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December 22, 2016

Mr. Matthew Morris
Washington State Department of Ecology – Toxics Cleanup Program
PO Box 47775
Olympia, Washington 98504-7775

BY MAIL AND E-MAIL

RE: REMEDIAL INVESTIGATION WORK PLAN ADDENDUM
GIG HARBOR SPORTSMAN'S CLUB
9721 BURNHAM DRIVE NORTHWEST
GIG HARBOR, WASHINGTON
FARALLON PN: 1303-001

Dear Mr. Morris:

Farallon Consulting, L.L.C. (Farallon) has prepared this letter to provide this Addendum to the *Final Remedial Investigation/Feasibility Study Work Plan* dated August 30, 2016, prepared by Farallon (RI/FS Work Plan) to revise the scope of work for the Remedial Action/Feasibility Study (RI/FS) for the Gig Harbor Sportsman's Club (GHSC) property at 9721 Burnham Drive Northwest in Gig Harbor, Washington (herein referred to as the GHSC Property) (RI/FS Work Plan Addendum). GHSC has entered into Agreed Order No. DE 12803 with the Washington State Department of Ecology (Ecology) to complete an RI/FS of the GHSC Property. The purpose of this RI/FS Work Plan Addendum is to document the revision to the scope of work as requested by the Ecology Site Manager, Mr. Matt Morris, during a meeting with Farallon at the Ecology office in Lacey, Washington on October 26, 2016. The results from the RI will be used to develop, evaluate, and select technically feasible cleanup alternatives in accordance with the Washington State Model Toxics Control Act Cleanup Regulation, as set forth in Chapter 173-340 of the Washington Administrative Code (WAC 173-340) and the Washington State Sediment Management Standards, as set forth in WAC 173-204.

The modifications to the scope of work requested by Ecology are summarized herein and described in detail in the revised SAP (Revised SAP), which is attached to this letter. The Revised SAP replaces the SAP in the RI/FS Work Plan.

Figures 2 and 3 of the RI/FS Work Plan are revised to reflect current GHSC Property surroundings and the revised sampling locations. Updated copies of Figures 2 and 3 are attached to this RI/FS Work Plan Addendum and replace Figures 2 and 3 in the RI/FS Work Plan.

SUMMARY OF SAMPLING MODIFICATIONS

The revisions to the SAP and the corresponding Section references in the Revised SAP are summarized below.

Sampling Modification	Corresponding Sections of Revised SAP
• Additional surface water and sediment sampling location in a portion of the North Creek Tributary upstream of the GHSC Property proximate to the bridge on Sentinel Drive that crosses the North Creek Tributary, northeast of the GHSC Property.	3.1 Surface Water Sampling and Analysis 3.3 Sediment Sampling and Analysis
• More detailed description of the field screening methods for soil samples.	3.2 Soil Sampling and Analysis
• Collect a stormwater sample from the stormwater retention pond proximate to the rifle range.	3.5 Stormwater Sampling and Analysis
• Collect sufficient sediment samples to provide a vertical profile for potential analysis, as practicable based on access and sampling tools available.	3.3 Sediment Sampling and Analysis
• Analyze soil, sediment, surface water, and groundwater samples for arsenic, lead, and copper, referred to herein as constituents of potential concern (COPCs). If concentrations of one or more of the COPCs exceed a screening or cleanup level, the sample will be analyzed for antimony, zinc, iron, and tin.	3.1.2 Surface Water 3.2.2 Soil 3.3.2 Surface Sediment 3.4.2 Groundwater
• Analyze for pH in all soil samples.	3.2.2 Soil
• Document that groundwater and surface water samples will be analyzed for total and dissolved metals.	3.1.2 Surface Water 3.4.2 Groundwater 3.5.2 Stormwater
• Perform tiered analysis of soil samples collected from the monitoring well borehole similar to the tiered methodology for analysis used for soil samples collected from the shallower direct-push borings.	3.2 Soil Sampling and Analysis

Sampling Modification	Corresponding Sections of Revised SAP
• Collect a soil sample from the saturated zone in each monitoring well borehole and analyze the sample for primary metallic COPCs.	3.2 Soil Sampling and Analysis

The Revised SAP and revised Figures 2 and 3 are attached. Please contact either of the undersigned at (425) 295-0800 if you have questions or need additional information.

Sincerely,

Farallon Consulting, L.L.C.

Jennifer L. Moore
Associate Scientist

Peter D. Jewett, L.G., L.E.G.
Principal Engineering Geologist

Attachments: Figure 2, *Site Plan Showing Historical Surface Water and Sediment Sample Locations*
Figure 3, *Site Plan Showing Proposed Sample Locations*
Attachment A, Revised Sampling and Analysis Plan

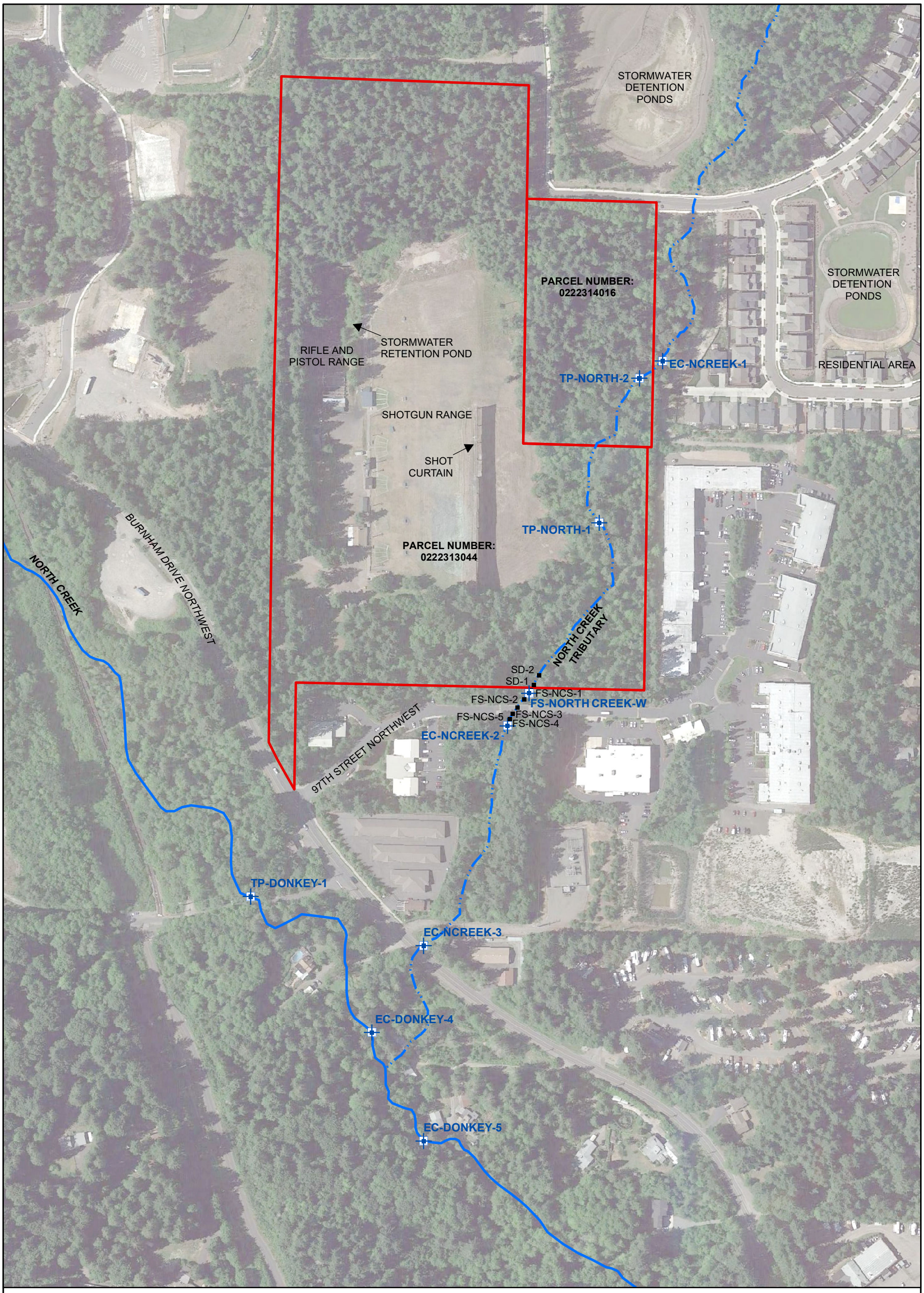
cc: Gig Harbor Sportsman's Club (by e-mail)
Mr. Clark Davis, Davis Law Office, PLLC (by e-mail)

JM/PJ:tlc

FIGURES

REMEDIAL INVESTIGATON WORK PLAN ADDENDUM
Gig Harbor Sportsman's Club
9721 Burnham Drive Northwest
Gig Harbor, Washington

Farallon PN: 1303-001



LEGEND

- PARCEL BOUNDARY
- SURFACE WATER SAMPLE LOCATION
- SEDIMENT SAMPLE LOCATION

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FIGURE 2

SITE PLAN SHOWING HISTORICAL
SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS
GIG HARBOR SPORTMAN'S CLUB
9721 BURNHAM DRIVE NORTHWEST
GIG HARBOR, WASHINGTON

FARALLON PN: 1301-001

Drawn By: pgarvin | Checked By: | Date: 12/1/2016 | Disc Reference:

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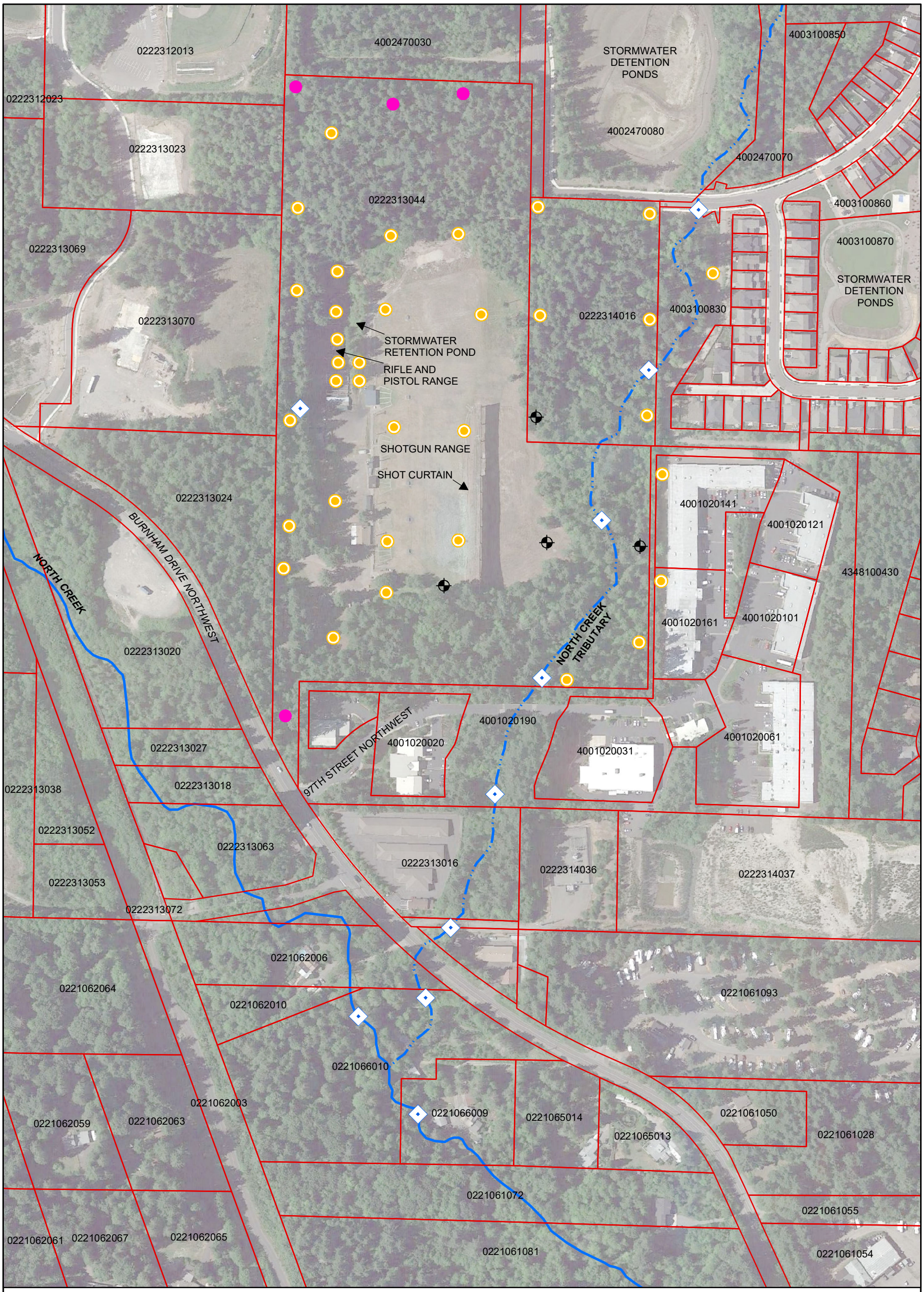

LEGEND

- PARCEL BOUNDARY
- PROPOSED BACKGROUND BORING LOCATIONS
- PROPOSED BORING LOCATIONS
- PROPOSED MONITORING WELL LOCATIONS
- PROPOSED LOCATION OF SOIL/SEDIMENT AND SURFACE WATER SAMPLES

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FIGURE 3

SITE PLAN SHOWING
PROPOSED SAMPLE LOCATIONS
GIG HARBOR SPORTMAN'S CLUB
9721 BURNHAM DRIVE NORTHWEST
GIG HARBOR, WASHINGTON

FARALLON PN: 1303-001

Drawn By: pgarvin | Checked By: | Date: 12/1/2016 | Disc Reference:

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ATTACHMENT A
REVISED SAMPLING AND ANALYSIS PLAN

REMEDIAL INVESTIGATON WORK PLAN ADDENDUM
Gig Harbor Sportsman's Club
9721 Burnham Drive Northwest
Gig Harbor, Washington

Farallon PN: 1303-001

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REVISED SAMPLING AND ANALYSIS PLAN

GIG HARBOR SPORTSMAN'S CLUB
9721 BURNHAM DRIVE NORTHWEST
GIG HARBOR, WASHINGTON
FACILITY SITE IDENTIFICATION NO. 2566095
AGREED ORDER NO. DE 12803

Submitted by:
Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027

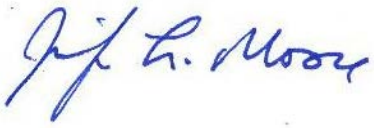
Farallon PN: 1303-001

For:
Washington State Department of Ecology
Toxics Cleanup Program
300 Desmond Drive Southeast, Lacey
PO Box 47775
Olympia, Washington 98504-7775

On Behalf of:
Gig Harbor Sportsman's Club
c/o Mr. Clark Davis
Davis Law Office, PLLC
7525 Pioneer Way, Suite 101
Gig Harbor, Washington 98335

December 22, 2016

Prepared by:



Jennifer L. Moore
Associate Scientist

Reviewed by:

Peter Jewett, L.G., L.E.G.
Principal Engineering Geologist

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1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this Revised Sampling and Analysis Plan (Revised SAP) on behalf of the Gig Harbor Sportsman's Club (GHSC) in accordance with the requirements of Agreed Order No. DE 12803 entered into by GHSC and the Washington State Department of Ecology (Ecology) in November 2015, and in accordance with the Washington State Model Toxics Control Act Cleanup Regulation, as established in Chapter 173-340 of the Washington Administrative Code (WAC 173-340). This Revised SAP was prepared to incorporate additional scope items into the Remedial Investigation (RI) that were requested by the new Ecology Site Manager, Mr. Matt Morris, during a meeting with Farallon at the Ecology office in Lacey, Washington on October 26, 2016, and after his review of the *Final Remedial Investigation/Feasibility Study Work Plan, Gig Harbor Sportsman's Club, 9721 Burnham Drive Northwest, Gig Harbor, Washington* dated August 30, 2016, prepared by Farallon (RI/FS Work Plan). Sampling conducted under this Revised SAP will also be conducted in accordance with the Washington State Sediment Management Standards, as established in WAC 173-204.

The purpose of the Revised SAP is to provide details pertaining to surface water, soil, surface sediment, and groundwater sampling and analysis for the RI to be conducted at the GHSC property at 9721 Burnham Drive Northwest in Gig Harbor, Washington (herein referred to as the GHSC Property) (Figure 1) and meets the requirements for a Sampling and Analysis Plan as defined in WAC-173-340-820 and WAC 173-204-600. The scope of the RI is discussed further in the RI/FS Work Plan and in the *Remedial Investigation and Feasibility Study Work Plan Addendum* dated December XX, 2016, prepared by Farallon (RI/FS Work Plan Addendum). This Revised SAP summarizes the standards and procedures to be followed for field quality control, and surface water, soil, surface sediment, and groundwater sample collection and analysis. Quality assurance and quality control (QA/QC) procedures and samples discussed in this Revised SAP are further detailed in the Quality Assurance Project Plan provided in Appendix C of the RI/FS Work Plan.

2.0 BACKGROUND

The GHSC Property includes an outdoor open firing range, shooting berms, and an office building and a storage building constructed in 1950 (Pierce County Assessor-Treasurer's Office 2015). The GHSC Property comprises approximately 35 acres on Pierce County Parcel Nos. 0222313044 and 0222314016 (Figure 2). The GHSC Property is primarily wooded, with the exceptions of an open grass field that comprises the shotgun firing range (shotgun range), buildings, and a bermed firing range for the use of pistols and rifles (rifle and pistol range) on the central and western portions of the GHSC Property. The use of the surrounding area is mixed commercial and residential. GHSC has been in operation since 1947.

An unnamed intermittent stream (herein referred to as the North Creek Tributary) traverses the eastern portion of the GHSC Property (Figure 2). The North Creek Tributary flows into North Creek, south of the GHSC Property. North Creek is a perennial salmon-bearing stream that flows to Gig Harbor in Puget Sound (Ecology 2008).

Current and historical operation of GHSC may have resulted in releases to the environment of hazardous substances, including the metals lead, arsenic, copper, zinc, and antimony from shot, bullets, and bullet jackets, and polycyclic aromatic hydrocarbons (PAHs) from commonly used clay targets. The nature and extent of these hazardous substances, which have been identified as the constituents of potential concern (COPCs) for the RI, have not been adequately assessed. The COPCs are further discussed in the RI/FS Work Plan. The purpose of the RI is to characterize the nature and extent of COPCs resulting from current and historical operation of GHSC, and to provide sufficient information to conduct a feasibility study to assess technically feasible cleanup alternatives for the GHSC Property.

3.0 SAMPLING PROCEDURES

This section details the sampling standards and procedures that will be applied in conducting the RI, presented below by potential media of concern. Samples collected as part of the RI will be submitted to OnSite Environmental Inc. of Redmond, Washington under standard chain-of-custody protocols for analysis according to the procedures described below. Samples analyzed for metallic COPCs will first be analyzed for arsenic, lead, and copper (Tier 1 analytes). If one or more of the Tier 1 analytes is detected at a concentration exceeding applicable screening levels, then the sample will also be analyzed for antimony, zinc, iron, and tin (Tier 2 analytes).

3.1 SURFACE WATER SAMPLING AND ANALYSIS

Surface water samples will be collected from the North Creek Tributary and North Creek at locations across GHSC and upstream and downstream areas (Figure 3), including a new upstream surface water sampling location added to a portion of the North Creek Tributary proximate to the bridge on Sentinel Drive that crosses the North Creek Tributary, northeast of the GHSC Property. The samples will be collected during the wet season between October and April, when there is more consistent flow in both of the creek channels. Additional surface water samples may be collected where surface water enters the creek channels to refine potential source areas for detections of COPCs in surface water samples collected from within the creek channels.

A surface water sample will be collected from the discharge area for the catch basin in the rifle and pistol range. This discharge area is on the western portion of the GHSC Property, proximate to the rifle and pistol range.

3.1.1 Surface Water Sample Identification

The surface water samples will be assigned a unique sample identifier, including the name of the sample location, the medium sampled, and the date the sample was collected (e.g., SD1-SW-010116). The sample identifier will be placed on the sample label, the Field Report form, Sample Summary forms, and the Chain of Custody form.

3.1.2 Surface Water Sample Collection and Handling Procedures

The surface water samples will be collected and handled in accordance with the procedures listed below:

- The samples will be collected by dipping a laboratory-supplied sample container directly into the center of the stream channel flow.
- Care will be taken not to handle the seal or inside cap of the container when the sample is placed into the containers, and the seals/caps will be secured.
- The sample container will be labeled with the medium (surface water), date, time sampled, sample identification and number, project name, project number, and sampler's initials.
- The sample will be logged on a Chain of Custody form and placed into a chilled cooler for transport to the laboratory under chain-of-custody protocols.

- Disposable sampling and health and safety supplies and equipment will be discarded in an appropriate waste dumpster.
- The depth of the flowing water at each surface water sample location will be measured, staked, and surveyed using a portable global positioning system (GPS), and plotted on a scaled drawing. Digital photographs of each location will be taken.

Surface water samples will be analyzed for total and dissolved Tier 1 and Tier 2 analytes, as applicable, by U.S. Environmental Protection Agency (EPA) Method 200.8; for hardness by Method SM 2340B; for PAHs by EPA Method 8270D; and for turbidity by EPA Method 180.1. Additional water quality parameters, including pH, conductivity, and temperature, will be obtained in the field using a Horiba multiparameter probe. The results from the surface water sampling will be evaluated; if COPCs are detected at concentrations exceeding preliminary screening levels, an additional phase of investigation will be required to evaluate the nature and extent of contamination in surface water.

3.2 SOIL SAMPLING AND ANALYSIS

Soil samples will be collected from 42 boring locations in the shotgun range; the rifle and pistol range; and wooded areas on the northern, eastern, and southern portions of the GHSC Property; and on properties east-adjacent to the GHSC Property boundary that could be affected by historical operations of GHSC (Figure 3). Thirty-eight of the borings will be advanced to a total depth of 5 feet below ground surface (bgs), and four of the borings will be advanced to a total depth of approximately 25 feet bgs for the installation of monitoring wells.

Soil cores from each of the 42 borings, including the borings that will be converted to monitoring wells, will be field-screened for evidence of contamination, including odor, the presence of debris related to current and historical operations of GHSC, photoionization detector measurements, and/or staining. A representative portion of each soil sample will be spread across a clean sheet of white paper to inspect the soil for debris such as bullets, bullet fragments, metal shot, bullet jackets, and clay target pieces. Soil samples from areas with visible debris will be homogenized in the field and submitted to the analytical laboratory for analysis. Soil samples will be collected from depths of 0 (ground surface), 0.5, 1.0, and 2.0 feet bgs, and the maximum depth of 5.0 feet bgs. If evidence of contamination is noted during field-screening, additional soil samples will be collected in the boreholes for the monitoring wells at depths below 5 feet bgs. One set of soil samples will be collected from the saturated zone of each monitoring well borehole and submitted to the laboratory for analysis.

3.2.1 Soil Sample Identification

The soil samples will be assigned a unique sample identifier, including the name of the sample location, the depth at which the soil sample was collected in feet bgs, and the date the soil sample was collected (e.g., FB1-1.5-010116). The sample identifier will be placed on the sample label, the Field Report form, Sample Summary forms, and the Chain of Custody form.

3.2.2 Soil Sample Collection and Handling Procedures

The soil samples will be collected and handled in accordance with the procedures listed below:

- The samples will be collected from the sample liner or decontaminated hand-auger using decontaminated stainless-steel utensils, and placed into a decontaminated stainless-steel mixing bowl. Non-dedicated sampling equipment will be decontaminated between uses, as appropriate.
- Information will be logged during each sampling event, including at a minimum: sample depth or elevation, Unified Soil Classification System description, soil moisture, and visual and olfactory indications of potential contamination.
- The soil sample will be thoroughly homogenized using decontaminated stainless-steel utensils until the sample is uniform in texture and color.
- The homogenized sample will be placed into certified pre-cleaned sample jars for the specified analyses. Care will be taken not to handle the seal or inside cap of the jar when the sample is placed into the container, and the seal/cap will be secured.
- The sample container will be labeled with the medium (soil), date, time sampled, sample identification and number, project name, project number, and sampler's initials.
- The sample will be logged on a Chain of Custody form and placed into a chilled cooler for transport to the laboratory under chain-of-custody protocols.
- Disposable sampling and health and safety supplies and equipment will be discarded in an appropriate waste dumpster.
- The position of each boring location will be recorded using a portable GPS and plotted on a scaled drawing. Digital photographs will be taken periodically to document soil sampling progress and locations.

Soil samples will be analyzed for Tier 1 and Tier 2 analytes, as applicable, by EPA Method 6020 and pH by EPA Method 9045D. A subset of the soil samples collected in areas where clay targets have been used will be analyzed for PAHs using EPA Method 8270D. Select soil samples may be prepared using Synthetic Precipitation Leaching Procedures by EPA Method 1312 to assess the leaching potential of metallic COPCs present at the GHSC Property. Following evaluation of soil sampling results, an additional phase of investigation may be conducted to evaluate the nature and extent of contamination in soil if the lateral or vertical extent of contamination has not been adequately delineated.

3.3 SEDIMENT SAMPLING AND ANALYSIS

Sediment samples will be collected from the creek beds of the North Creek Tributary and North Creek (Figure 3) in accordance with the guidance provided in the *Sediment Cleanup Users Manual II* dated March 2015, prepared by Ecology. Sediment sample locations will include a new upstream sediment sampling location added to a portion of the North Creek Tributary proximate to the bridge on Sentinel Drive that crosses the North Creek Tributary, northeast of the GHSC

Property. A sediment/soil sample also will be collected from the discharge area for the catch basin in the rifle and pistol range. This discharge area is on the western portion of the GHSC Property, proximate to the rifle and pistol range. The sediment samples will be collected proximate to the corresponding surface water samples using a sediment hand-corer with a Lexan sample liner or a reusable stainless-steel sample tip or a decontaminated stainless-steel trowel as described in Section 3.3.2, Sediment Sample Collection and Handling Procedures.

3.3.1 Sediment Sample Identification

The sediment samples will be assigned a unique sample identifier, including the name of the sample location, the medium sampled, and the date the surface sediment sample was collected (e.g., SD1-SS-010116). The sample identifier will be placed on the sample label, the Field Report form, Sample Summary forms, and the Chain of Custody form.

3.3.2 Sediment Sample Collection and Handling Procedures

The sediment samples will be collected and handled in accordance with the procedures listed below:

- Sediment samples will be collected during low-flow or dry conditions if possible, but not so long after a rainfall that the streambed and surrounding soil cannot be differentiated.
- If there is overlying water at the sample location, sediment samples will be collected using a sediment hand-corer and the water will be carefully siphoned off of the top of the sediment sample immediately after collection, taking care to not lose any overlying fine-grained material.
- If there is no overlying water at the sample location (e.g., intermittent stream locations), sediment samples will be collected using a stainless-steel trowel.
- The samples will be collected from the sample liner or decontaminated stainless-steel sampling tip using decontaminated stainless-steel utensils, and placed into a decontaminated stainless-steel mixing bowl and thoroughly homogenized prior to being placed in laboratory supplied certified-clean sample containers. Reusable non-dedicated sampling equipment will be decontaminated between uses, as appropriate.
- Information will be logged during each sampling event, including at a minimum: sample depth or elevation, Unified Soil Classification System description, presence of debris and/or organisms, sediment moisture, and visual and olfactory indications of potential contamination.
- The sediment sample will be thoroughly homogenized using decontaminated stainless-steel utensils until the sample is uniform in texture and color.
- The homogenized sample will be placed into certified pre-cleaned sample jars for the specified analyses.
- Care will be taken not to handle the seal or inside cap of the jar when the sample is placed into the sample containers, and the seals/caps will be secured.

- The sample jar will be labeled with the medium (sediment), date, time sampled, sample identification and number, project name, project number, and sampler's initials.
- The sample will be logged on a Chain of Custody form and placed into a chilled cooler for transport to the laboratory under chain-of-custody protocols.
- Disposable sampling and health and safety supplies and equipment will be discarded in an appropriate waste dumpster.
- The location of each sediment sample will be staked, surveyed using a portable GPS, and plotted on a scaled drawing. Digital photographs of each location will be taken.

If the sampling location consists of a rocky streambed, the Farallon Field Scientists will search for natural depositional areas to sample where finer-grained sediments have settled as those sediments will contain the highest concentrations of contaminants, and may also be areas where shot has come to rest. If there is any standing water, appropriate sampling procedures and equipment will be used to ensure that an intact sample is collected and that surface fines are not washed away. If there are no areas without mixed rocks and fines, Farallon Field Scientists will select sampling locations that appear to contain the highest ratio of fines to mixed rocks within the vicinity of the planned sample locations.

If the sampling location is not easily distinguished from the surrounding soil and/or has deep sediments, the total sampling depth will be selected based on the following:

- Depth of any organisms observed;
- Depth of plant roots observed; and
- Depth of obvious changes in the soil (e.g., horizons, soil types, anaerobic vs. aerobic).

An initial test pit will be hand-dug proximate to each planned sediment sampling location to determine the total sediment sample depth based on the depth of the biologically active zone and soil layers observed in the test pit, with the rationale recorded in the field notebook. Multiple layers will be collected for analysis as practicable at each sediment sampling location.

Each sediment sample will be analyzed for Tier 1 and Tier 2 analytes, as applicable, by EPA Method 6020; for total organic carbon by EPA Method 9060A; for PAHs by EPA Method 8270D; and for particle size by Puget Sound Estuary Protocols (EPA – Region 10 1996) and/or American Society for Testing and Materials Standard D-422 methods. Following evaluation of sediment sample results, an additional phase of investigation may be required to evaluate the nature and extent of contamination in surface sediment if metals or PAHs are detected at concentrations exceeding sediment preliminary screening levels.

3.4 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater samples will be collected from each of the four monitoring wells that will be installed in the shotgun range and in the wooded area on the eastern portion of the GHSC Property (Figure 3).

3.4.1 Groundwater Sample Identification

The groundwater samples will be assigned a unique sample identifier, including the name of the sample location and the date the groundwater sample was collected (e.g., MW1-010116). The sample identifier will be placed on the sample label, the Field Report form, Sample Summary forms, and the Chain of Custody form.

3.4.2 Groundwater Sample Collection and Handling Procedures

The groundwater samples will be collected and handled in accordance with the procedures listed below:

- The samples will be collected from the monitoring wells in accordance with standard EPA low-flow groundwater sampling procedures. Each monitoring well will be purged using a bladder pump at flow rates of between 100 and 300 milliliters per minute. Groundwater geochemical parameters, including temperature, pH, specific conductivity, dissolved oxygen, and oxidation-reduction potential, will be recorded approximately every 3 minutes during purging using a Yellow Springs Instrument or Horiba multi-parameter meter equipped with a flow-through cell.
- The tubing intake will be placed at the approximate middle of the water column in each monitoring well.
- Following stabilization of the geochemical parameters, groundwater samples will be collected directly from the pump outlet in accordance with the EPA – Region 1 (1996) guidance for low-flow purging and sampling. If a monitoring well is completely dewatered during purging, samples will be collected after sufficient recharge has occurred to allow filling of all sample containers.
- Groundwater samples will be decanted directly into laboratory-supplied sample containers, with care taken to minimize turbulence. Care will be taken to not handle the seal or lid of the container when the sample is placed into the container. Each container will be filled to eliminate headspace, and the seal/lid will be secured.

Groundwater samples will be analyzed for total and dissolved Tier 1 and Tier 2 analytes, as applicable, by EPA Method 6020, and for PAHs using EPA Method 8270D. Following evaluation of groundwater sampling results, an additional phase of investigation may be conducted to evaluate the nature and extent of contamination in groundwater if the lateral or vertical extent of contamination has not been adequately delineated.

3.5 STORMWATER SAMPLING AND ANALYSIS

Ecology requested that a stormwater sample be collected from the stormwater retention pond proximate to the rifle range (Figure 3) during a meeting with Farallon on October 26, 2016. The stormwater sample will be collected from a safely accessible portion of the stormwater retention pond. The sample will be collected during the same time period when the borings are advanced in the rifle range.

3.5.1 Stormwater Sample Identification

The stormwater sample will be assigned a unique sample identifier, including the name of the sample location, the medium sampled, and the date the sample was collected (e.g., P1-STW-010116). The sample identifier will be placed on the sample label, the Field Report form, Sample Summary forms, and the Chain of Custody form.

3.5.2 Stormwater Sample Collection and Handling Procedures

The stormwater sample will be collected and handled in accordance with the procedures listed below:

- The sample will be collected by dipping a laboratory-supplied sample container directly into the stormwater retention pond using a sampling pole.
- Care will be taken not to handle the seal or inside cap of the container when the sample is placed into the containers, and the seal/cap will be secured.
- The sample container will be labeled with the medium (stormwater), date, time sampled, sample identification and number, project name, project number, and sampler's initials.
- The sample will be logged on a Chain of Custody form and placed into a chilled cooler for transport to the laboratory under chain-of-custody protocols.
- Disposable sampling and health and safety supplies and equipment will be discarded in an appropriate waste dumpster.
- The approximate location of the stormwater sample will be surveyed using a portable GPS and plotted on a scaled drawing. Digital photographs of each location will be taken.

The stormwater sample will be analyzed for total and dissolved Tier 1 and Tier 2 analytes, as applicable, by EPA Method 200.8; for PAHs by EPA Method 8270D; and for turbidity by EPA Method 180.1. pH will be measured using a calibrated pH meter. The results from the stormwater sampling will be provided to Ecology. No further sampling is planned, because this stormwater is contained within a stormwater retention pond and is not expected to affect any of the media of potential concern.

4.0 QUALITY ASSURANCE AND QUALITY CONTROL

The QA/QC procedures presented in this section are in accordance with the Quality Assurance Project Plan provided in Appendix C of the RI/FS Work Plan.

4.1 EQUIPMENT DECONTAMINATION PROCEDURES

Reusable/non-dedicated equipment used in the collection of and in direct contact with soil, surface water, and/or surface sediment samples will be decontaminated prior to arrival at the GHSC Property, between samples collected, upon transition between sample locations, and upon exit from the GHSC Property as described below. The equipment will be:

- Rinsed and pre-cleaned with potable or distilled water;
- Washed in a solution of laboratory-grade non-phosphate based soap (i.e., Liquinox);
- Rinsed three times with potable or distilled water;
- Rinsed three times with laboratory-grade distilled deionized water; and
- Air dried.

If decontaminated equipment is not immediately used, it will be wrapped in aluminum foil (dull side facing the equipment) to prevent re-contamination.

The field technicians will wear disposable powder-free nitrile gloves during sample collection and processing. The gloves will be replaced between each sample interval to minimize potential cross-contamination of samples.

4.2 FIELD QUALITY CONTROL SAMPLES

Field quality control samples for this investigation will include field split samples, equipment wipes and wipe blanks for soil and surface sediment samples, and equipment rinsate and deionized distilled water blanks for surface water samples.

4.2.1 Field Duplicate Samples

Field duplicate samples will be collected and analyzed to assess the variability associated with sample processing. Blind field duplicate samples will be collected at a minimum frequency of 1 for every 20 field samples processed for each sample medium. One field duplicate sample will be collected from each sample medium with fewer than 20 samples.

4.2.2 Equipment Wipes and Wipe Blanks

Equipment wipe samples will be collected to help identify possible contamination from the sampling environment or from sampling equipment. Equipment wipe samples will consist of clean ashless filter papers supplied by the analytical laboratory, and will be collected at a minimum frequency of 1 for every 20 soil or surface sediment samples processed for each type of reusable non-dedicated equipment in direct contact with the soil and/or surface sediment being collected.

Equipment wipes will be prepared by wiping down the decontaminated sampling equipment with the filter paper between sampling stations.

One equipment wipe sample will be prepared for each type of analysis conducted (e.g., one equipment wipe sample for metals and one for PAHs), because the equipment can be wiped down only once for each piece of filter paper. This procedure ensures that the filter wipe result represents the most-conservative estimate of cross-contamination for each analysis type. (Note: Filter papers will be stored in pre-cleaned glass jars supplied by the analytical laboratory. Filter papers should not be stored in plastic bags.)

Wipe blanks will be submitted to the analytical laboratory for evaluation of potential background concentrations present in the filter papers used for the equipment wipes. Wipe blanks will be collected at a minimum frequency of one for each lot number of filter papers used for collecting the equipment wipes. Wipe blanks will be archived pending receipt of analytical results for the equipment wipe samples.

4.2.3 Equipment Rinsate and Deionized Distilled Water Blanks

One equipment rinsate sample will be collected for the eight surface water samples collected from the GHSC Property. If additional surface water sampling events are conducted, one equipment rinsate sample will be collected at a minimum frequency of one for every surface water sample event. One deionized distilled water blank will be collected for each equipment rinsate sample to evaluate potential background concentrations present in the laboratory-grade deionized distilled water used for the equipment rinsate samples.

5.0 REFERENCES

Pierce County Assessor-Treasurer's Office. 2015. Current Property Appraisal Report for Parcel Nos. 0222313044 and 0222314016. <http://epip.co.pierce.wa.us/cfapps/atr/epip/search.cfm>. (August 11, 2015.)

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Washington State Department of Ecology (Ecology). 2008. *Lead and Copper Concentrations In North Creek, Gig Harbor*. Publication No. 08-03-038. December.

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6.0 LIMITATIONS

6.1 GENERAL LIMITATIONS

The conclusions contained in this report/assessment are based on professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location. The conclusions contained herein are subject to the following inherent limitations:

- **Accuracy of Information.** Farallon obtained, reviewed, and evaluated certain information used in this report/assessment from sources that were believed to be reliable. Farallon's conclusions, opinions, and recommendations are based in part on such information. Farallon's services did not include verification of its accuracy or authenticity. Should the information upon which Farallon relied prove to be inaccurate or unreliable, Farallon reserves the right to amend or revise its conclusions, opinions, and/or recommendations.
- **Reconnaissance and/or Characterization.** Farallon performed a reconnaissance and/or characterization of the GHSC Property that is the subject of this report/assessment to document current conditions. Farallon focused on areas deemed more likely to exhibit hazardous materials conditions. Contamination may exist in other areas of the GHSC Property that were not investigated or were inaccessible. Activities at the GHSC Property beyond Farallon's control could change at any time after the completion of this report/assessment.

For the foregoing reasons, Farallon cannot and does not warrant or guarantee that the GHSC Property is free of hazardous or potentially hazardous substances or conditions, or that latent or undiscovered conditions will not become evident in the future. Farallon's observations, findings, and opinions can be considered valid only as of the date of the report hereof.

This report/assessment has been prepared in accordance with the contract for services between Farallon and the Gig Harbor Sportsman's Club, and currently accepted industry standards. No other warranties, representations, or certifications are made.

6.2 LIMITATION ON RELIANCE BY THIRD PARTIES

Reliance by third parties is prohibited. This report/assessment has been prepared for the exclusive use of the Gig Harbor Sportsman's Club to address the unique needs of the Gig Harbor Sportsman's Club at the GHSC Property at a specific point in time. Services have been provided to the Gig Harbor Sportsman's Club in accordance with a contract for services between Farallon and the Gig Harbor Sportsman's Club, and generally accepted environmental practices for the subject matter at the time this report was prepared.

No other party may rely on this report unless Farallon agrees in advance to such reliance in writing. Any use, interpretation, or reliance upon this report/assessment by anyone other than the Gig Harbor Sportsman's Club is at the sole risk of that party, and Farallon will have no liability for such unauthorized use, interpretation, or reliance.

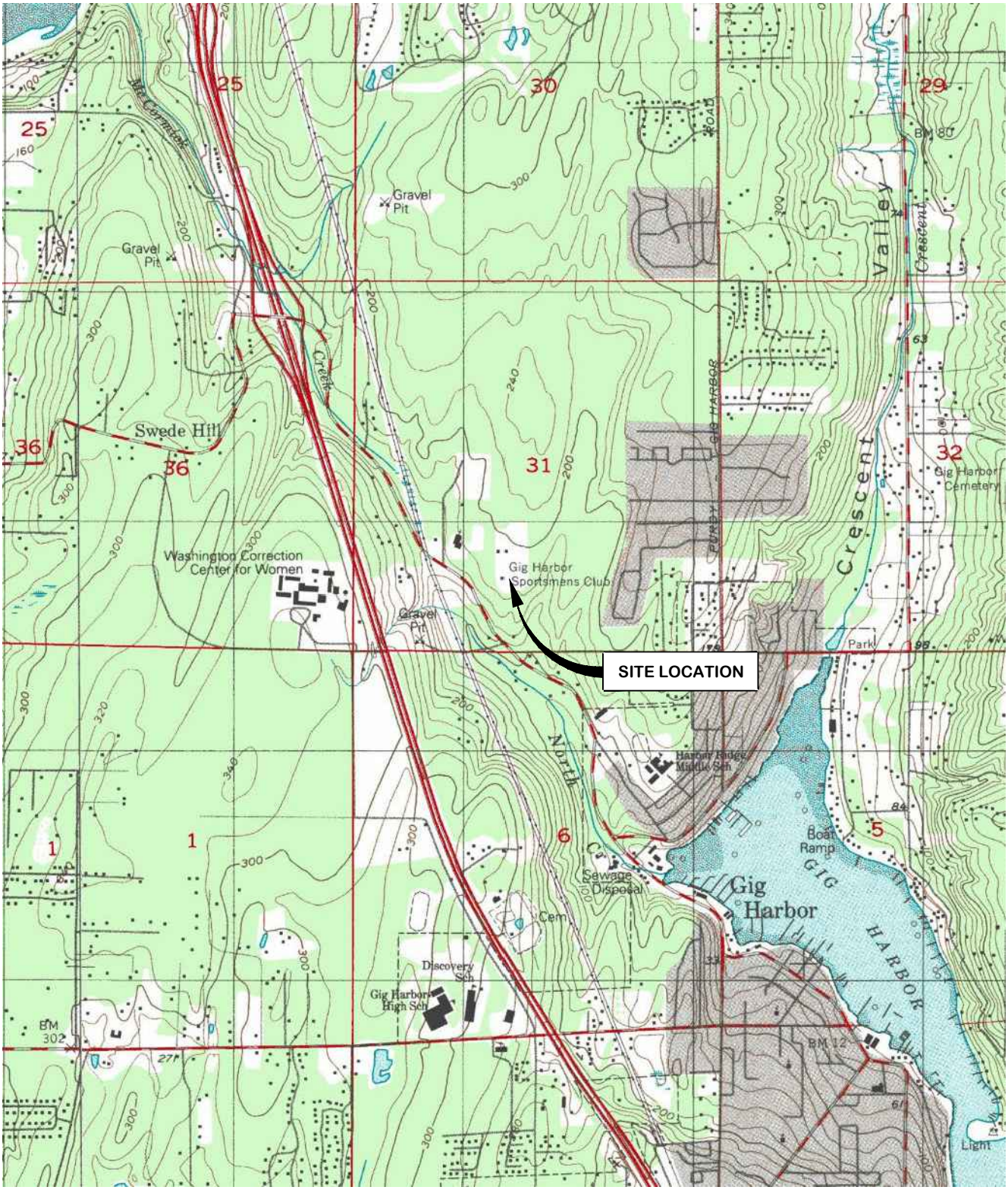
Do not rely on this report/assessment if:

- It was not prepared for you;
- It was not prepared for your project;
- It was not prepared for your specific property; or
- It was not prepared under an approved scope of work for which you are under contract with Farallon.

FIGURES

SAMPLING AND ANALYSIS PLAN
Gig Harbor Sportsman's Club
9721 Burnham Drive Northwest
Gig Harbor, Washington

Farallon PN: 1303-001



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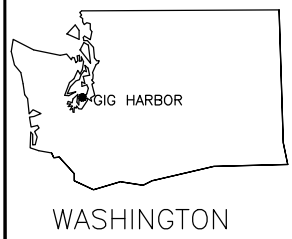

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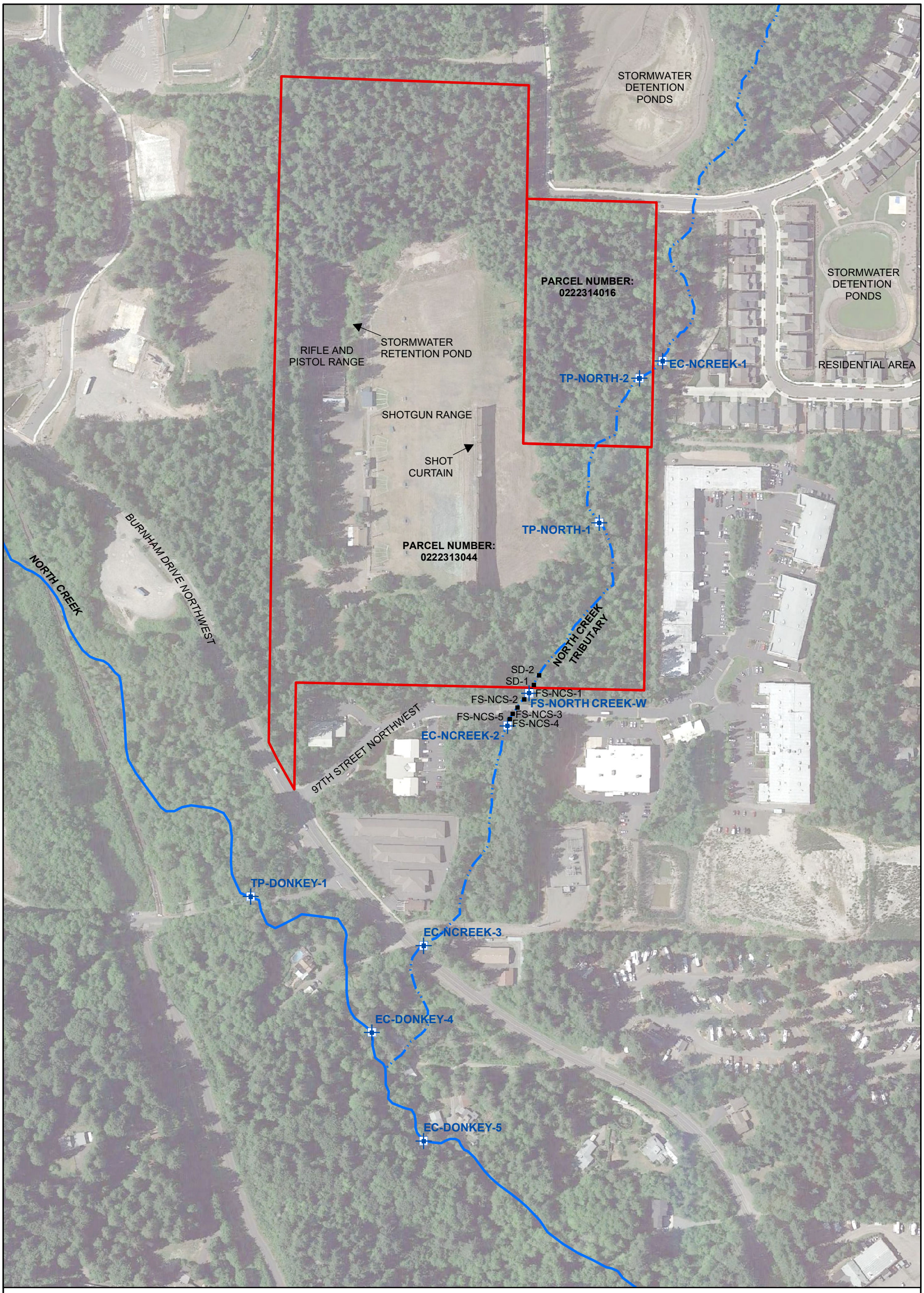
FIGURE 1

SITE VICINITY MAP
GIG HARBOR SPORTSMAN'S CLUB
9721 BURNHAM DR NW
GIG HARBOR, WASHINGTON

FARALLON PN: 1303-001

Drawn By: DEW Checked By: JM Date: 11/12/2015 Disk Reference: 1303-001



LEGEND

- PARCEL BOUNDARY
- SURFACE WATER SAMPLE LOCATION
- SEDIMENT SAMPLE LOCATION

N

0 250

SCALE IN FEET

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FIGURE 2

SITE PLAN SHOWING HISTORICAL
SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS
GIG HARBOR SPORTMAN'S CLUB
9721 BURNHAM DRIVE NORTHWEST
GIG HARBOR, WASHINGTON

FARALLON PN: 1301-001

Drawn By: pgarvin | Checked By: | Date: 12/1/2016 | Disc Reference:

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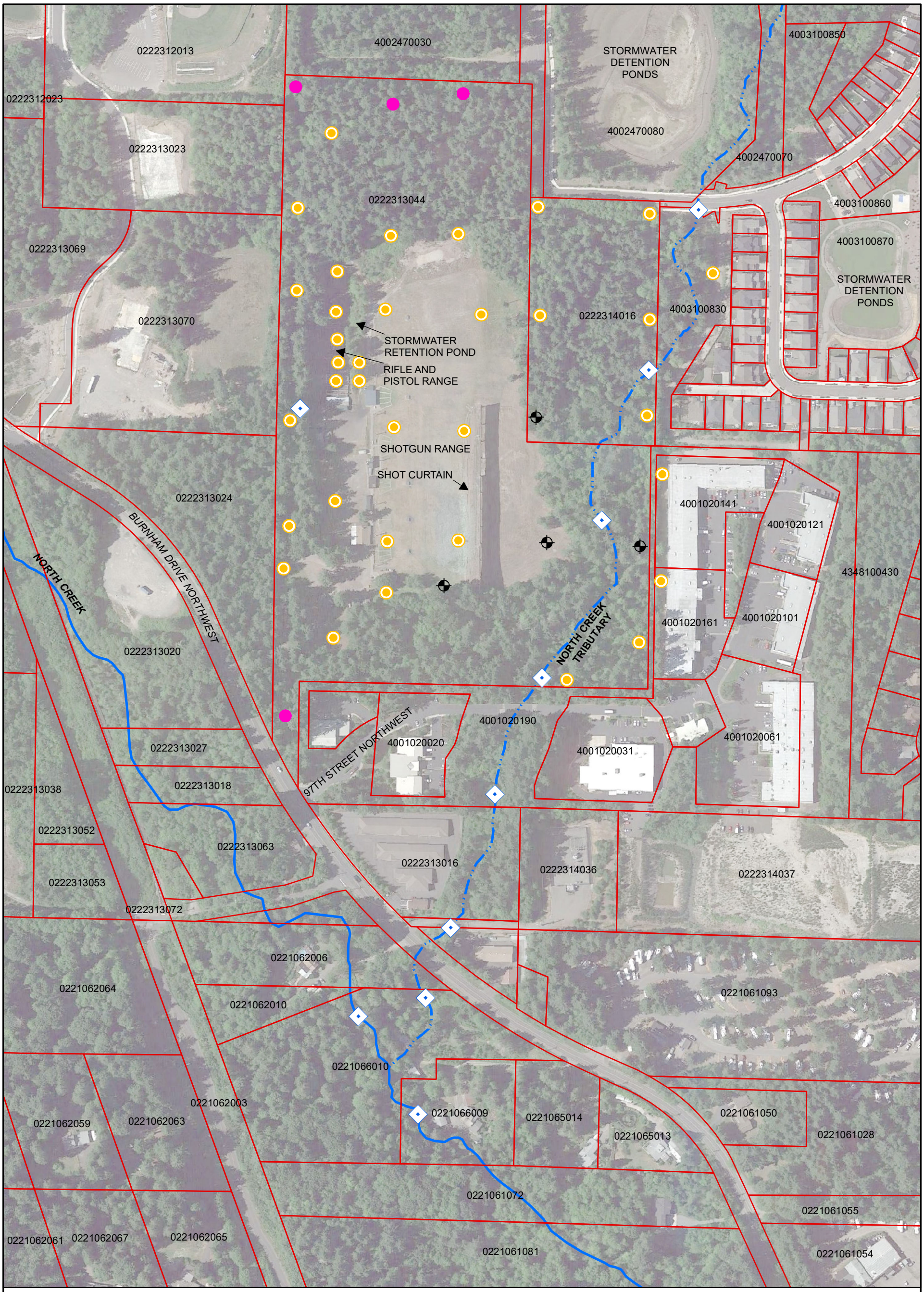

LEGEND

- PARCEL BOUNDARY
- PROPOSED BACKGROUND BORING LOCATIONS
- PROPOSED BORING LOCATIONS
- PROPOSED MONITORING WELL LOCATIONS
- PROPOSED LOCATION OF SOIL/SEDIMENT AND SURFACE WATER SAMPLES

0 250

SCALE IN FEET

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FIGURE 3

SITE PLAN SHOWING
PROPOSED SAMPLE LOCATIONS
GIG HARBOR SPORTMAN'S CLUB
9721 BURNHAM DRIVE NORTHWEST
GIG HARBOR, WASHINGTON

FARALLON PN: 1303-001

Drawn By: pgarvin | Checked By: | Date: 12/1/2016 | Disc Reference:

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