Geosyntec consultants

engineers | scientists | innovators

DATA GAPS INVESTIGATION WORK PLAN ADDENDUM 1 – Hydrogeological Characterization Well Installation

LOWER ISSAQUAH VALLEY
ISSAQUAH, WASHINGTON

Prepared for

The City of Issaquah
1775 – 12th Ave NW
Issaquah, WA 98027

Prepared by

Geosyntec Consultants, Inc.
520 Pike Street, Suite 2600
Seattle, Washington 98101

Project Number: PNG0989

November 2022

Data Gaps Investigation Work Plan Addendum 1 – Hydrogeological Characterization Well Installation

Lower Issaquah Valley
Issaquah, Washington

Prepared for

City of Issaquah, Washington
1775- 12th Ave NW
Issaquah, WA 98027

Prepared by

Geosyntec Consultants, Inc.
520 Pike Street, Suite 2600
Seattle, Washington 98101

Bob Anderson, LHG
Senior Principal Hydrogeologist

Cindy Bartlett, LG
Principal Geologist

Project Number: PNG0989

November 2022

Geosyntec consultants

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

CSM Conceptual Site Model

DAHP	Department of Archeology and Historical Preservation
Ecology	Washington State Department of Ecology
ft bgs	feet below ground surface
Geosyntec	Geosyntec Consultants, Inc.
HASP	Health & Safety Plan
IAA	Interagency Agreement
IDP	Inadvertent Discovery Plan
IDW	Investigation-derived waste
LIV	Lower Issaquah Valley
NTUs	nephelometric turbidity units
PFAS	per- and polyfluoroalkyl substances
PFBS	perfluorobutanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFHxS	perfluorohexanesulfonic acid
PID	photoionization detector
POTW	Publicly Owned Treatment Works
PVC	polyvinylchloride
QAPP	Quality Assurance Project Plan
SOP	Standard Operating Procedures
SPWD	Sammamish Plateau Water and Sewer District
THAs	Task Hazard Analyses
USCS	United Soil Classification System
VOCs	volatile organic compounds

1. INTRODUCTION

The Per-and Poly-Fluoroalkyl Substances Data Gaps Investigation Work Plan (Work Plan) was prepared by Farallon for Eastside Fire and Rescue in July 2022 as part of the Interagency Agreement (IAA) for the Lower Issaquah Valley Partnership. This Hydrogeological Characterization Work Plan is an addendum (Work Plan Addendum) to the Work Plan and has been prepared by Geosyntec Consultants, Inc. (Geosyntec) on behalf of the City of Issaquah. This Work Plan Addendum describes installation of one deep groundwater monitoring well to collect geologic and hydrogeologic information and per-and poly-fluoroalkyl substances (PFAS) data. These data will be used to refine the Conceptual Site Model (CSM) and groundwater MODFLOW model.

This work will be completed following the procedures outlined in the Work Plan and its appendices, including:

- Work Plan Appendix A - Quality Assurance Project Plan (QAPP).
- Work Plan Appendix B - Inadvertent Discovery Plan (IDP).
- Work Plan Appendix C - Standard Operating Procedures.
- Work Plan Appendix D - Field Forms. Field forms will generally mirror these forms but will be Geosyntec forms.

1.1 Purpose

The purpose of this Work Plan Addendum is to describe proposed additional well installation and sampling procedures that will be performed under IAA No. C2200183. The rationale for the well location and CSM data gaps were described in the CSM Report (Geosyntec, November 2022). The proposed monitoring well location is shown on Figure 1.

1.2 Previous Investigations and Background

The project background and prior investigations were described in the Work Plan. Five monitoring wells were installed in August 2022 by Farallon. The new monitoring well proposed in this Work Plan Addendum will be co-located with or nearby existing monitoring wells.

1.3 Scope of Work Overview

The scope of work included in this Work Plan Addendum includes the following:

- Installation of one monitoring well to a maximum depth of three-hundred (300) feet below ground surface (bgs);
- Observation and sampling of the deeper portions of the A Zone Aquifer and Deep Aquitard (deep silt);

- Collection of grab-groundwater samples during drilling to characterize the vertical changes in PFAS concentrations in the deeper portion of the A Zone Aquifer and Deep Aquitard;
- Collocation of soil samples from the deeper portion of the A Zone Aquifer and Deep Aquitard to provide data to evaluate potential diffusion through the Aquitard;
- Development of the newly installed monitoring well;
- Incorporation of the newly installed monitoring wells into the quarterly sampling schedule for the Lower Issaquah Valley (LIV) that is implemented by Farallon; and
- Coordination and disposal of investigation-derived waste (IDW) characterization and off-site disposal.

2. TASK 1 - MONITORING WELL DRILLING, INSTALLATION, AND SAMPLING

Task 1 includes drilling, installation, and development of the monitoring well and collection of baseline groundwater quality samples in the LIV. The proposed monitoring well location is shown in Figure 1. The location of the well was determined based on flow paths to City Well 4 (COI-PW04), as described in the CSM Report (Geosyntec, November 2022), PFAS results from the new wells installed in August 2022 (Farallon, October 2022), and accessibility for drilling (i.e. utility clearance).

2.1 Pre-Field Activities

2.1.1 Notification and Coordination with Tribes and the Department of Archeology and Historical Preservation (DAHP)

Prior to the investigation, a site walk will be conducted by Geosyntec and representatives from the City to identify potential well locations. If required, the well location will be submitted to the Washington State Department of Ecology (Ecology) to share with the Tribes and the DAHP for their review of the proposed monitoring well location and general work areas. A map of well location will be sent to a DAHP representative at least one month prior to the implementation of drilling activities.

2.1.2 Notification and Coordination with Other Public and Private Entities

Coordination with the City and private landowners will be completed to identify private underground utilities and obtain concurrence on proposed drilling locations. In addition, coordination will be needed with the City for traffic control and permits, if required, and temporary storage of IDW.

2.1.2.1 Utility Clearance

A Washington Utility Ticket will be called in (811) prior to the investigation. In addition, Geosyntec will work with a private utility locator to identify underground utilities in the area of the planned monitoring well. The monitoring well location will be adjusted in the field as needed based on utility locations.

2.1.3 Coordination with Subcontractors

Subcontractors will include an analytical laboratory and drilling subcontractors. Prior to fieldwork, Geosyntec will coordinate with the laboratory to determine appropriate analytical methods, sample containers and preservation, reporting limits, and data reporting packages. Geosyntec will also coordinate with the drilling subcontractor to determine the drilling schedule, staging, sequencing, water sampling strategies during drilling, and well construction specifications.

2.1.4 Health & Safety

Prior to field activities, a project-specific HASP was prepared (Appendix A). Task Hazard Analyses (THAs) will also be prepared to evaluate specific tasks.

2.2 Well Locations and Drilling Methodology

One new groundwater monitoring well (NLS-MW03) will be installed as follows:

- Location: The well will be installed in the southeast portion of Salmon Run Nature Park near existing wells COI-MW05, IES-MW07, and IES-MW12. The well will provide hydrogeologic information along the flow path to COI-PW04, from the Shallow and A Zone Aquifers, and the Deep Aquitard.
- Screen Interval: It is anticipated that the monitoring well will be screened in the deep A Zone Aquifer above the silt aquitard (if encountered) or in the upper B Zone Aquifer below the silt aquitard, depending on the depth the silt is encountered. The priority will be to install the well in the upper B Zone Aquifer if it is encountered within the planned drilling depths. If a distinct silt aquitard is not encountered or if it does not correlate with the aquitard logged at COI-PW05, the well will be completed at the bottom of the boring (i.e., 300 feet bgs).

Drilling and monitoring well installation will be performed by a Washington-licensed and bonded well driller using a Sonic™ drilling rig (Holt Drilling LLC, Tacoma, Washington). Drilling and well installation methods will be conducted in accordance with Ecology regulations.

Sonic drilling method will also include the retrieval of a continuous core for logging geology. Soil cores will be laid on plastic sheeting (visqueen) until the entire well has been logged by the onsite geologist. The maximum total depth of the well is assumed to be approximately 300 feet bgs. The cores will be logged by visual-manual methods using the United Soil Classification System (USCS). The soil core will be field screened for volatile organic compounds (VOCs) using a photoionization detector (PID) and for petroleum hydrocarbons using sheen testing. Field

screening and classification information will be recorded on a field boring log, along with information from the drilling rig, such as drilling penetration rate, heaving sands, and other information from the driller. Select soil samples will be collected for grain size analysis and possible PFAS testing. Photographs of the soil core will be taken in the field. Once the target depth or zone (below the Deep Aquitard) is reached, the monitoring well will be installed. The well depth and screened interval may be adjusted in the field depending on observations made during drilling.

The monitoring well will be completed using 4-inch schedule 40 polyvinyl chloride (PVC) casing and screen with flush-joint threaded PVC materials, 0.010-inch slot, factory-cut well screens (10 up to 20 feet). Once the casing and screen are set, clean silica sand will be tremied from the base of the borehole to approximately 2 to 3 feet above the top of the screen interval. An annular seal will be placed above the sand pack and will consist of approximately 2 to 3 feet of hydrated bentonite chips. Following placement of the annular seal, the remainder of the borehole will be filled with hydrated bentonite chips to the ground surface.

The surface completion of the well will be a flush-mounted, traffic-rated monument (minimum diameter 7 inches) set in concrete. After installation, the wells will be secured with lockable, expandable-gasket caps. Well construction details will be recorded by Geosyntec's onsite geologist during well installation.

Soil cuttings and decontamination water will be contained in 55-gallon drums by the driller and stored in a location indicated by the City.

2.3 Groundwater and Soil Sample Collection During Drilling

Groundwater samples will be obtained at approximately 150 feet bgs and every 50 feet thereafter (150, 200, 250, and 300, or 4 samples). Groundwater samples will be obtained by setting a one- or two-inch diameter temporary stainless steel well screen in the casing and pulling back the casing to expose the well screen. Groundwater samples will be obtained using a submersible pump inserted into the temporary well. Approximately one tubing volume will be purged prior to sample collection.

Soil samples will be collected from the silt aquitard, if encountered, for analytical testing of PFAS. Samples will be grab samples obtained from the top of the silt (Deep Aquitard) and every 10 to 20 feet of thickness.

Groundwater and soil samples will be obtained in laboratory-supplied containers, placed into a cooler with ice, and submitted to Eurofins Laboratory (Sacramento, CA). The laboratory certification is provided in Appendix B.

2.4 Monitoring Well Development

After a minimum of 48 hours following well installation, the monitoring wells will be developed using a combination of bailing, surging, and pumping. Groundwater quality parameters (temperature, pH, specific conductance, and turbidity) will be measured during purging activities to determine when development can cease. Wells will be developed to remove the fine-grained

materials inside the filter pack and casing, stabilize the filter pack around the well screen, and produce representative water samples from the water-bearing zone. The turbidity of the water purged from the well during well development will be measured. Development will continue until low turbidity conditions are measured (<50 nephelometric turbidity units [NTUs]), field parameters are stable, and/or 10 well volumes have been removed. The well development SOP is included in Appendix B of the Work Plan.

Field personnel shall not use Teflon® tubing, other equipment made of Teflon® or other potentially PFAS-containing materials for well installation and development, as stipulated in the Work Plan.

Following installation and development, we will coordinate with Farallon to survey the newly installed monitoring well and tie the well into the existing well network. A licensed surveyor will collect location coordinates (x,y) and top of casing and ground surface elevations (z).

2.5 Investigation-Derived Waste (IDW)

IDW will consist of soil cuttings, development and purge water, and solid waste.

- Soil cuttings will be placed into 55-gallon drums staged at the drilling site during well installation. Once the drilling is complete, the drums will be labeled and moved to a temporary storage location designated by the City. An SOP for field IDW management is included in Appendix C of the Work Plan. We estimate that one composite soil sample will be collected from the drums for waste characterization. Once characterized and accepted by the landfill, soil IDW will be disposed of at an off-site permitted facility.
- Decontamination, development, and purge water will be temporarily contained in 300-gallon totes or 55-gallon drums, labeled, and staged at a location designated by the City. The water IDW will be sampled and disposed of upon approval from the Publicly Owned Treatment Works (POTW) (either King county or Sammamish Plateau Water and Sewer District [SPWD]) (into the sanitary sewer) or to an offsite permitted facility.
- Solid waste consisting of disposable gloves, disposable tubing, paper towels, etc., will be disposed of offsite as municipal solid waste.

2.6 Analytical Testing

The groundwater and soil samples collected during drilling will be submitted for analytical testing of the following:

- PFAS compounds using EPA Modified Method 537.1, including:
  - perfluorooctanesulfonic acid (PFOS)
  - perfluorooctanoic acid (PFOA)
  - perfluorobutanesulfonic acid (PFBS)

- perfluorononanoic acid (PFNA)
- perfluorohexanesulfonic acid (PFHxS)
- Perfluorodecanoic acid (PFDA)
- Perfluorododecanoic acid (PFDoA)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorohexanoic acid (PFHxA)
- Perfluorotetradecanoic acid (PFTA)
- Perfluorotridecanoic acid (PFTrDA)
- Perfluoroundecanoic acid (PFUnA)
- N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA
- N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)

- Grain size by ASTM D422

Analytical testing will be completed using standard turnaround times. A data validation checklist will be completed upon receiving analytical laboratory results. Tier II data validation will consist of checking technical holding times, a completeness check to ensure that sample results are presented as requested, and a check that the associated quality control results are within specified method criteria.

Following well installation and development, the newly installed monitoring well will be incorporated into the monitoring well network and sampled for PFAS by Farallon.

3. DATA EVALUATION AND REPORTING

A well installation completion report, including draft boring logs and well construction details, and PFAS laboratory reports will be provided to Ecology thirty (30) days following completion of groundwater well drilling, assuming analytical results are received on time.

4. SCHEDULE

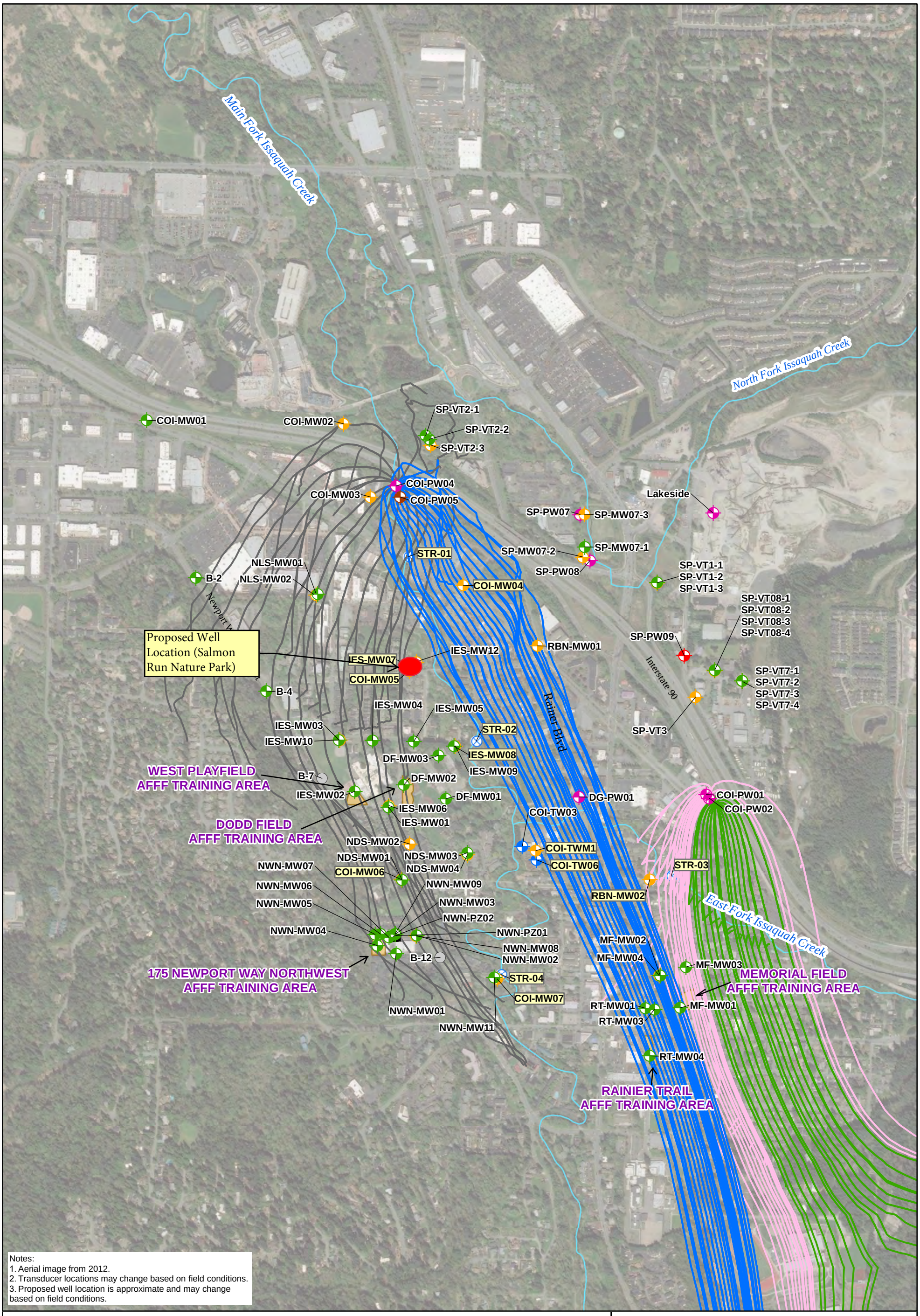
The project schedule is summarized in the table below.

Task	Start Date	Finish Date
Draft Hydrogeological Work Plan Addendum Ecology Review Work Plan (complete)	10/7/22	11/15/22
Ecology Agreement on Proposed Well Location (complete)	10/7/22	10/21/22
Ecology and Tribe Cultural Resources consultation (complete)	10/22/22	11/21/22
FINAL Hydrogeological Work Plan Addendum (complete)	11/16/22	11/28/22
Field work - well install Assume 2 weeks (10 days), including development.	11/28/22	12/09/22
New Well Sampling (4Q) - Sampled by Farallon	12/12/2022	12/16/22
Draft Well Installation Completion Report (30 days from completion of drilling)	12/09/22	1/08/23

5. REFERENCE

Farallon Consulting, L.L.C. (Farallon), 2022. Per- And Poly-Fluoroalkyl Substances Data Gap Investigation Work Plan, Lower Issaquah Valley, 175 Newport way Northwest, Issaquah, Washington, July 15, 2022.

FIGURE



Notes:
1. Aerial image from 2012.
2. Transducer locations may change based on field conditions.
3. Proposed well location is approximate and may change based on field conditions.

Legend

Well Type

- Shallow Zone Monitoring Well
- A Zone Monitoring Well
- B Zone Monitoring Well
- Temporary Well
- Piezometer
- A Zone Production Well
- B Zone Production Well
- C Zone Production Well
- Stream Gauging Station

Simulated Capture Zone (10 yr)

- COI1
- COI2
- COI4
- COI5
- AFFF Training Area
- Issaquah Creek
- Proposed Locations for Transducers

N

1 inch = 1000 feet

0 2,000 Feet

Proposed Monitoring Well & Transducer Locations

Issaquah, Washington

Geosyntec consultants

Seattle, Washington | October 2022

Figure 1

P:\CAD_GIS\Projects\PNG0714 - Issaquah\Projects\06_CSM Memo\Figure 4 Proposed Monitoring Well & Transducer LocationsV2.mxd 10/6/2022 5:18:15 AM

APPENDIX A
Health and Safety Plan (HASP)

City of Issaquah
670 1st Avenue N.E.
Issaquah, WA 98027

HEALTH AND SAFETY PLAN

City of Issaquah Hydrogeological Characterization Well Installation Issaquah, Washington

Prepared by

Geosyntec consultants

engineers | scientists | innovators

520 Pike St., Suite 2600
Seattle, WA 98101

Project Number: PNG0989

November 2022

TABLE OF CONTENTS

APPENDICES

HSE Event Response and Notification

Geosyntec consultants

CHOOSE THE BEST PATH!

EMERGENCY EVENT (catastrophic occurrence, injury or illness requiring emergency medical care, etc.)

IMMEDIATELY CALL 911 or alternate emergency number for your locale*

Conduct First Responses (rescue/assist injured, stop work, evacuate, stabilize worksite, other**)

Meet Arriving Emergency Responders and apprise them of the situation (fire, ambulance, police, other)

Notify HSE TEAM ASAP by phone or EVENT NOTIFICATION TOOL

NOTIFY your Manager, Supervisor, Client, and other key contacts ASAP

For Incidents, COMPLETE full *Incident Report* within 24 hours (use link in followup email you'll receive after submitting an **EVENT NOTIFICATION)**

NON-EMERGENCY EVENT or **NEAR MISS**

Stabilize the situation and provide initial care/support**

Notify HSE Team using EVENT NOTIFICATION TOOL within 1 hour after injury/illness or vehicle accident; by end of workday for other events.

For injury/illness or vehicle accident, HSE will attempt call-back within 1 hour of EVENT NOTIFICATION

Proceed as Directed by HSE for Medical Triage* and other aspects**

GOOD CATCH (Observed unsafe condition or non-compliance, positive safety observation, improvement suggestion, etc.)

Submit a **Good Catch** using the **EVENT NOTIFICATION TOOL** (on same day of occurrence)

IMPORTANT: To load the **EVENT NOTIFICATION TOOL** onto your mobile device, scan this QR code:

* 911 in North America; 112 in EU; 999 & 112 both applicable in UK; 000 in Australia; for other country- or site-specific numbers, see your Written Safety Plan or Office Emergency Plan

** First response actions by site/project team should always be in accordance with general-duty obligations, on-site roles, and training qualifications

*** Employees may initiate a call for medical triage/support if no call-back received from HSE within 60 minutes of Event Notification, or if HSE is not available directly by phone. For the medical support contact in your location (*WorkCare in North America; location-specific elsewhere*) see your Written Safety Plan or Office Emergency Plan, as applicable

If you have questions or concerns about any workplace health and safety matter, please contact a member of your Corporate HSE Team for assistance:

Global HSE Director
Bob Poll
M: +1 813-240-9231

HSE Programs Professional
Andrew Thomas
M: +1 508-649-3254

Multinational Region/US
Mark Malchik
M: +1 781-392-5440

Multinational Region/Intl
Jason Ford
M: +1 226-220-3401

South Region
Ersin Yalcin
M: +1 404-435-4722

Central Region
Joe Esseichick
M: +1 734-417-0909

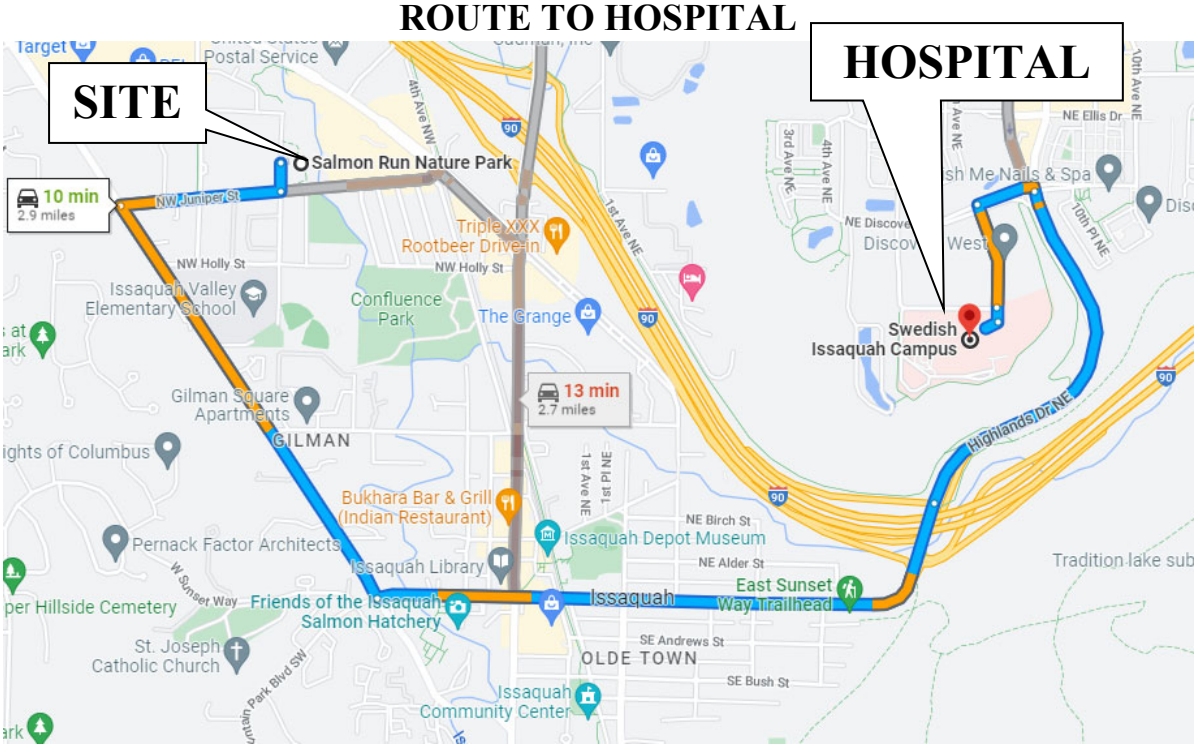
West Region
Madison McLaughlin
M: +1 951-990-2888

Canada
Dean Zapishny
M: +1 519-494-3031

GEOSYNTEC FAMILY OF COMPANIES

HSE Health, Safety, and Environment

ROUTE TO HOSPITAL



Swedish Medical Center - Issaquah
425-313-4000
751 NE Blakely Dr
Issaquah, WA 98029

Written Directions to Hospital from Site:

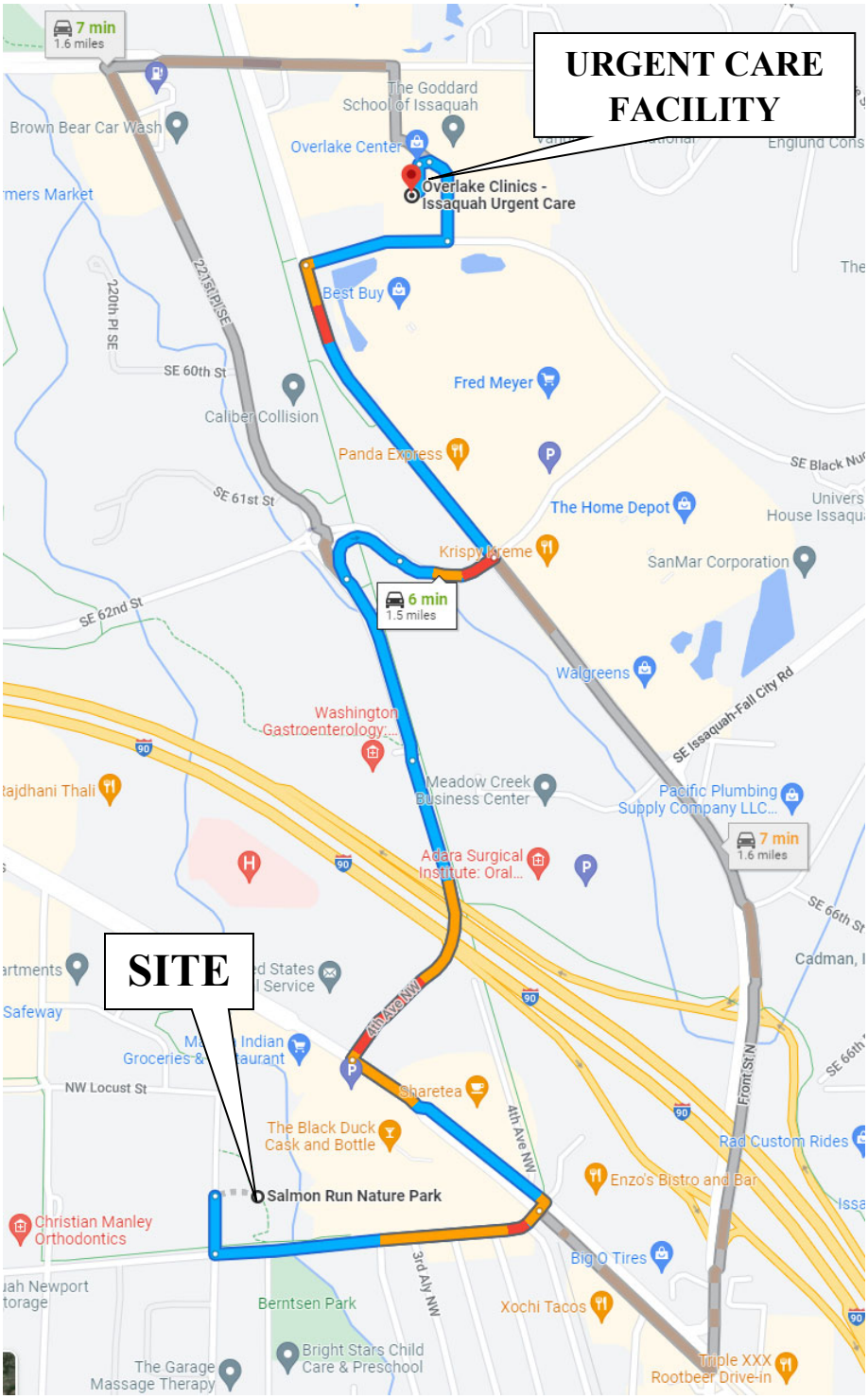
Turn right (west) on Juniper Street go →0.2 mi then
Turn left onto Newport Way NW go →2.3 mi then
Turn left onto W Sunset Way go → 1.0 mi
Continue onto Highlands Dr NE →0.3 mi
Turn left onto NE Discovery Dr → 0.1 mi
Turn left onto 8th Ave NE → 0.2 mi
Continue straight → 115 ft

Turn right onto NE Blakely Dr → 108 ft

Arrive at NE Blakely Dr
The last intersection is 8th Ave NE
If you reach 7th Ave NE, you've gone too far

Geosyntec consultants

ROUTE TO URGENT CARE FACILITY



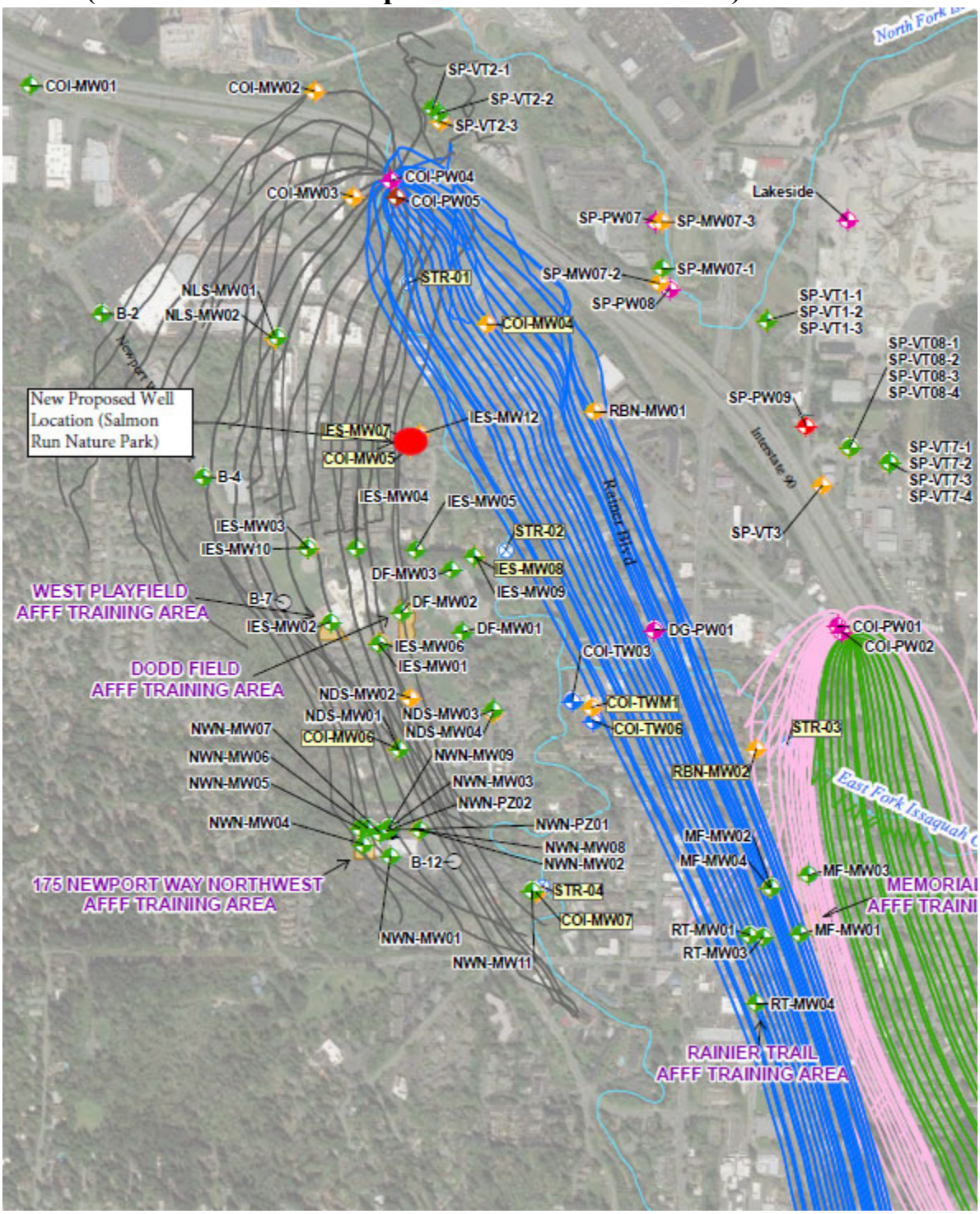
Overlake Medical Clinics Urgent Care Issaquah
425-688-5777
5708 E Lake Sammamish Pkwy SE
Issaquah, WA 98029

Written Directions to Urgent Care Facility from Site:

Turn Left onto NW Juniper St and go → 0.2 mi
Turn Left onto NW Gilman Blvd → 0.3 mi
Turn right onto 4th Ave NW, Continue onto 221st Pl SE
Slight right toward and merge onto SE 62nd St (go right at traffic circle)
Turn left onto E Lake Sammamish Pkwy SE → 0.3 mi
Turn right onto SE Black Nuggest Rd and arrive at clinic on the left

Geosyntec
consultants

SITE MAPS
(also see additional map with well location details)



1. INTRODUCTION

This site-specific Health and Safety Plan (HASP) was prepared to address project-specific hazards known or suspected to be present associated with the existing conditions and work to be performed at the work site(s). This HASP was prepared to meet the requirements specified in Occupational Safety and Health (OSHA) Hazardous Waste Operations Emergency and Response (HAZWOPER) program, Geosyntec's Health and Safety (H&S) Procedure HS 301, and the H&S requirements of the client.

2. SIGNATURES

2.1 Preparers and Reviewers

This HASP must be maintained on site when fieldwork is being performed. The Site Health and Safety Officer (SHSO) can change or amend this document, in agreement with the Health and Safety Coordinator (HSC) or Project Manager. Amendments (e.g., changes in personal protective equipment, addition of tasks, etc.) must be documented in Section 19 and in Appendix A. This HASP must be reviewed and amended on an annual basis for projects lasting more than one year.

Prepared by:		10/18/22
	Vanessa Maldonado	Date
Reviewed by:		10/18/22
	HSC – Adrianna Jarosz	Date
Approved by:		11/18/22
	Project Manager – Cindy Bartlett	Date

This HASP has been given to the following H&S approved subcontractor(s).

Subcontractor: _____ Representative: _____ Date: _____

Subcontractor: _____ Representative: _____ Date: _____

Subcontractor: _____ Representative: _____ Date: _____

2.2 Site Workers

This HASP must be reviewed by personnel prior to site work. Workers not in attendance at the initial meeting must be trained by the SHSO on the information covered in the pre-entry briefing. After reading the HASP and attending a pre-entry briefing, Geosyntec employees and other parties covered under this HASP must sign the following acknowledgment statement.

"I have read, understand, and will perform my work in accordance with the information set forth in this HASP."

Signature	Printed Name	Date

3. EMERGENCY CONTACT INFORMATION

Contact	*Telephone Numbers*	
	Office	*Alternate (Type)*
Fire Department	911	-
Police Department	911	-
Site Emergency Response (if applicable)	-	-
Hospital - *Swedish Medical Center in Issaquah*	(425) 313-4000	-
Director of H&S – *Bob Poll*	(831) 379-4420	(813) 240-9231
H&S Regional Manager – *Madison McLaughlin*	(858) 716-2900	(951)-990-2888
Project Manager – *Cindy Bartlett*	(971) 271-5895	(503) 505-4145 (Cell)
Health & Safety Coordinator – *Adrianna Jarosz*	-	(206) 379-2002 (Cell)
Site Health & Safety Officer – *Jobe Traywick*		707-854-8161 (Cell)
Principal-in-Charge – *Bob Anderson*		(425) 922-0054 (Cell)
Office manager – *Lisa Curtis*	(971) 271-5903	(971) 563-3651 (Cell)
Utility Emergencies	811	-
Work Care	(888) 449-7787	(714) 978-7488
Client Contact –*Matt Ellis (City of Issaquah)*	(425) 837-3410	(425) 539-3654

4. APPLICABILITY OF THIS HASP

This HASP was prepared in accordance with Geosyntec Consultants' H&S Procedures for use by Geosyntec project staff and subcontractors. Subcontractors, at a minimum, shall ensure that their employees, and those of its lower tier subcontractors, comply with these procedures and other health, safety and security provisions in the Subcontract. Compliance with this HASP shall represent the minimum requirements to be met by subcontractors, who shall be responsible for examining all requirements and determining whether additional or more stringent health, safety, and security provisions are appropriate for their portion of the work and implementing them accordingly. Therefore, for firms executing all or any portion of the work, this document and its contents should not be used without a thorough peer review by their health and safety managers. Prior to commencing work, such firms are responsible for reviewing and supplementing the HASP to add appropriate procedures specific to their portion of the work.

5. SITE/TASK/HAZARD DESCRIPTION

5.1 Site Background

The following is a brief description of the site, including information as to the location, approximate size, previous usage, and current usage. A description of the tasks to be performed is also presented.

- Site Location: Salmon Run Nature Park, 5th Ave NW and Juniper Street, Issaquah, Washington (see site maps)
- Approximate Size of Site: N/A
- Previous Site Usage: N/A
- Current Site Usage: City public park next to Issaquah Creek. Three other groundwater monitoring wells.
- Description of Surrounding Property/Population:

North varies East varies

South varies West varies

- Summary of previous site investigations (if available/applicable):

The City of Issaquah (City) operates several drinking water supply wells that have become contaminated with Per-and Polyfluoroalkyl substances (PFAS). Investigations in the Lower Issaquah Valley (LIV) have detected PFAS in unsaturated soil, saturated soil, and groundwater in four sites (areas) where Aqueous Film Forming Foams (AFFF) were used for fire suppression training. These four site have received Ecology early notice letters for investigation and cleanup.

PFAS monitoring at the four sites were comprehensively reported by Farallon in 2021 and 2022. Geosyntec identified 38 monitoring wells with PFAS concentrations that exceeded the Washington State Department of Health State Action Levels (SALs) for at least one of the five PFAS detected.

Additional investigation requires of the installation of one well to further characterize the extent of contamination and potential migration pathways to the City's deep production well.

5.2 Task Descriptions

Task 1: Oversight for Monitoring Well Installation and Development

This task involves oversight of a drilling subcontractor for drilling a deep boring and installation of one new groundwater monitoring well. The drilling methods will be conducted by a licensed driller subcontracted to Geosyntec. Prior to well installation, a "one call" and utility locator will be employed to identify potential subsurface utilities and marked accordingly.

The boring and well installation will be completed using sonic drilling methods. Soil will be characterized from soil cores and drill cuttings and collected for analytical testing. Discrete-depth groundwater sampling also will be conducted during drilling.

Well construction will occur following completion of the soil boring (total depth approximately 300 feet below ground surface). Following installation, the well will be developed by the driller using pumping and surging. Investigation-derived waste (soil cuttings, purge, and decontamination water) generated will be transferred to 55-gallon drums, staged at the City's maintenance shop or another location as directed by the City, and disposed off-site at a permitted facility.

Task Hazard Analyses (THAs) associated with these tasks are presented in Appendix B.

5.3 Chemical Hazards

The classes of chemicals that are known or suspected to be present that may be encountered while performing site work include the following:

- Perfluoroalkyl acids (PFAAs), including perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perfluorobutanesulfonic acid (PFBS), and perfluorohexanesulfonic acid (PFHxS).

Controls for these hazards are presented in the THAs included in Appendix B. A summary of these chemical hazards is presented in Appendix C.

5.4 Physical Hazards

The following physical hazards have been identified associated with the work to be performed and the site conditions.

- Cold Stress
- Drilling
- Drum and Container Handling
- Hand/Foot Injury
- Heat Stress
- Heavy Equipment
- Lifting Heavy Loads
- Loud Noise/Vibration
- Slips, Trips, and Falls
- Thoroughfares / Traffic
- Urban Environments
- Utility Protection

Controls for these hazards are presented in the THAs included in Appendix B.

5.5 Biological Hazards

The following biological hazards have been identified associated with the work to be performed and the site conditions.

- Biting/mauling animals (bears, dogs, mountain lions, etc.)
- Biting/stinging insects

Controls for these hazards are presented in the THAs included in Appendix B.

6. GENERAL SAFE WORK PRACTICES

The following general safe work practices must be adhered to while performing site work:

- Basic PPE shall be worn, including hard hats, safety glasses, hard-toed boots, and high-visibility vests. If conditions allow, the requirement for hard hats and hard-toed boots may be reduced with approval of the SHSO and Project Manager.
- Minimize contact with impacted materials. Do not place equipment on the ground. Do not sit or kneel on potentially contaminated surfaces.
- Smoking, eating, or drinking after entering the work zone and before personal decontamination is not allowed. Employees who are suspected of being under the influence of illegal drugs or alcohol will be removed from the site. Workers taking prescribed medication that may cause drowsiness shall not operate heavy equipment and are prohibited from performing tasks where Level C or B personal protective equipment is required.
- Practice good housekeeping.
- Use of contact lenses is not allowed under certain hazardous working conditions.
- The following conditions must be observed when operating a motor vehicle:
    - Wearing of seat belts is mandatory
    - The use of headlights is mandatory during periods of rain, fog, or other adverse weather or low-light conditions
    - A backup warning system or use of vehicle horn is mandatory when the vehicle is engaged in a backward motion
    - Posted traffic signs and directions from flagmen must be observed
    - Equipment and/or samples transported in vehicles must be secured from movement
    - The use of vehicles acquired by Geosyntec by non-Geosyntec personnel is prohibited
- In an unknown situation, always assume the worst reasonable conditions.

- Be observant of your immediate surroundings and the surroundings of others. It is a team effort to notice and warn of dangerous situations. Withdrawal from a hazardous situation to reassess procedures is the preferred course of action.
- Conflicting situations may arise concerning safety requirements and working conditions. These must be addressed and resolved rapidly by the SHSO and PM to relieve motivations or pressures to circumvent established safety policies.
- Unauthorized breaches of specified safety protocol are not allowed. Workers unwilling or unable to comply with established procedures will be asked to leave the work site.

7. EMERGENCY RESPONSE

This section discusses emergency response procedures and response equipment to be maintained on site. A table presenting a list of contacts and telephone numbers for the applicable local and off-site emergency responders is provided inside the front cover of this HASP (after figures).

7.1 Injury and Emergency Response Procedures

In the event of an **injury** to an employee, the instructions for injury response and reporting, located in the front of this HASP, must be implemented immediately. In the event that an **emergency** develops, the following procedures are to be implemented:

- The Site Health and Safety Officer (SHSO), or designated alternate, should be immediately notified via the on-site communication system. The SHSO assumes control of the emergency response.
- If applicable, the SHSO must immediately notify off-site emergency responders (e.g., fire department, hospital, police department, etc.) and must inform the response team of the nature and location of the emergency on site.
- If applicable, the SHSO may call for evacuation of the site. Site workers should move to their respective refuge stations using the evacuation routes provided on the Site Map.
- For small fires, flames should be extinguished using the appropriate type of fire extinguisher. Large fires should be handled by the local fire department.
- If a worker is injured, the procedures presented in “Instructions for Injury Response”, located in the front of this HASP, must be implemented immediately.
- After an incident has stabilized, the procedures presented in “Instructions for Incident Reporting”, located in the front of this HASP, must be followed.

7.2 Emergency Response Equipment

Emergency response equipment will be maintained in the work area as necessary for this project. Examples of emergency response equipment include first aid kits, fire extinguishers (Type ABC), and eyewash bottles.

8. KEY PERSONNEL AND HEALTH AND SAFETY RESPONSIBILITIES

Project personnel and their responsibilities in regard to health and safety concerns on this project are as follows:

Project Manager (PM): Cindy Bartlett

- Approve this HASP and amendments, if any;
- Monitor the field logbooks for health and safety work practices employed;
- Coordinate with SHSO so that emergency response procedures are implemented;
- Check that corrective actions are implemented;
- Check and document that qualified personnel receive this plan and are aware of its provisions and potential hazards associated with site operations, and that they are instructed in safe work practices and familiar with emergency response procedures; and
- Provide for appropriate monitoring, personal protective equipment, and decontamination materials.

Site Health and Safety Officer (SHSO): Jobe Traywick

- Prepare and implement project HASP and amendments, if any, and report to the Project Manager for action if deviations from the anticipated conditions exist and authorize the cessation of work if necessary;
- Check that site personnel meet the training and medical requirements;
- Conduct pre-entry briefing and daily tailgate safety meetings;
- Check that monitoring equipment and personal protective equipment are operating correctly according to manufacturer's instructions and such equipment is utilized by on-site personnel. Calibrate or check calibration of monitoring equipment and record results;
- Check that decontamination procedures are being implemented;
- Implement site emergency response and follow-up procedures;
- Notify the HSC in the event an emergency occurs; and
- Perform and document weekly inspections.

Health and Safety Coordinator (HSC): Adrianna Jarosz

- Review and audit HASP and amendments;
- Notify Director of Health & Safety when an emergency occurs;
- Assist with the implementation of the corporate health and safety program; and
- Consult with staff on health and safety issues.

Site Workers

- Provide verification of required health and safety training and medical surveillance prior to arriving at the site;
- Notify supervisors of workplace accomodation requirements as the result of physical limitations or medical conditions;
- Attend pre-entry briefings and daily tailgate safety meetings;
- Immediately report accidents and/or unsafe conditions to the SHSO;
- Be familiar with and abide by the HASP; and
- Be ultimately responsible for his or her own safety.

9. WORKER TRAINING AND MEDICAL SURVEILLANCE

Personnel involved in field activities subject to OSHA HAZWOPER 29 CFR 1910.120 will be required to participate in both a health and safety training program that complies with criteria primarily set forth by the OSHA HAZWOPER in 29 CFR 1910.120(e) and a medical surveillance program covered under 29 CFR 1910.120(f), or equivalent regulations based on the jurisdiction in which the project is performed.

9.1 Pre-Assignment and Annual Refresher Training

Prior to arrival on site, the Geosyntec Project Manager will be responsible for monitoring that their staff meet the requirements of pre-assignment training (40/24 hours per Procedure HS 301). In addition, personnel must be able to document dates of attendance at an annual 8-hour refresher and three days of fieldwork under a qualified supervisor. Failure to provide this documentation will prohibit entry to the active work area(s) (i.e., Exclusion Zone).

9.2 Site Supervisor Training

Consistent with OSHA 29 CFR 1910.120 (e)(4), prior to arrival on site, individuals designated as site supervisors require an additional eight hours of specialized training.

9.3 Initial Site Safety Orientation and HASP Review

In addition to complying with 29 CFR 1910(e), site personnel will attend an initial safety orientation during which the HASP and applicable THAs will be reviewed prior to initiating field activities. This review will include the following:

- Understanding the lines of authority regarding health and safety and site personnel roles and responsibilities;
- Information of specific hazard agents related to the site and site operations will be discussed, such as health hazards of site chemicals and specific safety hazards of processes, tools, and equipment;
- Training in the proper use, maintenance, and decon protocol of PPE and Level(s) of Protection;
- Appropriate work practices and engineering controls to reduce/eliminate exposures to site hazards will be reviewed;
- Personnel will be informed of means for normal site and emergency communication(s);
- Unique/site specific medical surveillance requirements that need to be considered based on site contaminants;
- Understanding site control measures, work zones, and proper decontamination procedures for personnel/tools/vehicles, etc. to reduce the potential for both on/off site contamination;
- Personnel will be trained to respond quickly and properly in the event of an emergency; and
- Personnel involved in specific hazardous activities, such as confined space entry, drum handling, sampling unknowns, etc. will receive specialized training in the appropriate techniques to employ prior to commencing these operations.

9.4 Baseline Medical Surveillance Exam

The baseline medical examination is used to identify physical capabilities and certain medical limitations that may have an impact on the candidate's ability to perform in the position and/or job activity for which he/she is being considered, as well as to establish certain baseline medical parameters. The initial test results can then be compared against future periodic or project-specific monitoring results.

9.5 Periodic/Annual/Biennial Medical Exam

The periodic medical examination is used to evaluate an employee's continued fitness for duty and to assess possible impact(s) occupational exposures may have had on their health status. The

periodic examination includes an update to the medical and work history, results of previous occupational exposure assessments, and a detailed medical exam tailored to the job description.

The Medical Director from WorkCare determines the frequency of the periodic medical exams based on regulatory requirements, the position/work activities of the employee, and the level of exposure to physical, chemical, and biological agents.

9.6 Exposure/Activity/Project-Specific Medical Testing

Exposure-specific medical tests and/or evaluation of biological indices may be conducted to establish a baseline for certain project-specific parameters, to monitor the effectiveness of hazard controls, and/or to assess the impact of occupational exposures associated with a particular work activity or project. The Medical Director, in coordination with the H&S Department, will require or recommend an exposure-specific exam when deemed appropriate based on knowledge of project hazards, occurance of employee health symptoms, or an unexpected exposure event. Requests for exposure-specific examinations will be forwarded to the H&S Department, who will process the requests in collaboration with the Medical Director. The Medical Director will determine the type and frequency of the exposure-specific medical exams for employees designated to participate based on sound medical practice, latest toxicology information, and current regulatory requirements.

9.7 Exit Exam

An exit medical examination is offered when an employee leaves the medical surveillance program, either because of termination of employment with Geosyntec or because of reassignment to a position not designated or identified to participate in the medical surveillance program. This optional exit examination may be used to assess potential changes in medical status that have occurred during the course of employees' previous work activities, and to establish a medical baseline at the time of departure.

9.8 Exit/Termination

An exit medical examination is offered when an employee leaves the medical surveillance program, either because of termination of employment with Geosyntec or because of reassignment to a position not designated or identified to participate in the medical surveillance program. This optional exit examination assesses potential adverse impacts occupational exposures may have contributed to the employee's health status.

10. MAPS AND SITE CONTROL

10.1 Routes to Hospital and Urgent Care Facility

A hospital and an urgent care facility near the site have been identified. Maps to the hospital and urgent care are included after the Table of Contents of this HASP. Both figures also include the facility name and phone number.

10.2 Site Map

A site map is located inside the cover of this HASP. The site map is intended to show the location of the work zone(s), to provide on-site orientation, and to delineate evacuation routes. Changes may be made to the site map by the SHSO based on changing site conditions. The site map should be accessible in the work area.

10.3 Buddy System

The buddy system is required when work is performed in hazardous areas. The buddy system includes maintaining regular contact with one or more onsite Geosyntec personnel, clients, and/or contractors to periodically check on the condition of site workers such that each employee in the work group is observed by (or in verbal contact with) at least one other employee in the work group. For field visits with only one employee onsite, the buddy system shall be implemented via periodic telephone contact with offsite Geosyntec personnel. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

10.4 Controlled Work Zones

APPLIES TO TASK: ☐① ☐② ☐③ ☐④ ☐⑤ ☐⑥ ☐⑦ ☐⑧ ☒ Not Applicable

Three controlled work zones, including an Exclusion Zone, a Contaminant Reduction Zone (CRZ), and a Support Zone, are required for the task(s) indicated above. Geosyntec employees must not be allowed into the CRZ or Exclusion Zone or the Work Zone until they have received the proper personal protective equipment (PPE) and they have read, understand, and meet the requirements outlined in this HASP. The Exclusion Zone is defined as the area on site where contamination is suspected and tasks are to be performed. The CRZ is defined as the area where equipment and workers are to be decontaminated as they leave the Exclusion Zone. The Support Zone is defined as the command area and may serve as a staging and storage area for supplies. The location and extent of the work zones may be modified as necessary as site investigation information becomes available. For sites that do not require the three controlled work zones, the area(s) where work is to be performed shall be called the Work Zone.

Visitors to the site may need to be continually escorted for safety purposes. Visitors under Geosyntec's direction need to check in with the SHSO upon visiting the site.

For the tasks identified above, the boundaries of the Exclusion Zone, CRZ, and Support Zone, or the Work Zone, shall be marked using appropriate methods, including but not limited to warning tape, signs, traffic cones, fencing, or other appropriate means.

10.5 Site Access

Certain sites require controlled access to the work area. Examples of access controls include sign in/sign out logs, checking in with guards, and donning identification badges. Geosyntec personnel will adhere to the site-specific access requirements and monitor that subcontractors and other Geosyntec visitors abide by site-specific access control requirements.

10.6 Inspections

☐ APPLICABLE ☒ NOT APPLICABLE

Based on the hazards identified for the project, periodic health and safety inspections may be performed. The Health & Safety Inspection Checklist records should be kept on file at the project site. The frequency for periodic inspections is:

☐ Weekly
☐ Monthly
☐ Other: _____

11. TAILGATE MEETINGS

Tailgate meetings must be held daily prior to starting work to discuss important health and safety issues concerning tasks to be performed during that shift. Non-Geosyntec site workers should also communicate health and safety concerns associated with the tasks they will be performing. Topics discussed in the tailgate meetings must be documented.

12. STOP WORK AUTHORITY

In accordance with the Company's Procedure HS 203 - Stop Work Authority, Geosyntec personnel and subcontractor personnel have the authority and responsibility to issue a Stop Work Order if unsafe actions and/or conditions are identified. The Stop Work Authority (SWA) process involves a stop, notify, correct, and resume approach for resolving observed unsafe work actions or conditions. The person issuing the work stoppage will first notify workers engaged in or affected by the unsafe activity or condition and require that associated work be stopped. After

this Stop Work Order is issued, the Geosyntec project manager and the supervisors for affected or concerned contractors will also be notified. The Geosyntec project manager will document the issuance of the Stop Work Order on the form provided in Procedure HS 203. Work will not resume until the issues and concerns of the Stop Work Order have been adequately addressed.

13. AIR MONITORING

APPLIES TO TASK: ☐① ☐② ☐③ ☐④ ☐⑤ ☐⑥ ☐⑦ ☐⑧ ☒ Not Applicable

Air monitoring will be performed to evaluate airborne chemical and/or dust exposure levels within the breathing zone of site workers. Hazardous conditions may include concentrations that may cause acute or chronic illness, potential oxygen deficient environments, or potential explosive environments. Air monitoring may also be performed to evaluate the adequacy of engineering, administrative, and/or PPE controls. Air monitoring may be "real-time" (e.g., the instrument provides immediate results at the project), using multi-gas meters, photoionization detectors (PIDs), or colorimetric tubes. Personal monitoring may also be performed by collecting samples and forwarding to a laboratory for analysis and quantification.

The type(s) of air monitoring equipment required and associated action levels are outlined in Appendix D. Monitoring equipment must be calibrated based on the manufacturer's requirements. Calibration results and air monitoring measurements must be documented. Based on the results noted and site activities or scope of work changes, the frequency of air monitoring may be adjusted on site by the SHSO with the consent of the Project Manager and communication with the HSC.

14. PERSONAL PROTECTIVE EQUIPMENT

The levels of PPE required for each task are presented in Appendix E. Required equipment and types of protective clothing materials, as well as an indication of the initial level of protection to be utilized, are listed. The level of protection may be upgraded or downgraded by the SHSO according to controls requirements in Appendix E or according to action levels provided in Appendix D.

If respirators are worn, workers must abide by the company's Respiratory Protection Program in accordance with company's Respiratory Protection Program (HS 112).

15. DECONTAMINATION

The SHSO and Project Manager will determine the type and level of decontamination procedures for both personnel and equipment based on evaluation of specific work activities in the controlled work zones. Medical treatment will take precedence over decontamination in the

event of a life threatening and/or serious injury/illness. Personnel will perform decontamination in designated and identified areas upon leaving "hot zones" where the potential exists for exposure to hazardous chemical, biological, or environmental conditions.

Decontamination of personnel in Level D (modified) will consist of proper containerization and disposal of coveralls, disposable boots, and gloves (if applicable).

Decontamination of personnel in Level C, if applicable, will consist, at a minimum, of:

- Removal and cleaning/disposal of boot covers, coveralls, and outer gloves;
- Removal, cleaning, and storage of respiratory protection;
- Washing of non-disposable PPE suspected of being contaminated using a soap solution followed by a water rinse; and
- Removal and disposal of inner gloves.

Hand tools and sampling equipment shall be decontaminated as needed by washing in decontamination basins with appropriate solutions, or, if possible, by dry decontamination. Wash solutions and PPE may require disposal at a licensed waste facility.

16. SPILL CONTAINMENT

The task(s) for this project may involve the handling of drums and/or containers that contain stored chemicals, hazardous materials, and/or wastes. The drums and/or containers may have been spilled/dislodged during site activities due to compromised construction of the drum/container, transportation accidents, improper packaging practices, and improper handling of hazardous materials during on/off loading. Containers shall be inspected and their integrity assured prior to being moved and/or handled. If the integrity of the container is in question, the container shall be over packed or its contents transferred. Operations shall be organized and coordinated to minimize movement of such containers. Where spills, leaks, or ruptures may potentially occur, a supply of sorbents shall be located in the immediate area. Additional preventative measures include:

- UN-approved 55-gallon drums, bins, and/or Baker tanks will be inspected for visible defects upon delivery to the site;
- UN-approved 55-galon drums will also be inspected to ensure each drum includes a resealable lid with a small resealable sampling port near the top, or on the side of the drum and that the enclosure is not deformed and/or distorted;
- Drums will not be completely filled to allow for possible expansion of liquid and will be set on wooden pallets to facilitate transport by forklift;
- The storage area will be inspected to check for leaks weekly while the containers are being filled and immediately after a relocation to a temporary on-site storage area; and

- Flat areas will be selected for temporary storage away from high-traffic work areas/zones and storm/sewer drains.

In the event of an unplanned release or spill of unknown or hazardous substances, the site supervisor will designate personnel who will support the spill containment, control, and/or clean-up procedures. The team will request additional off-site emergency response assistance if necessary based on the type of spill, volume, potential toxicity, etc.

The spill area will be isolated and restricted to only authorized personnel designated to assist with the containment, control, or clean-up activity. Authorized personnel will be trained to contain and clean spills from typical materials and quantities used at the project location. Physical barriers will be set up to warn unauthorized personnel to stay clear and evacuate the affected area. The spill, leak, or incident will be assessed by the team and characterized to determine the appropriate course(s) of action(s) to consider:

- Small spills (i.e., maximum volume of 55 gallons of a liquid or 100 pounds of a solid) may be remediated using absorbent materials by designated personnel;
- Large spills (i.e., liquid volumes > 55 gallons or solid weights > 100 pounds) and/or spills of highly toxic materials may require assistance by off-site hazardous materials (HAZMAT) teams;
- Attempts shall be made to identify and stop the source(s) of spillage immediately while donning proper PPE (based on action levels)
- The site supervisor will direct spill-response operations and stay at the spill area until it has been cleaned, inspected, and cleared for re-entry; and
- The site supervisor will prepare a spill incident and clean-up report and will communicate findings to the Project and Branch Manager and H&S Department.

17. CONFINED SPACE ENTRY

☐ APPLICABLE ☒ NOT APPLICABLE

The task(s) for this project involve confined-space entry. Workers must abide by the company's Confined Space Entry Program (Procedure HS 118).

18. GLOBALLY-HARMONIZED SYSTEM FOR HAZARD COMMUNICATION

☒ APPLICABLE ☐ NOT APPLICABLE

The following procedures must be followed for chemicals brought onto the site by Geosyntec personnel or by subcontractors (i.e., decontamination solution, sampling preservatives, KB-1 solution, sodium permanganate, etc.) while performing the tasks of this project:

- Labels on primary chemical containers must not be defaced;
- Chemicals must be stored in appropriate storage containers;
- Secondary containers and storage cabinets must be correctly and clearly labeled;
- Chemicals incompatible with each other must not be stored together;
- Workers must receive training on the chemical hazards; and
- Safety Data Sheets (SDSs) must be added to Appendix F.

When chemicals are used on site, workers must abide by Geosyntec's GHS Hazard Communication Program (Procedure HS 115).

19. HASP AMENDMENTS

Over the course of this project, it is possible that the project-specific hazards and working conditions will change. This HASP may be reviewed and amended as necessary to effectively describe the changing working conditions and measures to mitigate the potential health and safety issues that may arise during the project. Amendments to the HASP should be briefly described in the following spaces provided. The full text of the amendments should be provided in Appendix A and/or additional THAs should be added to Appendix B.

AMENDMENT 1:

Date: _____ Project Manager: _____ HSC: _____
Brief description of amendment:

_____
_____
_____
_____
_____

AMENDMENT 2:

Date: _____ Project Manager: _____ HSC: _____
Brief description of amendment:

_____
_____
_____
_____
_____

AMENDMENT 3:

Date: _____ Project Manager: _____ HSC: _____
Brief description of amendment:

_____
_____
_____
_____
_____

Appendix A: HASP Amendments

Discuss details of amendments to this HASP here. Include amendment number, date, and details of amendments.

Appendix B: Task Hazard Analyses

	TASKS
①	Oversight for Monitoring Well Installation and Development

THAs for these tasks are presented in the following pages.

INSERT THAs HERE

Geosyntec consultants

Geosyntec H&S Procedures referenced herein are available on Geosyntec's H&S SharePoint site and should be consulted, as appropriate, to ensure requirements are met. This THA has been prepared per "*HS-204-Work-Specific Hazard and Risk Assessment, Written Safety Plans.*"

TASK HAZARD ANALYSIS

(Ver. 3.1, 1-4-2021)

Part A – PROJECT/TASK INFORMATION

Project/Site Name:	City of Issaquah Hydrogeological Characterization Well Installation	**Project Number/Org.:**	PNG0989
Site Address:	1775- 12th Ave NW., Issaquah, WA 98027		
Task & Worksite Description:	Oversight for Monitoring Well Installation and Development		

Geosyntec Personnel:	**Name**	**Office Phone**	**Cell Phone**
Site Safety Lead/Officer	Jobe Traywick	206-496-1458	707-854-8161
Task Technical Lead	Cindy Bartlett	971-271-5895	503-505-4145
Project Manager	Cindy Bartlett	971-271-5895	503-505-4145
Project Director	Bob Anderson	-	425-922-0054
Local H&S Coordinator	Adrianna Jarosz	-	206-379-2002
Regional H&S Manager	Madison McLaughlin	858-716-2900	951-990-2888
Corporate H&S Director	Bob Poll	831-379-4420	813-240-9231
On-Site Subcontractor(s): ☐ Not Applicable	☐ Applicable; provide company name, work task and contact information for each Geosyntec subcontractor below:		
Client, Contact(s):	Matt Ellis	425-837-3410	425-539-3654
ETHICS POINT HOTLINE	US & Canada: 844-231-3371 UK: 800-89-0011 or 800-89-0011	Australia: 800-551-155 or 800.811.011 Ireland: 800-222-55288 or 800-500-000	

Part B - EMERGENCY RESPONSE and FIRST AID

IMPORTANT: After initial emergency response actions and incident stabilization, contact appropriate project and H&S personnel listed in Part A

Site-Specific Notes, Clarifications: Consider relevant risk factors & response procedures *(fire/explosion, medical, chemicals/spills, security, site factors, weather, communications)*, **as well as client/regulatory requirements and available of onsite/offsite emergency services (and the possible need for emergency contact numbers other than 911)**:

Emergency Communication / Alerting	☐ Verbal ☒ Cell Phone ☐ Land Line ☐ 2-Way Radio ☐ Satellite Phone ☐ On-site alarm/signal system ☐ Other:
To Summon Police, Fire, Ambulance	☒ **DIAL 911**, for external responders ☐ **Other**:
WorkCare *(for non-emergency injuries)*	**24/7: 888-449-7787**
Other Emergency Contacts *(such as security, spill responder, utility-related):*	Fire Department (non-emergency): 911 Police Department (non-emergency): 911 Utility Emergencies: Gas: 425-557-0418 Electrical: 425-577-8468
Nearest EMERGENCY ROOM Medical Services	Hospital Name: Swedish Medical Center - Issaquah Address: 751 NE Blakely Dr Phone #: 425-313-4000 ☒ See Attached Directions
Emergency Evacuation - Route, Rally/Muster Point, Shelter Location(s)	To be determined in field based on site conditions

EMERGENCY and FIRST AID EQUIPMENT required for this work task is listed in **PART C.2. – SAFETY EQUIPMENT LIST**

PART C – TASK / HAZARD / CONTROL SUMMARY and EQUIPMENT LIST

C.1 SUMMARY OF TASKS, HAZARDS AND CONTROLS

1. TASKS / WORK ASPECTS	2. HAZARDS / RISKS	3. CONTROLS
1 – Travel to and from Site	- Routine **driving hazards** - Driving to unknown places	Implement **precautions for routine driving safety** specified in D.1. ROUTINE HAZARD PREPAREDNESS.

		transportation/driving-related COVID-19 precautions listed in D.13. INFECTIOUS / ALLERGENIC BIOHAZARDS.
2 – Site hazards	**General Premises Hazards** - Weather, cold stress - Site traffic (vehicle and pedestrian) - Slips, trips, falls - Shorter daylight hours - COVID-19 exposure risk	Dress appropriately for the weather and take warm-up breaks. Refer to **HS-125 Cold Stress Prevention Program** Maintain **situational awareness** and **hazard controls** for general site safety. Do not perform nightwork without appropriate lighting. Follow current Geosyntec COVID-19 procedures.
	Drilling Hazards: - Utilities - Working near a drill rig - PFAS in soil and groundwater	- Clear for underground utilities prior to drilling; check overhead utilities and hazards - Wear appropriate PPE and stay away from moving parts. Locate fire extinguisher and emergency stop button prior to starting drilling. Drill rig only to be operated by contractor. - Wear appropriate PPE when handling soil and/or groundwater to prevent contact with potential contaminants.

C.2. SAFETY EQUIPMENT LIST (Gear to be brought to the worksite by Geosyntec personnel, or availability confirmed)

Site-Specific Notes, Clarifications:

☒	**WEATHER, CLIMATE, SEASONAL**	☒ Project-provided drinking water ☐ Canopy for shade, weather protection	☐ Sunscreen ☐ Ice creepers (boot attachments)	☐ Rock salt, traction sand ☐ Portable heater (electric or kerosene)
		☒ Other: Identify warm up shelter (such as personal vehicle)		
☒	**HYGIENE PROVISIONS**	☒ Hand washing equipment (soap & wash water)	☒ Hand sanitizer, disinfectant supplies	☐ Sanitary facility, porta-toilet
		☐ Other:		
☒	**BASIC PPE**	☒ Standard work clothes appropriate for task ☒ Hard-toed boots/shoes ☒ Hardhat	☒ Safety glasses ☒ Work gloves appropriate for task ☒ Noise/hearing protection	☒ High-visibility/reflective vest/apparel ☐ Nuisance dust mask (voluntary use)
☐	**BIOLOGICAL HAZARDS**	☐ Insect control (permethrin, repellant, wasp spray, other) ☐ Poison ivy protection (Ivy Block skin cream, Tecnu skin wash) ☐ Tick removal kit ☐ Pant-leg "blousing"/gaiters (tick safe) ☐ Snake chaps/gaiters	☐ Animal warning device (for bears/cougars/wolves/large animals) ☐ Hand sanitizer (for general hygiene or COVID-19) ☐ Disinfectant supplies (for general hygiene or COVID-19) ☐ Face covers for COVID-19 prevention	
		☐ Other:		
☐	**SPECIAL HAZARD CONTROLS**	☐ Portable GFCI(s) for shock protection ☐ Electrical-hazard-rated boots, gloves ☐ Arc-resistant (AR) protection PPE for arc flash ☐ Flame-resistant (FR) clothing ☐ Work-area delineation supplies	☐ Lockout/tagout equipment ☐ Portable lighting ☐ Tripod/winch ☐ Ventilation equipment (fan, blower) ☐ Traffic control devices	☐ Personal fall protection apparatus ☐ Personal flotation device ☐ Ring buoy & rope ☐ Marine survival suit
		☐ Other:		
☐	**CHEMICAL PPE and CHEMICAL SAFETY GEAR**	☐ Goggles and/or face shield ☐ Chemical protective gloves ☐ Coveralls (Tyvek, or other) ☐ Outer boots, boot covers	☐ Disposable N95 respirator ☐ Half-face respirator (APR), cartridges ☐ Full-face respirator (APR), cartridges ☐ Exclusion Zone delineation supplies	☐ Decon solution, related supplies ☐ Receptacle for disposable PPE ☐ **Chemical hazard emergency gear – listed in "EMERGENCY EQUIPMENT" below**
		☐ Air monitoring equipment, worker exposure monitoring device(s):		
		☐ Other:		
☐	**EMERGENCY EQUIPMENT**	☐ **Air horn, alarm, alerting equipment** ☐ **2-Way radios; other communication device** ☒ **First aid kit(s) – onsite and/or in vehicles** ☒ **Fire extinguisher – onsite and/or in vehicles**	☐ **Eyewash bottle(s)** ☐ **15-min. eyewash station** ☐ **Emergency deluge shower** ☐ **Chemical spill kit/supplies**	**Vehicle emergency preparedness:** ☐ **Fire extinguisher, first aid kit** ☐ **Flares, lights, reflective device** ☐ **Roadside assistance service**
		Other:		

PART D – HAZARD ANALYSIS AND CONTROLS

D.1. ROUTINE HAZARD PREPAREDNESS (This section required for all Tasks)

Site-Specific Notes & Clarifications:

Routine Driving Hazards

☒ **Routine work travel** – Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, no texting, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate).

☒ **Unfamiliar location** – Plan travel route before driving in roadway: view map, plot your route and/or enter destination and activate navigation device.

☒ **Fatigue** – Minimize fatigue during long drives: frequent rest breaks, eat light snacks-avoid heavy meals, stay hydrated, fresh air, no loud music, keep windshield clean; avoid/minimize long distance driving during your ordinary sleep hours; total *work time* and *drive time* should not exceed 14 hours per day.

☒ **Unfamiliar vehicle** – Become familiar with vehicle operational controls and handling characteristics before operating vehicle.

Geosyntec Procedures: *HS-105-Driver and Vehicle Safety; HS-211-Fatigue Management Plan*

General Safety

☒ **General site hazards** – Prevent slips/trips/falls (resulting from rough terrain, trip hazards, steep slope, slippery surfaces); maintain good housekeeping.

☐ **Musculoskeletal hazards** – Prevent strains/sprains from strenuous tasks, overexertion, repetitive motion/ergonomic/lifting (seek help/lift-aids over 49 lbs.)

☒ **Weather/climate-related hazards** – Prevent heat/cold-related illness, use sunscreen, monitor weather, i.d. shelter/refuge, use "30/30 rule" for lightning.

☐ **Plant/insect/animal hazards** – Use precautions: poison ivy blocker/wash; insect repellant; tick checks; wasp spray; animal precautions.

☐ **Common unsanitary/allergenic hazards** – Use routine hygienic measures/precautions; hand washing/sanitizer, food hygiene, PPE, disinfectant cleaning.

☒ **Infectious/Pathogenic** - For COVID-19, and other non-typical/potentially high-risk pathogenic hazards, see **D.13 "Infectious/Pathogenic Biohazards."**

☒ **Worksite traffic hazards** – Implement measures to protect personnel (high-visibility/reflective clothing, on-person lighting, traffic control measures).

☐ **Hazardous energy** – Use caution near electrical equipment/wet locations, machinery/physical hazards, stay out of hazard zone/line-of-fire, don't touch.

☐ **Illumination hazards/night work** – Illuminate work areas and/or access routes, use high-visibility and reflective clothing or on-person lighting, as appropriate.

☐ **Security, potential crime/violence, urban/industrial zones** – Complete the *Assessment for Specific Risk: Working in Urban and Industrial Zones*

☒ **Working alone -** Develop a project-specific plan/procedure on limitations for lone work, and specify a plan for periodic communication/contact.

Geosyntec Procedures: *HS-124-Heat Stress, HS-125-Cold Stress, HS 212- Biting/Stinging Arthropods and Poisonous Plants, HS-207-Working Alone, HS-208-Housekeeping, HS-210-Walking and Working Surfaces, HS-401-Back Injury Prevention, HS-517-Traffic Safety, Assessment for Specific Risk: Working in Urban and Industrial Zones*

Basic Personal Protection

☒ **Head protection from overhead hazards** – Wear hardhat or "bump cap" as appropriate for hazard.

☒ **Hand protection** – Wear protective work gloves appropriate for the hazard and work tasks.

☒ **Eye protection** – Wear safety glasses (with side shield or wrap around, either clear or shaded for sun protection), or other appropriate eye protection.

☒ **Foot protection, rough terrain** – Wear work boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions.

☒ **Hearing protection** – use earplugs or earmuffs (or both) as appropriate for conditions; at a minimum where noise levels exceed 85 dBA.

☐ **Protective clothing/nuisance dust mask** – For general protection against dust, dirt, oily residues, unsanitary conditions, as needed.

☐ Other personal safety gear required for the task(s) covered in this THA is described above in Site-Specific Notes & Clarifications

Geosyntec Procedures: *HS 109-Hearing Conservation, HS 112-Respiratory Protection, HS 113-Personal Protective Equipment*

D.2. SPECIAL DRIVING / TRAFFIC / TRANSPORTATION HAZARDS ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☐	**SPECIAL DRIVING HAZARDS** Off-Road Driving or use of non-typical vehicle, heavy vehicle, van, UTV/ ATV Hazards: Worker injury due to vehicle collision, rollover	☐ For off-road driving, do not exceed capability of vehicle, beware of wet conditions, keep speed low, avoid unsafe orientation on slopes. ☐ UTV/ATV-specific procedures for training, use roll-bar or helmet, operate per manufacturer's instructions. ☐ Special Skills Required for Vehicle type – For vehicles requiring special skills (such as windowless van, heavy work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator skills through experience. ***Geosyntec Procedure(s):*** *HS-510-All Terrain Vehicles*
☐	**ROADWAY TRAFFIC HAZARDS** Where the worksite is located in/near vehicle thoroughfare (road, highway, parking lot, etc.). Hazards: Worker injury from being struck by vehicle traveling in thoroughfare.	☐ Prepare Management of Traffic (MOT) Plan (address location hazards / client and regulatory requirements). ☐ Wear DOT-approved reflective vests where exposed to traffic hazards. ☐ Where possible, park vehicles as protective shield from oncoming traffic. ☐ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☐ Use DOT signal devices and/or signage to re-route vehicles around work area, site entrances/exits. ☐ Use DOT-trained flaggers or police detail where appropriate or required. ***Geosyntec Procedure(s):*** *HS-517-Traffic Safety*
☐	**TOWING/HAULING LOADS** Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment, un-roadworthiness of trailer.	☐ Ensure load within vehicle is firmly secured (rope, straps, load configuration) to prevent shifting during travel. ☐ Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be appropriate for use, and used in a manner as to prevent an unsafe condition. ☐ For trailer use, verify tow-hitch components are compatible, hitch/safety chains secure, signal/braking lights operational, rear-view mirrors effective, tires inflated to proper pressure and tread acceptable.
☐	**RAILROAD HAZARD** Hazard: Worker injury from being struck by train in R.R. right-of-way	☐ Coordinate with rail company or on-site host facility and implement required safety and security measures. ☐ Site workers to receive safety training for railroad work. **Geosyntec Procedure(s):** *HS-305-Rail Operations*

☐	**TRANSPORTATION BY WATER**	☐ See **D.3., "Water Hazards."** **Geosyntec Procedure(s):** HS-312-Water Transportation Safety
☐	**AIRPORT HAZARDS** Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with airport personnel and implement required safety measures. ☐ Site workers to receive safety training for airport work. ***Geosyntec Procedure(s):*** HS-310-Helicopter Safety, HS 311-General Aviation (Small Aircraft) Safety
☐	**TRAFFIC/VEHICLE HAZARDS RELATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES**	☐ See **D.8., "Construction, Heavy Equipment, Lift Equipment"**

D.3. WATER HAZARDS (Working Over/Near Water, Ash Ponds, Quicksand) ☐ Applicable ☒ Not Applicable, Not Anticipated

D.4. FALL HAZARDS (Falls to Lower Levels) ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☐	**WORKING AT HEIGHTS (GENERAL)** Hazards: - Injury from falls onto lower surface or falls into hazardous equipment, chemicals, water - Overhead utilities/obstructions - Impalement hazard (such as from falling onto unprotected rebar and similar surface projections) - Hazard posed to ground personnel from falling tools, equipment, materials	***Fall protection "trigger heights":*** ***Built environment*** *– US & CAN: 4 ft. (1.2 m.);* ***Construction:*** *US: 6 ft., 10 ft. for scaffolds; CAN: 10 ft. (3 m)* Protect from ***primary*** (fall) hazards: ☐ Restrict access to hazard (barriers, tape, sign) ☐ Ensure safe access to height (ladder, stair, lift) ☐ Ensure guardrails/stair-rails/handrails present ☐ Ensure covers in place over holes ☐ Use designated "watch person/monitor" ☐ Use tether or positioning device ☐ Use personal fall apparatus (PFA) ☐ Use fall protection net Protect from ***secondary*** (collateral) hazards: ☐ Protect site ground personnel from falling objects (restrict access, toe-boards, tether tools) ☐ Install caps on protruding rebar and similar ☐ Working over water; see **D.3, "Water Hazards"** ☐ Working over hazardous machinery/equipment; see **D.5, "Power-Tools/Powered Equipment"** ☐ Overhead electrical; See **D.11. "Utility-Related Hazards"** ☐ Working over chemical hazards; See **D.14 and/or D.15 for chemical and/or contaminant hazards.** ***Geosyntec Procedure(s):*** HS-120-Fall Protection, HS-210-Walking and Working Surfaces, HS-304-Overhead/Underground Utility Hazards
☐	**LADDER / STAIRS** ☐ Extension/straight ladders ☐ Step ladders ☐ Fixed/installed ladders ☐ Portable/mobile stairs ☐ Job-made or scaffold stairs Hazards: - See general fall hazards, above.	☐ Follow safe work practices: • Use ladders according to safe practices and manufacturer's instructions. • Maintain 3 points of contact at all times on ladder; keep center of gravity within side rails. • Do not use metal (conductive) ladder near electrical hazard. • Extension/straight ladders shall be properly footed, secured, angled, extend above upper work surface. • Stepladders are set on level ground or properly shimmed, spreaders locked; do not climb/stand on top step, top cap, or rear non-climbing side; use step ladder of sufficient length for work. • Equip stairs with stair handrails where more than 4 steps, and for stairway height of 4' or more. • Ensure portable stairs are stable, plumb. ***Geosyntec Procedure(s):*** HS-120-Fall Protection; HS-501-Ladders
☐	**SCAFFOLD** ☐ Supported scaffold ☐ Suspended scaffold ☐ Free-standing/mobile scaffold Hazards: - See general fall hazards, above - Equipment collapse	☐ Follow safe work practices: • Identify/coordinate operations with the scaffolding "Competent Person." • Supported scaffold level, stable, proper attachments, tiebacks, planking, • Suspended scaffolds anchored properly. • Guardrails or personal fall apparatus required above 10 feet. • Proper means of accessing scaffold (proper ladders, stair tower). • Total height of free-standing scaffold not to exceed four times the minimum base dimension. • Do not exceed load limits; store/stage materials in quantities sufficient for immediate use. ***Geosyntec Procedure(s):*** HS-507-Scaffolds
☐	**AERIAL BOOM/SCISSOR LIFT** Hazards: - See general fall hazards, above - Struck-by, run-over, tip over - Caught between (pinch points) - Fluid leaks/fuel hazards or battery-related hazards	☐ Follow safe work practices: • Operators to be trained and certified. • Equipment is inspected after mobilization and is in good condition. • Harness & lanyard worn whenever operating the lift. • Overhead hazards and surface obstructions to be reviewed with operators prior to use. ***Geosyntec Procedure(s):*** HS-509-Aerial Lifts
☐	**WARNING!** Confirmed or possible close proximity to **OVERHEAD ELECTRICAL UTILITY LINES.**	☐ Follow safe work practices per **D.11., "Utility-Related Hazards"** ***Geosyntec Procedure(s):*** HS-304-Overhead/Underground Utility Hazards

D.5. HAND TOOLS (Manual, Hand-Powered) ☒ Applicable ☐ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☒	**MANUAL HAND TOOL INJURIES** ☐ Struck by ☐ Pinch points/crushing injuries ☐ Puncture ☐ Cutting blade/laceration risk ☒ Flying objects, eye hazards ☐ Other, describe above	☒ Proper tool for the job, maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of fire," appropriate work gloves, keep blades sharp, use wrist strap when dropped tool poses a hazard. ☐ Utility/folding/collapsible knives and fixed open-bladed knives/cutting tools are *not* permitted, unless specifically authorized. Cutting tools with auto-retracting blades, or with enclosed/guarded blades are permitted. Use cut-resistant heavy work gloves, as applicable. ☐ Ground surface penetration – requires utility clearance; see **D.11. "Utility-Related Hazards"** ***Geosyntec Procedures:*** *HS-502-Manual Hand Tools*
☐	**MUSCULOSKELETAL (MSK) HAZARDS** ☐ Risk of acute physical MSK trauma (strains, sprains, soft tissue injuries) ☐ Risk of cumulative/chronic MSK trauma, repetitive motion injuries	☐ For tools requiring high exertion (shovel, hand auger, sledgehammer, pickaxe, slide hammer, similar): do stretching exercises to prepare, clear hazard zone, use stable body position, take rest breaks, avoid overexertion.

D.6. POWERED TOOLS & EQUIPMENT (For Drilling & Heavy Equipment, see D.7 & D.8) ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☐	**Type of powered tools/equipment:** ☐ "Power tools" ☐ Powered portable equipment ☐ Powered fixed equipment **Energy/power source:** ☐ Battery-operated ☐ Electric-powered ☐ 120V ☐ 240V ☐ 480V ☐ Extension/flexible cords ☐ Fuel-powered (gas or liquid) ☐ Pneumatic ☐ Hydraulic ☐ Gunpowder-actuated **Hazards of Power Tools and Powered Equipment:** ☐ Eye/hand/body injury ☐ Point-of-operation hazards ☐ Pinch points, moving parts ☐ Line-of-fire hazards, struck by ☐ Fire/explosion, ignition sources ☐ Burns from hot surfaces, steam ☐ Noise ☐ Inhalation/atmospheric hazards ☐ Working at heights, falls ☐ Overhead obstruction(s) ☐ Musculoskeletal hazards ☐ Potential (stored) energy ☐ Illumination	☒ General safe work practices for operation of powered tools and equipment: • Inspect before each use to ensure safe operating condition. • Clear personnel from hazard zone; keep personnel out of the "line-of-fire;" heed warning labels/signage. • Arrange worksite for safe access to equipment and safe use of tool; confirm no overhead obstructions. • Secure long hair/loose clothing/hanging jewelry near moving/rotating parts. • Ensure point-of-operation, mechanical power transmission, other moving parts are guarded with protective devices (as applicable); do not override interlocks, guards, protective devices. • Do not make any equipment modifications that create a greater hazard or bypass safety design features. • Use tool/equipment in accordance with manufacturer's use and safety instructions. • Use PPE and/or other safety protections, as appropriate, for eye/hearing/hand/head/body protection. • Provide training or verify operator competency for use of power tool/equipment. • Use ventilation, wet methods, respirators, other applicable means to mitigate inhalation hazard. • Move power cords/pressurized hoses to protect from damage during tool/equipment use. • For spark/heat generating tool/equipment, have fire extinguisher available, remove combustible/flammable materials, or use other means to control fire hazard. • Use safe lifting practices and/or lift aids for moving heavy portable equipment, and use safe operating procedures to protect from acute strains/sprains, overexertion, and cumulative trauma injuries. • Implement safe work practices for compressed air, pressurized systems (pneumatic/hydraulic), stored energy. ☐ Additional requirements for power tools: • Use vise/clamp/work bench or other means to hold/secure a portable/moveable work piece. • Don't carry electrical tools/equipment by the power cord; don't carry pneumatic tools by hoses. • Disconnect tool/equipment from power source before changing bits, blades or making adjustments. ☐ Additional requirements for fixed powered equipment: • Implement lockout/tagout controls for repairs/adjustments/tooling changes. • Equip pneumatic hoses with whip checks; ensure factory fittings are used for high-pressure hose connections. ☐ For climbing/fall hazards associated with large equipment, see **D.4. "Fall Hazards."** ☐ For electrical hazards, see **D.10. "Electrical Work Tasks."** ☐ For ground surface penetration, see **D.10. "Utility-Related Hazards."** ☐ For fuel-safety practices, see **D.14. "Commercial Chemical Products."** ☐ For air monitoring of atmospheric hazards, see **Part E, "Air Monitoring, Worker Exposure Monitoring."** ***Geosyntec Procedure(s):*** *HS-109-Hearing Conservation, HS-113-Personal Protective Equipment, HS-119-Lockout/Tagout, HS-121-Electrical Safety, HS-503-Powered Hand Tools, Others as applicable*

☐	**WELDING, CUTTING, HOT WORK** ☐ Arc-welding (electrical arc) ☐ Gas-welding/cutting (fuel gases) Hazards: - UV/IR light-eye/skin burns - hot-work hazards/fire - toxic metal welding fumes - compressed gases - electrical shock	☐ General safe work practices for operators of welding equipment: • Hot work permit system to be implemented. • Operator properly protected (eye protection, clothing, apron, etc.). • Fire hazard controls (watcher, fire extinguisher, water, remove combustibles from work area). • Protect nearby personnel from hazardous UV, IR light (shielding, curtain); see **D.16. "Radiation Hazards."** ☐ For welding gas cylinders, secure them upright with caps on when stored or not in use; protect cylinders from damage; NEVER secure gas cylinders to metal welding bench used for electrical arc welding); see **D.14. "Commercial Chemical Products."** ☐ For arc welding, follow electrical safe work practices; see **D.10. "Electrical Work Tasks."** ☐ For inhalation hazards from welding fumes (toxic metals) and gases (asphyxiant, flammable), see **D.14. "Commercial Chemical Products."** ***Geosyntec Procedure(s):*** *HS-511-Welding, Cutting and Other Hot Work*
☐	**PORTABLE ELECTRIC GENERATOR** Hazards: - Electrical shock - Carbon monoxide in exhaust - Fuel-related fire hazard - Injury from mechanical or lifting hazard - Burns from hot surfaces	☐ Follow general safe work practices for Powered Tools & Equipment (above), and as follows: • Use in accordance with manufacturer's instructions, including instructions for grounding the generator. • Keep generator and work area dry. • Never use indoors, or near building air intake vents due to carbon monoxide hazard. • Provide for ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. • Use hearing protection in close proximity to operating generator, as needed. • Use power cords/extension cords specified by instructions. • Use ground-fault circuit interrupters (GFCIs) in accordance with manufacturer's instructions; see **D.10. "Electrical Work Tasks."** • Shut down equipment before refueling; see safe practices for flammable/combustible liquids in **D.14. "Commercial Chemical Products."** ***Geosyntec Procedures:*** *HS-109-Hearing Conservation, HS-111-Air Monitoring, HS-115-Hazard Communication (for fuel), HS-121-Electrical Safety, Others as applicable*
☐	**PNEUMATIC / HYDRAULIC HAZARDS** ☐ Air compressor ☐ Compressed air system ☐ High-pressure liquid ☐ Pressurized steam (For compressed gas cylinders, see **D.14. "Commercial Chemical Products")**	☐ Never direct outlet nozzle toward body; use guards, restraints, engineering controls as appropriate. ☐ Never use compressed air for cleaning clothes you are wearing. ☐ If compressed air is used for cleaning, restrict pressure to 30 psi or below, equip nozzle with chip guard. ☐ Use PPE for eye (goggles or face shield)/hand/head/hearing/skin protection, as appropriate for the hazard. ☐ Ensure tank, hoses, fittings are in good repair using factory fittings, equipped with whip-checks. ☐ If pressure relief device poses a hazard to workers, reconfigure or shield device or restrict access by workers.
☐	**PORTABLE HEATER** ☐ electric ☐ fuel powered Hazards: - Shock (electrical) - Carbon monoxide emissions and fuel-related fire hazards (fueled) - Fires/burns from hot surfaces.	☐ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: • Keep heater dry and locate heater on level surface away from high traffic areas to prevent tipping. • Never use fuel-powered heaters indoors, or near air intake vents, due to carbon monoxide hazard. • Provide ventilation and/or air monitoring where hazardous accumulation of exhaust emissions is possible. • Keep combustible materials at least 3 feet from hot surfaces. • Do not use an extension cord or power strip to power an electric heater. • For electric heaters, see **D.10., "Electrical Work Tasks."** • Shut down fuel-powered equipment before refueling; see safe practices for flammable/combustible liquids and/or compressed gases in **D.14. "Commercial Chemical Products."** ***Geosyntec Procedures:*** *HS-111-Air Monitoring, HS-115-Hazard Communication (for fuel), HS-121-Electrical Safety, Others as applicable*
☐	**LOCKOUT/TAGOUT (LO/TO) OF HAZARDOUS ENERGY** To prevent unplanned equipment start-up or release of energy when under maintenance/repair.	☐ Prepare site-specific written LO/TO *program*, and equipment-specific written LO/TO *procedures* (as applicable); implement control procedures for hazardous energy sources, provide locks/tags, train workers, designate "authorized" personnel, notify "affected" personnel. ***Geosyntec Procedure(s):*** *HS-119-Lockout Tagout, HS-121-Electrical Safety*

D.7. DRILLING (Test Boring, Direct Push, Construction Drilling) ☒ Applicable ☐ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☒	**DRILLING & DIRECT PUSH** Includes hazards posed by drilling rig and associated equipment, heavy support vehicles, trailer/towing hazards, and similar mobile equipment. Hazards: - Struck-by equipment - Run over, roll over - Caught between (pinch points) - Manual lifting, musculoskeletal - Fuel/fluid leaks, fuel hazards	☒ Follow safe work practices, as applicable: • Non-drilling personnel to stay clear of drilling work zone when drill rig in operation. • Equipment maintained in good repair, inspected daily upon mobilization; backup alarms and emergency stop operational, machine guards in place, whip checks on high pressure lines. • Leaks or defective safety equipment should be repaired before use. • Establish eye contact with operator and use hand signals prior to approaching the rig. • Use PPE near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). • Arrange personal/support vehicles to protect drill team and not obstruct travel lanes or other operations. • Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. • Drill rigs will only be moved with masts lowered. • Maximum safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. • Use safe practices for fuel handling/storage/transport; spill equipment available for fuel/fluid leaks.

	- Suspended equipment - Roadway hazards.	• Ventilate exhaust and conduct air monitoring, as appropriate, when drilling indoors. • Never climb drill mast without appropriate fall protection. • Use precautions for overhead and underground utilities ***Geosyntec Procedure(s):*** *HS-403-Drilling, HS-304-Overhead/Underground Utility Hazards, Others as applicable*
☐	**MECHANICAL LIFTING, RIGGING** Applies to lifting truck-mounted boom rig (e.g., drill rig), and all other drilling-related mechanical/electrical hoist equipment. Hazards: - Mechanical hazards - Elevated loads	☐ In addition to general drilling & direct push safety practices (above), as applicable: • Slings, chains, rope, wire rope, as well as sheaves, boom, and attachments used for lifting/hoisting shall be maintained in good condition, inspected daily, and used/stored in a manner as to protect from damage. • Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. • Hooks will be equipped with safety latches. • Ensure anchor points for winch or other lift device are engineered for intended use. • Ensure personnel are not positioned beneath elevated loads. ***Geosyntec Procedure(s):*** *HS-506-Cranes*
☒	**WARNING!** Confirmed or possible close proximity to **OVERHEAD or UNDERGROUND UTILITIES.**	☒ Follow safe work practices per **D.11. "Utility-Related Hazards."** ***Geosyntec Procedure(s):*** *HS-304-Overhead/Underground Utility Hazards*

D.8. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☐	**WORKING NEAR MOBILE HEAVY EQUIPMENT, ON-SITE VEHICLES** Hazards: - Struck-by - Caught between - Run over, roll over - Overhead hazards/obstructions - Elevated loads	☒ For personnel on-foot/on-the-ground near operating heavy equipment, follow safe work practices: • High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. • Maintain unobstructed vision: wear shaded eyewear only in bright sun; don't wear hoods. • Erect barriers and post signs to identify and isolate the equipment hazard zone, if possible. • Stay out of swing radius of equipment, both in front and operating end, as well as at the back of equipment. • Stay out of the travel path of operating heavy equipment. • When crossing vehicle pathway behind moving equipment, cross at a distance not less than 30 feet. • When approaching equipment, always be able to see operator so he/she can see you. • Make eye contact with operator and use hand signals or make radio contact prior to approaching equipment. • Operator to provide "all off" hand signal when it is safe to approach within swing radius of equipment.
☐	**OPERATION OF MOBILE HEAVY EQUIPMENT** Hazards: - Struck-by - Run over, roll over - Caught between (pinch points) - Fluid leaks/fuel-/fire-hazards - Overhead hazards/obstructions - Potential for body entrapment/crushing - Rotating equipment, moving parts.	☐ Operators to follow safe work practices for operation of heavy equipment: • Only trained/qualified persons allowed to operate heavy equipment. • Wear seatbelts; roll-over protection system present/deployed; do not exceed maximum safe slope. • No passengers on moving/operating equipment except where passenger seat/restraint is present. • Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. • Leaks or defective safety equipment should be repaired before use; fire extinguisher present. • Maintain eye contact with ground personnel and use hand signals to direct their approach near equipment. • High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. • Cease operation if personnel enter swing radius, travel path or hazard zone of moving parts, elevated loads. • Use safe practices for fuel handling/storage/transport; spill equipment available for fuel/fluid leaks. • Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. • Shut down/lock out equipment to prevent crush situation beneath or between moving parts of equipment. • Ensure personal/support vehicles are parked/located not to obstruct equipment travel lanes/operating zones. • Mark temporary roadways clearly, provide berms/stops where needed. ***Geosyntec Procedure(s):*** *HS-504-Heavy Equipment, HS-132-Competent Persons*
☐	**TRENCHING/EXCAVATION** Hazards: - Cave-in, entrapment - Hazardous atmosphere - Water accumulation - Falls into excavations - Utility-related hazards - Undermining structures & foundations	☐ Safe work practices when personnel will enter trenches/excavations: • Activities under supervision/oversight of Competent Person, conduct daily inspection of excavation. • Excavated materials placed at least 2' from trench sidewall. • Prevent water accumulation in trench. • Sloping & shoring for trenches/excavations >20' deep must be approved by a Professional Engineer. • Sloping/shoring/trench box for excavations >5' when persons enter trench/excavation. • Sloping/shoring/trench box for shallow (<5') trench/excavation with cave-in hazard. • Workers in trenches to be within 25 feet of ladder or sloped entryway. • Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. • If potential for atmospheric hazard, see **D.12. "Confined/Enclosed Spaces"** ***Geosyntec Procedure(s):*** *HS-402-Excavation and Trenching, HS-132-Competent Persons*
☐	**FORKLIFT** Hazards: - Struck-by - Run over/roll over/tip over - Overhead utilities/obstructions - Caught between (pinch points) - Unstable/falling loads - Elevated forks -Fluid leaks	☐ In addition to general safety practices for heavy equipment (above), as applicable: • Qualified operator, per established forklift training (certificate is required); Geosyntec operator must be approved by Director of Health and Safety. • Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. • Do not exceed lifting load limits. • Forklift shall not be moved/driven with empty forks in raised position. • When not in use, forks lowered, brake set, controls in neutral, key removed. ***Geosyntec Procedure(s):*** *HS-505-Safe Operation of Forklifts, HS-132-Competent Persons*

☐	**AERIAL BOOM/SCISSOR LIFT** Hazards: - Falls from basket - Overhead utilities/obstructions - Struck-by, run over, tip over - Caught between (pinch points) - Tip over - Fluid leaks.	☐ Follow safe work practices: • Operators to be appropriately trained and certified. • Equipment is inspected after mobilization and is in good condition. • Harness & lanyard worn whenever operating the lift. • Overhead hazards and surface obstructions to be reviewed with operators/riders prior to use. ***Geosyntec Procedure(s):*** *HS-509-Aerial Lifts*
☐	**CRANES** Hazards: – electrocution by overhead utility – injury in swing radius – injury from falling load – crane tipping over due to overbalancing, high winds, unstable ground, unsafe slope, bad placement of outriggers – injury from mechanical hazards	☐ In addition to general safety practices for Operation of Heavy Equipment (above), as applicable: • Only qualified persons operate cranes (certificate required). • Critical Lift Plan & Checklist prepared/executed (See HS 506-Cranes) prior to mobilization. • Equipment to be inspected prior to mobilization and daily by crane operator. • Crane operator will remain at the controls at all times during operation. • Crane operation must be performed under the direction of an appointed signal person at all times using hand signals and/or voice/radio communication. • Crane to be level and stable (solid ground or crane mats/timbers, outriggers if present, cribbing); over-reaching or exceeding load limits is prohibited. • Keep area beneath suspended loads clear of personnel; tag lines used to maneuver load. • Rigging procedures – see Mechanical Lifts with Rigging, below. ***Geosyntec Procedure(s):*** *HS-506-Cranes, HS-132-Competent Persons*
☐	**MECHANICAL LIFTS WITH RIGGING** Applies to lifting by rigging attached to crane, truck-mounted boom rig (e.g. drill rig), heavy equipment, mechanical/electrical hoist, similar equipment. Hazards: – Mechanical hazards, – Elevated loads	☐ In addition to general safety practices for Operation of Heavy Equipment and Cranes (above), as applicable: • Slings, chains, rope, wire rope, as well as sheaves, boom and attachments used for lifting/hoisting shall be maintained in good condition, inspected daily, and used/stored in a manner as to protect from damage. • Coordinate lifting operations with competent person. • Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. • Hooks will be equipped with safety latches. • Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use. • Ensure personnel are not positioned beneath elevated loads and that tag lines are used where appropriate. ***Geosyntec Procedure(s):*** *HS-506-Cranes*
☐	**WARNING!** Confirmed or possible close proximity to **OVERHEAD or UNDERGROUND UTILITIES.**	☐ Follow safe work practices per **D.11. "Utility-Related Hazards"** ***Geosyntec Procedure(s):*** *HS-304-Overhead/Underground Utility Hazards*
☐	**DEMOLITION**	☐ Develop/implement a demolition safety plan. ***Geosyntec Procedure(s):*** *HS-132-Competent Persons*
☐	**BLASTING, UNEXPLODED ORDNANCE**	☐ Develop/implement safety plan for blasting, unexploded ordnance, as applicable. ***Geosyntec Procedure(s):*** *HS-307-Blasting and Use of Explosives, HS-132-Competent Persons*
☐	**PUBLIC AT RISK, SITE SECURITY**	☐ During site operations protect public (overhead protection, fencing, barriers, warning signs). ☐ During off hours, protect public with fencing, barriers, warning signs/lights, other measures as appropriate. ☐ Lock/secure hazardous materials and/or equipment.

D.9. STORAGE/HANDLING OF BULK MATERIALS (for *Chemical* Storage, see D.14 & 15) ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☐	**BULK STORAGE HAZARDS:** Collapse/movement of stacked/stored bags, blocks, containers, pipe, boxes, equipment, and similar. ☐ Stack/pallet/rack/shelf ☐ CONEX-box storage, or similar	☐ Store materials in stable manner (stacked, racked, blocked, interlocked, tied, wrapped, or otherwise secured) to prevent tipping, sliding, rolling, falling or collapse. ☐ Do not exceed load limits and ensure storage structure is stable, robust, secure for intended load. ☐ Ensure stored materials do not block aisles, passageways, electrical panels, emergency equipment, emergency access/egress routes, vehicle routes.
☐	**LIFTING/MANUAL MATERIAL HANDLING HAZARDS**	☐ During manual handling of materials and equipment, use safe lifting practices and/or lift aids; do stretches and use safe postures to protect from acute strains/sprains, overexertion, and cumulative trauma injuries.

D.10. ELECTRICAL WORK TASKS ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☐	**USE OF BATTERIES, BATTERY-POWERED EQUIPMENT <50 V, OR OTHER DC EQUIPMENT < 50 V** Potential fire hazard (if terminals are shorted), eye/skin hazards (when electrolyte is replenished), inhalation hazard in enclosed spaces.	☐ Follow safe work practices to control hazards of voltage, shock, arcing, overheating, hazardous gases, irritant electrolytes, secondary hazards. ☐ Prevent short-circuiting of terminals when battery is in use (segregated from tools, metal objects) and during transport (use battery transport container or install guard/cover on positive terminal). ☐ For batteries requiring replenishment of electrolyte, use PPE for eye and skin protection, and have eyewash equipment at hand; see discussion of *acids/caustics/corrosives* in **D.14. "Commercial Chemical Products."** ***Geosyntec Procedure(s):*** *HS-121-Electrical Safety*

☐	**"NORMAL OPERATION" OF ELECTRICAL EQUIPMENT CONNECTED TO AC OR DC POWER SOURCE ≥ 50 V:** Electrically powered tools, equipment, machinery, extension cords, portable generators, working near electrical equipment. Hazards: – Electrical shock – Secondary hazards (falls, other injuries).	☐ Follow "normal operation" requirements: • All electrical enclosures/guards/covers must be in place/closed/secured. • Electrical equipment maintained per codes/standards/manufacturer's recommendations. • Ensure no indication of damage or impending failure (heat, smoke, buzzing, odors, arcing, melting). • Operate equipment in accordance with manufacturer's standard operating procedures. ☐ Follow general electrical safety work practices to minimize shock hazard and secondary hazards: • Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. • Never touch electrical equipment if you are wet or standing/kneeling in water or on wet surfaces. • Use extension cords/power cords properly, rated for use conditions and current draw, prevent damage. • Inspect tool/equipment/extension cords/power cords before each use; remove from use if damaged. • Use GFCI-protected outlet or portable GFCI in wet/moist locations, outdoors, basements, concrete floors. • Do not enter any space delineated by an electrical approach boundary. ***Geosyntec Procedure(s):*** *HS-121-Electrical Safety*
☐	**HANDS-ON DIAGNOSTICS/REPAIR ON CIRCUIT(S) CONNECTED TO POWER SOURCE < 50 V:** ☐ AC ☐ DC ☐ Battery and/or solar power ☐ Capacitor(s) ☐ Stray voltage from soil electrodes	☐ Implement electrical safe work practices pertaining to: • Workers trained appropriately for the task. • Shock prevention measures. • Eye/skin protection for arcing hazards. • Protection from secondary hazards. ***Geosyntec Procedure(s):*** *HS-121-Electrical Safety*
☐	**WORK WITHIN *"APPROACH BOUNDARY"* OF EXPOSED, ENERGIZED (OR POTENTIALLY ENERGIZED) CONDUCTORS AND/OR CIRCUIT PARTS CONNECTED TO POWER SOURCE 50-600 V*:** ☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor(s) ☐ Induced voltage ☐ Stray voltage ≥50V from soil electrodes *** Working on >600 V not permitted for Geosyntec personnel**	☐ Prepare project-specific written "Electrical Safety Program" addressing (at a minimum): • Workers trained/designated as "Qualified Electrical Workers" per NFPA 70E (US)/CSA Z462 (CAN) • Assess risks of electrical shock (voltage levels and sources), arc flash hazard and secondary hazards. • Affix electrical hazard warning label to electrical enclosure(s) to be accessed. • Physically delineate arc flash- or limited approach boundary, whichever is farthest from hazard source. • Only "qualified" workers allowed within approach boundaries; prevent entry by non-qualified personnel. • Establish electrically safe working condition; work on live circuits prohibited (except for diagnostic testing). • Use PPE for shock/arc flash protection, as required. • Use other safe procedures/equipment required for the task, such as lockout/tagout. ***Geosyntec Procedure(s):*** *HS-121-Electrical Safety, HS-129-High Voltage Electricity Safety*
☐	**LOCKOUT/TAGOUT (LO/TO) OF ELECTRICAL ENERGY** To prevent unplanned start-up or release of energy when equipment is under maintenance/repair.	☐ Prepare site-specific written LO/TO *program*, and equipment-specific written LO/TO *procedures* (as applicable); implement control procedures for hazardous energy sources, provide locks/tags, train workers, designate "authorized" personnel, notify "affected" personnel. ***Geosyntec Procedure(s):*** *HS-119-Lockout Tagout, HS-121-Electrical Safety*
☐	**WARNING!** Confirmed or possible close proximity to **OVERHEAD ELECTRICAL UTILITY LINES.**	☐ Follow safe work practices per **D.11. "Utility-Related Hazards."** ***Geosyntec Procedure(s):*** *HS-304-Overhead/Underground Utility Hazards*

D.11. UTILITY-RELATED HAZARDS ☒ Applicable ☐ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications: Clear for utilities prior to starting drilling.

☐	**OVERHEAD, ABOVE-GROUND UTILITIES**	☐ Arrange for power company/utility owner to de-energize power line. ☐ Do not cross approach boundaries with personnel or equipment; employ other appropriate precautions for the conditions (specify above). ☐ Use additional controls, as applicable: shielding, flagging, observer/monitor. ***Geosyntec Procedure(s):*** *HS 304-Overhead/Underground Utility Hazards*
☒	**UNDERGROUND UTILITIES**	☒ Confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions. ☒ Hand digging/augering or vacuum post-holing within 3' of utility locations or other high-risk condition. ***Geosyntec Procedure(s):*** *HS 304-Overhead/Underground Utility Hazards*

D.12. CONFINED / ENCLOSED SPACES (Including Hazardous Indoor Spaces) ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☐	**Type of CONFINED/ENCLOSED/ HAZARDOUS INDOOR Workspace:** ☐ Indoors (occupied) ☐ Indoors (abandoned, vacant) ☐ Basement, crawl space, attic	**REQUIREMENTS:** 1. **Contact Corp. H&S Department** to determine applicability of confined space entry regulations, and to determine safe work practices for entry into any confined, enclosed or hazardous indoor spaces. 2. **Classify the work task** by checking **one** of the following:

	☐ Tunnel, shaft, inspection gallery ☐ Storage bin, locker ☐ Culvert, catch basin, sewer ☐ Well vault, utility vault, manhole ☐ Tank, vessel, silo, vat, hopper ☐ Trench, excavation ☐ Machine/equipment pit ☐ Transportation container, railcar ☐ Other – describe above **Confirmed or potential hazards:** ☐ Flammable/explosive ☐ Oxygen deficiency ☐ Hydrogen sulfide ☐ VOCs ☐ Carbon monoxide ☐ Combustible dust ☐ Combustion/exhaust emissions ☐ Welding/cutting fumes ☐ Electrical ☐ Mechanical equipment ☐ Entrapment, engulfment, drowning ☐ Building-related hazards ☐ Other – describe above	☐ **CONFINED SPACE** classified **by U.S. OSHA as a "Permit-Required Confined Space;"** ensure OSHA requirements are met in OSHA jurisdictions. ☐ **CONFINED/ENCLOSED/INDOOR/CONFINED space NOT classified as an OSHA Permit-Required Confined Space**; develop site-specific entry procedure **per applicable regulations and Geosyntec requirements**. **3. Delineate tasks, hazards and controls** associated with the work in **Section C.1. "Summary of Tasks, Hazards and Controls,"** and in applicable sections in **Parts C, D and E of this THA**; incorporate applicable safety provisions such as, but not limited to, the following: • Risk assessment; entry plan, entry permit system/safety checklist. • Air monitoring for atmospheric hazards. • Entry roles (supervisor, entrant, attendant), buddy system, regulatory training requirement. • Protect non-entry personnel from unauthorized entry (labels, signage, barriers) • Ingress/egress (stairway, ramp, ladder, tripod/winch, harness/lifeline, etc.). • Communication/alerting/rescue/emergency plan. • Entry hazard controls: - Isolation, cleaning, purging, lockout/tagout, fire protection. - *Dilution* ventilation to introduce fresh air - *Exhaust* ventilation to control point source of emissions. - Duct/stack to direct hazardous emissions away from work area. - Respiratory protection. - PPE and safety gear to protect from chemical/physical/biological hazards. - Fall protection. - Traffic control. ***Geosyntec Procedure(s):*** *HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-118-Confined Space Entry, Others as applicable to the specific work*

D.13. INFECTIOUS / PATHOGENIC BIOHAZARDS ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☐	**HAZARD TYPE:** ☐ COVID-19 ☐ Wastewater, sewer ☐ Bird guano ☐ Mold, fungi, valley fever ☐ Bloodborne pathogens ☐ Discarded syringes ☐ Medical waste ☒ Other (describe above)	☐ Follow ***Field Work COVID 19 General Prevention Measures*** (as applicable); **list project specific COVID interventions above, communicate/coordinate with project team prior to initiation of work.** ☐ Use "Universal Precautions" as applicable for potential exposures to infectious/pathogenic hazards. ☐ Low hazard – use basic hygiene practices, protective gloves, provide for hand washing. ☐ More severe hazard – add protective clothing, respirator/dust mask, decon, as appropriate. ☐ For bloodborne human pathogens follow Bloodborne Pathogen Program. ☐ Arrange with Human Resources for project-specific immunization. ☐ Implement remedial actions (remove syringes, clean up guano, decon/disinfect surfaces, etc.) as appropriate for the scope/scale of work. ***Geosyntec Procedure(s):*** *HS-133-Bloodborne Pathogens, COVID-19 Considerations and Mitigations for On-Going Business Operations, Field Work Covid-19 General Prevention Measures*

D.14. COMMERCIAL CHEMICAL PRODUCTS (per HAZCOM or WHMIS) ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☐	**PRODUCTS REGULATED BY HAZCOM[1] (US) or WHMIS[2] (CAN)**	☐ Safety Data Sheets (SDSs) available, either on site or readily available within same work shift, containers labelled properly, workers trained/oriented on hazards. ☐ For subcontractor/contractor use of chemical products, confirm SDS availability for affected onsite workers.
	[1] OSHA Hazard Communication Standard (United States); [2] Workplace Hazardous Material Information System (Canada)	
☐	**GENERAL SAFE WORK PRACTICES FOR FIELD USE OF CHEMICALS**	☐ Consult SDS for H&S hazards, symptoms of exposure; ensure workers have been apprised of safe practices. ☐ Handle with care, maintain good housekeeping, provide adequate illumination in work area. ☐ Pour/dispense/transfer liquid chemicals on stable work surface. ☐ Use chemicals in well ventilated area; use fans/blowers/exhaust for active ventilation, as appropriate. ☐ Have eyewash bottles, eyewash station, deluge capabilities, commensurate for the hazard, readily available. ☐ Have spill/neutralization equipment, appropriate for the chemicals, readily available. ☐ Conduct air monitoring as appropriate; see **Part E, "Air Monitoring, Worker Exposure Monitoring."**
☐	**STORAGE/TRANSPORT OF CHEMICALS/HAZMAT** ☐ **Non-Emergency (Routine) Chemical Storage** Risk of personal contact and/or incidental release ☐ **HAZMAT Transport** ☐ **Risk of Emergency Spill/Release**	☐ Transport chemicals only in sealed containers, secured to prevent shifting/breakage during travel. ☐ Store chemicals only in sealed containers; overnight storage in squirt/spray bottles prohibited. ☐ Store flammable/combustible liquids in chemical storage cabinets, or other appropriate storage arrangement. ☐ For liquids, provide secondary containment during storage. ☐ Segregate incompatible chemicals during storage. ☐ For *incidental release/spill;* maintain spill kit suitable for low flammability/toxicity/quantity/volatility release. ☐ DOT/TDG/IATA-Regulated transport: see **D.17. "Hazmat/Dangerous Goods Shipping/ Transportation.** ☐ For *emergency spills*: describe spill/release hazard and response plan/procedure above, and indicate

	☐ **CFTAS (Chemical Facility Anti-Terrorism Standards) Applicability:** On-site overnight storage of non-waste chemical product at quantity ≥25 gal(115L) or ≥250 lbs. (115 kg)	emergency response contact in Part B, "Emergency Response and First Aid." ☐ Locate emergency gear (eyewash, fire extinguisher, spill kit, safety signage) near storage area, as applicable. ☐ For CFTAS-applicable chemical storage, a safety and chemical management plan must be prepared and reviewed by a H&S Professional before bringing material to the site. (Does not apply to materials brought on to the site for daily work purposes and transported away at the end of each day)
☐	**COMPRESSED GAS CYLINDERS** ☐ Flammable ☐ Non-flammable ☐ Toxic ☐ Asphyxiant ☐ Oxygen	☐ Secure cylinders upright, caps on when not in use. ☐ Handle with care; use and store cylinders in a manner and location to prevent damage. ☐ Propane cylinders not in use must be stored outdoors in a cage or similar secure ventilated enclosure. ☐ Ensure acetylene cylinders are NOT secured to steel arc welding bench. ☐ Segregate oxygen and fuel gases by distance (20') or fire-rated barrier. ☐ Control ignition sources. ☐ "No smoking" signage at cylinder storage area for flammable gases.
☐	**FLAMMABLE/COMBUSTIBLE LIQUIDS**	☐ Use proper fuel safety can (metal fuel container with self-closing spout and flame arrestor preferred). ☐ Control/remove ignition sources near storage and use areas. ☐ Grounding and bonding where appropriate. ☐ Ensure a Type B or ABC fire extinguisher is readily available.
☐	**ACIDS, CAUSTICS, OTHER CORROSIVES**	☐ Use appropriate protection for eyes/face (goggles/face shield) and skin (gloves, sleeves, apron). ☐ Use eyewash, deluge shower, drench hose, hand washing (with water), as appropriate. ☐ For severe eye hazards (due to high corrosivity, large quantity), 15-min. eyewash required.
☐	**TOXIC**	☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact, skin absorption); use active ventilation and/or PPE as appropriate.
☐	**EMISSIONS FROM FUEL COMBUSTION, HOT PROCESSES** ☐ Gasoline ☐ Diesel ☐ Propane/Natural Gas ☐ Welding/cutting/hot work ☐ Vehicle/equipment exhaust ☐ Other	☐ Position outdoor personnel upwind of exhaust source. ☐ Avoid "idling" of equipment when not in use. ☐ Use *passive ventilation* (air infiltration/air currents) to disperse atmospheric hazards in breathing zone. ☐ Use *dilution ventilation* (blowers/fans) to provide fresh air to work area and dissipate atmospheric hazards. ☐ Use *exhaust ventilation* (hood/duct/exhaust stack/blower) to capture/divert exhaust from work area. ☐ Use respiratory protection for high levels of smoke, exhaust particulates, soot. ☐ Conduct air monitoring as appropriate; see **Part E," Air Monitoring, Worker Exposure Monitoring."**
☐	**OTHER HAZARDS**	☐ Describe other hazardous substances and safety measures under "Site-Specific Notes & Clarifications," above.
	Geosyntec Procedures: *HS-115-US-Hazard Communication, HS-115-CA-WHMIS, HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, Others as applicable*	

D.15. SITE CONTAMINANTS, CHEMICAL WASTES

☒ Applicable ☐ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications: PFAS compounds expected in soil and groundwater based on Site knowledge. Identify IDW storage procedures with client prior to starting work.

CHECK ALL THAT APPLY. Provide site-specific notes/clarifications above.

☒ Soil/groundwater contaminants (historical release)	☐ Explosive dust	☐ Potential for flammable gas (methane)
☐ Recent release, known high concentrations	☐ Oxygen deficiency	☐ Corrosive, acids/caustics, strong irritants
☐ Former chemical disposal site, landfill	☐ Chlorinated volatile organic compounds (VOCs)	☐ Asbestos abatement work
☐ Urban fill, residual contaminants	☐ BTEX, petroleum derived VOCs	☐ Pesticides, herbicides, fungicides
☐ Containerized waste (drums, process equipment)	☐ Fuel oils, petroleum, waste oil, lubricants	☐ Sensitizers
☐ Buried drums (known or potential)	☐ Metals, metal compounds, metal dusts	☐ Radioactive contaminants
☐ Large containers, potential for spills	☐ Elemental mercury	☐ Controlled substances, drugs
☐ Contaminated building surfaces	☐ Polyaromatic hydrocarbons (PAHs)	☐ Other - describe above
☐ Unexploded ordnance	☐ Potential for flammable vapors	

NOTE: For sites with one or more **"high-risk contaminants"** (below) designated/recognized as a *contaminant of concern*, or *exceeding an environmental reporting threshold*, or representing a *potential exceedance of an action level or exposure limit*, the THA must be reviewed by the H&S Dept. before initiating the work:

☐ Asbestos	☐ Cadmium	☐ Lead
☐ Arsenic/arsenic compounds	☐ Chromium VI (Hexavalent chromium)	☐ Methylene chloride
☐ Benzene (except as trace constituent of petroleum fuel)	☐ Dioxins	☐ Polychlorinated biphenyls (PCBs)
☐ Beryllium	☐ Reactives – Cyanides/sulfides (HCN, H_2S)	☐ Vinyl chloride

☐ **FOR WORK CONSISTING OF CLEANUP OPERATIONS, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATIONS at an "UNCONTROLLED HAZ. WASTE SITE" (per HAZWOPER, 29 CFR 1910.120 or equivalent), delineate procedures in "Site-Specific Notes and Clarifications" (or attachments) addressing the following, as applicable to the work:**

- Workers attend **pre-work orientation** on hazards, risks, onsite safety measures, emergency contingencies.
- Implement **site control plan** - delineate Exclusion Zone(s), Contaminant Reduction Zone(s), Support Zone (aka EZ, CRZ, SZ).
- Include **site map/figure** depicting work locations and other relevant site-specific information.

	– Site workers in EZ or CRZ to have 40-hour **HAZWOPER training**, current 8-hour refresher, 3 days supervised field experience. – Site supervisor(s) required to have 8-hour **Supervisor training**. – Site workers in EZ or CRZ to participate in **medical monitoring** program, as applicable. – Implement **site-specific procedures** for worker protection via engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination procedures, spill containment, emergency preparedness and response. – Conduct **air monitoring**, as appropriate; see **Part E," Air Monitoring, Worker Exposure Monitoring."** – **PPE program: S**pecify **Levels of Protectio**n and specific PPE to be used for applicable tasks; ○ **Level D**: No respirator, no chemical protective clothing, standard work clothes, basic PPE; (COVID-19 face covers allowed) ○ **Modified Level D**: No respirator, chemical protective clothing as appropriate; (COVID-19 face covers allowed) ○ **Level C**: Air-purifying respirator, chemical protective clothing as appropriate; **consult with Corp. H&S Dept. required**. ○ **Level B**: Air-supplied respirator, chemical protective clothing/suit as appropriate; **consult with Corp. H&S Dept. required**. ○ **Level A**: Fully encapsulating suit, self-contained breathing apparatus (SCBA); **Level A prohibited for Geosyntec personnel.** ***Geosyntec Procedures:*** *HS-301-HAZWOPER, HS-108-Medical Monitoring Surveillance, HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, HS-115-Hazard Communication, HS-405-Drum Sampling, Others as applicable*
☒	**FOR SITE WITH CHEMICAL CONTAMINANTS OR WASTE BUT NOT REGULATED BY HAZWOPER** – Workers to be knowledgeable/aware of chemical hazards thru safety training/orientation and availability of hazard information. – Implement controls to minimize worker exposure through engineering controls, work practices, PPE, decon, as appropriate. – Evaluate worker exposure via air monitoring/sampling, as applicable; see **Part E, "Air Monitoring, Worker Exposure Monitoring."** ***Geosyntec Procedures:*** *HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, HS-115-Hazard Communication, Others as applicable*

☒	**STORAGE/TRANSPORT OF IDW*** **Spill/Release Risk:** ☐ Risk of *incidental spill/release* ☐ Risk of *emergency spill/release* ** Investigation-Derived Waste*	☒ Describe site-specific procedures above for spill containment, container handling, as applicable. Drillers will transport drums to location designated by City. Drums must be labled and secured. ☐ For liquids, provide secondary containment during storage. ☐ Segregate incompatible chemicals during storage. ☐ Locate emergency gear (eyewash, fire extinguisher, spill kit, safety signage) near storage area, as applicable. ☐ For *incidental spills*; spill kit on-site for low-hazard releases (low-flammability/toxicity/quantity/volatility) ☐ For *emergency spills*: describe spill/release hazard and response plan/procedure above, and indicate Emergency response contact in Part B, "Emergency Response and First Aid." ☐ DOT/TDG/IATA-Regulated transport: see **D.17. "Hazmat/Dangerous Goods Shipping/Transportation."** ***Geosyntec Procedures****: HS-406-Unknown Hazardous Waste Drum Handling*
☐	**OFF-SITE MIGRATION OF AIRBORNE CONTAMINANTS**	☐ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.). ☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan; see **E.3 "Fence Line/Perimeter Air Monitoring."**

D.16. RADIATION HAZARDS (Other than Sunlight) ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes & Clarifications:

☐	**IONIZING RADIATION**	Potential hazard sources may include nuclear density gauges, host-facility X-ray equipment, radioactive contaminants (α, β, γ), medical or laboratory waste. Describe hazards & safety measures above in Site-Specific Notes & Clarifications. Conduct exposure monitoring, as appropriate; see **Part E, "Air Monitoring, Worker Exposure Monitoring."** ***Geosyntec Procedures:*** *HS-126-Radiation Safety Program, HS-128-Ionizing and Non-Ionizing Radiation*
☐	**NON-IONIZING RADIATION**	Potential hazard sources may include lasers, UV/IR sources, microwaves & high-frequency radio waves from cell-phone transmitter, high-intensity visible light. Describe hazards & safety measures above in Site-Specific Notes & Clarifications. Conduct exposure monitoring, as appropriate; see **Part E, "Air Monitoring, Worker Exposure Monitoring."** ***Geosyntec Procedures:*** *HS-128-Ionizing and Non-Ionizing Radiation*

D.17. HAZMAT/DANGEROUS GOODS SHIPPING/TRANSPORTATION ☐ Applicable ☒ Not Applicable, Not Anticipated

MODE(S) OF TRANSPORT:	☐ Road	☐ Rail	☐ Air	☐ Sea	☐ Inland Waterway	☐ International

IMPORTANT: Ensure that each individual who will be involved in shipping/transportation of hazardous material is current with required training (awareness, function-specific, safety, security) in accordance with applicable regulatory authority (DOT, FAA, IATA, TDG), and ensure adherence to applicable regulations.
Geosyntec Procedures: *HS-135-Hazardous Materials Procedures*

Site-Specific Notes & Clarifications:

PART E – AIR MONITORING, WORKER EXPOSURE MONITORING

E.1. AIR MONITORING ☐ Applicable ☒ Not Applicable, Not Anticipated

Site-Specific Notes, Clarifications:

AIR-TESTING PARAMETERS - Select site-specific testing parameters; list associated equipment in Part C.2, Safety Equipment List.

☐ VOCs ☐ Photoionization detector (PID): **X** eV ☐ Flame ionization detector (FID) ☐ Colorimetric indicator tubes – describe above	☐ Oxygen (O_2) – oxygen meter ☐ Lower Explosive Level (LEL) - LEL meter ☐ Hydrogen sulfide (H_2S) – H_2S detector ☐ Carbon monoxide (CO) – CO detector	☐ Particulates - total dust meter ☐ % Methane – methane meter ☐ Calibration kit for each parameter ☐ Other:

SUBSTANCE-SPECIFIC (PRE-SET) ACTION LEVELS - Sustained breathing zone action levels (sustained general work-area levels for LEL).		
☐ **O_2** (Oxygen)	**19.5-23%**	Acceptable to continue work without O_2-focused respiratory protection.
	<19.5%	STOP WORK, ventilate to raise O_2 to >19.5% for re-entry. For persistent hazard, contact Corp. H&S Dept.
	>23.0%	STOP WORK, ventilate to lower O_2 to <23% for re-entry. For persistent hazard, contact Corp. H&S Dept.
☐ **LEL** (Lower Explosive Limit)	IMPORTANT:	Confirm sufficient oxygen is present (min. 8-12%) to ensure accurate LEL readings.
	<10% LEL	Acceptable to continue working in work area; continue to monitor LEL.
	≥10% LEL	STOP WORK. Implement controls (reposition workers, ventilate, contain/eliminate source, etc.); resume work ONLY when LEL readings are <10%, sustained.
☐ **H_2S** (Hydrogen Sulfide)	**< 1 ppm**	Acceptable to continue work without H_2S-focused respiratory protection.
	1-10 ppm	Implement controls (reposition workers, ventilate, contain/eliminate source, scheduling, etc.) to limit exposures to <1ppm, or use APR* with *VOC/acid-gas* cartridges (yellow); do not exceed MUC* for respirator type; confirm acceptability of respirator usage with Corp. H&S Dept.
	> 10 ppm	Implement controls (reposition workers, ventilate, contain/eliminate source, scheduling, etc.) to limit exposures to <10ppm (with respirator), or <1ppm (without respirator). For persistent levels >10 ppm, STOP WORK, contact Corp. H&S Dept.
☐ **CO** (Carbon Monoxide)	**< 25 ppm**	Acceptable to continue work without CO-focused respiratory protection.
	≥ 25 ppm	Implement controls (reposition workers, ventilate, contain/eliminate source, scheduling, etc.) to limit exposures to <25ppm. For persistent levels >25ppm, STOP WORK, contact Corp. H&S Dept.
☐ **WILDFIRE SMOKE** (AQI for PM 2.5)	**≤150**	In this **Air Quality Index (AQI)** range, it's acceptable to continue work without respiratory protection.
	151-500	Voluntary use of N95 respirator is appropriate.
	>500	STOP WORK, or use APR* with approval of Corp. H&S Dept.
☐ **<OTHER>**		
SITE-DERIVED ACTION LEVELS – Sustained breathing zone action levels; derived based on site contaminants; REVIEW WITH CORP. H&S DEPT. REQUIRED.		
☐ **VOCs** (Volatile Organic Compounds)	**< X ppm**	Acceptable to continue work without VOC-focused respiratory protection.
	> " ppm	Implement controls (reposition workers, ventilation, containment, eliminate source, etc.) to lower VOC exposures to less than specified action level, or use APR* with approval of Corp. H&S Dept.
	X to X ppm	Use APR* with *VOC* cartridges (yellow or black); do not exceed MUC** for respirator type; confirm procedures for respirator usage with Corp. H&S Dept.
	> X ppm	STOP WORK. Implement controls, for persistent levels greater than action contact Corp H&S Dept.
☐ **AIRBORNE DUST** (Total Particulates)	**< X mg/m³**	Acceptable to continue work without particulate-focused respiratory protection.
	> " mg/m³	Implement controls (water spray, reposition workers, ventilation, containment, etc.) to lower dust levels to less than specified action level, or use APR* with approval of Corp. H&S Dept.
	X to X mg/m³	Use APR* with particulate cartridges appropriate for the hazard; do not exceed MUC** for respirator type; confirm procedures for respirator usage with Corp. H&S Dept.
	> mg/m³	STOP WORK. Implement controls. For persistent levels greater than action level, contact Corp H&S Dept.
☐ **<OTHER>**		

* Air-purifying respirator ** Maximum use concentration

Geosyntec Procedures: *HS-111-Air Monitoring, HS-602-Lead, HS-605-Hydrogen Sulfide, Wildfire Smoke THA Addendum*

E.2. OTHER WORKER EXPOSURE MONITORING / SAMPLING ☐ Applicable ☒ Not Applicable, Not Anticipated

☐ Heat/Cold Stress Testing/Monitoring ☐ Air Sampling *(sample collection, passive dosimeter)* ☐ Wipe/Bulk Sampling *(to evaluate worker exposure)*	☐ Wildfire Smoke – Tracking AQI (Air Quality Index) ☐ Ionizing or Non-ionizing Radiation Testing ☐ Noise Testing	☐ <Other> ☐ <Other>

Site-Specific Notes, Clarifications:

Geosyntec Procedures: *HS-109-Hearing Protection, HS-111-Air Monitoring, HS-124-Heat Stress Prevention, HS-125-Cold Stress Prevention, HS-126-Radiation Safety Program, HS-128-Ionizing and Non-ionizing Radiation, HS-601-Asbestos, HS-602-Lead, HS-604-Respirable Crystalline Silica, HS-605-Hydrogen Sulfide*

E.3. FENCELINE / PERIMETER AIR MONITORING ☐ Applicable ☒ Not Applicable, Not Anticipated

Fence line/perimeter air monitoring to be conducted in accordance with a separate **"Perimeter Air Monitoring Plan"** for this work; results from *fence line/perimeter* air monitoring shall NOT be used as the sole basis for determining *work zone* atmospheric hazards.

Site-Specific Notes, Clarifications:

PART F – APPROVALS, ACKNOWLEDGEMENTS

F.1. THA PREPARATION, REVIEW/APPROVAL SIGNATURES A THA is typically prepared by project staff, often with input from an HSC, with review/approval, at a minimum, by PM or PD. Corporate H&S staff must be consulted as required or otherwise deemed appropriate*.

	Printed Name	Signature	Date
THA PREPARED BY:	Vanessa Maldonado		10/14/2022
	Adrianna Jarosz		11/15/2022
THA REVIEWED/ APPROVED BY: (Project Manager or Project Director, at a minimum)	**Printed Name**	**Signature**	**Date**
	Cindy Bartlett		11/18/22

* At a minimum, Corp. H&S **must** review/approve the THA review when Geosyntec staff will encounter "high hazards/high risks," or perform critical tasks, such as (but not limited to):

- Climb ladders to heights >10'
- Use a personal fall apparatus
- Self-perform tasks classified as construction labor
- Climb ladders to heights >10'
- Tow a trailer on roadway
- Oversee a hot-work permit system
- Enter a permit-required confined space
- Operate a UTV/ATV, aerial lift or fork-lift
- Use of unmanned aerial vehicle (drone)
- Implement lockout/tagout controls
- Enter a trench/excavation >5' deep
- Work near heavy equipment or crane
- Function as a construction "Competent Person"
- Operate a pneumatic or powder-actuated tool
- Electrical testing & maintenance (<50 V excluded)
- Work at height near overhead electrical utility lines
- Derive action levels for VOCs or toxic dusts
- Instrument monitoring for critical exposure risks
- Wear a respirator
- Presence of "high-risk" contaminant(s)
- Sustained exposure to wildfire smoke $AQI_{PM\ 2.5}$ >150
- Enter EZ/CRZ during HAZWOPER cleanup activities
- Exposure to radioactive isotopes (α, β, γ)
- Onsite risk of emergency chemical spill
- Applicability of Chemical Anti-Terrorism Standards

Corporate H&S **must** also be consulted when Geosyntec subcontractors (*under Geosyntec's oversight*) perform high hazard/high risk work (such as demolition, blasting, crane lifts, confined space entry, testing/maintenance of electrical systems, lockout/tagout, HAZWOPER cleanup activities), **OR** when supplemental written H&S programs are required for a project (such as Electrical Safety Program, Lockout Program, Confined Space Entry Program, Emergency Response Plan), **OR** when a written safety plan must be submitted to a public agency. Consultation with Corp. H&S is encouraged for all questions/concerns regarding worker safety, regulatory compliance, risk/liability aspects, or project-specific safety requirements.

Geosyntec H&S Procedure: *For more information, see HS-204-Work-Specific Hazard and Risk Assessment, Written Safety Plans.*

F.2. GEOSYNTEC FIELD CREW ACKNOWLEDGEMENTS

Please sign below to acknowledge you reviewed and understand this THA, participated in project safety briefing and had an opportunity to ask questions about the information herein.

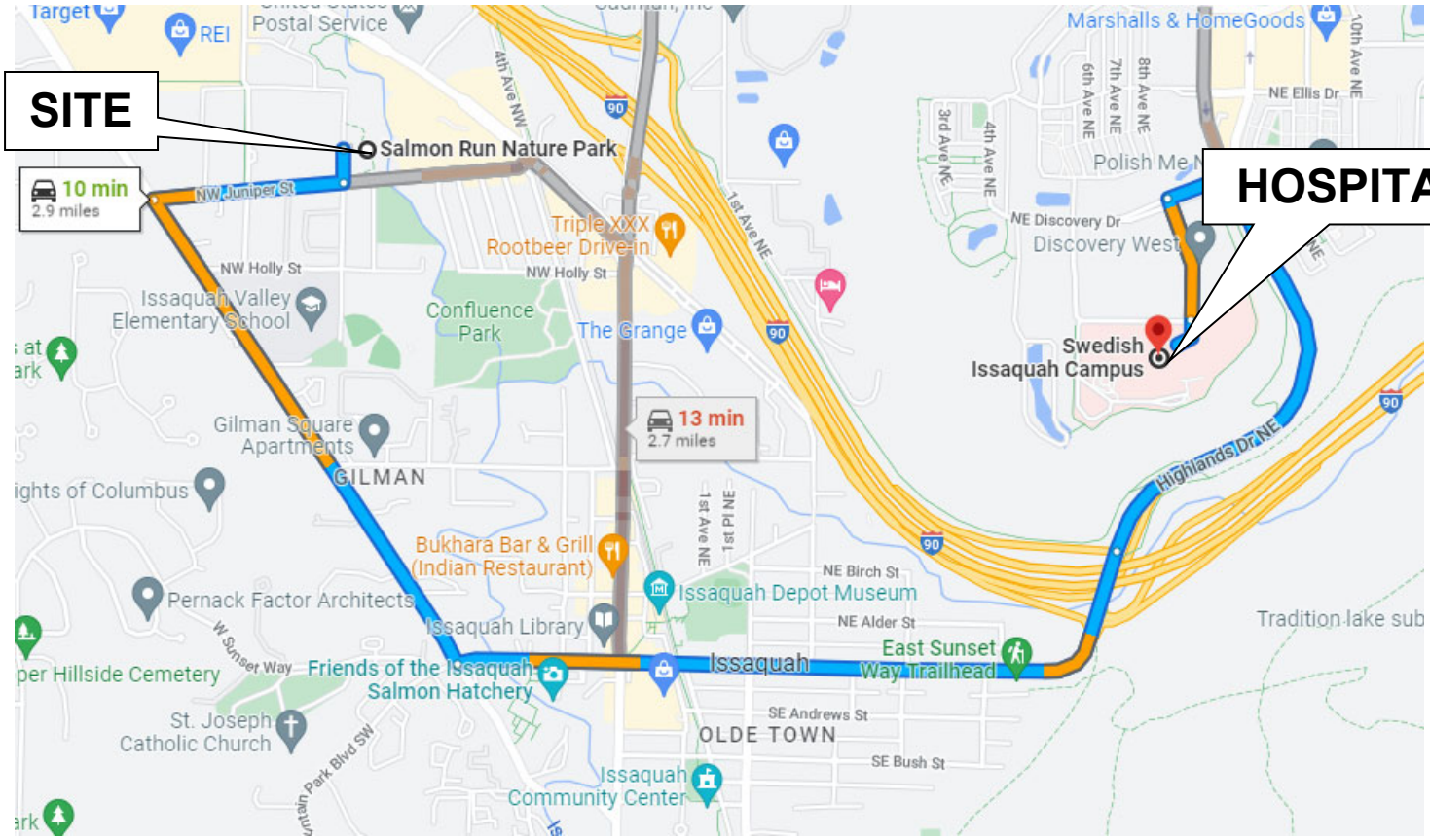
Printed Name	Signature	Employee No.	Date

F.3. SUBCONTRACTOR'S FIELD CREW ACKNOWLEDGEMENTS ☒ **Applicable** ☐ **Not Applicable**

Please sign below to acknowledge this THA was made available to you, and you had an opportunity to ask questions about the information herein.

Printed Name	Signature	Company Name	Date

ROUTE TO HOSPITAL



Swedish Medical Center - Issaquah
425-313-4000
751 NE Blakely Dr
Issaquah, WA 98029

Written Directions to Hospital from Site:

Turn right (west) on Juniper Street go →0.2 mi then
Turn left onto Newport Way NW go →2.3 mi then
Turn left onto W Sunset Way go → 1.0 mi
Continue onto Highlands Dr NE →0.3 mi
Turn left onto NE Discovery Dr → 0.1 mi
Turn left onto 8th Ave NE → 0.2 mi
Continue straight → 115 ft

Turn right onto NE Blakely Dr → 108 ft

Arrive at NE Blakely Dr
The last intersection is 8th Ave NE
If you reach 7th Ave NE, you've gone too far

Geosyntec consultants

INSERT SDSs HERE

Safety Data Sheet

Effective date: 11 May 2020 **Revision**: 11 May 2020
Trade Name: Alconox®

1 Identification of the substance/mixture and of the supplier

1.1 GHS Product identifier

Trade Name: Alconox®
Product number: 1101, 1103, 1104, 1104-1, 1112, 1112-1, 1125, 1150

1.2 Application of the substance / the mixture: Cleaning material/Detergent

1.2.1 Recommended dilution ratio: 1 – 2% in water

1.3 Details of the supplier of the Safety Data Sheet

Manufacturer:
Alconox Inc.
30 Glenn St
White Plains, NY 10603
(914) 948-4040

Supplier:

Emergency telephone number:
ChemTel Inc
North America: 1-888-255-3924
International: +1 813-248-0573

2 Hazards identification

2.1 Classification of the substance or mixture:

In compliance with EC regulation No. 1272, 29CFR1910/1200 and GHS requirements.

Hazard-determining components of labeling:
Tetrasodium Pyrophosphate
Sodium tripolyphosphate
Sodium Alkylbenzene Sulfonate

2.2 Label elements:

Eye damage, category 1.

Skin irritation, category 2.

Product at recommended dilution:
Eye irritation, category 2B

Hazard pictograms:

Signal word: Danger

Hazard statements:
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary statements:
P264 Wash skin thoroughly after handling.

Effective date: 11 May 2020 **Revision**: 11 May 2020
Trade Name: Alconox®

P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P501 Dispose of contents and container as instructed in Section 13.

Hazardous Elements at Use Dilution:

Hazard Pictograms:

Signal Word: Warning
Hazard Statements:
H320 Causes eye irritation

Precautionary statements:
P302+P352 If on skin: Wash with soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P501 Dispose of contents and container as instructed in Section 13

Additional information: None.

Hazard description
Hazards Not Otherwise Classified (HNOC): May cause surfaces to become slippery if wet. Use caution in areas of foot traffic if on floors.

Information concerning particular hazards for humans and environment:
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:
The classification is according to EC regulation No. 1272, 29CFR1910/1200 and GHS Requirements, and extended by company and literature data. The classification is in accordance with the latest editions of international substances lists and is supplemented by information from technical literature and by information provided by the company.

3 Composition/information on ingredients

3.1 Chemical characterization: Not determined or not available.

3.2 Description: None
3.3 Hazardous components (percentages by weight)

Identification	Chemical Name	Classification	Wt. %
CAS number: 7758-29-4	Sodium tripolyphosphate	Skin Irrit. 2; H315 Eye Irrit. 2; H319	12-28
CAS number: 68081-81-2 or 68411-30-3	Sodium Alkylbenzene Sulfonate	Acute Tox. 4; H303 Skin Irrit. 2; H315 Eye Dam. 1; H318	8-22
CAS number: 7722-88-5	Tetrasodium Pyrophosphate	Skin Irrit. 2; H315 Eye Irrit. 2; H319	2-16

Safety Data Sheet

Effective date: 11 May 2020 **Revision**: 11 May 2020
Trade Name: Alconox®

Hazardous components at use dilution (percentages by weight):

Identification	Chemical Name	Classification	Wt. %
CAS number: 7758-29-4	Sodium tripolyphosphate	Eye Irrit. 2; H319	0.12 - 0.28
CAS number: 68081-81-2 or 68411-30-3	Sodium Alkylbenzene Sulfonate	Eye Irrit. 2; H319	0.08 – 0.22
CAS number: 7722-88-5	Tetrasodium Pyrophosphate	Eye Irrit. 2; H319	0.02 – 0.16

3.4 Additional Information: None.

4 First aid measures

4.1 Description of first aid measures

General information: None.

After inhalation:

Maintain an unobstructed airway.
Loosen clothing as necessary and position individual in a comfortable position.

After skin contact:

Wash affected area with soap and water.
Seek medical attention if symptoms develop or persist.

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes.
Remove contact lens(es) if able to do so during rinsing.
Seek medical attention if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly.
Seek medical attention if irritation, discomfort, or vomiting persists.

4.2 Most important symptoms and effects, both acute and delayed

None

4.3 Indication of any immediate medical attention and special treatment needed:

No additional information.

First aid measure at recommended dilution:

General information: None.

After inhalation:

Maintain an unobstructed airway.
Loosen clothing as necessary and position individual in a comfortable position.

After skin contact:

Wash affected area with soap and water.

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes.
Remove contact lens(es) if able to do so during rinsing.

After swallowing:

Rinse mouth thoroughly. Seek medical attention if irritation, discomfort, or vomiting develops.

5 Firefighting measures

Safety Data Sheet

5.1 Extinguishing media

Suitable extinguishing agents:

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

For safety reasons unsuitable extinguishing agents: None

5.2 Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Advice for firefighters

Protective equipment:

Wear protective eye wear, gloves and clothing.
Refer to Section 8.

5.4 Additional information:

Avoid inhaling gases, fumes, dust, mist, vapor and aerosols.
Avoid contact with skin, eyes and clothing.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation.
Ensure air handling systems are operational.

6.2 Environmental precautions:

Should not be released into the environment.
Prevent from reaching drains, sewer or waterway.

6.3 Methods and material for containment and cleaning up:

Wear protective eye wear, gloves and clothing.

6.4 Reference to other sections: None

7 Handling and storage

7.1 Precautions for safe handling:

No expected hazards under normal use condition.

Avoid breathing mist or vapor if aerosolized.
Do not eat, drink, smoke or use personal products when handling chemical substances.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a cool, well-ventilated area.

7.3 Specific end use(s):

No additional information.

Safety Data Sheet

Effective date: 11 May 2020 **Revision**: 11 May 2020
Trade Name: Alconox®

8 Exposure controls/personal protection

8.1 Control parameters:

a) 7722-88-5, Tetrasodium Pyrophosphate, ACGIH TWA 10 mg/m3
b) 7758-29-4, Sodium Tripolyphosphate, ACGIH TWA 10 mg/m3
c) Dusts, non-specific OEL, Irish Code of Practice
   (i) Total inhalable 10 mg/m3 (8hr)
   (ii) Respirable 4 mg/m3 (8hr)
   (iii) Tetrasodium Pyrophosphate, OSHA TWA 5 mg/m3, (8hr)

8.2 Exposure controls

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.

Respiratory protection:

Not needed under normal use conditions.

Protection of skin:

Select glove material impermeable and resistant to the substance.

Eye protection:

Safety goggles or glasses, or appropriate eye protection. Recommended to comply with ANSI Z87.1 and/or EN 166.

General hygienic measures:

Wash hands before breaks and at the end of work.
Avoid contact with skin, eyes and clothing.

Exposure Control and Personal Protective Equipment at recommended dilution:

Under normal use and operational conditions, no special personal protective equipment or engineering controls will be necessary. Handle with care.

9 Physical and chemical properties

Appearance (physical state, color):	White and cream colored flakes - powder	**Explosion limit lower**: **Explosion limit upper**:	Not determined or notavailable. Not determined or notavailable.
Odor:	Not determined or not available.	**Vapor pressure at 20°C**:	Not determined or notavailable.
Odor threshold:	Not determined or not available.	**Vapor density**:	Not determined or notavailable.
pH-value:	9.5 (1% aqueous solution)	**Relative density**:	Not determined or notavailable.

Safety Data Sheet

Effective date: 11 May 2020 **Revision**: 11 May 2020
Trade Name: Alconox®

Melting/Freezing point:	Not determined or not available.	**Solubilities**:	Not determined or notavailable.
Boiling point/Boiling range:	Not determined or not available.	**Partition coefficient (n-octanol/water)**:	Not determined or notavailable.
Flash point (closed cup):	Not determined or not available.	**Auto/Self-ignition temperature**:	Not determined or notavailable.
Evaporation rate:	Not determined or not available.	**Decomposition temperature**:	Not determined or notavailable.

Flammability (solid, gaseous):	Not determined or not available.	**Viscosity**:	a. Kinematic: Not determined or not available. b. Dynamic: Not determined or not available.
Density at 20°C:	Not determined or not available.		

10 Stability and reactivity

10.1 Reactivity: Not determined or not available.
10.2 Chemical stability: Not determined or not available.
10.3 Possibility hazardous reactions: Not determined or not available.
10.4 Conditions to avoid: Not determined or not available.
10.5 Incompatible materials: Not determined or not available.
10.6 Hazardous decomposition products: Not determined or not available.

11 Toxicological information

11.1 Information on toxicological effects:

Acute Toxicity:

Oral:

: LD50 > 5000 mg/kg oral rat - Product.

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

Sodium Alkylbenzene Sulfonate: Causes skin irritation.

Serious eye damage/irritation:

Sodium Alkylbenzene Sulfonate: Causes serious eye damage.

Tetrasodium Pyrophosphate: Risk of serious damage to eyes.

Product information at recommended dilution:

Eye irritation may occur upon direct contact with eyes. No specific hazards for skin contact, inhalation, or chronic exposure are expected within normal use parameters.

Respiratory or skin sensitization: No additional information.

Carcinogenicity: No additional information.

IARC (International Agency for Research on Cancer): None of the ingredients are listed.

NTP (National Toxicology Program): None of the ingredients are listed.

Germ cell mutagenicity: No additional information.

Reproductive toxicity: No additional information.

Effective date: 11 May 2020 **Revision**: 11 May 2020
Trade Name: Alconox®

STOT-single and repeated exposure: No additional information.

Additional toxicological information: No additional information.

12 Ecological information

12.1 Toxicity:

Sodium Alkylbenzene Sulfonate: Fish, LC50 1.67 mg/l, 96 hours.
Sodium Alkylbenzene Sulfonate: Aquatic invertebrates, EC50 Daphnia 2.9 mg/l, 48 hours.
Sodium Alkylbenzene Sulfonate: Aquatic Plants, EC50 Algae 29 mg/l, 96 hours.
Tetrasodium Pyrophosphate: Fish, LC50 - other fish - 1,380 mg/l - 96 h.
Tetrasodium Pyrophosphate: Aquatic invertebrates, EC50 - Daphnia magna (Water flea) - 391 mg/l - 48 h.

12.2 Persistence and degradability: No additional information.

12.3 Bioaccumulative potential: No additional information.

12.4 Mobility in soil: No additional information.

General notes: No additional information.

12.5 Results of PBT and vPvB assessment:

PBT: No additional information.

vPvB: No additional information.

12.6 Other adverse effects: No additional information.

13 Disposal considerations

13.1 Waste treatment methods (consult local, regional and national authorities for proper disposal)

Relevant Information:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities. (US 40CFR262.11).

14 Transport information

14.1 UN Number: ADR, ADN, DOT, IMDG, IATA	None
14.2 UN Proper shipping name: ADR, ADN, DOT, IMDG, IATA	None
14.3 Transport hazard classes: ADR, ADN, DOT, IMDG, IATA	**Class:** None **Label:** None **LTD. QTY:** None

US DOT

Limited Quantity Exception: None

Bulk:
RQ (if applicable): None
Proper shipping Name: None
Hazard Class: None
Packing Group: None
Marine Pollutant (if applicable): No additional information.

Non Bulk:
RQ (if applicable): None
Proper shipping Name: None
Hazard Class: None
Packing Group: None
Marine Pollutant (if applicable): No additional information.

Safety Data Sheet

Effective date: 11 May 2020 **Revision**: 11 May 2020
Trade Name: Alconox®

	Comments: None	**Comments:** None
14.4	**Packing group:** ADR, ADN, DOT, IMDG, IATA	None
14.5	**Environmental hazards**:	None
14.6	**Special precautions for user:**	None
	Danger code (Kemler):	None
	EMS number:	None
	Segregation groups:	None

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

14.8 Transport/Additional information:

Transport category:	None
Tunnel restriction code:	None
UN "Model Regulation":	None

15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.

North American

SARA

Section 313 (specific toxic chemical listings): None of the ingredients are listed.
Section 302 (extremely hazardous substances): None of the ingredients are listed.

CERCLA (Comprehensive Environmental Response, Clean up and Liability Act) Reportable

Spill Quantity: None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

Inventory: All ingredients are listed as active.
Rules and Orders: Not applicable.

Proposition 65 (California):

Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Canadian

Canadian Domestic Substances List (DSL):
All ingredients are listed.

EU

REACH Article 57 (SVHC): None of the ingredients are listed.

Germany MAK: Not classified.
EC 648/2004 – This is an industrial detergent. Contains >30% phosphate, 15-30% anionic surfactant, <5% EDTA salts
EC 551/2009 – This is not a laundry or dishwasher detergent
EC 907/2006 – Contains no enzymes, optical brighteners, perfumes, allergenic fragrances, or preservative agents

Asia Pacific

Australia

Australian Inventory of Chemical Substances (AICS): All ingredients are listed.

China

Inventory of Existing Chemical Substances in China (IECSC): All ingredients are listed.

Japan

Inventory of Existing and New Chemical Substances (ENCS): All ingredients are listed.

Korea

Existing Chemicals List (ECL): All ingredients are listed.

New Zealand

New Zealand Inventory of Chemicals (NZOIC): All ingredients are listed.

Philippines

Philippine Inventory of Chemicals and Chemical Substances (PICCS): All ingredients are listed.

Taiwan

Taiwan Chemical Substance Inventory (TSCI): All ingredients are listed.

16 Other information

Abbreviations and Acronyms: None

Summary of Phrases

Hazard statements:
H315 Causes skin irritation.
H318 Causes serious eye damage.

NFPA: 1-0-0
HMIS: 1-0-0

At recommended dilution:
NFPA: 1-0-0
HMIS: 1-0-0

Precautionary statements:
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P321 Specific treatment (see supplemental first aid instructions on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P501 Dispose of contents and container as instructed in Section 13.

Manufacturer Statement:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET: BENTONITE

1. IDENTIFICATION

Product Name: BENTONITE
Synonyms:
Formula and Formula Weight: Undefined NA
Integra numbers beginning with: B322.50
Recommended Use: Commercial/industrial use
Restrictions on Use: No information available

INTEGRA Chemical Company
1216 6th Ave N
Kent WA 98032
Phone: 253-479-7000

24 Hour Emergency Response: CHEMTREC 800-424-9300 (Outside USA 703-527-3887)

2. HAZARDS IDENTIFICATION

OSHA Classification:	Hazard Category:	Hazard Statement:
None identified	Not applicable	Not applicable

Hazards Not Otherwise Classified: No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Synonyms	CAS #	% Weight
Bentonite	Montmorillonite	01302-78-9	100

4. FIRST AID MEASURES

Inhalation: Remove person to fresh air.
Eye Contact: Flush eyes with plenty of water. If irritation persists, seek medical attention.
Skin Contact: Wash with soap and water.
Ingestion: If conscious, rinse mouth and give victim large amounts of water. Seek medical attention.
Additional notes: Symptoms and effects include eye, respiratory irritation; intestinal obstruction.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Water spray, carbon dioxide, dry chemical or foam.
Special Equipment and Precautions: Use water to cool nearby containers and structures. Wear full protective equipment, including suitable respiratory protection.
Specific Hazards: High dust concentrations may ignite in the presence of an ignition source.
Hazardous combustion products: May liberate toxic and noxious fumes.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Prevent spread of spill. Sweep or scoop into suitable disposal container.

7. HANDLING AND STORAGE

Incompatible Materials: Incompatible with strong acids and strong oxidizers.
Storage and Handling: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers tightly closed and protect them from physical damage.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

OSHA & ACGIH Exposure Limits:

Bentonite None identified

Engineering Controls: Use adequate general or local exhaust ventilation to keep fume and/or dust levels as low as possible.
Respiratory Protection: If use generates annoying or irritating dusts, mists or vapors, use a NIOSH approved respirator with a particulate filter.
Skin/Eye Protective Equipment: Safety glasses.
Facilities storing or utilizing this material should have readily accessible eyewash stations and safety showers. Select respirators and other safety equipment in accordance with regulations and based upon the particular conditions of use and risk of exposure. Always use safe chemical-handling and good industrial hygiene practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Apearance: Light yellow or green, cream, pink, or gray to black powder
Odor: Not available
Odor Threshold: Not available
pH: 6 to 9
Melting/Freezing Point: >1200 °C
Initial Boiling Point and Boiling Range: Not available
Flash Point: Not available
Evaporation Rate: Not available

Flammability:	Not flammable
Flammable or Explosive	Upper: Not available
Limits (% by volume in air)	Lower: Not available
Vapor Pressure:	Not available
Vapor Density:	Not available
Relative Density:	2.4 g/cc
Solubility:	Insoluble in water
Partition Coefficient: n-octanol/water	Not available
Auto-Ignition Temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	Not available

10. STABILITY AND REACTIVITY

Reactivity:	No information available
Stability:	Stable
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur
Conditions to Avoid:	None identified
Incompatibles:	Incompatible with strong acids and strong oxidizers.
Decomposition Products:	May liberate toxic and noxious fumes.

11. TOXICOLOGICAL INFORMATION

Effects of Over Exposure:

Inhalation:	As with most nuisance dusts, inhalation of large quantities, or prolonged inhalation, may irritate the respiratory system.
Skin Contact:	No harmful effects expected
Eye Contact:	Dusts may cause some eye irritation.
Ingestion:	Ingestion of small amounts is not likely to produce harmful effects. Ingestion of large amounts may result in intestinal obstruction.
Chronic Effects:	Pneumoconiosis may result from repeated inhalation of large quantities. Chronic ingestion of large quantities has caused liver tumors in mice.
Target Organs:	None identified
Additional Effects:	None identified
Reproductive Effects:	None identified
Carcinogenicity:	Questionable carcinogen with experimental tumorigenic data.

Toxicity Data:

Bentonite	No information available

12. ECOLOGICAL INFORMATION

	Aquatic Toxicity Data:	Terrestrial Toxicity Data:
Bentonite	LC50 Rainbow trout: 19,000 mg/L - 96h	No information available

Persistence and degradability:	No information available
Bioaccumulative potential:	No information available
Mobility in soil:	No information available
Other adverse effects:	No information available

13. DISPOSAL CONSIDERATIONS

Disposal Procedures: Dispose of material and containers in accordance with all local, state and federal regulations.

14. TRANSPORTATION INFORMATION

This product is not a regulated material for domestic ground transporation.

Environmental hazards:	No information available
Special precautions:	No information available
Bulk transport:	No information available

15. REGULATORY INFORMATION

Bentonite is listed in the TSCA inventory.

16. OTHER INFORMATION

OSHA SDS #: 25211 rev 101 3/27/2015

NE = Not established, NA = Not applicable or Not available

The information presented above is offered for informational purposes only. This SDS, and the associated product, is intended for use only by technically qualified persons, and at their own discretion and risk. Since conditions and manner of use are outside the control of Integra Chemical Company, we make no warranties, either expressed or implied, and assume no liability in connection with any use of this information.

***** END OF SDS *****

Appendix C: Summary of Chemical Hazards

Perfluoroalkyl acids (PFAAs)

Perfluoroalkyl acids (PFAAs) are "emerging contaminants" that are extremely persistent in the environment. These organic compounds are fully fluorinated and are the most widely produced chemicals from the Per-and Polyfluoroalkyl Substances (PFAS) family. Some examples of commonly found PFAS include perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perfluorobutanesulfonic acid (PFBS), and perfluorohexanesulfonic acid (PFHxS). They are distributed widely across higher trophic levels and found in soil, air, and groundwater sites. PFAAs are used in various industial and commercial products including textiles and leather products, metal plating, photography and photolithography, semi-conductors, paper and packaging, coating additives, cleaning products, and pesticides (EPA 2014).

PFAAs can bioaccumulate and biomagify in wildlife. These compounds are readily absorbed via oral exposure and primarily accumulate in the serum, kidney, and liver. Acute- and intermediate-duration studies on rodents have raised concerns regarding potential developmental, reproductive, and other systemic effects (EPA 2014).

As a result of PFAAs being emerging contaminants there is currently no OSHA requirements on exposure levels regarding these contaminants. Exposure levels will be maintained below OSHA PEL or NIOSH REL as shown in the table below.

Chemical Name	HA[a](ng/L)
PFOA	0.004
PFOS	0.02
PFNA	9[b]
PFHxS	65[b]
PFBS	10

[a] Health Advisory Levels established by the EPA in 2022.
[b] Washington State Action Levels established by the Department of Ecology in 2021.

Geosyntec consultants

Appendix D: Air Monitoring

Applies to Task: ☐ ① ☐ ② ☐ ③

☐ *Photoionization Detector (PID)*

Brand/Model No.: _____ **eV:** __

Monitoring Frequency: Weekly _____

Breathing Zone Reading (ppm)	Action
0 to 100	Level D PPE
_____ to _____	Level C PPE
Greater than 100	Stop work. Evacuate the area. If upon return, levels still exceed the action level, stop work and implement engineering controls.

Note: _____

☐ *Oxygen (O_2) Meter*

Brand/Model No.: _____

Monitoring Frequency: _____

Reading (%)	Action
Less than 19.5	Stop work. Evacuate the area.
19.5 to 23.5	Continue to work with caution.
Greater than 23.5	Stop work. Evacuate the area.

Note: _____

☐ *Explosimeter*

Brand/Model No.: _____

Monitoring Frequency: _____

Source (% LEL)

Reading	Action
1 to 10	Continue with caution.
Greater than 10	Stop work. Evacuate the area. If upon return, if concentration still exceeds 10% LEL, ventilate until concentration is back to <10% LEL.

Note: _____

☐ *Flame Ionization Detector (FID)*

Brand/Model No.: _____

Monitoring Frequency: _____

Breathing Zone Reading (ppm)	Action
_____ to _____	Level D PPE
_____ to _____	Level C PPE
Greater than _____	Stop work. Evacuate the area. If upon return, levels still exceed ____, stop work and implement engineering controls.

Note: _____

☐ *Chemical Detector Tube*

Brand/Model No.: _____

Monitoring Frequency: _____

Breathing Zone Reading (ppm)	Action
_____ to _____	Level D PPE
_____ to _____	Level C PPE
Greater than _____	Stop work. Evacuate the area. If upon return, levels still exceed ____, stop work and implement engineering controls.

Note: _____

☐ *Other*

Brand/Model No.: _____

Monitoring Frequency: _____

Breathing Zone Reading	Action
_____ to _____	Level D PPE
_____ to _____	Level C PPE
Greater than _____	Stop work. Evacuate the area. If upon return, levels still exceed ____, stop work and implement engineering controls.

Note: _____

Appendix E: Personal Protective Equipment

	Task ①	Task ②	Task ③
Potential PPE Level per Task:	☒ D ☐ C	☒ D ☐ C	☒ D ☐ C

Modified Level D		*Level C*	
Equipment	***Material/Type***	***Equipment***	***Material/Type***
☒ Safety glasses		☐ Full-face air-purifying respirator	Cartridge Type:
☒ Hard-toed boots		☐ Half-mask air-purifying respirator	Cartridge Type:
☒ Protective clothing		☐ Safety glasses	
☒ Hard hat*		☐ Hard-toed boots	
☒ Hearing protection*		☐ Protective clothing	
☒ High-visibility vest*		☐ Hard hat	
☐ Outer boots*		☐ Hearing protection*	
☐ Outer gloves*		☐ High-visibility vest*	
☐ Other:		☐ Outer boots*	
		☐ Outer gloves*	
		☐ Inner gloves*	
		☐ Other:	

* PPE items may be downgraded (only with concurrence of SHSO and PM)

Appendix F: Safety Data Sheets

Included in this HASP	Chemical
☐	Acetone
☒	Alconox
☐	Ammonia
☒	Bentonite
☐	Diesel Fuel Oil No. 2-D
☐	Gasoline
☐	Helium
☐	Hexane
☒	Hydrochloric Acid
☐	Hydrogen
☐	Isobutylene Calibration Gas
☐	Isopropyl Alcohol
☐	KB-1
☐	Methane Calibration Gas
☒	Nitric Acid
☐	Permanganate
☐	Portland Cement
☐	Sulfuric Acid
☐	Other: _____
☐	Other: _____
☐	Other: _____
☐	Other: _____

Note: SDSs are for chemicals that used to perform project work, not site contaminants.

APPENDIX B
Laboratory Accreditation Certificate

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 488 • Manchester, WA 98353-0488 • (360) 871-8840

April 29, 2022

Lisa Stafford
Eurofins Sacramento
880 Riverside Parkway
West Sacramento, CA 95605

Dear Lisa Stafford:

Thank you for your application for renewal in the Environmental Laboratory Accreditation Program. Attached is a Certificate of Accreditation covering the one-year period beginning May 6, 2022 and a current Scope of Accreditation.

Accreditation is based in part on third party recognition of the Labs ORELAP accreditation.

Alkalinity by SM 2320 B-2011 in Non-Potable Water has been placed into Good Standing from Interim Accreditation in recognition of your ORELAP scope of accreditation.

The following parameters were returned to Good Standing in recognition of your ORELAP scope of accreditation:

- Perfluorodecane sulfonate (PFDS) by SOP WS-LC-0025 in Non-Potable Water
- Perfluorodecane sulfonate (PFDS) by SOP WS-LC-0025 in Solid and Chemical Materials

The following parameters are Denied because they are not present on the labs ORELAP scope of accreditation:

- Nitrate by EPA 353.2_2_1993 in Non-Potable Water
- 1,2-Dibromo-3-chloropropane (DBCP) by EPA 8260C_(8/06) in Solid and Chemical Materials

1,4-Dioxane by EPA 8260C_(8/06) in Solid and Chemical Materials has been Denied because no PTs were reported for this parameter in the previous accreditation year when two approved providers are available. Two acceptable PTs for this parameter are required before your next renewal to return the parameter to Good Standing.

Renewal of accreditation is based in part on review of your lab's performance over the past year as evidenced by participation in proficiency testing (PT) studies. In general, full accreditation is awarded for those parameters for which the two most recent PT results, if applicable, were rated satisfactory. Provisional accreditation is awarded if the latest of the two most recent PT results was rated "Not Acceptable" or only one PT result was submitted during the past twelve months. Accreditation is withheld for those parameters for which the two most recent PT results were rated "Not Acceptable" or no PT results were submitted during the past twelve-months.

As a reminder, continued participation in the Ecology Lab Accreditation Program requires the lab to:

- Submit a renewal application and fees annually
- Report significant changes in facility, personnel, analytical methods, equipment, the lab's quality assurance (QA) manual or QA procedures as they occur
- **Participate in proficiency testing studies semi-annually, with the following exception**: **For each parameter where all PT results were satisfactory, you are required to submit only one PT result over this next year, and in subsequent years, as long as the results are satisfactory.**
- Submit copies of current third-party Scopes of Accreditation when they are available.

YOUR RIGHT TO APPEAL

You have a right to appeal Ecology's decision to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this decision letter. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this decision:

- File your appeal and a copy of this decision with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this decision on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel Road SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

If you have any questions concerning the accreditation of your lab, please contact Ryan Zboralski at (360) 871-8845, fax (360) 871-8849, or by e-mail at ryan.zboralski@ecy.wa.gov.

Sincerely,

Rebecca Wood
Lab Accreditation Unit Supervisor

RW:ERZ:erz
Enclosures

The State of Washington Department of Ecology

Eurofins Sacramento
West Sacramento, CA

has complied with provisions set forth in Chapter 173-50 WAC and is hereby recognized by the Department of Ecology as an ACCREDITED LABORATORY for the analytical parameters listed on the accompanying Scope of Accreditation.

This certificate is effective May 6, 2022 and shall expire May 5, 2023.

Witnessed under my hand on April 29, 2022.

Rebecca Wood
Lab Accreditation Unit Supervisor

Laboratory ID
C581

WASHINGTON STATE DEPARTMENT OF ECOLOGY

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

SCOPE OF ACCREDITATION

Eurofins Sacramento

West Sacramento, CA

is accredited for the analytes listed below using the methods indicated. Full accreditation is granted unless stated otherwise in a note. EPA is the U.S. Environmental Protection Agency. SM is "Standard Methods for the Examination of Water and Wastewater." SM refers to EPA approved method versions. ASTM is the American Society for Testing and Materials. USGS is the U.S. Geological Survey. AOAC is the Association of Official Analytical Chemists. Other references are described in notes.

Matrix/Analyte	Method	Notes
Drinking Water		
Perchlorate	EPA 331.0_1.0_2005	1
2,3,7,8-TCDD	EPA 1613B_1994	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	EPA 537.1_(11/18)	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	EPA 537.1_(11/18)	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	EPA 537.1_(11/18)	1
Hexafluoropropylene oxide dimer acid (HFPO-DA)	EPA 537.1_(11/18)	1
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537.1_(11/18)	1
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537.1_(11/18)	1
Perfluorobutane sulfonic acid (PFBS)	EPA 537.1_(11/18)	1
Perfluorodecanoic acid (PFDA)	EPA 537.1_(11/18)	1
Perfluorododecanoic acid (PFDoA)	EPA 537.1_(11/18)	1
Perfluoroheptanoic acid (PFHpA)	EPA 537.1_(11/18)	1
Perfluorohexane sulfonic acid (PFHxS)	EPA 537.1_(11/18)	1
Perfluorohexanoic acid (PFHxA)	EPA 537.1_(11/18)	1
Perfluorononanoic acid (PFNA)	EPA 537.1_(11/18)	1
Perfluorooctane sulfonic acid (PFOS)	EPA 537.1_(11/18)	1
Perfluorooctanoic acid (PFOA)	EPA 537.1_(11/18)	1
Perfluorotetradecanoic acid (PFTeDA)	EPA 537.1_(11/18)	1
Perfluorotridecanoic acid (PFTrDA)	EPA 537.1_(11/18)	1
Perfluoroundecanoic acid (PFUnA)	EPA 537.1_(11/18)	1
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	EPA 537_1.1_2009	1
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	EPA 537_1.1_2009	1
Perfluorodecanoic acid (PFDA)	EPA 537_1.1_2009	1
Perfluorododecanoic acid (PFDoA)	EPA 537_1.1_2009	1
Perfluoroheptanoic acid (PFHpA)	EPA 537_1.1_2009	1
Perfluorohexanoic acid (PFHxA)	EPA 537_1.1_2009	1

Matrix/Analyte	Method	Notes
Drinking Water		
Perfluorononanoic acid (PFNA)	EPA 537_1.1_2009	1
Perfluorooctanoic acid (PFOA)	EPA 537_1.1_2009	1
Perfluorotetradecanoic acid (PFTeDA)	EPA 537_1.1_2009	1
Perfluorotridecanoic acid (PFTrDA)	EPA 537_1.1_2009	1
Perfluoroundecanoic acid (PFUnA)	EPA 537_1.1_2009	1
Non-Potable Water		
Bromide	EPA 300.0_2.1_1993	1
Chloride	EPA 300.0_2.1_1993	1
Fluoride	EPA 300.0_2.1_1993	1
Nitrate	EPA 300.0_2.1_1993	1
Nitrite	EPA 300.0_2.1_1993	1
Orthophosphate	EPA 300.0_2.1_1993	1
Sulfate	EPA 300.0_2.1_1993	1
Nitrate + Nitrite	EPA 353.2_2_1993	1
Nitrite	EPA 353.2_2_1993	1
Alkalinity	SM 2320 B-2011	1
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 1613B_1994	1
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 1613B_1994	1
1,2,3,4,6,7,8-Hpcdd	EPA 1613B_1994	1
1,2,3,4,6,7,8-Hpcdf	EPA 1613B_1994	1
1,2,3,4,7,8,9-Hpcdf	EPA 1613B_1994	1
1,2,3,4,7,8-Hxcdd	EPA 1613B_1994	1
1,2,3,4,7,8-Hxcdf	EPA 1613B_1994	1
1,2,3,6,7,8-Hxcdd	EPA 1613B_1994	1
1,2,3,6,7,8-Hxcdf	EPA 1613B_1994	1
1,2,3,7,8,9-Hxcdd	EPA 1613B_1994	1
1,2,3,7,8,9-Hxcdf	EPA 1613B_1994	1
1,2,3,7,8-Pecdd	EPA 1613B_1994	1
1,2,3,7,8-Pecdf	EPA 1613B_1994	1
2,3,4,6,7,8-Hxcdf	EPA 1613B_1994	1
2,3,4,7,8-Pecdf	EPA 1613B_1994	1
2,3,7,8-TCDD	EPA 1613B_1994	1
2,3,7,8-TCDF	EPA 1613B_1994	1
Hpcdd, total	EPA 1613B_1994	1
Hpcdf, total	EPA 1613B_1994	1
Hxcdd, total	EPA 1613B_1994	1
Hxcdf, total	EPA 1613B_1994	1

Matrix/Analyte	Method	Notes
Non-Potable Water		
Pecdd, total	EPA 1613B_1994	1
Pecdf, total	EPA 1613B_1994	1
TCDD, total	EPA 1613B_1994	1
TCDF, total	EPA 1613B_1994	1
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)	EPA 1668C_2010	1
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)	EPA 1668C_2010	1
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)	EPA 1668C_2010	1
2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)	EPA 1668C_2010	1
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)	EPA 1668C_2010	1
2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)	EPA 1668C_2010	1
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)	EPA 1668C_2010	1
2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)	EPA 1668C_2010	1
2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)	EPA 1668C_2010	1
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)	EPA 1668C_2010	1
2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)	EPA 1668C_2010	1
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)	EPA 1668C_2010	1
2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)	EPA 1668C_2010	1
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)	EPA 1668C_2010	1
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)	EPA 1668C_2010	1
2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)	EPA 1668C_2010	1
2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)	EPA 1668C_2010	1
2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)	EPA 1668C_2010	1
2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)	EPA 1668C_2010	1
2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)	EPA 1668C_2010	1
2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)	EPA 1668C_2010	1
2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)	EPA 1668C_2010	1
2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)	EPA 1668C_2010	1
2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)	EPA 1668C_2010	1
2,2',3,3',4-Pentachlorobiphenyl (BZ-82)	EPA 1668C_2010	1
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)	EPA 1668C_2010	1
2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)	EPA 1668C_2010	1
2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)	EPA 1668C_2010	1
2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)	EPA 1668C_2010	1
2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)	EPA 1668C_2010	1
2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)	EPA 1668C_2010	1
2,2',3,3',5-Pentachlorobiphenyl (BZ-83)	EPA 1668C_2010	1
2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Non-Potable Water		
2,2',3,3',6-Pentachlorobiphenyl (BZ-84)	EPA 1668C_2010	1
2,2',3,3'-Tetrachlorobiphenyl (BZ-40)	EPA 1668C_2010	1
2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)	EPA 1668C_2010	1
2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)	EPA 1668C_2010	1
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)	EPA 1668C_2010	1
2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)	EPA 1668C_2010	1
2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)	EPA 1668C_2010	1
2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)	EPA 1668C_2010	1
2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)	EPA 1668C_2010	1
2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)	EPA 1668C_2010	1
2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)	EPA 1668C_2010	1
2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)	EPA 1668C_2010	1
2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)	EPA 1668C_2010	1
2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)	EPA 1668C_2010	1
2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)	EPA 1668C_2010	1
2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)	EPA 1668C_2010	1
2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)	EPA 1668C_2010	1
2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)	EPA 1668C_2010	1
2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)	EPA 1668C_2010	1
2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)	EPA 1668C_2010	1
2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)	EPA 1668C_2010	1
2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)	EPA 1668C_2010	1
2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)	EPA 1668C_2010	1
2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)	EPA 1668C_2010	1
2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)	EPA 1668C_2010	1
2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)	EPA 1668C_2010	1
2,2',3,4,5-Pentachlorobiphenyl (BZ-86)	EPA 1668C_2010	1
2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)	EPA 1668C_2010	1
2,2',3,4',5-Pentachlorobiphenyl (BZ-90)	EPA 1668C_2010	1
2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)	EPA 1668C_2010	1
2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)	EPA 1668C_2010	1
2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)	EPA 1668C_2010	1
2,2',3,4,6-Pentachlorobiphenyl (BZ-88)	EPA 1668C_2010	1
2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)	EPA 1668C_2010	1
2,2',3,4',6-Pentachlorobiphenyl (BZ-91)	EPA 1668C_2010	1
2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)	EPA 1668C_2010	1
2,2',3,4-Tetrachlorobiphenyl (BZ-41)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Non-Potable Water		
2,2',3,4'-Tetrachlorobiphenyl (BZ-42)	EPA 1668C_2010	1
2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)	EPA 1668C_2010	1
2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)	EPA 1668C_2010	1
2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)	EPA 1668C_2010	1
2,2',3,5,6-Pentachlorobiphenyl (BZ-93)	EPA 1668C_2010	1
2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)	EPA 1668C_2010	1
2,2',3,5',6-Pentachlorobiphenyl (BZ-95)	EPA 1668C_2010	1
2,2',3,5-Tetrachlorobiphenyl (BZ-43)	EPA 1668C_2010	1
2,2',3,5'-Tetrachlorobiphenyl (BZ-44)	EPA 1668C_2010	1
2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)	EPA 1668C_2010	1
2,2',3,6-Tetrachlorobiphenyl (BZ-45)	EPA 1668C_2010	1
2,2',3,6'-Tetrachlorobiphenyl (BZ-46)	EPA 1668C_2010	1
2,2',3-Trichlorobiphenyl (BZ-16)	EPA 1668C_2010	1
2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)	EPA 1668C_2010	1
2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)	EPA 1668C_2010	1
2,2',4,4',5-Pentachlorobiphenyl (BZ-99)	EPA 1668C_2010	1
2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)	EPA 1668C_2010	1
2,2',4,4',6-Pentachlorobiphenyl (BZ-100)	EPA 1668C_2010	1
2,2',4,4'-Tetrachlorobiphenyl (BZ-47)	EPA 1668C_2010	1
2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)	EPA 1668C_2010	1
2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)	EPA 1668C_2010	1
2,2',4,5',6-Pentachlorobiphenyl (BZ-103)	EPA 1668C_2010	1
2,2',4,5-Tetrachlorobiphenyl (BZ-48)	EPA 1668C_2010	1
2,2',4,5'-Tetrachlorobiphenyl (BZ-49)	EPA 1668C_2010	1
2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)	EPA 1668C_2010	1
2,2',4,6-Tetrachlorobiphenyl (BZ-50)	EPA 1668C_2010	1
2,2',4,6'-Tetrachlorobiphenyl (BZ-51)	EPA 1668C_2010	1
2,2',4-Trichlorobiphenyl (BZ-17)	EPA 1668C_2010	1
2,2',5,5'-Tetrachlorobiphenyl (BZ-52)	EPA 1668C_2010	1
2,2',5,6'-Tetrachlorobiphenyl (BZ-53)	EPA 1668C_2010	1
2,2',5-Trichlorobiphenyl (BZ-18)	EPA 1668C_2010	1
2,2',6,6'-Tetrachlorobiphenyl (BZ-54)	EPA 1668C_2010	1
2,2',6-Trichlorobiphenyl (BZ-19)	EPA 1668C_2010	1
2,2'-Dichlorobiphenyl (BZ-4)	EPA 1668C_2010	1
2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)	EPA 1668C_2010	1
2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)	EPA 1668C_2010	1
2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Non-Potable Water		
2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)	EPA 1668C_2010	1
2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)	EPA 1668C_2010	1
2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)	EPA 1668C_2010	1
2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)	EPA 1668C_2010	1
2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)	EPA 1668C_2010	1
2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)	EPA 1668C_2010	1
2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)	EPA 1668C_2010	1
2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)	EPA 1668C_2010	1
2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)	EPA 1668C_2010	1
2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)	EPA 1668C_2010	1
2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)	EPA 1668C_2010	1
2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)	EPA 1668C_2010	1
2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)	EPA 1668C_2010	1
2,3,3',4,5-Pentachlorobiphenyl (BZ-106)	EPA 1668C_2010	1
2,3,3',4',5-Pentachlorobiphenyl (BZ-107)	EPA 1668C_2010	1
2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)	EPA 1668C_2010	1
2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)	EPA 1668C_2010	1
2,3,3',4,6-Pentachlorobiphenyl (BZ-109)	EPA 1668C_2010	1
2,3,3',4',6-Pentachlorobiphenyl (BZ-110)	EPA 1668C_2010	1
2,3,3',4-Tetrachlorobiphenyl (BZ-55)	EPA 1668C_2010	1
2,3,3',4'-Tetrachlorobiphenyl (BZ-56)	EPA 1668C_2010	1
2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)	EPA 1668C_2010	1
2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)	EPA 1668C_2010	1
2,3,3',5,6-Pentachlorobiphenyl (BZ-112)	EPA 1668C_2010	1
2,3,3',5',6-Pentachlorobiphenyl (BZ-113)	EPA 1668C_2010	1
2,3,3',5-Tetrachlorobiphenyl (BZ-57)	EPA 1668C_2010	1
2,3,3',5'-Tetrachlorobiphenyl (BZ-58)	EPA 1668C_2010	1
2,3,3',6-Tetrachlorobiphenyl (BZ-59)	EPA 1668C_2010	1
2,3,3'-Trichlorobiphenyl (BZ-20)	EPA 1668C_2010	1
2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)	EPA 1668C_2010	1
2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)	EPA 1668C_2010	1
2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)	EPA 1668C_2010	1
2,3,4,4',5-Pentachlorobiphenyl (BZ-114)	EPA 1668C_2010	1
2,3',4,4',5-Pentachlorobiphenyl (BZ-118)	EPA 1668C_2010	1
2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)	EPA 1668C_2010	1
2,3,4,4',6-Pentachlorobiphenyl (BZ-115)	EPA 1668C_2010	1
2,3',4,4',6-Pentachlorobiphenyl (BZ-119)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Non-Potable Water		
2,3,4,4'-Tetrachlorobiphenyl (BZ-60)	EPA 1668C_2010	1
2,3',4,4'-Tetrachlorobiphenyl (BZ-66)	EPA 1668C_2010	1
2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)	EPA 1668C_2010	1
2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)	EPA 1668C_2010	1
2,3,4,5,6-Pentachlorobiphenyl (BZ-116)	EPA 1668C_2010	1
2,3,4',5,6-Pentachlorobiphenyl (BZ-117)	EPA 1668C_2010	1
2,3',4,5',6-Pentachlorobiphenyl (BZ-121)	EPA 1668C_2010	1
2,3',4',5',6-Pentachlorobiphenyl (BZ-125)	EPA 1668C_2010	1
2,3,4,5-Tetrachlorobiphenyl (BZ-61)	EPA 1668C_2010	1
2,3,4',5-Tetrachlorobiphenyl (BZ-63)	EPA 1668C_2010	1
2,3',4,5'-Tetrachlorobiphenyl (BZ-68)	EPA 1668C_2010	1
2,3',4',5-Tetrachlorobiphenyl (BZ-70)	EPA 1668C_2010	1
2,3',4',5'-Tetrachlorobiphenyl (BZ-76)	EPA 1668C_2010	1
2,3',4,5-Tetrachlorobiphenyl (BZ-67)	EPA 1668C_2010	1
2,3,4,6-Tetrachlorobiphenyl (BZ-62)	EPA 1668C_2010	1
2,3,4',6-Tetrachlorobiphenyl (BZ-64)	EPA 1668C_2010	1
2,3',4,6-Tetrachlorobiphenyl (BZ-69)	EPA 1668C_2010	1
2,3',4',6-Tetrachlorobiphenyl (BZ-71)	EPA 1668C_2010	1
2,3,4-Trichlorobiphenyl (BZ-21)	EPA 1668C_2010	1
2,3,4'-Trichlorobiphenyl (BZ-22)	EPA 1668C_2010	1
2,3',4-Trichlorobiphenyl (BZ-25)	EPA 1668C_2010	1
2,3',4'-Trichlorobiphenyl (BZ-33)	EPA 1668C_2010	1
2,3',5,5'-Tetrachlorobiphenyl (BZ-72)	EPA 1668C_2010	1
2,3,5,6-Tetrachlorobiphenyl (BZ-65)	EPA 1668C_2010	1
2,3',5',6-Tetrachlorobiphenyl (BZ-73)	EPA 1668C_2010	1
2,3,5-Trichlorobiphenyl (BZ-23)	EPA 1668C_2010	1
2,3',5-Trichlorobiphenyl (BZ-26)	EPA 1668C_2010	1
2,3',5'-Trichlorobiphenyl (BZ-34)	EPA 1668C_2010	1
2,3,6-Trichlorobiphenyl (BZ-24)	EPA 1668C_2010	1
2,3',6-Trichlorobiphenyl (BZ-27)	EPA 1668C_2010	1
2,3-Dichlorobiphenyl (BZ-5)	EPA 1668C_2010	1
2,3'-Dichlorobiphenyl (BZ-6)	EPA 1668C_2010	1
2,4,4',5-Tetrachlorobiphenyl (BZ-74)	EPA 1668C_2010	1
2,4,4',6-Tetrachlorobiphenyl (BZ-75)	EPA 1668C_2010	1
2,4,4'-Trichlorobiphenyl (BZ-28)	EPA 1668C_2010	1
2,4,5-Trichlorobiphenyl (BZ-29)	EPA 1668C_2010	1
2,4',5-Trichlorobiphenyl (BZ-31)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Non-Potable Water		
2,4,6-Trichlorobiphenyl (BZ-30)	EPA 1668C_2010	1
2,4',6-Trichlorobiphenyl (BZ-32)	EPA 1668C_2010	1
2,4-Dichlorobiphenyl (BZ-7)	EPA 1668C_2010	1
2,4'-Dichlorobiphenyl (BZ-8)	EPA 1668C_2010	1
2,5-Dichlorobiphenyl (BZ-9)	EPA 1668C_2010	1
2,6-Dichlorobiphenyl (BZ-10)	EPA 1668C_2010	1
2-Chlorobiphenyl (BZ-1)	EPA 1668C_2010	1
3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)	EPA 1668C_2010	1
3,3',4,4',5-Pentachlorobiphenyl (BZ-126)	EPA 1668C_2010	1
3,3',4,4'-Tetrachlorobiphenyl (BZ-77)	EPA 1668C_2010	1
3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)	EPA 1668C_2010	1
3,3',4,5-Tetrachlorobiphenyl (BZ-78)	EPA 1668C_2010	1
3,3',4,5'-Tetrachlorobiphenyl (BZ-79)	EPA 1668C_2010	1
3,3',4-Trichlorobiphenyl (BZ-35)	EPA 1668C_2010	1
3,3',5,5'-Tetrachlorobiphenyl (BZ-80)	EPA 1668C_2010	1
3,3',5-Trichlorobiphenyl (BZ-36)	EPA 1668C_2010	1
3,3'-Dichlorobiphenyl (BZ-11)	EPA 1668C_2010	1
3,4,4',5-Tetrachlorobiphenyl (BZ-81)	EPA 1668C_2010	1
3,4,4'-Trichlorobiphenyl (BZ-37)	EPA 1668C_2010	1
3,4,5-Trichlorobiphenyl (BZ-38)	EPA 1668C_2010	1
3,4',5-Trichlorobiphenyl (BZ-39)	EPA 1668C_2010	1
3,4-Dichlorobiphenyl (BZ-12)	EPA 1668C_2010	1
3,4'-Dichlorobiphenyl (BZ-13)	EPA 1668C_2010	1
3,5-Dichlorobiphenyl (BZ-14)	EPA 1668C_2010	1
3-Chlorobiphenyl (BZ-2)	EPA 1668C_2010	1
4,4'-Dichlorobiphenyl (BZ-15)	EPA 1668C_2010	1
4-Chlorobiphenyl (BZ-3)	EPA 1668C_2010	1
Coelution - Dichlorobiphenyls (BZ-12-+13)	EPA 1668C_2010	1
Coelution - Heptachlorobiphenyls (BZ-171 + BZ-173)	EPA 1668C_2010	1
Coelution - Heptachlorobiphenyls (BZ-180 + BZ-193)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-128 + BZ-166)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-129 + BZ138 + BZ-163)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-135 + BZ-151)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-139 + BZ-140)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-147 + BZ-149)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-153 + BZ-168)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-156 + BZ-157)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Non-Potable Water		
Coelution - Octachlorobiphenyls (BZ-198 + BZ-199)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-107 + BZ-124)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-110 + BZ-115)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-85 + BZ-116 + BZ-117)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-86 + BZ-87 + BZ-90 + BZ-109 + BZ-119 + BZ-125)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-88 + BZ-91)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-90 + BZ-101 + BZ-113)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-93 + BZ-100)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-98 + BZ-102)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-40 + BZ-71)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-44 + BZ-47 + BZ-65)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-49 + BZ-69)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-50 + BZ-53)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-59 + BZ-62 + BZ-75)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-61 + BZ-70 + BZ-74 + BZ-76)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-18 + BZ-30)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-20 + BZ-28)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-21 + BZ-33)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-26 + BZ-29)	EPA 1668C_2010	1
Decachlorobiphenyl (BZ-209)	EPA 1668C_2010	1
Total Dichlorobiphenyls	EPA 1668C_2010	1
Total Heptachlorobiphenyls	EPA 1668C_2010	1
Total Hexachlorobiphenyls	EPA 1668C_2010	1
Total Monochlorobiphenyls	EPA 1668C_2010	1
Total Nonachlorobiphenyls	EPA 1668C_2010	1
Total Octachlorobiphenyls	EPA 1668C_2010	1
Total Pentachlorobiphenyls	EPA 1668C_2010	1
Total Tetrachlorobiphenyls	EPA 1668C_2010	1
Total Trichlorobiphenyls	EPA 1668C_2010	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	SOP WS-LC-0025	1,3
1H,1H,2H,2H,-Perfluorodecanesulfonic acid (8:2 FTS)	SOP WS-LC-0025	1,3
1H,1H,2H,2H,-Perfluorooctansulfonic acid (6:2 FTS)	SOP WS-LC-0025	1,3
1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2-FTS)	SOP WS-LC-0025	1,3
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	SOP WS-LC-0025	1,3
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	SOP WS-LC-0025	1,3
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	SOP WS-LC-0025	1,3
Hexafluoropropylene oxide dimer acid (HFPO-DA)	SOP WS-LC-0025	1,3

Matrix/Analyte	Method	Notes
Non-Potable Water		
N-Ethylperfluorooctane sulfonamide (EtFOSA)	SOP WS-LC-0025	1,3
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	SOP WS-LC-0025	1,3
N-Ethylperfluorooctanesulfonamidoethanol (EtFOSE)	SOP WS-LC-0025	1,3
N-Methylperfluorooctane sulfonamide (MeFOSA)	SOP WS-LC-0025	1,3
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	SOP WS-LC-0025	1,3
N-Methylperfluorooctanesulfonamidoethanol (MeFOSE)	SOP WS-LC-0025	1,3
Perfluorobutane sulfonic acid (PFBS)	SOP WS-LC-0025	1,3
Perfluorobutanoic acid (PFBA)	SOP WS-LC-0025	1,3
Perfluorodecane sulfonate (PFDS)	SOP WS-LC-0025	1,3
Perfluorodecane sulfonic acid (PFDS)	SOP WS-LC-0025	1,3
Perfluorodecanoic acid (PFDA)	SOP WS-LC-0025	1,3
Perfluorododecane sulfonic acid (PFDoS)	SOP WS-LC-0025	1,3
Perfluorododecanoic acid (PFDoA)	SOP WS-LC-0025	1,3
Perfluoroheptane sulfonic acid (PFHpS)	SOP WS-LC-0025	1,3
Perfluoroheptanoic acid (PFHpA)	SOP WS-LC-0025	1,3
Perfluorohexane sulfonic acid (PFHxS)	SOP WS-LC-0025	1,3
Perfluorohexanoic acid (PFHxA)	SOP WS-LC-0025	1,3
Perfluorononane sulfonic acid (PFNS)	SOP WS-LC-0025	1,3
Perfluorononanoic acid (PFNA)	SOP WS-LC-0025	1,3
Perfluorooctane sulfonamide (PFOSA)	SOP WS-LC-0025	1,3
Perfluorooctane sulfonic acid (PFOS)	SOP WS-LC-0025	1,3
Perfluorooctanoic acid (PFOA)	SOP WS-LC-0025	1,3
Perfluoropentane sulfonic acid (PFPeS)	SOP WS-LC-0025	1,3
Perfluoropentanoic acid (PFPeA)	SOP WS-LC-0025	1,3
Perfluorotetradecanoic acid (PFTeDA)	SOP WS-LC-0025	1,3
Perfluorotridecanoic acid (PFTrDA)	SOP WS-LC-0025	1,3
Perfluoroundecanoic acid (PFUnA)	SOP WS-LC-0025	1,3
Solid and Chemical Materials		
Perchlorate	EPA 6850-07	1
Chromium, Hexavalent	EPA 7196A_1_1992	1,2
Aluminum	EPA 6010C_(2/07)	1
Antimony	EPA 6010C_(2/07)	1
Arsenic	EPA 6010C_(2/07)	1
Barium	EPA 6010C_(2/07)	1
Beryllium	EPA 6010C_(2/07)	1
Cadmium	EPA 6010C_(2/07)	1
Calcium	EPA 6010C_(2/07)	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Chromium	EPA 6010C_(2/07)	1
Cobalt	EPA 6010C_(2/07)	1
Copper	EPA 6010C_(2/07)	1
Iron	EPA 6010C_(2/07)	1
Lead	EPA 6010C_(2/07)	1
Magnesium	EPA 6010C_(2/07)	1
Manganese	EPA 6010C_(2/07)	1
Molybdenum	EPA 6010C_(2/07)	1
Nickel	EPA 6010C_(2/07)	1
Potassium	EPA 6010C_(2/07)	1
Selenium	EPA 6010C_(2/07)	1
Silver	EPA 6010C_(2/07)	1
Sodium	EPA 6010C_(2/07)	1
Thallium	EPA 6010C_(2/07)	1
Vanadium	EPA 6010C_(2/07)	1
Zinc	EPA 6010C_(2/07)	1
Antimony	EPA 6020A_(2/07)	1
Arsenic	EPA 6020A_(2/07)	1
Barium	EPA 6020A_(2/07)	1
Beryllium	EPA 6020A_(2/07)	1
Cadmium	EPA 6020A_(2/07)	1
Chromium	EPA 6020A_(2/07)	1
Cobalt	EPA 6020A_(2/07)	1
Copper	EPA 6020A_(2/07)	1
Iron	EPA 6020A_(2/07)	1
Lead	EPA 6020A_(2/07)	1
Molybdenum	EPA 6020A_(2/07)	1
Nickel	EPA 6020A_(2/07)	1
Selenium	EPA 6020A_(2/07)	1
Silver	EPA 6020A_(2/07)	1
Thallium	EPA 6020A_(2/07)	1
Vanadium	EPA 6020A_(2/07)	1
Zinc	EPA 6020A_(2/07)	1
Mercury	EPA 7470A_1_1994	1,2
Mercury	EPA 7471B_(2/07)	1
4,4'-DDD	EPA 8081B_(2/07)	1
4,4'-DDE	EPA 8081B_(2/07)	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
4,4'-DDT	EPA 8081B_(2/07)	1
Aldrin	EPA 8081B_(2/07)	1
alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081B_(2/07)	1
alpha-Chlordane	EPA 8081B_(2/07)	1
beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081B_(2/07)	1
Chlordane (tech.)	EPA 8081B_(2/07)	1
Chlorobenzilate	EPA 8081B_(2/07)	1
delta-BHC	EPA 8081B_(2/07)	1
Diallate	EPA 8081B_(2/07)	1
Dieldrin	EPA 8081B_(2/07)	1
Endosulfan I	EPA 8081B_(2/07)	1
Endosulfan II	EPA 8081B_(2/07)	1
Endosulfan sulfate	EPA 8081B_(2/07)	1
Endrin	EPA 8081B_(2/07)	1
Endrin aldehyde	EPA 8081B_(2/07)	1
Endrin ketone	EPA 8081B_(2/07)	1
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 8081B_(2/07)	1
gamma-Chlordane	EPA 8081B_(2/07)	1
Heptachlor	EPA 8081B_(2/07)	1
Heptachlor epoxide	EPA 8081B_(2/07)	1
Isodrin	EPA 8081B_(2/07)	1
Methoxychlor	EPA 8081B_(2/07)	1
Toxaphene (Chlorinated camphene)	EPA 8081B_(2/07)	1
Aroclor-1016 (PCB-1016)	EPA 8082A_(2/07)	1
Aroclor-1221 (PCB-1221)	EPA 8082A_(2/07)	1
Aroclor-1232 (PCB-1232)	EPA 8082A_(2/07)	1
Aroclor-1242 (PCB-1242)	EPA 8082A_(2/07)	1
Aroclor-1248 (PCB-1248)	EPA 8082A_(2/07)	1
Aroclor-1254 (PCB-1254)	EPA 8082A_(2/07)	1
Aroclor-1260 (PCB-1260)	EPA 8082A_(2/07)	1
Aroclor-1262 (PCB-1262)	EPA 8082A_(2/07)	1
Aroclor-1268 (PCB-1268)	EPA 8082A_(2/07)	1
Nitrocellulose	SOP WS-WC-0050	1
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 1613B_1994	1
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 1613B_1994	1
1,2,3,4,6,7,8-Hpcdd	EPA 1613B_1994	1
1,2,3,4,6,7,8-Hpcdf	EPA 1613B_1994	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
1,2,3,4,7,8,9-Hpcdf	EPA 1613B_1994	1
1,2,3,4,7,8-Hxcdd	EPA 1613B_1994	1
1,2,3,4,7,8-Hxcdf	EPA 1613B_1994	1
1,2,3,6,7,8-Hxcdd	EPA 1613B_1994	1
1,2,3,6,7,8-Hxcdf	EPA 1613B_1994	1
1,2,3,7,8,9-Hxcdd	EPA 1613B_1994	1
1,2,3,7,8,9-Hxcdf	EPA 1613B_1994	1
1,2,3,7,8-Pecdd	EPA 1613B_1994	1
1,2,3,7,8-Pecdf	EPA 1613B_1994	1
2,3,4,6,7,8-Hxcdf	EPA 1613B_1994	1
2,3,4,7,8-Pecdf	EPA 1613B_1994	1
2,3,7,8-TCDD	EPA 1613B_1994	1
2,3,7,8-TCDF	EPA 1613B_1994	1
Hpcdd, total	EPA 1613B_1994	1
Hpcdf, total	EPA 1613B_1994	1
Hxcdd, total	EPA 1613B_1994	1
Hxcdf, total	EPA 1613B_1994	1
Pecdd, total	EPA 1613B_1994	1
Pecdf, total	EPA 1613B_1994	1
TCDD, total	EPA 1613B_1994	1
TCDF, total	EPA 1613B_1994	1
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)	EPA 1668C_2010	1
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)	EPA 1668C_2010	1
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)	EPA 1668C_2010	1
2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)	EPA 1668C_2010	1
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)	EPA 1668C_2010	1
2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)	EPA 1668C_2010	1
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)	EPA 1668C_2010	1
2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)	EPA 1668C_2010	1
2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)	EPA 1668C_2010	1
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)	EPA 1668C_2010	1
2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)	EPA 1668C_2010	1
2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)	EPA 1668C_2010	1
2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)	EPA 1668C_2010	1
2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)	EPA 1668C_2010	1
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)	EPA 1668C_2010	1
2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)	EPA 1668C_2010	1
2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)	EPA 1668C_2010	1
2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)	EPA 1668C_2010	1
2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)	EPA 1668C_2010	1
2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)	EPA 1668C_2010	1
2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)	EPA 1668C_2010	1
2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)	EPA 1668C_2010	1
2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)	EPA 1668C_2010	1
2,2',3,3',4-Pentachlorobiphenyl (BZ-82)	EPA 1668C_2010	1
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)	EPA 1668C_2010	1
2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)	EPA 1668C_2010	1
2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)	EPA 1668C_2010	1
2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)	EPA 1668C_2010	1
2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)	EPA 1668C_2010	1
2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)	EPA 1668C_2010	1
2,2',3,3',5-Pentachlorobiphenyl (BZ-83)	EPA 1668C_2010	1
2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)	EPA 1668C_2010	1
2,2',3,3',6-Pentachlorobiphenyl (BZ-84)	EPA 1668C_2010	1
2,2',3,3'-Tetrachlorobiphenyl (BZ-40)	EPA 1668C_2010	1
2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)	EPA 1668C_2010	1
2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)	EPA 1668C_2010	1
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)	EPA 1668C_2010	1
2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)	EPA 1668C_2010	1
2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)	EPA 1668C_2010	1
2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)	EPA 1668C_2010	1
2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)	EPA 1668C_2010	1
2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)	EPA 1668C_2010	1
2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)	EPA 1668C_2010	1
2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)	EPA 1668C_2010	1
2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)	EPA 1668C_2010	1
2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)	EPA 1668C_2010	1
2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)	EPA 1668C_2010	1
2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)	EPA 1668C_2010	1
2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)	EPA 1668C_2010	1
2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)	EPA 1668C_2010	1
2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)	EPA 1668C_2010	1
2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)	EPA 1668C_2010	1
2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)	EPA 1668C_2010	1
2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)	EPA 1668C_2010	1
2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)	EPA 1668C_2010	1
2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)	EPA 1668C_2010	1
2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)	EPA 1668C_2010	1
2,2',3,4,5-Pentachlorobiphenyl (BZ-86)	EPA 1668C_2010	1
2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)	EPA 1668C_2010	1
2,2',3,4',5-Pentachlorobiphenyl (BZ-90)	EPA 1668C_2010	1
2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)	EPA 1668C_2010	1
2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)	EPA 1668C_2010	1
2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)	EPA 1668C_2010	1
2,2',3,4,6-Pentachlorobiphenyl (BZ-88)	EPA 1668C_2010	1
2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)	EPA 1668C_2010	1
2,2',3,4',6-Pentachlorobiphenyl (BZ-91)	EPA 1668C_2010	1
2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)	EPA 1668C_2010	1
2,2',3,4-Tetrachlorobiphenyl (BZ-41)	EPA 1668C_2010	1
2,2',3,4'-Tetrachlorobiphenyl (BZ-42)	EPA 1668C_2010	1
2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)	EPA 1668C_2010	1
2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)	EPA 1668C_2010	1
2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)	EPA 1668C_2010	1
2,2',3,5,6-Pentachlorobiphenyl (BZ-93)	EPA 1668C_2010	1
2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)	EPA 1668C_2010	1
2,2',3,5',6-Pentachlorobiphenyl (BZ-95)	EPA 1668C_2010	1
2,2',3,5-Tetrachlorobiphenyl (BZ-43)	EPA 1668C_2010	1
2,2',3,5'-Tetrachlorobiphenyl (BZ-44)	EPA 1668C_2010	1
2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)	EPA 1668C_2010	1
2,2',3,6-Tetrachlorobiphenyl (BZ-45)	EPA 1668C_2010	1
2,2',3,6'-Tetrachlorobiphenyl (BZ-46)	EPA 1668C_2010	1
2,2',3-Trichlorobiphenyl (BZ-16)	EPA 1668C_2010	1
2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)	EPA 1668C_2010	1
2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)	EPA 1668C_2010	1
2,2',4,4',5-Pentachlorobiphenyl (BZ-99)	EPA 1668C_2010	1
2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)	EPA 1668C_2010	1
2,2',4,4',6-Pentachlorobiphenyl (BZ-100)	EPA 1668C_2010	1
2,2',4,4'-Tetrachlorobiphenyl (BZ-47)	EPA 1668C_2010	1
2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)	EPA 1668C_2010	1
2,2',4,5',6-Pentachlorobiphenyl (BZ-103)	EPA 1668C_2010	1
2,2',4,5-Tetrachlorobiphenyl (BZ-48)	EPA 1668C_2010	1
2,2',4,5'-Tetrachlorobiphenyl (BZ-49)	EPA 1668C_2010	1
2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)	EPA 1668C_2010	1
2,2',4,6-Tetrachlorobiphenyl (BZ-50)	EPA 1668C_2010	1
2,2',4,6'-Tetrachlorobiphenyl (BZ-51)	EPA 1668C_2010	1
2,2',4-Trichlorobiphenyl (BZ-17)	EPA 1668C_2010	1
2,2',5,5'-Tetrachlorobiphenyl (BZ-52)	EPA 1668C_2010	1
2,2',5,6'-Tetrachlorobiphenyl (BZ-53)	EPA 1668C_2010	1
2,2',5-Trichlorobiphenyl (BZ-18)	EPA 1668C_2010	1
2,2',6,6'-Tetrachlorobiphenyl (BZ-54)	EPA 1668C_2010	1
2,2',6-Trichlorobiphenyl (BZ-19)	EPA 1668C_2010	1
2,2'-Dichlorobiphenyl (BZ-4)	EPA 1668C_2010	1
2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)	EPA 1668C_2010	1
2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)	EPA 1668C_2010	1
2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)	EPA 1668C_2010	1
2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)	EPA 1668C_2010	1
2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)	EPA 1668C_2010	1
2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)	EPA 1668C_2010	1
2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)	EPA 1668C_2010	1
2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)	EPA 1668C_2010	1
2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)	EPA 1668C_2010	1
2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)	EPA 1668C_2010	1
2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)	EPA 1668C_2010	1
2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)	EPA 1668C_2010	1
2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)	EPA 1668C_2010	1
2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)	EPA 1668C_2010	1
2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)	EPA 1668C_2010	1
2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)	EPA 1668C_2010	1
2,3,3',4,5-Pentachlorobiphenyl (BZ-106)	EPA 1668C_2010	1
2,3,3',4',5-Pentachlorobiphenyl (BZ-107)	EPA 1668C_2010	1
2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)	EPA 1668C_2010	1
2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)	EPA 1668C_2010	1
2,3,3',4,6-Pentachlorobiphenyl (BZ-109)	EPA 1668C_2010	1
2,3,3',4',6-Pentachlorobiphenyl (BZ-110)	EPA 1668C_2010	1
2,3,3',4-Tetrachlorobiphenyl (BZ-55)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
2,3,3',4'-Tetrachlorobiphenyl (BZ-56)	EPA 1668C_2010	1
2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)	EPA 1668C_2010	1
2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)	EPA 1668C_2010	1
2,3,3',5,6-Pentachlorobiphenyl (BZ-112)	EPA 1668C_2010	1
2,3,3',5',6-Pentachlorobiphenyl (BZ-113)	EPA 1668C_2010	1
2,3,3',5-Tetrachlorobiphenyl (BZ-57)	EPA 1668C_2010	1
2,3,3',5'-Tetrachlorobiphenyl (BZ-58)	EPA 1668C_2010	1
2,3,3',6-Tetrachlorobiphenyl (BZ-59)	EPA 1668C_2010	1
2,3,3'-Trichlorobiphenyl (BZ-20)	EPA 1668C_2010	1
2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)	EPA 1668C_2010	1
2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)	EPA 1668C_2010	1
2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)	EPA 1668C_2010	1
2,3,4,4',5-Pentachlorobiphenyl (BZ-114)	EPA 1668C_2010	1
2,3',4,4',5-Pentachlorobiphenyl (BZ-118)	EPA 1668C_2010	1
2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)	EPA 1668C_2010	1
2,3,4,4',6-Pentachlorobiphenyl (BZ-115)	EPA 1668C_2010	1
2,3',4,4',6-Pentachlorobiphenyl (BZ-119)	EPA 1668C_2010	1
2,3,4,4'-Tetrachlorobiphenyl (BZ-60)	EPA 1668C_2010	1
2,3',4,4'-Tetrachlorobiphenyl (BZ-66)	EPA 1668C_2010	1
2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)	EPA 1668C_2010	1
2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)	EPA 1668C_2010	1
2,3,4,5,6-Pentachlorobiphenyl (BZ-116)	EPA 1668C_2010	1
2,3,4',5,6-Pentachlorobiphenyl (BZ-117)	EPA 1668C_2010	1
2,3',4,5',6-Pentachlorobiphenyl (BZ-121)	EPA 1668C_2010	1
2,3',4',5',6-Pentachlorobiphenyl (BZ-125)	EPA 1668C_2010	1
2,3,4,5-Tetrachlorobiphenyl (BZ-61)	EPA 1668C_2010	1
2,3,4',5-Tetrachlorobiphenyl (BZ-63)	EPA 1668C_2010	1
2,3',4,5'-Tetrachlorobiphenyl (BZ-68)	EPA 1668C_2010	1
2,3',4',5-Tetrachlorobiphenyl (BZ-70)	EPA 1668C_2010	1
2,3',4',5'-Tetrachlorobiphenyl (BZ-76)	EPA 1668C_2010	1
2,3',4,5-Tetrachlorobiphenyl (BZ-67)	EPA 1668C_2010	1
2,3,4,6-Tetrachlorobiphenyl (BZ-62)	EPA 1668C_2010	1
2,3,4',6-Tetrachlorobiphenyl (BZ-64)	EPA 1668C_2010	1
2,3',4,6-Tetrachlorobiphenyl (BZ-69)	EPA 1668C_2010	1
2,3',4',6-Tetrachlorobiphenyl (BZ-71)	EPA 1668C_2010	1
2,3,4-Trichlorobiphenyl (BZ-21)	EPA 1668C_2010	1
2,3,4'-Trichlorobiphenyl (BZ-22)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
2,3',4-Trichlorobiphenyl (BZ-25)	EPA 1668C_2010	1
2,3',4'-Trichlorobiphenyl (BZ-33)	EPA 1668C_2010	1
2,3',5,5'-Tetrachlorobiphenyl (BZ-72)	EPA 1668C_2010	1
2,3,5,6-Tetrachlorobiphenyl (BZ-65)	EPA 1668C_2010	1
2,3',5',6-Tetrachlorobiphenyl (BZ-73)	EPA 1668C_2010	1
2,3,5-Trichlorobiphenyl (BZ-23)	EPA 1668C_2010	1
2,3',5-Trichlorobiphenyl (BZ-26)	EPA 1668C_2010	1
2,3',5'-Trichlorobiphenyl (BZ-34)	EPA 1668C_2010	1
2,3,6-Trichlorobiphenyl (BZ-24)	EPA 1668C_2010	1
2,3',6-Trichlorobiphenyl (BZ-27)	EPA 1668C_2010	1
2,3-Dichlorobiphenyl (BZ-5)	EPA 1668C_2010	1
2,3'-Dichlorobiphenyl (BZ-6)	EPA 1668C_2010	1
2,4,4',5-Tetrachlorobiphenyl (BZ-74)	EPA 1668C_2010	1
2,4,4',6-Tetrachlorobiphenyl (BZ-75)	EPA 1668C_2010	1
2,4,4'-Trichlorobiphenyl (BZ-28)	EPA 1668C_2010	1
2,4,5-Trichlorobiphenyl (BZ-29)	EPA 1668C_2010	1
2,4',5-Trichlorobiphenyl (BZ-31)	EPA 1668C_2010	1
2,4,6-Trichlorobiphenyl (BZ-30)	EPA 1668C_2010	1
2,4',6-Trichlorobiphenyl (BZ-32)	EPA 1668C_2010	1
2,4-Dichlorobiphenyl (BZ-7)	EPA 1668C_2010	1
2,4'-Dichlorobiphenyl (BZ-8)	EPA 1668C_2010	1
2,5-Dichlorobiphenyl (BZ-9)	EPA 1668C_2010	1
2,6-Dichlorobiphenyl (BZ-10)	EPA 1668C_2010	1
2-Chlorobiphenyl (BZ-1)	EPA 1668C_2010	1
3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)	EPA 1668C_2010	1
3,3',4,4',5-Pentachlorobiphenyl (BZ-126)	EPA 1668C_2010	1
3,3',4,4'-Tetrachlorobiphenyl (BZ-77)	EPA 1668C_2010	1
3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)	EPA 1668C_2010	1
3,3',4,5-Tetrachlorobiphenyl (BZ-78)	EPA 1668C_2010	1
3,3',4,5'-Tetrachlorobiphenyl (BZ-79)	EPA 1668C_2010	1
3,3',4-Trichlorobiphenyl (BZ-35)	EPA 1668C_2010	1,
3,3',5,5'-Tetrachlorobiphenyl (BZ-80)	EPA 1668C_2010	1
3,3',5-Trichlorobiphenyl (BZ-36)	EPA 1668C_2010	1
3,3'-Dichlorobiphenyl (BZ-11)	EPA 1668C_2010	1
3,4,4',5-Tetrachlorobiphenyl (BZ-81)	EPA 1668C_2010	1
3,4,4'-Trichlorobiphenyl (BZ-37)	EPA 1668C_2010	1
3,4,5-Trichlorobiphenyl (BZ-38)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
3,4',5-Trichlorobiphenyl (BZ-39)	EPA 1668C_2010	1
3,4-Dichlorobiphenyl (BZ-12)	EPA 1668C_2010	1
3,4'-Dichlorobiphenyl (BZ-13)	EPA 1668C_2010	1
3,5-Dichlorobiphenyl (BZ-14)	EPA 1668C_2010	1
3-Chlorobiphenyl (BZ-2)	EPA 1668C_2010	1
4,4'-Dichlorobiphenyl (BZ-15)	EPA 1668C_2010	1
4-Chlorobiphenyl (BZ-3)	EPA 1668C_2010	1
Coelution - Dichlorobiphenyls (BZ-12-+13)	EPA 1668C_2010	1
Coelution - Heptachlorobiphenyls (BZ-171 + BZ-173)	EPA 1668C_2010	1
Coelution - Heptachlorobiphenyls (BZ-180 + BZ-193)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-128 + BZ-166)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-129 + BZ138 + BZ-163)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-135 + BZ-151)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-139 + BZ-140)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-147 + BZ-149)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-153 + BZ-168)	EPA 1668C_2010	1
Coelution - Hexachlorobiphenyls (BZ-156 + BZ-157)	EPA 1668C_2010	1
Coelution - Octachlorobiphenyls (BZ-198 + BZ-199)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-107 + BZ-124)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-110 + BZ-115)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-85 + BZ-116 + BZ-117)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-86 + BZ-87 + BZ-90 + BZ-109 + BZ-119 + BZ-125)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-88 + BZ-91)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-90 + BZ-101 + BZ-113)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-93 + BZ-100)	EPA 1668C_2010	1
Coelution - Pentachlorobiphenyls (BZ-98 + BZ-102)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-40 + BZ-71)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-44 + BZ-47 + BZ-65)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-49 + BZ-69)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-50 + BZ-53)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-59 + BZ-62 + BZ-75)	EPA 1668C_2010	1
Coelution - Tetrachlorobiphenyls (BZ-61 + BZ-70 + BZ-74 + BZ-76)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-18 + BZ-30)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-20 + BZ-28)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-21 + BZ-33)	EPA 1668C_2010	1
Coelution - Trichlorobiphenyls (BZ-26 + BZ-29)	EPA 1668C_2010	1
Decachlorobiphenyl (BZ-209)	EPA 1668C_2010	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Total Dichlorobiphenyls	EPA 1668C_2010	1
Total Heptachlorobiphenyls	EPA 1668C_2010	1
Total Hexachlorobiphenyls	EPA 1668C_2010	1
Total Monochlorobiphenyls	EPA 1668C_2010	1
Total Nonachlorobiphenyls	EPA 1668C_2010	1
Total Octachlorobiphenyls	EPA 1668C_2010	1
Total Pentachlorobiphenyls	EPA 1668C_2010	1
Total Tetrachlorobiphenyls	EPA 1668C_2010	1
Total Trichlorobiphenyls	EPA 1668C_2010	1
1,1,1,2-Tetrachloroethane	EPA 8260C_(8/06)	1
1,1,1-Trichloroethane	EPA 8260C_(8/06)	1
1,1,2,2-Tetrachloroethane	EPA 8260C_(8/06)	1
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260C_(8/06)	1
1,1,2-Trichloroethane	EPA 8260C_(8/06)	1
1,1-Dichloroethane	EPA 8260C_(8/06)	1
1,1-Dichloroethylene	EPA 8260C_(8/06)	1
1,1-Dichloropropene	EPA 8260C_(8/06)	1
1,2,3-Trichlorobenzene	EPA 8260C_(8/06)	1
1,2,3-Trichloropropane	EPA 8260C_(8/06)	1
1,2,4-Trichlorobenzene	EPA 8260C_(8/06)	1
1,2,4-Trimethylbenzene	EPA 8260C_(8/06)	1
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260C_(8/06)	1
1,2-Dichlorobenzene	EPA 8260C_(8/06)	1
1,2-Dichloroethane (Ethylene dichloride)	EPA 8260C_(8/06)	1
1,2-Dichloropropane	EPA 8260C_(8/06)	1
1,3,5-Trimethylbenzene	EPA 8260C_(8/06)	1
1,3-Dichlorobenzene	EPA 8260C_(8/06)	1
1,3-Dichloropropane	EPA 8260C_(8/06)	1
1,4-Dichlorobenzene	EPA 8260C_(8/06)	1
1-Chlorohexane	EPA 8260C_(8/06)	1
2,2-Dichloropropane	EPA 8260C_(8/06)	1
2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260C_(8/06)	1
2-Chloroethyl vinyl ether	EPA 8260C_(8/06)	1
2-Chlorotoluene	EPA 8260C_(8/06)	1
2-Hexanone	EPA 8260C_(8/06)	1
4-Chlorotoluene	EPA 8260C_(8/06)	1
4-Isopropyltoluene (p-Cymene)	EPA 8260C_(8/06)	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
4-Methyl-2-pentanone (MIBK)	EPA 8260C_(8/06)	1
Acetone	EPA 8260C_(8/06)	1
Acrolein (Propenal)	EPA 8260C_(8/06)	1
Acrylonitrile	EPA 8260C_(8/06)	1
Allyl chloride (3-Chloropropene)	EPA 8260C_(8/06)	1
Benzene	EPA 8260C_(8/06)	1
Bromobenzene	EPA 8260C_(8/06)	1
Bromochloromethane	EPA 8260C_(8/06)	1
Bromodichloromethane	EPA 8260C_(8/06)	1
Bromoform	EPA 8260C_(8/06)	1
Carbon disulfide	EPA 8260C_(8/06)	1
Carbon tetrachloride	EPA 8260C_(8/06)	1
Chlorobenzene	EPA 8260C_(8/06)	1
Chlorodibromomethane	EPA 8260C_(8/06)	1
Chloroethane (Ethyl chloride)	EPA 8260C_(8/06)	1
Chloroform	EPA 8260C_(8/06)	1
Chloroprene (2-Chloro-1,3-butadiene)	EPA 8260C_(8/06)	1
cis & trans-1,2-Dichloroethene	EPA 8260C_(8/06)	1
cis-1,2-Dichloroethylene	EPA 8260C_(8/06)	1
cis-1,3-Dichloropropene	EPA 8260C_(8/06)	1
Dibromomethane	EPA 8260C_(8/06)	1
Dichlorodifluoromethane (Freon-12)	EPA 8260C_(8/06)	1
Ethyl methacrylate	EPA 8260C_(8/06)	1
Ethylbenzene	EPA 8260C_(8/06)	1
Hexachlorobutadiene	EPA 8260C_(8/06)	1
Iodomethane (Methyl iodide)	EPA 8260C_(8/06)	1
Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260C_(8/06)	1
Isopropylbenzene	EPA 8260C_(8/06)	1
m+p-xylene	EPA 8260C_(8/06)	1
Methacrylonitrile	EPA 8260C_(8/06)	1
Methyl bromide (Bromomethane)	EPA 8260C_(8/06)	1
Methyl chloride (Chloromethane)	EPA 8260C_(8/06)	1
Methyl tert-butyl ether (MTBE)	EPA 8260C_(8/06)	1
Methylene chloride (Dichloromethane)	EPA 8260C_(8/06)	1
Naphthalene	EPA 8260C_(8/06)	1
n-Butylbenzene	EPA 8260C_(8/06)	1
n-Hexane	EPA 8260C_(8/06)	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
n-Propylbenzene	EPA 8260C_(8/06)	1
o-Xylene	EPA 8260C_(8/06)	1
Propionitrile (Ethyl cyanide)	EPA 8260C_(8/06)	1
sec-Butylbenzene	EPA 8260C_(8/06)	1
Styrene	EPA 8260C_(8/06)	1
tert-amylmethylether (TAME)	EPA 8260C_(8/06)	1
tert-Butyl alcohol	EPA 8260C_(8/06)	1
tert-Butylbenzene	EPA 8260C_(8/06)	1
Tetrachloroethylene (Perchloroethylene)	EPA 8260C_(8/06)	1
Toluene	EPA 8260C_(8/06)	1
trans-1,2-Dichloroethylene	EPA 8260C_(8/06)	1
trans-1,3-Dichloropropylene	EPA 8260C_(8/06)	1
trans-1,4-Dichloro-2-butene	EPA 8260C_(8/06)	1
Trichloroethene (Trichloroethylene)	EPA 8260C_(8/06)	1
Trichlorofluoromethane (Freon 11)	EPA 8260C_(8/06)	1
Vinyl acetate	EPA 8260C_(8/06)	1
Vinyl chloride	EPA 8260C_(8/06)	1
Xylene (total)	EPA 8260C_(8/06)	1
1,2,4,5-Tetrachlorobenzene	EPA 8270D_5_(7/14)	1
1,2,4-Trichlorobenzene	EPA 8270D_5_(7/14)	1
1,2-Dichlorobenzene	EPA 8270D_5_(7/14)	1
1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270D_5_(7/14)	1
1,3-Dichlorobenzene	EPA 8270D_5_(7/14)	1
1,3-Dinitrobenzene (1,3-DNB)	EPA 8270D_5_(7/14)	1
1,4-Dichlorobenzene	EPA 8270D_5_(7/14)	1
1,4-Dinitrobenzene	EPA 8270D_5_(7/14)	1
1,4-Naphthoquinone	EPA 8270D_5_(7/14)	1
1,4-Phenylenediamine	EPA 8270D_5_(7/14)	1
1-Chloronaphthalene	EPA 8270D_5_(7/14)	1
1-Methylnaphthalene	EPA 8270D_5_(7/14)	1
1-Naphthylamine	EPA 8270D_5_(7/14)	1
2,2'-Oxybis(1-chloropropane)	EPA 8270D_5_(7/14)	1
2,3,4,6-Tetrachlorophenol	EPA 8270D_5_(7/14)	1
2,4,5-Trichlorophenol	EPA 8270D_5_(7/14)	1
2,4,6-Trichlorophenol	EPA 8270D_5_(7/14)	1
2,4-Dichlorophenol	EPA 8270D_5_(7/14)	1
2,4-Dimethylphenol	EPA 8270D_5_(7/14)	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
2,4-Dinitrophenol	EPA 8270D_5_(7/14)	1
2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D_5_(7/14)	1
2,6-Dichlorophenol	EPA 8270D_5_(7/14)	1
2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D_5_(7/14)	1
2-Acetylaminofluorene	EPA 8270D_5_(7/14)	1
2-Chloronaphthalene	EPA 8270D_5_(7/14)	1
2-Chlorophenol	EPA 8270D_5_(7/14)	1
2-Methylaniline (o-Toluidine)	EPA 8270D_5_(7/14)	1
2-Methylnaphthalene	EPA 8270D_5_(7/14)	1
2-Methylphenol (o-Cresol)	EPA 8270D_5_(7/14)	1
2-Naphthylamine	EPA 8270D_5_(7/14)	1
2-Nitroaniline	EPA 8270D_5_(7/14)	1
2-Nitrophenol	EPA 8270D_5_(7/14)	1
2-Picoline (2-Methylpyridine)	EPA 8270D_5_(7/14)	1
3,3'-Dichlorobenzidine	EPA 8270D_5_(7/14)	1
3,3'-Dimethylbenzidine	EPA 8270D_5_(7/14)	1
3-Methylcholanthrene	EPA 8270D_5_(7/14)	1
3-Methylphenol (m-Cresol)	EPA 8270D_5_(7/14)	1
3-Nitroaniline	EPA 8270D_5_(7/14)	1
4,6-Dinitro-2-methylphenol	EPA 8270D_5_(7/14)	1
4-Aminobiphenyl	EPA 8270D_5_(7/14)	1
4-Bromophenyl phenyl ether (BDE-3)	EPA 8270D_5_(7/14)	1
4-Chloro-3-methylphenol	EPA 8270D_5_(7/14)	1
4-Chloroaniline	EPA 8270D_5_(7/14)	1
4-Chlorophenyl phenylether	EPA 8270D_5_(7/14)	1
4-Dimethyl aminoazobenzene	EPA 8270D_5_(7/14)	1
4-Methylphenol (p-Cresol)	EPA 8270D_5_(7/14)	1
4-Nitroaniline	EPA 8270D_5_(7/14)	1
4-Nitrophenol	EPA 8270D_5_(7/14)	1
5-Nitro-o-toluidine	EPA 8270D_5_(7/14)	1
7,12-Dimethylbenz(a) anthracene	EPA 8270D_5_(7/14)	1
a,a-Dimethylphenethylamine	EPA 8270D_5_(7/14)	1
Acenaphthene	EPA 8270D_5_(7/14)	1
Acenaphthylene	EPA 8270D_5_(7/14)	1
Acetophenone	EPA 8270D_5_(7/14)	1
Aniline	EPA 8270D_5_(7/14)	1
Anthracene	EPA 8270D_5_(7/14)	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Aramite	EPA 8270D_5_(7/14)	1
Benzidine	EPA 8270D_5_(7/14)	1
Benzo(a)anthracene	EPA 8270D_5_(7/14)	1
Benzo(a)pyrene	EPA 8270D_5_(7/14)	1
Benzo(g,h,i)perylene	EPA 8270D_5_(7/14)	1
Benzo(k)fluoranthene	EPA 8270D_5_(7/14)	1
Benzo[b]fluoranthene	EPA 8270D_5_(7/14)	1
Benzoic acid	EPA 8270D_5_(7/14)	1
Benzyl alcohol	EPA 8270D_5_(7/14)	1
bis(2-Chloroethoxy)methane	EPA 8270D_5_(7/14)	1
bis(2-Chloroethyl) ether	EPA 8270D_5_(7/14)	1
Butyl benzyl phthalate	EPA 8270D_5_(7/14)	1
Carbazole	EPA 8270D_5_(7/14)	1
Chlorobenzilate	EPA 8270D_5_(7/14)	1
Chrysene	EPA 8270D_5_(7/14)	1
Di(2-ethylhexyl)phthalate	EPA 8270D_5_(7/14)	1
Diallate	EPA 8270D_5_(7/14)	1
Dibenz(a,h) anthracene	EPA 8270D_5_(7/14)	1
Dibenz(a,j) acridine	EPA 8270D_5_(7/14)	1
Dibenzofuran	EPA 8270D_5_(7/14)	1
Diethyl phthalate	EPA 8270D_5_(7/14)	1
Dimethoate	EPA 8270D_5_(7/14)	1
Dimethyl phthalate	EPA 8270D_5_(7/14)	1
Di-n-butyl phthalate	EPA 8270D_5_(7/14)	1
Di-n-octyl phthalate	EPA 8270D_5_(7/14)	1
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8270D_5_(7/14)	1
Diphenylamine	EPA 8270D_5_(7/14)	1
Disulfoton	EPA 8270D_5_(7/14)	1
Ethyl methanesulfonate	EPA 8270D_5_(7/14)	1
Famphur	EPA 8270D_5_(7/14)	1
Fluoranthene	EPA 8270D_5_(7/14)	1
Fluorene	EPA 8270D_5_(7/14)	1
Hexachlorobenzene	EPA 8270D_5_(7/14)	1
Hexachlorobutadiene	EPA 8270D_5_(7/14)	1
Hexachlorocyclopentadiene	EPA 8270D_5_(7/14)	1
Hexachloroethane	EPA 8270D_5_(7/14)	1
Hexachloropropene	EPA 8270D_5_(7/14)	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Indeno(1,2,3-cd) pyrene	EPA 8270D_5_(7/14)	1
Isodrin	EPA 8270D_5_(7/14)	1
Isophorone	EPA 8270D_5_(7/14)	1
Isosafrole	EPA 8270D_5_(7/14)	1
Kepone	EPA 8270D_5_(7/14)	1
Methapyrilene	EPA 8270D_5_(7/14)	1
Methyl methanesulfonate	EPA 8270D_5_(7/14)	1
Methyl parathion (Parathion, methyl)	EPA 8270D_5_(7/14)	1
Naphthalene	EPA 8270D_5_(7/14)	1
Nitrobenzene	EPA 8270D_5_(7/14)	1
N-Nitrosodiethylamine	EPA 8270D_5_(7/14)	1
N-Nitrosodimethylamine	EPA 8270D_5_(7/14)	1
N-Nitroso-di-n-butylamine	EPA 8270D_5_(7/14)	1
N-Nitroso-di-n-propylamine	EPA 8270D_5_(7/14)	1
N-Nitrosopiperidine	EPA 8270D_5_(7/14)	1
N-Nitrosopyrrolidine	EPA 8270D_5_(7/14)	1
o,o,o-Triethyl phosphorothioate	EPA 8270D_5_(7/14)	1
Parathion, ethyl	EPA 8270D_5_(7/14)	1
Pentachlorobenzene	EPA 8270D_5_(7/14)	1
Pentachloronitrobenzene	EPA 8270D_5_(7/14)	1
Pentachlorophenol	EPA 8270D_5_(7/14)	1
Phenacetin	EPA 8270D_5_(7/14)	1
Phenanthrene	EPA 8270D_5_(7/14)	1
Phenol	EPA 8270D_5_(7/14)	1
Phorate	EPA 8270D_5_(7/14)	1
Pronamide (Kerb)	EPA 8270D_5_(7/14)	1
Pyrene	EPA 8270D_5_(7/14)	1
Pyridine	EPA 8270D_5_(7/14)	1
Safrole	EPA 8270D_5_(7/14)	1
Thionazin (Zinophos)	EPA 8270D_5_(7/14)	1
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 8280B_2_(2/07)	1
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 8280B_2_(2/07)	1
1,2,3,4,6,7,8-Hpcdd	EPA 8280B_2_(2/07)	1
1,2,3,4,6,7,8-Hpcdf	EPA 8280B_2_(2/07)	1
1,2,3,4,7,8,9-Hpcdf	EPA 8280B_2_(2/07)	1
1,2,3,4,7,8-Hxcdd	EPA 8280B_2_(2/07)	1
1,2,3,4,7,8-Hxcdf	EPA 8280B_2_(2/07)	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
1,2,3,6,7,8-Hxcdd	EPA 8280B_2_(2/07)	1
1,2,3,6,7,8-Hxcdf	EPA 8280B_2_(2/07)	1
1,2,3,7,8,9-Hxcdd	EPA 8280B_2_(2/07)	1
1,2,3,7,8,9-Hxcdf	EPA 8280B_2_(2/07)	1
1,2,3,7,8-Pecdd	EPA 8280B_2_(2/07)	1
1,2,3,7,8-Pecdf	EPA 8280B_2_(2/07)	1
2,3,4,6,7,8-Hxcdf	EPA 8280B_2_(2/07)	1
2,3,4,7,8-Pecdf	EPA 8280B_2_(2/07)	1
2,3,7,8-TCDD	EPA 8280B_2_(2/07)	1
2,3,7,8-TCDF	EPA 8280B_2_(2/07)	1
Hpcdd, total	EPA 8280B_2_(2/07)	1
Hpcdf, total	EPA 8280B_2_(2/07)	1
Hxcdd, total	EPA 8280B_2_(2/07)	1
Hxcdf, total	EPA 8280B_2_(2/07)	1
Pecdd, total	EPA 8280B_2_(2/07)	1
Pecdf, total	EPA 8280B_2_(2/07)	1
TCDD, total	EPA 8280B_2_(2/07)	1
TCDF, total	EPA 8280B_2_(2/07)	1
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 8290A_1_(2/07)	1
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 8290A_1_(2/07)	1
1,2,3,4,6,7,8-Hpcdd	EPA 8290A_1_(2/07)	1
1,2,3,4,6,7,8-Hpcdf	EPA 8290A_1_(2/07)	1
1,2,3,4,7,8,9-Hpcdf	EPA 8290A_1_(2/07)	1
1,2,3,4,7,8-Hxcdd	EPA 8290A_1_(2/07)	1
1,2,3,4,7,8-Hxcdf	EPA 8290A_1_(2/07)	1
1,2,3,6,7,8-Hxcdd	EPA 8290A_1_(2/07)	1
1,2,3,6,7,8-Hxcdf	EPA 8290A_1_(2/07)	1
1,2,3,7,8,9-Hxcdd	EPA 8290A_1_(2/07)	1
1,2,3,7,8,9-Hxcdf	EPA 8290A_1_(2/07)	1
1,2,3,7,8-Pecdd	EPA 8290A_1_(2/07)	1
1,2,3,7,8-Pecdf	EPA 8290A_1_(2/07)	1
2,3,4,6,7,8-Hxcdf	EPA 8290A_1_(2/07)	1
2,3,4,7,8-Pecdf	EPA 8290A_1_(2/07)	1
2,3,7,8-TCDD	EPA 8290A_1_(2/07)	1
2,3,7,8-TCDF	EPA 8290A_1_(2/07)	1
Hpcdd, total	EPA 8290A_1_(2/07)	1
Hpcdf, total	EPA 8290A_1_(2/07)	1

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Hxcdd, total	EPA 8290A_1_(2/07)	1
Hxcdf, total	EPA 8290A_1_(2/07)	1
Pecdd, total	EPA 8290A_1_(2/07)	1
Pecdf, total	EPA 8290A_1_(2/07)	1
TCDD, total	EPA 8290A_1_(2/07)	1
TCDF, total	EPA 8290A_1_(2/07)	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	SOP WS-LC-0025	1,3
1H,1H,2H,2H,-Perfluorodecanesulfonic acid (8:2 FTS)	SOP WS-LC-0025	1,3
1H,1H,2H,2H,-Perfluorooctansulfonic acid (6:2 FTS)	SOP WS-LC-0025	1,3
1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2-FTS)	SOP WS-LC-0025	1,3
1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	SOP WS-LC-0025	1,3
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	SOP WS-LC-0025	1,3
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	SOP WS-LC-0025	1,3
Hexafluoropropylene oxide dimer acid (HFPO-DA)	SOP WS-LC-0025	1,3
N-Ethylperfluorooctane sulfonamide (EtFOSA)	SOP WS-LC-0025	1,3
N-Ethylperfluorooctane sulfonamido acetic acid (NEtFOSAA)	SOP WS-LC-0025	1,3
N-Ethylperfluorooctanesulfonamidoethanol (EtFOSE)	SOP WS-LC-0025	1,3
N-Methylperfluorooctane sulfonamide (MeFOSA)	SOP WS-LC-0025	1,3
N-Methylperfluorooctane sulfonamido acetic acid (NMeFOSAA)	SOP WS-LC-0025	1,3
N-Methylperfluorooctanesulfonamidoethanol (MeFOSE)	SOP WS-LC-0025	1,3
Perfluorobutane sulfonic acid (PFBS)	SOP WS-LC-0025	1,3
Perfluorobutanoic acid (PFBA)	SOP WS-LC-0025	1,3
Perfluorodecane sulfonate (PFDS)	SOP WS-LC-0025	1,3
Perfluorodecane sulfonic acid (PFDS)	SOP WS-LC-0025	1,3
Perfluorodecanoic acid (PFDA)	SOP WS-LC-0025	1,3
Perfluorododecane sulfonic acid (PFDoS)	SOP WS-LC-0025	1,3
Perfluorododecanoic acid (PFDoA)	SOP WS-LC-0025	1,3
Perfluoroheptane sulfonic acid (PFHpS)	SOP WS-LC-0025	1,3
Perfluoroheptanoic acid (PFHpA)	SOP WS-LC-0025	1,3
Perfluorohexane sulfonic acid (PFHxS)	SOP WS-LC-0025	1,3
Perfluorohexanoic acid (PFHxA)	SOP WS-LC-0025	1,3
Perfluorononane sulfonic acid (PFNS)	SOP WS-LC-0025	1,3
Perfluorononanoic acid (PFNA)	SOP WS-LC-0025	1,3
Perfluorooctane sulfonamide (PFOSA)	SOP WS-LC-0025	1,3
Perfluorooctane sulfonic acid (PFOS)	SOP WS-LC-0025	1,3
Perfluorooctanoic acid (PFOA)	SOP WS-LC-0025	1,3
Perfluoropentane sulfonic acid (PFPeS)	SOP WS-LC-0025	1,3

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Perfluoropentanoic acid (PFPeA)	SOP WS-LC-0025	1,3
Perfluorotetradecanoic acid (PFTeDA)	SOP WS-LC-0025	1,3
Perfluorotridecanoic acid (PFTrDA)	SOP WS-LC-0025	1,3
Perfluoroundecanoic acid (PFUnA)	SOP WS-LC-0025	1,3

Accredited Parameter Note Detail

(1) Accreditation based in part on recognition of Oregon NELAP accreditation. (2)Aqueous Matrices only. (3) Based on Labs EPA 537-Modified 1.1 ORELAP accreditation.

Rebecca Wood

Authentication Signature

Rebecca Wood, Lab Accreditation Unit Supervisor

04/29/2022

Date