CONSTRUCTION COMPLETION REPORT

CIRCLE K SITE 1461

SEATTLE, WASHINGTON

Prepared by:

Glacier Environmental Services, Inc.

7509 212TH St SW

Edmonds, WA 98026

Prepared for:

DEPARTMENT OF
ECOLOGY
State of Washington

May 2025

Introduction

Glacier Environmental Services, Inc was contracted by the Washington Department of Ecology to furnish and install a multi-phase extraction and groundwater recirculation system for the Circle K Site 1461 Remediation Project. The Project Site is located at 2350 24th Ave E in the Montlake neighborhood of Seattle. Glacier has prepared this Final Completion Report in accordance with the Project Specifications to document the construction activities and as-built conditions.

Generally, the scope of work on this project included: obtaining all necessary permits; construction of six remediation wells (three vertical wells and three slant wells), three sub-slab depressurization wells and four vapor monitoring pins; installation of the underground piping system between wells; procurement and installation of a treatment system; and site restoration.

Site Background

The site previously operated as a gasoline service station. During operation, four gasoline underground storage tanks (USTs), one pump island, one waste oil UST, and one heating oil UST were located at the site. The site was redeveloped in 1990 and 1991 to its current configuration. Two businesses currently operate at the site including a general store and a dry-cleaning business.

All construction operations were conducted without closing the existing businesses. Glacier provided safe access to the businesses and limited disruption by phasing the site work and coordinating with the business owners.

Permits

The slant wells installed on 24th Ave E required a Utility Major Permit issued by Seattle Department of Transportation (SDOT); this permit also covered protection of street trees and necessary restoration to the rights-of-way on 24th Ave E and East McGraw. Glacier applied for this permit with Kennedy Jenks Consultants preparing the required plan sheets and details. Permit # SUUMP0000620 is included in Appendix A.

All other site work and the treatment building itself was covered by a Construction Permit issued by the Seattle Department of Construction and Inspections (SDCI). This is a comprehensive permit process that considers the treatment building, excavation and

grading, drainage plan, parking, electrical, and construction stormwater management. Many of the elements of this permit were exempted due to the small scale of the project, for example a drainage review was not required because of limited disturbance to impervious surface.

The treatment system is partially located within an 8'x20' shipping container, which required a building permit and structural design. Glacier hired structural engineering firm Swenson Say & Faget to provide the footing details and structural calculations for the container/building. Kennedy Jenks Consultants provided the site plans and architectural drawings required by SDCI. Permit #6996584-CN is included in Appendix A.

Preconstruction Submittals

Prior to mobilization, Glacier prepared multiple planning documents including:

- Well Installation Plan
- Soil and Waste Management Plan
- Construction Quality Assurance & Quality Control Plan (QAQCP)
- Environmental Protection Plan
- Spill Prevention, Control and Countermeasures Plan

Copies of these documents are included in Appendix B.

Summary of Construction

During the permitting phase, the multi-phase treatment system was built by Product Recovery Management, Inc (PRM) of North Carolina.

The initial onsite activity was drilling the six new wells. The well drilling was conducted by Cascade Environmental of Woodinville. To drill the slant wells on 24th Ave E, Glacier coordinated shut down of the bus trolley electrical lines, which also meant this work was required to take place on a weekend. All water and drill spoils were collected and stored in drums for offsite disposal. The soil was later profiled, comingled with trench spoils, and hauled to the 3rd & Lander transfer station for ultimate disposal at Roosevelt Landfill. Drummed water was pumped, transported, and treated by Marine Vacuum Services, Inc. of Seattle for permitted discharge to sewer. Records of disposal are included in Appendix C.

Krazan & Associates of Lynnwood logged the wells and collected soil samples in accordance with the plans and specifications. The samples were transported to ALS Laboratories in Everett, WA for analysis. Well Logs and sample results are included in Appendix D.

Once the SDCI Construction permit was issued, Glacier mobilized to the site to begin trenching and excavation activities. The work was completed in sections, with the work on

the north side of the site first, allowing access through the driveway on 24th; and then shifting the work to the south and allowing access to the driveway on E McGraw. During excavation all soil was either direct loaded into a truck or stockpiled on plastic and covered.

A waste profile for Republic Services' Roosevelt Landfill was submitted with the analytical data collected during well drilling activities. While the shallower trench soils were presumed clean, the small quantity, as well as the site constraints, made it impractical for reuse. Therefore, all soil generated was disposed under the same profile as contaminated soil. The drummed soil from drilling activities was tipped into a dump truck with the trench spoils and hauled to the 3rd & Lander transfer station. Disposal records for all waste are included in Appendix C, in total 99.92 ton of contaminated soil were disposed.

HDPE piping was installed concurrent with trenching and backfill to limit open trenches. Pipe was placed in accordance with the plans and bedded with imported pea gravel; plywood piping spacers were used to maintain pipe spacing. In multiple locations abandoned fuel piping or unknown piping presumed to be part of the former fueling station were found. In these locations, additional soil samples were collected and sent for laboratory analysis, the results of which are included in Appendix D.

Following bedding, the trenches were backfilled with CSBC, compacted and then patched with 6" of asphalt. Trenches that crossed the sidewalks were temporarily patched with asphalt until the full concrete sidewalk restoration was completed.

Once the piping was nearing completion, Glacier began preparing the area for the treatment system building with footings and anchors for the container. The system was delivered and offloaded into place using a crane and forklift. Connection of the system from the wells and piping of the exterior treatment components was completed using SCH80 PVC and carbon steel piping.

Power the treatment system is provided by Seattle City Light through a new overhead service connection.

As Built Plans of the site work, electrical and system are included in Appendix F.

Discharge Troubleshooting & Reroute

Water generated that is not reinjected into the wells is discharged to a combined sanitary/storm line in E. McGraw. The initial discharge location was located in a catch basin in the parking lot. During initial startup and testing, the discharge catch basin would backup quickly indicating there was a blockage or damage to the pipe downstream. A series of investigations (CCTV), testing, and attempts to clear were conducted and it was determined that there was pre-existing damage to the owner's onsite storm lines preventing discharge.

Thankfully, it was discovered that there were remnants of the previous treatment system in place that had a 2" PVC discharge still connected to the sewer. Glacier performed a dye test on this line to confirm that it connected to the City owned sewer in E. McGraw. Following the work change directive, the discharge was rerouted to this existing pipe; this change is reflected in the As-Built Plans.

System Commissioning and Startup

Initial startup and testing was conducted once the system had power, however until the discharge issue was resolved, the ability to fully run the system was limited. In the interim period, Glacier operated the system focusing just on vapor extraction to produce as little water as possible. Water that was generated, was discharged through a temporary connection to the sewer. Once the final connection was complete, Glacier operated the system for 2 weeks and had a final punch-list walk through with Kennedy Jenks.

Site Restoration

In addition to the trench asphalt patching, Glacier restored 2 sidewalks, the landscaping strip on E. McGraw, and restriped the parking lot per the revised parking plan. Glacier subcontracted Salinas Construction of Mukilteo, WA to pour 3 new sidewalk panels in accordance with SDOT specifications. The landscape strip on E McGraw had existing asphalt that was impacted by the tree roots; at the request of Seatle Urban Forestry, the broken asphalt was removed and replaced with arborist wood chip mulch. Puget Sound Striping of Sumner, WA striped the parking lot with a new ADA space and 5 additional parking stalls in accordance with the permit approved plan set.

Appendix A- Permits

Appendix B-Preconstruction Plans

Appendix C- Disposal Records

Appendix D- Well Logs and Analytical Reports

Appendix E- Test & Inspection Reports

Appendix F- RFI's and Work Change Directives

Appendix G- As-Built Plans

APPENDIX A- PERMITS

Seattle Department of Transportation

Issue Date: 1/31/2024
Original Issue Date: 1/31/2024
Application Received Date: 6/5/2023
Permit Expiration Date: 9/27/2024

Street Use Permit
Permit Number: SUUMP0000620

Address: 2350 24TH AVE E

Onsite Contact

(425)355-2826

Project Description: Remediation of the site located on the corner of 24th Ave E an E. McGraw. Includes directional drilling of 2 slant wells that originate in the sidewalk and extend approx. 5-8LF into 24th Ave E.
Project Name: 2350 24TH AVE E Circle K Site Remediation

Owner
Kuk-Jin Choung
2350 24TH AVE E
SEATTLE, WASHINGTON 98112

Applicant
Glacier Environmental Services Inc
7509 212th St SW
Edmonds, WA 98026

Financially Responsible Party
Glacier Environmental Services Inc

7509 212th St SW
Edmonds, WA 98026

Work Type	Install New
Utility Information	Other
Method of Installation	Directional drilling
Curb Ramp Required ?	No

Mobility Impacts Legend

C: Closed	**ALC:** All Lanes Closed
N: None	**IC:** Intermittent Closure
R: Rerouted	**RLC:** Reduced Lane Closure
SLC: Some Lanes Closed	**RW:** Reduced Width

Permitted Use(s)

Permitted Use Description: Major Utility Infrastructure
Space/Segment Description: B1/E MCGRAW ST BETWEEN 24TH AVE E AND 25TH AVE E
Street Category: Non-Arterial

							Mobility Impacts				
Issue Date	**Start Date**	**End Date**	**Days in ROW**	**Work Days**	**Sq Ft**	**Side of Street**	**Side-walk**	**Bike**	**Travel**	**Transit**	**Parking**
1/31/2024	04/01/2024	9/27/2024	3	ALL	750	South	C	N	N	N	C

Permitted Use Description: Major Utility Infrastructure
Space/Segment Description: A1/24TH AVE E BETWEEN E LYNN ST AND E MCGRAW ST
Street Category: Arterial

							Mobility Impacts				
Issue Date	**Start Date**	**End Date**	**Days in ROW**	**Work Days**	**Sq Ft**	**Side of Street**	**Side-walk**	**Bike**	**Travel**	**Transit**	**Parking**

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1/31/2024	02/10/2024	8/7/2024	1	ALL	200	East	C	N	N	N	N

Conditions of Use:

C055: CONCRETE POURING, CONCRETE/ASPHALT CUTTING, AND ASPHALT APPLICATION - Sweep or shovel loose aggregate chunks and dust for recycling or proper disposal. Place storm drain covers or similarly effective containment devices over all storm drains located downslope or adjacent to the work area. Shovel or vacuum all slurry and remove from the site. Perform cleaning of concrete application and mixing equipment or concrete-delivery vehicles in a designated area where the rinse water is controlled.

C006: LANDSCAPING AND LAWN VEGETATION MANAGEMENT - Use proper fertilizer and herbicide application techniques to minimize nutrient pollution of stormwater. Implement proper landscaping and mulching techniques to prevent plant material and excess mulch from entering the separate storm drainage system. Do not dispose of collected vegetation in separate storm drainage systems, waterways, water bodies or greenbelt areas.

C056: OUTDOOR STORAGE OR TRANSFER OF SOLID RAW MATERIALS, BYPRODUCTS OR FINISHED PRODUCTS-Do not hose down the contained stockpile area if the discharge will flow into a storm drain or a drainage conveyance. Sweep paved storage areas daily or more often as necessary to collect and dispose of loose solid materials. For stockpiles containing more than 5 cubic yards of erodible or water-soluble materials: store in a building or a covered, paved area; place temporary plastic sheeting (polyethylene, polypropylene, hypalon, or equivalent material) over the material; or pave the area and install a stormwater drainage system.

C057: OUTDOOR PORTABLE CONTAINER STORAGE-Label and store containers on a paved surface under a roof or inside a building if possible. Place drip pans beneath all taps on mounted containers and at potential drip and spill locations during the filling and unloading of containers. Check containers daily for leaks and spills.

C007: SPILL PREVENTION AND CLEANUP-Keep a spill cleanup kit in a nearby vehicle or next to the work site so that it is easily accessible. Make sure the contents of the spill kit are appropriate for the types and quantities of materials used for this work task. Refill spill kit materials before beginning work.

C060: USE OF CHEMICALS DURING CONSTRUCTION - Use only the recommended amounts of chemical materials and apply them in a proper manner. Neutralize the pH of concrete wash water from concrete mixers, if necessary.

C061: SAWCUTTING AND PAVING POLLUTION PREVENTION - Vacuum slurry and cuttings during the activity to prevent migration offsite and do not leave slurry and cuttings on permanent concrete or asphalt paving overnight. Dispose of collected slurry and cuttings, waste material, and demolition debris in a manner that does not violate groundwater or surface water quality standards. Implement preventative measures such as berms, barriers, secondary containment, and vactor trucks if observations indicate that a violation of water quality standards could occur.

C062: SOLID WASTE HANDLING AND DISPOSAL - Remove and dispose of accumulated solid waste at authorized disposal areas. Label waste containers and place them in a covered area with closed lids. Salvage and recycle any useful materials.

C063: MULCHING AND MATTING - Apply mulch to protect exposed soils and promote plant establishment.

C009: PERMANENT SEEDING AND PLANTING - Install temporary surface runoff control measures prior to seeding or planting to protect the surface from erosion until the vegetation is established. Establish permanent vegetation (e.g., grasses, legumes, trees, and shrubs) as rapidly as possible to prevent soil erosion by wind or water, per City Of Seattle standards.

C010: SODDING - Establish permanent turf for immediate erosion protection or to stabilize drainage pathways where concentrated overland flow will occur, per City Of Seattle standards.

C065: STORM DRAIN INLET PROTECTION - Install storm drain covers on stormwater structures less than 12 inches deep during construction. Install catch basin filter socks in stormwater structures greater than 12 inches deep. Place the storm drain or catch basin grate on top of the catch basin filter sock to hold it in place.

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C066: STREET SWEEPING AND VACUUMING - Do not sweep or vacuum when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose). Do not sweep up any unknown substance or any object that may be potentially hazardous. Prevent sediment from entering storm drain system. Properly dispose of sweeper wastes at an approved dump site after sweeping is finished.

C068: A pre-construction meeting with the SDOT Street Use is required prior to the start of work.

C069: The Permittee shall contact the Office of Arts and Culture at 206-684-7171 at least 2 weeks prior to construction if the proposed work may impact a public art piece. If a public art piece is damaged during construction, the Permittee shall contact the Street Use inspector and the Office of Arts and Culture immediately.

C002: Contact SDOT Urban Forestry (684-TREE) 48 hours in advance of any work adjacent to (within the dripline) street trees that may impact the tree's canopy, stem, roots or soil.

Any construction activity within the dripline of a street tree must be pre-approved by SDOT Urban Forestry. When trenching near trees with trunks greater than twelve inches (12") in diameter, all trenching must be hand dug for a distance of twenty feet (20'), measured ten feet (10') radius from the tree trunk.

Do not cut roots greater than two inches (2") in diameter, without permission from SDOT Urban Forestry. If tree roots must be severed, cut off cleanly with sharp saw. Do not expose roots--cut or uncut-- to drying conditions. Do not paint ends of cut roots.

Failure to prevent injury to any street tree may result in fines and/or penalties as outlined in SMC. 15.43.

C095: The contractor must maintain Red-Line mark-ups at the Project Site per the requirements of the 2023 City of Seattle Standard Specifications 1-05.3(13)A. As-Built Drawings are completed Red-Line Drawings as reviewed and approved by the Engineer of Record per 1-05.3(13)B. Upon completion of final restoration, the applicant shall submit As-Built Drawings to SDOT via the Seattle Services Portal as a Revision Amendment to the permit for the purpose of adding them to The Engineering Records Vault. The SDOT Final Inspection will not be closed out until the As-Built Drawings have been submitted.

C094: No excavations shall be made in the street right-of-way without required protective systems that meet Occupational Safety Health Administration (OSHA) and Labor and Industry (L&I) standards. Further requirements may apply based on site conditions.

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GENERAL REQUIREMENTS

1. ***Nature of permit.*** This permit is issued according to Seattle Municipal Code ("SMC") Chapter 15.04, for the use or occupancy of the public right-of-way in a manner consistent with the terms and conditions in this permit. This permit is temporary, vests no permanent rights, and is revocable according to SMC Section 15.04.070.
2. ***Acceptance of terms, conditions, and requirements***. The Permittee accepts the terms, conditions, and requirements of this permit and agrees to comply with them to the satisfaction of the Seattle Department of Transportation, Street Use Division ("Street Use"), or such other agency as may be designated by the City. The Permittee further agrees to comply with all applicable City ordinances, including but not limited to SMC Title 15, and all applicable City of Seattle ("City"), county, state, and federal laws.
3. ***Copy of permit***. A copy of the issued permit and current approved plans shall be on-site and available at all times (electronic or hardcopy).
4. ***Expiration of permit***. This permit shall remain valid until one of the following occurs: (1) the permit is revoked according to SMC Section 15.04.070; (2) the permit expiration date is reached; or (3) the authorized work does not begin within six months from the date the permit is issued. The Permittee is responsible for keeping the permit up to date including submitting updated plans for approval. The Permittee shall submit requests to update a permit via the Seattle Services Portal in a timely manner; otherwise, the Permittee may lose access to their requested schedule or use footprint for continued work in the right-of-way.
5. ***Superiority of Street Improvement Permits***. When a Street Improvement Permit ("SIP") exists, rights acquired under the SIP supersede those acquired under any other Street Use or Utility Permits. Work not approved under the SIP shall require separate Street Use or Utility Permits and the Permittee shall obtain these permits in advance of work.
6. ***Compliance with technical requirements and standards***. All work within the public right-of-way shall be performed and completed according to the following technical documents published by the City: Streets Illustrated (Right-of-Way Improvements Manual); Street Tree Manual; Standard Specifications for Road, Bridge, and Municipal Construction; Standard Plans for Municipal Construction; Right-of-way Opening and Restoration Rule; Traffic Control Manual for In-Street Work; and Pedestrian Mobility Rule 10-2015; unless otherwise shown on the approved plans.
7. ***Scope of work***. For permits authorizing construction, the Permittee shall stage equipment or materials and construct or install the improvements and infrastructure reflected in and in accordance with this permit and the City-approved construction plans. Any revisions, omissions, or additions to the scope of work shall be reviewed and approved by the City before implementation. The construction site shall remain in good repair, free of refuse and graffiti as defined in SMC Chapter 10.07.
8. ***Traffic Incidents***. If SDOT determines that a transportation incident or other event is likely to impact the part of the transportation network that includes the permitted site, the Permittee may be required to remove or minimize the permitted use footprint until the transportation network impact has ended.
9. ***Street Use notification***. Construction and utility work may be completed in several phases: site preparation (installing traffic control, saw-cutting, etc.); groundbreaking; restoration; and staging of equipment and materials. Before beginning any phase of work in the public right-of-way, the Permittee shall notify the assigned Street Use Inspector of each date as described below.
   - The Permittee shall submit a **Job Start Notification** in the **Seattle Services Portal** to notify Street Use when work will begin and to schedule or re-schedule the Initial Inspection.
     - If the **Job Start Notification** is not submitted, the **Initial Inspection** will automatically schedule for 5 business days after the first use start date on the issued permit.
     - If the **Job Start Notification** schedule or re-schedule open period has lapsed in the Seattle Services Portal, the Permittee shall provide the start date notification to the assigned inspector.
     - The Permittee shall pay the cost of any inspection fees resulting in the dispatch of an inspector to the site for a scheduled initial inspection unless that inspection was appropriately rescheduled through the Seattle Services Portal Job Start Notification or through direct contact with the Inspector.
   - Subsequent inspection notifications shall be scheduled on the **Seattle Services Portal**. Depending on the permit type, the following inspection notifications may also be available to schedule in the **Seattle Services Portal** after the Initial Inspection has been completed:
     - **Curb Ramp Inspection**: to confirm new curb ramps meet ADA requirements.
     - **Mark Out Inspection**: to establish layout of restoration dimensions.
     - **Restoration Inspection**: to ensure restoration complies with City standards and codes. The Restoration Inspection shall be scheduled a minimum of 2 business days before beginning the restoration work.
     - **Site Inspection**: to request an inspection prior to your next scheduled inspection.
   - Notifications not available on the **Seattle Services Portal**:
     - Pre-construction meeting: required for SIPs and Utility Major Permits before starting construction. To schedule a SIP preconstruction meeting, contact your assigned Street Use reviewer or SIP Project Manager. For Utility Major Permit ("UMP") preconstruction meetings contact your assigned Street Use Inspector at least 10 business days prior to mobilization.
     - Off-hours Inspection: for any inspection needed outside of normal working hours (8am-5pm, Monday-Friday) email request to DOT_StUse_OffHours_Inspection@seattle.gov a minimum of 3 business days in advance. The off-hour request SHALL include the following information:
       - § Permit/record number
       - § Address/location
       - § Hours of work
       - § Dates of work
       - § Site Contact Name and phone number
       - § Description of work
       - § And (if applicable) stated confirmation of Hub coordination approval.
   - Please note that off-hours conditions also apply to the observed annual dates of the following holidays in the City of Seattle for inspection response scheduling:
     - New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, Juneteenth, Independence Day, Labor Day, Indigenous People's Day, Veteran's Day, Thanksgiving Day and the Friday following it, and Christmas Day.
   - Failure to notify Street Use Job Start may result in a citation according to SMC Section 15.91.002 and the current Street Use Fee Schedule according to SMC Section 15.04.074.
10. ***Underground and overhead utility notification***. The Permittee shall notify the following entities, as applicable, 2 business days in advance:

- Utility Underground Locate Center (811 or 1-800-424-5555) before ground disturbance; and
- Seattle City Light (206-684-4911) if working within 10 feet of high-voltage lines.

11. ***Olympic Pipeline Company notification***. When work in the right-of-way occurs within 100 feet of an Olympic Pipeline Company ("OPLC") pipeline, the Permittee shall coordinate the work with OPLC, which may include submitting detailed construction plans to OPLC. The Permittee shall notify OPLC's field coordinator 10 business days in advance of the work (425-235-7736) and an OPLC representative may be required to be onsite during the work.
12. ***King County Metro notification***. The Permittee shall notify King County Metro Transit in advance of any construction or use that may disrupt transit service according to the following schedule:

- Five business days' notice (minimum) for any work requiring a short-term temporary bus stop or shelter move.
- Ten business days' notice (minimum) for reroute of bus service.
- 15 business days' notice (minimum) for deactivation of trolley bus overhead electrical system (overhead catenary system, OCS).
- If trolley wires are present, call 206-477-1150 or email trolley.impacts@kingcounty.gov.
- If trolley wires are not present, call 206-477-1140 or email construction.coord@kingcounty.gov.

13. ***Public notification***. Notification requirements shall comply with Client Assistance Memo (CAM) 2117.
14. ***Alley notification***. In addition to the requirements of CAM 2117, where this permit authorizes work in an alley, the Permittee shall notify all potentially impacted property owners and businesses prior to any activity occurring in the alley, including and especially those property owners and businesses with tenants using the alley to access parking or for building ingress/egress or deliveries. The Permittee shall schedule work around waste-management-collection days. If this is not possible, the Permittee shall coordinate with waste management services to either provide intermittent alley access during waste pickup, to actively facilitate waste pickup, or to temporarily establish waste pickup at an alternate location. If an alley is to remain open during permitted work, a minimum 11-foot clear width is required for vehicular access. If an alley is closed to through traffic, the Permittee shall notify Seattle Fire Department at sfd_opsadmin@seattle.gov and the Seattle Police Department at the non-emergency numbers prior to commencing work.
15. ***Coordination of work***. In performing work or occupying the right-of-way as authorized by this permit, the Permittee shall coordinate with other contractors, public agencies, and other permittees working in the public right-of-way to minimize mobility and other impacts to the public. Documented coordination agreements may be required prior to permit issuance and additional notification to the public may be required.
Coordination of work in a designated Construction Hub area:
Locations, dates, and times of work, or occupation in the right-of-way shall be approved by the Construction Hub coordinator through the permit review process. Schedule and time changes after the initial or amendment issuance of a permit shall be approved by the Construction Hub coordinator at least 10 business days prior to impacting the right-of-way. Schedule and time change requests can be emailed to SDOTConstructionHub@seattle.gov.

- Attendance at geo-based Construction Hub coordination meetings may be required to ensure desired dates are coordinated and scheduled and to minimize delays in the permit review and Construction Hub coordination processes. For meeting information and invitations and other information specific to Construction Hubs, email SDOTConstructionHub@Seattle.gov.
- The Construction Hub map can be found at this link: https://www.seattle.gov/transportation/projects-and-programs/programs/pedestrian-program/project-and-construction-coordination-office/construction-hub-coordination

16. ***Hours of work***. Work performed in the public right-of-way shall occur only during hours authorized under all applicable codes, regulations, rules, and permits.
17. ***Billing***. All fees and costs billed according to this permit shall be paid to the City of Seattle within 30 calendar days from the invoice date. Past due invoices may be subject to interest charges and may be sent to collections.
18. ***Deposits, charges, and future billings***. The Permittee or, if designated, Financially Responsible Party, is responsible and liable for all permit related charges.
19. ***Corrective work***. The Permittee is responsible for any additional costs incurred by the City resulting from temporary or corrective measures required to bring the work or occupation area into compliance with standards that apply, including but not limited to: temporary traffic control, requirements for temporary structures, temporary stabilization, and temporary restoration when the Permittee is not on site.
20. ***Indemnification***. The Permittee agrees to defend, indemnify, and hold harmless the City of Seattle, its officials, officers, employees, and agents; against any liability, claims, causes of action, judgments, or expenses, including reasonable attorney fees; resulting directly or indirectly from any act or omission of the Permittee, its contractors, subcontractors, anyone directly or indirectly employed by them, and anyone for whose acts or omissions they may be liable; arising out of the Permittee's use or occupancy of the public right-of-way; and all loss by the failure of the Permittee to fully or adequately perform, in any respect, all authorizations or obligations under this Permit and shall comply with SMC Section 15.04.060.
21. ***Insurance***. Except as exempted by SDOT Director's Rule 04-2023, the Permittee shall, at its own expense, obtain and maintain in full force and effect public liability insurance in an amount sufficient to protect the City from all potential claims and risks of loss from perils in connection with any activity that may arise from or be related to the Permittee's activity upon or the use or occupation of the public right-of-way allowed by the permit; and all claims and risks in connection with activities performed by the Permittee by virtue of the permission granted by the permit and shall meet all other insurance requirements in SMC 15.04.045.
22. ***Maintenance of long-term permitted use.*** The Permittee shall ensure long-term permitted uses remain structurally stable, in good repair, clear of refuse, and free from defacement or graffiti as defined in SMC Chapter 10.07.

EXISTING IMPROVEMENTS
1. ***Costs of damage to City property and improvements***. The Permittee shall be responsible for the costs of repairing any damage to City property or improvements resulting from work performed by or on behalf of the Permittee within the public right-of-way. Damage to street trees is assessed on the value of the tree according to SMC subsection 15.90.018.B.
2. ***Utility protection***. The Permittee shall be responsible for checking locations and providing adequate protection for all utilities in the work area.
3. ***Utility relocation***. The Permittee shall be responsible for notifying affected utilities and requesting any necessary relocation.
4. ***Survey monuments***. Before removing, destroying, disturbing, or covering a survey monument such that the survey point is no longer visible or readily accessible, the Permittee shall obtain a permit from the Department of Natural Resources according to Washington Administrative Code, Chapter 332-120.
5. ***Protecting, removing, and relocating existing improvements***. In addition to General Requirements, the Permittee, at their own cost and expense, shall be responsible for coordinating the removal and relocation of existing improvements within the public right-of-way that their

construction or permitted project may interfere with. These existing improvements include, but are not limited to trees, bike racks, newsstands, signs, benches, artwork, and waste receptacles.
• For existing assets, the Permittee shall contact the improvement owner at least 10 business days before starting work to coordinate the temporary removal of the improvement.
• The Permittee shall be responsible for reinstalling the improvements or coordinating the reinstallation in their original location or at a reasonable alternative location approved by the existing improvement owner and meeting all applicable City requirements. The Permittee is further responsible for protecting all trees within the construction project area and shall contact Urban Forestry to disclose and describe any construction impacts to trees.
• Failure to contact the improvement owners or Urban Forestry is cause for Street Use to revoke this permit.
6. ***Monorail system proximity requirements***. The Permittee shall be responsible for coordinating with the Seattle Center when any work, deliveries, or loading/unloading will occur within 14 feet of a Monorail structure or 20 feet of a Monorail foundation or below-ground installation. The Permittee shall contact the Seattle Center at review@seattlemonorail.com at least 10 business days before starting construction. Failure to do so is cause for permit revocation.
7. ***Monorail system proximity guidelines***. Below grade: The restricted digging area includes a 45-degree cone extending outward and downward from the ground level of all monorail piers. Nearby excavations shall be monitored to assure footing stability. At- or above-grade: The piers above ground level cannot be moved, nor can any item like lighting or signage be attached to the piers without prior written consent from the Seattle Center Director. Piers shall not be painted. Landscaping shall not occur adjacent to piers or within 10 feet of a Monorail structure without prior written consent of the Seattle Center Director. Any construction activity in the area of the power rails shall follow OSHA guidelines for working around high voltage. Construction equipment shall be located and operated in awareness of and taking account of beam height and the train's 14-foot-operational envelope from each side of the beam. Contractors shall string warning lines from pier to pier under the beams as a guide. Spotters shall be employed when any construction activity occurs within 25 feet of the beams.

ENVIRONMENTAL PROTECTION
1. ***Best management practices required***. The Permittee shall be responsible for protecting the public place, including but not limited to protecting existing street trees and green stormwater infrastructure, and controlling surface runoff, erosion and sediment at the construction site, as required by: the Stormwater Code and Manual, (SMC Title 22, Subtitle VIII); the Street and Sidewalk Use Code, (SMC Title 15); the Standard Specifications for Road, Bridge, and Municipal Construction; and the Regulations for Environmentally Critical Areas (SMC Chapter 25.09). The site and the surrounding area shall generally be kept clean and free of construction debris or other material, including but not limited to mud, dust, rock, asphalt, and concrete. Waste materials shall be collected and disposed of at an appropriate disposal site. These materials shall be prevented from entering any part of the public sewer and storm drain system, and any surface waters.

TRAFFIC CONTROL REQUIREMENTS
1. ***Compliance with the Traffic Control Manual for In-Street Work***. In order to provide safe and effective work areas and to ward, control, protect, and expedite vehicular and pedestrian traffic; signage for all construction within the public right-of-way shall comply with the City of Seattle Traffic Control Manual for In-Street Work, as amended. When required, the conditions on the traffic control plan shall supersede any conflicting provisions or requirements in the City of Seattle Traffic Control Manual for In-Street Work. A copy of the current City of Seattle Traffic Control Manual for In-Street Work and the approved traffic control plan shall be on site at all times.
2. ***Lanes to remain open during peak hours***. Traffic lanes shall not be closed during the following peak hours: 6:00 AM - 9:00 AM and 3:00 PM - 7:00 PM in the Central Business District and 7:00 AM - 9:00 AM and 4:00 PM - 6:00 PM for arterials elsewhere in the City, unless specifically noted on the approved traffic control plan.
3. ***Maintain access***. Access to adjoining properties and businesses shall be maintained or accommodated during construction. Pedestrian access around construction sites shall be implemented and maintained per SDOT Director's Rule 10-2015, or successor rule.
4. ***Width of temporary traffic lanes***. Temporary traffic lanes created during the permitted work shall be a minimum of 11 feet in width unless otherwise approved on the traffic control plan.
5. ***Working within restricted curb spaces***. When the project impacts a restricted curb space, such as meters, pay stations, and specific use and load zones; the Permittee shall obtain all necessary permits in the Seattle Services Portal.
6. ***Temporary No Parking signs and easels***. In areas without parking pay stations or parking meters, or when Traffic Operations allows reserved parking spaces to be controlled with Temporary No Parking signs, establishing a Temporary No Parking Zone requires placing type R7-T38 (T-38) or R7-T39 (T-39) easels and obtaining all necessary permits in the Seattle Services Portal in conformance with the Traffic Control Manual for In-Street Work. In high impact areas, the Central Business District, and in areas where construction projects are densely clustered (such as in City-designated Construction Hubs), additional requirements for establishing a Temporary No Parking Zone may apply. The Permittee shall clearly and legibly mark signs and easels indicating dates and times of traffic restriction and shall maintain signs and easels in good condition and free of graffiti.
7. ***Nighttime illumination***. For permits authorizing construction, the Permittee shall place and maintain at the points of obstruction or excavation of any right-of-way, four or more Type B warning lights of sufficient brilliance to be seen from 500 feet during the hours of darkness.
8. ***Work in alleys***. For work occurring in alleys that impedes vehicular access, including but not limited to egress, ingress, or through travel; the Permittee shall place "Street Closed" signs at each end of the alley.

ENFORCEMENT
1. ***Enforcement.*** Violations of any of the requirements set forth herein are subject to enforcement according to SMC Title 15 Section IV.

Permit Number:
6996584-CN

CITY OF SEATTLE
Construction Permit

Seattle Department of
Construction and Inspections
700 Fifth Ave, Suite 2000
PO Box 34019
Seattle, WA 98124-4019
(206) 684-8600

APN #:

Site Address: 2350 24TH AVE E SEATTLE, WA 98112
Building ID: none
Location: Work will be conducted in the parking lot on the west side of the store. The treatment
Legal Description: APN: 678820-1335 LTS 1 & 2, BLK 29, LESS ELY 6' THEREOF, PIKES 2ND ADDN TO
Records Filed At: 2350 24TH AVE E

OWNER

Kuk-Jin Choung
2350 24TH AVE E
SEATTLE, WASHINGTON 98112
Ph: (206) 683-5917

CONTRACTOR INFORMATION

Disclosed by the permit applicant
Work Performed By: Licensed Contractor
Contractor License: GLACIES108C7
Contractor Name: GLACIER ENVIRONMENTAL SRVC INC
Contractor Phone: (425) 355-2826
Link to Contractor Data

Application Date:	01/02/2024
Issue Date:	05/17/2024
Expiration Date:	11/17/2025
Fees Paid:	$5,622.99
As of Print Date:	05/17/2024

Description of Work: Construct remediation treatment facility in modified shipping container, occupy per plan.

Permit Remarks:

Curb Cut Size and Location: N/A - existing

Building Code: 2018 SBC
SDCI Valuation: $15,333
Occupancy Cert Required: Y
Special Inspections: Y
Land Use Conditions: N
Separated Use: N **Site Final Required: Y**

Building Info:

Basements:	0
Stories:	1
Mezzanines	0

Housing & Dwelling Unit(s) this Permit:

Unit Type	DU?	Units	Add	Remove
None	N	0	0	0

Zoning/Overlay:
NC1-40 (M)
Council District 3
FREQ_TRANSIT_SRVC_
MHA_ZONING Yes, (NC1

Occupancy per Building Code						Approved Use per Land Use Code	
Floors	**Type**	**Occupancy Group**	**Occupancy Type**	**Asmbly Load**	**Fire**	**Use**	**Location**
1st	Type VB	F-2 Factory - Low Hazard	Site Remediation		None	General Retail Sales &	N/A

A/P #	Related Cases/Permits
6996584-CN-003	Contractor Disclosure Form
6996584-CN-004	Upload Documents
6996584-CN-001	Construction Application Intake
6996584-CN-006	Upload Documents
6996584-CN-005	Special Inspection
6996584-CN-002	Developer Contributions
Additional Information on File	

Project Contacts	Name
Ordinance Reviewer	Brian Newson
Structural Reviewer	Roussi Roussev
Zoning Reviewer	Katrina Nygaard
Geo Soils Reviewer	Pao Huang
Addressing Reviewer	Sherri Brown
MHA Reviewer	Katrina Nygaard

Applicant Signature: **Date:**

Permitted work must not progress without prior inspection approval. When ready for inspection, make request with the Seattle Department of Construction and Inspections at (206) 684-8900 or on the internet at:
https://cosaccela.seattle.gov/portal/. **Provide the permit number, site address, and contact phone.** Permission is given to do the above work at the site address shown, according to the conditions hereon and according to the specification pertaining thereto, subject to compliance with the Ordinances of the City of Seattle. Correct information is the responsibility of the applicant. Permits with incorrect information may be subject to additional fees.

You must have a paper copy of your approved and stamped plan set available at your job site for the City Inspector to review. If you do not have your plans printed and ready for review, you may fail your inspection.

PERMIT # 6996584-CN

City of Seattle
Seattle Department of Construction and Inspections
700 Fifth Ave, Suite 2000

POST THIS SIDE OUT

TO THE CONTRACTOR/OWNER:
Additional permits may be required for work occurring under this permit. This permit does not authorize Sewer, Public Right-of-Way Shoring, Drainage and Street Use, Fire Department, Boiler, Electrical, Elevator, Furnace, Gas Piping, Plumbing, or Sign permits. If other permits are required, they must be applied for separately from this permit. The requirements for all other permits related to this Permit, must be completed prior to the Final Inspection of this permit. The premises must not be occupied until the Final Inspection is completed and occupancy is authorized by the Seattle Department of Construction and Inspections. If your project is in a pre-1978 built residence, or pre-1978 built child-occupied facility, Washington's Lead Renovation Rule WAC 365-230-360 requires certification to perform your work. Call to ask for compliance details at (360) 586-5323, or email to: lbpinfo@commerce.wa.gov

PROPERTY LINES MUST BE ESTABLISHED BY SURVEY STAKES PRIOR TO SETBACK/FOUNDATION INSPECTION.

BEFORE BEGINNING CONSTRUCTION:
A) Before **First Ground Disturbance**, request an inspection of installed **Erosion Control Measures**.
B) When there is **Special Inspections**, Land Use conditions, and/or unusual design elements, a **Pre Construction Conference** is required **prior** to construction. Call 684-8860 to request a Pre Construction conference.
C) If this permit requires a **Soil Bearing Capacity** special inspection by a Geotechnical Engineer, that approval is required **before** the foundation pour.
D) When **Special Inspections** are required, notify the Special Inspection Agency at least 24 hours in advance.

INSPECTION REQUESTS: Please clarify which inspections your project requires **before** proceeding with your project.
You may request an inspection on the internet or by phone. Inspection requests received **before 7:00 AM** are scheduled for the same working day. Inspection requests received **after 7:00 AM** are scheduled for the next working day. Inspectors are available between the hours of 7:30 AM and 8:30 AM.
A) **Internet:** https://cosaccela.seattle.gov/portal/ Search for your record and click on the **Inspections & Appointments** link to schedule your inspection.
B) **24 hour inspection request line at (206) 684-8900**, **cell phones are discouraged** due to frequent connection problems.
C) **Customer Service at (206) 684-8950** between the hours of 7:30 AM and 4:30 PM.

DURING CONSTRUCTION:
SDCI inspectors will provide an electronic copy of each inspection report through the Seattle Services Portal. Go to the portal, print a copy of the inspection reports, and keep them together or with this Permit, where they can be conveniently referenced,

a.	**FIRST GROUND** (non distrubance areas, erosion control, tree protection)	f.	**INSULATION** (Slab, Walls, Ceiling)
b.	**SETBACK** (Location)	g.	**MECHANICAL COVER** (If HVAC is authorized by this permit)
c.	**FOUNDATION** (Footings, Walls) [Soil bearing, Reinforcing steel, Foundation drainage]	h.	**MECHANICAL FINAL** (If HVAC is authorized by this permit)
d.	**STRUCTURAL** (Shear Wall, HD's/Straps, Diaphragms)	i.	**SITE FINAL** (If required by this permit)
e.	**FRAMING** (Sub floor prior to sheathing, Walls, Ceiling)	j.	**FINAL INSPECTION** (After all other related permit requirements are completed)

PRIOR TO FINAL BUILDING APPROVAL:
Other permit approval sign-offs may be required prior to the Final Inspection of this permit. To speed-up Final approval of this permit, we recommend you acquire other permit final approvals in the signature boxes provided below.

SOIL BEARING Approved By Engineer Date	**BOILER** Approved By Date	**SEATTLE FIRE DEPARTMENT** Approved By Date
ELECTRICAL Approved By Date	**ELEVATOR** Approved By Date	**LAND USE/DESIGN REVIEW** Approved By Date
PLUMBING / GASPIPING / BACKFLOW Approved By Date	**SITE / SIDE SEWER** Approved By Date	**SDOT - PRVT CONTRACT/ST. USE** Approved By Date
MECHANICAL / REFRIGERATION Approved By Date	**OTHER** Approved By Date	**STREET TREES / ARBORIST** Approved By Date

City of Seattle

DEPARTMENT OF CONSTRUCTION AND INSPECTIONS

CERTIFICATE OF OCCUPANCY

A/P No.: 6996584-CN **Address:** 2350 24TH AVE E SEATTLE, WA 98112

Bldg ID: none **Records Filed At:** 2350 24TH AVE E

Bldg Description:

Total Units for Building: 0

Occupancy Group	Occupancy	Floors/ Area	Assembly Load	Construction Type	Sprinkler Standard
F-2 Factory - Low Hazard	Site Remediation	1st		Type VB	None

Construct remediation treatment facility in modified shipping container, occupy per plan.

The work noted above has been inspected and approved as complying with provisions of the Seattle Building Code

Issued this 8th day of April, 2025 **for Director by** Patrick Beaulieu

Patrick Beaulieu, Chief Building Inspector

This certificate shall be posted in a conspicuous public area, shall not be removed, mutilated or obscured and shall be maintained in legible condition at all times. Any change of occupancy requires a new certificate.

APPENDIX B-PRECONSTRUCTION PLANS

Well Installation Plan

Project: Circle K Site 1461

Prepared for:

WA Department of Ecology

The purpose of this Well Installation Plan is to provide detail of the means and methods Glacier intends to use to install slant and vertical wells on the Circle K Remediation Site 1461 Remediation Project. This Plan has been prepared based on the Specifications 01 33 00 and 33 11 53.13.

1.0 Well Installation

Glacier Environmental Services, Inc. will subcontract Cascade Drilling of Bothell, Washington to install the wells. Cascade employs multiple licensed drillers and will provide a copy of the license for the selected driller prior to construction. Cascade is planning one mobilization for their TSi 150cc sonic rig to complete all of the wells. A copy of the equipment specification is attached.

Well SW-1 is located in close proximity to the bus trolley line and therefore will be completed on a weekend during a coordinated de-energization of the trolley lines. All other wells are greater than 10 feet from power lines and therefore can be completed during normal working hours.

Cascade will file the Notice of Intent and Well Logs directly with the Department of Ecology.

2.0 Sampling & Screening During Drilling

Glacier will subcontract Krazan & Associates of Lynnwood to perform the well logging, field screening and soil sampling as described in specification 33 11 53.13. Samples collected for chemical analysis will be transported to ALS Laboratory in Everett, Washington.

Well Logs

Krazan will keep a log of the material found during drilling and show the elevations at which the material was encountered, with particular care being taken to locate all water bearing strata.

A complete report of the log will be submitted to the Engineer and Ecology Representative at the end of each day's drilling operation.

During drilling and well construction the Drilling Log will include the following:

1. Reference point for all depth measurements.
2. The depth at which each change of formation occurs.

3. Record of bits used.
4. Drilling times for each 5-foot increment.
5. The thickness of each stratum.
6. The identification of the material of which each stratum is composed (clay, sand or silt, gravel, cemented formations, hard rock, etc.).
7. The depth interval from which each formation sample was taken and, if the sampler is driven a hammer, the number of blows per foot during sampling.
8. The depth to the static water level (SWL).
9. Total depth of the completed well.
10. Any and all other pertinent information for a complete and accurate log; i.e. temperature, pH and appearance (color) of any water samples taken.
11. Depth or location of any lost drilling fluids, drilling materials, or tools.
12. The nominal hole diameter of the well bore above and below casing seal.
13. The depth and description of the well casing.

Field Screening

Krazan will perform field screen tests on drill cuttings every 2 feet, or at significant changes in lithology. Field screening will include headspace screening using a PID, sheen testing, visual and olfactory observations in accordance with specification **33 11 53.13.**

Soil Sampling

At least two soil samples will be collected at each soil boring location and submitted for initial laboratory analysis of gasoline-range hydrocarbons (TPH by method NWTPH-Gx) and BTEX constituents (by EPA method 8260B) :

1. One sample from the unsaturated zone (above 5 feet below ground surface)
2. One sample from the presumed smear zone (5 to 10 feet below ground surface)

Each soil sample will be designated on the Chain of Custody with the boring designation and the depth interval; type of analysis; time and date of sample collection; collector's name, name of preservative. Soil sample intervals will be recorded on the Drilling Log.

Additional soil samples may be collected if potential petroleum hydrocarbon impacts in soil are identified based on field screening observations and the depth interval is not represented by other samples.

3.0 IDW Management

All water and drill cuttings will be stored separately in 55-gallon drums and sampled in accordance with the Soil & Waste Management Plan for the project.

Laboratory analysis for all soil samples will include testing for gasoline-range hydrocarbons by method NWTPH-Gx and BTEX constituents by EPA method 8260B. In addition, at least 5 of these samples will also

be analyzed for Volatile Organic Compounds (VOCs) by EPA Method 8260B, RCRA 8 Metals by EPA Method 6010 (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and by EPA Method 7471 (mercury), and TPH by NWTPH-Dx (without Silica Gel Cleanup) (number of samples is based on *Guidance for Remediation of Petroleum Contaminated Sites, Washington State Department of Ecology Pub. No. 10-09-057*).

Water generated during well drilling, development and testing will be collected separately in 55 gallons drums. A composite sample of water will be collected for profiling. The water will be sampled and analyzed for VOCs by EPA Method 8260B, RCRA 8 Metals by EPA Method 6010 (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and by EPA Method 7470 (mercury), TPH by NWTPH-Dx (without Silica Gel Cleanup), NWTPH-Gx and Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Soil drums will remain onsite until trenching activities begin. Drummed soil will be comingled with trench spoils scheduled for offsite disposal and transported to a Subtitle D Landfill via dump truck.

TERRA SONIC INTERNATIONAL

TSi 150CC COMPACT CRAWLER-MOUNTED SONIC DRILL RIG

- COMPACT CRAWLER-MOUNTED UNIT
- 225 HP DIESEL ENGINE TO POWER ALL DRIVING, DRILLING AND ACCESSORY HYDRAULIC FUNCTIONS
- EXCLUSIVE TSi 150 SERIES SONIC OSCILLATOR USES 150 HP TO GENERATE RESONANT SONIC ENERGY
- STANDARD 19 FT 1 IN. (5.8 M) LONG MAST; AVAILABLE 14 FT 6.5 IN. (4.4 M) SHORT MAST
- MAST ACCOMMODATES 10 FT (3 M) SECTIONS OF TOOLING OR 5 FT (1.5 M) WITH OPTIONAL SHORT MAST
- ANGLE DRILLS BETWEEN VERTICAL AND NEARLY HORIZONTAL
- RATED DRILLING DEPTH OF UP TO 1,000 FT (304.8 M) DEPENDING ON THE LITHOLOGY AND CASING DESIGN

27825 STATE ROUTE 7, MARIETTA, OHIO 45750 USA
TELEPHONE: 740.374.6608 • WWW.TERRASONICINTERNATIONAL.COM

TERRA SONIC INTERNATIONAL

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MARIETTA, OHIO 45750 USA
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www.terrasonicinternational.com

TSi 150CC COMPACT CRAWLER-MOUNTED SONIC DRILL RIG

SONIC HEAD SPECIFICATIONS

- SONIC Head Model TSi 150
- Oscillator Frequency of 0–150 Hz
- Oscillator Force of 50,000 lbf (222 kN)
- Max Torque (high torque/low speed) of 4,677 ft-lb (6,341 N-m)
- Rotation Speed (low speed/high torque) of 0 to 80 rpm

DIMENSIONS AND WEIGHT

- Width (Folded) is 7 ft 3 in. (2.2 m)
- Width (Unfolded) is 7 ft 11.5 in. (2.4 m)
- Length (Folded) is 19 ft 2.25 in. (5.85 m)
- Length (Unfolded) is 19 ft 3.25 in. (5.87 m)
- Height (Folded) is 7 ft 1.38 in. (2.2 m)
- Height (Unfolded) with Jib Stored and Mast Fully Raised is 20 ft 2.5 in. (6.16 m)
- Weight is 22,400 lbs (10,161 kg)
- Ground Clearance is 10.5 in. (267 mm)

MAST SPECIFICATIONS

- Head Tilts 87 Degrees and Hinges Away from Driller to Enable Jib Over the Hole
- Head Travel of 14 ft 1 in. (4.3 m)
- Head Travel Speed of 0 to 155 fpm (0 to 47.3 m/min)
- Overall Length is 19 ft 1 in. (5.8 m)
- Drilling Angle of Vertical to Nearly Horizontal
- Upper Jib Hoist of 2,000 lb (907 kg) Capacity, 150 fpm (46 m/min) Bare Drum Speed
- Feed System is a Hydraulic Operated Feed Frame Using Half the Leaf Chain Length and Rollers as Conventional Hydraulic Cylinder/Chain Method
- Mast Lock—Manual Mast Lock in Vertical Position
- Hose Carrier is a Mast Integrated Hose Management System with Accessible Bulkheads
- Optional Low Clearance (Short) Mast Available—14 ft 6.5 in. (4.4 m)

DECK SPECIFICATIONS

- Driller Platform is 3 ft (914 mm) L x 2 ft 6 in. (762 mm) W, with a Hinge for Folding it Up
- Four Jacklegs 3½ in. (89 mm) x 24 in. (618 mm); Located at Deck Corners with Built-in Lock Valves

RIG PERFORMANCE SPECIFICATIONS

- Rated Drill Depth of Up to 1,000 ft (304.8 m) Depending on the Lithology and Casing Design
- Max Drilling Diameter of 12 in. (305 mm) Casing
- Drill Feed Rate of 0 to 135 fpm (0 to 41 m/min)
- Pull Back Force of 16,800 lbf (74.7 kN)
- Down Force of 11,300 lbf (50.3 kN)
- Max Casing Length of 10 ft (3 m)

HYDRAULIC SYSTEM SPECIFICATIONS

- Hydraulic Oil Capacity is 120 gal (454 L)
- Hydraulic Cooling System of 240,000 Btu/hr @ 100 gpm (70.3 kW @ 379 Lpm) and 50,000 Btu/hr @ 20 gpm (14.7 kW @ 76 Lpm) for Sonic Head Lubrication
- Variable Displacement Pumps—Load Sense Piston Pumps with Pilot Controlled Valves
- Hydraulic Control is Hydraulic Over Hydraulic for All Functions
- Manual Setup Functions

ENGINE SPECIFICATIONS

- Engine is a John Deere, Model 6068, Diesel, Tier 3 with Stage IIIA Emission Certification Standards
- Engine Power of 225 hp (168 kW) @ 2,000 rpm
- Murphy PowerView is Used to Monitor Engine and Transmission Parameters
- Fuel Capacity of 42 gal (159 L)
- Auxiliary Air Compressor of 13.2 CFM @ 120 psi (22.4 m^3/hr @ 8.3 bar)

BREAKOUT WRENCH SPECIFICATIONS

- Wrench Has Dual Cylinders on Both Top and Bottom Wrench
- Bottom Wrench Clamping Cylinders Have Integral Lock Valves
- Wrench Clamp Force has Adjustable Pressure Control Preset at 34,500 lbf (153.4 kN)
- Breakout Torque of 30,365 ft-lb (41,157 N-m) with Dual Cylinders
- Wrench Size Range of 3 in. (76 mm) to 12 in. (305 mm)
- Wrench Travel is 19-Degree Swing
- Hardened Inserts are Standard
- Optional Casing Clamp with Integral Lock Valves in Clamping Cylinders

WATER SYSTEM

- Deck Mounted Triplex Pump—Standard for Water Soluble Fluids (40 gpm) (151.42 Lpm)
- Water Meter with LED Readout
- Optional FMC Bean Mud Pump (44 to 53 gpm) (166.56 to 200.63 Lpm)
- Optional 300-Gallon Detachable Water Tank (1,136 L)
- Optional Progressive Cavity Grout Pump

SECTION 33 11 53.13

REMEDIATION WELLS

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. This Section includes furnishing all labor, supervision, material, transportation, tools, supplies, equipment, and appurtenances necessary for the drilling, sampling, logging, and testing of three vertical remediation wells, three slant remediation wells, and three sub-slab depressurization wells as described herein.

B. For the purposes of this Section, the following definitions shall apply:

1. Vertical Remediation Well: A vertical well to be used in the in-situ treatment of petroleum hydrocarbons-impacted soil and groundwater to:

   a. extract groundwater and soil vapor, and

   b. inject groundwater amended with surfactants and nutrients.

2. Slant Remediation Well: A well installed at a 30-degree angle from the vertical that will be used in the in-situ treatment of petroleum hydrocarbons-impacted soil and groundwater to:

   a. extract groundwater and soil vapor, and

   b. inject groundwater amended with surfactants and nutrients.

3. Sub-Slab Depressurization Well: A shallow, horizontal well installed below ground surface (bgs) outside the existing buildings on site to extract soil vapor to remove hydrocarbon vapors can create a vacuum beneath the building slab.

1.02 SCOPE OF WORK

A. The work shall be accomplished in the following sequence. At the end of each item of work, the Engineer will evaluate the progress and results of the work. The Engineer shall have the sole authority to determine if the work will continue or may terminate the work sequence without penalty.

B. Coordination with King County Metro Transit: Drilling of slant wells shall require coordination with Metro County Transit for shutdown of the overhead bus power lines due to the small distance between the well locations and the electric wires on 24th Street. A minimum of 15 business days is necessary in advance of well drilling. Shutdown of the overhead bus power lines is only possible on weekends; therefore, drilling of slant wells of the electric wires must be completed on weekends.

C. Vertical Remediation Well Installation: The work includes the complete construction of three vertical remediation wells including well casing, drilling, and testing. The work includes:

1. Drill a minimum 8-inch diameter hole to a depth of 22 feet below ground surface (ft bgs) (~~NRW-1 and NRW-2~~ RW-8 and RW-9) or to a depth of 30 ft bgs (~~NRW-3~~ RW-10), or as directed by the Engineer.
2. Install a 4-inch-diameter casing, and backfill the annular space between the casing with filter pack and sealant material as described in Section 2.
3. The screen interval will be 5 to 20 ft bgs ~~NRW-1 and NRW-2~~ (RW-8 and RW-9) and 23 to 28 ft bgs (~~NRW-3~~ RW-10).
4. Perform all specified operations incidental to well construction such as permits, logs, filing of records, temporary capping, and cleanup.

D. Slant Well Installation: The work includes the complete construction of three slant remediation wells including well surface casing, drilling, and testing. The work includes:

1. Drill a minimum 8-inch diameter hole to an angled depth of 20 ft bgs (approximately 23 feet along the angled boring) at an angle of 30 degrees, or as directed by the Engineer.
2. Install a 4-inch-diameter surface casing and backfill the annular space between the casing and the bore hole with filter pack and sealant material as described in Section 2.
3. The screen interval will be ~~5 to 18 ft bgs~~ 15 feet long, from 6 to 21 feet measured along the angled boring.

E. Soil Sample Collection: The work includes borehole logging, soil classification, and soil sampling for laboratory analysis.

F. Field Screening: The work includes screening by photoionization detector, testing for sheen, and screening for visual and odor indicators of petroleum impact.

G. Sub-Slab Depressurization Well Installation: The work includes the installation of three horizontal sub-slab depressurization wells including saw cutting existing concrete or asphalt pavement as needed. The work shall be performed in accordance with the details shown on the Drawings.

1. The well shall be installed at least 1 ft below the depth of any perimeter footing for the building where it is located.

H. Well Testing: The work includes testing of the vertical and slant wells. This includes:

1. Test pump well and conduct water level monitoring. Record extraction flow rate.
2. Draw water quality samples for analysis by Engineer.

I. Wellhead Inspection: The work includes inspection of each wellhead prior to covering once piping to the treatment system is installed to check for air leakage at the piping-well connection.

1.03 RELATED SECTIONS

A. **Section 01 33 00 – Submittal Procedures**

B. **Section 01 99 00– Environmental Protection**

C. **Section 01 74 19 – Construction Waste Management**

D. **Section 02 40 00 – Demolition**

1.04 REFERENCES

A. ASTM International (ASTM)

1. D2488-06 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
2. D2487-00 Standard Practice for Classification of Soils for Engineering Purposes

B. State of Washington Administrative Code (WAC), Chapter 173-160.

C. AWWA Standard A100.

D. Department of Ecology Publication No. 10-09-057: Guidance for Remediation of Petroleum Contaminated Sites.

E. Environmental Protection Agency (EPA)

1. Method 5035 Test Methods for Evaluating Solid Waste

1.05 SUBMITTALS

A. Product Data: Fully describe every product proposed for use and demonstrate that they conform to these Specifications.

B. Material Data: Show that all materials to be used in the construction of the well conform to the Specifications.

C. Well Installation Plan: Contractor shall submit a Well Installation Plan with Ecology prior to starting work. The Well Installation Plan shall include, at a minimum, the following:

1. Plan of Operations: The Plan of Operation shall include identification of any subcontractors, a description of the firm, a copy of all required permits, listing of

proposed drilling equipment, and a description of the procedures and outputs from the procedure.

2. Water Disposal Plan: The Water Disposal Plan shall describe all methods proposed for handling, filtering, and discharging water developed during drilling, development and test pumping from the production and observation wells and piezometers.
3. Cutting Disposal Plan: The Cutting Disposal Plan shall describe all methods proposed for handling, water separation, and consolidation for hauling by others all soil and rock cuttings developed during construction of the observation and production wells and piezometers.

D. Drilling Log: The Contractor shall keep an accurate log of the material found during the drilling of both wells and show the elevations at which the material was encountered, with particular care being taken to locate all water bearing strata. A complete report of the log shall be submitted to the Contracting Officer via fax at the end of each day's drilling operation. During drilling and well construction the Drilling Log shall include the following:

1. Reference point for all depth measurements.
2. The depth at which each change of formation occurs.
3. Record of bits used.
4. Drilling times for each 5-foot increment.
5. The thickness of each stratum.
6. The identification of the material of which each stratum is composed (clay, sand or silt, gravel, cemented formations, hard rock, etc.).
7. The depth interval from which each formation sample was taken and, if the sampler is driven a hammer, the number of blows per foot during sampling.
8. The depth to the static water level (SWL).
9. Total depth of the completed well.
10. Any and all other pertinent information for a complete and accurate log; i.e. temperature, pH and appearance (color) of any water samples taken.
11. Depth or location of any lost drilling fluids, drilling materials, or tools.
12. The nominal hole diameter of the well bore above and below casing seal.
13. The depth and description of the well casing.
14. Construction drawings indicating the as-constructed details of the finished wells.

E. Records Required: The Contractor shall keep development and test records maintained showing all pertinent information concerning method of development.

1. Contractor shall submit parameters reded during well development to the Engineer for each well (see Section 3.04 below).

F. Report Required: The Contractor shall file with the State of Washington Department of Ecology, and other required Agencies, such reports and logs which may be required, including the Well Report, and supplemental reports as may be required.

G. Samples: Furnish, without additional cost to the Contracting Officer, such quantities of construction materials as may be required by the Contracting Officer for test purposes. The Contractor shall cooperate with the Contracting Officer and furnish necessary facilities for sampling and testing of all materials and workmanship. All materials furnished and all work performed shall be subject to rigid inspection, and no material shall be used in the construction work until it has been submitted and favorably reviewed by the Contracting Officer.

1.06 QUALITY ASSURANCE

A. The Contractor, or their hired subcontractor, shall, at his own expense, procure all permits, certificates, and licenses required of him by law for the execution of this work. He shall comply with all federal, state, and local laws, ordinances or rules and regulations relating to the performance of the work, including the requirements of the Washington Administrative Code, Chapter 173-160. The cost of all permits, certificates and licenses required by law for the completion of the described work shall be considered as included in the bid.

1.07 NOTIFICATION

A. The Contractor shall be responsible to give notice to Ecology in writing prior to performance of specific operations as follows:

1. At least seventy-two (72) hours advance notice of intent to start drilling operations of the vertical and slant remediation wells.

At least seventy-two (72) hours advance notice of intent to start operations for installation of the sub-slab depressurization wells.

PART 2 – PRODUCTS

2.01 CASING

A. Well Casing: Well casing shall be new rigid polyvinyl chloride (PVC) with a wall thickness at least equal to Schedule 40 well casing pipe. PVC Material shall comply with ASTM D1784 with a cell classification of 12454C or 14333 C or D.

B. Casing Guides: During slant well installation, centering guides shall be attached in a favorably reviewed manner to the outside of well casing sections to center the elements in the bore hole. Centering guides shall, at a minimum, consist of “vane”

type worm gear style centralizers made from stainless steel SAE HD clamps assembled to four stainless steel strap bow springs. The steel collar rings shall have hinges placed within the channel to eliminate hinge damage. Bow springs shall be made of 1-1/4-inch by 3/16-inch #1095 spring steel. Three guides shall be placed: at the bottom of the well screen, the approximate middle of the well casing and in the cement interval between approximately 2 and 3 feet bgs measured along the angle.

C. Centering guides shall be sized to create a uniform annular space around the casing in the borehole.

D. Finished Grade and Surface Restoration: Finished grade around the well shall be a flush with the existing ground. The ground surface shall be raked clean of all construction materials and cement debris. Final grading shall slope away from the wellhead and if necessary, divert surface flow around the wellhead.

E. Monument: Well monument shall be flush with the ground, at least 12 inches in diameter, and traffic rated.

F. Well cap: 4-inch PVC compression cap with passthrough fittings for sampling.

2.02 SCREEN

A. Screen shall be made of PVC with a wall thickness at least equal to Schedule 40. PVC material shall comply with ASTM D 1784 with a cell classification of 12454C or 14333 C or D.

B. The screen shall be of the machine-slotted type, 0.010-inch slot, or as directed by the Engineer.

2.03 BACKFILL MATERIAL

A. Sand backfill material shall be clean, washed 10/20 Colorado Silica Sand, free from flat or elongated particles. The backfill material shall be free from organic matter and other deleterious material. Sand backfill shall extend from the bottom of the borehole to 1-foot above the top of the well screen.

B. Bentonite shall be installed above the sand backfill to 3 ft bgs.

C. Wellhead Seal – The wells shall have a continuous seal that seals the annular space between the bore hole and the permanent casing. The seal shall extend from the ground surface to the top of the filter pack. The filter pack shall be no less than one foot above the screen interval. The cement sealant shall consist of a neat cement (2.07.C).

2.04 EXTRACTION/INJECTION LINE AND CONNECTION TO TREATMENT SYSTEM

A. 1-inch Schedule 40 PVC pipe shall be installed in the center of each well.

B. Connection to the 1-inch HDPE pipe that connects to the treatment system shall be in accordance with the details shown on Drawing C-03.

C. Pitless adapter shall be 1-inch bronze, lead-free.

2.05 WATER

A. Potable water from a standard water hose spigot will be provided by Owner at typical flow rates and pressures. The hose access for water may be used for each day of drilling operations for construction at no charge. The Contractor shall supply the materials, labor, and equipment to deliver the water to the well site.

2.06 HYDRATED BENTONITE TRANSITIONAL SEAL

A. Bentonite shall be new material, clean of any contamination, and shall be a manufactured product specifically for use as a well sealing material. Hydration shall be as per the manufacturer's recommendations for installation in a dry well hole environment.

B. Bentonite slurries shall be prepared and installed according to the manufacturer's instructions.

C. Active solids content (bentonite) shall be greater than or equal to 20% by weight in all bentonite slurries. The active solids shall be checked using the following formula:

$$\%\ solids = \frac{Weight\ of\ bentonite\ (lbs)}{Weight\ of\ bentonite\ (lbs) + (gallons\ of\ water\ x\ 8.33\frac{lbs}{gal})}\ x\ 100$$

D. Unhydrated bentonite-pelletized, granulated, powder, or chip bentonite may be used in the construction of seals. The bentonite material shall be specifically designed for sealing and be within the industry tolerances for dry western sodium bentonite. Placement of bentonite shall conform to the manufacturer's specifications and result in a seal free of voids or bridges.

2.07 NEAT CEMENT SEAL

A. Neat cement shall be new material, clean of any contamination, and shall be a manufactured product specifically for use as a well sealing material.

B. Neat cement consists of either Portland cement types I, II, III, or high-alumina cement mixed with less than or equal to 6 gallons of potable water per sack of cement (94 pounds per sack).

C. Neat cement grout consists of neat cement with up to 5% bentonite clay added, by dry weight of the bentonite. Bentonite is to be added to improve flow qualities and compensate for shrinkage.

D. Expanding agents, such as aluminum powder, may be used at a rate less than or equal to 0.075 ounce (1 level teaspoon) per sack (94 pounds per sack) of dry cement. The powder may not contain polishing agents. High-alumina cement and Portland cement of any types must not be mixed together.

PART 3 – EXECUTION

3.01 EQUIPMENT

A. The Contractor must provide equipment which is in first class working order. No unnecessary delays or work stoppages will be tolerated due to inadequate or faulty equipment. The Contractor shall be held responsible, and payment may be withheld for damages to the well due to any cause of negligence or faulty operation.

B. Job Supervision: The Contractor shall have a competent and responsible supervisor in attendance at the well site at all times during the construction, development, and test pumping of the well.

C. Hole Protection: The Contractor shall take all measures necessary to protect the well bores from caving and raveling. If a temporary conductor pipe is used to prevent caving in during placement of the seal or during drilling, it shall be removed as the seal is placed.

D. Well Location: The wells shall be located as shown on the Drawings. Coordinate with the Engineer to field confirm well locations. Locate and stake each well prior to starting well drilling construction.

E. Cuttings Disposal: The Contractor shall place all cuttings in DOT-approved 55-gallon drums for characterization. The Contractor shall provide a means of moving the drums to a location designated by Engineer. The Contractor shall characterize and dispose of all cuttings and drillings at an appropriate Facility in accordance with **Section 01 74 19 – Construction Waste Management**. Other debris and unused materials from the site shall be disposed of at no additional cost to the Owner.

3.02 BOREHOLE LOGGING AND SOIL SAMPLE COLLECTION

A. Borehole logging and screening will be performed in accordance with the ASTM Visual-Manual Procedure (ASTM D2488-06) and in conjunction with the Unified Soil Classification System (USCS) (ASTM D2487-00).

A. Soil classification and borehole logging shall be conducted by qualified geologist, engineer, or other personnel trained and experienced in the classification of soils.

B. At least two soil samples shall be collected at each soil boring location:

1. One sample from the unsaturated zone (above 5 feet below ground surface)
2. One sample from the presumed smear zone (5 to 10 feet below ground surface)

C. Each soil sample name shall include the boring designation and the depth interval; type of analysis; time and date of sample collection; collector's name, name of preservative. Soil sample intervals shall be recorded on the Drilling Log.

D. Soil samples for volatile organic compound analyses shall be collected using EPA sampling methodology 5035. Collect soil samples using a coring device, such as an EnCore™ or US Analyticals Eazydraw Syringe™ sampler, or other approved coring device, and put the "cored" soil directly into containers provided by the analytical laboratory. Additional soil volume for each sample will be collected into a 4- or 8-ounce glass jar and provided to the laboratory for moisture content analysis.

E. Additional soil samples shall be collected if potential petroleum hydrocarbon impacts in soil are identified based on field screening observations and the depth interval is not represented by other samples.

F. Two soil samples per soil boring shall be submitted for initial laboratory analysis of gasoline-range hydrocarbons (TPH by method NWTPH-Gx) and BTEX constituents (by EPA method 8260B).

G. Soil samples shall be entered on a Chain of Custody form, and containers will be labeled, sealed, and kept in a cooler chilled with ice until transfer to an accredited laboratory under chain-of-custody procedures and documentation. Samples shall be maintained at a stable temperature of 4 ± 2 degrees Celsius. and a container of water for sample temperature verification (temperature blank) shall be included.

H. Soil samples submitted to the analytical laboratory but not marked for initial analysis shall be archived by the analytical laboratory for possible follow-up analyses. Archived samples shall be frozen to extend hold times, if needed.

3.03 FIELD SCREENING

A. Every 2 feet, or at significant changes in lithology, screen soil for headspace reading. Continuously screen soil for sheen, and visual and odor indications as described below. Record results on the Drilling Log.

B. Headspace screening with Photoionization Detector (PID): Use the polyethylene bag headspace method described below to characterize soil.

1. Use PIDs with a 10.2 eV (+/-) or greater lamp source. Perform PID instrument calibration on site and at least daily to yield "total organic vapors" in parts per million. Follow the manufacturer's instructions for operation, maintenance, and calibration of the instrument. Keep calibration records in a bound book.

2. Use a resealable one-quart polyethylene freezer bag. Half-fill the bag with sample so the volume ratio of soil to air is equal, then immediately seal it. Manually break up the soil clumps within the bag. Soil shall be transferred to the field screening bags immediately after opening the split spoon sampler or soil sample liner.

3. Allow headspace development for at least 10 minutes at approximately room temperature. Vigorously shake bags for 15 seconds at the beginning and end of the headspace development period. Headspace development decreases with temperature. When temperatures are below the operating range of the instrument, perform headspace development and screening in a heated vehicle or building. Record the ambient temperature during headspace screening. Complete headspace screening within approximately 20 minutes of sample collection.
4. After headspace development, introduce the instrument sampling probe through a small opening in the bag to a point about one-half of the headspace depth. Keep the probe free of water droplets and soil particles.
5. Record the highest meter response on a sampling form. Maximum response usually occurs within about two seconds. Erratic meter response may occur if high organic vapor concentrations or moisture is present. Note any erratic headspace data on the sampling form. Do not collect analytical samples from the polyethylene bag.

C. Petroleum Sheen Test: Sheen test shall be conducted in conformance with DOE Publication No. 10-09-057 and as follows:

1. Place a small quantity of petroleum-contaminated soil in a jar, on a large spoon, or in a pan of water.
2. Add enough water to break apart and submerge the soil particles. Let the sample rest for a minimum of 10 minutes prior to examining for sheen or droplets of product.
3. If droplets of product or sheen are present on the water surface, the test result is positive, and the soil is considered petroleum saturated.
4. Use the following descriptors when recording the presence of sheen in the Drilling Log (from DOE Pub 10-09-057):

Descriptor	Observations
NS (no sheen)	No visible sheen on the water surface
SS (slight sheen)	Light, colorless, dull sheen; spread is irregular, not rapid. Natural organic oils or iron bacteria in the soil may produce a slight sheen.
MS (moderate sheen)	Pronounced sheen over limited area; probably has some color/iridescence; spread is irregular, may be rapid; sheen does not spread over entire water surface.
HS (heavy sheen)	Heavy sheen with pronounced color/iridescence; spread is rapid; the entire water surface is covered with sheen.

Note: False positive results may be generated by the presence of decaying organic matter and iron bacteria, which can produce a rainbow-like sheen similar to an oil sheen. These sheens, unlike oil sheens, can typically be broken up when agitated or disturbed

D. Visual Staining and Odor:

1. Not observations of additional liquid. If a separate phase liquid appears to be present, it may be described as “dark brown viscous fluid or liquid observed in the soil matrix.” This remark should follow the lithologic description in the borehole log.
2. Note observations of color. Observations of color shall be made such as “black streaks” or “mottled gray” to “olive brown”, however it should not be inferred or remarked that the color is a necessary consequence of petroleum staining.
3. Note observations of odor. Screening for odor consists of noting where soil has an unnatural odor that may be associated with petroleum chemicals. If the soil smells like petroleum, it may be remarked that it has a “petroleum like” or “solvent like” odor.

3.04 DRILLING

A. The vertical wells shall be drilled using hollow-stem auger method, unless otherwise approved by the Engineer.

B. The slant wells shall be drilled using sonic core method, unless otherwise approved by the Engineer.

C. Contractor shall install well casing, screen, backfill, and filter pack using methods favorably reviewed by the Engineer.

3.05 GROUT PLACEMENT

A. Grout shall be placed in a manner that will fill the annular space around the well casing completely. Grout placement shall be from the bottom upward, using a tremie pipe or tube method and by a positive displacement method using a pump. The minimum size tremie pipe used shall be 2 inches inside diameter. When making a tremie pour, the tremie pipe shall be lowered to the bottom of the zone being grouted and raised slowly as the grout material is introduced. The tremie pipe shall be kept full continuously from start to finish of the grouting procedure with the discharge end of the tremie pipe being continuously submerged in the grout until the zone to be grouted is completely filled.

B. The Contractor shall keep accurate records of the amount of grout used to fill the annular space. The grout volume shall not be less than the calculated volume of the annular space between the conductor casing or the reamed borehole and the well casing.

C. After grout placement is complete, the grout shall be allowed to set for a period of not less than 24 hours. No standby time will be paid while the grout seal is setting. Drilling fluid shall be circulated to eliminate all cement contamination prior to beginning any other drilling operations.

3.06 DEVELOPMENT OF VERTICAL AND SLANT WELLS

A. General: Development of the wells is an operation separate and apart from the test pumping. All vertical and slant wells shall be developed.

I. Equipment: The Contractor shall furnish all necessary swab, pumps, compressors, plungers or other needed equipment and shall develop the wells by swabbing, airlifting, surging, jetting or other such methods, approved by the Engineer, that shall give the maximum yield of water per foot of drawdown, and shall extract from the water-bearing formation the maximum practical quantity of such sands as may, during the life of the well, be drawn through the screen when the well is pumped under maximum conditions of drawdown. Well development shall be accomplished through a combination of swabbing, pumping, and surging. All equipment shall be steam cleaned prior to being introduced to the well.

J. Development with Test Pump (Surging and Pumping):

1. After completion of well development as detailed above, the Contractor shall commence well development using a test pump. The test pump shall be capable of pumping up to 5 gpm and be equipped to throttle flow between 0 and 5 gpm.

The quantity of water being pumped from the well at commencement of development pumping shall be limited and gradually increased as the water clears. From time to time, the pump shall be stopped and the water in the pump column allowed to flow back through the pump. This procedure, with increasing pumping rates, shall be repeated as development of the well continues and shall be done in a manner satisfactory to the Engineer. This procedure shall be repeated at approximately 1 gpm increments up to 5 gpm.

The Contractor shall provide accurate dual reading flow meters, in gpm for instantaneous rate dial meter and total gallons pumped for the totalizing odometer, or other approved devices to accurately monitor both instantaneous flow rates and total flow volumes during the work. The meter used shall have been recently calibrated and a record showing the calibration shall be provided to the Engineer prior to installation and use.

The Contractor shall provide to the Engineer a report of flow and water quality parameters, recorded during the development of each well. An example well development field form is included in Appendix E05. The parameters recorded shall include:

Flow rate (gpm)

Temperature (± .1 degrees Fahrenheit)

pH (± .01 standard units)

Dissolved Oxygen (DO) (± .01 milligrams per Liter)

Oxidation-Reduction Potential (ORP) (± .1 millivolts)

Specific Conductance (EC) (± 1 micro Siemens)

Turbidity (± 1 NTU)

General Observations: Color, odor, sheen, and other observations of note.

3.07 INSTALLATION OF CONNECTION TO PIPE TO TREATMENT SYSTEM

A. Contractor shall cut the well after installation in order to install the connection of the extraction/injection line to the 1-inch HDPE pipe in the trench. The connection shall be at approximately 3 ft bgs and installed in accordance with the details shown in the Drawings.

B. After connection to the HDPE piping, Contractor shall backfill the area with a minimum of 3-inch bentonite and compact per Specifications. The Contractor shall then backfill and compact using backfill material to the finished grade.

3.08 PROTECTION OF THE SITE

A. Contractor shall protect and repair any damage to existing features and improvements to the satisfaction of Ecology.

K. The Contractor shall be responsible for all temporary construction fencing, site security, and protection.

L. Wastewater from drilling, developing, and test pumping shall be disposed of in accordance with **Section 01 74 19 – Construction Waste Management**. Water shall be placed in 55-gallon drums on site. A composite sample shall be collected from the water for profile prior to disposal. Water shall be disposed of at an appropriate location based on sample results.

3.09 CLEANUP

A. Upon completion of the new well, the Contractor shall remove all equipment and drilling spoil from the site and restore the site to a condition similar to that existing prior to construction of the wells. Cleanup shall include restoration of any area disturbed by disposal of water during development and test pumping.

END OF SECTION 33 11 53

Soil & Waste Management Plan

Project: Circle K Site 1461

Prepared for:

WA Department of Ecology

Prepared by:
Glacier Environmental Services, Inc.
7509 212th Street SW
Edmonds, WA 98026

November 2023

1.0 Purpose

The purpose of this Soil and Waste Management Plan is to provide detail of the means and methods Glacier intends to use to manage wastes on the Circle K Remediation Site 1461 Remediation Project. This Plan has been prepared based on the Specifications 01 33 00 and 01 99 00.

2.0 Scope of Work

Construction of a multi-phase extraction and groundwater recirculation system for the Circle K 1461 Site. The system is being constructed to treat petroleum hydrocarbons present in soil and groundwater at the site. Construction includes installation of new remediation wells, sub slab depressurization wells, vapor monitoring points, underground piping, liquid and vapor phase treatment trains, and a bioremediation and reinjection system.

The site is located in the Montlake neighborhood of Seattle at 2350 24th Ave E, Seattle, WA. The current site use is a convenience store and dry cleaner.

3.0 Sampling & Characterization

Soil cuttings generated during well installation will be collected in 55 gallon drums. At least 2 soil samples will be collected from each boring, field screened (PID, sheen, visual and odor), and submitted for laboratory analysis. Additional details on soil sample collection from borings will be provided under separate cover in the Well Installation Plan.

Laboratory analysis for all soil samples will include testing for gasoline-range hydrocarbons by method NWTPH-Gx and BTEX constituents by EPA method 8260B. In addition, at least 5 of these samples will also be analyzed for Volatile Organic Compounds (VOCs) by EPA Method 8260B, RCRA 8 Metals by EPA Method 6010 (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and by EPA Method 7471 (mercury), and TPH by NWTPH-Dx (without Silica Gel Cleanup) (number of samples is based on *Guidance for Remediation of Petroleum Contaminated Sites, Washington State Department of Ecology Pub. No. 10-09-057*).

Water generated during well drilling, development and testing will be collected separately in 55 gallons drums. A composite sample of water will be collected for profiling. The water will be sampled and analyzed for VOCs by EPA Method 8260B, RCRA 8 Metals by EPA Method 6010 (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and by EPA Method 7470 (mercury), TPH by NWTPH-Dx (without Silica Gel Cleanup), NWTPH-Gx and Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

Soil & groundwater sampling during well drilling will be performed by Krazan & Associates and soil and water samples transported to ALS Global in Everett for laboratory analysis.

4.0 Recyclable Materials

Asphalt and concrete will be sawcut and demolished in accordance with the Plans. All asphalt and concrete generated will be recycled at Renton Concrete Recyclers located at 500 Monster Rd SW, Renton, WA 98057.

5.0 Stockpiling and Soil Management

It is anticipated that less than 100 CY of soil will be generated from trenching activities, of that about half will be displaced with bedding material and paving base course. Soil will be temporarily stockpiled on 6 mil plastic and covered, straw wattles will be used to create a containment berm under the bottom liner. Due to the small site and access constraints, soil generated from trenching activities will be hauled and disposed as contaminated soil under the same profile for the drilling spoils; as such, sampling of trench spoils will not be conducted.

6.0 Soil Transportation and Disposal

Surplus soil and soil generated during drilling activities will be transported by solo truck to a Seattle Subtitle D Transfer Station. Soil in drums will be dumped into trucks for disposal and the drums recycled.

The 2 disposal facilities for non-hazardous soil disposal are:

Waste Management-Columbia Ridge Landfill by way of the Alaska Street Reload Facility located at 70 Alaska Street or the Duwamish Reload Facility located at 7400 8th Ave. South.

Republic Services-Roosevelt Landfill by way of the 3rd & Lander Transfer Station.

It is anticipated that trucks will enter the site from 24th Ave, load on the southern end of the site and then exit on the East McGraw driveway. This may change depending on where the current work area is located and if trenching prohibits that route.

Landfills selected for disposal will be permitted for acceptance of Subtitle D Waste. A Soil Profile signed by the Generator will be approved by the waste facility prior to acceptance of materials.

7.0 Recordkeeping

Analytical results will be summarized table format; tables and copies of lab reports will be submitted to Kennedy Jenks and Ecology as a Submittal. This data will be used to profile soil and water for disposal. Glacier will complete all waste profiling applications for the selected disposal facility with WA Dept of Ecology signing as the Generator. Each load of soil will be weighed at the transfer station and tonnage recorded on a scale ticket. Records of all soil disposal (tickets) will be submitted to Ecology and Kennedy Jenks at the completion of the project.

8.0 Water Disposal

It is not anticipated that we will generate any water during trenching activities. Water generated during well drilling will be stored in drums (separate from soil) until characterized. A composite sample will be

collected and analyzed for the contaminates of concern in Paragraph 3.0 above. It is presumed that the water will be suitable for treatment and discharge to the sewer system by Marine Vacuum Services located at 1516 S. Graham Street in Seattle under their King County Discharge Authorization.

9.0 Decontamination Waste

Any water and soil accumulated during decontamination of equipment or personnel will be collected and disposed as contaminated media following the methods above. PPE and debris generated during decontamination will be collected as solid waste and disposed in accordance with paragraph 11.

10.0 Dust & Street Sweeping

Dust is not anticipated to be an issue as the trench excavations are shallow and narrow. It addition, this work will be completed during the winter months. Trucks leaving the site will be covered to prevent dust during transport.

All trucks entering and leaving the site will remain on paved surfaces, minimizing track out concerns. The construction exit will be swept by hand regularly during offsite hauling. In the event that mechanical sweeping is needed, Glacier will either use a ride-on Laymor sweeper for small frequent maintenance or subcontract a vacuum broom sweeping company to clean the haul route.

11.0 Solid Waste Disposal

Solid waste will not be allowed to accumulate onsite. PPE, pipe debris, and crew refuse will be transported offsite for disposal as municipal waste. A combination of commercial waste service at our Lynnwood location as well as county landfills will be used for disposal of solid waste construction debris.

Spill Prevention, Control and Countermeasures Plan

Project: Circle K Site 1461

Prepared for:

WA Department of Ecology

Prepared by:

Glacier Environmental Services, Inc.

7509 212th Street SW

Edmonds, WA 98026

November 2023

Table of Contents

SPCC Plan Implementation Requirements

The purpose of an SPCC Plan is to protect human health and the environment from spills and releases of "hazardous materials," a generic term WSDOT uses in Chapter 447 of its Environmental Procedures Manual (M 31-11) to mean dangerous waste, problem waste, petroleum products, and hazardous substances. The SPCC Plan shall also address conditions that may be required by Section 3406 of the current International Fire Code, or as approved by the local Fire Marshal.

Glacier is committed to preventing discharges of oil to navigable waters and the environment, and to maintaining the highest standards for spill prevention, control and countermeasures through the implementation of, and regular review and amendment to this Plan. Glacier shall update this SPCC Plan throughout the Project so that the written Plan reflects actual site conditions and practices.

Glacier shall fully implement this SPCC Plan, as accepted and updated, at all times and maintain a copy of the updated SPCC plan on the project site. All project employees will be trained in spill prevention and containment, know where the SPCC Plan and spill response kits are located and have immediate access to them.

SPCC Plan Elements

1. Responsible Personnel

Table 1.1 identifies the name(s), title(s), and contact information for the personnel responsible for implementing and updating the SPCC Plan, and for responding to spills. If spill response Subcontractor(s) will be used for spill response (as described in Section 8, Spill Response, below), the Subcontractor(s) company name(s) and contact information are also included in Table 1.1.

Table 1 Responsible Personnel

Responsibility	Name and Title	Contact Information
Implementing and Updating SPCC Plan (primary contact person)	**Lauren Golembiewski – Project Manager**	Company: **Glacier Environmental** Office Phone: **(425) 355-2826** Cell Phone: **(425) 268-9775**
Implementing and Updating SPCC Plan (secondary contact person)	**Thayne Wastman - Superintendent**	Company: **Glacier Environmental** Office Phone: **(425) 355-2826** Cell Phone: **(206) 793-3713**
On-Site Spill Responder	**GES- Laborer**	Company: **Glacier Environmental** Office Phone: **(425) 355-2826**

2. Spill Reporting

The uncontrolled discharge of oil to groundwater, surface water, or soil is prohibited by state and federal laws. In the event of a discharge, immediate action will be taken to control, contain, and recover the discharged product.

In the event of a spill, Glacier shall notify the WA Dept of Ecology Project Manager, Kennedy Jenks, and shall notify the Federal, State, and Local Agencies listed in Table 2 if appropriate.

Table 2 Project-Specific Federal, State, and Local Agencies to be Notified in the Event of a Spill

Agency Name	Agency Notification Telephone Number	When Agency Shall be Notified	Agency Region
Ecology Site Manager: Dale Myers •	(425) 649-4446	Any Spill or Release	Project Specific
Ecology's Representative: Ryan Hultgren-Kennedy Jenks	(253) 835-6432	Any Spill or Release	Project Specific
Department of Ecology (in addition to Project Contact)	206-594-0000	spill or release to soil that is an immediate threat to human health or the environment or a spill or release to water or a	Northwest Regional Office

Agency Name	Agency Notification Telephone Number	When Agency Shall be Notified	Agency Region
		confirmed release or spill from a UST	
National Response Center	1-800-424-8802	spill or release to water	Not applicable
Washington State Division of Emergency Management	1-800-258-5990	spill or release to water	Not applicable
Seattle Public Utilities	(206) 684-7587. After Hours: (206) 386-1800	Spills that could impact surface water pollution and could carry pollutants along streets and into Seattle's creeks, lakes, and Puget Sound.	

3. Project and Site Information

A. The Project work: Construction of a multi-phase extraction and groundwater recirculation system for the Circle K 1461 Site. The system is being constructed to treat petroleum hydrocarbons present in soil and groundwater at the site. Construction includes installation of new remediation wells, sub slab depressurization wells, vapor monitoring points, underground piping, liquid and vapor phase treatment trains, and a bioremediation and reinjection system.

B. The site location and boundaries: The site is located in the Montlake neighborhood of Seattle at 2350 24th Ave E, Seattle, WA. It is on the southeast corner of the intersection of 24th Ave E and W. McGraw Street. The current site use is a convenience store and dry cleaner.

C. The drainage pathways from the site: The site is generally flat and paved; surface water drains to existing onsite drains that connect to City Combined Storm and Sanitary Sewer.

D. Nearby waterways and sensitive areas and their distances from the site: None.

4. Potential Spill Sources

A description of each potential fuel, petroleum product and other hazardous material brought or generated on-site is set forth in Table 4. The potential fuel, petroleum product and other hazardous

materials listed on Table 4 include materials used for operating, refueling, maintaining, and cleaning equipment.

Table 4 Fuel, Petroleum Product and other Hazardous Materials Brought or Generated On-Site

Hazardous Material Name	Intended Use of Material	Est. Max. Amount of Material On-Site at Any One Time	Material Staging, Use, and Storage Location(s), & Material Storage and Secondary Containment Practices and Structures[1]	Distance of Material Staging, Use, and Storage Locations from Nearby Waterways[2] and Sensitive Areas[3]	Cleaning location and disposal procedure for equipment that comes into contact with material
gasoline, diesel, motor oil, hydraulic oil,	Equipment fueling and maintenance	Less than 500 gal	150-gallon service vehicle mounted tanks,	N/A	Sorbent pads used to clean spilled fuel will be bagged and disposed as solid waste or comingled with contaminated soil for offsite disposal. Any contaminated soil that is the result of a spill will be drummed or stockpiled for offsite disposal per the Soil & Waste Management Plan.

Notes:

1 See also Section 7.D (Spill Prevention, secondary containment and structures may be described in Table 4 or under Section 7D.

2 Waterways include streams, creeks, sloughs, rivers, Puget Sound, etc.

3 Sensitive areas are areas that typically contain populations that could be particularly sensitive to a hazardous materials spill or release. Such areas include wetlands, areas that provide habitat for threatened or endangered species, nursing homes, hospitals, childcare centers, etc. Sensitive areas also include areas where groundwater is used for drinking water, such as wellhead protection zones and sole source aquifer recharge areas.

5. Pre-Existing Contamination

This project includes remediation of residual petroleum hydrocarbons including excavation and disposal of soil and groundwater during well drilling and trenching.

6. Spill Prevention and Response Training

Glacier shall ensure all employees and subcontractors have attended and are current in the appropriate training, spill kit locations, spill response and containment during the project orientation. The date, names of attendees, and the topics covered will be documented on the Employee Orientation Checklist, provided.

Additionally, all onsite personnel are required to attend daily safety meetings at the work site. These meetings discuss potential problems, including storm water control, and a review of the response actions that will occur in the event of any situation.

Apart from fuel and lubrication for construction equipment Glacier does not anticipate that it will bring any hazardous or toxic substances to the site. Materials stored on-site will be stored in their appropriate containers on a level site and covered. Petroleum products will be stored in tightly sealed safety containers that are clearly labeled.

Materials and equipment needed for cleanup will be kept readily available on-site, both at the Contractor Lay-down Area and in Glacier service vehicles. Equipment available on-site will include but not be limited to; shovels, granular absorbent, absorbent pads, adsorbent booms, gloves, goggles, and plastic disposal bags. Glacier and subcontracted personnel will be made aware of SPCC requirements, cleanup procedures, the location of spill equipment, and spill reporting procedures. Spills will be contained and cleaned up immediately upon discovery and reported to the Site Manager.

7. Spill Prevention

A. Spill response kit contents and location(s) (see Table 7). Appropriately stocked spill response kits shall be maintained in close proximity to hazardous materials and equipment and shall be immediately accessible to all Project personnel.

Table 7 Spill Response Kit Contents and Locations

Type of Spill Kit	Spill Kit Contents	Spill Kit Location(s)
Spill kit and supplies	50-foot absorbent sock 50-foot floating booms "Oil-dry" loose absorbent material 2-foot by 2-foot absorbent pads Nitrile gloves Sand bags	Glacier trucks and in staging area
Truck refueling kits	at a minimum will include oil absorbent pads and rags, oily soil bucket(s) to contain impacted soils, and trash bags to contain oily waste from the cleanup effort.	all Glacier company pickups and service trucks

B. Security measures for potential spill sources. All fuel will be in truck mounted tanks and removed from the site each night. Any stored lubricants will be removed from the site nightly or locked in a storage container.

C. Methods used to prevent stormwater from contacting fuel, petroleum products and hazardous materials. Should the unlikely occur, the area of the spill will be isolated with sandbags and boom as needed to isolate stormwater run-off and run-on from contacting the area. Loose sorbent and pads will be deployed as necessary. Catch basins will be blocked.

D. Secondary containment for each potential spill source listed in Section 4, above. A reasonable potential for an accidental discharge exists during refueling operations; as such, all refueling activities require the constant presence of the operator.

E. Best Management Practices (BMP) Methods used to prevent discharge to ground or water during mixing and transfers of hazardous materials, petroleum product and fuel. Prior to fueling, refueling personnel will ensure that spill equipment is available, dispensing nozzles will have automatic shut offs and ensure operators are attentive to fueling operations.

F. Refueling procedures for equipment that cannot be moved from below the ordinary high-water line. Not applicable.

G. Daily inspection and cleanup procedures that ensure all equipment used below the ordinary high-water line is free of all external petroleum-based products. Not applicable.

H. Routine equipment, storage area, and structure inspection and maintenance practices to prevent drips, leaks or failures of hoses, valves, fittings, containers, pumps, or other systems that contain or transfer hazardous materials. Heavy construction equipment will be parked and stored at the site each night, during weekends and other non-working days. The heavy equipment will be stored in the designated laydown area when not in use. Heavy construction equipment is equipped with hydraulic systems with hoses and seals that can leak oils.

I. Site inspection procedures and frequency. Each morning prior to equipment startup, the areas under the equipment will be inspected for evidence of spills or leaks. Any leaks will be remediated with the use of spill kit materials that will kept in work trucks. Equipment that is leaking will require repair to eliminate the spreading of leaking oils.

8. Spill Response

The uncontrolled discharge of oil to groundwater, surface water, or soil is prohibited by state and federal laws. In the event of a discharge, immediate action will be taken to control, contain, and recover the discharged product. The following response actions will be taken:

1. Mitigate fire explosion and vapor hazards. Eliminate potential spark sources.
2. If possible and safe to do so, identify and shut down the source of the discharge to stop the flow.
    - o If it is not safe, phone emergency responders (911) for help .
    - o If necessary, begin evacuating the area.
3. To prevent further release to the environment:
    - o Contain the discharge with sorbents, berms, fences, trenches, sandbags, or other material.
    - o Remove the material from leaking tank and/or remove the tank from the site if it is safe to do so.
4. Contact the Site Manager/Engineer or his/her alternate. Ryan Hultgren-Kennedy Jenks (253) 835-6432.
5. Contact regulatory authorities and the response organizations. Dale Myers WADOE (425-649-4446)
6. Collect and dispose of recovered products in accordance with local regulations;
    - o Collect all wastes generated during the incident;
    - o Properly dispose of all wastes generated during the incident; and
    - o Clean and/or recharge all emergency equipment.
7. Restock all spill response supplies.

9. Project Site Map

A Project site map, clearly showing each of the following required or recommended items, is attached

A. Site location and boundaries;

B. Site access roads;

C. Drainage pathways from the site;

D. Nearby waterways and sensitive areas (Waterways include streams, creeks, sloughs, rivers, Puget Sound, etc. Sensitive areas are areas that typically contain populations that could be particularly sensitive to a hazardous materials spill or release. Such areas include wetlands, areas that provide habitat for threatened or endangered species, nursing homes, hospitals, child care centers, etc. Sensitive areas also include areas where groundwater is used for drinking water, such as wellhead protection zones and sole source aquifer recharge areas.);

E. Hazardous materials, equipment, and decontamination areas identified in Section 4 (Potential Spill Sources), above;

F. Pre-existing contamination or contaminant sources described in Section 5 (Pre-Existing Contamination), above;

G. Spill prevention and response equipment described in Section 7 (Spill Prevention) and Section 8 (Spill Response), above.

10. Spill Report Form(s)

A copy of the spill report form that Glacier will use in the event of a release or spill is attached in Appendix A

SPCC Plan Acknowledgement Form (to be signed by all Project personnel)

This is to certify that I have read this Project SPCC Plan and understand its contents. I have attended a Project orientation meeting discussing the elements of this SPCC Plan and the safety and health hazards associated with SPCC operations to be performed at this Project. Failure to comply with the requirements contained in this SPCC Plan may result in my removal from the Project.

PRINT NAME	SIGNATURE	DATE

Appendix A

Spill Report Form

Spill Report Form

Name of Facility:					
Date and time of incident:		**Date and time discovered:**		**Date and time spill stopped:**	
Location:					
Cause:					
Equipment Involved:	□ Refueling Equip. □ Hydraulic Hose □ Leaking Fuel Tank/Vehicle □ Other _____				
Names of Person(s) responding:		**Material spilled:**			
Estimate Gallons spilled:	□ <25 □ 25 to 50 □ 50 to 100 □ 100-150 □ >150				
Did any spillage enter any water body? Y/N? (including storm drain)	If so, which one:		Estimate Gallons that reached water body:		
Describe extent of affected area:	(ex. Radius of spill? Confined to site? Confined within containment wall? Distance/direction travelled?)				
Damages caused by spill:					
Was an evacuation necessary?		**Injuries/fatalities caused by spill:**			
Action taken to stop discharge:		**Action taken to confine spill:**			
Suggested preventative measures:					
Assessment of root cause of spill:					
Other and/or additional information:					

Notifications that were made:

Name of Individual or Organization	Phone Number	Date Contacted	Comments
Washington Emergency Management Division	1-800-OILS-911		
National Response Center	1-800-424-8802		
WA DOE NW Regional Office	425-649-7000		
Mid Sound Fisheries	206-226-2548		

Date of Report:		**Name (print) :**	
Signature:			

Appendix B

Project Site Map

Plot Date: 10/11/2022 7:30 AM

User: RICHARD HILLS

GENERAL SHEET NOTES

1. DIMENSIONS SHOWN ARE THE MAXIMUM ALLOWABLE FOR LAYDOWN STAGING AREAS. AREAS MAY NEED TO BE REDUCED TO ALIGN WITH EXISTING FEATURES SUCH AS CURBS OR ALLOW FOR VEHICLE AND PEDESTRIAN TRAFFIC AND SHALL BE SECURED BY TEMPORARY FENCING.
2. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL USING CONTRACTOR MEANS AND METHODS SUCH AS PHASED CONSTRUCTION, TRAFFIC RATED TRENCH LIDS, SIGNAGE, TEMPORARY FENCING, AND OTHER, AS NEEDED TO MAINTAIN VEHICLE AND PEDESTRIAN ACCESS TO THE STORES.
3. CONTRACTOR WORK AREA SHALL BE CLEARLY DELINEATED AND FENCED OFF TO PREVENT PUBLIC ENTRANCE, WHILE STILL MAINTAINING STORE ACCESS AT ALL TIMES DURING CONSTRUCTION.
4. CONTRACTOR SHALL SECURE ANY CITY PERMITTING RELATED TO TRAFFIC CONTROL INCLUDING PROVIDING TRAFFIC CONTROL PLANS, CITY RIGHT OF WAY WORK, AND KING METRO FOR WORK NEAR THE BUS STOP WHICH MAY REQUIRE WEEKEND WORK.
5. CONTRACTOR SHALL OBTAIN ALL PERMITS NECESSARY FOR CONSTRUCTION WITHIN THE RIGHT-OF-WAY AND MAINTAIN FULL ACCESS TO THE BUS STOP AT ALL TIMES DURING CONSTRUCTION.
6. PIPE ROUTING IS APPROXIMATE. CONTRACTOR SHALL PROVIDE INDIVIDUAL LINES TO EACH WELL PER P&ID DRAWINGS.
7. CONTRACTOR SHALL SUBMIT A WORK SEQUENCING PLAN DESCRIBING THE METHOD IN WHICH ALL REQUIRED ACCESS POINTS SHALL BE PROPERLY MAINTAINED. DETAILS ON THE WORK SEQUENCING PLAN REQUIREMENTS ARE INCLUDED IN SPECIFICATION SECTION 01 33 00.

LEGEND

- WELL TO BE USED FOR EXTRACTION/INJECTION (NEW AND EXISTING, SEE NOTE 1 AND WELL TABLES ON SHEET C-01)
- EXISTING WELL NOT USED FOR EXTRACTION/INJECTION
- NEW SLANT WELL (SEE NOTE 2)
- EXTRACTION AND INJECTION PIPING
- SUB-SLAB DEPRESSURIZATION PIPING
- SUB-SLAB DEPRESSURIZATION WELL
- APPROXIMATE EXTENT OF TRENCH
- CHAIN LINK FENCE
- VAPOR MONITORING PIN (SEE NOTE 3)
- SITE AND STORE ACCESS AREAS
- APPROXIMATE LOCATION OF STAGING AREA

SPILL CONTAINMENT & CONTROL PLAN

GLACIER ENVIRONMENTAL SERVICES

7509 212th Street SW
Edmonds, WA 98020

November 2023

- A — Storage & Fueling Areas
- B — Pre-existing Contamination-Petroleum
- C — Spill Kit Location

ISSUED FOR BID

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS. USERS OF THIS DOCUMENT IN EDITABLE ELECTRONIC FORMATS ARE CAUTIONED AGAINST USE WITHOUT FIRST DETERMINING WHETHER CHANGES MAY HAVE BEEN MADE SUBSEQUENT TO ITS PREPARATION.

NO	REVISION	DATE	BY

SCALES
0 — 1"
0 — 25mm
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.

BENJAMIN EDWARD FUENTES — STATE OF WASHINGTON — 98495 — REGISTERED PROFESSIONAL ENGINEER

DESIGNED CMW
DRAWN CMW
CHECKED BEF

DEPARTMENT OF ECOLOGY State of Washington

WASHINGTON STATE DEPARTMENT OF ECOLOGY
BELLEVUE, WASHINGTON
CIRCLE K SITE 1461 ENVIRONMENTAL REMEDIATION SYSTEM INSTALLATION
SEATTLE, WASHINGTON

Kennedy Jenks

SITE PLAN STAGING AREAS

SCALE 1" = 10'
JOB NO 2196008.00
DATE OCTOBER 2022
SHEET 7 OF 19
C-02

File: C:\bms\kjce-pwd\01815742\196008\00-C-02.dwg

Construction Quality Assurance & Quality Control Plan (QAQCP)

Project: Circle K Site 1461

Prepared for:
WA Department of Ecology

Prepared by:
Glacier Environmental Services, Inc.
7509 212th Street SW
Edmonds, WA 98026

December 2023

1.0 Quality Objectives & Policies

This document establishes the Quality Control Plan to be instituted by Glacier Environmental Services, Inc. (Glacier) during construction of the multi-phase extraction and groundwater recirculation system for the Circle K 1461 Site. It is intended to comply with the requirement Specification in Section 01 33 00 1.04.A.1 of the Project Manual.

1.1 Quality Objectives

This plan is the Glacier project team's documentation of the organizational structure, functional responsibility, levels of authority, and lines of communication for the activities that affect quality. Quality is everyone's responsibility. All team members who perform quality functions have sufficient authority, access to work areas, and organizational freedom to:

1. Verify that all provisions have been made to provide required control testing.
2. Monitor the design, and contractors daily work progress.
3. Check dimensional requirements.
4. Visually inspect materials received on site for proper documentation, completeness, and condition.
5. Observe all required test such as mechanical and electrical to verify that they are in compliance with the specifications.
6. Ensure the completion of all deficiencies in materials and workmanship in a timely manner.
7. Maintain a document control file.
8. Work closely with all testing agencies to verify that all required test are able to be preformed.

1.2 Quality Polices

Glacier's Quality Control Plan will ensure a uniform high-quality level of workmanship through all phases of construction, including planning, construction, and turnover. To meet this goal the following principles will be observed:

1. Ensure the highest level of quality by maintaining supervised controls and written instructions governing Quality Control procedures and practices.
2. Establish clearly defined responsibility and authority for compliance.
3. Meet contractual requirements by conformance to Contract Document and applicable standards.
4. Complete and maintain accurate records of inspections and tests.

5. Identify and advise Glacier and Engineer of quality related non-conformance for timely corrective action. Ensure that corrective action is properly implemented and documented.

6. Maintain procedures to ensure that quality requirements are communicated to all levels of the field organization, including subcontractors.

It is the intent of the plan that the function of quality control be one of cooperation. It is not the responsibly of the quality control staff to police the job, but to provide review and assistance to the operations staff (including subcontractors) to enable those involved to achieve a quality end product.

2.0 Quality Control Organizational Structure

Project QC Coordinator	Thayne Wastman	Glacier Environmental Services, Inc.	TWastman@glacierenviro.com 206.793.3713
Company QC Manager/ Owner	Lauren Golembiewski	Glacier Environmental Services, Inc.	LMiles@glacierenviro.com 425.268.9775
Client Representative	Dale Myers	WA Dept. of Ecology	DAMY461@ECY.WA.GOV 425-389-2521
Engineer Representative	Ryan Hultgren	Kennedy Jenks	RyanHultgren@KennedyJenks.com 253-835-6432

3.0 Quality Control Team Responsibilities

Quality Control Coordinator

- The Quality Control Coordinator reports to the Client & Engineer for coordination of all quality control activities.
- Establish and maintain documented procedures to control documents and data that relate to quality assurance for the construction work.
- Administer and implement, as required, the written procedures and instruction contained in this manual.
- Coordinate with inspectors and all testing and field personnel to assure compliance with all quality control requirements of the contract documents.
- Attend coordination meeting with subcontractors and suppliers to ensure quality requirements are followed.
- Verify that quality control efforts of subcontractors and suppliers correspond with the overall quality control plan.
- Monitor the activities of the independent testing laboratories (if any).
- Perform monthly audits of subcontractor as built drawings.

Project Superintendent (for this project QC Coordinator/Superintendent)

- The Project Superintendent is responsible for all field activities, and ensures that all construction is performed in accordance with the contract requirements.

- The Project Superintendent will develop schedules as required, maintain daily work records, oversee and coordinate subcontractors, field testing, inspections, and enforce project safety procedures.

4.0 Design Development Quality Control

Glacier will review the drawings during each stage of construction to ensure constructability and functionality. These reviews will also be used to ensure that schedule and budget remain in compliance with the original contact.

Glacier will coordinate and facilitate meetings with Design Team and System Manufacturer, Product Recovery Management, Inc., to ensure that system functionality meets the intent of the design. Glacier will maintain and update a set of drawings Drawings and Specifications with actual construction for the Project Record, in accordance with Section 00 72 00, 4.02.

5.0 Site Access and Control

Access to the onsite businesses will be maintained during construction. Work will be staged and secured for pedestrian and visitor safety. Store access for fire and police departments will be maintained at all times.

During drilling activities the parking lot will remain mostly open to vehicular and pedestrian traffic. The work area immediately surrounding the drilling will be cordoned off with delineators and caution tape.

Trenching and excavation for underground pipe installation will be completed in phases to limit impacts to the parking lot. Use of delineators, caution tape, signage and temporary fencing as needed will be used to designate vehicular and pedestrian pathways. Whenever possible trenches will be backfilled each day to limit open excavations, in the event a trench must remain open it will be covered with non-skid steel plates.

At minimum, Glacier will provide 4 parking spaces for store patrons. If possible, those spaces will be in the existing parking lot, however during restoration of asphalt and placement of the treatment system equipment it may be necessary to provide those spaces as offsite street parking; in which case Glacier will obtain a Street Use Permit for the designated parking spaces of East McGraw Street.

6.0 Primary Elements of Work

6.1 Well Drilling

Cascade Drilling will perform vertical and angled well drilling using hollow stem auger and a limited access sonic rig. Angled wells installed in the Right-of-Way will be performed on the weekend.

6.2 Excavation & Trenching

Excavation is limited to trenching for treatment system conveyance piping and possibly to establish footings for the treatment building. Trenches will vary from 1-2 feet wide and approximately 3 feet deep. Trench spoils will be temporarily stockpiled for offsite disposal or reuse. Imported materials will be used to bed pipes and backfill the excavation.

6.3 Treatment System Installation

Product Recovery Management Inc of North Carolina will provide the Dual Phase Extraction System. A majority of the system components will be contained within an 8x20 foot shipping container, modified for use as a treatment building. A crane will be used to offload and set the system building. Additional components of system including tanks and carbon vessels will be offloaded and placed using a reach forklift.

6.4 Electrical

SHJ Electric of Lakewood will be subcontracted to perform the electrical scope. This includes coordination with Seattle City Light (SCL) for a new service connection.

6.5 Site Restoration

All trenches will be backfilled, and surface restored in accordance with the plans and specifications. Any areas of landscaping disturbed will be restored to pre-construction conditions.

7.0 Construction Inspection and Testing

Inspection of materials and work in progress will be the responsibility of the Glacier Superintendent/QC Coordinator and special inspectors to ensure that the work conforms to the contract documents.

Glacier will use the following three-point inspection plan for field inspections:

- Prior to starting work a pre-work coordination meeting will be held. Attendees will include Supervisory, Quality Control and safety personnel from both Glacier and our proposed subcontractors. At a minimum the meeting will cover contract, submittal, quality control, training and safety requirements of the contract documents.

- During construction the Glacier Supervisor will monitor the work on a daily basis to assure the continuing conformance of the work.

- Once the work is complete the Glacier Quality Control Coordinator and Project Engineer will conduct a completion inspection, and any deficiencies will be noted and corrected.

7,1 Pipe Testing

All underground piping will be tested for leakage after backfill, prior to paving in accordance with Specification 33 14 16.13 and following schedule:

Piping Test Schedule				
Legend	System	Test Pressure	Test Medium	Allowable Leakage
Biovent Vacuum	HDPE PVC	20 in HG	Air	No more than 3 psi due to temperature drop. 2-hour duration.
Biovent Pressure	PVC Flex Hose	10 PSI	Air	No more than 3 psi due to temperature drop. 2-hour duration.
Vapor Liquid separator	PVC	1.5x transfer pump rated shut-off head or min 30 psi	Water	None
Groundwater Treatment	HDPE PVC	1.5x transfer pump rated shut-off head or min 30 psi	Water	None

7.2 Well Development Testing

After completion of initial well development, well development will continue in accordance with specification **33 11 53.13** using a test pump capable of pumping up to 5 gpm and equipped to throttle flow between 0 and 5 gpm. A totalizing flow meter will be utilized to record the instantaneous flow rate and total volume during development.

Quality Parameters will be recorded on the Well Development Report Form, including:

1. Flow rate (gpm)
2. Temperature (± .1 degrees Fahrenheit)
3. pH (± .01 standard units)
4. Dissolved Oxygen (DO) (± .01 milligrams per Liter (mg/L))
5. Oxidation-Reduction Potential (ORP) (± .1 millivolts (mV))
6. Specific Conductance (EC) (± 1 micro Siemens (µS/cm))
7. Turbidity (± 1 NTU)
8. General Observations: Color, odor, sheen, and other observations of note.

7.3 Well Performance Testing

Performance testing of the extraction/injection wells will be conducted upon startup of the system. The objective of the performance testing is to determine the vacuum/flow relationship for each well screen. The performance testing will follow the procedures of Specification Section **01 77 00** Paragraph 3.02.

Final System sampling will include collection of vapor VOC readings from SSD wells and vapor monitoring pins using a low-detection PID and Four Gas Monitor.

7.4 Concrete & Anchor Testing & Inspection

Subcontracted Structural Engineer, Swenson Say & Faget, will provide an anchoring plan for securing the system and exterior components. This plan will likely include concrete footings and anchor bolts. They will provide a specification for concrete strength tests and tension testing the anchors as necessary.

7.5 Factory Testing

PRM will test all components of the Treatment System prior to shipment to the site. Factory performance test reports will be provided to the Engineer for approval prior to shipment. This equipment is manufactured out of state, PRM will make arrangements for the Engineer to visit

their shop prior to shipment, or will make arrangements to provide photo or video documentation as requested. In addition to performance testing, PRM will also measure the operating sound level of the system to determine if additional noise suppression will be required.

8.0 Material Inspections

All materials, equipment etc. to be incorporated into the work will be subject to periodic inspection by the Quality Control Staff.

8.1 Import & Native Backfill Soils Testing

Trenches and decommissioned vaults will be backfilled using import and native materials (if suitable). Gradation analyses will be provided for each type of import in accordance with ASTM D1241. The independent materials testing laboratory, Krazan & Associates, Inc., will collect proctor samples of all materials to be compacted in accordance with ASTM D1557 and submit optimum moisture content, and maximum dry density information.

Import materials will also be tested for contaminates by a third party chemical testing laboratory for: Semi-Volatile Organic Compounds (SVOCs) by EPA Method 8270; Volatile Organic Compounds (VOCs) by EPA Method 8260B; Polychlorinated Biphenyls (PCBs) by EPA Method 8082; Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270 in selected ion monitoring (SIM) mode; Organochlorine Pesticides by EPA Method 8081A; RCRA 8 Metals by EPA 6010 and by EPA 7471; and Total Petroleum Hydrocarbons (TPH) by NWTPH-Dx (without Silica Gel Cleanup) and NWTPH-Gx.

Soil that is structurally suitable for use as backfill will be field screened; if field screening indicates the soil is clean, laboratory analysis will be performed for: VOCs by EPA Method 8260B; RCRA 8 Metals by EPA 6010 and by EPA 7471; and TPH by NWTPH-Dx (without Silica Gel Cleanup) and NWTPH-Gx. Only soils that meet the standard for Unrestricted Land Use per Ecology Table 740-1 will be considered for reuse. It is very likely that the amount of soil generated will not be enough to justify the effort of chemical testing for reuse, in which case all backfill material would be imported.

8.2 Testing of Soil & Water for Disposal Profiling

Soil cuttings generated during well installation will be collected in 55 gallon drums. At least 2 soil samples will be collected from each boring, field screened (PID, sheen, visual and odor), and submitted for laboratory analysis. Additional details on soil sample collection from borings will be provided under separate cover in the Well Installation Plan. Laboratory analysis for all soil samples will include testing for gasoline-range hydrocarbons by method NWTPH-Gx and BTEX constituents by EPA method 8260B. In addition, at least 5 of these samples will also be analyzed for Volatile Organic Compounds (VOCs) by EPA Method 8260B, RCRA 8 Metals by EPA Method 6010 (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and by EPA Method 7471 (mercury), and TPH by NWTPH-Dx (without Silica Gel Cleanup) (number of samples is based on *Guidance for Remediation of Petroleum Contaminated Sites, Washington State Department of Ecology Pub. No. 10-09-057*).

Water generated during well drilling, development and testing will be collected in 55 gallons drums. A composite sample of water will be collected for profiling. The water will be sampled and analyzed for VOCs by EPA Method 8260B, RCRA 8 Metals by EPA Method 6010 (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and by EPA Method 7470 (mercury),

TPH by NWTPH-Dx (without Silica Gel Cleanup), NWTPH-Gx and Polychlorinated Biphenyls (PCBs) by EPA Method 8082.

8.3 Asphalt and Concrete Testing

Krazan will also perform in-place compaction testing in accordance with ASTM D1556 or ASTM D2922 for every 100LF of trench and 100SF of asphalt replacement. Structural Concrete will be tested for compressive strength in accordance with ASTM C39.

9.0 Documentation for Non-Conformities

Quality Control inspections will be conducted during the work and deficiencies noted and reported to the Client and Engineer. Once the deficient item has been corrected and reinspected, the inspector will sign off the deficient item. The intent of this pro-active approach towards quality is to identify problems at the earliest stage possible so that timely and cost-effective actions can be taken.

10.0 Documentation Records

Quality Control Records will be maintained by the Glacier Quality Control Coordinator. Daily field reports in accordance with Section 01 45 00, 2.01 will be completed. The quality control records will be protected from deterioration or damage throughout the period of the contract. During construction as built drawings will be maintained onsite, and updated as changes occur. Upon completion of the work Glacier will provide the owner with as built drawings in accordance with the project specifications.

Glacier will document all inspections and tests performed and provide Client with records of such inspections and tests. These records shall include factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, proposed corrective action; and corrective actions taken.

Third party testing and specialty inspection reports will be submitted to the Client and Engineer.

ENVIRONMENTAL PROTECTION PLAN

CIRCLE K SITE 1461
SEATTLE, WASHINGTON

Prepared by:

Glacier Environmental Services, Inc.
7509 212TH St SW
Edmonds, WA 98026

Prepared for:

DEPARTMENT OF
ECOLOGY
State of Washington

February 2024

ENVIRONMENTAL PROTECTION PLAN

CIRCLE K SITE 1461
SEATTLE, WASHINGTON

1 Purpose

As part of its dedication to environmental responsibility, Glacier Environmental Services, Inc. (Glacier) is committed to using construction methods and practices that reduce or eliminate environmental pollution. The purpose of this Environmental Protection Plan (EPP) is to present a comprehensive overview of known or potential environmental issues that will be addressed by Glacier during the Circle K Site 1461 Environmental Cleanup in Seattle, Washington.

The EPP is a working document that will be continually reviewed by management to ensure its continuing suitability, adequacy and effectiveness. This review will include an evaluation of policies and procedures, which ensure ongoing identification, evaluation, and implementation of pollution prevention opportunities.

This plan is intended to meet the submittal requirements of Sections 01 99 00 (Environmental Protection), 01 57 19.13 (Noise Control), and 01 35 43.10 (Green Construction Practices) of the project specifications.

All operations will comply with all federal, state, and local regulations pertaining to water, air, solid waste, and noise pollution. The following rules and regulations that apply to this work include, but are not limited to:

1. Chapter 173-303 WAC Washington State Dangerous Waste Regulations
2. Chapter 173-340 WAC Model Toxics Control Act Cleanup Regulations.

2. Responsibilities

Project Manager – Lauren Golembiewski, Glacier's Project Manager will have overall responsibility for preparation, and implementation of the EPP. Working with on-site personnel, she will continually identify and submit for approval any additional requirements to be included in the EPP.

Superintendent – Thayne Wastman, the Glacier Site Superintendent will be responsible for ensuring day-to-day compliance to the EPP. Thayne will be physically present at the site during all work and will be ultimately responsible for inspecting control measures and correcting deficiencies. He will ensure training sessions are conducted so that Glacier and subcontract employees are familiar with the provisions of the EPP, the use of specialized equipment and materials, and the pollution countermeasures contained herein.

Craft Labor Personnel – All site personnel will be responsible for being knowledgeable of the provisions of this EPP and will report any noted deficiency, spill or event that could adversely affect human health or the environment.

3. Training

Glacier site personnel have been instructed by management in the operation and maintenance of pollution control equipment and pollution control laws and regulations. The training course outline includes:

- Understanding the regulatory and legal structure;
- understanding the responsibilities to report and respond;
- consequences on not properly reporting or responding;
- elements of a Spill Prevention, Control and Countermeasures (SPCC) Plan;
- recognition of potential spill problems;
- spill planning for construction sites;
- recognition of spill pathways; spill prevention measures and techniques;
- required actions for spill reporting.

During safety briefings, spill prevention will be discussed. Any near misses or incidents will be discussed to prevent them from reoccurring. Employee feedback and recommendations are encouraged in spill prevention and operation. Sign-in sheets, which included the topics of discussion at each meeting, are maintained for documentation.

4. Permits and Notifications

Glacier has obtained a Utility Major Permit from the Seattle Department of Transportation for the well drilling and trenching in the Right of Way. Notification procedures are outlined in the Permit Conditions.

Glacier is currently in the process of obtaining a Construction Building Permit from the Seattle Department of Construction, which will be required for trenching and the treatment building.

5. Protection of Existing Features

5.1 General

Field activities will be limited to the areas defined by the project specifications and drawings. Areas that are not to be disturbed will be clearly marked or delineated by fence by or other barrier.

Except as specified, Glacier will not remove, cut, deface, or destroy land resources including trees, shrubs, vines, etc. These features will be clearly marked, wrapped, or otherwise protected.

Monuments and markers will be protected at all times and marked with high visibility tape. Site workers will be advised as to the purpose of the markings and/or protecting particular objects.

Upon completion, Glacier will obliterate all signs of temporary construction such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction as directed by Ecology. Haul roads will be kept clear at all times of any object that creates an unsafe condition. Any contaminants or construction material dropped from construction vehicles will be promptly cleaned up. Streets adjacent the site will be swept clean as necessary.

5.2 Preconstruction Survey

Prior to the start of on-site activities, the Glacier Superintendent will conduct a survey of existing site conditions. Photographs will be taken as part of the survey. Glacier will prepare a brief report indicating the condition of trees, shrubs, sidewalks, pavement and buildings onsite and adjacent to the work site.

5.3 Trees, Shrubs

Glacier will not remove, cut, deface, injure or destroy trees or shrubs outside the work area limits, or remove, deface, injure or destroy trees within the work area. Landscaped areas will be restored per the plans and specifications.

Glacier will protect street trees that are located in the Right of Way using temporary barricades per Seattle Standard Detail 132B.

5.4 Cultural Resources

The project does not pass through any known archaeological sites. However, it is always possible that unrecorded archaeological sites could be discovered during the construction. In the event that artifacts, human remains, or other cultural resources are discovered during excavations at locations of the Work, Glacier will protect the discovered items, notify Ecology, and comply with applicable law.

Glacier has notified the Snoqualmie Indian Tribes Department of Archaeology and Historic Preservation of the drilling activities and will provide a secondary notification before trench excavation begins. Employees will review the Inadvertent Discovery Plan (**Appendix A-03 of the Bid Specification**).

Glacier will immediately stop work and notify the Engineer if any artifacts or other archaeological resources are unearthed during excavation or otherwise discovered on the construction site. Work stoppage will remain in effect until permission to proceed has been granted by Ecology.

If human remains are discovered, work will cease in the area of discovery and notification made to Ecology, local law enforcement, and coroner (Reference: RCW 27.44.055).

a. City of Seattle Police, Non-Emergency No.:**(206) 625-5011**

b. King County Sheriff, Non-Emergency No.: **(206) 296-3311**

c. King County Medical Examiner No.: **(206) 731-3232x4**

d. Police Emergency No. **911**

6. Sedimentation and Erosion Control

The worksite is generally paved and is less than 1 acre; therefore, the is no requirement for an NPDES Permit or of full Stormwater Pollution Prevention Plan. Glacier has developed a Construction Stormwater Control Plan Per City of Seattle Standards, attached as Appendix A. Glacier will use BMPs including inlet protection (catch basin socks) and wattles to control stormwater runoff.

7. Air Quality

With the exception of nuisance dust, it is not anticipated that the project will be the source of air emissions affecting human health or the environment**.**

Dust may be produced on site as a result of construction activities and as a result of the wind. Dust suppression techniques will be employed, including the used of water sprays, as needed. No significant concentration of acutely toxic solids, that could become airborne, is anticipated.

8. Noise Pollution

Potential sources of noise pollution include:

- Concrete/asphalt slab sawing and breaking;
- Well Drilling
- Truck Traffic;
- Slamming Truck Gates;
- Service Vehicles and Heavy Equipment (backup alarms);
- Drilling, sawing, hammering, etc.

All reasonable measures will be employed for the suppression of noise resulting from the work. Construction equipment will be fitted with exhaust silencers (mufflers) and shut off when not being used.

Noise limitations shall be in compliance with the City of Seattle's noise ordinance (City of Seattle Municipal Code, Chapter 25.08).

Construction activities are generally permitted:

- 7:00 a.m. - 7:00 p.m., weekdays
- 9:00 a.m. - 7:00 p.m., weekends and legal holidays*

Impact activities (pile driving, jackhammers, etc.) is limited to:

- 8:00 a.m. - 5:00 p.m., weekdays
- 9:00 a.m. - 5:00 p.m., weekends and legal holidays*

Noise related to Treatment System Operation

The treatment system contains multiple motors and pumps that will produce noise pollution. The treatment system installed will meet the Leq noise level limitation of 60 dBA specified for commercial properties. The only equipment that will exceed that level is the Liquid Ring Pump located inside the container. The LRP has an integral silencer package and will be placed on a 3/4" rubber pad to prevent vibration transfer. The treatment building has been insulated with R-10 2-inch foam board and plywood sheathing which will provide some level of noise insulation. All vents in the room with LRP will be fitted with sound hoods.

PRM will measure the sound level of the system during their testing operation and report to Glacier. Once onsite, Glacier will measure sound levels using a decibel meter. Additional modifications to the container or system will be addressed if the Leq exceeds 60 dBA.

9. Site Security & Temporary Facilities

Glacier recognizes the need to keep the businesses on the site in operation and provide safe access for patrons. The work will be phased so that only portions of the site are inaccessible at any one time. Four parking spaces will be provided for employees and customers at all times. If adequate parking is not available onsite during a particular phase of work, Glacier will establish "No Parking" spaces on E. McGraw to designate for employee parking.

During drilling operations the restricted areas will be limited to the immediate vicinity of the well being drilled; support vehicles (trailers) will be stored offsite.

Glacier plans to begin trenching activities on the north end and work south. Glacier will limit the access to the south driveway on 24th Ave E while trenching is taking place on the north end. Trench sections will be completed and backfilled up to grade so that areas of the parking lot can be reopened and utilized after hours. The additional backfill will be removed prior to final paving. Non-

skid steel plates will be used if needed to cover any trenches that cannot be backfilled to grade temporarily. When the treatment system is being delivered and additional equipment installed, access will be limited to the north driveway off E. McGraw.
Glacier will utilize delineators, caution tape, and fencing as necessary to protect the work area and provide a clear and safe path for customers/patrons. Equipment will be staged in one centralized location when not in use, all small tools will be removed from the site each day or stored in a locked toolbox. Glacier will keep piping materials neatly stockpiled and secured in the designated laydown area under the building eaves.

10. Spill Prevention and Control

Properly managing hazardous and toxic substances and petroleum products at the project site will greatly reduce the potential for spills or pollution. Good housekeeping practices, along with proper use and storage of these substances form the basis of proper management. Following is a list of good housekeeping practices to be implemented during construction:

- Storage of hazardous materials, chemicals fuels and oils and fueling of construction equipment will not take place within 100 feet of any drainage, wetland, spring or other water feature.
- An effort will be made to store only enough fuel and lubricants as necessary to complete the job.
- Materials stored on-site will be stored in their appropriate containers on a level site and covered.
- Products will be stored in tightly sealed containers with the original manufacturer's label.
- Substances will not be mixed with on another unless recommended by the manufacturer.
- Whenever possible, the entire product will be used before it's container is discarded
- Manufacturer's recommendation for proper use and disposal of a product will be followed.
- If surplus product must be disposed of, the manufacturers or local and state recommended methods for proper disposal will be followed.

Additional spill prevention and control measures are detailed in the Spill Prevention Control and Containment Plan for the Project.

11. Green Remediation

Glacier is committed to leading the industry in minimizing the impact of our activities on the environment. Key strategies that aid in this effort include utilizing diesel-powered equipment that meets EPA Tier 4 standards, fueled with Ultra Low Sulfur (ULS) diesel. To reduce emissions, our company policy is to not allow equipment and vehicles to sit idle for more than 3 minutes. Our general practice is to segregate demolition debris including asphalt and concrete for recycling.

In addition to our field operations, our business practices include increased communications and reporting via email and electronic recordkeeping, use of EnergyStar office equipment, and recycling policies. We will make an effort to reduce onsite waste by composting food waste, recycling, and using refillable water bottles.

Glacier will utilize the BMPS in Table 01 35 32-1, attached, whenever possible.

CONSTRUCTION STORMWATER CONTROL (CSC) GENERAL NOTES

1. A FIRST GROUND DISTURBANCE INSPECTION IS REQUIRED PRIOR TO START OF WORK ON ALL SITES WITH LAND DISTURBING ACTIVITY.
2. SCHEDULE A FIRST GROUND DISTURBANCE INSPECTION FOR AN ISSUED BUILDING PERMIT AT 206-684-8900 OR ONLINE AT WWW.SEATTLE.GOV/DPD/PERMITS/INSPECTIONS/
3. THE APPLICANT SHALL DESIGNATE AN EROSION AND SEDIMENT CONTROL (ESC) SUPERVISOR WHO SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS). FOR LARGE CONSTRUCTION PROJECTS, THE ESC SUPERVISOR SHOULD BE A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (CESCL). PROVIDE THE NAME AND PHONE NUMBER OF THE ESC SUPERVISOR TO THE SITE INSPECTOR AT THE FIRST GROUND DISTURBANCE INSPECTION.
4. BMPS SHALL BE INSTALLED PRIOR TO STARTING CONSTRUCTION TO ENSURE SEDIMENT-LADEN WATER DOES NOT LEAVE THE PROJECT SITE OR ENTER ROADSIDE DITCHES, STORM DRAINS, SURFACE WATERS, OR WETLANDS.
5. THE BMPS INCLUDED IN THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. THE APPLICANT IS RESPONSIBLE FOR ENSURING THAT BMPS ARE MODIFIED AS NEEDED FOR UNEXPECTED STORM EVENTS OR OTHER UNFORESEEN CIRCUMSTANCES, AND TO ACCOUNT FOR CHANGING SITE CONDITIONS.
6. ANY AREAS OF DISTURBED SOIL THAT WILL NOT BE WORKED FOR TWO CONSECUTIVE DAYS DURING THE WET SEASON (OCT 1 TO APRIL 30) OR SEVEN DAYS DURING THE DRY SEASON (MAY 1 TO SEPT 30) SHALL BE IMMEDIATELY STABILIZED WITH APPROVED BMPS METHODS (E.G. STRAW, MULCH, PLASTIC COVERING, COLD MIX, ETC.)
7. GRADING AND/OR SOIL DISTURBING ACTIVITIES MAY BE LIMITED OR PROHIBITED FOR CERTAIN SITES SUBJECT TO ECA STANDARDS (I.E. ECA STEEP SLOPES, LANDSLIDE PRONE AREAS, ETC.) BETWEEN OCTOBER 31ST AND APRIL 1ST. IF NOTED IN THE GEOTECHNICAL SPECIAL INSPECTIONS REQUIREMENTS, A GRADING SEASON EXTENSION LETTER (GSEL) ISSUED BY SDCI IS REQUIRED FOR ALL GRADING AND/OR SOIL DISTURBING ACTIVITIES DURING THIS PERIOD. THE GEOTECHNICAL SPECIAL INSPECTOR MUST SUBMIT ELECTRONIC APPLICATIONS FOR A GSEL USING THE SDCI PROJECT PORTAL. ALLOW FOUR TO SIX WEEKS FOR PROCESSING. FAILURE TO OBTAIN THE GSEL PRIOR TO OCTOBER 31 MAY RESULT IN A WORK STOPPAGE.
8. CITY STREETS AND SIDEWALKS SHALL BE KEPT CLEAN AT ALL TIMES. NO MATERIAL SHALL BE STORED ON CITY STREETS OR SIDEWALKS WITHOUT A STREET USE PERMIT FROM THE SEATTLE DEPARTMENT OF TRANSPORTATION (SDOT).
9. POLLUTION CONTROL MEASURES SHALL BE FOLLOWED TO ENSURE THAT NO LIQUID PRODUCTS OR CONTAMINATED WATER ENTERS ANY STORM DRAINAGE FACILITIES OR OTHERWISE LEAVES THE PROJECT SITE. ANY HAZARDOUS MATERIALS OR LIQUID PRODUCTS THAT HAVE THE POTENTIAL TO POLLUTE RUNOFF SHALL BE STORED AND DISPOSED OF PROPERLY.
10. ENSURE THAT WASHOUT FROM CONCRETE TRUCKS IS PERFORMED OFF-SITE OR IN DESIGNATED CONCRETE WASHOUT AREAS ONLY. DO NOT WASH OUT CONCRETE TRUCKS ONTO THE GROUND, OR TO STORM DRAINS OR OPEN DITCHES. DO NOT DUMP EXCESS CONCRETE ONSITE, EXCEPT IN DESIGNATED CONCRETE WASHOUT AREAS.
11. ALL AREAS OF DISTURBED SOIL SHALL BE FULLY STABILIZED WITH THE APPROPRIATE SOIL AMENDMENT AND COVER MEASURES AT COMPLETION OF THE PROJECT. TYPICAL COVER MEASURES INCLUDE LANDSCAPING OR HYDROSEED WITH MULCH.

CONSTRUCTION STORMWATER CONTROL (CSC) PLAN REQUIREMENTS / NARRATIVE

THIS PLAN IS REQUIRED FOR ALL PROJECTS WITH GREATER THAN 750 SQUARE FEET OF LAND DISTURBING ACTIVITIES.

SHOW TEMPORARY AND PERMANENT BEST MANAGEMENT PRACTICES (BMPS) IN THE PLAN VIEW OF THIS SHEET THAT WILL ACCOMPLISH THE MINIMUM REQUIREMENTS DESCRIBED IN THE NARRATIVE BELOW.

THE BMPS SHOWN IN THE PLAN VIEW OF THIS PLAN ARE THE MINIMUM REQUIRED. ADDITIONAL BMPS ARE REQUIRED WHEN MINIMUM CONTROLS ARE NOT SUFFICIENT TO PREVENT EROSION OR TRANSPORT OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE.

- MARK CLEARING LIMITS
- DELINEATE ENVIRONMENTALLY CRITICAL AREAS
- RETAIN TOP LAYER AND NATIVE VEGETATION
- ESTABLISH CONSTRUCTION ACCESS
- PROTECT DOWNSTREAM PROPERTIES AND RECEIVING WATERS
- PREVENT EROSION AND SEDIMENT TRANSPORT FROM THE SITE
- STABILIZE SOILS
- PROTECT SLOPES
- PROTECT STORM DRAINS
- STABILIZE CHANNEL AND OUTLETS
- CONTROL POLLUTANTS
- CONTROL DEWATERING
- MAINTAIN AND INSPECT BMPs
- EXECUTE CONSTRUCTION STORMWATER CONTROL PLAN
- MINIMIZE OPEN TRENCHES
- PHASE THE PROJECT
- INSTALL PERMANENT FLOW CONTROL AND WATER QUALITY FACILITIES
- PROTECT STORMWATER BMPs PRIOR TO, DURING, AND AFTER CONSTRUCTION

COMPLETE CONSTRUCTION STORMWATER CONTROL BMP DETAILS AND REQUIREMENTS ARE LOCATED IN DIRECTOR'S RULE DPD DR 21-2015, CHAPTER 4, VOLUME 2: CONSTRUCTION STORMWATER CONTROL, OF THE SEATTLE STORMWATER MANUAL. SHOW ALL BMPS ON THIS PLAN SHEET THAT WILL BE USED TO ACHIEVE THE REQUIREMENTS ABOVE.

POST CONSTRUCTION SOIL MANAGEMENT PLAN

AT THE END OF PROJECT, ALL AREAS DISTURBED AND NOT COVERED WITH A HARD SURFACE MUST BE AMENDED PER THE SOIL AMENDMENT DETAIL BELOW AND PROBE TO 12-INCHES AT THE SITE FINAL INSPECTION.

- LABEL ALL AREAS DISTURBED AND NOT COVERED WITH A HARD SURFACE WITHIN THE SITE AS ONE OF THE FOLLOWING: SA (SOIL AMENDMENT AREA) or ND (NON-DISTURBED AREA). SEE DEFINITIONS BELOW. DO NOT REFERENCE AN ALTERNATE PLAN SHEET.
- AN ESTIMATE OF THE VOLUME OF COMPOST REQUIRED IS AUTOMATICALLY CALCULATED ON THE SITE AND DRAINAGE CONTROL SUMMARY SHEET REQUIRED ON THE DRAINAGE AND WASTEWATER CONTROL PLAN (DWC PLAN). THE ACTUAL VOLUME OF COMPOST REQUIRED WILL BE DETERMINED IN THE FIELD.

DEFINITIONS:

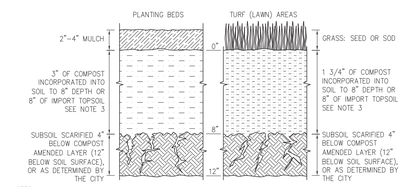
- NON-DISTURBED AREA (ND): VEGETATED AREAS THAT WILL NOT BE SUBJECT TO LAND DISTURBING ACTIVITY (SEE D) DO NOT REQUIRE SOIL AMENDMENT IF THEY ARE FENCED AND CONTINUOUSLY PROTECTED THROUGHOUT CONSTRUCTION. THE FENCING MUST BE IN PLACE AT THE FIRST GROUND DISTURBANCE INSPECTION. THIS WILL BE MONITORED BY THE DPD SITE INSPECTOR. NO DISTURBANCE, INCLUDING VEHICLE TRAFFIC OR MATERIAL STORAGE, IS ALLOWED IN THESE AREAS UNTIL FINAL INSPECTION. LABEL THESE AREAS AS (ND) IN THE PLAN VIEW.
- SOIL AMENDMENT AREA (SA): VEGETATED OR COMPOST AREAS (TURF AND LANDSCAPE) MUST BE AMENDED PER THE SOIL AMENDMENT DETAIL AND THE SUBSOIL MUST BE LOOSENED SO IT WILL PROBE TO A DEPTH OF 12 INCHES PRIOR TO SITE FINAL INSPECTION. THIS INCLUDES AREAS IMPACTED BY CLEARING AND GRADING, STOCKPILING, SITE ACCESS, PATHWAYS AND MATERIALS OR EQUIPMENT STORAGE. LABEL THESE AREAS AS (SA) IN THE PLAN VIEW.

ESTIMATED COMPOST REQUIRED FOR SOIL AMENDMENT

ONLY COMPLETE THE FOLLOWING CALCULATION IF A DRAINAGE AND WASTEWATER CONTROL PLAN (DWC PLAN) IS NOT REQUIRED (E.G. SUBJECT TO FIELD INSPECTION (STFI) DEMOLITION PERMITS)

_____ (SQUARE FEET) X 0.0062 = _____ (CUBIC YARDS)
AREA REQUIRING AMENDMENT (SA) — REQUIRED COMPOST

SOIL AMENDMENT

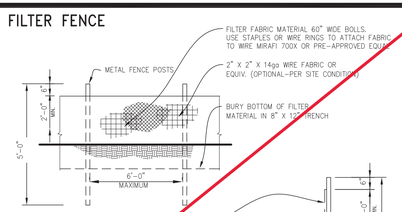


NOTES:

1. POST CONSTRUCTION SOIL AMENDMENT IS REQUIRED ON ALL AREAS NOT COVERED BY IMPERVIOUS SURFACE WHERE SOIL IS DISTURBED DURING CONSTRUCTION.
2. SOIL AMENDMENT MUST PASS A 12 INCH MINIMUM PROBE TEST.
3. IMPORT TOPSOIL, IF USED, MUST MEET THE REQUIREMENTS OF THE 2016 SEATTLE STORMWATER MANUAL, VOL. 1, SECTIONS 5.1.5.1 AND 5.1.5.3.

SYMBOL: (SA) AREA REQUIRING SOIL AMENDMENT (ND) NON-DISTURBED AREA (SOIL AMENDMENT NOT REQUIRED)

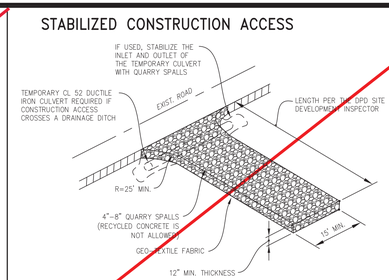
FILTER FENCE



NOTE: ANGLE SILT FENCE BACK UP THE SLOPE AT THE END OF RUN.

SYMBOL: FF

STABILIZED CONSTRUCTION ACCESS



STABILIZED ACCESS SHALL BE USED IN ALL AREAS OF THE SITE WITH VEHICLE TRAFFIC AND PARKING, INCLUDING PLANTING STRIPS. RECYCLED CONCRETE IS NOT ALLOWED.

SYMBOL: CE

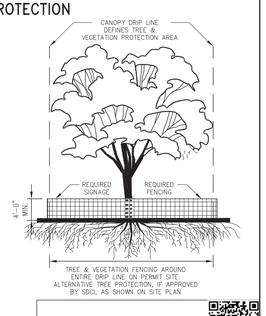
TREE & VEGETATION PROTECTION

TREE PROTECTION FENCING AND SIGN

1. CHAIN LINK, WIRE MESH, OR SIMILAR OPEN RIGID MATERIAL (NO PLYWOOD)
2. MUST BE INSTALLED PRIOR TO DEMOLITION OR GROUND DISTURBANCE
3. KEPT IN PLACE FOR THE DURATION OF CONSTRUCTION.
4. NO SOIL DISTURBANCE OR ACTIVITY ALLOWED WITHIN FENCED AREA: MATERIAL STORAGE/STOCKPILING, PARKING, EXCAVATION, DUMPING, OR WASHING
5. MODIFICATIONS OF THESE REQUIREMENTS BY APPROVAL OF SDCI PLANNER ONLY
6. IF ROOTS GREATER THAN 2 INCH FOUND OUTSIDE OF FENCING, PROTECT BY HAND EXCAVATION AND, IF NECESSARY, CUT CLEANLY AND KEEP MOIST
7. USE 3 INCHES OR DEEPER WOOD CHIP MULCH OUTSIDE FENCED AREAS TO PROTECT FEEDER ROOTS

VEGETATION PROTECTION

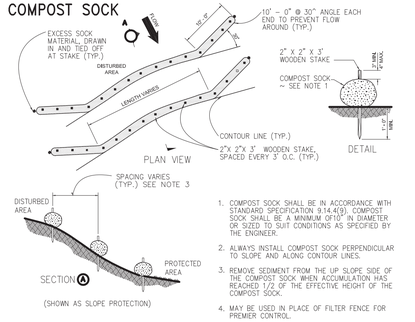
1. ORANGE MESH OR SIMILAR OPEN MATERIAL
2. MINIMIZE CONSTRUCTION ZONE
3. PROTECT VEGETATION OUTSIDE CONSTRUCTION ZONE WITH FENCING AS SHOWN
4. USE 3 INCHES OR DEEPER WOOD CHIP MULCH OUTSIDE FENCED AREAS TO PROTECT FEEDER ROOTS



LINK TO MORE TREE PROTECTION INFORMATION:

SYMBOL: TP

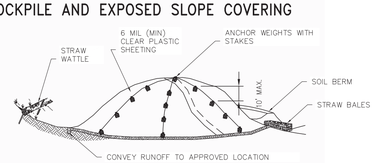
COMPOST SOCK

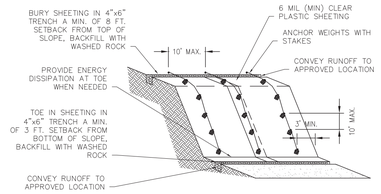


1. COMPOST SOCK SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION 9.14.4(9). COMPOST SOCK SHALL BE A MINIMUM OF10" IN DIAMETER, OR SIZED TO SUIT CONDITIONS AS SPECIFIED BY THE ENGINEER.
2. ALWAYS INSTALL COMPOST SOCK PERPENDICULAR TO SLOPE AND ALONG CONTOUR LINES.
3. REMOVE SEDIMENT FROM THE UP SLOPE SIDE OF THE COMPOST SOCK WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE COMPOST SOCK.
4. MAY BE USED IN PLACE OF FILTER FENCE FOR PREMIER CONTROL.

SYMBOL: CS

STOCKPILE AND EXPOSED SLOPE COVERING





SYMBOL: SP

NOTES:

1. Stormwater drains to combined storm/sanitary system
2. Existing driveways to remain paved, all trucks entering and leaving the Site will remain on paved roads
3. Trench excavations will be backfilled as soon as possible
4. Any water accumulations in trenches will be collected for disposal offsite.
5. Trench excavations will be covered with plastic sheeting to prevent contact of stormwater with soil until excavation has been backfilled.
6. Any sediment or soil tracked onto the site will be swept up within 30 minutes of occurrence.
7. Any stockpiles used will be underlain, and covered, with plastic sheeting of a size substantially larger than the pile, secured as required prior to leaving job site on a daily basis. Stockpile covers will be secured against movement by wind.

Prepared By:

GLACIER ENVIRONMENTAL SERVICES

7509 212th Street SW
Edmonds, WA 98026

CONSTRUCTION STORMWATER CONTROL & POST CONSTRUCTION SOIL MANAGEMENT PLAN

NOTE: THIS PLAN IDENTIFIES THE MINIMUM MEASURES REQUIRED; ADDITIONAL MEASURES MAY BE REQUIRED BASED ON CONSTRUCTION METHODS AND ACTUAL AREA OF DISTURBANCE.

SCALE: 1" = 10' NORTH ARROW

DPD APPROVAL STAMP

TEMPLATE VERSION: 2017-06-02

STANDARD CONSTRUCTION STORMWATER CONTROL (CSC) AND POST CONSTRUCTION SOIL MANAGEMENT (SOIL) PLAN

APPLICANT PLAN SET

CITY OF SEATTLE
DEPARTMENT OF CONSTRUCTION AND INSPECTIONS

Project Number: 6996584-CN

Address: 2350 24th AVE E SEATTLE, WA 98112

DATE: 00/00/0000

STANDARD CSC/SOIL PLAN

SHEET CSC

Table 01 35 32-1: Green Remediation and Sustainable Best Management Practices

Action	Potentially Applicable to Site?	Potential Benefits			
		Air	Energy	Water	Land
Use alternate fuels such as biodiesel, ultra-low sulfur diesel, and E85.	YES	Reduces air emissions from on-site construction equipment and from trucking waste materials.	Reduces use of petroleum products in on-site construction equipment and in trucking waste materials.	This action is not applicable to the above category.	Less toxic to the environment should a leak occur.
Require vehicles and construction equipment to use idle reduction technologies	YES	Reduces direct and indirect green-house gas and other emissions, e.g., CO, CO_2, VOC_S, NO_X, SO_X.	Reduces fuel use in on-site construction equipment and vehicles.	This action is not applicable to the above category.	Reduces noise impacts.
Sequence work to minimize double-handling of materials.	YES	Reduces air emissions from on-site construction equipment. Reduces nuisance dust.	Reduces fuel use in on-site construction equipment.	Reduces water quality impacts from erosion	Restores land sooner.
Use on-site renewable energy to power elements of the remedy, e.g., wind and solar power for treatment system.	NO	This action is not applicable to the above category.	Reduces purchased energy.	This action is not applicable to the above category.	May be an asset to redevelopment if left on site after cleanup.
Purchase green energy to power elements of the remedy	NO	Reduces air impacts of cleanup.	This action is not applicable to the above category.	This action is not applicable to the above category.	This action is not applicable to the above category.
Use permeable surface soil barriers, e.g., vegetated topsoil or gravel	NO	This action is not applicable to the above category.	This action is not applicable to the above category.	Reduces stormwater runoff	Increases post cleanup marketability of developable sites.

Action	Potentially Applicable to Site?	Potential Benefits			
		Air	Energy	Water	Land
Reclaim grey water for reuse.	NO	This action is not applicable to the above category.	This action is not applicable to the above category.	Reduces water use.	This action is not applicable to the above category.
Use engineered surface soil barriers, e.g., pavement, cover system.	YES	Reduces air emissions from on-site construction equipment and from trucking.	Reduces fuel use in on-site construction equipment and in trucking waste materials.	This action is not applicable to the above category.	Reduces waste material requiring off-site disposal.
Use in-situ remediation technologies (e.g. monitored natural attenuation; chemical oxidation).	YES	May reduce air emissions by reducing excavation and materials handling.	Reduces fuel use in on-site construction equipment and in trucking waste materials.	This action is not applicable to the above category.	Less intrusive, especially if structures present like roads, utilities and valuable buildings.
Use cleanup technologies that permanently destroy contaminants (incineration, treatment).	YES	This action is not applicable to the above category.	May be more energy intensive.	This action is not applicable to the above category.	Reduces future contaminant migration concerns; eliminates need for long term maintenance and monitoring.
Use treated soils to backfill excavation.	NO	Reduces emissions from trucking in clean fill.	This action is not applicable to the above category.	This action is not applicable to the above category.	Reduces clean fill material requirements.
Retain existing structures on site.	YES	Reduces air emissions from demolition activities.	Reduces fuel used for demolition and in trucking wastes off site.	This action is not applicable to the above category.	Preserves structures for future redevelopment; provides link to the past.

Action	Potentially Applicable to Site?	Potential Benefits			
		Air	Energy	Water	Land
Recycle waste materials generated during cleanup	YES	This action is not applicable to the above category.	This action is not applicable to the above category.	This action is not applicable to the above category.	Reduces material requiring off-site disposal
Collect rainwater for on-site use e.g., dust control.	YES	This action is not applicable to the above category.	This action is not applicable to the above category.	Reduces water use; stormwater impacts.	This action is not applicable to the above category.
Install temporary dewatering systems to lower groundwater.	NO	This action is not applicable to the above category.	This action is not applicable to the above category.	Reduces potential ground and surface water impacts.	Better control of limits of excavation.

END OF SECTION 01 35 43.10

APPENDIX C- DISPOSAL RECORDS

DatRun	Ticket Number	Dirt	Haul & dispose	Invoice #	Product	Tons
06/06/24	1023636	5.44			Soil Disposal-Contaminated w/fuel	5.44
06/06/24	1023639	4.90			Soil Disposal-Contaminated w/fuel	4.90
06/06/24	1023646	4.13			Soil Disposal-Contaminated w/fuel	4.13
06/10/24	1023729	5.64			Soil Disposal-Contaminated w/fuel	5.64
06/11/24	1023752	3.33			Soil Disposal-Contaminated w/fuel	3.33
06/11/24	1023779	4.49			Soil Disposal-Contaminated w/fuel	4.49
06/12/24	1023842	3.56			Soil Disposal-Contaminated w/fuel	3.56
06/12/24	1023864	4.74			Soil Disposal-Contaminated w/fuel	4.74
06/12/24	1023918	3.88			Soil Disposal-Contaminated w/fuel	3.88
06/12/24	1023943	5.90		58048	Soil Disposal-Contaminated w/fuel	5.90
06/17/24	1023957	4.62			Soil Disposal-Contaminated w/fuel	4.62
06/17/24	1023966	4.47			Soil Disposal-Contaminated w/fuel	4.47
06/25/24	1024187	5.73			Soil Disposal-Contaminated w/fuel	5.73
06/26/24	1024234	4.57			Soil Disposal-Contaminated w/fuel	4.57
06/26/24	1024251	5.77			Soil Disposal-Contaminated w/fuel	5.77
06/27/24	1024312	3.85			Soil Disposal-Contaminated w/fuel	3.85
06/28/24	1024338	5.96			Soil Disposal-Contaminated w/fuel	5.96
06/28/24	1024345	5.46			Soil Disposal-Contaminated w/fuel	5.46
06/28/24	1024364	5.54		58094	Soil Disposal-Contaminated w/fuel	5.54
07/02/24	1024385	4.32			Soil Disposal-Contaminated w/fuel	4.32
07/10/24	1024511	1.75		58147	Soil Disposal-Contaminated w/fuel	1.75
07/29/24	1024978	1.87		58187	Soil Disposal-Contaminated w/fuel	1.87
Totals		99.92	0.00			99.92

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

23-008

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023636	

WEIGHMASTER: IN - Dale H. OUT - Stephanie A.
DATE/TIME IN: 6/6/24 7:23 am
DATE/TIME OUT: 6/6/24 7:38 am
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: JAMES
BILL OF LADING:

SCALE IN GROSS WEIGHT 21,700 NET TONS 5.44 INBOUND
SCALE OUT TARE WEIGHT 10,820 NET WEIGHT 10,880 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.44	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

Cont Soil Disposal

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INBOUND - SCALE INDICATOR 96135341 = E-Seal 2000
OUTBOUND – SCALE INDICATOR 1955300033 = E-Seal 2006 Stephanie Anderson

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NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 TICKET # 1023636 CELL
WEIGHMASTER IN - Dale H. OUT - Stephanie A.
DATE/TIME IN 6/6/24 7:23 am DATE/TIME OUT 6/6/24 7:38 am
VEHICLE GLACIER ENVIRO CONTAINER
REFERENCE JAMES
BILL OF LADING

SCALE IN GROSS WEIGHT 21,700 NET TONS 5.44 INBOUND
SCALE OUT TARE WEIGHT 10,820 NET WEIGHT 10,880 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.44	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

23-008

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023639	

WEIGHMASTER: IN - Dale H. OUT - Stephanie A.
DATE/TIME IN: 6/6/24 10:34 am
DATE/TIME OUT: 6/6/24 10:46 am
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: JAMES
BILL OF LADING:

SCALE IN GROSS WEIGHT 20,600 NET TONS 4.90 INBOUND
SCALE OUT TARE WEIGHT 10,800 NET WEIGHT 9,800 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.90	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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3rd and lander -Seattle, WA

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Contract:TB-8333

SITE	TICKET #	CELL
01	1023639	

WEIGHMASTER: IN - Dale H. OUT - Stephanie A.
DATE/TIME IN: 6/6/24 10:34 am
DATE/TIME OUT: 6/6/24 10:46 am
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: JAMES
BILL OF LADING:

SCALE IN GROSS WEIGHT 20,600 NET TONS 4.90 INBOUND
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0.00	YD	Tracking QTY				
4.90	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

23-018

SITE	TICKET #	CELL
01	1023646	

WEIGHMASTER: Zackeia J.

DATE/TIME IN	DATE/TIME OUT
6/6/24 2:48 pm	6/6/24 2:55 pm

VEHICLE	CONTAINER
GLACIER ENVIRO	

REFERENCE: RAYMOND

BILL OF LADING:

SCALE IN GROSS WEIGHT 18,760 NET TONS 4.13 INBOUND
SCALE OUT TARE WEIGHT 10,500 NET WEIGHT 8,260 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.13	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

Cont Soil Disposal

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OUTBOUND – SCALE INDICATOR 1955300033 = E-Seal 2006 Zackeia Jones-tutwiler

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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023646	

WEIGHMASTER: Zackeia J.

DATE/TIME IN	DATE/TIME OUT
6/6/24 2:48 pm	6/6/24 2:55 pm

VEHICLE	CONTAINER
GLACIER ENVIRO	

REFERENCE: RAYMOND

BILL OF LADING:

SCALE IN GROSS WEIGHT 18,760 NET TONS 4.13 INBOUND
SCALE OUT TARE WEIGHT 10,500 NET WEIGHT 8,260 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.13	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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CHANGE
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REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

23-008

SITE	TICKET #	CELL
01	1023729	
WEIGHMASTER	Dale H.	
DATE/TIME IN	6/10/24 11:43 am	DATE/TIME OUT 6/10/24 12:12 pm
VEHICLE	GLACIER ENVIRO	CONTAINER
REFERENCE	JAMES	
BILL OF LADING		

SCALE IN GROSS WEIGHT 25,400 NET TONS 5.64
SCALE OUT TARE WEIGHT 14,120 NET WEIGHT 11,280

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.64	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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RS-F042UPR (04/19)

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REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023729	
WEIGHMASTER	Dale H.	
DATE/TIME IN	6/10/24 11:43 am	DATE/TIME OUT 6/10/24 12:12 pm
VEHICLE	GLACIER ENVIRO	CONTAINER
REFERENCE	JAMES	
BILL OF LADING		

SCALE IN GROSS WEIGHT 25,400 NET TONS 5.64
SCALE OUT TARE WEIGHT 14,120 NET WEIGHT 11,280

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
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3rd and lander Seattle, WA

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010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023752	

WEIGHMASTER: Stephanie A.
DATE/TIME IN: 6/11/24 6:46 am
DATE/TIME OUT: 6/11/24 6:53 am
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: RAYMOND#1 GLACIER
BILL OF LADING:

SCALE IN GROSS WEIGHT 17,220 NET TONS 3.33
SCALE OUT TARE WEIGHT 10,560 NET WEIGHT 6,660

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
3.33	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-008

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SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 | TICKET # 1023752 | CELL
WEIGHMASTER Stephanie A.
DATE/TIME IN 6/11/24 6:46 am
DATE/TIME OUT 6/11/24 6:53 am
VEHICLE GLACIER ENVIRO
CONTAINER
REFERENCE RAYMOND#1 GLACIER
BILL OF LADING

SCALE IN GROSS WEIGHT 17,220 NET TONS 3.33
SCALE OUT TARE WEIGHT 10,560 NET WEIGHT 6,660

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
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3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023779	
WEIGHMASTER	Dale H.	
DATE/TIME IN	6/11/24 10:30 am	DATE/TIME OUT 6/11/24 10:41 am
VEHICLE	GLACIER ENVIRO	CONTAINER
REFERENCE	RAYMOND	
BILL OF LADING		

SCALE IN GROSS WEIGHT 19,520 NET TONS 4.49 INBOUND
SCALE OUT TARE WEIGHT 10,540 NET WEIGHT 8,980 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.49	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-008

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Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023779	
WEIGHMASTER	Dale H.	
DATE/TIME IN	6/11/24 10:30 am	DATE/TIME OUT 6/11/24 10:41 am
VEHICLE	GLACIER ENVIRO	CONTAINER
REFERENCE	RAYMOND	
BILL OF LADING		

SCALE IN GROSS WEIGHT 19,520 NET TONS 4.49 INBOUND
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QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
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4.49	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023842	

WEIGHMASTER: IN - Dale H. OUT - Stephanie A.
DATE/TIME IN: 6/12/24 9:56 am
DATE/TIME OUT: 6/12/24 10:06 am
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: RAYMOND
BILL OF LADING:

SCALE IN GROSS WEIGHT 17,620 NET TONS 3.56 INBOUND
SCALE OUT TARE WEIGHT 10,500 NET WEIGHT 7,120 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
3.56	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-008

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3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023842	

WEIGHMASTER: IN - Dale H. OUT - Stephanie A.
DATE/TIME IN: 6/12/24 9:56 am
DATE/TIME OUT: 6/12/24 10:06 am
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: RAYMOND
BILL OF LADING:

SCALE IN GROSS WEIGHT 17,620 NET TONS 3.56 INBOUND
SCALE OUT TARE WEIGHT 10,500 NET WEIGHT 7,120 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
3.56	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023864	

WEIGHMASTER: IN - Zackeia J. OUT - Michael A.
DATE/TIME IN: 6/12/24 1:13 pm
DATE/TIME OUT: 6/12/24 1:21 pm
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: RAYMOND
BILL OF LADING:

SCALE IN GROSS WEIGHT 19,980 NET TONS 4.74
SCALE OUT TARE WEIGHT 10,500 NET WEIGHT 9,480

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.74	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-008

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CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023864	

WEIGHMASTER: IN - Zackeia J. OUT - Michael A.
DATE/TIME IN: 6/12/24 1:13 pm
DATE/TIME OUT: 6/12/24 1:21 pm
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: RAYMOND
BILL OF LADING:

SCALE IN GROSS WEIGHT 19,980 NET TONS 4.74
SCALE OUT TARE WEIGHT 10,500 NET WEIGHT 9,480

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.74	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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INBOUND - SCALE INDICATOR 96135341 = E-Seal 2000
OUTBOUND – SCALE INDICATOR 1955300033 = E-Seal 2006 Michael Anderson

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NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE

REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER

010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023918	

WEIGHMASTER: IN - Zackeia J. OUT - Michael A.

DATE/TIME IN: 6/13/24 1:31 pm

DATE/TIME OUT: 6/13/24 1:37 pm

VEHICLE: GLACIER ENVIRO

CONTAINER:

REFERENCE: RAYMOND

BILL OF LADING:

SCALE IN GROSS WEIGHT 18,180 NET TONS 3.88
SCALE OUT TARE WEIGHT 10,420 NET WEIGHT 7,760

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
3.88	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE

REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023918	

WEIGHMASTER: IN - Zackeia J. OUT - Michael A.

DATE/TIME IN: 6/13/24 1:31 pm

DATE/TIME OUT: 6/13/24 1:37 pm

VEHICLE: GLACIER ENVIRO

CONTAINER:

REFERENCE: RAYMOND

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SCALE OUT TARE WEIGHT 10,420 NET WEIGHT 7,760

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
3.88	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023943	

WEIGHMASTER: IN - Zackeia J. OUT - Michael A.
DATE/TIME IN: 6/14/24 12:43 pm
DATE/TIME OUT: 6/14/24 12:53 pm
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: RAYMOND
BILL OF LADING:

SCALE IN GROSS WEIGHT 22,180 NET TONS 5.90 INBOUND
SCALE OUT TARE WEIGHT 10,380 NET WEIGHT 11,800 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.90	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 TICKET # 1023943 CELL
WEIGHMASTER IN - Zackeia J. OUT - Michael A.
DATE/TIME IN 6/14/24 12:43 pm DATE/TIME OUT 6/14/24 12:53 pm
VEHICLE GLACIER ENVIRO CONTAINER
REFERENCE RAYMOND
BILL OF LADING

SCALE IN GROSS WEIGHT 22,180 NET TONS 5.90 INBOUND
SCALE OUT TARE WEIGHT 10,380 NET WEIGHT 11,800 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.90	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023957	

WEIGHMASTER: Dale H.

DATE/TIME IN	DATE/TIME OUT
6/17/24 8:55 am	6/17/24 9:03 am

VEHICLE	CONTAINER
GLACIER ENVIRO	

REFERENCE: RAYMOND

BILL OF LADING:

SCALE IN GROSS WEIGHT 20,020 NET TONS 4.62
SCALE OUT TARE WEIGHT 10,780 NET WEIGHT 9,240

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.62	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-008

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by chapter 15.80 RCW administered by the Washington State Department of Agriculture.
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OUTBOUND – SCALE INDICATOR 1955300033 = E-Seal 2006 Dale Haijuano

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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 | TICKET # 1023957 | CELL

WEIGHMASTER: Dale H.

DATE/TIME IN 6/17/24 8:55 am | DATE/TIME OUT 6/17/24 9:03 am

VEHICLE GLACIER ENVIRO | CONTAINER

REFERENCE: RAYMOND

BILL OF LADING:

SCALE IN GROSS WEIGHT 20,020 NET TONS 4.62
SCALE OUT TARE WEIGHT 10,780 NET WEIGHT 9,240

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.62	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

SITE

REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER

010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1023966	

WEIGHMASTER: IN - Zackeia J. OUT - Dale H.

DATE/TIME IN	DATE/TIME OUT
6/17/24 12:34 pm	6/17/24 12:40 pm

VEHICLE	CONTAINER
GLACIER ENVIRO	

REFERENCE: RAYMOND

BILL OF LADING:

SCALE IN GROSS WEIGHT 19,720 NET TONS 4.47
SCALE OUT TARE WEIGHT 10,780 NET WEIGHT 8,940

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.47	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-008

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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

SITE

REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 TICKET # 1023966 CELL

WEIGHMASTER IN - Zackeia J. OUT - Dale H.

DATE/TIME IN 6/17/24 12:34 pm DATE/TIME OUT 6/17/24 12:40 pm

VEHICLE GLACIER ENVIRO CONTAINER

REFERENCE RAYMOND

BILL OF LADING

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SCALE OUT TARE WEIGHT 10,780 NET WEIGHT 8,940

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1024187	

WEIGHMASTER: Dale H.

DATE/TIME IN	DATE/TIME OUT
6/25/24 9:41 am	6/25/24 9:50 am

VEHICLE	CONTAINER
GLACIER ENVIRO	

REFERENCE: JAMES

BILL OF LADING:

SCALE IN GROSS WEIGHT 25,700 NET TONS 5.73
SCALE OUT TARE WEIGHT 14,240 NET WEIGHT 11,460

23-008

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.73	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1024187	

WEIGHMASTER: Dale H.

DATE/TIME IN	DATE/TIME OUT
6/25/24 9:41 am	6/25/24 9:50 am

VEHICLE	CONTAINER
GLACIER ENVIRO	

REFERENCE: JAMES

BILL OF LADING:

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SCALE OUT TARE WEIGHT 14,240 NET WEIGHT 11,460

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
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TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

23-008

SITE	TICKET #	CELL
01	1024234	

WEIGHMASTER: IN - Dale H. OUT - Stephanie A.
DATE/TIME IN: 6/26/24 7:30 am
DATE/TIME OUT: 6/26/24 8:00 am
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: JAMES
BILL OF LADING:

SCALE IN GROSS WEIGHT 23,220 NET TONS 4.57
SCALE OUT TARE WEIGHT 14,080 NET WEIGHT 9,140

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.57	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 | TICKET # 1024234 | CELL
WEIGHMASTER IN - Dale H. OUT - Stephanie A.
DATE/TIME IN 6/26/24 7:30 am
DATE/TIME OUT 6/26/24 8:00 am
VEHICLE GLACIER ENVIRO
CONTAINER
REFERENCE JAMES
BILL OF LADING

SCALE IN GROSS WEIGHT 23,220 NET TONS 4.57
SCALE OUT TARE WEIGHT 14,080 NET WEIGHT 9,140

INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.57	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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CHANGE
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SIGNATURE _____

SITE

REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER

010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

23-008

SITE	TICKET #	CELL
01	1024251	

WEIGHMASTER: IN - Michael A. OUT - Dale H.

DATE/TIME IN	DATE/TIME OUT
6/26/24 11:06 am	6/26/24 11:15 am

VEHICLE	CONTAINER
SUNSTATE	

REFERENCE: JAMES

BILL OF LADING:

SCALE IN GROSS WEIGHT 25,620 NET TONS 5.77 INBOUND
SCALE OUT TARE WEIGHT 14,080 NET WEIGHT 11,540 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.77	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE

REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1024251	

WEIGHMASTER: IN - Michael A. OUT - Dale H.

DATE/TIME IN	DATE/TIME OUT
6/26/24 11:06 am	6/26/24 11:15 am

VEHICLE	CONTAINER
SUNSTATE	

REFERENCE: JAMES

BILL OF LADING:

SCALE IN GROSS WEIGHT 25,620 NET TONS 5.77 INBOUND
SCALE OUT TARE WEIGHT 14,080 NET WEIGHT 11,540 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.77	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1024312	

WEIGHMASTER: Dale H.

DATE/TIME IN	DATE/TIME OUT
6/27/24 12:12 pm	6/27/24 12:22 pm

VEHICLE	CONTAINER
GLACIER ENVIRO	

REFERENCE: JAMES

BILL OF LADING:

SCALE IN GROSS WEIGHT 21,480 NET TONS 3.85 INBOUND
SCALE OUT TARE WEIGHT 13,780 NET WEIGHT 7,700 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
3.85	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-008

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SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 | TICKET # 1024312 | CELL
WEIGHMASTER: Dale H.
DATE/TIME IN 6/27/24 12:12 pm | DATE/TIME OUT 6/27/24 12:22 pm
VEHICLE GLACIER ENVIRO | CONTAINER
REFERENCE JAMES
BILL OF LADING

SCALE IN GROSS WEIGHT 21,480 NET TONS 3.85 INBOUND
SCALE OUT TARE WEIGHT 13,780 NET WEIGHT 7,700 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
3.85	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

23-008

SITE	TICKET #	CELL
01	1024338	

WEIGHMASTER: IN - Robert C. OUT - Dale H.
DATE/TIME IN: 6/28/24 8:36 am
DATE/TIME OUT: 6/28/24 8:43 am
VEHICLE: GLACIER ENVIRO
CONTAINER:
REFERENCE: JAMES
BILL OF LADING:

SCALE IN GROSS WEIGHT 25,980 NET TONS 5.96
SCALE OUT TARE WEIGHT 14,060 NET WEIGHT 11,920
INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.96	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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INBOUND - SCALE INDICATOR 96135341 = E-Seal 2000
OUTBOUND – SCALE INDICATOR 1955300033 = E-Seal 2006 Dale Haijuano

The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions on the reverse side and that he or she has the authority to sign this document on behalf of the customer.

NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 TICKET # 1024338 CELL
WEIGHMASTER IN - Robert C. OUT - Dale H.
DATE/TIME IN 6/28/24 8:36 am DATE/TIME OUT 6/28/24 8:43 am
VEHICLE GLACIER ENVIRO CONTAINER
REFERENCE JAMES
BILL OF LADING

SCALE IN GROSS WEIGHT 25,980 NET TONS 5.96
SCALE OUT TARE WEIGHT 14,060 NET WEIGHT 11,920
INBOUND
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.96	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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INBOUND - SCALE INDICATOR 96135341 = E-Seal 2000
OUTBOUND – SCALE INDICATOR 1955300033 = E-Seal 2006 Dale Haijuano

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NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1024345	

WEIGHMASTER: IN - Michael A. OUT - Dale H.
DATE/TIME IN: 6/28/24 10:53 am
DATE/TIME OUT: 6/28/24 11:02 am
VEHICLE: SUNSTATE
CONTAINER:
REFERENCE: JAMES
BILL OF LADING:

SCALE IN GROSS WEIGHT 24,960 NET TONS 5.46 INBOUND
SCALE OUT TARE WEIGHT 14,040 NET WEIGHT 10,920 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.46	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-008

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by chapter 15.80 RCW administered by the Washington State Department of Agriculture.
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OUTBOUND – SCALE INDICATOR 1955300033 = E-Seal 2006 Dale Haijuano

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NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 TICKET # 1024345 CELL
WEIGHMASTER IN - Michael A. OUT - Dale H.
DATE/TIME IN 6/28/24 10:53 am DATE/TIME OUT 6/28/24 11:02 am
VEHICLE SUNSTATE CONTAINER
REFERENCE JAMES
BILL OF LADING

SCALE IN GROSS WEIGHT 24,960 NET TONS 5.46 INBOUND
SCALE OUT TARE WEIGHT 14,040 NET WEIGHT 10,920 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.46	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by chapter 15.80 RCW administered by the Washington State Department of Agriculture.
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NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1024364	

WEIGHMASTER: Michael A.
DATE/TIME IN: 6/28/24 1:40 pm
DATE/TIME OUT: 6/28/24 1:40 pm
VEHICLE: SUNSTATE
CONTAINER:
REFERENCE: JAMES
BILL OF LADING:

SCALE IN GROSS WEIGHT 25,120 NET TONS 5.54 INBOUND
TARE OUT TARE WEIGHT 14,040 NET WEIGHT 11,080 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.54	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-088

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by chapter 15.80 RCW administered by the Washington State Department of Agriculture.
INBOUND - SCALE INDICATOR 96135341 = E-Seal 2000
OUTBOUND – SCALE INDICATOR 1955300033 = E-Seal 2006 Michael Anderson

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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 TICKET # 1024364 CELL
WEIGHMASTER Michael A.
DATE/TIME IN 6/28/24 1:40 pm DATE/TIME OUT 6/28/24 1:40 pm
VEHICLE SUNSTATE CONTAINER
REFERENCE JAMES
BILL OF LADING

SCALE IN GROSS WEIGHT 25,120 NET TONS 5.54 INBOUND
TARE OUT TARE WEIGHT 14,040 NET WEIGHT 11,080 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
5.54	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1024385	

WEIGHMASTER: Stephanie A.

DATE/TIME IN	DATE/TIME OUT
7/2/24 6:57 am	7/2/24 7:20 am

VEHICLE	CONTAINER
GLACIER ENVIRO	

REFERENCE: JAMES

BILL OF LADING:

SCALE IN GROSS WEIGHT 23,040 NET TONS 4.32 INBOUND
SCALE OUT TARE WEIGHT 14,400 NET WEIGHT 8,640 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.32	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-408

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OUTBOUND – SCALE INDICATOR 1955300033 = E-Seal 2006 Stephanie Anderson

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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 | TICKET # 1024385 | CELL
WEIGHMASTER Stephanie A.
DATE/TIME IN 7/2/24 6:57 am | DATE/TIME OUT 7/2/24 7:20 am
VEHICLE GLACIER ENVIRO | CONTAINER
REFERENCE JAMES
BILL OF LADING

SCALE IN GROSS WEIGHT 23,040 NET TONS 4.32 INBOUND
SCALE OUT TARE WEIGHT 14,400 NET WEIGHT 8,640 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
4.32	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1024511	

WEIGHMASTER: IN - Michael A. OUT - Dale H.
DATE/TIME IN: 7/10/24 11:37 am
DATE/TIME OUT: 7/10/24 11:50 am
VEHICLE: SUNSTATE
CONTAINER:
REFERENCE: JAMES
BILL OF LADING:

SCALE IN GROSS WEIGHT 17,860 NET TONS 1.75 INBOUND
SCALE OUT TARE WEIGHT 14,360 NET WEIGHT 3,500 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
1.75	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 TICKET # 1024511 CELL
WEIGHMASTER IN - Michael A. OUT - Dale H.
DATE/TIME IN 7/10/24 11:37 am DATE/TIME OUT 7/10/24 11:50 am
VEHICLE SUNSTATE CONTAINER
REFERENCE JAMES
BILL OF LADING

SCALE IN GROSS WEIGHT 17,860 NET TONS 1.75 INBOUND
SCALE OUT TARE WEIGHT 14,360 NET WEIGHT 3,500 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
1.75	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

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NET AMOUNT
TENDERED
CHANGE
CHECK#

RS-F042UPR (04/19)

SIGNATURE _____

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander Seattle, WA

CUSTOMER
010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE	TICKET #	CELL
01	1024978	

WEIGHMASTER: IN - Zackeia J. OUT - Dale H.

DATE/TIME IN	DATE/TIME OUT
7/29/24 1:00 pm	7/29/24 1:11 pm

VEHICLE	CONTAINER
GLACIER ENVIRO	

REFERENCE: JAMES

BILL OF LADING:

SCALE IN GROSS WEIGHT 14,460 NET TONS 1.87 INBOUND
SCALE OUT TARE WEIGHT 10,720 NET WEIGHT 3,740 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
1.87	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

23-008

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by chapter 15.80 RCW administered by the Washington State Department of Agriculture.
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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

SITE
REGIONAL DISPOSAL INTERMODAL 425-977-4127
3rd and lander -Seattle, WA

CUSTOMER 010249
Glacier Environmental Services, Inc
PO Box 1097
Mukilteo, WA 98275
Contract:TB-8333

SITE 01 TICKET # 1024978 CELL

WEIGHMASTER IN - Zackeia J. OUT - Dale H.

DATE/TIME IN 7/29/24 1:00 pm DATE/TIME OUT 7/29/24 1:11 pm

VEHICLE GLACIER ENVIRO CONTAINER

REFERENCE JAMES

BILL OF LADING

SCALE IN GROSS WEIGHT 14,460 NET TONS 1.87 INBOUND
SCALE OUT TARE WEIGHT 10,720 NET WEIGHT 3,740 INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
1.87	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by chapter 15.80 RCW administered by the Washington State Department of Agriculture.
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RS-F042UPR (04/19)

SIGNATURE _____

NET AMOUNT
TENDERED
CHANGE
CHECK#

STRAIGHT BILL OF LADING

ORIGINAL — NOT NEGOTIABLE

Shipper No. 23490

23-006

Carrier No. _____

Page 1 of 4

Marine Vacuum Service Inc.

(Name of carrier) (SCAC)

Date 6/26/24

On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec.1.

TO:
Consignee Marine Vacuum Service Inc.
Street 1516 South Graham Street
City Seattle State WA Zip Code 98108

FROM:
Shipper Glacier Environmental
Street 2350 24TH Ave E
City Seattle State WA Zip Code
24 hr. Emergency Contact Tel. No. ChemTel 1-800-255-3924 Contract MIS3627926

Route

Vehicle Number

No. of Units & Container Type	HM	BASIC DESCRIPTION UN or NA Number, Proper Shipping Name, Hazard Class, Packing Group	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
1 TT	X	(DOT Spec Tank Required) UN1863 Fuel, Aviation, Turbin Engine, Class 3, PG I				
1 TT	X	(DOT Spec Tank Required) UN1203 Gasoline, Mixture Class 3, PG II				
1 TT	X	(DOT Spec Tank Required) UN1203 Gasoline, Class 3, PG II				
1 TT	X	NA1993 Diesel Mixture, Class 3, PG III				
1 TT	X	NA1993 Diesel, Class 3, PG III				
1 TT	X	NA1270 Petroleum Oil, Class 3, PG I				
1 TT	X	NA1270 Petroleum Oil, Mixture, Class 3, PG I				
1 TT		Oily Waste Water Non Reg by DOT				
1 TT		Waste Water Non Reg by DOT	300 Gallon			
1 TT		Used Oil Non Reg by DOT				
1 TT		Used Coolant Non Reg by DOT				

PLACARDS TENDERED: YES ☐ NO ☐

Note — (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____."
(2) Where the applicable tariff provisions specify a limitation of the carrier's liability absent a release or a value declaration by the shipper and the shipper does not release the carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172.
(3) Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation. See Section 2(e) of item 360, Bills of Lading, Freight Bills and Statements of Charges and Section 1(a) of the Contract Terms and Conditions for a list of such articles.

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

_____ Signature

REMIT C.O.D. TO: ADDRESS

COD Amt: $

C.O.D. FEE: PREPAID ☐ COLLECT ☐ $

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

_____ (Signature of Consignor)

TOTAL CHARGES $

FREIGHT CHARGES
FREIGHT PREPAID except when box at right is checked ☐ Check box if charges are to be collect

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.

Shipper hereby certifies that he is familiar with all the lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER Glacier CARRIER MAR-VAC

PER PER

DATE 6/26/24 DATE 6/26/24

Permanent post-office address of shipper.

APPENDIX D- WELL LOGS AND ANALYTICAL REPORTS

DEPARTMENT OF ECOLOGY
State of Washington

Notice of Intent to
Decommission a Well

This form and required fees **MUST BE RECEIVED** by the Department of Ecology **72 HOURS BEFORE** you decommission a well.

Notice Number
AE81436

1. Property Owner			
Name: Kuk-Jin Choung			
Mailing Address: 2350 24th Ave E	City: Seattle	State: WA	Zip Code: 98112

2. Consulting Firm (if applicable)			
Business Name: Glacier Enviro			
Mailing Address: 7509 212th St SW	City: Edmonds	State: WA	Zip Code: 98026
Email Address:	Phone Number: (425) 355-2826		

3. Well Site Location					
County Name: King			Tax Parcel Number: 6788201335		
Street Address: 2350 24th Ave East			City: Seattle	State: WA	Zip Code:
Township: 25N	Range: 4E	Section: 21	¼ (within 160 acres): NE	¼ - ¼ (within 40 acres): SW	
Latitude Degrees:			Longitude Degrees:		

4. Project Details		
Estimated Start Date: 2/13/2024	Project Name: 110.24.1003	Well Count: 1
Well Type: Water	Origional NOI No.:	Decommisioned Well Tag:

5. Driller Details	
Professional Name [Architect | Engineer | Surveyor] (if applicable)	License Number
Drilling Company Name: CASCADE DRILLING OREGON - CLACKAMAS	Phone Number: (503) 775-4118
Licensed Driller Name: JON CASTNER	Driller License Number: 2245
Comments:	

6. Fee Summary

Total amount due: $50.00

Remit payment to: Department of Ecology Cashiering Unit, P.O. Box 47611, Olympia WA 98504-7611
OR Pay online at https://appswr.ecology.wa.gov/wellconstruction/Wells/NoticeOfIntentPaymentRequest.aspx

Notice Status	Date	Confirmation | Cash Journal Number
Pending	2/12/2024 3:39:35 PM	

DEPARTMENT OF ECOLOGY
State of Washington

Notice of Intent to Construct a

Resource Protection Well

This form and required fees **MUST BE RECEIVED** by the Department of Ecology **72 HOURS BEFORE** you construct a well.

Notice Number
RE25734

1. Property Owner			
Name: Kuk-Jin Choung			
Mailing Address: 2350 24th Ave E	City: Seattle	State: WA	Zip Code: 98112

2. Consulting Firm (if applicable)			
Business Name: Glacier Enviro			
Mailing Address: 7509 212th St SW	City: Edmonds	State: WA	Zip Code: 98026
Email Address:	Phone Number: (425) 355-2826		

3. Well Site Location					
County Name: King			Tax Parcel Number: 6788201335		
Street Address: 2350 24th Ave E			City: Seattle	State: WA	Zip Code: 98112
Township: 25N	Range: 4E	Section: 21	¼ (within 160 acres): NE	¼ - ¼ (within 40 acres): SW	
Latitude Degrees:			Longitude Degrees:		

4. Project Details		
Estimated Start Date: 2/7/2024	Project Name: 110.24.1003	Well Count: 6
Well Type: Resource Protetction (Other)		

5. Driller Details	
Professional Name [Architect | Engineer | Surveyor] (if applicable):	License Number:
Drilling Company Name: CASCADE DRILLING OREGON - CLACKAMAS	Phone Number: (503) 775-4118
Licensed Driller Name: CHRIS BAKER	Driller License Number: 3080
Comments:	

6. Fee Summary

Total amount due: $240.00

Remit payment to: Department of Ecology Cashiering Unit, P.O. Box 47611, Olympia WA 98504-7611
OR Pay online at https://appswr.ecology.wa.gov/wellconstruction/Wells/NoticeOfIntentPaymentRequest.aspx

Notice Status	Date	Confirmation | Cash Journal Number
Pending	2/5/2024 3:07:19 PM	24020530224873

DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

■ Construction
☐ Decommission ⇨ Original NOI No. _____

Ecology Well ID Tag No. BPR 846

Site Well Name SW-1

Consulting Firm Glacier Environmental Services, Inc

Was a variance approved for this well/boring? ☐ Yes ■ No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

■ Driller ☐ Trainee ☐ Engineer

Name (Print Last, First Name) Baker, Chris

Driller/Engineer/Trainee Signature _____

License No. 3080

Company Name Cascade Drilling

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. RE25734

Type of Well:

☐ Resource Protection Well ☐ Injection Point
■ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other _____
↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Kuk-Jin Choung

Well Street Address 2350 24th Ave E

City Seattle County King

Tax Parcel No. 6788201335

Location (see instructions): WWM ☐ or EWM ■

SW ¼-¼ NE ¼, Section 21 Town 25n Range 4e

Latitude (Example: 47.12345) 47.640120

Longitude (Example: -120.12345) -122.301969

(WGS 84 Coordinate System)

Borehole diameter 8 inches Casing diameter 4 inches

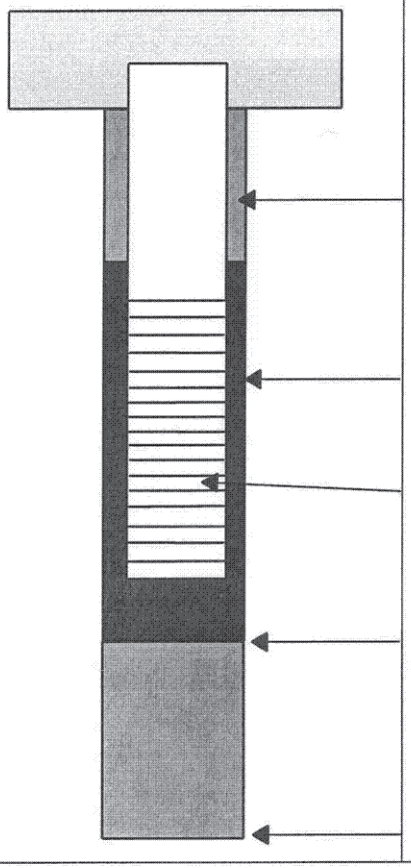
Static water level 5 ft below top of casing Date 02/10/24

☐ Above-ground completion with bollards ■ Flush monument

↳ Stick-up of top of well casing _____ ft above ground surface

Start Date 2/6/2024 Completed Date 2/14/2024

Construction Design



Well Data

Concrete Surface Seal Depth	18" Flush Monument
Blank Casing (dia x dep)	.5-6
Material	PVC
Backfill	1-4
Type	Bentonite chips
Gravel Pack	4-23
Material	3/8" Minus Pea Gravel
Screen (dia x dep)	6-21
Slot Size	.010
Material	PVC
Well Depth	23
Backfill	
Material	
Total Hole Depth	23

Driller's Log

0 - 23 FT
Lt Brown to Dk Gray, fine to course silt & sand.

- FT

- FT

- FT

- FT

- FT

Cascade Drilling 110.24.1003

DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

☒ Construction
☐ Decommission ⇨ Original NOI No. _____

Ecology Well ID Tag No. BPR 847

Site Well Name SW-2

Consulting Firm Glacier Environmental Services, Inc

Was a variance approved for this well/boring? ☐ Yes ☒ No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

☒ Driller ☐ Trainee ☐ Engineer

Name (Print Last, First Name) Baker, Chris

Driller/Engineer/Trainee Signature _____

License No. 3080

Company Name Cascade Drilling

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. RE25734

Type of Well:

☐ Resource Protection Well ☐ Injection Point
☒ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other _____
↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Kuk-Jin Choung

Well Street Address 2350 24th Ave E

City Seattle County King

Tax Parcel No. 6788201335

Location (see instructions): WWM ☐ or EWM ☒

SW ¼-¼ NE ¼, Section 21 Town 25n Range 4e

Latitude (Example: 47.12345) 47.640071

Longitude (Example: -120.12345) -122.301933

(WGS 84 Coordinate System)

Borehole diameter 8 inches Casing diameter 4 inches

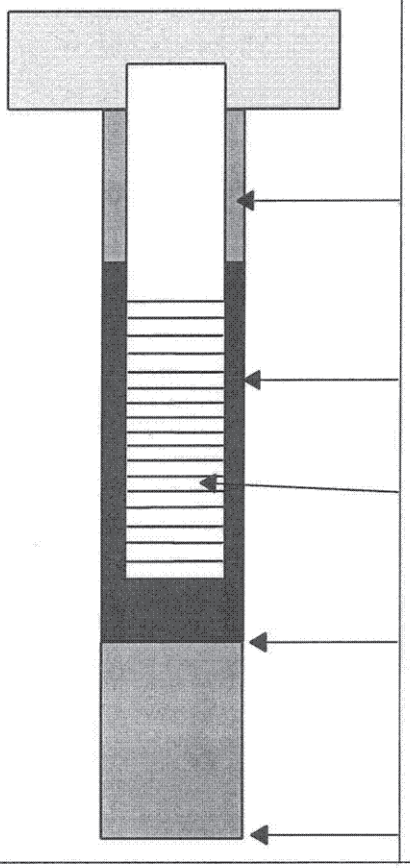
Static water level 5 ft below top of casing Date 02/12/24

☐ Above-ground completion with bollards ☒ Flush monument

↳ Stick-up of top of well casing _____ ft above ground surface

Start Date 2/6/2024 Completed Date 2/14/2024

Construction Design



Well Data

Concrete Surface Seal Depth	18" Flush Monument
Blank Casing (dia x dep)	.5-6
Material	PVC
Backfill	1-4
Type	Bentonite chips
Gravel Pack	4-23
Material	3/8" Minus Pea Gravel
Screen (dia x dep)	6-21
Slot Size	.010
Material	PVC
Well Depth	23
Backfill	
Material	
Total Hole Depth	23

Driller's Log

0 - 23 FT
Lt Brown to Dk Gray, fine to course silt & sand.

- FT

- FT

Received
Department of Ecology
MAY 16 2024
Water Resources Program
NWRO

- FT

- FT

Cascade Drilling 110.24.1003

The Department of Ecology does not warranty the data and\or information on this well report.

ECY050-12 (07/2018) To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program 360-407-6872. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

☒ Construction
☐ Decommission ⇨ Original NOI No. _____

Ecology Well ID Tag No. BPR 845
Site Well Name SW-3
Consulting Firm Glacier Environmental Services, Inc
Was a variance approved for this well/boring? ☐ Yes ☒ No
If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

☒ Driller ☐ Trainee ☐ Engineer
Name (Print Last, First Name) Baker, Chris
Driller/Engineer/Trainee Signature _____
License No. 3080
Company Name Cascade Drilling

If trainee box is checked, sponsor's license number: _____
Sponsor's signature _____

Notice of Intent No. RE25734

Type of Well:

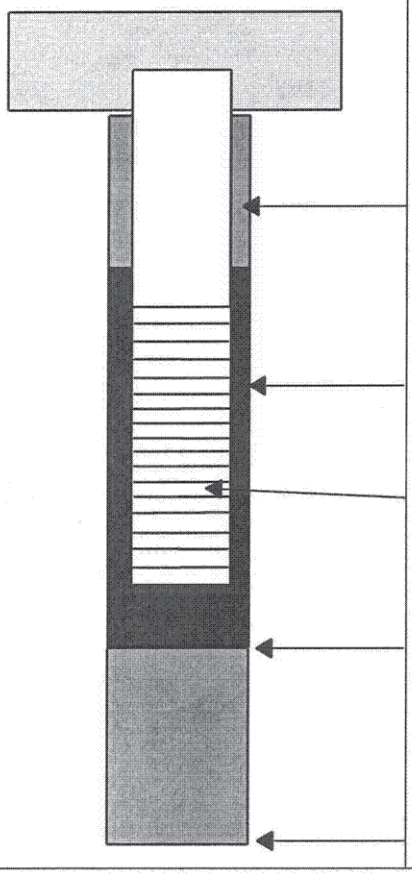
☐ Resource Protection Well ☐ Injection Point
☒ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other _____
↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Kuk-Jin Choung
Well Street Address 2350 24th Ave E
City Seattle County King
Tax Parcel No. 6788201335

Location (see instructions): WWM ☐ or EWM ☒
SW ¼-¼ NE ¼, Section 21 Town 25n Range 4e
Latitude (Example: 47.12345) 47.640029
Longitude (Example: -120.12345) -122.301933
(WGS 84 Coordinate System)

Borehole diameter 8 inches Casing diameter 4 inches
Static water level 5 ft below top of casing Date 02/09/24
☐ Above-ground completion with bollards ☒ Flush monument
↳ Stick-up of top of well casing _____ ft above ground surface
Start Date 2/6/2024 Completed Date 2/14/2024

Construction Design



Well Data

Concrete Surface Seal Depth	18" Flush Monument
Blank Casing (dia x dep)	.5-6
Material	PVC
Backfill	1-4
Type	Bentonite chips
Gravel Pack	4-23
Material	3/8" Minus Pea Gravel
Screen (dia x dep)	6-21
Slot Size	.010
Material	PVC
Well Depth	23
Backfill	
Material	
Total Hole Depth	23

Driller's Log

0 - 23 FT
Lt Brown to Dk Gray, fine to course silt & sand.

- FT

- FT

- FT

- FT

- FT

Cascade Drilling 110.24.1003

Received
Department of Ecology
MAY 16 2024
Water Resources Program
NWRO

The Department of Ecology does not warranty the data and\or information on this well report.

ECY050-12 (07/2018) To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program 360-407-6872. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

■ Construction
☐ Decommission ⇨ Original NOI No. _____

Ecology Well ID Tag No. BPR 842

Site Well Name RW-8

Consulting Firm Glacier Environmental Services, Inc

Was a variance approved for this well/boring? ☐ Yes ■ No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

■ Driller ☐ Trainee ☐ Engineer

Name (Print Last, First Name) Baker, Chris

Driller/Engineer/Trainee Signature _____

License No. 3080

Company Name Cascade Drilling

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. RE25734

Type of Well:

☐ Resource Protection Well ☐ Injection Point
■ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other _____
↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Kuk-Jin Choung

Well Street Address 2350 24th Ave E

City Seattle County King

Tax Parcel No. 6788201335

Location (see instructions): WWM ☐ or EWM ■

SW ¼-¼ NE ¼, Section 21 Town 25n Range 4e

Latitude (Example: 47.12345) 47.640139

Longitude (Example: -120.12345) -122.301933

(WGS 84 Coordinate System)

Borehole diameter 8 inches Casing diameter 4 inches

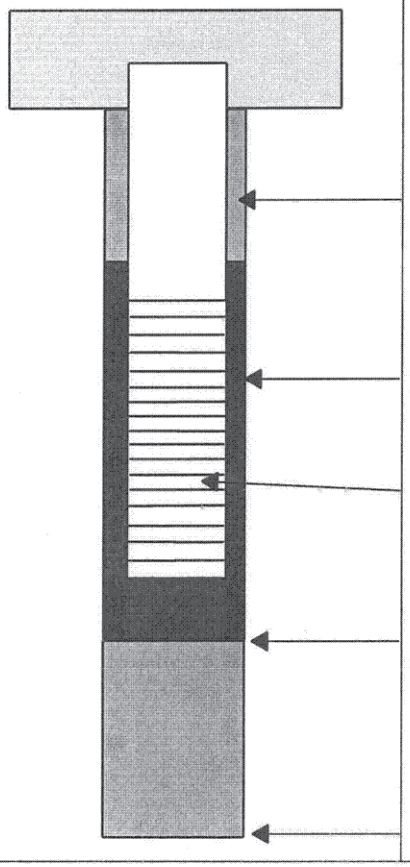
Static water level 5 ft below top of casing Date 02/07/24

☐ Above-ground completion with bollards ■ Flush monument

↳ Stick-up of top of well casing _____ ft above ground surface

Start Date 2/6/2024 Completed Date 2/14/2024

Construction Design



Well Data

Concrete Surface Seal Depth	12" Vaulted Monument
Blank Casing (dia x dep)	.5-5
Material	PVC
Backfill	1-3
Type	Bentonite chips
Gravel Pack	3-22
Material	3/8" Minus Pea Gravel
Screen (dia x dep)	5-20
Slot Size	.010
Material	PVC
Well Depth	22
Backfill	
Material	
Total Hole Depth	22

Driller's Log

0	- 22	FT

Lt Brown to Dk Gray, fine to course silt & sand.

- FT

- FT

Received
Department of Ecology
- FT
MAY 16 2024
Water Resources Program
NWRO
- FT

- FT

Cascade Drilling 110.24.1003

The Department of Ecology does not warranty the data and\or information on this well report.

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DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:
■ Construction
☐ Decommission ⇨ Original NOI No. _____

Ecology Well ID Tag No. BPR 843
Site Well Name RW-9
Consulting Firm Glacier Environmental Services, Inc
Was a variance approved for this well/boring? ☐ Yes ■ No
If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

■ Driller ☐ Trainee ☐ Engineer
Name (Print Last, First Name) Baker, Chris
Driller/Engineer/Trainee Signature _____
License No. 3080
Company Name Cascade Drilling

If trainee box is checked, sponsor's license number: _____
Sponsor's signature _____

Notice of Intent No. RE25734

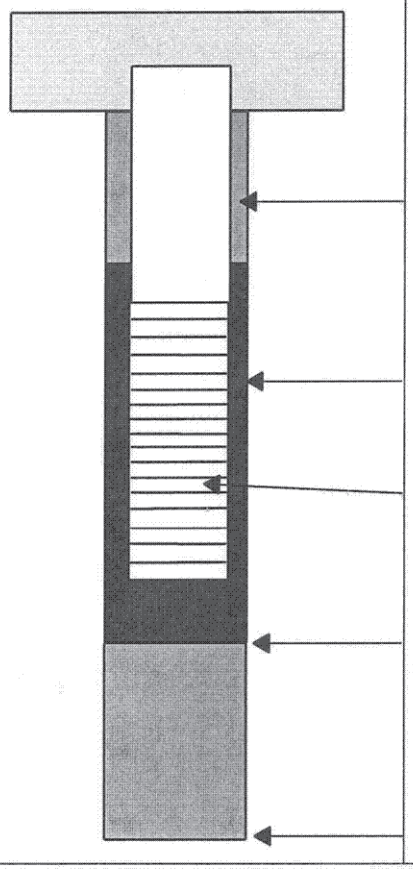
Type of Well:
■ Resource Protection Well ☐ Injection Point
■ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other _____
↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Kuk-Jin Choung
Well Street Address 2350 24th Ave E
City Seattle County King
Tax Parcel No. 6788201335

Location (see instructions): WWM ☐ or EWM ■
SW ¼-¼ NE ¼, Section 21 Town 25n Range 4e
Latitude (Example: 47.12345) 47.639998
Longitude (Example: -120.12345) -122.301877
(WGS 84 Coordinate System)

Borehole diameter 8 inches Casing diameter 4 inches
Static water level 5 ft below top of casing Date 02/08/24
☐ Above-ground completion with bollards ■ Flush monument
↳ Stick-up of top of well casing _____ ft above ground surface
Start Date 2/6/2024 Completed Date 2/14/2024

Construction Design



Well Data

Concrete Surface Seal Depth	12" Vaulted Monument
Blank Casing (dia x dep)	.5-5
Material	PVC
Backfill	1-3
Type	Bentonite chips
Gravel Pack	3-22
Material	3/8" Minus Pea Gravel
Screen (dia x dep)	5-20
Slot Size	.010
Material	PVC
Well Depth	22
Backfill	
Material	
Total Hole Depth	22

Driller's Log

0 - 22 FT
Lt Brown to Dk Gray, fine to course silt & sand.

- FT

- FT

- FT

- FT

- FT

Cascade Drilling 110.24.1003

DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

☒ Construction
☐ Decommission ⇨ Original NOI No. _____

Ecology Well ID Tag No. BPR 844
Site Well Name RW-10
Consulting Firm Glacier Environmental Services, Inc
Was a variance approved for this well/boring? ☐ Yes ☒ No
If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

☒ Driller ☐ Trainee ☐ Engineer
Name (Print Last, First Name) Baker, Chris
Driller/Engineer/Trainee Signature _____
License No. 3080
Company Name Cascade Drilling

If trainee box is checked, sponsor's license number: _____
Sponsor's signature _____

Notice of Intent No. RE25734

Type of Well:

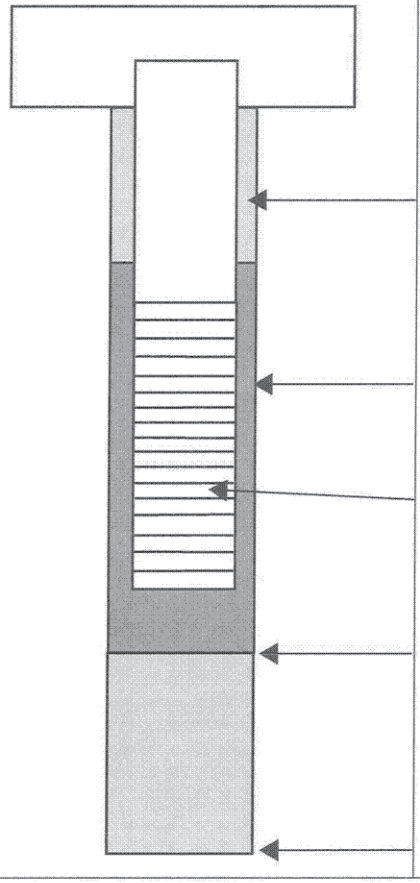
☐ Resource Protection Well ☐ Injection Point
☒ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other _____
↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Kuk-Jin Choung
Well Street Address 2350 24th Ave E
City Seattle County King
Tax Parcel No. 6788201335

Location (see instructions): WWM ☐ or EWM ☒
SW ¼-¼ NE ¼, Section 21 Town 25n Range 4e
Latitude (Example: 47.12345) 47.640053
Longitude (Example: -120.12345) -122.301796
(WGS 84 Coordinate System)

Borehole diameter 8 inches Casing diameter 4 inches
Static water level 22 ft below top of casing Date 02/08/24
☐ Above-ground completion with bollards ☒ Flush monument
↳ Stick-up of top of well casing _____ ft above ground surface
Start Date 2/6/2024 Completed Date 2/14/2024

Construction Design



Well Data

Concrete Surface Seal Depth	12" Vaulted Monument
Blank Casing (dia x dep)	.5-25
Material	PVC
Backfill	1-22
Type	Bentonite chips
Gravel Pack	22-31
Material	3/8" Minus Pea Gravel
Screen (dia x dep)	25-30
Slot Size	.010
Material	PVC
Well Depth	31
Backfill	
Material	
Total Hole Depth	31

Driller's Log

0 - 31 FT
Lt Brown to Dk Gray, fine to course silt & sand.

- FT

- FT

- FT

- FT

Cascade Drilling 110.24.1003

Received
Department of Ecology
MAY 16 2024
Water Resources Program
NWRO

The Department of Ecology does not warranty the data and\or information on this well report.

ECY050-12 (07/2018) To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program 360-407-6872. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

WATER WELL REPORT

DEPARTMENT OF ECOLOGY
State of Washington

Type of Work:
☐ Construction
☒ Decommission ⟹ Original installation NOI No. none

Proposed Use: ☐ Domestic ☐ Industrial ☐ Municipal ☐ Dewatering ☐ Irrigation ☐ Test Well ☐ Other _____

Construction Type: ☐ New well ☐ Alteration ☐ Deepening ☐ Other _____

Method: ☐ Driven ☐ Jetted ☐ Cable Tool ☐ Dug ☐ Air- ☐ Mud-Rotary

Dimensions: Diameter of boring _____ in., to _____ ft.
Depth of completed well _____ ft.

Construction Details:

Casing	Liner	Diameter	From	To	Wall Thickness	Steel	PVC	Welded	Thread
☐	☐	_____ in.	____	____	_____ in.	☐	☐	☐	☐
☐	☐	_____ in.	____	____	_____ in.	☐	☐	☐	☐
☐	☐	_____ in.	____	____	_____ in.	☐	☐	☐	☐
☐	☐	_____ in.	____	____	_____ in.	☐	☐	☐	☐

Perforations: ☐ Yes ☐ No Type of perforator used _____
No. of perforations _____ Size of perforations _____ in. by _____ in.
Perforated from _____ ft. to _____ ft. below ground surface

Screens: ☐ Yes ☐ No ☐ K-Packer ⟹ Depth _____ ft.
Manufacturer's Name _____
Type _____ Model No. _____
Diameter _____ in. Slot size _____ in. from _____ ft. to _____ ft.
Diameter _____ in. Slot size _____ in. from _____ ft. to _____ ft.

Sand/Filter pack: ☐ Yes ☐ No Size of pack material _____ in.
Materials placed from _____ ft. to _____ ft.

Surface Seal: ☐ Yes ☐ No To what depth? _____ ft.
Material used in seal _____
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

Pump: Manufacturer's Name _____ Type: _____
H.P. _____ Pump intake depth: _____ ft. Designed flow rate: _____ gpm

Water Levels: Land-surface elevation above mean sea level _____ ft.
Stick-up of top of well casing _____ ft. above ground surface
Static water level _____ ft. below top of well casing Date _____
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (cap, valve, etc.)

Well Tests:
Was a pumping test performed? ☐ No ☐ Yes ⟹ by whom? _____
Yield _____ gpm with ____ ft. drawdown after _____ hrs.
Yield _____ gpm with ____ ft. drawdown after _____ hrs.
Yield _____ gpm with ____ ft. drawdown after _____ hrs.
Recovery data (time = zero when pump is turned off – water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of pumping test _____
Bailer test _____ gpm with ____ ft. drawdown after _____ hrs.
Air test _____ gpm with stem set at _____ ft. for _____ hrs. Date _____
Artesian flow _____ gpm
Temperature of water _____ ° F Was a chemical analysis made? ☐ Yes ☐ No

Notice of Intent No. AE81436
Unique Ecology Well ID Tag No. none
Site Well Name (if more than one well): none
Water Right Permit/Certificate No. none
Property Owner Name Kuk-Jin Choung
Well Street Address 2350 24th Ave East
City Seattle County King
Tax Parcel No. 6788201335
Was a variance approved for this well? ☐ Yes ☒ No
If yes, what was the variance for? _____

Location (see instructions on page 2): ☐ WWM or ☒ EWM
SW ¼-¼ of the NE ¼; Section 21 Township 25n Range 4e
Latitude (Example: 47.12345) 47.640182
Longitude (Example: -120.12345) -122.301689

Driller's Log/Construction or Decommission Procedure
Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information. Use additional sheets if necessary.

Material	From	To
Decommission in Place - Dug Well	4	19.5
Removal of Concrete Vault 4.5' h x 6' w x 8' l		
Removed All: Debris, appertenances, hoses, fittin		
Decommissioned per WAC 173-160-381		

Start Date 02/13/2024 Completed Date 02/13/2024

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Trainee ☐ PE – Print Name Trent Castner
Signature Trent Castner
License No. 2245
IF TRAINEE: Sponsor's License No.
Sponsor's Signature

Drilling Company Cascade Drilling LP
Address 13600 SE Ambler Rd
City, State, Zip Clackamas OR 97015
Contractor's Registration No. CASCADL915O8 Date 02/28/2024

KRAZAN AND ASSOCIATES, INC.

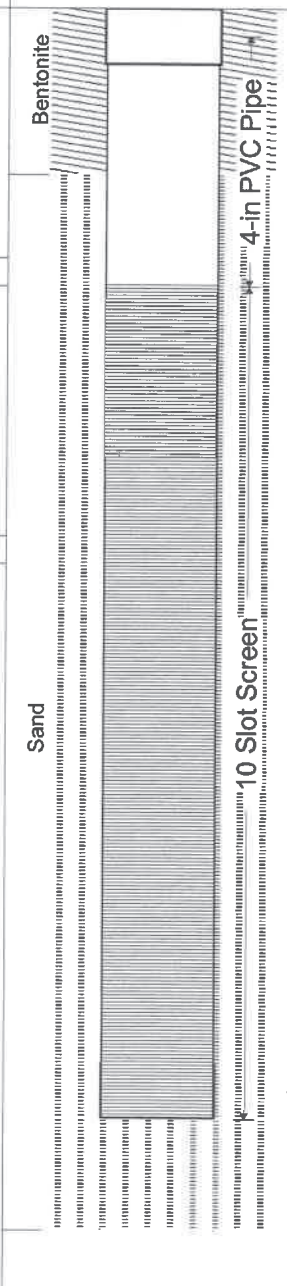
4303 198th Street SW
Lynnwood, WA 98036

LOG OF EXPLORATORY BORING RW-8

PROJECT: **Circle K Remediation Wells**
PROJECT NO.: **092-24002**
CONTRACTOR: **Cascade**
LOGGED BY: **AL**
SAMPLE METHOD: **Grab / Discrete**
TOTAL WELL DEPTH: **20 feet bgs**
CASING DIAMETER: **8-in**

DATE: **2/7/24**
PAGE: **1 of 1**
SURFACE ELEVATION: **Not Provided**
LOCATION: **Seattle, WA**
DRILLING METHOD: **Sonic Drill**
WELL DIAMETER: **4-In**
WELL ANGLE: **0 (Vertical)**

DEPTH (ft)	TIME	CORE RUN	RECOVERY %	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID Reading (PPM)	SAMPLES	Notes
	12:05					2-inch Asphalt			
						Brown Silt			
		1	90		ML	Brown Silt with Sand (Moist, Stiff)	0.4		
						Gray Fine Sand with Trace Gravel (Moist, Medium Dense)	0.5		
5	12:15							RW8-5	Sheen Test: No Sheen
		2	100				5.7		Sheen Test: Slight Sheen
							13.6		
10	12:30				SP		4637	RW9-10	
		3	90				5000+		Sheen Test: Slight Sheen
							5000+		
15	12:55	4	100				858		Becomes Moist to Wet @ 15' to 19' Strong petroleum-like odor @15'
		5	90				23.5		
20	13:18				ML	Gray Silt (Moist, Hard)	18.9		
					SP	Gray Fine Sand with Silt (Moist, Medium Dense to Dense)			
						End of Exploratory Boring	13.6		



Water Observations: Slight to moderate groundwater seepage was observed at a depth from about 15-ft to 19-ft bgs.

General Observations: Petroleum-like odor observed from approximately 5 feet to 15 feet bgs; Schedule 40 PVC Pipe.

KRAZAN AND ASSOCIATES, INC.

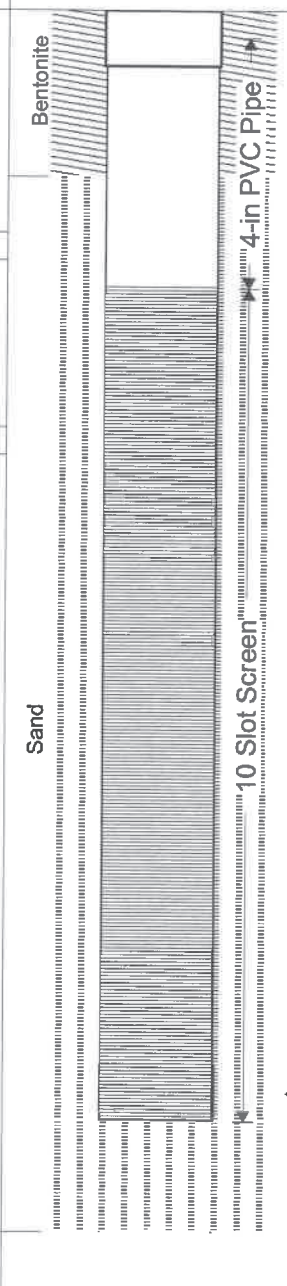
4303 198th Street SW
Lynnwood, WA 98036

LOG OF EXPLORATORY BORING RW-9

PROJECT: Circle K Remediation Wells
PROJECT NO.: 092-24002
CONTRACTOR: Cascade
LOGGED BY: EC
SAMPLE METHOD: Grab / Discrete
TOTAL WELL DEPTH: 20 feet bgs
CASING DIAMETER: 8-in

DATE: 2/8/24
PAGE: 1 of 1
SURFACE ELEVATION: Not Provided
LOCATION: Seattle, WA
DRILLING METHOD: Sonic Drill
WELL DIAMETER: 4-in
WELL ANGLE: 0 (Vertical)

DEPTH (ft)	TIME	CORE RUN	RECOVERY %	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID Reading (PPM)	SAMPLES
	8:40					2-inch Asphalt		
		1	100		ML	Brown Sandy Silt with Clay and Gravel (Moist, Stiff)	1.5	
						Gray Silt (Moist, Stiff)	67	RW9-4
5	8:55				SM	Gray Silty Sand (Moist, Medium Dense)		
		2	100		ML	Mottled Gray Silt and Med-Coarse Brown Sand (Moist, Stiff)	42	
							78	RW9-7.5
						Gray Silty Sand with Trace Gravel (Moist, Medium Dense to Dense)		
10	9:10						1218	
		3	90		SM		1621	
							5000+	
15	9:40					Gray Silt with Trace Gravel (Moist, Very Stiff)	8	
		4	100				1.8	
		5	100		ML		1.2	
20	9:45						0.8	
						End of Exploratory Boring		



Notes
Sheen Test: Slight Sheen Becomes Moist to Wet @ 8' to 15'
Strong petroleum-like odor @15'
Sheen Test: Moderate Sheen

Water Observations: Slight to moderate groundwater seepage was observed at a depth from about 8 feet to 15 feet bgs.

General Observations: Petroleum-like odor observed from approximately a depth of 10 feet to 15 feet bgs; Schedule 40 PVC Pipe.

KRAZAN AND ASSOCIATES, INC.

4303 198th Street SW
Lynnwood, WA 98036

LOG OF EXPLORATORY BORING RW-10

PROJECT: **Circle K Remediation Wells**
PROJECT NO.: **092-24002**
CONTRACTOR: **Cascade**
LOGGED BY: **EC**
SAMPLE METHOD: **Grab / Discrete**
TOTAL WELL DEPTH: **30 feet bgs**
CASING DIAMETER: **8-in**

DATE: **2/8/24**
PAGE: **1 of 2**
SURFACE ELEVATION: **Not Provided**
LOCATION: **Seattle, WA**
DRILLING METHOD: **Sonic Drill**
WELL DIAMETER: **4-in**
WELL ANGLE: **0 (Vertical)**

DEPTH (ft)	TIME	CORE RUN	RECOVERY %	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID Reading (PPM)	SAMPLES	WELL SCHEMATIC	Notes
	12:35					2.5-inch Asphalt				
					SP	Dark Brown Sand with Silt and Gravel (Moist, Loose)				
		1	100			Brown Silty Clay with Gravel (Moist, Stiff)	3.5			
					CL	Gray Silty Clay (Mottled with Brown) (Moist, Stiff)	20			
5	13:15							RW10-5		
					SP	Gray Sand (Moist, Medium Dense)	5000+			
		2	100		ML	Gray Silt (Moist, Stiff)				
					SP		858			
						Brown Sand with Silt (Moist, Medium Dense to Dense)				
					ML	Brown Silt (Mottled with Gray) (Moist, Stiff)				
10	13:25						1200	RW10-10		
						Gray Silty Sand with Trace Gravel (Moist, Dense)	5000+			Sheen Test: Slight Sheen
		3	100							
					SM		5000+			
15	13:50									Strong petroleum-like odor, moderate-heavy sheen @ 15'
							31			Sheen Test: No Sheen
		4	100			Gray Silt with Sand and Trace Gravel (Moist, Stiff)	22			
20	14:00				ML	Gray Sandy Silt with Trace Gravel (Moist to Wet, Stiff)	10			
		5	80				5000+			

Bentonite
4-in PVC Pipe
Sand

Water Observations: Moderate to heavy groundwater seepage was observed at a depth from about 20 feet to 25 feet bgs.

General Observations: Petroleum-like odor observed intermittently from approximately 5 feet to 25 feet bgs; Schedule 40 PVC Pipe.

KRAZAN AND ASSOCIATES, INC.

4303 198th Street SW
Lynnwood, WA 98036

LOG OF EXPLORATORY BORING RW-10

PROJECT: **Circle K Remediation Wells**
PROJECT NO.: **092-24002**
CONTRACTOR: **Cascade**
LOGGED BY: **EC**
SAMPLE METHOD: **Grab / Discrete**
TOTAL WELL DEPTH: **30 feet bgs**
CASING DIAMETER: **8-in**

DATE: **2/8/24**
PAGE: **2 of 2**
SURFACE ELEVATION: **Not Provided**
LOCATION: **Seattle, WA**
DRILLING METHOD: **Sonic Drill**
WELL DIAMETER: **4-in**
WELL ANGLE: **0 (Vertical)**

DEPTH (ft)	TIME	CORE RUN	RECOVERY %	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID Reading (PPM)	SAMPLES	WELL SCHEMATIC	Notes
28	12:50	6	90		ML	Gray Sandy Silt with Trace Gravel (Moist, Stiff)	5000+		Sand; 10 Slot Screen; Threaded Cap	No odor/sheen
						Gray Silt with Sand and Trace Gravel (Moist, Stiff)	32			
							5			
						End of Exploratory Boring	3.5			
33										
38										
43										

Water Observations: Moderate to heavy groundwater seepage was observed at a depth from about 20 feet to 25 feet bgs.

General Observations: Petroleum-like odor observed intermittently from approximately 5 feet to 25 feet bgs; Schedule 40 PVC Pipe.

KRAZAN AND ASSOCIATES, INC.

4303 198th Street SW
Lynnwood, WA 98036

LOG OF EXPLORATORY BORING SW-1

PROJECT: **Circle K Remediation Wells**
PROJECT NO.: **092-24002**
CONTRACTOR: **Cascade**
LOGGED BY: **AL**
SAMPLE METHOD: **Grab / Discrete**
TOTAL WELL DEPTH: **21 feet; 18.2 feet bgs**
CASING DIAMETER: **8-in**

DATE: **2/10/24**
PAGE: **1 of 1**
SURFACE ELEVATION: **Not Provided**
LOCATION: **Seattle, WA**
DRILLING METHOD: **Sonic Drill**
WELL DIAMETER: **4-in**
WELL ANGLE: **30 degrees**

(BGS) DEPTH (ft)	TIME	CORE RUN	RECOVERY %	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID Reading (PPM)	SAMPLES	WELL SCHEMATIC	Notes
	11:56					5-inch Concrete			Bentonite	
		1	100			Brown Clayey Silt with Organics (Moist, Stiff)	0.8			
					ML	Grayish Brown Silt with Sand and Gravel (Moist, Stiff)	0.4	SW1@4'		Mottled Brown Soils
(4.3) 5	12:05						0.6			
		2	100			Gray Silty Sand with Gravel (Moist, Medium Dense)	0.4			
(8.7) 10	12:15				SM		0.9	SW1@10'		Sheen Test: No Sheen
		3	90				13.3		Sand	Strong petroleum-like odor from 13'-20'
					SP	Gray Sand with Silt and Trace Gravel (Moist, Medium Dense)	2653		4-in PVC Pipe	
(13) 15	12:30				ML	Brown Silt (Moist, Stiff)				Sheen Test: No Sheen
						Gray Sand with Silt (Moist to Wet, Dense)	266.2		10 Slot Screen	
		4	100		SP		1260			
(17.3) 20	1:00					Gray Silt with Sand (Moist, Stiff)	893.2	SW1@20'		
		5	100		ML		3.3		Threaded Cap	
						End of Exploratory Boring				

Water Observations: Slight groundwater seepage was observed from a depth of about 16 feet to 20 feet.

General Observations: Petroleum-like odor observed intermittently from approximately 13 feet to 20 feet; Schedule 40 PVC Pipe

KRAZAN AND ASSOCIATES, INC.

4303 198th Street SW
Lynnwood, WA 98036

LOG OF EXPLORATORY BORING SW-2

PROJECT: **Circle K Remediation Wells**
PROJECT NO.: **092-24002**
CONTRACTOR: **Cascade**
LOGGED BY: **AL**
SAMPLE METHOD: **Grab / Discrete**
TOTAL WELL DEPTH: **21 feet; 18.2 feet bgs**
CASING DIAMETER: **8-in**

DATE: **2/12/24**
PAGE: **1 of 2**
SURFACE ELEVATION: **Not Provided**
LOCATION: **Seattle, WA**
DRILLING METHOD: **Sonic Drill**
WELL DIAMETER: **4-in**
WELL ANGLE: **30 degrees**

(BGS) DEPTH (ft)	TIME	CORE RUN	RECOVERY %	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID Reading (PPM)	SAMPLES	WELL SCHEMATIC	Notes
	9:05					4-inch Asphalt				
					ML	Gray to Brown Silt with Gravel and Organics (Moist, Stiff)	0		Bentonite	Mottled Brown Soils
		1	80			Brown Silty Sand with Gravel (Moist, Medium Dense)	0			
(4.3) 5	9:10				SM			SW2@5'		
							3.5			
		2	100		SP	Gray Sand with Silt and Trace Gravel (Moist, Medium Dense)	6.9			
(8.7) 10	9:25						39.3	SW2@10'		Sheen Test: No Sheen
					SM	Gray to Brown Silty Sand (Moist, Medium Dense)	26.3		Sand	
		3	90							
							77.3			
(13) 15	9:45					Gray Sand with Silt (Moist, Dense)				Petroleum-like odor @15'-16'
							1348			Sheen Test: Slight Sheen
					SP					
		4	100			Gray Medium-Coarse Sand (Moist, Medium Dense)	283.6			
(17.3) 20	10:15						273	SW2@20'		
					ML	Gray Silt (Moist, Very Stiff)			10 Slot Screen	
		5	90		SP	Gray Sand (Moist, Dense)	124		4-in PVC Pipe	
					ML	Gray Silt with Sand (Moist, Stiff)			Threaded Cap	

Water Observations: Groundwater seepage was not observed.

General Observations: Petroleum-like odor observed intermittently from approximately 10 feet to 23 feet; Schedule 40 PVC Pipe

KRAZAN AND ASSOCIATES, INC.

4303 198th Street SW
Lynnwood, WA 98036

LOG OF EXPLORATORY BORING SW-3

PROJECT: **Circle K Remediation Wells**
PROJECT NO.: **092-24002**
CONTRACTOR: **Cascade**
LOGGED BY: **EC**
SAMPLE METHOD: **Grab / Discrete**
TOTAL WELL DEPTH: **21 feet; 18.2 feet bgs**
CASING DIAMETER: **8-in**

DATE: **2/9/24**
PAGE: **1 of 1**
SURFACE ELEVATION: **Not Provided**
LOCATION: **Seattle, WA**
DRILLING METHOD: **Sonic Drill**
WELL DIAMETER: **4-in**
WELL ANGLE: **30 degrees**

(BGS) DEPTH (ft)	TIME	CORE RUN	RECOVERY %	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	PID Reading (PPM)	SAMPLES	WELL SCHEMATIC	Notes
	9:05					3-inch Asphalt			Bentonite	
		1	90		CL	Brown Silty Clay with Trace Gravel (Moist, Stff)	0			Mottled Gray Soils
(4.3) 5	9:10					Brown Silty Sand with Trace Gravel (Moist, Medium Dense)	0	SW3@4'	4-in PVC Pipe	
		2	100		SM		20			
						Gray Silty Sand (Moist, Medium Dense)	2180	SW3@8'		
(8.7) 10	9:45					Gray Sandy Silt with Clay (Moist, Stiff)	21			Sheen Test: No Sheen
		3	100		ML		1921		Sand	
						Gray Silty Sand with Trace Gravel (Moist, Medium Dense to Dense)	163			Slight Sheen
(13) 15	9:50				SM		0	SW3@15'	10 Slot Screen	Sheen Test: No Sheen
		4	100			Brown Sandy Silt with Clay and Gravel (Moist, Stiff)	0			
(17.3) 20	10:50				ML		0			
		5				Brown Silt with Trace Gravel (Moist, Stiff)	0		Threaded Cap	
						End of Exploratory Boring				

Water Observations: Groundwater seepage was not observed.

General Observations: Petroleum-like odor observed intermittently from approximately 5 feet to 14 feet; Schedule 40 PVC Pipe

February 22, 2024

Ms. Lauren Golembiewski
Glacier Environmental Services, Inc.
7509 - 212th St SW
Edmonds, WA 98026

Dear Ms. Golembiewski,

On February 9th, 8 samples were received by our laboratory and assigned our laboratory project number EV24020077. The project was identified as your Circle K Site 1461 / 23-008. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020077 EV24020077-01
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/09/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/7/2024 12:20:00 PM
CLIENT SAMPLE ID	RW8-5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	02/10/2024	MNC
Benzene	EPA-8260	U	5.0	1	UG/KG	02/13/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	02/13/2024	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**83.2**	02/10/2024	MNC
Toluene-d8	EPA-8260	**97.6**	02/13/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020077 EV24020077-02
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/09/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/7/2024 12:40:00 PM
CLIENT SAMPLE ID	RW8-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**660**	30	10	MG/KG	02/13/2024	MNC
Benzene	EPA-8260	**600**	170	10	UG/KG	02/14/2024	DLC
Toluene	EPA-8260	**1900**	100	10	UG/KG	02/14/2024	DLC
Ethylbenzene	EPA-8260	**4900**	150	10	UG/KG	02/14/2024	DLC
m,p-Xylene	EPA-8260	**21000**	290	10	UG/KG	02/14/2024	DLC
o-Xylene	EPA-8260	**8200**	180	10	UG/KG	02/14/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 10X Dilution	NWTPH-GX	**123**	02/13/2024	MNC
Toluene-d8 10X Dilution	EPA-8260	**96.7**	02/14/2024	DLC

Chromatogram indicates that it is likely that sample contains weathered gasoline.
Gasoline range product results biased high due to semivolatile range product overlap.

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CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020077 EV24020077-05
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/09/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/8/2024 8:50:00 AM
CLIENT SAMPLE ID	RW9-4	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	02/13/2024	MNC
Benzene	EPA-8260	U	5.0	1	UG/KG	02/13/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	02/13/2024	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**69.4**	02/13/2024	MNC
Toluene-d8	EPA-8260	**102**	02/13/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020077 EV24020077-06
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/09/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/8/2024 9:04:00 AM
CLIENT SAMPLE ID	RW9-7.5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	02/10/2024	MNC
Benzene	EPA-8260	U	5.0	1	UG/KG	02/13/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	02/13/2024	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**93.5**	02/10/2024	MNC
Toluene-d8	EPA-8260	**93.3**	02/13/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

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CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020077 EV24020077-07
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/09/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/8/2024 12:50:00 PM
CLIENT SAMPLE ID	RW10-5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**54**	3.0	1	MG/KG	02/10/2024	MNC
Benzene - Reanalysis1	EPA-8260	**190**	17	1	UG/KG	02/14/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC
Ethylbenzene - Reanalysis1	EPA-8260	**820**	14	1	UG/KG	02/14/2024	DLC
m,p-Xylene	EPA-8260	**52**	20	1	UG/KG	02/13/2024	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**103**	02/10/2024	MNC
Toluene-d8	EPA-8260	**89.8**	02/13/2024	DLC
Toluene-d8 - Reanalysis1	EPA-8260	**104**	02/14/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified gasoline range product.

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ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020077 EV24020077-08
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/09/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/8/2024 1:00:00 PM
CLIENT SAMPLE ID	RW10-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**24**	3.0	1	MG/KG	02/10/2024	MNC
Benzene	EPA-8260	**880**	11	1	UG/KG	02/15/2024	DLC
Toluene	EPA-8260	**570**	10	1	UG/KG	02/15/2024	DLC
Ethylbenzene	EPA-8260	**600**	10	1	UG/KG	02/15/2024	DLC
m,p-Xylene	EPA-8260	**2300**	20	1	UG/KG	02/15/2024	DLC
o-Xylene	EPA-8260	**920**	12	1	UG/KG	02/15/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**99.7**	02/10/2024	MNC
Toluene-d8	EPA-8260	**95.4**	02/15/2024	DLC

Chromatogram indicates that it is likely that sample contains lightly weathered gasoline.

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CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE:	2/22/2024
		ALS SDG#:	EV24020077
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	Circle K Site 1461 / 23-008		

LABORATORY BLANK RESULTS

MBG-020924S - Batch 207440 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	02/10/2024	MNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-021324S - Batch 207432 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8260	U	UG/KG	5.0	02/13/2024	DLC
Toluene	EPA-8260	U	UG/KG	10	02/13/2024	DLC
Ethylbenzene	EPA-8260	U	UG/KG	10	02/13/2024	DLC
m,p-Xylene	EPA-8260	U	UG/KG	20	02/13/2024	DLC
o-Xylene	EPA-8260	U	UG/KG	10	02/13/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE:	2/22/2024
		ALS SDG#:	EV24020077
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	Circle K Site 1461 / 23-008		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 207440 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**98.4**			66.5	122.7	02/10/2024	MNC
TPH-Volatile Range - BSD	NWTPH-GX	**100**	**2**		66.5	122.7	02/10/2024	MNC

ALS Test Batch ID: 207432 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8260	**100**			75	138	02/13/2024	DLC
Benzene - BSD	EPA-8260	**90.0**	**11**		75	138	02/13/2024	DLC
Toluene - BS	EPA-8260	**99.5**			71.6	122.1	02/13/2024	DLC
Toluene - BSD	EPA-8260	**90.1**	**10**		71.6	122.1	02/13/2024	DLC
Ethylbenzene - BS	EPA-8260	**98.1**			50	150	02/13/2024	DLC
Ethylbenzene - BSD	EPA-8260	**88.9**	**10**		50	150	02/13/2024	DLC
m,p-Xylene - BS	EPA-8260	**98.6**			50	150	02/13/2024	DLC
m,p-Xylene - BSD	EPA-8260	**89.9**	**9**		50	150	02/13/2024	DLC
o-Xylene - BS	EPA-8260	**103**			50	150	02/13/2024	DLC
o-Xylene - BSD	EPA-8260	**92.9**	**10**		50	150	02/13/2024	DLC

APPROVED BY

Rob Greer
Laboratory Director

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Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)
EV24020077

Date 2/8/24 Page 1 Of 1

PROJECT ID: Circle K Site 14101
REPORT TO COMPANY: Glacier Environmental Services, Inc.
PROJECT MANAGER: Lauren Golembiewski
ADDRESS: 7509 212th St SW
Edmonds WA 98026
PHONE: 425-755-2520 P.O. #: 23008
E-MAIL: LMiles@glacierenvir.com
INVOICE TO COMPANY: Same as above
ATTENTION:
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021	BTEX by EPA 8260	MTBE by EPA 8021	MTBE by EPA 8260	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Pesticides by EPA 8081	Metals-MTCA-5	RCRA-8	Pri Pol	TAL	Metals Other (Specify)	TCLP-Metals	VOA	Semi-Vol	Pest	Herbs	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. RW8-5	2/7/24	12:20	Soil	1			X	X																						5	
2. RW8-10	2/7/24	12:40 pm	Soil	2			X	X																						5	
3. RW8-3	2/7/24	13:00	Soil	3			X	X																					HOLD	3	
4. RW8-4	2/7/24	13:20	Soil	4			X	X																					HOLD	3	
5. RW9-4	2/8/24	8:50	Soil	5			X	X																						3	
6. RW9-7.5	2/8/24	9:04	Soil	6			X	X																						3	
7. RW10-5	2/8/24	12:50	Soil	7			X	X																						4	
8. RW10-10	2/8/24	13:00	Soil	9			X	X																						4	
9.																															
10.																															

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: [illegible], Amelia Leong, Kvazan, ~~2/9/24, 3:36 pm~~ 2/8/24, 2:30 pm
   Received By: [illegible] Thayne Westman 2/8/24 2:30 PM
2. Relinquished By: ~~[illegible]~~ Thayne Westman 2/9/24 600 PM
   Received By: Lauren Golembiewski 2/9/24 9:30am

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY

OTHER: Specify: Rec'd: [illegible] 2/9/24 1225

~~Rec'd:~~ [illegible] Acs 2/9/24 1225

*Turnaround request less than standard may incur Rush Charges

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Glacier Env Serv Inc ALS Job#: Ev24020077

Project: Circle K Site 1461

Login Date: 2-9-2024 Login Time: 12:28 Login By: MH

Type of Shipping Container: Cooler ✓ Box ___ Other ___

Shipped via: FedEx Ground ___ UPS ___ Courier ___ Hand Delivered ✓ ALS Courier ___
FedEx Express ___

	Yes	No	N/A
Were custody seals on outside of shipping container? If yes, how many? ___ Where? ___ Custody seal date: ___ Seal name: ___	___	___	✓
Was Chain of Custody properly filled out (ink, signed, dated, etc.)?	✓	___	___
Did all bottles have labels?	✓	___	___
Did all bottle labels and tags agree with Chain of Custody?	✓	___	___
Were samples received within hold time?	✓	X	___
Did all bottles arrive in good condition (unbroken, etc.)?	✓	___	___
Was sufficient amount of sample sent for the tests indicated?	✓	___	___
Was correct preservation added to samples?	✓	___	___
Subcontract test containers added to Subcontract Bin?	___	___	✓
Wetchem test containers marked with required Tests?	___	___	✓
Short hold time test containers delivered to analysts?	___	___	✓
Were VOA vials checked for absence of air bubbles?	___	___	✓
Bubbles present in sample #: ___			
5035A kits received? 6 # Low Kits: ✓ # High Kits: ___	✓	___	___
5035A kits returned? # Low Kits: ___ # High Kits: ___			
Temperature of cooler upon receipt: 7.3°C On ice?	✓	___	___

Explain any discrepancies:

Sample #1 not rec'd for 5035A, VT mode outside of hold time (48hr) for 5035A.
Sample #2 not rec'd for 5035A, VT mode within hold time for 5035A. CN 2/9/24

Was client contacted? ___ Who was called? ___ By whom? ___ Date: ___

Outcome of call:

February 22, 2024

Ms. Lauren Golembiewski
Glacier Environmental Services, Inc.
7509 - 212th St SW
Edmonds, WA 98026

Dear Ms. Golembiewski,

On February 9th, 3 samples were received by our laboratory and assigned our laboratory project number EV24020082. The project was identified as your Circle K Site 1461 / 23-008. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020082 EV24020082-01
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/09/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/9/2024 9:10:00 AM
CLIENT SAMPLE ID	MW3 @ 4'	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	02/14/2024	MNC
Benzene	EPA-8260	U	5.0	1	UG/KG	02/13/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	02/13/2024	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	02/13/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**91.0**	02/14/2024	MNC
Toluene-d8	EPA-8260	**97.2**	02/13/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020082 EV24020082-02
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/09/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/9/2024 9:15:00 AM
CLIENT SAMPLE ID	MW3 @ 8'	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**1600**	60	20	MG/KG	02/15/2024	MNC
Benzene	EPA-8260	U	16	1	UG/KG	02/14/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/14/2024	DLC
Ethylbenzene	EPA-8260	U	13	1	UG/KG	02/14/2024	DLC
m,p-Xylene	EPA-8260	U	26	1	UG/KG	02/14/2024	DLC
o-Xylene	EPA-8260	U	17	1	UG/KG	02/14/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 20X Dilution	NWTPH-GX	**102**	02/15/2024	MNC
Toluene-d8	EPA-8260	**97.4**	02/14/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified gasoline range product.
Gasoline range product results biased high due to semivolatile range product overlap.

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CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020082 EV24020082-03
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/09/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/9/2024 9:50:00 AM
CLIENT SAMPLE ID	MW3 @ 15'	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	02/14/2024	MNC
Benzene	EPA-8260	**9.1**	5.0	1	UG/KG	02/14/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/14/2024	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	02/14/2024	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	02/14/2024	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	02/14/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**74.0**	02/14/2024	MNC
Toluene-d8	EPA-8260	**96.8**	02/14/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE:	2/22/2024
		ALS SDG#:	EV24020082
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	Circle K Site 1461 / 23-008		

LABORATORY BLANK RESULTS

MBG-021324S - Batch 207363 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	02/13/2024	MNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-021324S - Batch 207432 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8260	U	UG/KG	5.0	02/13/2024	DLC
Toluene	EPA-8260	U	UG/KG	10	02/13/2024	DLC
Ethylbenzene	EPA-8260	U	UG/KG	10	02/13/2024	DLC
m,p-Xylene	EPA-8260	U	UG/KG	20	02/13/2024	DLC
o-Xylene	EPA-8260	U	UG/KG	10	02/13/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE:	2/22/2024
		ALS SDG#:	EV24020082
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	Circle K Site 1461 / 23-008		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 207363 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**93.6**			66.5	122.7	02/14/2024	MNC
TPH-Volatile Range - BSD	NWTPH-GX	**93.2**	**0**		66.5	122.7	02/14/2024	MNC

ALS Test Batch ID: 207432 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8260	**100**			75	138	02/13/2024	DLC
Benzene - BSD	EPA-8260	**90.0**	**11**		75	138	02/13/2024	DLC
Toluene - BS	EPA-8260	**99.5**			71.6	122.1	02/13/2024	DLC
Toluene - BSD	EPA-8260	**90.1**	**10**		71.6	122.1	02/13/2024	DLC
Ethylbenzene - BS	EPA-8260	**98.1**			50	150	02/13/2024	DLC
Ethylbenzene - BSD	EPA-8260	**88.9**	**10**		50	150	02/13/2024	DLC
m,p-Xylene - BS	EPA-8260	**98.6**			50	150	02/13/2024	DLC
m,p-Xylene - BSD	EPA-8260	**89.9**	**9**		50	150	02/13/2024	DLC
o-Xylene - BS	EPA-8260	**103**			50	150	02/13/2024	DLC
o-Xylene - BSD	EPA-8260	**92.9**	**10**		50	150	02/13/2024	DLC

APPROVED BY

Rob Greer
Laboratory Director

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Everett, WA 98208
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Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV24020082

Date 2/9/24 Page 1 Of 1

PROJECT ID: CIRCLE K Site 1461
REPORT TO COMPANY: Glacier Environmental
PROJECT MANAGER: Laura Galembiewski
ADDRESS: 7509 212th ST SW
Edmonds WA 98026
PHONE: 425 355 2826 P.O. #: 23008
E-MAIL: Lmiles@glacierenviro.com
INVOICE TO COMPANY: Glacier Environmental
ATTENTION: Same As Above
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021	MTBE by EPA 8021	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082	Pesticides by EPA 8081	Metals-MTCA-5	RCRA-8	Pri Pol	TAL	Metals Other (Specify)	TCLP-Metals	VOA	Semi-Vol	Pest	Herbs	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. MW3@4'	2/9/24	9:10	Soil	1			X	X																					4	
2. MW3@8'	2/9/24	9:15	Soil	2			X	X																					4	
3. MW3@15'	2/9/24	9:50	Soil	3			X	X																					4	
4.																														
5.																														
6.																														
7.																														
8.																														
9.																														
10.																														

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Amelia Leong, Kruzan, 2/9/24, 3:00PM
   Received By: Thanesha Weerasinghe 2/9/24 3:00 PM
2. Relinquished By: Thanesha Weerasinghe 2/9/24 3:50 PM
   Received By: ALS 2/9/24 1550

TURNAROUND REQUESTED in Business Days* 3-9C

Organic, Metals & Inorganic Analysis: [10] Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: [5] Standard | 3 | 1 | SAME DAY

OTHER: Specify:

*Turnaround request less than standard may incur Rush Charges

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Glacial Env ALS Job#: Ev24020082

Project: Circle K Site 1461

Login Date: 2-9-24 Login Time: 15:50 Login By: MH

Type of Shipping Container: Cooler X Box ___ Other ___

Shipped via: FedEx Ground ___ UPS ___ Courier ___ Hand Delivered X ALS Courier ___
FedEx Express ___

	Yes	No	N/A
Were custody seals on outside of shipping container? If yes, how many? ___ Where? ___ Custody seal date: ___ Seal name: ___	___	___	X
Was Chain of Custody properly filled out (ink, signed, dated, etc.)?	X	___	___
Did all bottles have labels?	X	___	___
Did all bottle labels and tags agree with Chain of Custody?	X	___	___
Were samples received within hold time?	X	___	___
Did all bottles arrive in good condition (unbroken, etc.)?	X	___	___
Was sufficient amount of sample sent for the tests indicated?	X	___	___
Was correct preservation added to samples?	X	___	___
Subcontract test containers added to Subcontract Bin?	___	___	X
Wetchem test containers marked with required Tests?	___	___	X
Short hold time test containers delivered to analysts?	___	___	X
Were VOA vials checked for absence of air bubbles?	___	___	X
Bubbles present in sample #: ___			
5035A kits received? # Low Kits: 3 # High Kits: ___	X	___	___
5035A kits returned? # Low Kits: ___ # High Kits: ___			
Temperature of cooler upon receipt: ~~9.9~~ Ice On ice?	X	___	___

Explain any discrepancies: 3.9

Was client contacted? ___ Who was called? ___ By whom? ___ Date: ___

Outcome of call:

February 22, 2024

Ms. Lauren Golembiewski
Glacier Environmental Services, Inc.
7509 - 212th St SW
Edmonds, WA 98026

Dear Ms. Golembiewski,

On February 12th, 3 samples were received by our laboratory and assigned our laboratory project number EV24020089. The project was identified as your Circle K Site 1461 / 23-008. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020089 EV24020089-01
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/12/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/10/2024 12:10:00 PM
CLIENT SAMPLE ID	SMW1 @ 4'	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	02/14/2024	MNC
Benzene	EPA-8260	U	5.0	1	UG/KG	02/17/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	02/17/2024	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**87.7**	02/14/2024	MNC
Toluene-d8	EPA-8260	**93.8**	02/17/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020089 EV24020089-02
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/12/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/10/2024 12:20:00 PM
CLIENT SAMPLE ID	SMW1 @ 10'	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	02/14/2024	MNC
Benzene	EPA-8260	U	5.0	1	UG/KG	02/17/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	02/17/2024	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**89.9**	02/14/2024	MNC
Toluene-d8	EPA-8260	**93.5**	02/17/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020089 EV24020089-03
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/12/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/10/2024 12:40:00 PM
CLIENT SAMPLE ID	SMW1 @ 20'	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**13**	3.0	1	MG/KG	02/14/2024	MNC
Benzene	EPA-8260	**950**	14	1	UG/KG	02/17/2024	DLC
Toluene	EPA-8260	**730**	10	1	UG/KG	02/17/2024	DLC
Ethylbenzene	EPA-8260	**460**	12	1	UG/KG	02/17/2024	DLC
m,p-Xylene	EPA-8260	**1700**	23	1	UG/KG	02/17/2024	DLC
o-Xylene	EPA-8260	**570**	14	1	UG/KG	02/17/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**69.9**	02/14/2024	MNC
Toluene-d8	EPA-8260	**94.9**	02/17/2024	DLC

Chromatogram indicates that it is likely that sample contains weathered gasoline.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE:	2/22/2024
		ALS SDG#:	EV24020089
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	Circle K Site 1461 / 23-008		

LABORATORY BLANK RESULTS

MBG-021324S - Batch 207363 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	02/13/2024	MNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-021724S - Batch 207719 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8260	U	UG/KG	5.0	02/17/2024	DLC
Toluene	EPA-8260	U	UG/KG	10	02/17/2024	DLC
Ethylbenzene	EPA-8260	U	UG/KG	10	02/17/2024	DLC
m,p-Xylene	EPA-8260	U	UG/KG	20	02/17/2024	DLC
o-Xylene	EPA-8260	U	UG/KG	10	02/17/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS SDG#: WDOE ACCREDITATION:	2/22/2024 EV24020089 C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	Circle K Site 1461 / 23-008		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 207363 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**93.6**			66.5	122.7	02/14/2024	MNC
TPH-Volatile Range - BSD	NWTPH-GX	**93.2**	**0**		66.5	122.7	02/14/2024	MNC

ALS Test Batch ID: 207719 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8260	**91.5**			75	138	02/17/2024	DLC
Benzene - BSD	EPA-8260	**97.0**	**6**		75	138	02/17/2024	DLC
Toluene - BS	EPA-8260	**95.5**			71.6	122.1	02/17/2024	DLC
Toluene - BSD	EPA-8260	**100**	**5**		71.6	122.1	02/17/2024	DLC
Ethylbenzene - BS	EPA-8260	**94.0**			50	150	02/17/2024	DLC
Ethylbenzene - BSD	EPA-8260	**98.6**	**5**		50	150	02/17/2024	DLC
m,p-Xylene - BS	EPA-8260	**96.2**			50	150	02/17/2024	DLC
m,p-Xylene - BSD	EPA-8260	**101**	**5**		50	150	02/17/2024	DLC
o-Xylene - BS	EPA-8260	**98.3**			50	150	02/17/2024	DLC
o-Xylene - BSD	EPA-8260	**104**	**6**		50	150	02/17/2024	DLC

APPROVED BY

Rob Greer
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

Laboratory location:
8260 Holly Drive, Suite 100
Everett, WA 98208

Chain of Custody Form

Page 1 of 1

EV24020089

ALS Project Manager:		Work Order #:	

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	23-008	Project Name	Circle K site 1461	A	NWTPH-Gx
Work Order		Project Number	23-008	B	BTEX by EPA 8260
Company Name	Glacier Environmental	Bill To Company	Glacier Environmental	C	
Send Report To	Lauren Golembiewski	Invoice Attn.	Lauren Golembiewski	D	
Address	7509 212th st SW	Address	7509 212th st SW	E	
				F	
City/State/Zip	Edmonds WA 98026	City/State/Zip	Edmonds WA 98026	G	
Phone	425-355-2826	Phone	425-355-2826	H	
Fax		Fax		I	
e-Mail Address	lmiles@glacierenviro.com	e-Mail Address	lmiles@glacierenviro.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SMW1@4'	2/10/24	12:10	SOIL		4	X	X									
2	SMW1@10'	2/10/24	12:20	SOIL		4	X	X									
3	SMW1@20'	2/10/24	12:40	SOIL		4	X	X									
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign
Amelia Leong

Shipment Method:

Required Turnaround Time: ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Amelia Leong	2/10/24	1:00pm	
Relinquished by:	Date:	Time:	Received by (Laboratory):
	2/12/24	0600 am	2/12/24 1215
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: Ellis Heights Delivered 12:48pm ALS, 2/12/24 1248

Cooler Temp.

QC Package: (Check Box Below)

- ☐ Level II: Standard QC
- ☐ Level III: Std QC + Raw Data
- ☐ Level IV: SW846 CLP-Like
- ☐ Other: _____
- ☐ TRRP-Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Glacier Environmental ALS Job#: EV24020089

Project: Circle K site 1461

Login Date: 2/12/24 Login Time: 1248 Login By: AJ

Type of Shipping Container: Cooler Ø Box ___ Other ___

Shipped via: FedEx Ground ___ UPS ___ Courier ___ Hand Delivered Ø ALS Courier ___
FedEx Express ___

	Yes	No	N/A
Were custody seals on outside of shipping container?	___	Ø	___
If yes, how many? ___ Where? ___			
Custody seal date: ___ Seal name: ___			
Was Chain of Custody properly filled out (ink, signed, dated, etc.)?	Ø	___	___
Did all bottles have labels?	Ø	___	___
Did all bottle labels and tags agree with Chain of Custody?	Ø	___	___
Were samples received within hold time?	Ø	___	___
Did all bottles arrive in good condition (unbroken, etc.)?	Ø	___	___
Was sufficient amount of sample sent for the tests indicated?	Ø	___	___
Was correct preservation added to samples?	Ø	___	___
Subcontract test containers added to Subcontract Bin?	___	___	Ø
Wetchem test containers marked with required Tests?	___	___	Ø
Short hold time test containers delivered to analysts?	___	___	Ø
Were VOA vials checked for absence of air bubbles?	___	Ø	___
Bubbles present in sample #: none (soil samples)			
5035A kits received?	Ø	___	___
# Low Kits: 3 # High Kits: ___			
5035A kits returned?			
# Low Kits: ___ # High Kits: ___			
Temperature of cooler upon receipt: 1.6°C On ice?	✓	___	___

Explain any discrepancies:

Was client contacted? ___ Who was called? ___ By whom? ___ Date: ___

Outcome of call:

February 22, 2024

Ms. Lauren Golembiewski
Glacier Environmental Services, Inc.
7509 - 212th St SW
Edmonds, WA 98026

Dear Ms. Golembiewski,

On February 12th, 3 samples were received by our laboratory and assigned our laboratory project number EV24020093. The project was identified as your Circle K Site 1461 / 23-008. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020093 EV24020093-01
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/12/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/12/2024 9:20:00 AM
CLIENT SAMPLE ID	SMW2 @ 5'	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	02/14/2024	MNC
Benzene	EPA-8260	U	5.0	1	UG/KG	02/17/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	02/17/2024	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**88.8**	02/14/2024	MNC
Toluene-d8	EPA-8260	**92.2**	02/17/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020093 EV24020093-02
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/12/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/12/2024 9:30:00 AM
CLIENT SAMPLE ID	SMW2 @ 10'	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	02/14/2024	MNC
Benzene	EPA-8260	U	5.0	1	UG/KG	02/17/2024	DLC
Toluene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC
Ethylbenzene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC
m,p-Xylene	EPA-8260	U	20	1	UG/KG	02/17/2024	DLC
o-Xylene	EPA-8260	U	10	1	UG/KG	02/17/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**88.0**	02/14/2024	MNC
Toluene-d8	EPA-8260	**95.9**	02/17/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	2/22/2024 EV24020093 EV24020093-03
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	02/12/2024
CLIENT PROJECT:	Circle K Site 1461 / 23-008	COLLECTION DATE:	2/12/2024 10:00:00 AM
CLIENT SAMPLE ID	SMW2 @ 20'	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**6.7**	3.0	1	MG/KG	02/14/2024	MNC
Benzene	EPA-8260	**54**	12	1	UG/KG	02/17/2024	DLC
Toluene	EPA-8260	**390**	10	1	UG/KG	02/17/2024	DLC
Ethylbenzene	EPA-8260	**280**	10	1	UG/KG	02/17/2024	DLC
m,p-Xylene	EPA-8260	**1000**	20	1	UG/KG	02/17/2024	DLC
o-Xylene	EPA-8260	**370**	13	1	UG/KG	02/17/2024	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**84.5**	02/14/2024	MNC
Toluene-d8	EPA-8260	**94.9**	02/17/2024	DLC

Chromatogram indicates that it is likely that sample contains weathered gasoline.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE:	2/22/2024
		ALS SDG#:	EV24020093
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	Circle K Site 1461 / 23-008		

LABORATORY BLANK RESULTS

MBG-021324S - Batch 207363 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	02/13/2024	MNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-021724S - Batch 207719 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8260	U	UG/KG	5.0	02/17/2024	DLC
Toluene	EPA-8260	U	UG/KG	10	02/17/2024	DLC
Ethylbenzene	EPA-8260	U	UG/KG	10	02/17/2024	DLC
m,p-Xylene	EPA-8260	U	UG/KG	20	02/17/2024	DLC
o-Xylene	EPA-8260	U	UG/KG	10	02/17/2024	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS SDG#: WDOE ACCREDITATION:	2/22/2024 EV24020093 C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	Circle K Site 1461 / 23-008		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 207363 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**93.6**			66.5	122.7	02/14/2024	MNC
TPH-Volatile Range - BSD	NWTPH-GX	**93.2**	**0**		66.5	122.7	02/14/2024	MNC

ALS Test Batch ID: 207719 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8260	**91.5**			75	138	02/17/2024	DLC
Benzene - BSD	EPA-8260	**97.0**	**6**		75	138	02/17/2024	DLC
Toluene - BS	EPA-8260	**95.5**			71.6	122.1	02/17/2024	DLC
Toluene - BSD	EPA-8260	**100**	**5**		71.6	122.1	02/17/2024	DLC
Ethylbenzene - BS	EPA-8260	**94.0**			50	150	02/17/2024	DLC
Ethylbenzene - BSD	EPA-8260	**98.6**	**5**		50	150	02/17/2024	DLC
m,p-Xylene - BS	EPA-8260	**96.2**			50	150	02/17/2024	DLC
m,p-Xylene - BSD	EPA-8260	**101**	**5**		50	150	02/17/2024	DLC
o-Xylene - BS	EPA-8260	**98.3**			50	150	02/17/2024	DLC
o-Xylene - BSD	EPA-8260	**104**	**6**		50	150	02/17/2024	DLC

APPROVED BY

Rob Greer
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

Laboratory location:
8260 Holly Drive, Suite 100
Everett, WA 98208

Chain of Custody Form

Page 1 of 1

EV24020093

ALS Project Manager: | **Work Order #:**

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order	23-008	Project Name	Circle K site 1461	A	~~NT~~ NWTPH-GX
Work Order		Project Number	23-008	B	BTEX by EPA 8260
Company Name	Glacier Environmental	Bill To Company	Glacier Environmental	C	
Send Report To	Lauren Golembiewski	Invoice Attn.	Lauren Golembiewski	D	
Address	7509 212th st SW	Address	7509 212th st SW	E	
				F	
City/State/Zip	Edmonds WA 98026	City/State/Zip	Edmonds WA 98026	G	
Phone	425-355-2826	Phone	425-355-2826	H	
Fax		Fax		I	
e-Mail Address	lmiles@glacierenviro.com	e-Mail Address	lmiles@glacierenviro.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SMW2@ 5'	2/12/24	9:20	Soil		4	X	X									
2	SMW2@ 10'	2/12/24	9:30	Soil		4	X	X									
3	SMW2@ 20'	2/12/24	10:00	Soil		4	X	X									
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign: Amelia Leong

Shipment Method:

Required Turnaround Time: ☐ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by: Amelia Leong	**Date:** 2/12/24	**Time:** 10:45am	**Received by:** Thayne Westman	**Notes:**
Relinquished by: Thayne Westman	**Date:** 2/12/24	**Time:** 16:12 PM	**Received by (Laboratory):** CW 2/12/24	**Cooler Temp.** 2.1 °C (CO) Iced
Logged by (Laboratory):	**Date:**	**Time:**	**Checked by (Laboratory):**	

QC Package: (Check Box Below)

- ☐ Level II: Standard QC
- ☐ Level III: Std QC + Raw Data
- ☐ Level IV: SW846 CLP-Like
- ☐ Other: _____
- ☐ TRRP-Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Glacier Env. ALS Job#: EV24020093

Project: Circle K site 1461

Login Date: 2/12/24 Login Time: 1612 Login By: CR

Type of Shipping Container: Cooler X Box ___ Other ___

Shipped via: FedEx Ground ___ UPS ___ Courier ___ Hand Delivered X ALS Courier ___
FedEx Express ___

	Yes	No	N/A
Were custody seals on outside of shipping container? If yes, how many? ___ Where? ___ Custody seal date: ___ Seal name: ___	___	___	X
Was Chain of Custody properly filled out (ink, signed, dated, etc.)?	X	___	___
Did all bottles have labels?	X	___	___
Did all bottle labels and tags agree with Chain of Custody?	X	___	___
Were samples received within hold time?	X	___	___
Did all bottles arrive in good condition (unbroken, etc.)?	X	___	___
Was sufficient amount of sample sent for the tests indicated?	X	___	___
Was correct preservation added to samples?	X	___	___
Subcontract test containers added to Subcontract Bin?	___	___	X
Wetchem test containers marked with required Tests?	___	___	X
Short hold time test containers delivered to analysts?	___	___	X
Were VOA vials checked for absence of air bubbles?	___	___	X
Bubbles present in sample #: ___			
5035A kits received? # Low Kits: 3 # High Kits: ___	X	___	___
5035A kits returned? # Low Kits: ___ # High Kits: ___			
Temperature of cooler upon receipt: 2.1 °C On ice?	X	___	___

Explain any discrepancies:

→ Returned ~~5~~ 4 MeOH voas unused and clean

Was client contacted? ___ Who was called? ___ By whom? ___ Date: ___

Outcome of call:

June 14, 2024

Ms. Lauren Golembiewski
Glacier Environmental Services, Inc.
7509 - 212th St SW
Edmonds, WA 98026

Dear Ms. Golembiewski,

On June 12th, 6 samples were received by our laboratory and assigned our laboratory project number EV24060109. The project was identified as your 23-008. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	6/14/2024 EV24060109 EV24060109-01
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	06/12/2024
CLIENT PROJECT:	23-008	COLLECTION DATE:	6/12/2024 7:50:00 AM
CLIENT SAMPLE ID	NW Trench	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**78**	3.0	1	MG/KG	06/13/2024	MNC
Benzene	EPA-8021	**0.059**	0.030	1	MG/KG	06/13/2024	MNC
Toluene	EPA-8021	U	0.050	1	MG/KG	06/13/2024	MNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	06/13/2024	MNC
Xylenes	EPA-8021	**0.23**	0.20	1	MG/KG	06/13/2024	MNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	06/13/2024	DHM
TPH-Oil Range	NWTPH-DX	**63**	50	1	MG/KG	06/13/2024	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**100**	06/13/2024	MNC
TFT	EPA-8021	**105**	06/13/2024	MNC
C25	NWTPH-DX	**92.2**	06/13/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline and an unidentified oil range product.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	6/14/2024 EV24060109 EV24060109-02
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	06/12/2024
CLIENT PROJECT:	23-008	COLLECTION DATE:	6/12/2024 7:50:00 AM
CLIENT SAMPLE ID	NB Trench	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**74**	3.0	1	MG/KG	06/13/2024	MNC
Benzene	EPA-8021	**0.041**	0.030	1	MG/KG	06/13/2024	MNC
Toluene	EPA-8021	U	0.050	1	MG/KG	06/13/2024	MNC
Ethylbenzene	EPA-8021	**0.26**	0.050	1	MG/KG	06/13/2024	MNC
Xylenes	EPA-8021	**0.74**	0.20	1	MG/KG	06/13/2024	MNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	06/13/2024	DHM
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	06/13/2024	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**80.9**	06/13/2024	MNC
TFT	EPA-8021	**91.4**	06/13/2024	MNC
C25	NWTPH-DX	**92.2**	06/13/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	6/14/2024 EV24060109 EV24060109-03
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	06/12/2024
CLIENT PROJECT:	23-008	COLLECTION DATE:	6/12/2024 7:50:00 AM
CLIENT SAMPLE ID	NE Trench	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**5.7**	3.0	1	MG/KG	06/13/2024	MNC
Benzene	EPA-8021	U	0.030	1	MG/KG	06/13/2024	MNC
Toluene	EPA-8021	U	0.050	1	MG/KG	06/13/2024	MNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	06/13/2024	MNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	06/13/2024	MNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	06/13/2024	DHM
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	06/13/2024	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**62.4**	06/13/2024	MNC
TFT	EPA-8021	**72.4**	06/13/2024	MNC
C25	NWTPH-DX	**96.8**	06/13/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	6/14/2024 EV24060109 EV24060109-04
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	06/12/2024
CLIENT PROJECT:	23-008	COLLECTION DATE:	6/12/2024 8:15:00 AM
CLIENT SAMPLE ID	SW Trench	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**73**	3.0	1	MG/KG	06/13/2024	MNC
Benzene	EPA-8021	**0.053**	0.030	1	MG/KG	06/13/2024	MNC
Toluene	EPA-8021	U	0.050	1	MG/KG	06/13/2024	MNC
Ethylbenzene	EPA-8021	**0.58**	0.050	1	MG/KG	06/13/2024	MNC
Xylenes	EPA-8021	**0.33**	0.20	1	MG/KG	06/13/2024	MNC
TPH-Diesel Range	NWTPH-DX	**30**	25	1	MG/KG	06/13/2024	DHM
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	06/13/2024	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**76.4**	06/13/2024	MNC
TFT	EPA-8021	**85.2**	06/13/2024	MNC
C25	NWTPH-DX	**93.8**	06/13/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline and an unidentified diesel range product.
Diesel range product results biased high due to gasoline range product overlap.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	6/14/2024 EV24060109 EV24060109-05
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	06/12/2024
CLIENT PROJECT:	23-008	COLLECTION DATE:	6/12/2024 8:15:00 AM
CLIENT SAMPLE ID	SB Trench	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**1200**	300	100	MG/KG	06/14/2024	MNC
Benzene	EPA-8021	**0.67**	0.030	1	MG/KG	06/13/2024	MNC
Toluene	EPA-8021	U	0.050	1	MG/KG	06/13/2024	MNC
Ethylbenzene	EPA-8021	**12**	5.0	100	MG/KG	06/14/2024	MNC
Xylenes	EPA-8021	**5.2**	0.20	1	MG/KG	06/13/2024	MNC
TPH-Diesel Range	NWTPH-DX	**37**	25	1	MG/KG	06/13/2024	DHM
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	06/13/2024	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 100X Dilution	NWTPH-GX	U, SUR07	06/14/2024	MNC
TFT	EPA-8021	**204 SUR12**	06/13/2024	MNC
TFT 100X Dilution	EPA-8021	U, SUR07	06/14/2024	MNC
C25	NWTPH-DX	**94.1**	06/13/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
SUR12 -Surrogate recoveries were outside of the control limits due to matrix interference.
SUR07 -The surrogate recovery could not be determined due to dilution below the calibration range.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline and an unidentified diesel range product.
Diesel range product results biased high due to gasoline range product overlap.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	6/14/2024 EV24060109 EV24060109-06
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	06/12/2024
CLIENT PROJECT:	23-008	COLLECTION DATE:	6/12/2024 8:15:00 AM
CLIENT SAMPLE ID	SE Trench	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**520**	30	10	MG/KG	06/14/2024	MNC
Benzene	EPA-8021	**0.46**	0.030	1	MG/KG	06/13/2024	MNC
Toluene	EPA-8021	U	0.050	1	MG/KG	06/13/2024	MNC
Ethylbenzene	EPA-8021	**4.1**	0.050	1	MG/KG	06/13/2024	MNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	06/13/2024	MNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	06/13/2024	DHM
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	06/13/2024	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 10X Dilution	NWTPH-GX	**102**	06/14/2024	MNC
TFT	EPA-8021	**138**	06/13/2024	MNC
C25	NWTPH-DX	**94.6**	06/13/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.

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CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE:	6/14/2024
		ALS SDG#:	EV24060109
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	23-008		

LABORATORY BLANK RESULTS

MBG-061224S - Batch 213560 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	06/13/2024	MNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-061224S - Batch 213560 - Soil by EPA-8021

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	MG/KG	0.030	06/13/2024	MNC
Toluene	EPA-8021	U	MG/KG	0.050	06/13/2024	MNC
Ethylbenzene	EPA-8021	U	MG/KG	0.050	06/13/2024	MNC
Xylenes	EPA-8021	U	MG/KG	0.20	06/13/2024	MNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-061324S - Batch 213522 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	MG/KG	25	06/13/2024	DHM
TPH-Oil Range	NWTPH-DX	U	MG/KG	50	06/13/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT: Glacier Environmental Services, Inc.
7509 - 212th St SW
Edmonds, WA 98026
CLIENT CONTACT: Lauren Golembiewski
CLIENT PROJECT: 23-008

DATE: 6/14/2024
ALS SDG#: EV24060109
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 213560 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**84.5**			66.5	122.7	06/13/2024	MNC
TPH-Volatile Range - BSD	NWTPH-GX	**95.7**	**12**		66.5	122.7	06/13/2024	MNC

ALS Test Batch ID: 213560 - Soil by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8021	**95.7**			67.7	124	06/13/2024	MNC
Benzene - BSD	EPA-8021	**95.2**	**1**		67.7	124	06/13/2024	MNC
Toluene - BS	EPA-8021	**91.5**			71	123	06/13/2024	MNC
Toluene - BSD	EPA-8021	**90.9**	**1**		71	123	06/13/2024	MNC
Ethylbenzene - BS	EPA-8021	**94.3**			69.8	120	06/13/2024	MNC
Ethylbenzene - BSD	EPA-8021	**94.2**	**0**		69.8	120	06/13/2024	MNC
Xylenes - BS	EPA-8021	**92.3**			70	120	06/13/2024	MNC
Xylenes - BSD	EPA-8021	**89.3**	**3**		70	120	06/13/2024	MNC

ALS Test Batch ID: 213522 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	**107**			75.5	122.1	06/13/2024	DHM
TPH-Diesel Range - BSD	NWTPH-DX	**111**	**4**		75.5	122.1	06/13/2024	DHM

APPROVED BY

Rob Greer
Laboratory Director

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Only): EV24060109

Date 6/12/24 Page 1 Of 1

PROJECT ID: 23-008
REPORT TO COMPANY: Glacier Environmental
PROJECT MANAGER: Lauren Golembiewski
ADDRESS: 7509 212TH ST SW
EDMONDS WA 98026
PHONE: 425-355-2826 P.O. #:
E-MAIL: LMiles@glacierenviro.com
INVOICE TO COMPANY: Glacier Environmental
ATTENTION: Lauren
ADDRESS: 7509 212TH ST SW
EDMONDS WA 98026

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☒	BTEX by EPA 8260 ☐	MTBE by EPA 8021 ☐	MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐	Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☐	RCRA-8 ☐	Pri Pol ☐	TAL ☐	Metals Other (Specify)	TCLP-Metals ☐	VOA ☐	Semi-Vol ☐	Pest ☐	Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. NW Trench	6-12-24	7:50	Soil	1		X	X	X																								
2. NB Trench	6-12-24	7:50	Soil	2		X	X	X																								
3. NE Trench	6-12-24	7:50	Soil	3		X	X	X																								
4. SW Trench	6-12-24	8:15	Soil	4		X	X	X																								
5. SB Trench	6-12-24	8:15	Soil	5		X	X	X																								
6. SE Trench	6-12-24	8:15	Soil	6		X	X	X																								
7.																																
8.																																
9.																																
10.																																

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: [signature] 6-12-24 2:55
Received By: [signature] Julia ALS 6/12/24 1455
2. Relinquished By:
Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard ☐ | 5 ☐ | 3 ☐ | 2 ☐ | 1 ☐ | SAME DAY ☐

Fuels & Hydrocarbon Analysis: 5 Standard ☐ | 3 ☐ | 1 ☑ | SAME DAY ☐

OTHER:
Specify: 8021 and GX = 1 day
DX = 2 day

*Turnaround request less than standard may incur Rush Charges

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Glacier Environmental ALS Job#: EV2406O109

Project: 23-008

Login Date: 6/12/24 Login Time: 1455 Login By: AV

Type of Shipping Container: Cooler ✓ Box ___ Other ___

Shipped via: FedEx Ground ___ UPS ___ Courier ___ Hand Delivered ✓ ALS Courier ___
FedEx Express ___

	Yes	No	N/A
Were custody seals on outside of shipping container? If yes, how many? ___ Where? ___ Custody seal date: ___ Seal name: ___	___	___	✓
Was Chain of Custody properly filled out (ink, signed, dated, etc.)?	✓	___	___
Did all bottles have labels?	✓	___	___
Did all bottle labels and tags agree with Chain of Custody?	✓	___	___
Were samples received within hold time?	✓	___	___
Did all bottles arrive in good condition (unbroken, etc.)?	✓	___	___
Was sufficient amount of sample sent for the tests indicated?	✓	___	___
Was correct preservation added to samples?	✓	___	___
Subcontract test containers added to Subcontract Bin?	___	___	✓
Wetchem test containers marked with required Tests?	___	___	✓
Short hold time test containers delivered to analysts?	___	___	✓
Were VOA vials checked for absence of air bubbles?	___	___	✓
Bubbles present in sample #: ___			
5035A kits received? # Low Kits: ___ # High Kits: 6	✓	___	___
5035A kits returned? # Low Kits: ___ # High Kits: ___			
Temperature of cooler upon receipt: 12.5°C On ice?	___	✓	___

Explain any discrepancies:

Client wanted a 1 day rush for all tests. Dx, I mentioned to aim for 1 day but if not, it will be 2 day.

Was client contacted? ___ Who was called? ___ By whom? ___ Date: ___

Outcome of call:

June 24, 2024

Ms. Lauren Golembiewski
Glacier Environmental Services, Inc.
7509 - 212th St SW
Edmonds, WA 98026

Dear Ms. Golembiewski,

On June 21st, 3 samples were received by our laboratory and assigned our laboratory project number EV24060182. The project was identified as your 23-008. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rob Greer
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	6/24/2024 EV24060182 EV24060182-01
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	06/21/2024
CLIENT PROJECT:	23-008	COLLECTION DATE:	6/21/2024 10:15:00 AM
CLIENT SAMPLE ID	WS Trench	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**28**	3.0	1	MG/KG	06/24/2024	MNC
Benzene	EPA-8021	**0.38**	0.030	1	MG/KG	06/24/2024	MNC
Toluene	EPA-8021	U	0.050	1	MG/KG	06/24/2024	MNC
Ethylbenzene	EPA-8021	**0.12**	0.050	1	MG/KG	06/24/2024	MNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	06/24/2024	MNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	06/24/2024	DHM
TPH-Oil Range	NWTPH-DX	**79**	50	1	MG/KG	06/24/2024	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**99.1**	06/24/2024	MNC
TFT	EPA-8021	**114**	06/24/2024	MNC
C25	NWTPH-DX	**106**	06/24/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline and an unidentified oil range product.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	6/24/2024 EV24060182 EV24060182-02
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	06/21/2024
CLIENT PROJECT:	23-008	COLLECTION DATE:	6/21/2024 10:15:00 AM
CLIENT SAMPLE ID	WB Trench	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	3.0	1	MG/KG	06/24/2024	MNC
Benzene	EPA-8021	U	0.030	1	MG/KG	06/24/2024	MNC
Toluene	EPA-8021	U	0.050	1	MG/KG	06/24/2024	MNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	06/24/2024	MNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	06/24/2024	MNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	06/24/2024	DHM
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	06/24/2024	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**86.6**	06/24/2024	MNC
TFT	EPA-8021	**101**	06/24/2024	MNC
C25	NWTPH-DX	**105**	06/24/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE: ALS JOB#: ALS SAMPLE#:	6/24/2024 EV24060182 EV24060182-03
CLIENT CONTACT:	Lauren Golembiewski	DATE RECEIVED:	06/21/2024
CLIENT PROJECT:	23-008	COLLECTION DATE:	6/21/2024 10:15:00 AM
CLIENT SAMPLE ID	WN Trench	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**3.6**	3.0	1	MG/KG	06/24/2024	MNC
Benzene	EPA-8021	**0.040**	0.030	1	MG/KG	06/24/2024	MNC
Toluene	EPA-8021	U	0.050	1	MG/KG	06/24/2024	MNC
Ethylbenzene	EPA-8021	U	0.050	1	MG/KG	06/24/2024	MNC
Xylenes	EPA-8021	U	0.20	1	MG/KG	06/24/2024	MNC
TPH-Diesel Range	NWTPH-DX	U	25	1	MG/KG	06/24/2024	DHM
TPH-Oil Range	NWTPH-DX	U	50	1	MG/KG	06/24/2024	DHM

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**92.5**	06/24/2024	MNC
TFT	EPA-8021	**106**	06/24/2024	MNC
C25	NWTPH-DX	**106**	06/24/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE:	6/24/2024
		ALS SDG#:	EV24060182
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	23-008		

LABORATORY BLANK RESULTS

MBG-062424S - Batch 214018 - Soil by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	MG/KG	3.0	06/24/2024	MNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062424S - Batch 214018 - Soil by EPA-8021

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	MG/KG	0.030	06/24/2024	MNC
Toluene	EPA-8021	U	MG/KG	0.050	06/24/2024	MNC
Ethylbenzene	EPA-8021	U	MG/KG	0.050	06/24/2024	MNC
Xylenes	EPA-8021	U	MG/KG	0.20	06/24/2024	MNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-062324S - Batch 214011 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	MG/KG	25	06/24/2024	DHM
TPH-Oil Range	NWTPH-DX	U	MG/KG	50	06/24/2024	DHM

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Glacier Environmental Services, Inc. 7509 - 212th St SW Edmonds, WA 98026	DATE:	6/24/2024
		ALS SDG#:	EV24060182
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Lauren Golembiewski		
CLIENT PROJECT:	23-008		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 214018 - Soil by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**112**			66.5	122.7	06/24/2024	MNC
TPH-Volatile Range - BSD	NWTPH-GX	**114**	**2**		66.5	122.7	06/24/2024	MNC

ALS Test Batch ID: 214018 - Soil by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8021	**120**			67.7	124	06/24/2024	MNC
Benzene - BSD	EPA-8021	**121**	**1**		67.7	124	06/24/2024	MNC
Toluene - BS	EPA-8021	**114**			71	123	06/24/2024	MNC
Toluene - BSD	EPA-8021	**116**	**1**		71	123	06/24/2024	MNC
Ethylbenzene - BS	EPA-8021	**116**			69.8	120	06/24/2024	MNC
Ethylbenzene - BSD	EPA-8021	**117**	**1**		69.8	120	06/24/2024	MNC
Xylenes - BS	EPA-8021	**113**			70	120	06/24/2024	MNC
Xylenes - BSD	EPA-8021	**113**	**0**		70	120	06/24/2024	MNC

ALS Test Batch ID: 214011 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	**105**			75.5	122.1	06/24/2024	DHM
TPH-Diesel Range - BSD	NWTPH-DX	**102**	**3**		75.5	122.1	06/24/2024	DHM

APPROVED BY

Rob Greer
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

EV24060182

Date 6-21-24 Page 1 Of 1

PROJECT ID: 23-008
REPORT TO COMPANY: Glacier Environmental
PROJECT MANAGER: Lauren Golembiewski
ADDRESS: 7509 212TH S SW
EDMONDS WA 98026
PHONE: 425 355 2826 P.O. #:
E-MAIL: LMiles@glacierenviro.com
INVOICE TO COMPANY:
ATTENTION: — SAME —
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#
1. WS TRENCH	6/21/24	10:15	S	1
2. WB TRENCH	6/21/24	10:13		2
3. WN TRENCH	6/21/24	10:15		3
4.				
5.				
6.				
7.				
8.				
9.				
10.				

ANALYSIS REQUESTED

NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☑	BTEX by EPA 8260 ☐	MTBE by EPA 8021 ☐	MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐	Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☐	RCRA-8 ☐	Pri Pol ☐	TAL ☐	Metals Other (Specify)	TCLP-Metals ☐	VOA ☐	Semi-Vol ☐	Pest ☐	Herbs ☐
	X	X	X																					
	X	X	X																					
	X	X	X																					

OTHER (Specify)

NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: 1410 6-21-24
   Received By: ALS 6/21/24 1410
2. Relinquished By:
   Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis
10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis
5 Standard | 3 | 1 | SAME DAY

OTHER:
Specify:

*Turnaround request less than standard may incur Rush Charges

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Glacier Environmental ALS Job#: EV24060182

Project: 23-008

Login Date: 6/21/24 Login Time: 1410 Login By: AV

Type of Shipping Container: Cooler ✓ Box ___ Other ___

Shipped via: FedEx Ground ___ UPS ___ Courier ___ Hand Delivered ✓ ALS Courier ___
FedEx Express ___

	Yes	No	N/A
Were custody seals on outside of shipping container?	___	___	✓
If yes, how many? ___ Where? ___			
Custody seal date: ___ Seal name: ___			
Was Chain of Custody properly filled out (ink, signed, dated, etc.)?	✓	___	___
Did all bottles have labels?	✓	___	___
Did all bottle labels and tags agree with Chain of Custody?	✓	___	___
Were samples received within hold time?	✓	___	___
Did all bottles arrive in good condition (unbroken, etc.)?	✓	___	___
Was sufficient amount of sample sent for the tests indicated?	✓	___	___
Was correct preservation added to samples?	✓	___	___
Subcontract test containers added to Subcontract Bin?	___	___	✓
Wetchem test containers marked with required Tests?	___	___	✓
Short hold time test containers delivered to analysts?	___	___	✓
Were VOA vials checked for absence of air bubbles?	___	___	✓
Bubbles present in sample #: ___			
5035A kits received? 3 AV # Low Kits: 3 # High Kits: 3	✓	___	___
5035A kits returned? # Low Kits: ___ # High Kits: ___			
Temperature of cooler upon receipt: 11.3 °C On ice?	✓	___	___

Explain any discrepancies:

Was client contacted? ___ Who was called? ___ By whom? ___ Date: ___

Outcome of call:

APPENDIX E- TEST & INSPECTION REPORTS

GLACIER
ENVIRONMENTAL SERVICES

PRESSURE TESTING REPORT

Project: Circle K

Pipe Being Tested: Well Piping- Well Bank 1 (RW-6, MW-4, RW-2)

Date of Test: 7/25/2024

Type of Test (Air/Water): Air

	Time		Pressure
Duration:	2 hours		30

Witnessed By: Todd Leach

Remarks (leaks, repairs, etc.) After finding out most sample ports leaked I did a quick test and verified that all sample ports were leaking so I removed all sample ports and retaped and used thread sealant and reinstalled them.

Evaluation (Pass/Fail): Pass

Pipe Being Tested: Well Piping- Well Bank 2 (RW-10, SW-2, RW-5)

Date of Test: 7/25/2024

Type of Test (Air/Water): Air

	Time		Pressure
Duration:	2 hours		30

Witnessed By: Todd Leach

Remarks (leaks, repairs, etc.) After finding out most sample ports leaked I did a quick test and verified that all sample ports were leaking so I removed all sample ports and retaped and used thread sealant and reinstalled them.

Evaluation (Pass/Fail): Pass

GLACIER
ENVIRONMENTAL SERVICES

PRESSURE TESTING REPORT

Pipe Being Tested: Well Piping-Well Bank 3 (SW-1, RW-8, RW-4)

Date of Test: 7/26/2024

Type of Test (Air/Water): Air

	Time		Pressure
Duration:	2 hours		30

Witnessed By: Todd Leach

Remarks (leaks, repairs, etc.) After finding out most sample ports leaked I did a quick test and verified that all sample ports were leaking so I removed all sample ports and retaped and used thread sealant and reinstalled them.

Evaluation (Pass/Fail): Pass

Pipe Being Tested: Well Piping- Well Bank 4 (RW-7, SW-3, RW-3, RW-9)

Date of Test: 7/26/2024

Type of Test (Air/Water): Air

	Time		Pressure
Duration:	2 hours		30

Witnessed By: Todd Leach

Remarks (leaks, repairs, etc.) After finding out most sample ports leaked I did a quick test and verified that all sample ports were leaking so I removed all sample ports and retaped and used thread sealant and reinstalled them.

Evaluation (Pass/Fail): Pass

GLACIER
ENVIRONMENTAL SERVICES

PRESSURE TESTING REPORT

	Time	Temp	Pressure
Start:	10:50	45*F	10.5 PSI
End:	13:10	47*F	10 PSI

Witnessed By: Thayne Wastman

Remarks (leaks, repairs, etc.)

Evaluation (Pass/Fail): Pass

Pipe Being Tested: t-400 to Mixing tank

Date of Test: 11/15-11/18/2024

Type of Test (Air/Water): Water

		Time	Temp	Pressure
Start:	11/15/2024	6:50		30
End:	11/18/2024	8:51		30

Witnessed By: Thayne Wastman

Remarks (leaks, repairs, etc.)

Evaluation (Pass/Fail): Pass

GLACIER
ENVIRONMENTAL SERVICES

PRESSURE TESTING REPORT

Pipe Being Tested: T301-T400 including LGAC skid

Date of Test: 11/15-11/18/2024

Type of Test (Air/Water):

		Time	Temp	Pressure
Start:	11/12/2024	12:01		30
End:	11/13/2024	6:45		30

Witnessed By: Thayne Wastman

Remarks (leaks, repairs, etc.)

Evaluation (Pass/Fail): Pass

Pipe Being Tested: T300 to T301

Date of Test: 11/15-11/18/2024

Type of Test (Air/Water): Water

		Time	Temp	Pressure
Start:	11/15/2024	11:01		30
End:	11/18/2024	7:23		30

Witnessed By: Thayne Wastman

Remarks (leaks, repairs, etc.)

Evaluation (Pass/Fail): Pass

Name:__Shawn Koliadko / Mason Inman_____, Date finished:_____

Corrected altitude: *~175'* I.P. Address:_____

WO -__8135__Hr (start/finish) - *Within January of 2024* /_____

(Items in Red are not applicable)

Electrical Precheck:

__SK__Perform a wire pull test and re-torque all connections.

__SK__Check the disconnect wiring before powering up the unit.

__SK__Connect main power feed to the power distribution block

Electrical Power:

__SK__Flip the disconnect and main breaker (check for correct power input with a meter).

__SK__Flip the control circuit breaker and check for hot/neutral at the feed terminals.

__SK__Switch on battery backup and check the hot/neutral inputs.

__SK__With battery backup on, check for power output from surge and battery outlets.

__SK__Test for 120 volt and 24 volt hot and neutral.

__N/A__Set phase monitor.

System Voltage - Primary: NP (V/FLA)=__208__V/__162__A,__3__PH

L1+L2=__210.2__V, L1+L3=__209.6__V, L2+L3=__209.7__V

L1=__121.2__V, L2=__121.2__V, L3=__120.8__V

Secondary Voltage : NP (V/FLA)=__120__V/__N/A__A,__1__PH

L1+L2=__120.8__V, L1+L3=_____V, L2+L3=_____V

L1=_____V, L2=_____V, L3=_____V

Control Circuit Voltage - Primary: NP=__24__V, L1=__24.01__V

__SK__Take a photograph of the HMI displays to modify the checklist.

Preliminary Inspection:

__SK__Check all documents against the system.

__SK__Verify that all clean out ports can be accessed.

__SK__Verify that all wiring is properly sized, terminated in the correct location, and installed in a clean and orderly manner.

__SK__Ensure check valves and solenoids are in the correct direction.

__SK__Verify that the appropriate gaskets were used in the application (Buna, Viton, EPDM, etc)

__SK__No green PVC suction hose on positive pressure water lines (except for 1” hose if used with metal camlocks)

__SK__Check that the sides of all electrical junction boxes (XP) are supported.

__SK__Examine Class 1, Division 1, and Division 2 motors and devices.

__SK__Check that every conduit is secured in accordance with the National Electrical Code.

__SK__Ensure that all Seal-Tite connections are correctly tightened.

__SK__Check that, in accordance with the National Electrical Code, all seal-offs are in their proper locations.

__SK__Verify that a ground lug is installed on the skid.

MI Check for USB drive on touch screen HMI displays

__SK__Inspect that all components that flow air are grounded (AST, MS, etc)

__SK__Motors and their respective thermal protectors are contrasted.

__SK__Remove all floats to ensure that all Centering disks are installed on all float stems.

__N/A__The pressure/vacuum relief (vacuum breaker) is adjusted and positioned after the final outlet point. (only on systems where there is liquid phase carbon OR if there is a big downhill to the end-point)

__N/A__Check that the mini-helix and magnehelic have the zero set property and that the case is secure.

__SK__Check that all gauges are positioned for convenient ground-level viewing.

__N/A__Verify that the solenoid valve for the compressor has been installed in the correct location.

__N/A__Centrifugal blower inlet guards are installed.

__SK__Exhaust stack(s) and vent risers are fabricated and installed.

__N/A__Verify that all AST rods are properly tightened prior to operation.

__SK__The product tank(s) is/are assembled with 1" galvanized plugs in all unused bungs.

__SK__ On every oil-filled unit, make sure to check the oil level and oil fill tag.

__SK__Compare motor overload and circuit breaker specifications to motor maximum load amperage.

__SK__Check that all threaded conduit has bushings installed when entering a junction box.

__N/A__Verify the VFD voltage/amperage to the motor/panel specifications.

__N/A__Check to ensure that all line voltage junction boxes and devices have grounds installed, tightened, and sized properly. (No less than #12 wire on all “field” devices.)

__SK__Verify that all transmitters and switches are operational and readable.

__SK__Verify that all Transmitter/switch setpoints in the HMI have been updated.

__SK__No clear tubing on water pressure transmitters

__N/A__Program VFDs (if applicable).

__SK__Check ISR inputs (Intrinsic circuit).

__SK__Check "CR” operations.

__SK__Check that every GFCI outlet trips when tested.

MI Check ALL hose attachments, including gauge tubing.

__SK__Check for bonding bushings on all conduits entering/exiting classified areas.

__SK__Examine the caulking on all walls separating classified from unclassified areas.

__SK__Ensure that seal-offs are present on all heaters in classified areas.

__SK__Examine the tension of each cord grip.

MI All filters are installed.

__SK__Check pipe strapping in electrical and plumbing systems.

MI/SK Program electromagnetic flowmeters.

__SK__All piping is aligned and straight.

_____ Check that all doors open and close properly, and that all locks operate with the appropriate keys

__SK__Blower/compressor motor cooling exhaust ducting (If necessary)

__SK__Check the temperature and pressure resistance of each hose.

__SK__Examine all fasteners on flanges and connections.

__SK__Verify that the shields of all control cables have been terminated and grounded on the panel grounding bar.

__N/A__Confirm that the condensate line feeding the compressor line is in place.

__SK__Check that the MS tank is equipped with a vacuum relief valve, and record the vacuum relief point. __27__”__HG__

__SK__Pitot tubes, transmitters, and gauges have been outfitted with tubing.

MI/SK Check PLC inputs/outputs while hand operating sensors/switches.

__SK__Verify that the HMI display reads all associated transmitters on the status screen.

Liquid Test:

MI Check all water connections to ensure there are no major leaks on startup.

MI Check all plumbing valves to ensure they are in the correct position for startup flow.

MI Install cam locks on the unit's inlet and outlet apertures for testing.

MI Look for leakage in cam locks and hoses.

MI Fill the vessel with water (as much as possible without starting the motors) (check for leakage and report).

MI Check for water leaks from all pumps, devices, and connections.

Operational Testing:

Specifications to validate and test:

Provide 300 ACFM at ~~29~~ 24 inches of mercury. At 60 Hz, the motor shall operate at 1,750 RPM. (per RFQ and Submittal) ***Achieved:*** *352.9 ACFM (~70 SCFM) @ 24 Hg*

Min of 5 gpm and max 10 gpm. (per RFQ)

Provide a heat exchanger that will drop the exit temperature on the discharge side of the oil sealed liquid ring pump to within 15F of the ambient average annual maximum temperature. (per Sign Off Form 1.2.3.)

Transfer pump Max Discharge Pressure of 50 psig (per Sign Off Form 1.2.3.)

MI Turn on all breakers to all devices

MI/SK Check motor rotation starting with the largest motor.

MI Obtain flow diagrams to compare the airflow of all blowers and compressors.

_____ Test the pressure relief valve operation on the compressor. _____psi

MI Test the auto oiler's operation.

MI Check that the manually engaged motor overloads break the circuit.

MI Create failure scenarios in order to observe the system's response.

N/A Validate the operation of the air compressor's automatic drain.

MI/SK Check that all transmitters and switches work as they should.

__SK__ Test unit CFM Rated flow vs. actual flow.

MI Test pump(s) GPM Rated flow vs Actual flow.

MI/SK Test all alarms on the HMI screen.

N/A Test VFD panel fan and thermostat.

__SK__ Decibel reading recorded inside:__98__ dB outside at 10ft:__66__ dB.

MI/SK Auto restart tested if applicable.

MI/SK After turning on, leave the unit running with the vent fans off for at least two hours to assess the ventilation in the space.

MI Check all air compressor connections and plumbing for air leaks.

N/A Run AST at normal operation then disengage AST blower (to mock an failure scenario) to allow water to dump then check for leaks.

_____ Meet with Mel or Brian to do a pre-departure inspection

LRP HOA

Hand: *MI*

Off: *MI*

Auto: *MI*

MS Pump HOA

Hand: *MI*

Off: *MI*

Auto: *MI*

P-400 Pump HOA

Hand: *MI*

Off: *MI*

Auto: *MI*

P-401 Pump HOA

Hand: *MI*

Off: *MI*

Auto: *MI*

Mixer HOA

Hand: *MI*

Off: *MI*

Auto: *MI*

Mixing pump HOA

Hand: *MI*

Off: *MI*

Auto: *MI*

Influent Pump #2 HOA

Hand:_____

Off: _____

Auto:_____

Effluent Pump #1 HOA

Hand:_____

Off: _____

Auto:_____

Effluent Pump #2 HOA

Hand:_____

Off: _____

Auto:_____

Chemical (sequestrant) Pump #1 HOA

Hand:_____

Off: _____

Auto:_____

Chemical (sequestrant) Pump #2 HOA

Hand:_____

Off: _____

Auto:_____

Equalizer Tank #1 Pump HOA

Hand:_____

Off: _____

Auto:_____

Equalizer Tank #2 Pump HOA

Hand:_____

Off: _____

Auto:_____

SYSTEM COMPONENTS: (Nameplate, Amperage, Setpoint, Pressure, Flow rate)

LRP: NP=__48__A@__208__V, L1= *50.7 A* , L2= *46.8 A* , L3= *49.9 A* ,

SP= *max* ,Press *~24 Hg @ 70 SCFM* , Breaker=__100__A, Overload=__47-57__A,

HP=__20__, RPM=__1770____

Compressor: NP= *10* A@ *120* V, L1= *11.2* A, L2=_____ A, L3=_____A,

SP= *165 psi* ,Press@ *165 max psi* @_____CFM,

Breaker= *20* A, Overload= *N/A* , HP=_____, RPM=_____

MS Pump: NP=__3.18__A@ *208* V, L1= *2.36* A, L2= *2.53* A, L3= *2.32* A,

SP=_____,Press@ *10 PSI* @_____GPM,

Breaker=__15__A, Overload=__3.5-5__A, HP=__1__, RPM=__1745__

P-400 Transfer Pump: NP=__2.8__A@ *208* V, L1= *1.86* A , L2= *1.76* A, L3= *1.85* A,

SP=_____,Press@ *~30 psi* @ *9.79 GPM* ,

Breaker=__15__A, Overload=__2.2-3.2__A, HP=__0.75__, RPM=__3475__

P-401 Transfer Pump: NP=__2.8__A@ *208* V, L1= *1.87* A, L2= *1.84* A, L3= *1.88* A,

SP=_____,Press@ *~30psi* @ *9.18* GPM,

Breaker=__15__A, Overload=__2.2-3.2__A, HP=__0.75__, RPM=__3475__

P-500 Mixing Tank Pump: NP=__3.32__A@ *208* V, L1= *1.62 A* , L2= *1.64 A* , L3= *1.58 A* ,

SP=_____,Press@ *38 psi* @ *9.8 GPM*,

Breaker=__15__A, Overload=__2.8-4__A, HP=__1__, RPM=__3435__

T-500 Mixer: NP=__6__A@ *120* V, L1= *5.92* A, L2=_____ A, L3=_____ A,

SP=_____,Press@_____@_____GPM,

Breaker=__20__A, Overload=__4.5-6.3__A, HP=__.33__, RPM=__1725__

O2 Generator: NP= *5* A@ *120* V, L1= *3.53* A, L2=_____A, L3=_____A,

SP=_____,Press@ *~23 psi* @_____GPM,

Breaker=__20__A, Overload=__N/A__A, HP=_____, RPM=_____

Heat Exchanger: NP=__1.91__A@_____V, L1= *1.63* A,L2= *1.71* A, L3= *1.81* A,

Breaker=__15__A, Overload=__1.8-2.5__A, HP=__.5__, RPM=__1760_____

Bioremediation Room vent fan: NP=__.45__A@ *120* V, L1= *0.76* A, L2=_____ A, L3=_____

A, SP=_____, Breaker=__20__A, Overload=__N/A__A, HP=__N/A__, RPM=__N/A__

Extraction Room Vent Fan: NP=__1.9__A@_ V, L1= *1.29* A, L2= *1.25* A, L3= *1.38* A, SP= *80*

F , Breaker=__15__A, Overload=__1.8-2.5__A, HP=__1/3__, RPM=__1770__

Bioremediation Room heater: NP= 4.2 A@ *120* V, L1= *3.4* A, L2=_____A, L3=_____A,

SP= *70 F* , Breaker= 20 A, Overload= N/A A, HP= N/A , RPM= N/A

Control Room heater: NP= 5 A@ *120* V, L1= *3.2* A, L2=_____A, L3=_____A,

SP= *70 F* , Breaker= 20 A, Overload= *n/a* , HP=*n/a*

Lights: *0.62* A@ *120* V

Control Circuit from Breaker: *0.72* A@ *120* V

FLOATS, TRANSMITTERS, AND SWITCHES:

Float Switches for N/O (Float high high alarms on alarm section:

_____AST #1:

H=_____-_____

L=_____-_____

_____AST #2:

H=_____-_____

L=_____-_____

MI MS:

H= *MI* - *High level float turn on MS pump when raised*

L= *MI* - *Low level float shuts off MS pump when float drops*

MI Holding Tank #1 (T-301):

H= *MI* - *Holding tank high float turns on pump P-400*

L= *MI* - *Holding tank low float turns off pump P-400*

MI Tank #2 (T-400):

H= *MI* - *Holding tank high float turns on pump P-401*

L= *MI* - *Holding Tank low float turns off pump P-401*

Transmitter(s):

MI Vacuum Transmitter(s):

MI - *Pre-LRP Vac Trans* - *Tied to Low and High Vac alarms*

MI/SK Pressure Transmitter(s):

MI/SK - *O2 Press Trans* - *Tied to Oxygen feed Low and High pressure alarms*

MI/SK - *Post Venturi Press Trans* - *Tied to post venturi Low and High pressure alarms*

MI/SK - *Post LRP Press Trans* - *Tied to Status screen only*

MI/SK - *Post P-400 Press Trans* - *Tied to high discharge Pressure alarm*

MI/SK - *Pre LGAC Carbon Press Trans* - *Tied to High Pressure alarm*

MI/SK - *Post Mixing Tank Pump Press Trans* -

MI Temperature Transmitter(s):

MI - *Bioremediation room Temp Trans* - *Tied to Low and High Temp alarms*

MI - *Extraction Room Temp Trans* - *Tied to Low and High Temp alarms*

MI - *Post Hx Temp Trans* - *Tied to High temp alarm*

MI/SK - *Falco Temp Trans* - *3 Trans are internal and trans Low and High Alarms to reflect on HMI of system*

MI Flow Transmitter(s):

MI/SK - *Post LRP Flow Trans* - *Allows for monitoring of CFM flow rate*

MI/SK - *Post mixing tank flow trans* - *Allows for Monitoring of effluent GPM flow rate*

Switch(es):

MI/SK Oil Level High *Triggers High Level Alarm to protect LRP*

MI/SK Oil Level Low *Triggers Low Level Alarm to protect LRP*

MI/SK Vacuum switch *internal to the LRP*

ALARMS and High/Low alarms (Refer to this link to verify alarms):

https://docs.google.com/spreadsheets/d/1E1X3SRvANDD3itaE5dTF4nNvU8iwITm5/edit?usp=sharing&ouid=108429924932933678506&rtpof=true&sd=true

Finalization:

MI Update engineering for As-Builts

MI Remove power from the panel(s).

_____ ”PRMFiltration” stickers to be at the upper portion of the unit exterior

MI Verify that every connection into the panel(s) is impermeable by performing a leak test.

MI Verify that all Hose connections on the unit's inlets and outlets correspond to customer connections.

MI Flow meter reading documented following testing *4,300 gal*.

MI Ensure that the system is operating at the required flow/pressure/vacuum and are these flows recorded?

MI Verify glycerin's liquid level and the cleanliness of the gauges.

MI Clearly marked shipment brackets are to be removed after shipping.

_____ A fresh set of control panel schematics is uploaded to the QR code

MI All seal-offs are poured.

_____ Paint neatly applied.

_____ Caulking (and Great Stuff if the opening is excessive) was meticulously applied to all required areas inside and outside of the unit.

MI Electrical box covers in place.

MI Filter bags are installed in bag filter housings, and spare bag filters are stored in close proximity to bag filter housings.

MI Panel panduit covers are in place in the control panel.

PRMFiltration

_____ AST rods tightened after testing.

_____ Manuals are given to the driver.

_____ Pallets containing loose products are packed properly.

_____ Driver has directions, contact name/phone, and a delivery acceptance sheet.

_____ The list of loose objects packed into the unit and photographed.

_____ Tighten all zip ties contained within the panel(s).

MI Dielectric test.

_____ Verify that all Trailers have corner stabilizers installed (if requested).

_____ Bubble wrap loose piping.

MI Cover all exterior holes with gorilla tape.

MI Drain all storage containers, sumps, and housings.

_____ Fill carbon vessels.

_____ Install finger guards.

_____ Secure vent fan louvers prior to transport.

MI Examine the roof for debris and loosening of the rivets.

_____ Check VFDs for covers.

MI Verify that all carbon vessel have been secured for shipping

_____ Examine tire pressures.

MI Contact Mel/Brian for a final walk through inspection

MI Clean and blow out the unit.

_____ Upload and update all documents in Drive

REMEDIATION EQUIPMENT TERMS OF ACCEPTANCE AND WARRANTY CARD

1. All remediation equipment supplied by PRM must be wired by a licensed electrician. The electrician to perform the work should be familiar with typical applications and all work must conform to the NEC. Failure to have a licensed electrician perform connections will void the system warranty.

2. All mechanical work should be done in a neat and orderly fashion without kinks and strains imposed on hoses and piping systems.

3. Each system supplied by PRM must be registered with PRM a minimum of 2 days prior to startup. This allows PRM to assign a technical support number to the project for start up and technical assistance. Failure to register the equipment will cause technical support delays.

4. Equipment supplied by PRM that will be powered by a generator will require low voltage protection across each phase. Equipment with electronic or solid state controls must be provided with clean power that is supplied with surge protection and appropriate equipment to provide a regulated power source. Failure to provide this power protection will void the warranty on the control system and possibly on the equipment itself.

5. Technical support is available 8:30am to 4:30pm Eastern Standard Time. Monday through Friday except for Holidays. Technical support offered after hours will be billable at a rate of $95.00 per hour with a minimum 1 hour billing.

WARRANTY CARD WO-8135

WARRANTY CARD WO-8135

Site Name DOE Circle K Site 1461

Electrician SHJ Electric License No. / Ph. No. SHJELC I061B S

Size of service 200A 208V 3PH Conductors 3/6

THIS CARD MUST BE RETURNED TO PRM FOR TECHNICAL SUPPORT TO BE ACTIVATED.

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

March 3, 2025

KA No. 096-24255
Permit No. 6996584-CN

Ms. Lauren Golembiewski (E-Mail)
GLACIER ENVIRONMENTAL SERVICES, INC.
7509 212th Street SW
Edmonds, WA 98026

RE: CONSTRUCTION TESTING AND INSPECTION
Circle K
2350 24th Avenue E
Seattle, Washington

Dear Ms. Golembiewski,

In accordance with your request and authorization, our firm performed construction testing and inspection for the above-referenced project. The sampling and testing was performed by our inspectors and reports are included.

If you have any questions, or if we can be of further assistance, please do not hesitate to contact our office.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Jerry L. Gelder
Project Manager
Pacific Northwest Division

JLG/lkj

C.C. CITY OF SEATTLE (UPLOAD)

Krazan & Associates, Inc.
Geotechnical Engineering • Environmental Engineering
Construction Testing and Inspection

WELDING INSPECTION
REPORT NO.: 09624255SSR022625-ZZ

DATE: 2/26/2025
PROJECT #: 09624255
PROJECT: CIRCLE K
LOCATION: 2350 24th Ave E., Seattle, WA
KA P.M.: Jeffrey Dewey

CONTRACTOR: GLACIER
PERMIT #: 6996584
INSPECTOR: Zelalem Zerihun
JURISDICTION: City of Seattle
WEATHER: Cloudy TEMP: 40's

STRUCTURAL STEEL

☑ FIELD ☐ SHOP WELDING ☑ VISUAL ☐ MATERIAL ID

Item(s) Inspected:
Inspected field welds for the angle to the container corners per 4/S1.1.

Location:
The container anchorage to the footing, one per corner per 4/S1.1.

Welder qualification / certification verified for: N/A

Position:	☐	FLAT	☑	VERTICAL	☐	OVERHEAD	☑	HORIZONTAL	☐ Filler Metal:
Process:	☐	SMAW	☑	FCAW	☐	SAW	☐	GMAW	☐ Other:
Weld Type:	☑	FILLET	☐	C.P.	☐	PLUG	☐	P.P.	☐ Other:
Weld Size:	☐	3/16"	☑	1/4"	☐	3/8"	☐	5/16"	☐ Other:
Codes:	☑	AWS	☑	AISC	☐	ASME	☐	IBC	☐ Other:

☑ NOTES ☐ DISCREPANCIES ___ % COMPLETE

1) **Welds** joining angle-to-container frame at 4 corners were inspected per 4/S1.1 and met the visual criteria outlined in AWS D1.1-2020, clauses 8. See photos taken during the inspection.
2) **Adhesive** bolts, one 3/4" A.B. at each corner of the container, were installed into the concrete footing through the steel angle. According to the contractor, the ¾"x10" long anchor bolts had been drilled & epoxied with 8" embed. Based on the bolt protrusion we have observed, the 8" embed information appeared correct. We measured the anchor diameter and confirmed with the required size. We then conducted a torque test by applying over 90% of the recommended maximum installation torque force, 100 lb-ft. In my opinion, the adhesive appeared done per the MPII. The EOR should review this report and either accept it or suggest any necessary remediations.


To the best of my knowledge, the above **WAS performed in accordance with the approved plans, specifications and regulatory requirements.**

Superintendent/Representative: Technician:

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

July 1, 2024

KA No. 096-24255
Permit No. 6996584-CN

Ms. Lauren Golembiewski (E-Mail)
GLACIER ENVIRONMENTAL SERVICES, INC.
7509 212th Street SW
Edmonds, WA 98026

RE: CONSTRUCTION TESTING AND INSPECTION
Circle K
2350 24th Avenue E
Seattle, Washington

Dear Ms. Golembiewski,

In accordance with your request and authorization, our firm performed construction testing and inspection for the above-referenced project. The sampling and testing was performed by our inspectors and reports are included.

If you have any questions, or if we can be of further assistance, please do not hesitate to contact our office.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Jeffrey S. Mercer
Operations Manager
Pacific Northwest Division

JSM/lkj

C.C. CITY OF SEATTLE (UPLOAD)

Krazan & Associates, Inc.
Geotechnical Engineering • Environmental Engineering
Construction Testing and Inspection

Field Report NO.: 09624255DFR6272024TT

DATE: 6/27/2024	Set Count:	CONTRACTOR: Glacier Environmental
PROJECT #: 09624255		PERMIT #: 6996584
PROJECT: Circle K		INSPECTOR: T. Tran
LOCATION: 2350 24th Ave E		JURISDICTION: Seattle
KA P.M.: JSM		WEATHER: Cloudy TEMP: 59° F

On site as requested for reinforcing steel.

Inspected the resteel for (4) footings for the container. Resteel in place corrected size, spacing, lap, grade, and clearance per S1.1 called out.

Reviewed By:		ASTM Test #:		Asset Number(s):	

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

Superintendent/Representative:	Technician:

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

July 15, 2024

KA No. 096-24255
Permit No. 6996584-CN

Ms. Lauren Golembiewski (E-Mail)
GLACIER ENVIRONMENTAL SERVICES, INC.
7509 212th Street SW
Edmonds, WA 98026

RE: CONSTRUCTION TESTING AND INSPECTION
Circle K
2350 24th Avenue E
Seattle, Washington

Dear Ms. Golembiewski,

In accordance with your request and authorization, our firm performed construction testing and inspection for the above-referenced project. The sampling and testing was performed by our inspectors and reports are included.

If you have any questions, or if we can be of further assistance, please do not hesitate to contact our office.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Jeffrey S. Mercer
Operations Manager
Pacific Northwest Division

JSM/lkj

C.C. CITY OF SEATTLE (UPLOAD)

Krazan & Associates, Inc.
Geotechnical Engineering • Environmental Engineering
Construction Testing and Inspection

Field Report NO.: 09624255DFR070824JA

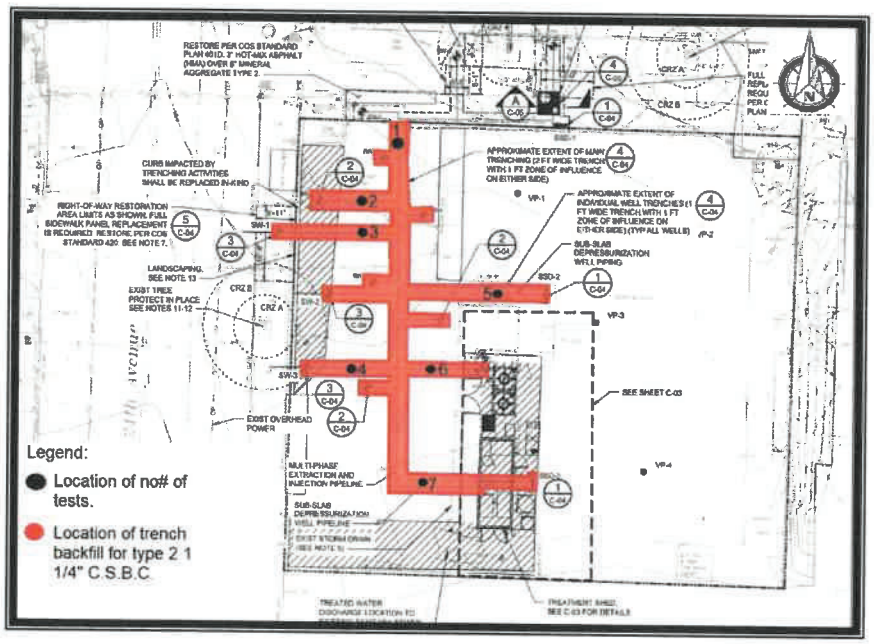
DATE: 7/8/2024	Set Count:	CONTRACTOR: GLACIER
PROJECT #: 09624255		PERMIT #: 6996584
PROJECT: Circle K		INSPECTOR: Joseph Aranas
LOCATION: 2350 24th Ave E		JURISDICTION: City of Seattle
KA P.M.: JM		WEATHER: Sunny TEMP: 80° F

In Place Density:

A krazan and associate arrive onsite on time as requested to performed in place density, upon arrival krazan meet with the contractor (GLACIER) and discussed the detail of inspection, krazan observed contractor already backfill of 12-in thick type 2 1 ¼" C.S.B.C. trench well piping and compacted using jumping jack. Krazan use equipment nuclear gauge KA-268 troxler 3430. Calibration date: Sept.2023

Today, krazan performed seven (7) compaction tests. Test results are pending while waiting for the laboratory test result for the compaction requirement per ASTM D1557 (modified Proctor) of Type 2 1 ¼" C.S.B.C. Refer to compaction report no. 09624255SCR782024JA for compaction details. Site photos are attached for reference.

A bulk sample of type 2 1 ¼" C.S.B.C. materials was also collected at the project site at site stock pile in general accordance to AASHTO T-2 sampling procedures. The collected sample was brought back to our laboratory for the determination of its maximum dry density (ASTM D1557: modified Proctor), gradation (ASTM C136: sieve analysis) and moisture content (ASTM D2216: water content determination by mass).



Krazan & Associates, Inc.
Geotechnical Engineering • Environmental Engineering
Construction Testing and Inspection

Field
Report NO.: 09624255DFR070824JA

Reviewed By:		ASTM Test #:		Asset Number(s):	
To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.					
Superintendent/Representative:		Technician:			

Krazan & Associates, Inc.
Geotechnical Engineering • Environmental Engineering
Construction Testing and Inspection

COMPACTION REPORT NO.: 09624255SCR070824-JA

DATE: 7/8/2024
PROJECT #: 09624255
PROJECT: Circle K
LOCATION: 2350 24th Ave E
KA P.M.: JM

CONTRACTOR: GLACIER
PERMIT #: 6996584
INSPECTOR: Joseph Aranas
JURISDICTION: City of Seattle
WEATHER: Sunny TEMP: 80

☐ NUCLEAR DENSOMETER ASTM D6938 ☐ SANDCONE ASTM D1556 ☐ OTHER

LOCATION MAP

- ○ Paved Areas :
- ○ Building Pad(s) :
- ◉ Utility : Well Piping
- ○ Other :

Curve	Unified Soils Classification or Description	Maximum Dry Density / Rice (PCF)	Optimum Moisture
A	Type 2 1 1/4" C.S.B.C.	128.8	4.4%
	(Uncorrected Value)		

TEST	ELEVATION	LOCATION	CURVE	MODE & DEPTH	DENSITY (PCF)	MOISTURE	COMPACTION	REQUIRED COMPACTION
1	grade	trench Well piping	A	8	127.0	3.3%	99%	95%
2	grade	trench Well piping	A	8	126.0	4.3%	98%	95%
3	grade	trench Well piping	A	8	123.2	3.9%	96%	95%
4	grade	trench Well piping	A	8	123.9	3.2%	96%	95%
5	grade	trench Well piping	A	8	123.2	3.6%	96%	95%
6	grade	trench Well piping	A	8	124.0	4.2%	96%	95%
7	grade	trench Well piping	A	8	123.8	5.3%	96%	95%

EQUIPMENT NO.: B-268 troxler 3430 CALIBRATION DATE: Sept.2023
DAILY AVERAGE STANDARD DENSITY COUNT: 2544
DAILY AVERAGE STANDARD MOISTURE COUNT: 665

Reviewed By: RDM

This testing does not preclude the possibility that the soil or hot mix asphalt may be loosened by future construction or rainfall events. The compaction tests were performed at the approximate locations and elevations shown, and indicate relative compaction at those locations. Horizontal and vertical limits of the compacted areas were determined by others. Our firm does not guarantee earthwork or paving construction, nor does our work relieve the contractor's responsibility to conform to the approved project plans and specifications.

To the best of my knowledge, the above WAS performed in accordance with the approved plans, specifications and regulatory requirements.

REMARKS :

Superintendent/Representative: Technician:

Krazan & ASSOCIATES, INC.

GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING
CONSTRUCTION TESTING & INSPECTION

July 15, 2024

KA No. 096-24255
Lab Report No. 01

Ms. Lauren Golembiewski (E-Mail)
GLACIER ENVIRONMENTAL SERVICES, INC.
7509 212th Street SW
Edmonds, WA 98026

RE: SOILS LABORATORY TESTING
Circle K – 1 ¼" minus, C.S.B.C
2350 24th Avenue E
Seattle, Washington

Dear Ms. Golembiewski,

In accordance with your request and authorization, we have performed laboratory tests for the above referenced project.

Laboratory testing was performed in accordance with ASTM standards. Attached are the results of the Proctor Value with Natural Moisture Content & Sieve Analysis for sample number 86586 dated July 8, 2024 as performed in the Krazan and Associates laboratory. If you have any questions; or if we can be of further assistance, please do not hesitate to contact our office.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

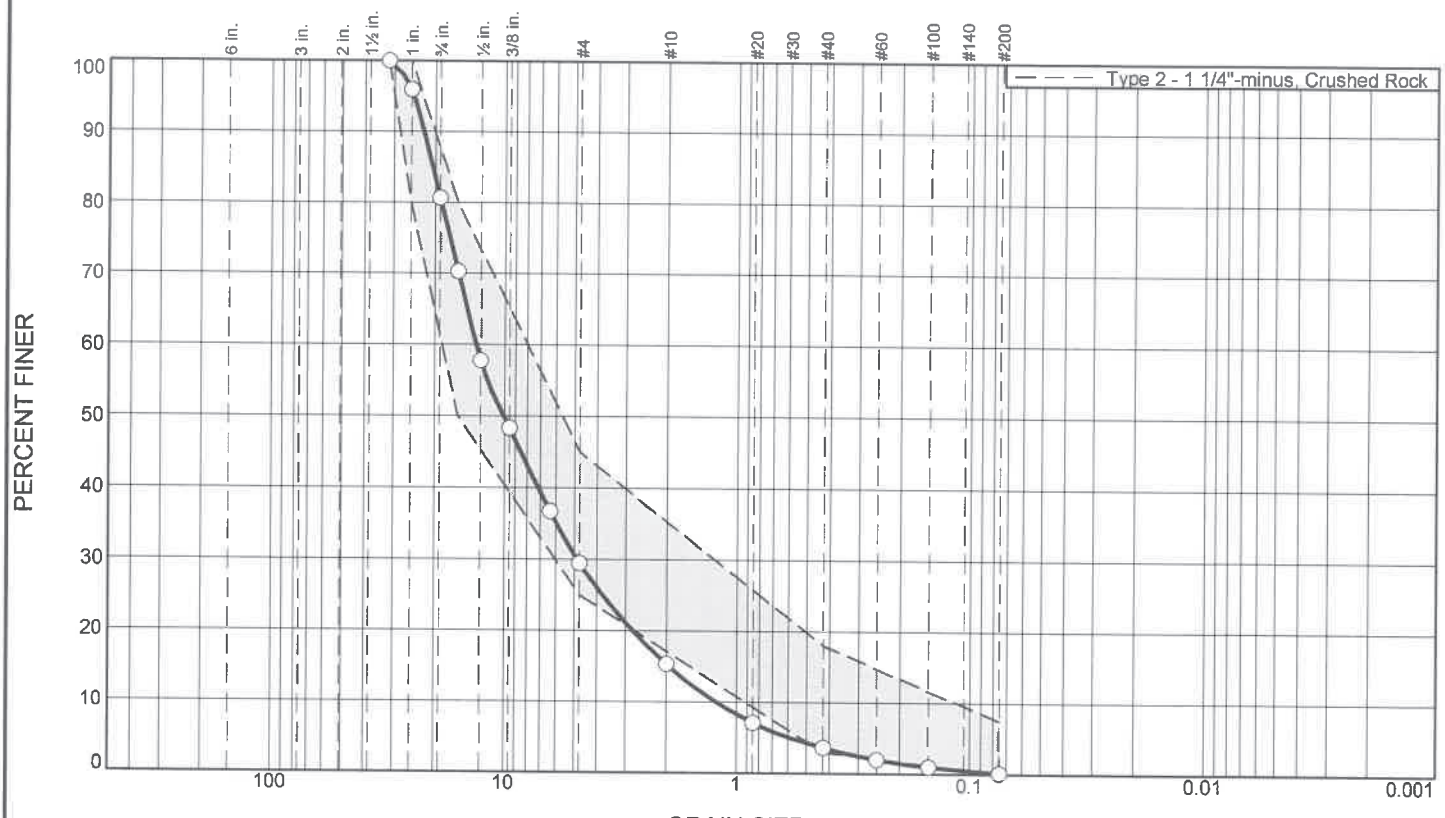
Jeffrey S. Mercer
Operations Manager
Pacific Northwest Division

JSM/lkj

C.C. CITY OF KIRKLAND

Krazan & Assoc. Sieve Analysis

ASTM C117 & C136



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	19.4	51.1	14.1	11.7	3.6	0.1	

Test Results (ASTM C117 & C136)

Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)	Pct. of Fines
1.25	100.0	100		
1	96.0	80-100		
.75	80.6			
.625	70.3	50-80		
.5	57.8			
.375	48.3			
.25	36.7			
#4	29.5	25-45		
#10	15.4			52.1
#20	7.1			24.2
#40	3.7	3-18		12.5
#60	2.0			6.7
#100	1.0			3.4
#200	0.1	0-7.5		0.4

* Type 2 - 1 1/4"-minus, Crushed Rock

Material Description

Type 2 (1 1/4" minus, C.S.B.C.)

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{90}= 22.3899 D_{85}= 20.5443 D_{60}= 13.2994
D_{50}= 10.0760 D_{30}= 4.8702 D_{15}= 1.9458
D_{10}= 1.2152 C_u= 10.94 C_c= 1.47

Classification

USCS= GW AASHTO= A-1-a

Test Remarks

AS-Received Moisture Content (ASTM D-2216): 3.4%

Location: Hiedelberg High Rock - Monroe, WA
Sample Number: 86586

Sample Date: 7/8/2024

Krazan

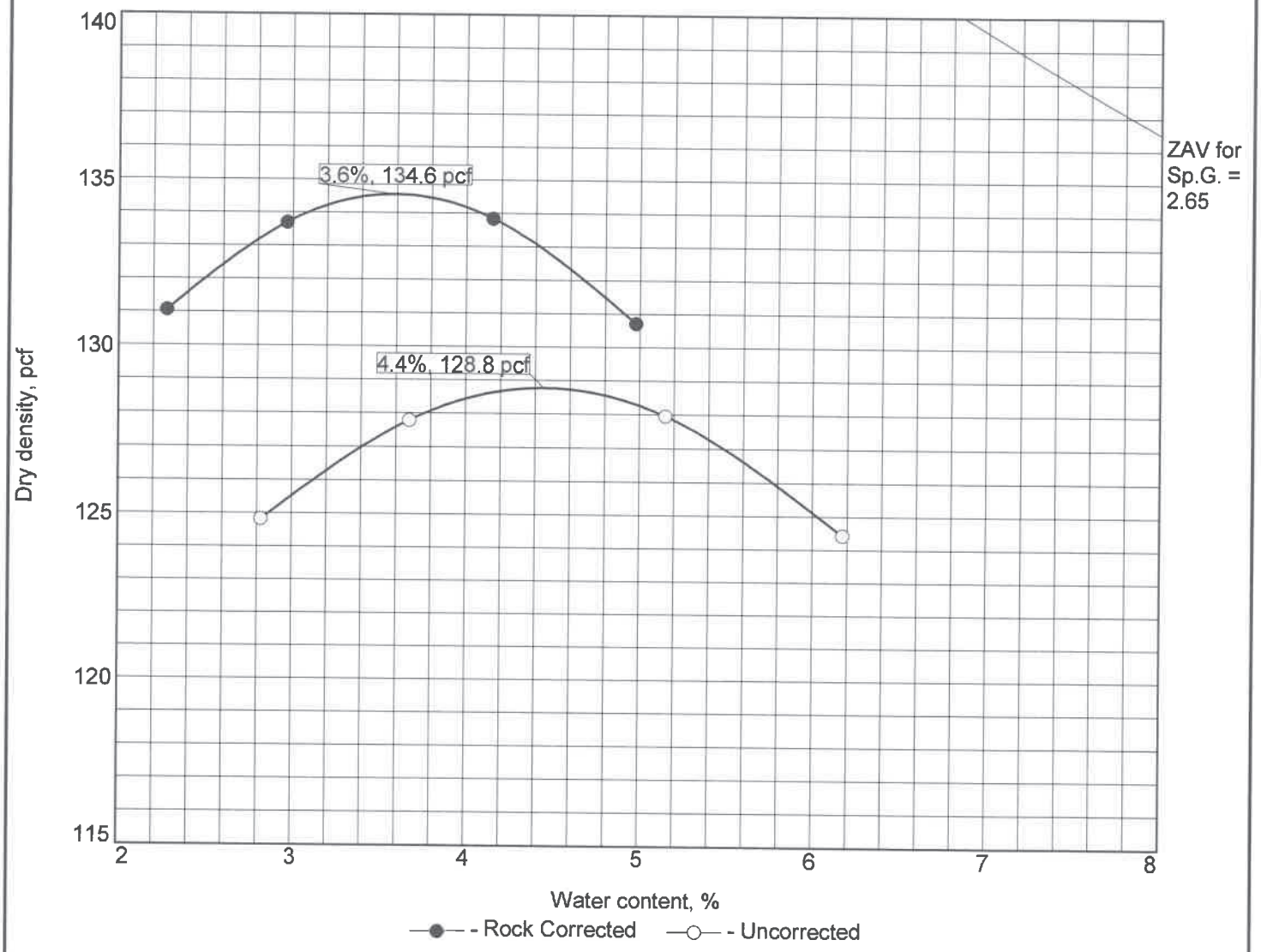
Client: Glacier Environmental Services, Inc.
Project: Circle K

Project No: 09624255

Figure

Tested By: Dave Hill **Checked By:** Cole Demas

COMPACTION TEST REPORT for Curve No. A



Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	GW	A-1-a	3.4%	2.65	NP	NP	19.4	0.1

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 134.6 pcf	128.8 pcf	Type 2 (1 1/4" minus, C.S.B.C.)
Optimum moisture = 3.6 %	4.4 %	

Project No. 09624255 **Client:** Glacier Environmental Services, Inc.
Project: Circle K
Date: 7/9/2024
○ **Location:** Hiedelberg High Rock - Monroe, WA **Sample Number:** 86586

Krazan

Remarks:
Type of Rammer Used: Mechanical.
Sample ID: 86586.
Sample Date: 7/8/2024

Figure

Tested By: Cole Demas **Checked By:** Cole Demas

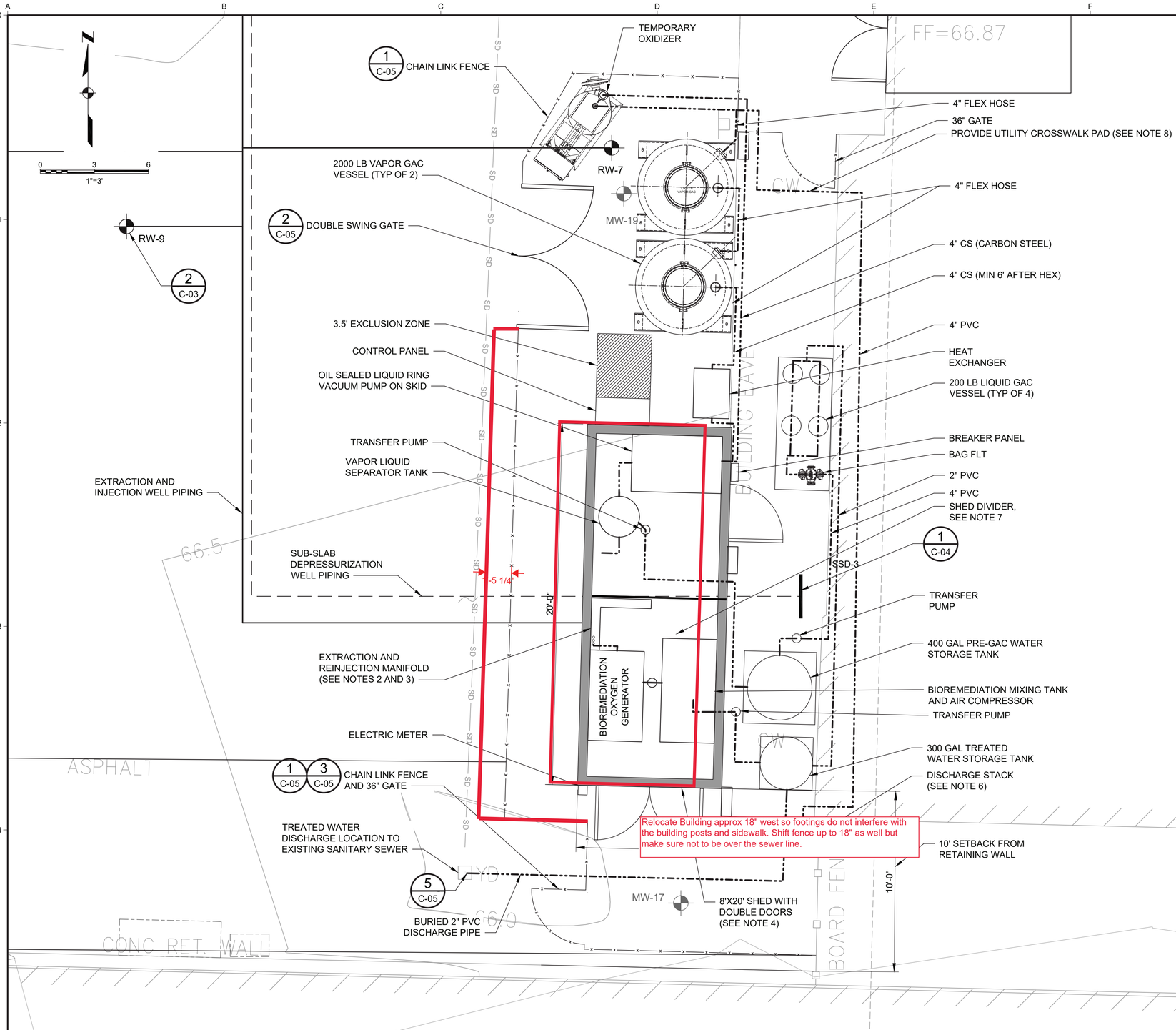
APPENDIX F- RFIs and WORK CHANGE DIRECTIVES

Work Change Directive Form
Change No: 01

Project:	Circle K 1461 Treatment System Installation	**Date of Issuance:**	31 May 2024
Client:	Washington Department of Ecology		
Engineer:	Kennedy/Jenks Consultants	**KJ's Project No.:**	2196008*00
Contractor:	Glacier Environmental Services, Inc.		

You are directed to proceed promptly with the following change(s):

Relocate treatment system building up to 18" west so footings do not interfere with building posts and sidewalk. Shift fence up to 18" west. Refer to attached drawing. Do not interfere with existing sanitary sewer drain line.



GENERAL SHEET NOTES

1. WELL TERMINOLOGY:
   1A. MW = EXISTING MONITORING WELL
   1B. RW = REMEDIATION WELL (EITHER EXISTING OR TO BE INSTALLED
2. ALL MANIFOLDS SHALL BE EQUIPPED WITH GATE VALVE, SAMPLE PORTS, AND 1/4" TAP FOR FLOW INSERTION.
3. EXTRACTION AND REINJECTION MANIFOLDS SHALL BE EQUIPPED WITH CONTROL VALVES AND FLOW METER FOR EACH WELL.
4. PIPING AND VALVES SHALL BE STACKED VERTICALLY ALONG EQUIPMENT ENCLOSURE WALL FOR ACCESS TO FLOW PATH AND MEASUREMENTS.
5. CONTRACTOR SHALL RECREATE ALL PARKING SPACES AFFECTED BY THE REMEDIATION SYSTEM AS SHOWN ON SHEET C-06 INCLUDING REPAINTING PARKING LOT STRIPING AND HANDICAP SYMBOLS, AND REPLACING EXISTING CURBS WITH NEW CURBS.
6. INSTALL ANY NECESSARY PIPE SUPPORTS TO DISCHARGE STACK TO EXTEND TOP OF STACK TO 3 FEET ABOVE THE ROOF. DISCHARGE STACK PIPE SUPPORTS SHALL BE CONTRACTOR DESIGNED AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
7. DIVIDER AND SHED CONSTRUCTION SHALL MEET IBC AND NFPA REQUIREMENTS TO SEPARATE ZONES. SHED CONSTRUCTION SHALL INCLUDE DIVIDER TO SEPARATE UNCLASSIFIED AND CLASS 1, DIVISION 2 RATED EQUIPMENT OR CONTRACTOR SHALL PROVIDE TWO SEPARATE SHEDS INSTALLED ADJACENT TO EACH OTHER.
8. PIPE ROUTING IS APPROXIMATE. FIELD ROUTE AS NEEDED TO MAINTAIN PATHWAYS AND ACCESS TO EQUIPMENT AND VALVES. PROVIDE STEP OVERS/RAMPS WHERE REQUIRED OR ELEVATE TO MINIMUM 7 FEET ABOVE GROUND TO MAINTAIN ACCESS PER SPECIFICATIONS. PROVIDE LOW POINT DRAINS AND HIGH POINT VENTS AS NEEDED. CONTRACTOR DESIGNED SUPPORTS SHALL BE FAVORABLY APPROVED BY ENGINEER. EXCEPT AS MAY BE REQUIRED FOR THE DISCHARGE STACK, SUPPORTS SHALL NOT BE ANCHORED TO THE BUILDING WALL, AWNING, ROOF, OR COLUMNS.
9. TREATMENT SYSTEM SHALL BE COMMISSIONED IN ACCORDANCE WITH SPECIFICATION SECTION 01 77 00.
10. EQUIPMENT AND PIPING LOCATIONS ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY. ACTUAL EQUIPMENT AND PIPING LOCATIONS SHALL BE COORDINATED BY THE CONTRACTOR.

LEGEND

- EXTRACTION AND INJECTION PIPING
- SUB-SLAB DEPRESSURIZATION WELL PIPING
- REMEDIATION SYSTEM PROCESS PIPING (SEE NOTE 4)
- CHAIN LINK FENCE
- SUB-SLAB DEPRESSURIZATION WELL
- VAPOR MONITORING PIN
- WELL TO BE USED FOR EXTRACTION/INJECTION (NEW AND EXISTING, SEE NOTE 1 AND WELL TABLES ON SHEET C-01)
- EXISTING WELL NOT USED FOR EXTRACTION/INJECTION

THE CITY OF SEATTLE
DEPARTMENT OF CONSTRUCTION & INSPECTIONS
APPROVED
Subject to Errors and Omissions
05/17/2024

ISSUED FOR PERMIT

ANY PRINTS NOT BEARING THIS STAMP MAY HAVE BEEN PRINTED PRIOR TO ADVERTISING AND CANNOT BE CONSIDERED AS BID DOCUMENTS. USERS OF THIS DOCUMENT IN EDITABLE ELECTRONIC FORMATS ARE CAUTIONED AGAINST USE WITHOUT FIRST DETERMINING WHETHER CHANGES MAY HAVE BEEN MADE SUBSEQUENT TO ITS PREPARATION.

NO	REVISION	DATE	BY
1	SEATTLE DEPARTMENT OF TRANSPORTATION PERMIT	10/09/2023	CMW

SCALES 0 10"

BENJAMIN EDWARD CENTER — STATE OF WASHINGTON — 98405 — REGISTERED PROFESSIONAL ENGINEER — 4/16/2024

DESIGNED CMW
DRAWN CMW
CHECKED BEF

DEPARTMENT OF ECOLOGY State of Washington

WASHINGTON STATE DEPARTMENT OF ECOLOGY
BELLEVUE, WASHINGTON
CIRCLE K SITE 1461 ENVIRONMENTAL REMEDIATION SYSTEM INSTALLATION
SEATTLE, WASHINGTON

Kennedy Jenks

REMEDIATION SYSTEM LAYOUT

SCALE 1" = 10'
JOB NO 2196008.00
DATE APRIL 2024
SHEET 8 OF 24
C-03

Plot Date: 4/16/2024 1:58 PM
User: RICHARD HILLS
File: C:\bms\kjce-pw\d0181574\219600800-C-03.DWG

Work Change Directive Form
Change No: 02

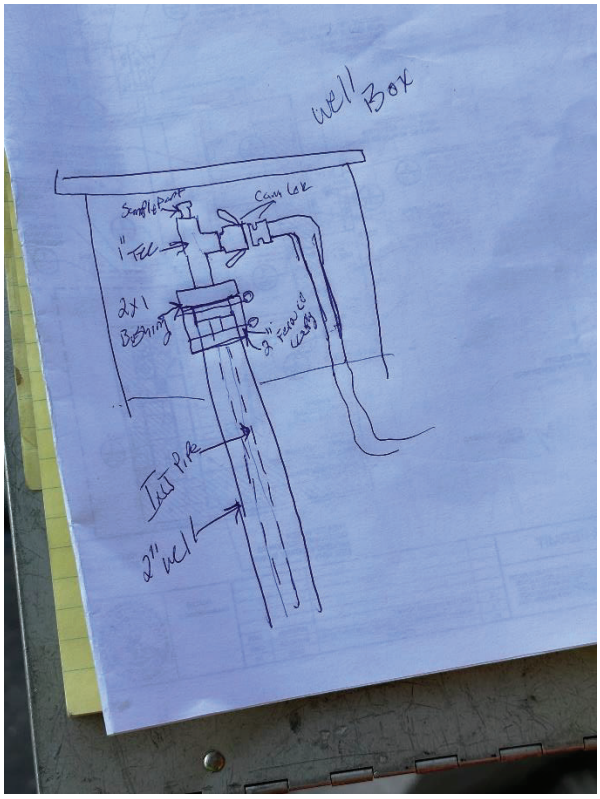
Project:	Circle K 1461 Treatment System Installation	**Date of Issuance:**	31 May 2024
Client:	Washington Department of Ecology		
Engineer:	Kennedy/Jenks Consultants	**KJ's Project No.:**	2196008*00
Contractor:	Glacier Environmental Services, Inc.		

You are directed to proceed promptly with the following change(s):

At monitoring well MW-4 (total depth of 18 feet), increase the size of the well monument and well box to 18". Make piping connection to the well as shown in the sketch (provided by Glacier) below.

To account for the additional head these changes will create, when connecting the wells to the treatment system, move wells MW-4 and RW-6 to Well Bank 4 and wells SW-3 and RW-7 to Well Bank 1. The updated Well Bank configuration will be as follows:

- Well Bank 1: ~~MW-4, RW-6,~~ RW-9, RW-3, SW-3, RW-7
- Well Bank 2: RW-4, RW-8, SW-1
- Well Bank 3: RW-5, SW-2, RW-10
- Well Bank 4: ~~SW-3, RW-7,~~ RW-2, MW-4, RW-6



Work Change Directive Form
Change No: _03_____

Kennedy Jenks

Project:	Circle K 1461 Treatment System Installation	**Date of Issuance:**	8 November 2024
Client:	Washington Department of Ecology		
Engineer:	Kennedy/Jenks Consultants	**KJ's Project No.:**	2196008*00
Contractor:	Glacier Environmental Services, Inc.		

You are directed to proceed promptly with the following change(s):

Coalescer Drainage

Excessive water is collecting in the coalescer. This accumulation poses concern for freezing in the coalescer, vapor phase GAC units and associated piping, clogging vapor phase GAC or reducing adsoprtion capacity, or causing issues to the CatOx system.

Contractor is directed to make the following changes:
Install barb fitting and flexible 5/16 to 3/8 vinyl tubing from coalescer drainage to vacuum gauge VI 210, directly upstream of the moisture separator tank (T-300) inlet. Add a tee fitting with valve and barb between VI 210 and the 4-inch piping. Tubing shall be routed along the 4-inch discharge piping to the north side of the building. The tubing shall penetrate the side of the north wall near the ceiling and routed high overhead before dropping down to the connection point. Protect and seal the wall penetration. Use zip ties to secure the tubing to existing pipe and piping supports.

FT-500 Totalizer

The specified ½-inch combination flowmeter / totalized FT-500 for the outlet of tank T-400 to the sanitary sewer was restricting flow to a rate that was not registering on the meter and was also backing up flow so the high-high level was engaging. On 8/29/2024, the King County Industrial Waste (KCIW) program approved providing an average daily discharge volume (calculated as the difference between recorded discharge volumes on a totalizer meter divided by elapsed time) instead of daily flow meter reading for KCIW Wastewater Discharge Authorization (WDA) No. 4614-01. Therefore, a flowmeter is not needed at this location, only a totalizer.

It is important that the totalizer cannot lose power and the total gallons value cannot be "erased". As such, a larger diameter analog totalizer is required. The totalizer may also include a pulse counter that could be tied into the PLC for remote monitoring and logging of the total gallons discharged.

Replace the FT-500 combination flowmeter / totalizer and associated ½" diameter SCH80 PVC piping with PRM 1-¼-inch Multi-Jet Brass Totalizing Water Meter with Pulse Output. Contractor shall transition the piping between the 2-inch piping and 1-¼-inch totalizer as quickly as possible to reduce friction losses.

Contractor shall provide a quote to perform the additional following work and receive approval prior to proceeding:

- Connect the pulse wire of the new totalizer installed above to the control panel.
- Modify the PLC to remotely monitor and log the discharge gallons to SS.
- Modify HMI Status screen to distinguish "Total Discharge Gallons" as "Total Injection Discharge Gallons" and add "Total SS Discharge Gallons" display.

Work Change Directive Form
Change No: _03_____

Kennedy Jenks

Work Change Directive Form
Change No: _05____

Kennedy Jenks

Project:	Circle K 1461 Treatment System Installation	**Date of Issuance:**	12 December 2024
Client:	Washington Department of Ecology		
Engineer:	Kennedy/Jenks Consultants, Inc.	**KJ's Project No.:**	2196008*00
Contractor:	Glacier Environmental Services, Inc.		

You are directed to proceed promptly with the following change(s):

Treated Water Drainage

Water is ponding at the catch basin connected to the sanitary sewer discharge. Storm drain piping connecting catch basin to sanitary sewer main determined to be blocked after CCTV inspection. A new connection to sanitary sewer is necessary for discharge of treated water during system operation. Existing remediation piping in SE corner of the property was determined to be connected to the sanitary sewer and will be the new discharge location.

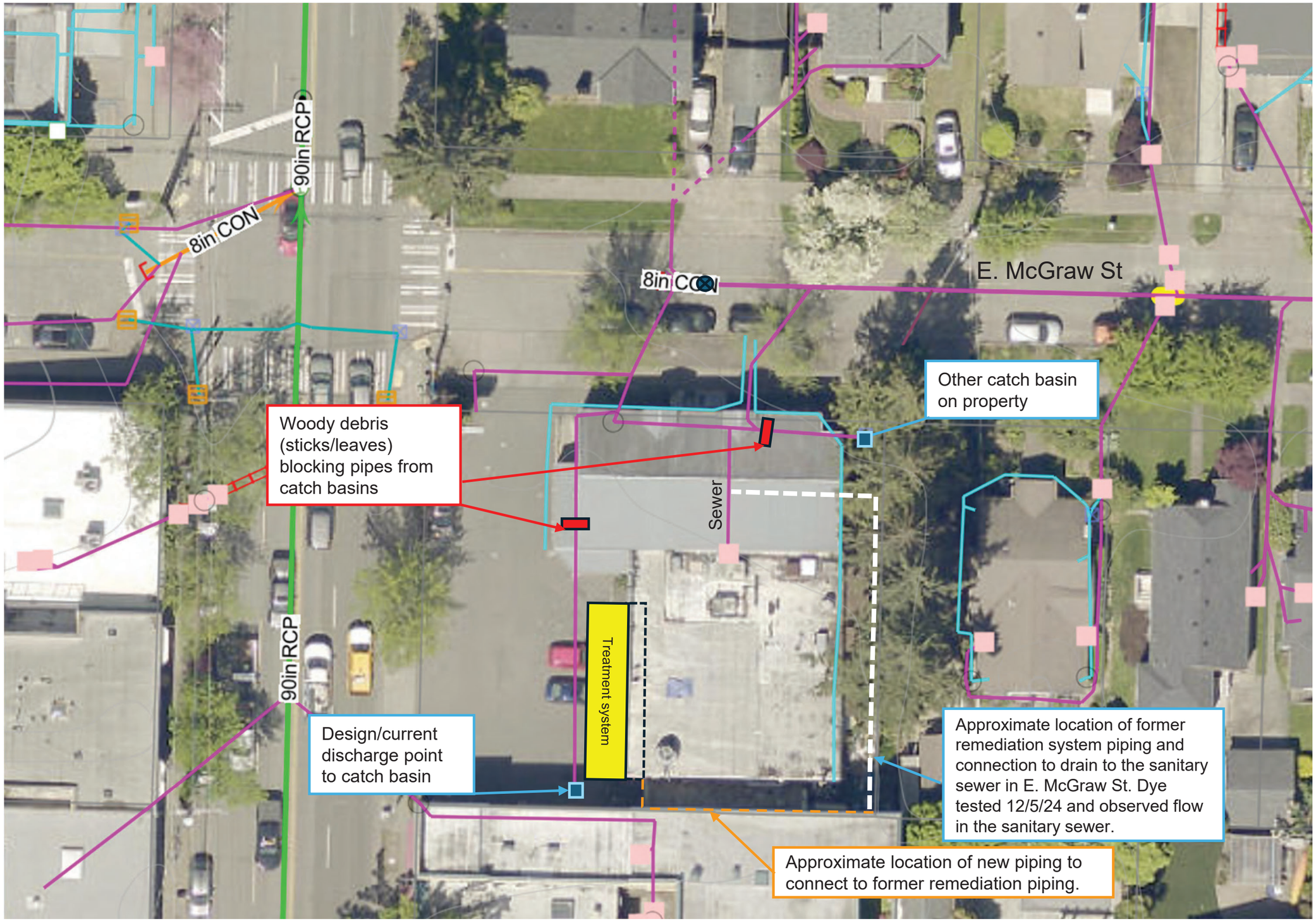
Contractor is directed to make the following changes:
Connect treated water discharge piping to existing remediation piping as shown on the attached figures.

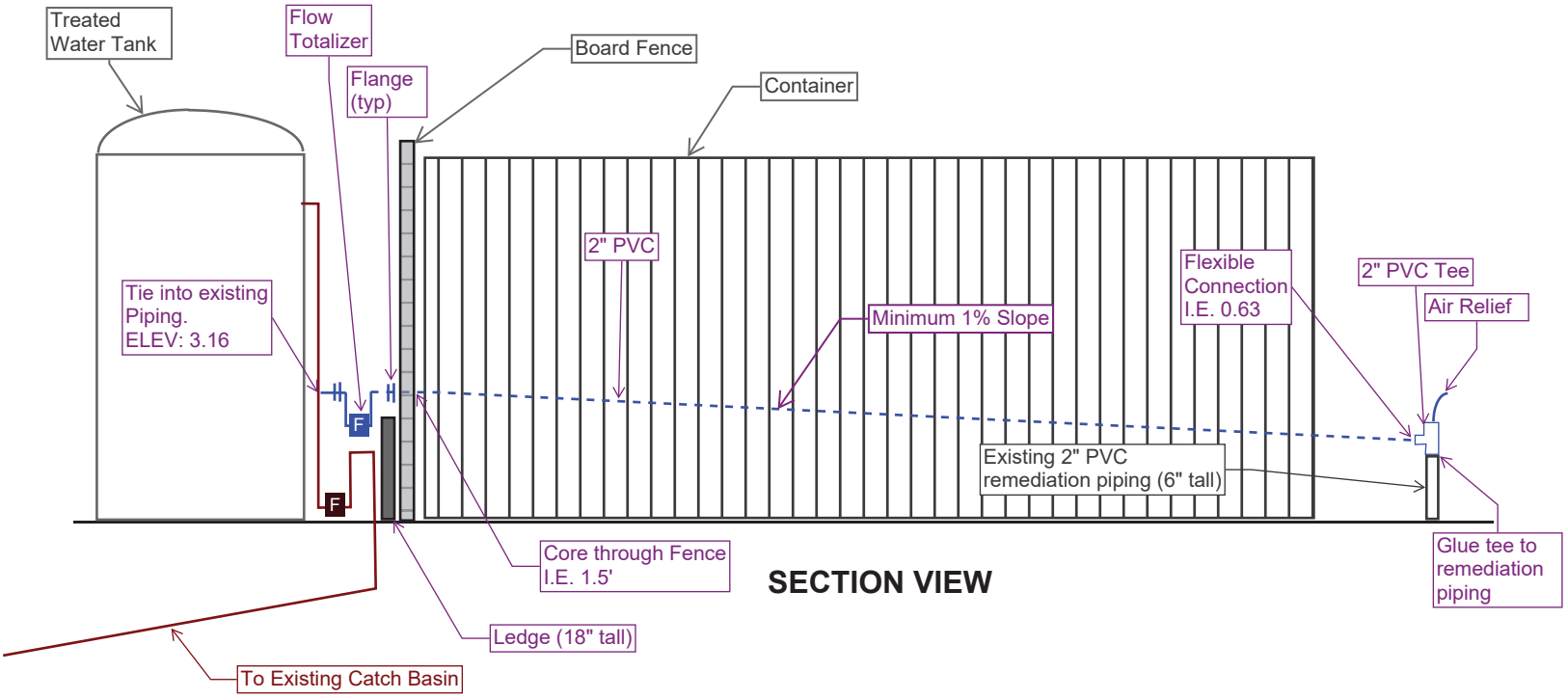
Install 2" SCH 80 PVC tee on 2" PVC existing remediation piping. Glue tee to piping. Provide air relief at top of tee.

Connect 2" SCH 80 PVC pipe to existing 2" PVC discharge piping at treated water tank T-400. Install new FT-500 flow totalizer (refer to WCD 03). Route piping in front of board fence to building at southern property boundary. Core through board fence and run piping in the space between the container and the southern property boundary wall. Connect piping to tee using flexible connection to allow for slope. Flexible connection shall be 2-inch NPS x 2-inch barb with two stainless steel hose clamps on each hose connection. Alternatively, contractor may use cam-lock fittings.

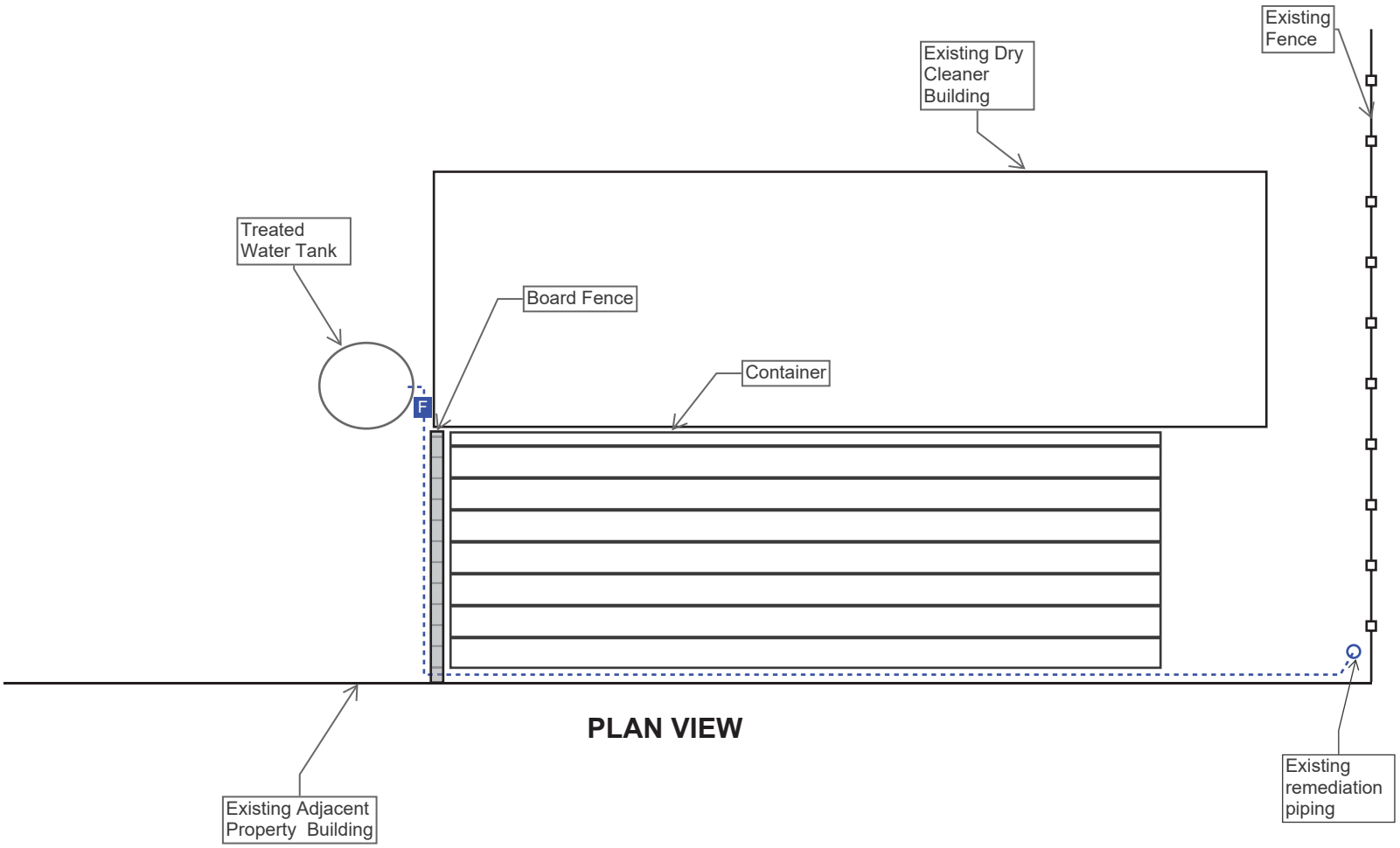
Contractor shall comply with the following requirements:

1. Install piping in accordance with the specifications.
2. Pipe core in fence shall be a minimum of 18" above the ground.
3. Pipe connection into T-400 piping shall be a minimum of 38" above the ground.
4. All pipe shall have a minimum slope of 1% and maximum slope of 2%.
5. Pipe shall be supported by freestanding pipe supports with cradle for piping, such as cinder blocks, every 5 feet, in accordance with Specification Section 33 14 16.13.
6. Pipe shall be insulated in accordance with Specification Section 40 41 00. No heat tracing is required.
7. Provide air relief (via tubing or mechanical air relief valve) on tee connected to existing remediation piping.

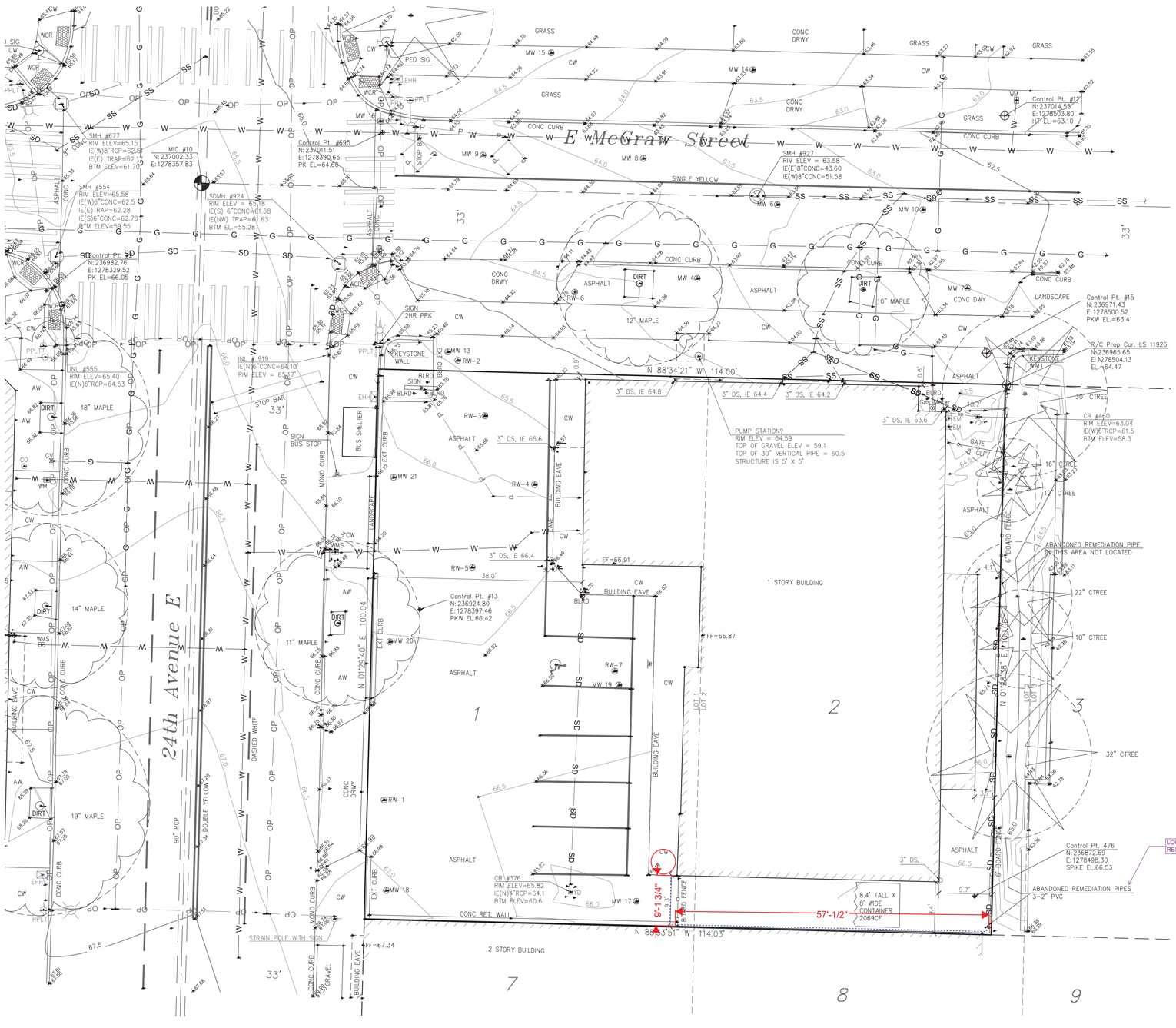

90in RCP
8in CON
8in CON
E. McGraw St
Other catch basin on property
Woody debris (sticks/leaves) blocking pipes from catch basins
Sewer
Treatment system
90in RCP
Design/current discharge point to catch basin
Approximate location of former remediation system piping and connection to drain to the sanitary sewer in E. McGraw St. Dye tested 12/5/24 and observed flow in the sanitary sewer.
Approximate location of new piping to connect to former remediation piping.



SECTION VIEW



PLAN VIEW



LEGAL DESCRIPTION

LOTS 1 AND 2, BLOCK 29, LESS EASTERLY 6 FEET THEREOF, PIKE'S 2ND ADDITION TO UNION CITY, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 1 OF PLATS, PAGE 65A, IN KING COUNTY, WASHINGTON.

TAX PARCEL NO. 678820-1335

NOTES

1. HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, NAD83/91.
2. VERTICAL DATUM: NAVD 88.
3. DATE OF SURVEY: JUNE 8, 2017
4. EQUIPMENT USED: LEICA TS 12.
5. UTILITIES SHOWN HEREON WERE FROM PHYSICAL STRUCTURES ONLY.
6. 0.5' CONTOUR INTERVAL.
7. TOTAL AREA OF PROPERTY: 11,407 SQ. FT.

LEGEND

- BOUNDARY LINE
- RIGHT-OF-WAY LINE
- CENTERLINE
- SD SD STORM DRAIN
- OP OP OVERHEAD POWER
- P P UNDERGROUND POWER
- G G GAS
- SS SS SANITARY SEWER
- WOOD FENCE
- DECIDUOUS TREE W/DRIPLINE
- MONUMENT IN CASE
- WATER METER
- ELECTRIC METER
- GAS METER
- STREET SIGN
- POWER POLE
- TRAFFIC SIGNAL W/LUMINAIRE
- EHH JUNCTION BOX
- SEWER MANHOLE
- STORM DRAIN MANHOLE
- CB CATCH BASIN
- DS DOWN SPOUT
- MW MONITORING WELL
- BLRD BOLLARD
- CW CONCRETE WALK

ABBREVIATIONS

AW	ASPHALT WALK
BLRD	BOLLARD
CB	CATCH BASIN
CTREE	CONIFEROUS TREE
CW	CONCRETE WALK
DRWY	DRIVEWAY
DS	DOWNSPOUT
ECAB	ELECTRICAL CABINET
EHH	ELECTRIC HANDHOLE
EM	ELECTRIC METER
FF	FINISHED FLOOR
HYD	FIRE HYDRANT
IE	INVERT ELEVATION
MIC	MONUMENT IN CASE
MW	MONITORING WELL
PED SIG	PEDESTRIAN SIGNAL
PPLT	POWER POLE WITH LUMINAIRE
RW	RECLAMATION WELL
WM	WATER METER
WV	WATER VALVE
YD	YARD DRAIN

CONTROL POINT INFORMATION

POINT NO.	NORTHING	EASTING	ELEVATION
2	236982.76	1278329.52	66.05
12	237014.55	1278503.80	63.10
13	236924.80	1278397.46	66.42
15	236971.43	1278500.52	63.41
16	237010.81	1278536.57	61.93
476	236872.69	1278498.30	66.53
695	237011.51	1278390.65	64.60

N
W E
S

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)

SURVEYED: KM/SW
DRAWN: JB
CHECKED: TI

REV	REVISION	DATE	BY	APP'D

True NORTH LAND SURVEYING, INC.
815 S. Weller Street
Suite 200
Seattle, WA 98104-3023
206.332.0800

EILEEN M. FORRESTER STATE OF WASHINGTON 31453 REGISTERED PROFESSIONAL LAND SURVEYOR

Date: 6-20-2017
Scale: 1" = 10'
Book: J16186.dwg

2401 E McGraw Street, Seattle, WA
SITE PLAN
For KENNEDY/JENKS

PORTION OF THE SE 1/4 OF THE NW 1/4 OF SECTION 21, T 25 N, R 4 E, W.M.

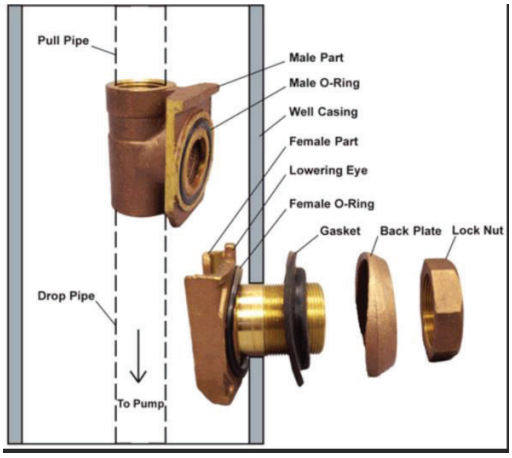
Job Number: J16-186.00
Sheet: 1 of 1

Request for Information/
Design Clarification/Variation Request

RFI/DCVR No.:	01
Date:	04/09/2024
Contract Name:	Circle K Site 1461 Environmental Remediation System
Contract Number:	C2300123
PROJECT No.	23-008
Contractor:	Glacier Environmental Services Inc
Contractor Representative:	Lauren Golembiewski
Response Requested By:	ASAP
Nature of Work:	Well Head assemblies
Reference Drawings:	C-04
Reference Specification:	33 11 53.13

Description:
Detail 2 on sheet C-04 shows a pitless adapter going vertical to top of 4” pipe. The pitless adapter is basically an elbow 90 and does not have a pass through going vertically. The vertical pipe coming up is just to pull out the injection line. Then it shows a 4” compression fitting with a pass through for the 1” pipe with a 1” j-plug in it. You wouldn’t be able to sample through the 1” because of the blockage at the pitless adapter. Please clarify the fittings you are requesting and what access you need.

Detail 3 for slant well it does not show a pitless adapter and looks like it may show a wye. Plan does not show a 1” wye just a 4” wye. We would suggest using a pitless adapter on this application as well, that way all injection pipes can be removed as needed.



Request for Information/
Design Clarification/Variation Request

Engineer's Response:
19 April 2024

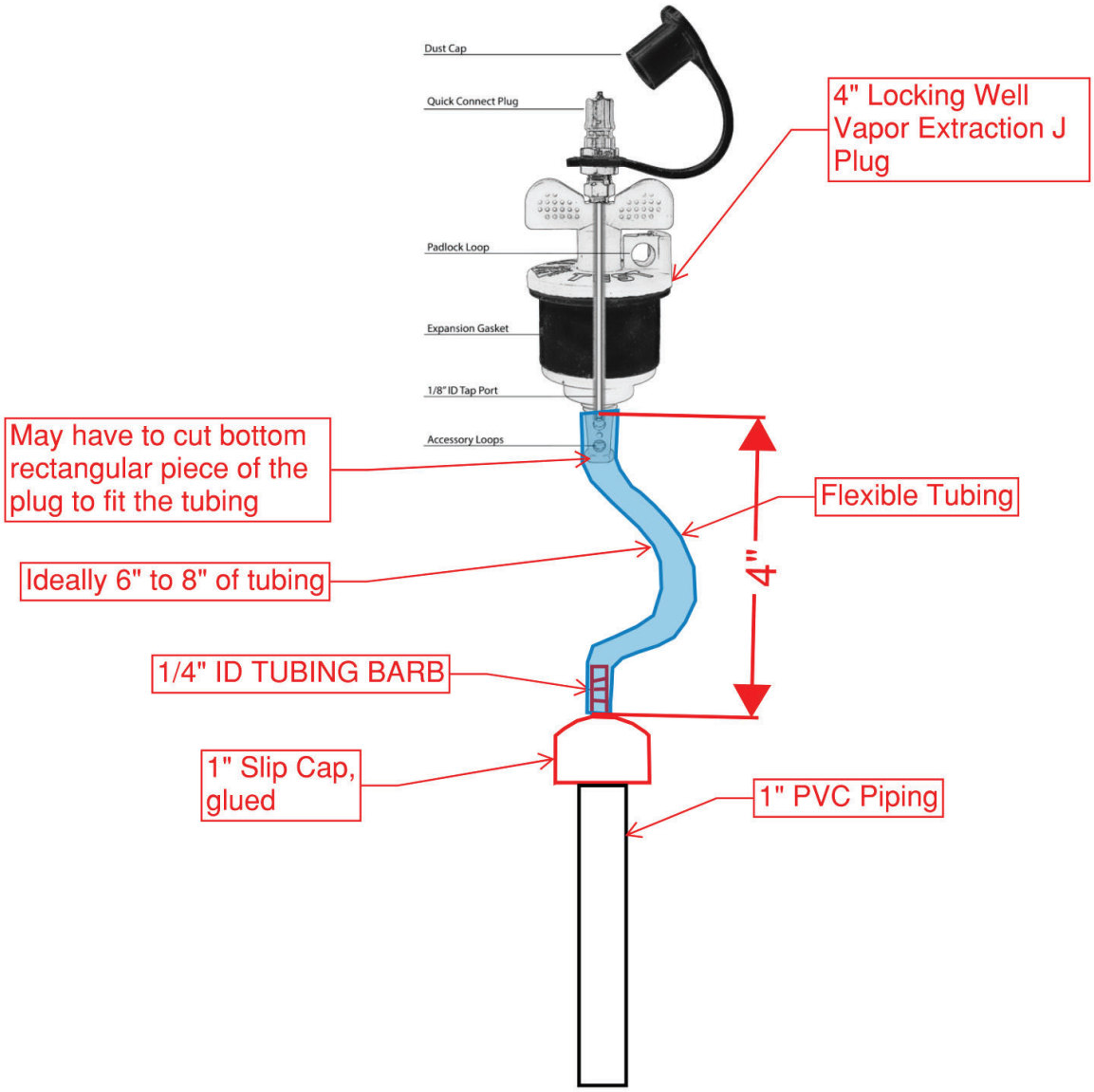
Intent is to be able to sample vapor and pressure directly from the 1-inch drop pipe without removing the 4-inch cap. Additionally, vertical drop pipes should be able to be removed to adjust drop pipe length if needed.

VERTICAL WELLS

1. Drill 3/8" hole centered through pitless adapter.
2. Use 1" slip cap, glued to pipe with tube barb fitting for flexible tube from cap up to bottom of 4-inch locking well vapor extraction J plug with quick disconnect. Picture below shows j-plug with quick disconnect fitting. J plug can be found here (or equal also acceptable): https://ectmfg.com/product/vapor-extraction-locking-well-plug

3. Connect tubing between barb on 1" cap and bottom of 4" J plug. Distance between bottom of 4" J plug and top of 1" cap should be approximately 4". Use 6" to 8" of tubing. Use appropriate size based on barb and accessory loops on 4" J plug. See sketch below for reference.
4. Provide vapor extraction quick connect coupling (https://ectmfg.com/product/vapor-extraction-quick-connect-coupling) to test construction.

Request for Information/
Design Clarification/Variation Request

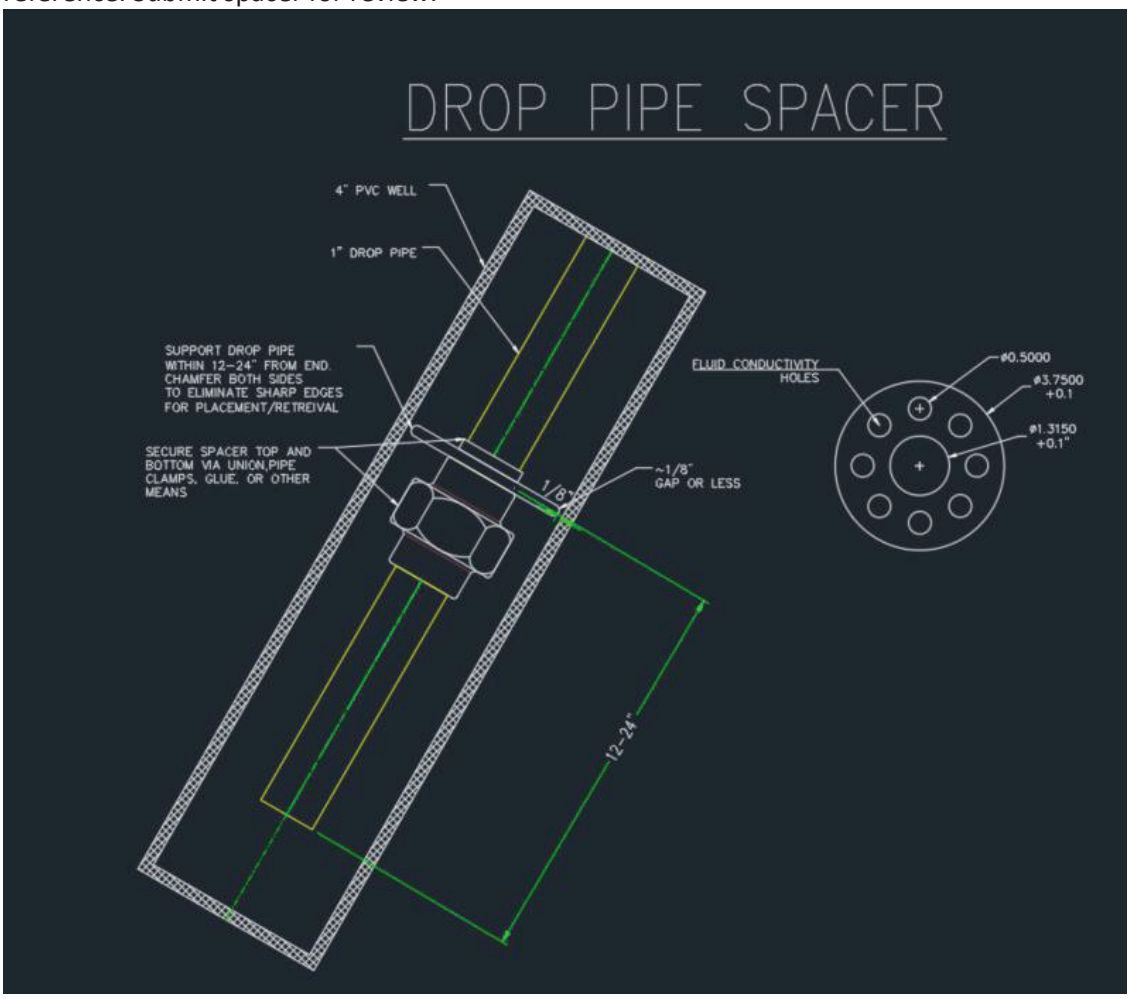


SLANTED WELLS

1. Utilize same cap and J plug detail above.
2. Pitless adapter may be used in-lieu of 1” wye inside 4” wye, assuming a 1” 45-degree elbow is installed outside well to avoid stressing/kinking HDPE tubing.
3. Provide contractor designed spacer for slanted drop pipe within 4” casing to support drop pipe near bottom. Spacer shall allow for fluid flow between annular space. See sketch below for

Request for Information/
Design Clarification/Variation Request

reference. Submit spacer for review.



Ryan Hultgren, P.E.

Distribution

	Submittal	Encl.	RESPONSE
Project Manager	Ryan Hultgren, KJ	x	
Resident Engineer	Cayla Whiteside, KJ	x	
Contractor	Lauren Golembiewski, Glacier	x	
Department of Ecology	Dale Myers	x	
File			

Request for Information/
Design Clarification/Variation Request

RFI/DCVR No.:	02
Date:	05/20/2024
Contract Name:	Circle K Site 1461 Environmental Remediation System
Contract Number:	C2300123
PROJECT No.	23-008
Contractor:	Glacier Environmental Services Inc
Contractor Representative:	Lauren Golembiewski
Response Requested By:	ASAP
Nature of Work:	Fence
Reference Drawings:	C-03
Reference Specification:	32 31 13

Description:
Please confirm that there is no barbed wire on the fence. The written spec mentions it on the gate but it is not shown on the drawing detail.

Also is the double swing gate width 10’ or 12’?

Engineer’s Response 5/21/24:
No barbed wire required on the fence.
Double swing gate width shall be 10’.

Request for Information/
Design Clarification/Variation Request

RFI/DCVR No.:	04
Date:	05/20/2024
Contract Name:	Circle K Site 1461 Environmental Remediation System
Contract Number:	C2300123
PROJECT No.	23-008
Contractor:	Glacier Environmental Services Inc
Contractor Representative:	Lauren Golembiewski
Response Requested By:	ASAP
Nature of Work:	Pipe slope and well boxes
Reference Drawings:	C-04
Reference Specification:	33 14 16.13

Description:

1. The existing vertical well boxes are 8", the new vertical wells have 12" well boxes. Do you want to replace the existing ones with new 12" well boxes? This would be a change.

2. We do not see anywhere in the plans or specifications that specifies a minimum slope for the underground piping, please confirm that a minimum slope is not required.

Engineer's Response:

1. Replace seven (7) existing 8-inch diameter well vaults with seven (7) new 12-inch diameter well vaults. During the 4 June 2024 Contractor Check-in Meeting, the cost for replacing these seven (7) well vaults was quoted at $880 by Glacier. Glacier stated that the replacement of the well vaults will reduce labor required for working around the existing ones.

2. Minimum slope is not required. If a slope is needed, pipes sloped back towards the wells would be preferred for draining moisture and easing injection.

12 December 2024

Memorandum

To: Dale Myers, Washington State Department of Ecology

From: Ryan Hultgren, Kennedy Jenks

Subject: Circle K 1461 – Soil Vapor Extraction (SVE) Operation
K/J 2196008*00

This memorandum has been prepared by Kennedy/Jenks Consultants, Inc. (Kennedy Jenks) for and on behalf of the Washington State Department of Ecology to present procedures for temporary operation of the Circle K 1461 (site) treatment system in soil vapor extraction (SVE) mode. These procedures have been modified from Section 4.2.1 of the Final Draft Operations and Maintenance Manual Environmental Remediation System Circle K 1461, Seattle, Washington (Kennedy Jenks 2024) (O&M Manual). The site is located at 2350 24th Avenue East in Seattle, King County, Washington. This site is listed on the Washington State Department of Ecology (Ecology) Site Information System and Hazardous Sites List as Circle K 1461, under cleanup site ID 5086 and facility/site ID 2322.

Phase 1 (Modified) – Temporary Soil Vapor Extraction (SVE)

Soil from the surface to the depth of the exposed saturated zone will be remedied by the extraction of vapor from the unsaturated soils. The vapor will be treated with a catalytic oxidizer (CatOx) until extraction vapor concentrations are reduced to 500 parts per million (ppm); when this concentration is reached, the catalytic oxidizer will be removed, and GAC will be employed for air treatment. Treated air will be discharged through an exhaust pipe. The use of the catalytic oxidizer is estimated to last from 1 to 3 months. GAC will be employed until groundwater concentrations stabilize and approach asymptotic levels, approximately 6 to 12 months, after which Phase 2 will commence (provided treated water discharge piping is completed).

Preliminary startup operations (in multiphase extraction (MPE) mode) indicated that vapor VOC concentrations were below 500 ppm (using a photoionization detector (PID) calibrated with isobutylene) when operating the system with all wells open 100%, including the subslab depressurization wells (SSDs). Closing SSDs completely resulted in inlet concentrations above 950 ppm, which caused the vacuum control valve (VCV) of the CatOx to close and VCV air dilution to open, thus dropping the vacuum to the extraction wells. A relatively steady state operation is preferred; therefore, an inlet vapor concentration of 700 to 800 ppm should be targeted.

The following provides example system startup and adjustments:

1. Remove stingers (drop pipes) from the extraction / injection remediation wells (RW-2 through RW-10, MW-4, SW-1, SW-2, and SW-3). Close valve to well RW-10 at the extraction manifold, as it is screened below the water table (25 to 30 ft bgs).

2. Set Extraction Well Banks 1 – 4 to green on HMI screen.

3. Set valves to all wells (except RW-10) to 100% open on Manifold B.

4. Confirm manual air dilution valve at moisture separator is closed.

5. Start the blower. The VCV will close and VCV air dilution will open 100%. The VCV will begin to slowly open as TO-400 heats up to setpoint temperatures and VCV air dilution will begin to close. This process takes approximately 15 minutes.

6. Adjust SSD gate valves closed until vacuum is approximately 20-inches water column (WC) or less at Manifold A. The vacuum on each individual well at Manifold B is expected to be between 5 and 10-inches mercury (Hg).

7. Allow system to operate until TO-400 temperatures stabilize. Temperatures around 700-750°F indicate diluted soil vapor and temperatures of 950-1,000°F indicate excessive concentrations that may continue to climb and cause VCV to close and loss of vacuum at wells. Measure VOC concentrations at the coalescing filter to achieve target concentration.

8. Adjust extraction rates from SSD wells by opening the valves to reduce inlet concentrations or closing the valves to increase concentrations. Certain SSD and extraction/injection remediation wells have less measured PID concentrations and may be closed completely to increase vacuum and flow rates from other wells and, potentially, PID concentrations.

9. As shown in the attached Table 1, the baseline PID measurements from the wells in Well Bank 2 were the lowest, ranging from 5.0 ppm (SW-2) to 22.7 ppm (RW-5). If the inlet PID at the CatOx is less than the 700-800 ppm optimum range, extraction from Well Bank 2 can be discontinued by closing the valve to this Well Bank.

10. Balance the extraction rates for each well screen in each Well Bank by closing the dilution valve (if open) and adjusting the individual valves at the piping manifolds.

11. Record measurements (as applicable) on the Phase 1 MPE / SVE field form.

Sampling requirements for Public Works Construction Contractor
To meet PSCAA substantial requirements, vapor concentrations of total petroleum hydrocarbons (TPH) as hexane or its equivalent can be measured using a PID (and the applicable response factors), including one of the following instruments (or similar):

- MiniRAE 2000 or 3000, Photoionization detector
- RAE Model 8000, Photoionization detector

PID measurements shall be taken at the inlet to and exhaust from the CatOx unit. Other parameters to record are shown on the attached field form.

[The Public Works O&M Contractor will also measure TPH/BTEX concentrations at each of the vapor pins and the SSD wells with low-detection PIDs (ppbRAE 3000 or equal) in accordance with the O&M Manual].

Table: Emission Limits to meet PSCAA Substantial Requirements

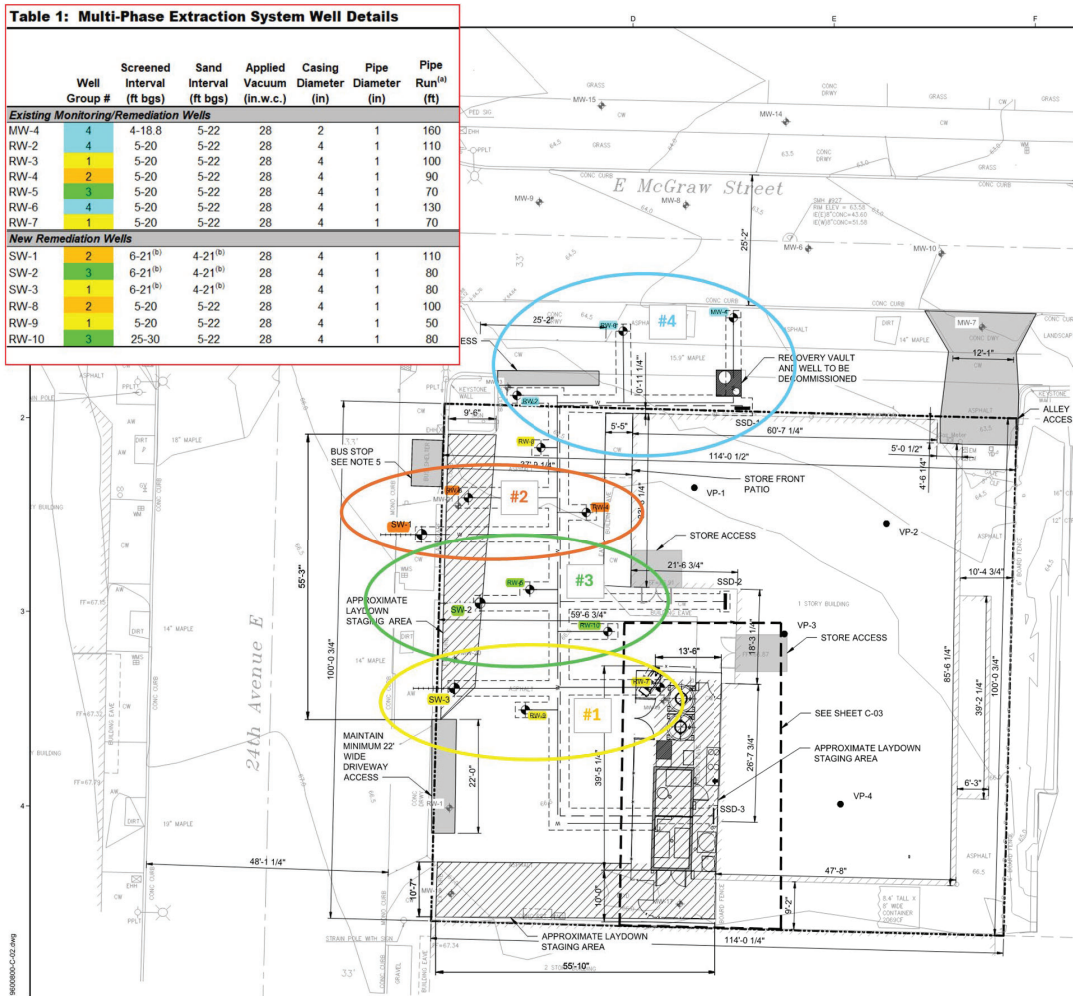
Cat Ox or GAC (at >99% control efficiency)	
Inlet flow (scfm)	Maximum Inlet PID (ppm)
50	8,000
100	4,000
150	2,500
200	2,000
250	1,600
300	1,300

Maximum inlet PID readings for controlled emissions of benzene, toluene, ethylbenzene, and total xylenes to be below WAC 173-460-150 De Minimis and Small Quantity Emission Rate (SQER) limits. Based on control efficiencies of 99% or higher for a catalytic oxidizer or two granular activated carbon (GAC) vessels in series.

Figure: Well Banks and Well Details Table and Well Location Plan View

Table 1: Multi-Phase Extraction System Well Details

	Well Group #	Screened Interval (ft bgs)	Sand Interval (ft bgs)	Applied Vacuum (in.w.c.)	Casing Diameter (in)	Pipe Diameter (in)	Pipe Run[a] (ft)
Existing Monitoring/Remediation Wells							
MW-4	4	4-18.8	5-22	28	2	1	160
RW-2	4	5-20	5-22	28	4	1	110
RW-3	1	5-20	5-22	28	4	1	100
RW-4	2	5-20	5-22	28	4	1	90
RW-5	3	5-20	5-22	28	4	1	70
RW-6	4	5-20	5-22	28	4	1	130
RW-7	1	5-20	5-22	28	4	1	70
New Remediation Wells							
SW-1	2	6-21[b]	4-21[b]	28	4	1	110
SW-2	3	6-21[b]	4-21[b]	28	4	1	80
SW-3	1	6-21[b]	4-21[b]	28	4	1	80
RW-8	2	5-20	5-22	28	4	1	100
RW-9	1	5-20	5-22	28	4	1	50
RW-10	3	25-30	5-22	28	4	1	80



References:

Kennedy/Jenks Consultants, Inc. 2024. Final Draft Operations and Maintenance Manual Environmental Remediation System Circle K 1461 Seattle, Washington. Prepared by Kennedy/Jenks Consultants, Inc. for Washington State Department of Ecology. 22 November 2024.

Enclosure(s) (2)

Table 1	Multi-phase Extraction Well Details
Field Form	System Monitoring Form Circle K – Phase 1: Multi-Phase Extraction (MPE) / Soil Vapor Extraction (SVE)

Table 1 - Multi-Phase Extraction Well Details
Circle K 1461 Treatment System

Kennedy Jenks

							Baseline Measurements 10/31/2024				
Well	Bank	Screened Interval (ft bgs)	Sand Interval (ft bgs)	Applied Vacuum (in.w.c.)	Casing Diameter (in)	Pipe Run[(a)] (ft)	Vacuum / Pressure (in WC)	VOCs (PPM)	O2 %	CO2 %	Notes
MW-4	1	4-18.8	5-22	28.0	2.0	160.0	-3.0	584.0	7.6	14.8	
RW-6	1	5-20	5-22	28.0	4.0	130.0	-0.003	743.0	7.1	16.7	
RW-2	1	5-20	5-22	28.0	4.0	110.0	-0.003	758.0	7.4	15.1	
RW-10	2	25-30	5-22	28.0	4.0	80.0	-0.89	18.8	20.7	0.3	Well screened below water table.
RW-5	2	5-20	5-22	28.0	4.0	70.0	-0.003	22.7	20.7	0.3	
SW-2	2	6-21[(b)]	4-21[(b)]	28.0	4.0	80.0	-0.003	5.0	20.1	1.0	
SW-1	3	6-21[(b)]	4-21[(b)]	28.0	4.0	110.0	-0.023	65.0	16.0	4.0	
RW-8	3	5-20	5-22	28.0	4.0	100.0	+0.006	227.0	16.9	2.8	
RW-4	3	5-20	5-22	28.0	4.0	90.0	+0.013	247.5	15.8	2.5	
RW-7	4	5-20	5-22	28.0	4.0	70.0	-0.003	890.0	9.7	5.0	
SW-3	4	6-21[(b)]	4-21[(b)]	28.0	4.0	80.0	-0.037	87.7	20.7	0.2	
RW-3	4	5-20	5-22	28.0	4.0	100.0	+0.006	42.0	20.7	0.2	
RW-9	4	5-20	5-22	28.0	4.0	50.0	-0.033	395.0	19.3	1.1	
VP-1	NA	NA	NA	NA	NA	NA	+0.011	0.0	16.0	5.4	
VP-2	NA	NA	NA	NA	NA	NA	+0.006	0.0	19.1	1.2	
VP-3	NA	NA	NA	NA	NA	NA	+0.005	0.0	20.8	0.0	
VP-4	NA	NA	NA	NA	NA	NA	0.0	5.0	19.9	0.5	

Note and Abbreviations:

(a) Pipe run approximated from Construction Drawings. Pipe run lengths will be updated after system installation is complete.

(b) Depth expressed as measured depth within well casing. Well drilled at 30 degree angle.

ft bgs = feet below ground surface.

in.w.c. = vacuum or pressure in inches water column.

in = inches

- Pressures measured at wellheads.
- VOCs, O2, and CO2 measured at manifold. System operated for approximately 30 minutes with all valves open 100% except SSDs. Individual wells isolated from vacuum by closing valves while system was still running to allow for sampling.

SYSTEM MONITORING FORM
CIRCLE K - PHASE 1: MULTI-PHASE EXTRACTION (MPE) / SOIL VAPOR EXTRACTION (SVE)

Name & Company:
Date/time of data collection:
Weather:

System On on Arrival? (circle): yes no
System Hours:
Phase 1: MPE / SVE, all wells in extraction mode.

Barometric pressure (psi):	Barometric Pressure source:
Ambient Temperature (°F):	Ambient Temperature source:
Noise (dBA): If above 60 dBA, notify KJ personnel	Noise measurement source:

Moisture Separator Drained? (circle) Yes No
Approximate volume (gal):
Catalytic Oxidizer Installed? (circle) Yes No
Effluent Vapor VOC Conc (ppm):
PID Calibration Performed? (circle) Yes No

PID Calibration	Zero Gas	Span Gas
Calibration Value (ppm):		
Instrument Reading (ppm):		

Active Alarm Conditions (circle, note affected equipment):
1. No Alarm
2. High Water Level Tank(s):
3. Low Water Level Tank(s):
4. High Pressure Equipment:
5. Low Pressure Equipment:
6. System Shutdown Equipment:
7. Temperature Equipment:
8. Other:

Wells - Injection/Extraction (At Manifold)					Treatment System					
Well ID	Pres/Vac (in Hg)	Flow (cfm)	PID (ppm)	Valve (O/C, fraction)	Location	ID	Temp (°F)	Pres/Vac (psi)	Flow (cfm/gpm)	PID (ppm)
RW-2					Before MS	VI 210				
RW-3					After MS	PI 310				
RW-4					Before Blower	VI 300				
RW-5					After Blower	PI/FI 302				
RW-6					At Heat Exchanger	TT-302				
RW-7					Before Vapor GAC	PI 411				
RW-8					Vapor GAC Midpoint**	PI 412				
RW-9					After Vapor GAC**	PI 410				
RW-10					After Pump P-400	PI 400				
SW-1					Before Bag Filter	PI-405				
SW-2					After Bag Filter**	FI 400/PI 401				
SW-3					Midpoint Liquid GAC 1**	PI 403				
MW-4					After Liquid GAC 1	FE-404				
Well ID	Pres/Vac (in Hg)	Flow (cfm)	PID (ppm)	Valve (O/C, fraction)	Midpoint Liquid GAC 2**	PI 406				
SSD-1					After Liquid GAC 2	FE-407				
SSD-2					After Liquid GAC**	PI-404				
SSD-3					Catalytic Oxidizer Temperatures (°F)		T1 Entrance:	T2 Exit:	T3 Interior:	
VP-1					Catalytic Oxidizer PID (ppm)		Pre:		Post:	
VP-2					Catalytic Oxidizer Flow Rate (scfm)		Pre:		Post:	
VP-3					Water Discharge Flow Totalizer		Date	Time	Total Flow (gal)	
VP-4						FT 500				
						FT 500				

** Location for collection of air or water sample for laboratory analysis.

Comments/Maintenance Activities:

Permit Discharge Limits (see permits):

Air: 200 scfm Water: 3 gpm / 4500 gpd

If exceeded, notify Kennedy Jenks personnel.

Notes: psi = pounds/square inch; cfm = cubic feet per minute; ppm = parts per million; gal = gallons; MS = vapor liquid separator; GAC = granular activated carbon; O/C= open/closed