July 24, 2012

Mr. John Bails
Washington State Department of Ecology
3190 160th Avenue Southeast
Bellevue, Washington 98008

RE: Sampling and Analysis Plan
Former B&B Radiator Property
151 12th Avenue, Seattle, Washington
RGI Project No. 2009-310C
Ecology VCP No: NW2586

Dear Mr. Bails:

The Riley Group, Inc. (RGI) has prepared this *Sampling and Analysis Plan* regarding the Former B&B Radiator Property located at 151 12th Avenue, Seattle, Washington (hereafter referred to as the Site).

Based on Ecology's Voluntary Cleanup Program (VCP) review, Ecology has requested additional indicated soil and groundwater quality data, specifically at the southern boundary line of the Site, in or order to determine whether or not the completed cleanup of the Site has met the substantive requirements of Model Toxics Control Act (MTCA).

PROJECT OBJECTIVES

The purpose of this scope of work is to evaluate soil and groundwater quality at the southern boundary line. The tasks to meet this project objective include performing a supplemental test probe investigation (along the southern boundary line) and sampling the two existing groundwater monitoring wells, as outlined below.

TEST PROBE SUBSURFACE INVESTIGATION

RGI will advance three test probes along the southern boundary line to a maximum depth of 12 feet below ground surface (bgs), or until shallow groundwater or refusal, is encountered, whichever is less. Test probes will be advanced by our drilling subcontractor using a Ford 550 truck mounted AMS PowerProbe 9630. A PowerProbe is a direct-push strataprobe. Proposed test probe locations are shown on Figure 2.

In addition, RGI will obtain a permit to temporarily close three to four parking spaces for one day for consultant and drill rig parking.

The actual number and/or location of soil borings completed will ultimately depend on actual conditions encountered during the subsurface investigation, and other unknown or unforeseen variables.

Soil Sampling

A continuous soil profile will be collected at all test probe locations. Soil samples will be collected from all soil boring locations, inspected and field screened for the presence of VOCs using a gas analyzer equipped with a photoionization detector (PID) and for diesel- and oil-range TPH using a water sheen test.

Samples collected for potential VOC analysis will be collected using the Washington State Department of Ecology-required 5035 sampling method.

At least one discrete soil sample from each test probe/soil boring will be collected every 2.5 to 5-foot sampling depth interval. Soil samples from each sampling interval will be collected for potential diesel-range TPH.

Soil conditions encountered will be described using the Unified Soil Classification System (USCS).

Groundwater Grab Sampling

RGI will attempt to collect shallow groundwater grab samples during the test probe investigation as outlined below.

If sufficient shallow groundwater is present, a groundwater grab sample will be collected down hole (either through the drive rods or through a temporarily installed 1-inch PVC well screen) using a disposal bailer.

Prior to collecting groundwater samples, field personnel will purge groundwater from each probe hole in an effort to remove turbid water from the borehole. RGI will purge each probe (bore) hole until a maximum of 3 gallons of water has been removed or until the purge water is visually clear, whichever comes first.

All purge water and decontamination water will be stored at the Site in a 55-gallon drum.

Standard Sampling Protocols

All samples will be collected in accordance with our standard operating and decontamination procedures. Samples will be placed in preconditioned, sterilized containers provided by an Ecology-accredited analytical laboratory.

All soil boring holes will be abandoned using hydrated bentonite chips and patched to match existing grade (gravel, ready mix concrete, or asphalt patch). All sampling equipment will be decontaminated using Alconox® soap and tap water between sampling events. In addition, the down hole test probe drilling equipment will be pressure washed and/or steam cleaned between boring locations.

GROUNDWATER MONITORING WELL SAMPLING

RGI will collect groundwater samples from the two existing groundwater monitoring wells (MW-1 and MW-2) located on the Site, following the procedures described below.

- Prior to purging and sampling wells, the headspace of each well will be screened for VOCs using a portable PID.
- Measure depth to static water from well TOC using an electronic water level meter.
- Each well will be purged using a peristaltic pump. At least three well casing volumes will be removed from each well prior to sampling. Purged water will be stored on-site in a 55-gallon drum and left on the Site. *Note: Due to very slow recharge rates for MW-1, purging may occur on one day and sampling of the well may occur on the second day.*
- Start-up times, PID readings, static depth to water measurements, groundwater recovery times, field parameters (pH, temperature and specific conductivity), volume and duration of the purging operations and other pertinent data will be recorded in a field data book.
- Following purging activities, each well will be left to recharge to at least 80 percent of its original water level prior to sampling. All wells will be sampled under low-flow conditions using a peristaltic pump with disposable tubing.
- Groundwater samples will be collected in laboratory-supplied, one-liter amber bottles and 40-milliliter vials with Teflon caps (no headspace). Sample containers will be placed in an ice-chilled cooler and transported to the analytical laboratory under proper chain-of-custody documentation.

Based on our telephone conversation on July 19, 2012, RGI understands that the installation of a third or additional groundwater monitoring well is not being required by Ecology at this time.

LABORATORY ANALYSIS

Soil and groundwater samples will be submitted for analytical testing to an Ecology-accredited, third-party laboratory for one or more of the following analyses:

- Gasoline-range TPH using Ecology Test Method NWTPH Gx
- Diesel and oil-range TPH using Ecology Test Method NWTPH Dx
- Benzene, ethylbenzene, toluene and xylene (BETX) using EPA Test Method 8021
- Extractable Petroleum Hydrocarbons (EPH) by Washington State Fractionation Methods.
- Volatile Petroleum Hydrocarbons (VPH) by Washington State Fractionation Methods.

DATA ANALYSIS AND REPORTING

RGI will prepare a report presenting our findings, conclusions, and recommendations (if any). Soil and groundwater analytical results will be compared to the following regulation:

- Ecology's MTCA Method A Cleanup Levels for Unrestricted Land Uses (WAC 173-340-900, Table 740-1) and the MTCA Method A Cleanup Levels for Ground Water (WAC 173-340-900, Table 720-1).
- Based on findings, RGI may compare TPH concentrations encountered in soils to Ecology's Method B Site Specific Cleanup Levels (WAC 173-340-705). Under Method B, site-specific and/or chemical specific information may be used to change certain assumptions to calculate different (site-specific) cleanup levels.

PROJECT LIMITATIONS

The project limitations or exclusions are as follows:

- Neither RGI nor its subcontractors will be held responsible for the repair or damage to any unmarked public or private underground utility.
- Other work not specifically stated in the preceding scope of work is not included in the scope of work or estimated project cost.

If you have any questions, or need additional information, please contact us at (425) 415-0551.

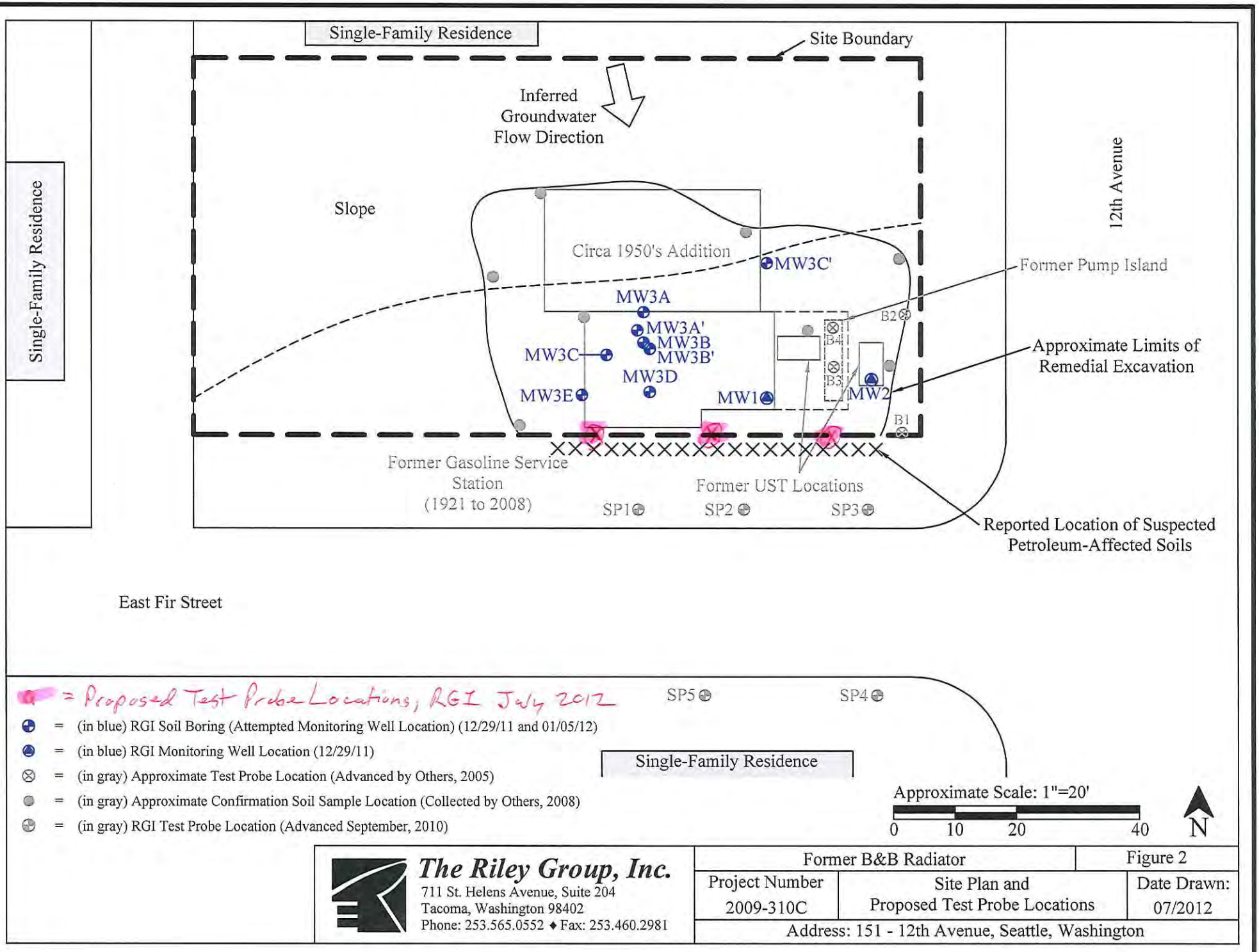
Sincerely,
THE RILEY GROUP, INC.

Frederick H. Becker, LG, LHG
Senior Project Manager

Paul D. Riley, LG, LHG
Principal

cc: *Ms. Laura Reifel (Umpqua Bank)*

Attachment: *Figure 2, Site Plan and Proposed Test Probe Locations*



The Riley Group, Inc.
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Former B&B Radiator		Figure 2
Project Number 2009-310C	Site Plan and Proposed Test Probe Locations	Date Drawn: 07/2012
Address: 151 - 12th Avenue, Seattle, Washington		