORTH POINT GOVERNMENT FACILITY 1747 MERRIT BLVD-7701 WISE AVE DUNDALK, MD		
Drawn By: MJO			
Project Number: AMORT-004	CAD File: AMORT-004	Approx. Scale: 1"=50'	Client: A MORTON THOMAS