Initial Investigation Close-Out Router

ERTS #: 722266	Site Name: Quality Carriers Maritime Ave Vancouver

1

Recommended Action: Circle one of the appropriate categories:

No Further Action (NFA) | List on Confirmed and Suspected Contaminated Sites List (CSCSL)

Initial Investigator: Nannette Brooks

2

Recommended Action: Circle one of the appropriate categories:

NFA (Non-List) | NFA (List on CSCSL as NFA; cleanup occurred) | List on CSCSL

Unit Supervisor/Regional Coordinator: Jack Brown

3

Final Action: Circle one of the appropriate categories:

NFA (Non-List) | NFA (List on CSCSL as NFA; cleanup occurred) | List on CSCSL

Section Manager:

LUST ☐ Docs on Y: ☐ NFA Letter Requested ☐

New UNIT Only ☐ New CSID Only ☐ Rescind NF ☐

Update File ☐ Model Remedy NFA ☐_____

Non-Listed NFAs go Directly to the Incident Tracker, and Then the File Room; Others Follow the Process Below

4

Date Entered into ISIS: 1/8/2024

Cleanup Site ID Number: 17131

Facility/Site ID Number: 100003108

Date Early Notice Letter Sent (*Listed Sites Only, excludes NFA-List*):

FS/ISIS Coordinator: Nancy Davis

5 Incident Tracker: Date:

6 File Room: County: Clark File Type:

DEPARTMENT OF ECOLOGY
State of Washington

☒ Check this box if you have attached any documents to this form (using the paperclip icon on the left).

ERTS #(s):	**722266**
Parcel # (s):	31093000
County:	**Clark**
FSID #:	**100003108**
CSID #:	**17131**
UST #:	**Click to enter text.**

SITE INFORMATION

Site Name (Name over door): Quality Carriers spill site	Site Address (including City, State, and Zip): 503 SE Maritime Ave, Vancouver, WA 98661	Phone 904.539.5004 Email **Click to enter text.**
Site Contact, Title, Business: Cory Weiss, Quality Carriers	Site Contact Address (including City, State, and Zip): 102 Pickering Way, Suite 105, Exton PA 19341	Phone 610.310.7289 Email cweiss@qualitycarriers.com
Site Owner, Title Business: CBC 4 LLC	Site Owner Address (including City, State, and Zip): 1615 SE 3rd Ave, #100, Portland OR 97214	Phone **Click to enter text.** Email **Click to enter text.**
Site Owner Contact, Title, Business **Click to enter text.**	Site Owner Contact Address (Including City, State, and Zip): **Click to enter text.**	Phone **Click to enter text.** Email **Click to enter text.**
Previous Site Owner(s): **Click to enter text.**	Additional Info (for any Site Information Item): **Click to enter text.**	
Alternate Site Name(s): **Click to enter text.**		

Latitude 45.61675	**Click to enter text.**	Longitude -122.64711:	**Click to enter text.**

INSPECTION INFORMATION

☐ Please check this box if there is relevant inspection information, such as data or photos, in an existing site report for this site.

Inspection Conducted? Yes ☐ No ☒	Date/Time: Click to enter text.	Entry Notice:	Announced ☐ Unannounced ☐
Photographs taken?	Yes ☐	No ☒	Note: Attach photographs or upload to PIMS
Samples Collected?	Yes ☐	No ☒	Note: Attach record with media, location, depth, etc.

RECOMMENDATION

No Further Action (Check appropriate box below):		**LIST on Confirmed and Suspected Contaminated Sites List:** ☒
Release or threatened release does not pose a threat	☐	
No release or threatened release	☐	
Refer to program/agency (Name: **Click to enter text.**)	☐	
Independent Cleanup Action Completed (contamination removed)	☒	

COMPLAINT (Brief Summary of ERTS Complaint):

A faulty valve on a tanker truck allowed a 10-gallon release of cupric acid to the soil.

CURRENT SITE STATUS (Brief Summary of why Site is recommended for Listing or NFA):

The final excavation on July 17, 2023, yielded sampling not exceeded MTCA Metod B cleanup levels. (Quality Carriers, Inc Spill report, (2023) p.62 - 63) Eleven samples were analyzed using method EPA 6020B to determine the result.

Recommendation is the give the site an “NFA” but list it in the Confirmed Sites list for awareness if the site is developed into a residential area.

developed into a residential area.

Investigator: **Nannette Brooks**	Date Submitted: 1/31/2024

OBSERVATIONS ☐ **Please check this box if you included information on the Supplemental Page at end of report.**

Description (If site visit made, please be sure to include the following: site observations, site features and cover, chronology of events, sources/past practices likely responsible for contamination, presence of water supply wells and other potential exposure pathways, etc):

On April 18, 2023, Quality Carriers spilled ten gallons of Advantage Cupric Staters, a copper based corrosive acid solution at 503 SE Maritime Ave, Vancouver. The spill was reported on April 19, 2023. Spill Responder Ben Cornell provided initial technical assistance and then referred it to the Toxics Cleanup Program for technical assistance.

"The spill was reported to Washington Department of Ecology (DOE) by QC on April 19, 2023. GrayMar Environmental (GrayMar) of Troutdale, Oregon, performed an initial spill response, excavating a limited amount of soil (eleven 55-gallon drums) to an overall depth of approximately 2 to 3 inches below ground surface (bgs). Soil samples collected by GrayMar were analyzed for copper by Environmental Protection Agency (EPA) Method 6020B by Specialty Analytical of Clackamas, Oregon. Concentrations of copper ranged from 238 milligrams per kilogram (mg/kg) to 5,810 mg/kg in the spill area. A fifth sample (QC-05) was collected outside of the spill area to compare copper to background levels nearby. The sample indicated a copper detection of 32.6 mg/kg. Soil samples were additionally analyzed for pH to assess impacts from the hydrochloric acid component of the material spilled. The soil samples indicated pH levels ranging from 5.73 to 7.66.

PBS understands that DOE recommended remediation of copper in soils to the Model Toxics Control Act (MTCA) Method B Cleanup Level of 280 mg/kg. PBS was subsequently contracted to oversee remedial activities at the site and recommended further excavation be completed under guidance of PBS staff equipped with a handheld x-ray fluorescence (XRF) Analyzer." (Quality Carriers, Inc Spill report, (2023) p.1)

The final excavation on July 17, 2023, yielded sampling not exceeded MTCA Metod B cleanup levels. (Quality Carriers, Inc Spill report, (2023) p.62 - 63) Eleven samples were analyzed using method EPA 6020B to determine the result.

Recommendation is the give the site an "NFA" but list it in the Confirmed Sites list for awareness if the site is developed into a residential area.

Documents reviewed:

ERTS 722666
SDS for AdvantEdge Cupric Starter
Quality Carrier\\s Specialty Analytical Report 04MAY23
Quality Carriers Analytical Report 29JUN23
Quality Carriers PBS Final report

CONTAMINANT GROUP	CONTAMINANT	*SOIL*	*GROUNDWATER*	*SURFACE WATER*	*AIR*	*SEDIMENT*	DESCRIPTION
Non-Halogenated Organics	Phenolic Compounds	Select	Select	Select		Select	Compounds containing phenols (Examples: phenol; 4-methylphenol; 2-methylphenol)
	Non-Halogenated Solvents	Select	Select	Select	Select	Select	Organic solvents, typically volatile or semi-volatile, not containing any halogens. To determine if a product has halogens, search HSDB (http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB) and look at the Chemical/Physical Properties, and Molecular Formula. If there is not a Cl, I, Br, F in the formula, it's not halogenated. (Examples: acetone, benzene, toluene, xylenes, methyl ethyl ketone, ethyl acetate, methanol, ethanol, isopropranol, formic acid, acetic acid, stoddard solvent, Naptha). *Use this when TEX contaminants are present independently of gasoline.*
	Polynuclear Aromatic Hydrocarbons (PAH)	Select	Select	Select	Select	Select	Hydrocarbons composed of two or more benzene rings.
	Tributyltin	Select	Select	Select		Select	The main active ingredients in biocides used to control a broad spectrum of organisms. Found in antifouling marine paint, antifungal action in textiles and industrial water systems. (Examples: Tributyltin; monobutyltin; dibutyltin)
	Methyl tertiary-butyl ether	Select	Select	Select	Select	Select	MTBE is a volatile oxygen-containing organic compound that was formerly used as a gasoline additive to promote complete combustion and help reduce air pollution.
	Benzene	Select	Select	Select	Select	Select	Benzene
	Other Non-Halogenated Organics	Select	Select	Select	Select	Select	TEX
	Petroleum Diesel	Select	Select	Select		Select	Petroleum Diesel
	Petroleum Gasoline	Select	Select	Select	Select	Select	Petroleum Gasoline
	Petroleum Other	Select	Select	Select		Select	Oil-range organics
Halogenated Organics (see notes at bottom)	PBDE	Select	Select	Select	Select	Select	Polybrominated di-phenyl ether
	Other Halogenated Organics	Select	Select	Select	Select	Select	Other organic compounds with halogens (chlorine, fluorine, bromine, iodine). search HSDB (http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB) and look at the Chemical/Physical Properties, and Molecular Formula. If there is a Cl, I, Br, F in the formula, it is halogenated. (Examples: Hexachlorobutadiene; hexachlorobenzene; pentachlorophenol)
	Halogenated solvents	Select	Select	Select	Select	Select	PCE, chloroform, EDB, EDC, MTBE
	Polychlorinated Biphenyls (PCB)	Select	Select	Select	Select	Select	Any of a family of industrial compounds produced by chlorination of biphenyl, noted primarily as an environmental pollutant that accumulates in animal tissue with resultant pathogenic and teratogenic effects
	Dioxin/dibenzofuran compounds (see notes at bottom)	Select	Select	Select	Select	Select	A family of more than 70 compounds of chlorinated dioxins or furans. (Examples: Dioxin; Furan; Dioxin TEQ; PCDD; PCDF; TCDD; TCDF; OCDD; OCDF). *Do not use for 'dibenzofuran', which is a non-chlorinated compound that is detected using the semivolatile organics analysis 8270*
Metals	Metals – Other	Select	Select	Select		Select	Cr, Se, Ag, Ba, Cd
	Lead	Select	Select	Select		Select	Lead
	Mercury	Select	Select	Select	Select	Select	Mercury
	Arsenic	Select	Select	Select		Select	Arsenic
Pesticides	Non-halogenated pesticides	Select	Select	Select	Select	Select	Pesticides without halogens (Examples: parathion, malathion, diazinon, phosmet, carbaryl (sevin), fenoxycarb, aldicarb)
	Halogenated pesticides	Select	Select	Select	Select	Select	Pesticides with halogens (Examples: DDT; DDE; Chlordane; Heptachlor; alpha-beta and delta BHC; Aldrin; Endosulfan, dieldrin, endrin)

CONTAMINANT GROUP	CONTAMINANT	*SOIL*	*GROUNDWATER*	*SURFACE WATER*	*AIR*	*SEDIMENT*	DESCRIPTION
Other Contaminants	Radioactive Wastes	Select	Select	Select	Select	Select	Wastes that emit more than background levels of radiation.
	Conventional Contaminants, Organic	Select	Select	Select		Select	Unspecified organic matter that imposes an oxygen demand during its decomposition (Example: Total Organic Carbon)
	Conventional Contaminants, Inorganic	Select	Select	Select	Select	Select	Non-metallic inorganic substances or indicator parameters that may indicate the existence of contamination if present at unusual levels (Examples: Sulfides, ammonia)
	Asbestos	Select	Select	Select	Select	Select	All forms of Asbestos. Asbestos fibers have been used in products such as building materials, friction products and heat-resistant materials.
	Other Deleterious Substances	Select	Select	Select		Select	Other contaminants or substances that cause subtle or unexpected harm to sediments (Examples: Wood debris; garbage (e.g., dumped in sediments))
	Benthic Failures	Select	Select	Select		Select	Failures of the benthic analysis standards from the Sediment Management Standards.
	Bioassay Failures	Select	Select	Select		Select	For sediments, a failure to meet bioassay criteria from the Sediment Management Standards. For soils, a failure to meet TEE bioassay criteria for plant, animal or soil biota toxicity.
Reactive Wastes	Unexploded Ordinance	Select	Select	Select	Select	Select	Weapons that failed to detonate or discarded shells containing volatile material.
	Other Reactive Wastes	Select	Select	Select	Select	Select	Other Reactive Wastes (Examples: phosphorous, lithium metal, sodium metal)
	Corrosive Wastes	Select	Select	Select	Select	Select	Corrosive wastes are acidic or alkaline (basic) wastes that can readily corrode or dissolve materials they come into contact with. Wastes that are highly corrosive as defined by the Dangerous Waste Regulation (WAC 173-303-090(6)). (Examples: Hydrochloric acid; sulfuric acid; caustic soda)

(fill in contaminant matrix above with appropriate status choice from the key below the table)

Status choices for contaminants	
Contaminant Status	**Definition**
B— Below Cleanup Levels (Confirmed)	The contaminant was tested and found to be below cleanup levels. (Generally, we would not enter each and every contaminant that was tested; for example if an SVOC analysis was done we would not enter each SVOC with a status of "below". We would use this for contaminants that were believed likely to be present but were found to be below standards when tested
S— Suspected	The contaminant is suspected to be present; based on some knowledge about the history of the site, knowledge of regional contaminants, or based on other contaminants known to be present
C— Confirmed Above Cleanup Levels	The contaminant is confirmed to be present above any cleanup level. For example—above MTCA method A, B, or C; above Sediment Quality Standards; or above a presumed site-specific cleanup level (such as human health criteria for a sediment contaminant).
RA— Remediated - Above	The contaminant was remediated, but remains on site above the cleanup standards (for example—capped area).
RB— Remediated - Below	The contaminant was remediated, and no area of the site contains this contaminant above cleanup standards (for example—complete removal of contaminated soils).

Halogenated chemicals and solvents: Any chemical compound with chloro, bromo, iodo or fluoro is halogenated; those with eight or fewer carbons are generally solvents (e.g. halogenated methane, ethane, propane, butane, pentane, hexane, heptane or octane) and may also be used for or registered as pesticides or fumigants. Most are dangerous wastes, either listed or categorical. Organic compounds with more carbons are almost always halogenated pesticides or a contaminant or derivative. Referral to the HSDB is recommended if you are unfamiliar with a chemical name or compound, as it contains useful information about synonyms, uses, trade names, waste codes, and other regulatory information about most toxic or potentially toxic chemicals.

Dibenzodioxins and dibenzofurans are normalized to a combined equivalent toxicity based on 2,3,7,8-tetrachloro-p-dibenzodioxin as set out in WAC 173-340-708(8)(d) and in the Evaluating the Toxicity and Assessing the Carcinogenic Risk of Environmental Mixtures using Toxicity Equivalency Factors Focus Sheet (https://fortress.wa.gov/ecy/clarc/FocusSheets/tef.pdf). Results may be reported as individual compounds and isomers (usually lab results), or as a toxic equivalency value (reports).

FOR ECOLOGY II REVIEWER USE ONLY (For Listing Sites):

How did the Site come to be known ☐ **Site Discovery (received a report)** Date (Date Report Received)
☐ **ERTS Complaint**
☐ **Other (please explain):** Click to enter text.

Does an Early Notice Letter need to be sent: ☐ Yes ☐ No
If *No*, please explain why: Click to enter text.

NAICS Code (if known): Click to enter text.
Otherwise, briefly explain how property is/was used (i.e., gas station, dry cleaner, paint shop, vacant land, etc.):
Click to enter text.

Site Unit(s) to be created (Unit Type): ☐ Upland (includes VCP & LUST) ☐ Sediment
If multiple Unites needed, please explain why: Click to enter text.

Cleanup Process Type (for the Unit):
☐ No Process ☐ Independent Action
☐ Voluntary Cleanup Program ☐ Ecology-supervised or conducted
☐ Federal-supervised or conducted

Site Status:
☐ Awaiting Cleanup ☐ Construction Complete – Performance Monitoring
☐ Cleanup Started ☐ Cleanup Complete – Active O&M/Monitoring
☐ No Further Action Required

Model Remedy Used? ☐
If yes, was this a transformer spill? ☐

Site Manager (Default Click to enter text.**)** Click to enter text.

Specific confirmed contaminants include:
Click to enter text in Soil
Click to enter text. in Groundwater
Click to enter text. in Other (specify matrix: Choose an item.

Facility/Site ID No. (if known):
Click to enter text.
Cleanup Site ID No. (if known):
Click to enter text.

COUNTY ASSESSOR INFO: Please attach to this report a copy of the tax parcel/ownership information for each parcel associated with the site, as well as a parcel map illustrating the parcel boundary and location.

Additional or Supplemental Information for Observations Page

Please use this box for any text that requires special formatting

Click to enter text.

PROPERTY INFORMATION CENTER

Account Summary

Property Identification Number: 31093000 MapsOnline Fact Sheet
Property Type: Real
Property Status: Active
Site Address: 503 SE MARITIME AVE, VANCOUVER, WA 98661 (Situs Addresses)
Abbreviated Description: #335 WM RYAN DLC 2.09A (SEE S#031093-001)

Tax Status: Regular

Property Owner	**Owner Mailing Address**	**Property Site Address**
CBC 4 LLC	1615 SE 3RD AVE #100 PORTLAND OR , 97214	503 SE MARITIME AVE, VANCOUVER, WA 98661 Google Maps Street View

Administrative Data Info...

Jurisdiction	Vancouver
Land Use Planning	
Comprehensive Plan Designation	IND
Comprehensive Plan Overlay(s)	none
Urban Growth Area	Vancouver
Zoning Designation - Codes	Light Industrial (IL)
Zoning Overlay(s)	Shoreline Plan District 20.620 Airport Transition Zone 20.560
Miscellaneous	
Census Tract	426.01
Drainage District	n/a
Neighborhood	Columbia Way
Park District	A
Public Safety	
Burning Allowed	No
EMS Response Area	AMR
Fire District	Vancouver
Increased Wildfire Danger Area	No
Police Jurisdiction	VPD West District 2
Schools	
School District Name	Vancouver
Elementary School Attendance Area	Harney

Electoral Data

Board of County Councilors District	1
Camas Council Ward	n/a
CPU Commissioner District	3
Election Precinct	195
Legislative District	49
Library District	Fort Vancouver Regional Library
Port District	Vancouver Port District 3
School District Board Director District	No Director Districts
Sewer Board District	Vancouver
State Weed Board District	1

Land Data

Approximate Area Info...	91,040 sq. ft. 2.09 acres
Clark County Road Atlas	Page 8
DOR Land Use Code Info...	39
Section-Township-Range	NE 1/4,S35,T2N,R1E PDF
Subdivision	no data
Survey	No Records

Sales History

Date of Sale	01/29/2024
Document Type	D-B&S
Document Number	
Excise Number	889485
Sale Amount	$96,000,000.00

Date of Sale	01/18/2024

Assessment Data Info...

2023 Values for 2024 Taxes

Market Value as of January 1, 2023

Land Value	$701,011.00
Building Value	$0.00
Total Property	$701,011.00

Taxable Value Info...

Total	$701,011.00

2022 Values for 2023 Taxes

Market Value as of January 1, 2022

Land Value	$637,283.00
Building Value	$0.00
Total Property	$637,283.00

Taxable Value Info...

Total	$637,283.00

General

Assessor Neighborhood	7610
Re-valuation Cycle	1
Notice of Value	2023 2022 2019 2018 2017 2016 2015

Property assessment value is valid as of the date printed on the linked notice of value. The notice of value will not reflect any updates to property value that occurred after the notice mail date. Please contact the Assessor's office if you have a question about your assessed value.

Middle School Attendance Area	Discovery
High School Attendance Area	Hudsons Bay

Transportation

C-TRAN Public Transportation Benefit Area	Yes
Traffic Impact Fee (TIF) District	Columbia
Transportation Analysis Zone	102

Utilities

CPU Lighting Utility District	n/a
Last Street Sweeping	n/a
Sewer District	Vancouver
Waste Collection Provider	n/a
Waste Collection Day	No Data
Water District	Vancouver

The water service provider may be different from the indicated water district. Please contact the parcel's jurisdiction if you need to know the water service provider.

Document Type	D-B&S
Document Number	
Excise Number	889478
Sale Amount	$0.00

Date of Sale	12/22/2020
Document Type	D-SWD
Document Number	
Excise Number	834506
Sale Amount	$0.00

Date of Sale	11/15/2018
Document Type	D-SWD
Document Number	
Excise Number	794705
Sale Amount	$0.00

Date of Sale	08/02/2006
Document Type	DEED
Document Number	4204863
Excise Number	596088
Sale Amount	$13,955,900.00

Date of Sale	07/25/2005
Document Type	D-QCD
Document Number	
Excise Number	572140
Sale Amount	$0.00

Date of Sale	07/25/2005
Document Type	D-QCD
Document Number	
Excise Number	572142
Sale Amount	$0.00

Date of Sale	07/25/2005
Document Type	D-QCD
Document Number	
Excise Number	572141
Sale Amount	$0.00

Date of Sale	07/25/2005
Document Type	D-QCD
Document Number	
Excise Number	578839
Sale Amount	$0.00

	Date of Sale 07/25/2005 Document Type D-QCD Document Number Excise Number 572143 Sale Amount $0.00 Date of Sale 07/25/2005 Document Type D-QCD Document Number Excise Number 572144 Sale Amount $0.00	

If you have questions concerning the data on this page, please contact the Clark County Assessor's Office. Main Phone: (564) 397-2391, Email: assessor@clark.wa.gov

ERTS Incident #722266

Environmental Report Tracking - *Generated 4/24/2023, 9:25 AM*

Primary Initial Report - Reported: 04/18/23 19:43

Reference ID - 212633

Where did it happen?

Location name:
Physical address: 503 SE Maritime Ave
Vancouver WA 98661
US
County: Clark
Ecology region: SWRO
Lat, long: 45.61675 , -122.64711
Directions/Landmarks:

What happened?

Incident date: 04/18/23 19:43
Activity: Transferring
Cause:
Medium: Ground - Permeable containment
Source: Vehicle - Tank truck
Substance: Drug lab - Chemical
Substance amount: 10 U.S. gallons

Who might be responsible?

Name:
Kurt Francescone
Organization:
Quality Carriers
Email:
Phone number(s):
(904) 539-5004
Mailing address:

Comments/notes

How was it reported?

Intake type: Call
Reported date: 04/18/23 19:43
Entered by: David Prater
Entered at: 04/18/23 20:12

Who reported it?

Do they want this to be confidential? No

Reporter type:
Name:
Kurt Francescone
Organization:
Quality Carriers
Email:
Phone number(s):
(904) 539-5004
Mailing address:
Are they anonymous? No
Are they self-reporting? No
External reference number:

From: State Emergency Operations Officer (MIL)
Sent: Tuesday, April 18, 2023 7:42:21 PM
To: Prater, David (ECY) ; CRESA DO
Subject: FW: NRC#1365125

Forwarded for your action/information as required. Please reply with confirmation of receipt.

Thank you!

State Emergency Operations Officer
Alert & Warning Center
Response Section | Operations Unit
Emergency Management Division
Washington Military Department
(800) 258-5990

-----Original Message-----
From: HQS-SMB-NRC@uscg.mil
Sent: Tuesday, April 18, 2023 7:41 PM
To: State Emergency Operations Officer (MIL) ; State Emergency Operations Officer (MIL) ; Clark, Anthony B (MIL)
Subject: NRC#1365125

External Email

NATIONAL RESPONSE CENTER 1-800-424-8802
GOVERNMENT USE ONLYGOVERNMENT USE ONLY***
Information released to a third party shall comply with any
applicable federal and/or state Freedom of Information and Privacy Laws

Incident Report # 1365125

INCIDENT DESCRIPTION

*Report taken by NRC on 18-APR-23 at 22:32 ET.
Incident Type: MOBILE
Incident Cause: EQUIPMENT FAILURE
Affected Area:
Incident occurred on 18-APR-23 at 17:45 local incident time.
Affected Medium: LAND / GROUND

REPORTING PARTY
Name: KURT FRANCESCONE
Organization: ERTS
Address: 11231 PHILLIPS INDUSTRIAL BLVD
JACKSONVILLE, FL
Email Address: erts@ertsonline.com

PRIMARY Phone: (904)5395004
Type of Organization: PRIVATE ENTERPRISE

SUSPECTED RESPONSIBLE PARTY
Name: SYE TANK
Organization: QUALITY CARRIERS
Address: 1208 E KENNEDY BLVD
TAMPA, FL
Phone: (800)7598265
Type of Organization: PRIVATE ENTERPRISE

INCIDENT LOCATION
503 SE MARITIME AVENUE County: CLARK
City: VACOUVER State: WA

RELEASED MATERIAL(S)
CHRIS Code: NCC Official Material Name: NO CHRIS CODE
Also Known As: ADVANTAGE CUPRIC STARTERS (UN3264 - CORROSIVE ACID
Qty Released: 10 GALLON(S)

DESCRIPTION OF INCIDENT
THE CALLER STATES A FAULTY VALVE ON A TANKER TRUCK RELEASED 10 GALLONS OF ADVANTAGE CUPRIC STARTERS (UN3264 - CORROSIVE ACIDIC NOS) ONTO THE GROUND.

SENSITIVE INFORMATION

INCIDENT DETAILS
Road Mile Marker:
Length of Service Disruption:
Airbag Deployed: UNKNOWN
---MOBILE INFORMATION---
Vehicle Type: TANKER TRUCK
Vehicle Number: FG5297
Vehicle Fuel Capacity:
Hazmat Carrier: UNKNOWN
Carrier Licensed: UNKNOWN
Suspected Non Compliance: UNKNOWN
Trailer/Tanker Number:
Cargo Capacity:
Cargo On Board:

IMPACT
Fire Involved: NO Fire Extinguished: UNKNOWN

INJURIES: NO Sent to Hospital: Empl/Crew: Passenger:
FATALITIES: NO Empl/Crew: Passenger: Occupant:
EVACUATIONS:NO Who Evacuated: Radius/Area:

Damages: NO
Hours Direction of
Closure Type Description of Closure Closed Closure

Air: NO
Major
Road: NO Artery:NO

Waterway:NO

Track: NO

Passengers Transferred: NO
Environmental Impact: NO
Media Interest: NONE

REMEDIAL ACTIONS
THE PRODUCT WILL BE SOLIDIFIED, NEUTRALIZED AND PLACED IN WASTE CONTAINERS. BOOMS DEPLOYED.
Release Secured: YES
Release Rate:
Estimated Release Duration:

WEATHER
Weather: RAINY, ºF

ADDITIONAL AGENCIES NOTIFIED
Federal:
State/Local:
State/Local On Scene:
State Agency Number:

NOTIFICATIONS BY NRC
CENTERS FOR DISEASE CONTROL (GRASP)
18-APR-23 22:40 (770)4887100
CBP TRADE PTNRSHP AGAINST TERRORISM (LOS ANGELES FIELD OFFICE)
18-APR-23 22:40 (562)3663864
DEPT OF HEALTH AND HUMAN SERVICES (SECRETARY OPERATION CENTER (SOC))
18-APR-23 22:40
DHS CISA (CISA CENTRAL)
18-APR-23 22:40 (202)2829201
DHS CYBER & INFRASTRUCTURE SECURITY (OFC OF INFRASTRUCTURE PROTECTION RGN X)
18-APR-23 22:40 (202)8215301
OFFICE OF INFRASTRUCTURE PROTECTION (WA STATE PROTECTIVE SECURITY ADVISOR)
18-APR-23 22:40 (202)8053379
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
18-APR-23 22:40 (202)3661863
U.S. EPA X SEATTLE (MAIN OFFICE)
(206)5531263
U.S. EPA X SEATTLE (CID OREGON)
18-APR-23 22:40 (206)5531263
JOINT TASK FORCE CIVIL SUPPORT (CBRN ANALYSIS CELL)
18-APR-23 22:40 (757)5017422
NATIONAL OCEAN SERVICE (OFFICE OF RESPONSE & RESTORATION)
18-APR-23 22:40 (206)5266322
NOAA RPTS FOR WA (MAIN OFFICE)
18-APR-23 22:40 (206)5264911
OREGON DEQ (EMERGENCY RESPONSE PROGRAM)
18-APR-23 22:40 (503)2296391
PIPELINE & HAZMAT SAFETY ADMIN (HAZARDOUS MATERIAL ACCIDENT INVESTIGATION)
18-APR-23 22:40 (202)3664031
REPORTING PARTY (RP SUBMITTER)
18-APR-23 22:40
SECTOR COLUMBIA RIVER (PORTLAND DETACHED IMD)
18-APR-23 22:40 (503)2409370
SECTOR COLUMBIA RIVER (MSU PORTLAND - INSPECTIONS)
18-APR-23 22:40 (503)2409339
SECTOR COLUMBIA RIVER (MSU PORTLAND – FACILITIES/WWM)
18-APR-23 22:40 (503)2409333
SECTOR COLUMBIA RIVER (IMD-DD-PORTLAND DUTY PHONE)
18-APR-23 22:40 (503)3389463
SECTOR COLUMBIA RIVER (IMD-ASTORIA DUTY PHONE)
18-APR-23 22:40 (503)8616211
SECTOR COLUMBIA RIVER (IMD ASTORIA)
18-APR-23 22:40 (503)8616211
OREGON EMERGENCY MANAGEMENT (MAIN OFFICE)
18-APR-23 22:40 (800)4520311
WA STATE EMERGENCY MANAGEMENT (MAIN OFFICE)
18-APR-23 22:40 (800)2585990
USCG DISTRICT 13 (DISTRICT THIRTEEN (DRAT - DRMM))
18-APR-23 22:40 (206)2207221
WASHINGTON STATE FUSION CENTER (FUSION COMMAND CENTER)
18-APR-23 22:40 (877)8439522

WA UTILITIES & TRANSPORTATION COMM (PIPELINE SAFETY)
18-APR-23 22:40 (360)6641182
WA UTILITIES & TRANSPORTATION COMM (TRANSPORTATION SAFETY)
18-APR-23 22:40 (360)6641236

ADDITIONAL INFORMATION

*** END INCIDENT REPORT #1365125 ***
Report any problems by calling 1-800-424-8802
PLEASE VISIT OUR WEB SITE AT https://gcc02.safelinks.protection.outlook.com/?url=http%3A%2F%2Fnrc.uscg.mil%2F&data=05%7C01%7CDAPR461%40ECY.WA.GOV%7C36221c962ed8432aa80908db407fb2ff%7C11d0e217264e400a8ba057dcc127d72d%7C0%7C0%7C638174689468965636%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=wWQa6fWJJxE3DyrzRLha1VVmFhRvMiuOasgw8FIvirM%3D&reserved=0

Incident details

Life cycle status:	Program referral pending
Incident Date:	04/18/23 19:43
Was it self-reported?:	No
Show to public?:	No

Location

Location name:	
Physical Address:	503 SE Maritime Ave Vancouver WA 98661 US
County:	Clark
Lat, long:	45.61675 , -122.64711

Program owners

SWRO - Toxics Cleanup
Comments:

Garret Peck **(Primary)**
SWRO - Spill Prevention, Preparedness & Response
Comments:

Who might be responsible?

Name:
Organization:
Email:
Phone number(s):
Mailing address:

Incident attachments

Disclaimer: There are no attachments for this incident

SAFETY DATA SHEET

CircuitEtchants

AdvantEdge Cupric Starter

Section 1. Identification of Substance and Supplier

Product Name	AdvantEdge Cupric Starter
Alternative Names	AdvantEdge Cupric Starter – PWB AdvantEdge Cupric Starter – Oxford Cupric Chloride
Recommended Use of Chemical	For use in accordance with technical data sheets.
Use Restrictions	For use in accordance with technical data sheets.
Manufacturer's Information	Micronutrients USA LLC 1550 Research Way Indianapolis, Indiana 46231 317-486-5880
Emergency Phone Number	CHEMTREC (800)424-9300 Micronutrients (317) 486-5880

Section 2. Hazards Identification

GHS Classification of Substance	Corrosive to metals, Category 1 Acute Toxicity (Oral), Category 3 Skin Irritant, Category 1 Eye Irritant, Category 1 Target Organ Systemic Toxicity, Category 2 Aquatic Toxicity, Category 1 Aquatic Chronic, Category 2	
National or Regional Information	Not Applicable	
GHS Label Elements	WARNING Harmful if swallowed. Harmful in contact with skin. May cause respiratory irritation. Harmful if inhaled. May be corrosive to metals. Very toxic to aquatic life. Causes serious eye irritation. 	Keep only in original container. Avoid breathing fume/gas/vapors/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves / clothing and eye/face protection. If swallowed, rinse mouth and immediately call a poison center. If on skin (or hair) remove contaminated clothing and rinse skin with water. If inhaled, remove to fresh air and keep at a rest position comfortable for breathing. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Absorb spillage to prevent material damage. Collect spillage. Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistance container with a resistant inner liner. Dispose of contents/ container in accordance with applicable regulations.

CircuitEtchants

AdvantEdge Cupric Starter

Other Hazards	Not Applicable

Section 3. Composition / Information on Ingredients

Ingredient Name	CAS Number	EC Number	Percent of Total Weight
Cupric Chloride	7447-39-4	231-210-2	27-50%
Hydrochloric Acid	7647-01-0	231-595-7	0.2-5.4%
Water	7732-18-5	231-791-2	<Balance>

Section 4. First Aid Measures

Eye	Immediately irrigate eyes with flowing water continuously for a minimum of 15 minutes, while holding eyes open and washing beneath eyelids. Contacts must be removed before or during flushing. Speed in rinsing eyes after contact is essential to prevent serious injury. Obtain medical attention immediately.
Skin	Immediately flood affected skin area with water (safety shower is preferable) and remove clothing. Wash skin vigorously with flowing water and soap for at least 15 minutes. Do not apply salve or ointment. Continue washing in serious cases until medical help arrives, even for an hour or longer. Clothing should be discarded or washed before re-use. Obtain immediate medical attention.
Ingestion	If victim is alert and not convulsing, rinse mouth with water and give large volumes of water to drink. If spontaneous vomiting occurs, have affected person lean forward with head down. Rinse mouth again, and give more water to drink. Obtain medical attention immediately.
Inhalation	Remove affected person from area to fresh air and provide oxygen if breathing is difficult. Give artificial respiration ONLY if breathing has stopped, and give CPR ONLY if there is no breathing and no pulse. Obtain immediate medical attention.
Note to Physician	Treat patient symptomatically, Endoscopic evaluation of patient may be warranted.

Section 5. Firefighting Measures

Suitable extinguishing media	Dry chemical, Carbon Dioxide, Water Spray or Foam
Fire and Explosion Hazards	Cupric chloride is not considered to be a fire or explosion hazard.
PPE and precautions for firefighters	Avoid breathing vapors and keep upwind of fire. Move containers from area of fire if safely possible. Spray or fog of water is effective on ammonia vapors. Firefighters should use NIOSH-approved self-containing breathing apparatus (SCBA) with positive pressure full-face piece and wear impervious protective clothing.

Section 6. Accidental Release Measures

Suggested PPE, Equipment and Procedures	Avoid contact with skin, eyes and clothing. Wear protective clothing, gloves and eye protection. Keep unauthorized personnel away from the area.
Environmental Precautions	Do not dump in to any sewers, on the ground, or in to any water body.
Methods and materials for	Dike spills with sand or inert solid, and place in to drums or other containers that can be sealed. Very small spills may be flushed with large quantities of water and diluted.

containment and cleanup	

Section 7. Handling and Storage

Handling Precautions	Avoid contact with skin, eyes and clothing. Wear proper protective clothing, gloves and eye protection. Wash thoroughly after handling this product. Avoid breathing vapor or mist by using respiratory protective equipment.
Storage Precautions	Store in a cool, well ventilated, dry location. Isolate from incompatible materials.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limit Values	Cupric Chloride, (syn. Copper (II) Chloride) OSHA PEL: 1mg (Cu)/m^3 (8 hr TWA) ACGIH TLV: 1mg (Cu)/m^3 (8 hr TWA) NIOSH: 100mg (Cu)/m^3 (IDLH) Hydrochloric Acid OSHA PEL: 5ppm HCL (Ceiling Limit) OSHA PEL: 7mg/m^3 ACGIH TLV: 5ppm
Engineering Controls	Ventilate the work area to avoid vapor and mist problems. Local exhaust is necessary if employees will be exposed to airborne levels that exceed the OSHA exposure limits. Recommended guidance documents include "Industrial Ventilation, A Manual of Recommended Practices," by ACGIH.
Individual Protection Measures	Wear appropriate eye protection such as safety glasses, face shield or splash goggles. Use chemical resistant gloves made of suitable material to prevent skin contact. The use of chemical resistant clothing is recommended. A NIOSH / MSHA approved respirator is necessary if a worker may be exposed to airborne contaminant levels exceeding the exposure limits given. It is the employer's responsibility to ensure that the proper respiratory protection is used and that the worker is properly trained in the use and maintenance of respirators. Safety showers with quick opening valves which stay open, and eye wash fountains, or other means of washing the eyes with a gentle flow of cool tepid water, should be readily available in all areas where this material is handled or stored.

Section 9. Physical and Chemical Properties

Appearance	Clear, dark green liquid
Odor	Slight hydrochloric acid odor
Odor Threshold	Not Known
pH	0.0 – 2.0
Melting Point / Freezing Point	Not Known
Initial Boiling Point and Boiling Range	Boiling Point >212°F
Flash Point	Not Known
Evaporation Rate	Not Known
Flammability	Non-Flammable
Upper / Lower flammability or explosive limits	Not Known
Vapor Pressure	Not Known
Vapor Density	Not Known
Relative Density	Not Known

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AdvantEdge Cupric Starter

Solubility	Soluble in water
Partition Coefficient; n-octanol / water	Not Known
Auto-Ignition Temperature	Not Known
Decomposition Temperature	Not Known

Section 10.Stability and Reactivity

Chemical Stability	Stable at Room Temperature
Possibility of Hazardous Reactions	Hazardous polymerization will not occur.
Conditions to Avoid	Avoid contact with incompatible materials.
Incompatible Materials	Keep away from incompatible materials, avoid contact with oxidizing agents and sulfides.
Hazardous Decomposition Products	Emits toxic fumes of copper, hydrogen chloride or chlorine when heated to decomposition.

Section 11.Toxicological Information

Exposure Routes	Dermal absorption, Inhalation, Ingestion
Delayed Effects	Hydrogen chloride and hydrochloric acid have no known or suspected carcinogenic activity.
Acute Effects	**Eye hazards**: Direct eye contact may cause redness, pain, blurred vision and severe tissue damage leading to temporary or permanent injury, including corneal or conjunctival ulceration. Significant potential for corrosive burns to the entire eye. Blindness may result. **Skin Hazards**: Acute exposure may cause irritation, redness and burning of the skin. **Ingestion Hazards**: Ingestion of large amounts of copper may be toxic. Causes excessive salivation, nausea, vomiting, and corrosive burning of the gastrointestinal tract, including perforation. Repeated and prolonged ingestion may cause liver, kidney, or spleen damage. Lesser effects include sore throat, vomiting, metallic taste, hemorrhagic gastritis, and diarrhea. **Inhalation Hazards**: Corrosive overexposure causes burning, irritation and destruction of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, sneezing, mucous production and sinus congestion. **Other** indications of overexposure are headache, nausea, vomiting, low grade fever, and shortness of breath.
Chronic Effects	Chronic exposure to this product may cause skin rashes, pain and discoloration of the skin. Repeated exposure may lead to allergic contact dermatitis. Chronic inhalation may result in permanent damage to the upper respiratory tract, particularly the lungs. Sub chronic (target organ effects) are observed for both cupric chloride and hydrochloric acid. Target organs for cupric chloride include eyes, skin, respiratory system, liver and kidneys. Target organs for hydrochloric acid are eyes, skin and the respiratory system.
Acute Toxicity Estimates	This product is a liquid solution, however, for reference, the oral toxicity (rat) of solid crystalline Cupric Chloride ($CuCl_2$), expressed as the LD_{50} is 140mg/kg. For hydrochloric acid, the LD_{50} oral toxicity (rabbit (is 900 mg/kg.

Section 12.Ecological Information

Ecotoxicity	The ecotoxicity of this product has not been established. Cupric chloride is known to cause substantial negative ecological effects, both acute and chronic.

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AdvantEdge Cupric Starter

Persistence and degradability	Not Known
Bioaccumulative potential	Not Known
Mobility in soil	Not Known
Other adverse effects	None Identified

Section 13.Disposal Considerations

Description of waste residues	Waste residues may consist of unused, expired product, spill residues, and commercial packaging.
Safe Handling and Disposal methods	Material that cannot be used or chemically reprocessed and empty containers should be disposed of in accordance with all applicable regulations. Product containers should be thoroughly emptied before disposal. Generators of waste material are required and are solely responsible for evaluating all waste for compliance with RCRA and any local disposal procedures and regulations.

Section 14.Transport Information

UN Number	UN 3264
UN Proper Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s. (hydrochloric acid, copper chloride solution)
Transport Hazard Class(es)	8 - Corrosive
Packing Group	PG II
Marine Pollutant	Yes
Special Precautions	RQ (Reportable Quantity) notation may be required. (Cupric Chloride = 10 pounds, Hydrochloric Acid RQ = 5,000 lbs.). DOT Emergency Response Guidebook Number 154. Except when transported by vessel, non-bulk packaging and bulk packaging may be exempt from "Marine Pollutant" markings (See 49 CFR 171.4 and 172.332.

Section 15.Regulatory Information

Applicable Regulations	**US Regulatory Information** TSCA: This product has been reported to the EPA Office of Toxic Substances in accordance with the requirements of the Toxic Substances Control Act (40 CFR 710). EPCRA: The following ingredients of this product are subject to reporting under SARA Title III, Section 313: Cupric Chloride (as copper compounds), Hydrochloric Acid SARA: Acute Health Hazard based on Hydrochloric Acid and Copper Compounds SARA Hazard Classes: Acute Health Hazard SARA Title III, Section 313 Supplier Notification This product contains the following constituent in concentrations at or above de minimus levels and which is listed as a toxic chemical in 40 CFR Part 372 pursuant to the requirements of Section 313 of Superfund Amendments and Reauthorization Act of 1986 (SARA). The act also requires that this notice accompany the SDS in all redistributions and may not be detached or omitted from future copies. Cupric Chloride (Syn. Copper (II) Chloride (7447-39-4) 27-50% Hydrochloric Acid (7647-01-0) 0.2-5.4% **Ingredient(s) U.S. Regulatory Information** Cupric Chloride (syn. Copper (II) Chloride SARA Title III – Section 313 Form "R" TRI Reportable Chemical SARA – Acute Health Hazard

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AdvantEdge Cupric Starter

	Hydrochloric Acid SARA Title III – EPA Part 355, Extremely Hazardous Substance SARA Title III – Section 313 Form "R" / TRI Reportable Chemical Clean Air Act 112 (r) Toxic Substance OSHA Process Safety Management – 1910.119, App A Hazardous Chemical SARA – Acute Health Hazard SARA – Reactivity Hazard. **Other International Regulations** For regulatory requirements outside the United States of America, check with the appropriate regulatory agencies.

Section 16.Other

Disclaimer	Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).
SDS preparer	Megan Walters, Carla Jackson
SDS revision date	February 22, 2016

September 18, 2023

Nannette Brooks
Initial Investigator
Toxics Cleanup Program/SWRO
Department of Ecology
PO Box 47775
Olympia, WA 98504-7775

Via email: nbro461@ecy.wa.gov

Regarding: Quality Carriers, Inc. Spill Cleanup
503 SE Maritime Avenue
Vancouver, Washington
PBS Project 17822.100

Dear Nannette:

PBS Engineering and Environmental Inc. (PBS) has managed and completed cleanup activities related to the spill of cupric chloride at 503 SE Maritime Avenue in Vancouver, Washington (site, Figure 1). Cleanup activities were completed in June and July 2023.

BACKGROUND

On April 18, 2023, Quality Carriers, Inc. (QC) notified their contracted emergency response management company, ERTS of Jacksonville, Florida, about a 10-gallon spill of Advantage Cupric Starter (copper chloride, hydrochloric acid and water). At 19:32 (local time), ERTS notified the National Response Center (NRC) of the spill and incident report number 1365125 was assigned.

The spill was reported to Washington Department of Ecology (DOE) by QC on April 19, 2023. GrayMar Environmental (GrayMar) of Troutdale, Oregon, performed an initial spill response, excavating a limited amount of soil (eleven 55-gallon drums) to an overall depth of approximately 2 to 3 inches below ground surface (bgs). Soil samples collected by GrayMar were analyzed for copper by Environmental Protection Agency (EPA) Method 6020B by Specialty Analytical of Clackamas, Oregon. Concentrations of copper ranged from 238 milligrams per kilogram (mg/kg) to 5,810 mg/kg in the spill area. A fifth sample (QC-05) was collected outside of the spill area to compare copper to background levels nearby. The sample indicated a copper detection of 32.6 mg/kg. Soil samples were additionally analyzed for pH to assess impacts from the hydrochloric acid component of the material spilled.. The soil samples indicated pH levels ranging from 5.73 to 7.66.

PBS understands that DOE recommended remediation of copper in soils to the Model Toxics Control Act (MTCA) Method B Cleanup Level of 280 mg/kg. PBS was subsequently contracted to oversee remedial activities at the site and recommended further excavation be completed under guidance of PBS staff equipped with a handheld x-ray fluorescence (XRF) Analyzer.

EXCAVATION ACTIVITES

PBS mobilized onsite with GrayMar Environmental on June 27, 2023, to complete the additional excavation of copper impacted soil. The XRF Analyzer was used by PBS staff during excavation to detect the approximate concentrations of copper in the subsurface and guide excavation depth and direction. Excavation was initiated at the sample location (QC-04) that indicated the highest copper detection. XRF readings indicated that the spill extended beyond the eastern property line and appeared to infiltrate deeper into the subsurface within a parking strip located between the property line fence and the east-adjoining property's parking lot. A confirmation sample (Eastpit-floor) collected from the east-adjoining property indicated copper detections exceeded the MTCA Method B limit and additional excavation was determined to be necessary.

Additional excavation was completed on July 11, July 14, and July 17, 2023. In total, 154.82 tons of soil was excavated and disposed of at Waste Management Hillsboro Landfill. Copies of the disposal receipts are included as an attachment. Groundwater was not encountered during excavation activities. Following completion of the excavation activities, the excavation was backfilled to surface grade with clean compacted ¾ crushed rock.

Field observations during excavation noted relatively fine-grained silts beneath crushed rock surface in the parking area west of the fence, where the release and initial cleanup occurred. PBS noted that the vertical extent of contaminant migration in this area was limited by this material and a significant decrease in copper concentrations was noted following removal of the upper six inches. Upon initiation of excavation activities in the area to the east of the fence, significantly different soil conditions were encountered, as coarse-grained sand was encountered very close to the surface and extended vertically to the maximum depth excavated of 10 feet below ground surface (bgs). Field observations and XRF measurements indicated that spilled material likely migrated across the ground surface to this material and then migrated vertically, with limited lateral migration beyond the parking strip on the east side of the fence.

A large number of XRF measurements were collected during excavation activities for varying depth intervals along excavation sidewalls and excavation bottom confirming that measured copper concentrations were at levels of approximately 280 parts per million (ppm) or below. PBS determined that XRF readings provided a high level of confidence as initial readings collected during the June 27th event were within a similar range as laboratory analysis of samples collected from the same area.

SAMPLE RESULTS

When XRF readings indicated that residual copper concentrations were likely below 280 ppm in the excavation area, confirmation samples were collected. Samples on the east side of fence were collected from sidewalls at a depth of 5 feet and the excavation base at a depth of 10 feet bgs. Sample locations are indicated on the Detail Plan (Figure 3). Confirmation samples were analyzed for Copper by EPA Method 6020B at Apex Laboratories in Tigard, Oregon. Copper detections ranged from 7.30 mg/kg to 245 mg/kg. Table 1 summarizes the soil analytical results. Copies of the laboratory reports are included as an attachment.

CONCLUSIONS

A total of 154.82 tons of copper-impacted soil was excavated from the spill area and disposed of at a subtitle D landfill. Soil testing indicates that residual concentrations of copper do not exceed the MTCA Method B Cleanup Level of 280 mg/kg. Based on these findings, the cupric chloride spill appears to be appropriately remediated. Please feel free to contact us at 503-417-7610 or Nick.Thornton@pbsusa.com with any questions or comments.

Sincerely,

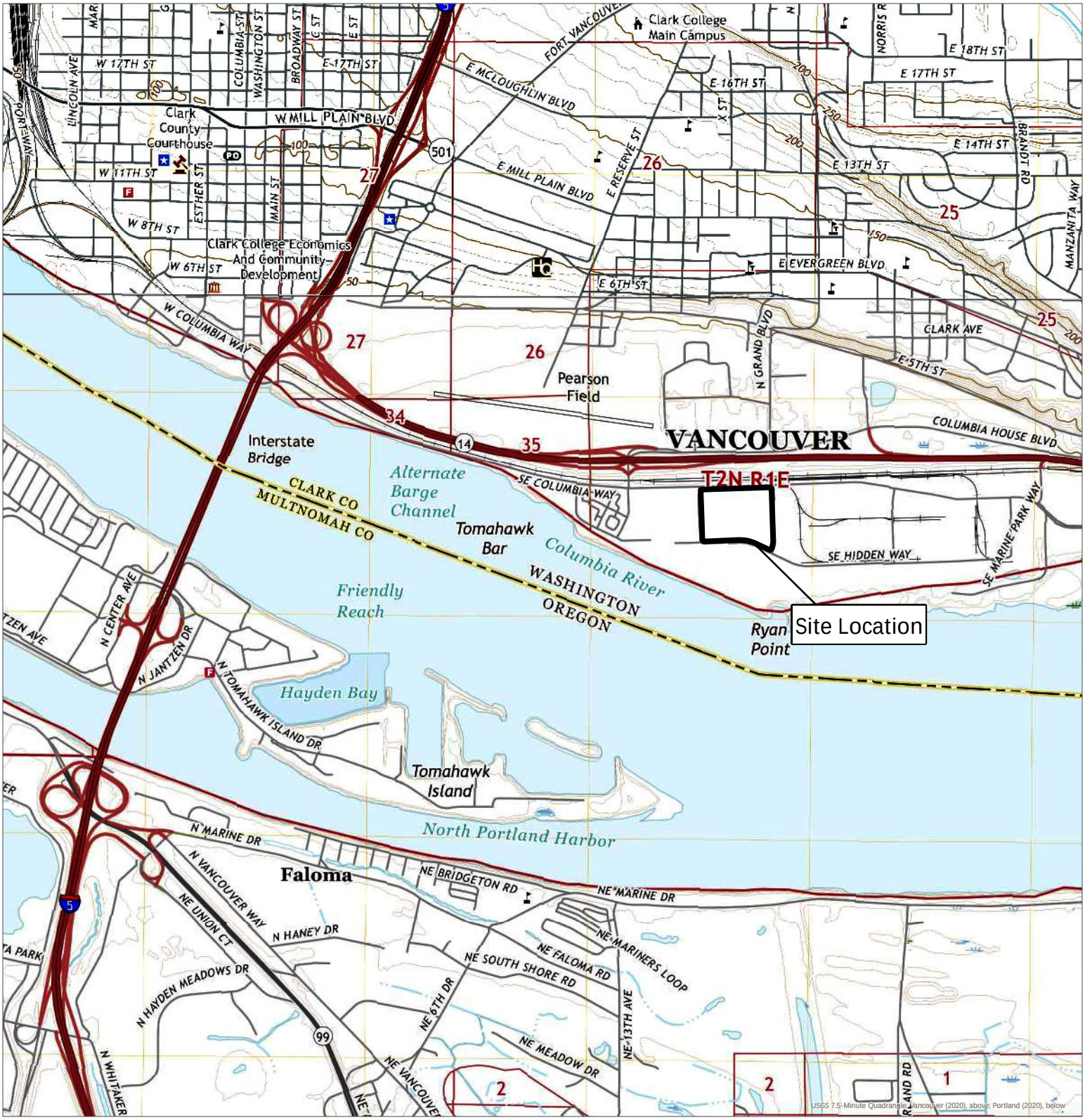
PBS Engineering and Environmental Inc.

Nick Thornton
Project Manager

Dennis Terzian
Senior Geologist, LG

Attachments:
Figure 1. Vicinity Map
Figure 2. Site Plan
Figure 3. Detail Plan
Table 1. Summary of Soil Analytical Results
Photographic Documentation
Disposal Receipts
Quarry Ticket
Cupric Chloride Safety Data Sheets
Laboratory Reports

RM:NT:DT



Site Vicinity

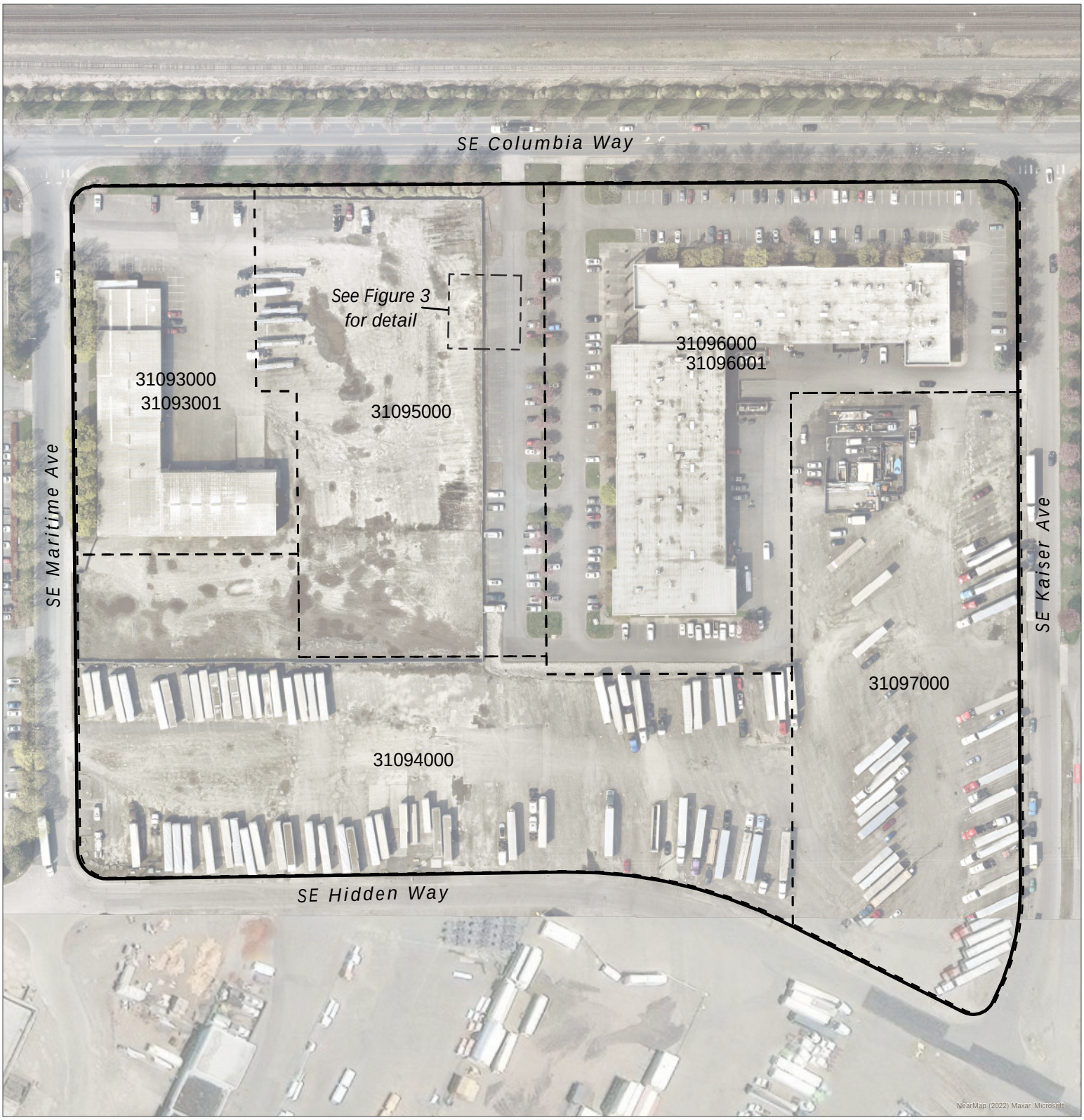
503 SE Maritime Avenue, Vancouver, Washington
2501 SE Columbia Way, Vancouver, Washington
Date: September 2023 | Project: 17822.100

Figure: 1

Site Boundary

1 INCH = 2,000 FEET
0
2,000
Feet

PBS



Site Plan

503 SE Maritime Avenue, Vancouver, Washington
2501 SE Columbia Way, Vancouver, Washington
Date: September 2023 | Project: 17822.100

Figure: 2

Site Parcel (with Taxlot Number)

Site Boundary

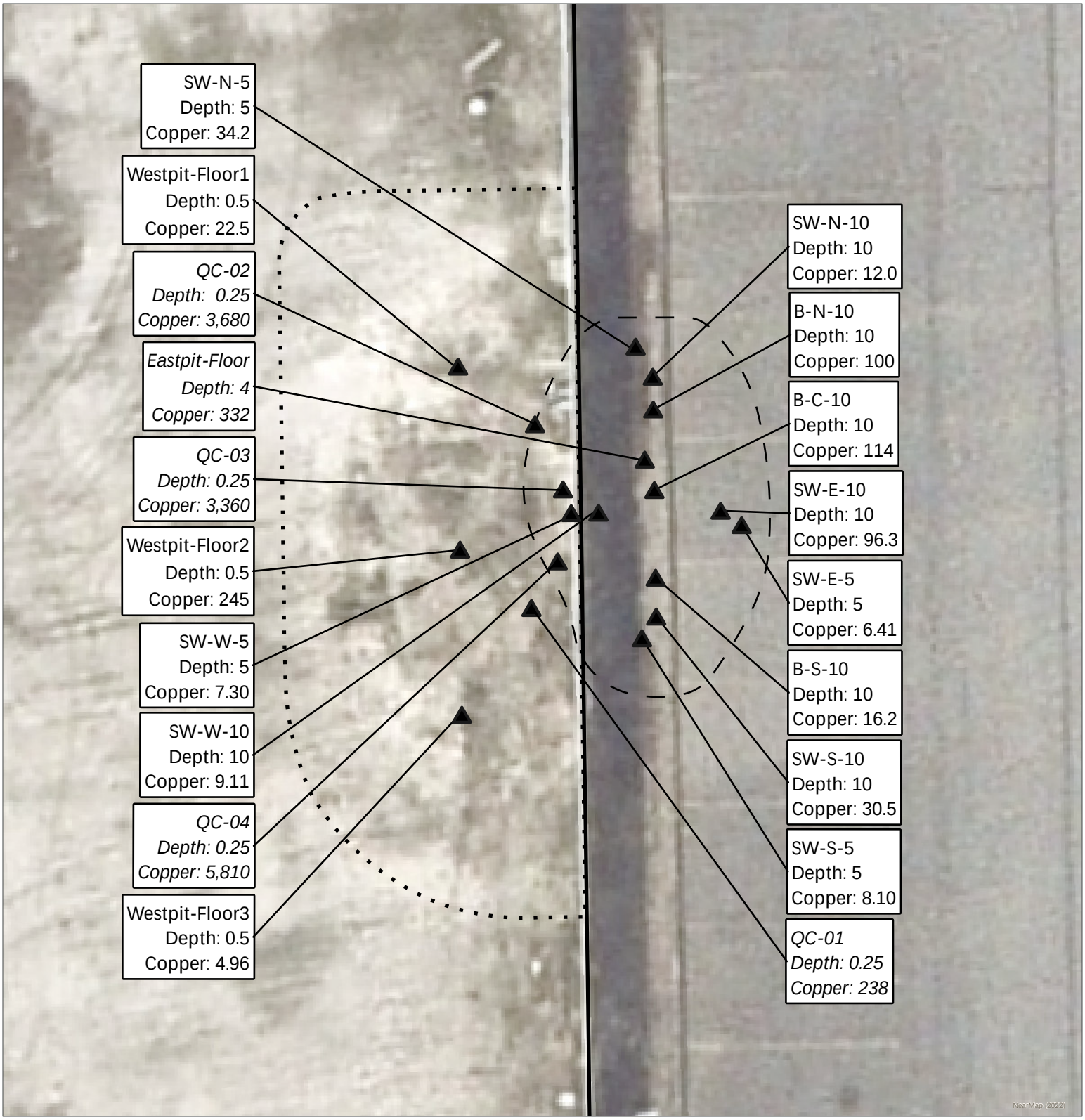
N

1 INCH = 150 FEET

0 150 Feet

PBS

NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet | L:\Projects\17000\17800-17899\17822\17822-100_Vancouver\Environmental\Excavation Oversight\GIS\17822.100_Vancouver\17822.100_Vancouver.aprx | 7/24/2023 1:00 PM



Detail Plan

503 SE Maritime Avenue, Vancouver, Washington
2501 SE Columbia Way, Vancouver, Washington
Date: September 2023 | Project: 17822.100

Figure: 3

Sample Location
Fence
June and July 2023 Excavation Limits
June 2023 Western Property Excavation Limits

- Italic label denotes sample was removed.
- Depth measured in feet below ground surface.
- Copper measured in mg/kg.
- Samples QC-01 through QC-04 were collected by GrayMar Environmental on 4/26/2023. GrayMar sample locations are approximate.

N

1 INCH = 10 FEET
0 10 Feet

PBS

NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet | L:\Projects\17000\17800-17899\17822\17822-100_Vancouver\Environmental\Excavation Oversight\GIS\17822.100_Vancouver\17822.100_Vancouver.aprx | 7/31/2023 3:42 PM

Table 1. Summary of Soil Analytical Results

503 SE Maritime Ave

Vancouver, Washington

Sample ID	Sampling Date	Depth Collected (feet bgs)	Copper
			(mg/kg)
GrayMar Environmental Initial Response Samples			
QC-01	4/26/2023	0.25	238
QC-02	4/26/2023	0.25	3,680
QC-03	4/26/2023	0.25	3,360
QC-04	4/26/2023	0.25	5,810
QC-05	4/26/2023	0.25	32.6
PBS Excavation Oversight Samples			
Eastpit-floor	6/27/2023	4.0	332
Westpit-floor1	6/27/2023	0.5	22.5
Westpit-floor2	6/27/2023	0.5	245
Westpit-floor3	6/27/2023	0.5	4.96
SW-N-5	7/17/2023	5.0	34.2
SW-S-5	7/17/2023	5.0	8.10
SW-E-5	7/17/2023	5.0	6.41
SW-W-5	7/17/2023	5.0	7.30
SW-N-10	7/17/2023	10.0	12.0
SW-S-10	7/17/2023	10.0	30.5
SW-E-10	7/17/2023	10.0	96.3
SW-W-10	7/17/2023	10.0	9.11
B-N-10	7/17/2023	10.0	100
B-C-10	7/17/2023	10.0	114
B-S-10	7/17/2023	10.0	16.2
MTCA Soil Method B Cleanup Level[1]			280

Notes:

mg/kg: milligrams per kilogram

bgs: below ground surface

Italics: Sample was removed

Sample QC-05 was collected by GrayMar outside of the spill area to compare background levels of copper

See laboratory report for full list of analytes and quality-control data.

[1] Cleanup Levels and Risk Calculation (CLARC) Master Table, Washington State Department of Ecology, January 2023

Photo 1. View toward the southeast of the initial excavation west of property boundary on June 27, 2023.

Photo 2. Looking north at the initial excavation on east side of property boundary on 6/27/23.

Photo 3. Oxidized copper and coarse sandy soils encountered during excavation on the eastern property are visible. Photo taken looking to the east on July 11, 2023.

Photo 4. Looking southeast toward the eastern sidewall of the excavation on July 17, 2023.

Photo 5. Looking east at the final extent of the excavation.

Photo 6. Following completion of excavation activities, the excavation was backfilled with compacted crushed rock.

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1679429

Customer Name	QUALITY CARRIERS INC QUALITY	Carrier	GRAYMAR	
Ticket Date	04/25/2023	Vehicle#	T518	Volume
Payment Type	Credit Account	Container		
Manual Ticket#		Driver	DAN	
Hauling Ticket#		Check#		
Route		Billing #	0004741	
State Waste Code		Gen EPA ID		
Manifest	4403492700			
Destination		Grid		
PO	91621			
Profile	117950WA (SOIL GRAVEL ABSORBENTS CONTAMINATED WITH ACID)			
Generator	133-QUALITY CARRIERS INC QUALITY CARRIERS INC 503 MARITIME AVE VANCOUVER WA			

	Time	Scale	Operator	Inbound		
In	04/25/2023 10:39:05	Inbound 1	TLONG5		Gross	22440 lb
Out	04/25/2023 11:13:12	Outbound	MLAWREN4		Tare	17160 lb
					Net	5280 lb
					Tons	2.64

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Each-	100	11.00	Each				CLARK
2	EVF-P-Standard Env	100		%				CLARK
3	FUEL-Fuel Surcharg	100		%				CLARK

Total Tax
Total Ticket

Driver`s Signature

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Reprint
Ticket# 1689115

Customer Name	QUALITY CARRIERS INC QUALITY	Carrier	TAYLOR TRANSPORT		
Ticket Date	07/14/2023	Vehicle#	4090-PUP	Volume	
Payment Type	Credit Account	Container			
Manual Ticket#		Driver	TIM		
Hauling Ticket#		Check#			
Route		Billing #	0004741		
State Waste Code		Gen EPA ID			
Manifest	NA				
Destination		Grid			
PO	91621				
Profile	117950WA (SOIL GRAVEL ABSORBENTS CONTAMINATED WITH ACID)				
Generator	133-QUALITY CARRIERS INC QUALITY CARRIERS INC 503 MARITIME AVE VANCOUVER WA				

	Time	Scale	Operator	Inbound		
In	07/14/2023 09:00:30	MANUAL WT	tlong5		Gross	90380 lb*
Out	07/14/2023 09:00:30		tlong5		Tare	40020 lb*
			* Manual Weight		Net	50360 lb
					Tons	25.18

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Tons-	100	25.18	Tons				CLARK
2	EVF-P-Standard Env	100		%				CLARK
3	FUEL-Fuel Surcharg	100		%				CLARK

Total Tax
Total Ticket

Driver`s Signature

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Reprint
Ticket# 1689203

Customer Name	QUALITY CARRIERS INC QUALITY	Carrier	TAYLOR TRANSPORT	
Ticket Date	07/17/2023	Vehicle#	2207-PUP	Volume
Payment Type	Credit Account	Container		
Manual Ticket#		Driver		
Hauling Ticket#		Check#		
Route		Billing #	0004741	
State Waste Code		Gen EPA ID		
Manifest	PDX-767-05			
Destination		Grid		
PO	91621			
Profile	117950WA (SOIL GRAVEL ABSORBENTS CONTAMINATED WITH ACID)			
Generator	133-QUALITY CARRIERS INC QUALITY CARRIERS INC 503 MARITIME AVE VANCOUVER WA			

	Time	Scale	Operator	Inbound		
In	07/17/2023 13:30:44	Inbound 1	ECOBB		Gross	76720 lb
Out	07/17/2023 13:30:44		ECOBB		Tare	42780 lb
					Net	33940 lb
					Tons	16.97

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Tons-	100	16.97	Tons				CLARK
2	EVF-P-Standard Env	100		%				CLARK
3	FUEL-Fuel Surcharg	100		%				CLARK

Total Tax
Total Ticket

Driver`s Signature

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Reprint
Ticket# 1689444

Customer Name	QUALITY CARRIERS INC QUALITY	Carrier	GRAYMAR		
Ticket Date	07/19/2023	Vehicle#	T507	Volume	
Payment Type	Credit Account	Container			
Manual Ticket#		Driver	CHRIS		
Hauling Ticket#		Check#			
Route		Billing #	0004741		
State Waste Code		Gen EPA ID			
Manifest	PDX-767				
Destination		Grid			
PO	91621				
Profile	117950WA (SOIL GRAVEL ABSORBENTS CONTAMINATED WITH ACID)				
Generator	133-QUALITY CARRIERS INC QUALITY CARRIERS INC 503 MARITIME AVE VANCOUVER WA				

	Time	Scale	Operator	Inbound		
In	07/19/2023 07:44:17	Inbound 1	mmalone2		Gross	65740 lb
Out	07/19/2023 08:46:29	Outbound	ecobb		Tare	40020 lb
					Net	25720 lb
					Tons	12.86

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Tons-	100	12.86	Tons				CLARK
2	EVF-P-Standard Env	100		%				
3	FUEL-Fuel Surcharg	100		%				

Total Tax
Total Ticket

Driver`s Signature

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Reprint
Ticket# 1689152

Customer Name	QUALITY CARRIERS INC QUALITY	Carrier	TAYLOR TRANSPORT	
Ticket Date	07/17/2023	Vehicle#	2150-PUP	Volume
Payment Type	Credit Account	Container		
Manual Ticket#		Driver	BRET	
Hauling Ticket#		Check#		
Route		Billing #	0004741	
State Waste Code		Gen EPA ID		
Manifest	PDX-767-04			
Destination		Grid		
PO	91621			
Profile	117950WA (SOIL GRAVEL ABSORBENTS CONTAMINATED WITH ACID)			
Generator	133-QUALITY CARRIERS INC QUALITY CARRIERS INC 503 MARITIME AVE VANCOUVER WA			

	Time	Scale	Operator	Inbound		
In	07/17/2023 10:43:34	Inbound 2	mmalone2		Gross	102660 lb
Out	07/17/2023 11:07:15	Outbound	tlong5		Tare	41740 lb
					Net	60920 lb
					Tons	30.46

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Tons-	100	30.46	Tons				CLARK
2	EVF-P-Standard Env	100		%				
3	FUEL-Fuel Surcharg	100		%				

Total Tax
Total Ticket

Driver`s Signature

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Reprint
Ticket# 1689113

Customer Name	QUALITY CARRIERS INC QUALITY	Carrier	TAYLOR TRANSPORT		
Ticket Date	07/15/2023	Vehicle#	4090-PUP	Volume	
Payment Type	Credit Account	Container			
Manual Ticket#		Driver	TIM		
Hauling Ticket#		Check#			
Route		Billing #	0004741		
State Waste Code		Gen EPA ID			
Manifest	NA				
Destination		Grid			
PO	91621				
Profile	117950WA (SOIL GRAVEL ABSORBENTS CONTAMINATED WITH ACID)				
Generator	133-QUALITY CARRIERS INC QUALITY CARRIERS INC 503 MARITIME AVE VANCOUVER WA				

	Time	Scale	Operator	Inbound		
In	07/15/2023 08:58:25	MANUAL WT	tlong5		Gross	99580 lb*
Out	07/15/2023 08:58:25		tlong5		Tare	40020 lb*
			* Manual Weight		Net	59560 lb
					Tons	29.78

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Tons-	100	29.78	Tons				CLARK
2	EVF-P-Standard Env	100		%				
3	FUEL-Fuel Surcharg	100		%				

Total Tax
Total Ticket

Driver`s Signature

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Reprint
Ticket# 1689123

Customer Name	QUALITY CARRIERS INC QUALITY	Carrier	TAYLOR TRANSPORT	
Ticket Date	07/17/2023	Vehicle#	2207-PUP	Volume
Payment Type	Credit Account	Container		
Manual Ticket#		Driver	JOEY	
Hauling Ticket#		Check#		
Route		Billing #	0004741	
State Waste Code		Gen EPA ID		
Manifest	PDX-767-03			
Destination		Grid		
PO	91621			
Profile	117950WA (SOIL GRAVEL ABSORBENTS CONTAMINATED WITH ACID)			
Generator	133-QUALITY CARRIERS INC QUALITY CARRIERS INC 503 MARITIME AVE VANCOUVER WA			

	Time	Scale	Operator	Inbound		
In	07/17/2023 09:29:56	Inbound 1	ECOBB		Gross	99920 lb
Out	07/17/2023 09:49:38	Outbound	mmalone2		Tare	42780 lb
					Net	57140 lb
					Tons	28.57

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Special Misc-Tons-	100	28.57	Tons				CLARK
2	EVF-P-Standard Env	100		%				CLARK
3	FUEL-Fuel Surcharg	100		%				CLARK

Total Tax
Total Ticket

Driver`s Signature

KNIFE RIVER
AN MDU RESOURCES COMPANY

Sundial Aggregate
5700 NE Sundial Rd
Troutdale, OR 97060
FOR INFO PLEASE CALL
(503)-944-3570

Ticket No.: **26091806**

Date : 6/27/2023 Time : 7:28:13AM

Vehicle : 0482203 KNIFE RIVER SOLO
Customer : 30946 CASH SALE - KRCNW
Order : METRO GRAYMAR ENVIRO - 503 SE MARITIME AVE, V

P.O. : $1060 32T 3/4"-
Product : 2499340 3/4"- 0 CRUSHED

503 SE MARITIME AVE, VANCOUVER
STEVE 971.401.2587
ASK DISPATCH FOR THE PIN

15.62 Ton

	Pounds	Tons	Metric
Gross	58420	29.21	26.50
Tare	27180 *	13.59 *	12.33 *
Net	31240	15.62	14.17

* P. T.

Price			530.00
Tax	C99999		0.00
Total:			530.00
Today:	15.62	Loads:	1

Weighmaster: Gabby Yap

TERMS: NET - CASH SALES PAYABLE UPON PICKUP OR DELIVERY. CHARGE SALES DUE AND PAYABLE BY THE 10TH OF MONTH FOLLOWING PURCHASE. A service charge of 1.5% per month, or a minimum of $1.00, will be made on the unpaid blalance at the end of the following month's billing cycle. This is an ANNUAL PERCENTAGE RATE OF 18%. PERSONAL NOTICE: We reserve the right to claim lien for all labor and material furnished on this job according to OREGON REVISED STATUTE 87.021

As the owner or contractor for this job,I hereby save and hold harmless from any and all liability Knife River or their driver as a result of the Knife River Vehicle being driven inside property or curblines. I also accept full responsibility for any property damage or any equipment damage to Knife River which may occur beyond this point. I further agree to pay any towing or stand-by charges

Received : _____

CUSTOMER COPY

KNIFE RIVER
AN MDU RESOURCES COMPANY

Sundial Aggregate
5700 NE Sundial Rd
Troutdale, OR 97060
FOR INFO PLEASE CALL
(503)-944-3570

Ticket No.: **26091806**

Date : 6/27/2023 Time : 7:28:13AM
Vehicle : 0482203 KNIFE RIVER SOLO
Customer : 30946 CASH SALE - KRCNW
Order : METRO GRAYMAR ENVIRO - 503 SE MARITIME AVE, V

P.O. : $1060 32T 3/4"-
Product : 2499340 3/4"- 0 CRUSHED

503 SE MARITIME AVE, VANCOUVER
STEVE 971.401.2587
ASK DISPATCH FOR THE PIN

15.62 Ton

	Pounds	Tons	Metric
Gross	58420	29.21	26.50
Tare	27180 *	13.59 *	12.33 *
Net	31240	15.62	14.17

* P. T.

Price			530.00
Tax	C99999		0.00
Total:			530.00
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OFFICE COPY

KNIFE RIVER
AN MDU RESOURCES COMPANY

Sundial Aggregate
5700 NE Sundial Rd
Troutdale, OR 97060
FOR INFO PLEASE CALL
(503)-944-3570

Ticket No.: **26091806**

Date : 6/27/2023 Time : 7:28:13AM
Vehicle : 0482203 KNIFE RIVER SOLO
Customer : 30946 CASH SALE - KRCNW
Order : METRO GRAYMAR ENVIRO - 503 SE MARITIME AVE,

P.O. : $1060 32T 3/4"-
Product : 2499340 3/4"- 0 CRUSHED

503 SE MARITIME AVE, VANCOUVER
STEVE 971.401.2587
ASK DISPATCH FOR THE PIN

15.62 Ton

	Pounds	Tons	Metric
Gross	58420	29.21	26.50
Tare	27180 *	13.59 *	12.33 *
Net	31240	15.62	14.17

* P. T.

Price			530.00
Tax	C99999		0.00
Total:			530.00
Today:	15.62	Loads:	1

Weighmaster: Gabby Yap

TERMS: NET - CASH SALES PAYABLE UPON PICKUP OR DELIVERY. CHARGE SALES DUE AND PAYABLE BY THE 10TH OF MONTH FOLLOWING PURCHASE. A service charge of 1.5% per month, or a minimum of $1.00, will be made on the unpaid blalance at the end of the following month's billing cycle. This is an ANNUAL PERCENTAGE RATE OF 18%. PERSONAL NOTICE: We reserve the right to claim lien for all labor and material furnished on this job according to OREGON REVISED STATUTE 87.021

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Received : _____

TANGENT COPY

KNIFE RIVER
AN MDU RESOURCES COMPANY

Sundial Aggregate
5700 NE Sundial Rd
Troutdale, OR 97060
FOR INFO PLEASE CALL
(503)-944-3570

Ticket No.: **26092090**

Date : 7/14/2023 Time : 11:29:36AM

	Pounds	Tons	Metric
Gross	104660	52.33	47.47
Tare	40120 *	20.06 *	18.20 *
Net	64540	32.27	29.27

* Manual P. T.

Vehicle : TAY4090TF TAYLOR TRANSPORT TR
Customer : 35901 TAYLOR TRANSPORT INC
Order : 4310106314 GRAYMAR 503 MARITIME AVE, VANCOUVER

P.O. :

Product : 2499340 3/4"- 0 CRUSHED **32.27** Ton

Ordered	629.27
Remaining	
Today: 32.27	Loads: 1

Weighmaster: Carolyn Little

TERMS: NET - CASH SALES PAYABLE UPON PICKUP OR DELIVERY. CHARGE SALES DUE AND PAYABLE BY THE 10TH OF MONTH FOLLOWING PURCHASE. A service charge of **1.5%** per month, or a minimum of **$1.00**, will be made on the unpaid blalance at the end of the following month's billing cycle. This is an **ANNUAL PERCENTAGE RATE OF 18%.** **PERSONAL NOTICE:** We reserve the right to claim lien for all labor and material furnished on this job according to OREGON REVISED STATUTE 87.021.

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Received : _____

CUSTOMER COPY

KNIFE RIVER
AN MDU RESOURCES COMPANY

Sundial Aggregate
5700 NE Sundial Rd
Troutdale, OR 97060
FOR INFO PLEASE CALL
(503)-944-3570

Ticket No.: **26092212**

	Pounds	Tons	Metric
Gross	103760	51.88	47.06
Tare	41820 *	20.91*	18.97 *
Net	61940	30.97	28.10

* P. T.

Ordered	603.92
Remaining	
Today: 92.18	Loads: 3

Weighmaster: Gabby Yap

Date : 7/20/2023 Time : 12:41:14PM
Vehicle : TAY2150TF TAYLOR TRANSPORT TR
Customer : 35901 TAYLOR TRANSPORT INC
Order : 4310106314 503 MARATIME AVE, VANCOUVER WA

P.O. : GRAYMER- LOTS
Product : 2499340 3/4"- 0 CRUSHED **30.97** Ton

503 MARATIME AVE, VANCOUVER WA
GRAYMER- LOTS

TERMS: NET - CASH SALES PAYABLE UPON PICKUP OR DELIVERY. CHARGE SALES DUE AND PAYABLE BY THE 10TH OF MONTH FOLLOWING PURCHASE. A service charge of 1.5% per month, or a minimum of $1.00, will be made on the unpaid balance at the end of the following month's billing cycle. This is an ANNUAL PERCENTAGE RATE OF 18%. PERSONAL NOTICE: We reserve the right to claim lien for all labor and material furnished on this job according to OREGON REVISED STATUTE 87.021

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Received : _____

CUSTOMER COPY

KNIFE RIVER
AN MDU RESOURCES COMPANY

Sundial Aggregate
5700 NE Sundial Rd
Troutdale, OR 97060
FOR INFO PLEASE CALL
(503)-944-3570

Ticket No.: 26092212

	Pounds	Tons	Metric
Gross	103760	51.88	47.06
Tare	41820 *	20.91*	18.97 *
Net	61940	30.97	28.10

* P. T.

Ordered	603.92
Remaining	
Today: 92.18	Loads: 3

Weighmaster: Gabby Yap

Date : 7/20/2023 Time : 12:41:14PM
Vehicle : TAY2150TF TAYLOR TRANSPORT TR
Customer : 35901 TAYLOR TRANSPORT INC
Order : 4310106314 503 MARATIME AVE, VANCOUVER WA

P.O. : GRAYMER- LOTS
Product : 2499340 3/4"- 0 CRUSHED 30.97 Ton

503 MARATIME AVE, VANCOUVER WA
GRAYMER- LOTS

TERMS: NET - CASH SALES PAYABLE UPON PICKUP OR DELIVERY. CHARGE SALES DUE AND PAYABLE BY THE 10TH OF MONTH FOLLOWING PURCHASE. A service charge of 1.5% per month, or a minimum of $1.00, will be made on the unpaid balance at the end of the following month's billing cycle. This is an ANNUAL PERCENTAGE RATE OF 18%. PERSONAL NOTICE: We reserve the right to claim lien for all labor and material furnished on this job according to OREGON REVISED STATUTE 87.021

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KNIFE RIVER
AN MDU RESOURCES COMPANY

Sundial Aggregate
5700 NE Sundial Rd
Troutdale, OR 97060
FOR INFO PLEASE CALL
(503)-944-3570

Ticket No.: **26092210**

Date : 7/20/2023 Time : 11:07:58AM

Vehicle : TAY2150TF TAYLOR TRANSPORT TR
Customer : 35901 TAYLOR TRANSPORT INC
Order : 4310106314 503 MARATIME AVE, VANCOUVER WA

P.O. : GRAYMER- LOTS
Product : 2499340 3/4"- 0 CRUSHED **30.78** Ton

503 MARATIME AVE, VANCOUVER WA
GRAYMER- LOTS

	Pounds	Tons	Metric
Gross	103380	51.69	46.89
Tare	41820 *	20.91*	18.97 *
Net	61560	30.78	27.92

* P. T.

Ordered	600.21
Remaining	
Today: 61.21 Loads: 2	

Weighmaster: Gabby Yap

TERMS: NET - CASH SALES PAYABLE UPON PICKUP OR DELIVERY. CHARGE SALES DUE AND PAYABLE BY THE 10TH OF MONTH FOLLOWING PURCHASE. A service charge of 1.5% per month, or a minimum of $1.00, will be made on the unpaid balance at the end of the following month's billing cycle. This is an ANNUAL PERCENTAGE RATE OF 18%. PERSONAL NOTICE: We reserve the right to claim lien for all labor and material furnished on this job according to OREGON REVISED STATUTE 87.021

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KNIFE RIVER
AN MDU RESOURCES COMPANY

Sundial Aggregate
5700 NE Sundial Rd
Troutdale, OR 97060
FOR INFO PLEASE CALL
(503)-944-3570

Ticket No.: **26092210**

Date : 7/20/2023 Time : 11:07:58AM
Vehicle : TAY2150TF TAYLOR TRANSPORT TR
Customer : 35901 TAYLOR TRANSPORT INC
Order : 4310106314 503 MARATIME AVE, VANCOUVER WA

P.O. : GRAYMER- LOTS
Product : 2499340 3/4"- 0 CRUSHED **30.78** Ton

503 MARATIME AVE, VANCOUVER WA
GRAYMER- LOTS

	Pounds	Tons	Metric
Gross	103380	51.69	46.89
Tare	41820 *	20.91*	18.97 *
Net	61560	30.78	27.92

* P. T.

Ordered	600.21
Remaining	
Today: 61.21 Loads: 2	

Weighmaster: Gabby Yap

TERMS: NET - CASH SALES PAYABLE UPON PICKUP OR DELIVERY. CHARGE SALES DUE AND PAYABLE BY THE 10TH OF MONTH FOLLOWING PURCHASE. A service charge of 1.5% per month, or a minimum of $1.00, will be made on the unpaid balance at the end of the following month's billing cycle. This is an ANNUAL PERCENTAGE RATE OF 18%. PERSONAL NOTICE: We reserve the right to claim lien for all labor and material furnished on this job according to OREGON REVISED STATUTE 87.021

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KNIFE RIVER
AN MDU RESOURCES COMPANY

Sundial Aggregate
5700 NE Sundial Rd
Troutdale, OR 97060
FOR INFO PLEASE CALL
(503)-944-3570

Ticket No.: **26092208**

Date : 7/20/2023 Time : 9:49:32AM

Vehicle : TAY2150TF TAYLOR TRANSPORT TR
Customer : 35901 TAYLOR TRANSPORT INC
Order : 4310106314 503 MARATIME AVE, VANCOUVER WA

P.O. : GRAYMER- LOTS
Product : 2499340 3/4"- 0 CRUSHED **30.43** Ton

503 MARATIME AVE, VANCOUVER WA
GRAYMER- LOTS

	Pounds	Tons	Metric
Gross	102680	51.34	46.57
Tare	41820 *	20.91*	18.97 *
Net	60860	30.43	27.61

* P. T.

Ordered	593.39
Remaining	
Today: 30.43 Loads: 1	

Weighmaster: Gabby Yap

TERMS: NET - CASH SALES PAYABLE UPON PICKUP OR DELIVERY. CHARGE SALES DUE AND PAYABLE BY THE 10TH OF MONTH FOLLOWING PURCHASE. A service charge of 1.5% per month, or a minimum of $1.00, will be made on the unpaid balance at the end of the following month's billing cycle. This is an ANNUAL PERCENTAGE RATE OF 18%. PERSONAL NOTICE: We reserve the right to claim lien for all labor and material furnished on this job according to OREGON REVISED STATUTE 87.021

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CUSTOMER COPY

KNIFE RIVER
AN MDU RESOURCES COMPANY

Sundial Aggregate
5700 NE Sundial Rd
Troutdale, OR 97060
FOR INFO PLEASE CALL
(503)-944-3570

Ticket No.: **26092208**

Date : 7/20/2023 Time : 9:49:32AM
Vehicle : TAY2150TF TAYLOR TRANSPORT TR
Customer : 35901 TAYLOR TRANSPORT INC
Order : 4310106314 503 MARATIME AVE, VANCOUVER WA

P.O. : GRAYMER- LOTS
Product : 2499340 3/4"- 0 CRUSHED **30.43** Ton

503 MARATIME AVE, VANCOUVER WA
GRAYMER- LOTS

	Pounds	Tons	Metric
Gross	102680	51.34	46.57
Tare	41820 *	20.91*	18.97 *
Net	60860	30.43	27.61

* P. T.

Ordered	593.39
Remaining	
Today: 30.43 Loads: 1	

Weighmaster: Gabby Yap

TERMS: NET - CASH SALES PAYABLE UPON PICKUP OR DELIVERY. CHARGE SALES DUE AND PAYABLE BY THE 10TH OF MONTH FOLLOWING PURCHASE. A service charge of 1.5% per month, or a minimum of $1.00, will be made on the unpaid balance at the end of the following month's billing cycle. This is an ANNUAL PERCENTAGE RATE OF 18%. PERSONAL NOTICE: We reserve the right to claim lien for all labor and material furnished on this job according to OREGON REVISED STATUTE 87.021

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Received : _____

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SAFETY DATA SHEET

CircuitEtchants

AdvantEdge Cupric Starter

Section 1. Identification of Substance and Supplier

Product Name	AdvantEdge Cupric Starter
Alternative Names	AdvantEdge Cupric Starter – PWB AdvantEdge Cupric Starter – Oxford Cupric Chloride
Recommended Use of Chemical	For use in accordance with technical data sheets.
Use Restrictions	For use in accordance with technical data sheets.
Manufacturer's Information	Micronutrients USA LLC 1550 Research Way Indianapolis, Indiana 46231 317-486-5880
Emergency Phone Number	CHEMTREC (800)424-9300 Micronutrients (317) 486-5880

Section 2. Hazards Identification

GHS Classification of Substance	Corrosive to metals, Category 1 Acute Toxicity (Oral), Category 3 Skin Irritant, Category 1 Eye Irritant, Category 1 Target Organ Systemic Toxicity, Category 2 Aquatic Toxicity, Category 1 Aquatic Chronic, Category 2	
National or Regional Information	Not Applicable	
GHS Label Elements	WARNING Harmful if swallowed. Harmful in contact with skin. May cause respiratory irritation. Harmful if inhaled. May be corrosive to metals. Very toxic to aquatic life. Causes serious eye irritation. 	Keep only in original container. Avoid breathing fume/gas/vapors/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves / clothing and eye/face protection. If swallowed, rinse mouth and immediately call a poison center. If on skin (or hair) remove contaminated clothing and rinse skin with water. If inhaled, remove to fresh air and keep at a rest position comfortable for breathing. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Absorb spillage to prevent material damage. Collect spillage. Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistance container with a resistant inner liner. Dispose of contents/ container in accordance with applicable regulations.

CircuitEtchants

AdvantEdge Cupric Starter

Other Hazards	Not Applicable

Section 3. Composition / Information on Ingredients

Ingredient Name	CAS Number	EC Number	Percent of Total Weight
Cupric Chloride	7447-39-4	231-210-2	27-50%
Hydrochloric Acid	7647-01-0	231-595-7	0.2-5.4%
Water	7732-18-5	231-791-2	<Balance>

Section 4. First Aid Measures

Eye	Immediately irrigate eyes with flowing water continuously for a minimum of 15 minutes, while holding eyes open and washing beneath eyelids. Contacts must be removed before or during flushing. Speed in rinsing eyes after contact is essential to prevent serious injury. Obtain medical attention immediately.
Skin	Immediately flood affected skin area with water (safety shower is preferable) and remove clothing. Wash skin vigorously with flowing water and soap for at least 15 minutes. Do not apply salve or ointment. Continue washing in serious cases until medical help arrives, even for an hour or longer. Clothing should be discarded or washed before re-use. Obtain immediate medical attention.
Ingestion	If victim is alert and not convulsing, rinse mouth with water and give large volumes of water to drink. If spontaneous vomiting occurs, have affected person lean forward with head down. Rinse mouth again, and give more water to drink. Obtain medical attention immediately.
Inhalation	Remove affected person from area to fresh air and provide oxygen if breathing is difficult. Give artificial respiration ONLY if breathing has stopped, and give CPR ONLY if there is no breathing and no pulse. Obtain immediate medical attention.
Note to Physician	Treat patient symptomatically, Endoscopic evaluation of patient may be warranted.

Section 5. Firefighting Measures

Suitable extinguishing media	Dry chemical, Carbon Dioxide, Water Spray or Foam
Fire and Explosion Hazards	Cupric chloride is not considered to be a fire or explosion hazard.
PPE and precautions for firefighters	Avoid breathing vapors and keep upwind of fire. Move containers from area of fire if safely possible. Spray or fog of water is effective on ammonia vapors. Firefighters should use NIOSH-approved self-containing breathing apparatus (SCBA) with positive pressure full-face piece and wear impervious protective clothing.

Section 6. Accidental Release Measures

Suggested PPE, Equipment and Procedures	Avoid contact with skin, eyes and clothing. Wear protective clothing, gloves and eye protection. Keep unauthorized personnel away from the area.
Environmental Precautions	Do not dump in to any sewers, on the ground, or in to any water body.
Methods and materials for	Dike spills with sand or inert solid, and place in to drums or other containers that can be sealed. Very small spills may be flushed with large quantities of water and diluted.

containment and cleanup	

Section 7. Handling and Storage

Handling Precautions	Avoid contact with skin, eyes and clothing. Wear proper protective clothing, gloves and eye protection. Wash thoroughly after handling this product. Avoid breathing vapor or mist by using respiratory protective equipment.
Storage Precautions	Store in a cool, well ventilated, dry location. Isolate from incompatible materials.

Section 8. Exposure Controls/Personal Protection

Occupational Exposure Limit Values	Cupric Chloride, (syn. Copper (II) Chloride) OSHA PEL: 1mg (Cu)/m^3 (8 hr TWA) ACGIH TLV: 1mg (Cu)/m^3 (8 hr TWA) NIOSH: 100mg (Cu)/m^3 (IDLH) Hydrochloric Acid OSHA PEL: 5ppm HCL (Ceiling Limit) OSHA PEL: 7mg/m^3 ACGIH TLV: 5ppm
Engineering Controls	Ventilate the work area to avoid vapor and mist problems. Local exhaust is necessary if employees will be exposed to airborne levels that exceed the OSHA exposure limits. Recommended guidance documents include "Industrial Ventilation, A Manual of Recommended Practices," by ACGIH.
Individual Protection Measures	Wear appropriate eye protection such as safety glasses, face shield or splash goggles. Use chemical resistant gloves made of suitable material to prevent skin contact. The use of chemical resistant clothing is recommended. A NIOSH / MSHA approved respirator is necessary if a worker may be exposed to airborne contaminant levels exceeding the exposure limits given. It is the employer's responsibility to ensure that the proper respiratory protection is used and that the worker is properly trained in the use and maintenance of respirators. Safety showers with quick opening valves which stay open, and eye wash fountains, or other means of washing the eyes with a gentle flow of cool tepid water, should be readily available in all areas where this material is handled or stored.

Section 9. Physical and Chemical Properties

Appearance	Clear, dark green liquid
Odor	Slight hydrochloric acid odor
Odor Threshold	Not Known
pH	0.0 – 2.0
Melting Point / Freezing Point	Not Known
Initial Boiling Point and Boiling Range	Boiling Point >212°F
Flash Point	Not Known
Evaporation Rate	Not Known
Flammability	Non-Flammable
Upper / Lower flammability or explosive limits	Not Known
Vapor Pressure	Not Known
Vapor Density	Not Known
Relative Density	Not Known

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Solubility	Soluble in water
Partition Coefficient; n-octanol / water	Not Known
Auto-Ignition Temperature	Not Known
Decomposition Temperature	Not Known

Section 10.Stability and Reactivity

Chemical Stability	Stable at Room Temperature
Possibility of Hazardous Reactions	Hazardous polymerization will not occur.
Conditions to Avoid	Avoid contact with incompatible materials.
Incompatible Materials	Keep away from incompatible materials, avoid contact with oxidizing agents and sulfides.
Hazardous Decomposition Products	Emits toxic fumes of copper, hydrogen chloride or chlorine when heated to decomposition.

Section 11.Toxicological Information

Exposure Routes	Dermal absorption, Inhalation, Ingestion
Delayed Effects	Hydrogen chloride and hydrochloric acid have no known or suspected carcinogenic activity.
Acute Effects	**Eye hazards**: Direct eye contact may cause redness, pain, blurred vision and severe tissue damage leading to temporary or permanent injury, including corneal or conjunctival ulceration. Significant potential for corrosive burns to the entire eye. Blindness may result. **Skin Hazards**: Acute exposure may cause irritation, redness and burning of the skin. **Ingestion Hazards**: Ingestion of large amounts of copper may be toxic. Causes excessive salivation, nausea, vomiting, and corrosive burning of the gastrointestinal tract, including perforation. Repeated and prolonged ingestion may cause liver, kidney, or spleen damage. Lesser effects include sore throat, vomiting, metallic taste, hemorrhagic gastritis, and diarrhea. **Inhalation Hazards**: Corrosive overexposure causes burning, irritation and destruction of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, sneezing, mucous production and sinus congestion. **Other** indications of overexposure are headache, nausea, vomiting, low grade fever, and shortness of breath.
Chronic Effects	Chronic exposure to this product may cause skin rashes, pain and discoloration of the skin. Repeated exposure may lead to allergic contact dermatitis. Chronic inhalation may result in permanent damage to the upper respiratory tract, particularly the lungs. Sub chronic (target organ effects) are observed for both cupric chloride and hydrochloric acid. Target organs for cupric chloride include eyes, skin, respiratory system, liver and kidneys. Target organs for hydrochloric acid are eyes, skin and the respiratory system.
Acute Toxicity Estimates	This product is a liquid solution, however, for reference, the oral toxicity (rat) of solid crystalline Cupric Chloride ($CuCl_2$), expressed as the LD_{50} is 140mg/kg. For hydrochloric acid, the LD_{50} oral toxicity (rabbit (is 900 mg/kg.

Section 12.Ecological Information

Ecotoxicity	The ecotoxicity of this product has not been established. Cupric chloride is known to cause substantial negative ecological effects, both acute and chronic.

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Persistence and degradability	Not Known
Bioaccumulative potential	Not Known
Mobility in soil	Not Known
Other adverse effects	None Identified

Section 13.Disposal Considerations

Description of waste residues	Waste residues may consist of unused, expired product, spill residues, and commercial packaging.
Safe Handling and Disposal methods	Material that cannot be used or chemically reprocessed and empty containers should be disposed of in accordance with all applicable regulations. Product containers should be thoroughly emptied before disposal. Generators of waste material are required and are solely responsible for evaluating all waste for compliance with RCRA and any local disposal procedures and regulations.

Section 14.Transport Information

UN Number	UN 3264
UN Proper Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s. (hydrochloric acid, copper chloride solution)
Transport Hazard Class(es)	8 - Corrosive
Packing Group	PG II
Marine Pollutant	Yes
Special Precautions	RQ (Reportable Quantity) notation may be required. (Cupric Chloride = 10 pounds, Hydrochloric Acid RQ = 5,000 lbs.). DOT Emergency Response Guidebook Number 154. Except when transported by vessel, non-bulk packaging and bulk packaging may be exempt from "Marine Pollutant" markings (See 49 CFR 171.4 and 172.332.

Section 15.Regulatory Information

Applicable Regulations	**US Regulatory Information** TSCA: This product has been reported to the EPA Office of Toxic Substances in accordance with the requirements of the Toxic Substances Control Act (40 CFR 710). EPCRA: The following ingredients of this product are subject to reporting under SARA Title III, Section 313: Cupric Chloride (as copper compounds), Hydrochloric Acid SARA: Acute Health Hazard based on Hydrochloric Acid and Copper Compounds SARA Hazard Classes: Acute Health Hazard SARA Title III, Section 313 Supplier Notification This product contains the following constituent in concentrations at or above de minimus levels and which is listed as a toxic chemical in 40 CFR Part 372 pursuant to the requirements of Section 313 of Superfund Amendments and Reauthorization Act of 1986 (SARA). The act also requires that this notice accompany the SDS in all redistributions and may not be detached or omitted from future copies. Cupric Chloride (Syn. Copper (II) Chloride (7447-39-4) 27-50% Hydrochloric Acid (7647-01-0) 0.2-5.4% **Ingredient(s) U.S. Regulatory Information** Cupric Chloride (syn. Copper (II) Chloride SARA Title III – Section 313 Form "R" TRI Reportable Chemical SARA – Acute Health Hazard

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AdvantEdge Cupric Starter

	Hydrochloric Acid SARA Title III – EPA Part 355, Extremely Hazardous Substance SARA Title III – Section 313 Form "R" / TRI Reportable Chemical Clean Air Act 112 (r) Toxic Substance OSHA Process Safety Management – 1910.119, App A Hazardous Chemical SARA – Acute Health Hazard SARA – Reactivity Hazard. **Other International Regulations** For regulatory requirements outside the United States of America, check with the appropriate regulatory agencies.

Section 16.Other

Disclaimer	Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).
SDS preparer	Megan Walters, Carla Jackson
SDS revision date	February 22, 2016

Specialty Analytical

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Website: www.specialtyanalytical.com

May 04, 2023

Trevor Smith
GrayMar Environmental
905 NW Corporate Drive
Troutdale, OR 97060
TEL: (971) 270-7776
FAX:

RE: Quality Carriers Order No.: 2304265

Dear Trevor Smith:

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications, except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Marty French
Lab Director

Specialty Analytical

WO#: **2304265**
Date Reported: **5/4/2023**

CLIENT: GrayMar Environmental
Project: Quality Carriers

Lab ID: 2304265-001 **Matrix:** SOIL
Client Sample ID QC-01 **Collection Date:** 4/26/2023 8:57:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA_8_S				**SW 6020B**	**SW3050B**	Analyst: **AC**
ICP/MS METALS-TOTAL RECOVERABLE						
Copper	238	2.45		mg/Kg	50	5/4/2023 1:14:45 PM
CORROSIVITY BY PH				**SW9045D**		Analyst: **NK**
pH	7.15	1.00		pH Units	1	4/26/2023 4:25:22 PM

Lab ID: 2304265-002 **Matrix:** SOIL
Client Sample ID QC-02 **Collection Date:** 4/26/2023 9:02:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA_8_S				**SW 6020B**	**SW3050B**	Analyst: **AC**
ICP/MS METALS-TOTAL RECOVERABLE						
Copper	3680	24.5		mg/Kg	500	5/4/2023 1:29:51 PM
CORROSIVITY BY PH				**SW9045D**		Analyst: **NK**
pH	6.96	1.00		pH Units	1	4/26/2023 4:31:22 PM

Lab ID: 2304265-003 **Matrix:** SOIL
Client Sample ID QC-03 **Collection Date:** 4/26/2023 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA_8_S				**SW 6020B**	**SW3050B**	Analyst: **AC**
ICP/MS METALS-TOTAL RECOVERABLE						
Copper	3360	24.3		mg/Kg	500	5/4/2023 1:33:37 PM
CORROSIVITY BY PH				**SW9045D**		Analyst: **NK**
pH	6.50	1.00		pH Units	1	4/26/2023 4:34:22 PM

Qualifiers:
H Holding times for preparation or analysis exceeded
S Spike Recovery outside accepted recovery limits
R RPD outside accepted recovery limits

CLIENT: GrayMar Environmental
Project: Quality Carriers

Lab ID: 2304265-004 **Matrix:** SOIL
Client Sample ID QC-04 **Collection Date:** 4/26/2023 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA_8_S				**SW 6020B**	**SW3050B**	Analyst: **AC**
ICP/MS METALS-TOTAL RECOVERABLE						
Copper	5810	48.4		mg/Kg	1000	5/4/2023 1:37:23 PM
CORROSIVITY BY PH				**SW9045D**		Analyst: **NK**
pH	5.73	1.00		pH Units	1	4/26/2023 4:37:22 PM

Lab ID: 2304265-005 **Matrix:** SOIL
Client Sample ID QC-05 **Collection Date:** 4/26/2023 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA_8_S				**SW 6020B**	**SW3050B**	Analyst: **AC**
ICP/MS METALS-TOTAL RECOVERABLE						
Copper	32.6	0.471		mg/Kg	10	5/4/2023 1:41:09 PM
CORROSIVITY BY PH				**SW9045D**		Analyst: **NK**
pH	7.66	1.00		pH Units	1	4/26/2023 4:40:22 PM

Qualifiers:
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: 6020_S**

Sample ID: **ICV**	SampType: **ICV**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **ICV**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.46	0.0500	5.00	0	109	90	110				

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Qualifiers: H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode:** **6020_S**

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Sample ID: **ICV**	SampType: **ICV**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **ICV**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.47	0.0500	5.00	0	109	90	110				

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Qualifiers: H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: 6020_S**

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCV**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.45	0.0500	5.00	0	109	90	110				

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCV**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.46	0.0500	5.00	0	109	90	110				

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Qualifiers: H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: 6020_S**

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **MB-21289**	SampType: **MBLK**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date: **4/28/2023**	RunNo: **49231**
Client ID: **PBS**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Sample ID: **LCS-21289**	SampType: **LCS**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date: **4/28/2023**	RunNo: **49231**
Client ID: **LCSS**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.50	0.500	5.00	0	110	80	120				

Sample ID: **2304265-001ADUP**	SampType: **DUP**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date: **4/28/2023**	RunNo: **49231**
Client ID: **QC-01**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	273	2.47						238	13.6	20	

Qualifiers: H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: 6020_S**

Sample ID: **2304265-001AMS**	SampType: **MS**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date: **4/28/2023**	RunNo: **49231**
Client ID: **QC-01**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	283	2.49	4.99	238	899	70	130				SMC

Sample ID: **2304265-001AMSD**	SampType: **MSD**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date: **4/28/2023**	RunNo: **49231**
Client ID: **QC-01**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	365	2.47	4.93	238	2590	70	130	283	25.6	20	RSMC

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCV**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.49	0.0500	5.00	0	110	90	110				

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Qualifiers: H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: 6020_S**

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: PH_S**

Sample ID: **2304265-001ADUP** SampType: **DUP** TestCode: **PH_S** Units: **pH Units** Prep Date: RunNo: **49170**

Client ID: **QC-01** Batch ID: **R49170** TestNo: **SW9045D** Analysis Date: **4/26/2023** SeqNo: **631445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.09	1.00						7.150	0.843	20	

Qualifiers:

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

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Clackamas, Oregon 97015
TEL: 503-607-1331 FAX: 503-607-1336
Website: www.specialtyanalytical.com

Sample Receipt Checklist

Client Name GRAYMAR Work Order Number 2304265

RcptNo: 1 Date and Time Received 4/26/2023 10:40:07 AM Received by: Mandy Wehe

Completed by Reviewed by:

Completed Date: 4/26/2023 Reviewed Date: 4/26/2023 12:07:20 PM

Carrier name: Client

Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	Not Present ☐
Are matrices correctly identified on Chain of custody?	Yes ☑	No ☐	
Is it clear what analyses were requested?	Yes ☑	No ☐	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Samples in proper container/bottle?	Yes ☑	No ☐	
Were correct preservatives used and noted?	Yes ☑	No ☐	NA ☐
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
Were container lables complete (ID, Pres, Date)?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
All samples received at a temp. of > 0° C to 6.0° C?	Yes ☐	No ☑	NA ☐
Response when temperature is outside of range:	Approved by client.		
Preservative added to bottles:			
Sample Temp. taken and recorded upon receipt?	Yes ☑	No ☐	To 17.1 ºC
Water - Were bubbles absent in VOC vials?	Yes ☐	No ☐	No Vials ☑
Water - Was there Chlorine Present?	Yes ☐	No ☐	NA ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
Are Samples considered acceptable?	Yes ☑	No ☐	
Custody Seals present?	Yes ☐	No ☑	
Traffic Report or Packing Lists present?	Yes ☐	No ☑	
Airbill or Sticker?	Air Bill ☐	Sticker ☐	Not Present ☑
Airbill No:			
Sample Tags Present?	Yes ☐	No ☑	
Sample Tags Listed on COC?	Yes ☐	No ☑	
Tag Numbers:			
Sample Condition?	Intact ☑	Broken ☐	Leaking ☐

Case Number: SDG: SAS:

Adjusted? _____ Checked by

Any No and/or NA (not applicable) response must be detailed in the comments section be

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Sample Receipt Checklist

Client Contacted? ☐ Yes ☑ No ☐ NA Person Contacted: Comments:

Contact Mode: ☐ Phone: ☐ Fax: ☐ Email: ☐ In Person:

Client Instructions:

Date Contacted: Contacted By:

Regarding:

CorrectiveAction:

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Phone: 503-607-1331
Fax: 503-607-1336

Chain of Custody Record

Date: 4/26/23 | Page: 1 of: 1 | Laboratory Project No (internal): 2304265

Project Name: Quality Carriers | Temperature on Receipt: 17.1 °C

Client: GrayMar Environmental | Project No: | PO No: PDX | Cooling: | Shipped Via:

Address: 905 NW Corporate Dr | Collected by: Trevor Smith | Custody Seal: Y / (N) Intact / Broken | Cooler / Bottle

City, State, Zip: Troutdale, OR 97060 | State Collected: OR (WA) OTHER | MDL TIER IV EDD

Telephone: | Report To (PM): Trevor Smith | Sample Disposal: ☐ Return to client ☑ Disposal by lab (after 60 days)

AP Email: AccountsPayable@graymarenv.com | PM Email: tSmith@graymarenv.com

Sample Name	Sample Date 2023	Sample Time	Sample Matrix*	# of Containers	Requested Tests: RCRA 8 Metals	PH	Copper	Comments
1 QC-01	4/26	8:57	S	1	x	x	x	
2 QC-02	4/26	9:02	S	1	x	x	x	
3 QC-03	4/26	9:07	S	1	x	x	x	
4 QC-04	4/26	9:10	S	1	x	x	x	
5 QC-05	4/26	9:15	S	1	x	x	x	
6								
7								
8								
9								
10								

*Matrix: A = Air, AQ = Aqueous, L=Liquid, O = Oil, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water, M = Miscellaneous

Turn-around Time: Standard : _____ 3 Day: _____ 2 Day: _____ Next Day: X Same Day: _____

Expedited turn-around requests should be coordinated in advance

Relinquished	Date/Time	Received	Date/Time
x Trevor Smith	4/26/23 10:10	x [signature]	4/26/23 10:10
x		x	
x		x	

polly@specialtyanalytical.com

From: Trevor Smith <tsmith@graymarenv.com>
Sent: Thursday, April 27, 2023 10:45 AM
To: polly@specialtyanalytical.com; julie@specialtyanalytical.com
Cc: mandy@specialtyanalytical.com
Subject: RE: GrayMar Quality Carriers Samples

That would be great. Thank You

Trevor Smith
Operations Manager | Pacific Northwest
GrayMar Environmental Services, Inc.
905 NW Corporate Dr. Troutdale, OR 97060
(971) 401-0303
Email: tsmith@graymarenv.com
Website: http://www.graymarenvironmental.com

From: polly@specialtyanalytical.com <polly@specialtyanalytical.com>
Sent: Thursday, April 27, 2023 10:44 AM
To: Trevor Smith <tsmith@graymarenv.com>; julie@specialtyanalytical.com
Cc: mandy@specialtyanalytical.com
Subject: RE: GrayMar Quality Carriers Samples

Hi Trevor,

We have already prepped and run Mercury however I can take off the other 6 metals and just report out Copper and pH.

Thank you,

Polly Miller
Project Manager

Specialty Analytical
9011 SE Jannsen Road

Clackamas, OR 97015
503.607.1331

From: Trevor Smith <tsmith@graymarenv.com>
Sent: Thursday, April 27, 2023 10:41 AM
To: julie@specialtyanalytical.com; polly@specialtyanalytical.com
Subject: GrayMar Quality Carriers Samples

Hello, the customer has requested that we ONLY run the samples for Copper & PH. Is it too late to make the changes or have you already started running the other metals?

Also please use PO PDX767 for this order.

Thank You.

Trevor Smith
Operations Manager | Pacific Northwest
GrayMar Environmental Services, Inc.
905 NW Corporate Dr. Troutdale, OR 97060
(971) 401-0303
Email: tsmith@graymarenv.com
Website: http://www.graymarenvironmental.com

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Definition Only

WO#: **2304265**
Date: **5/4/2023**

Definitions:

KEY TO FLAGS

A: This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was qualified against gasoline calibration standards.

A1: This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was qualified against diesel calibration standards.

A2: This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was qualified against lube oil calibration standards.

A3: The results was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.

A4: The product appears to be aged or degraded.

B: The blank exhibited a positive result greater than the reporting limit for this compound.

CN: See Case Narrative.

E: Result exceeds the calibration range for this compound. The result should be considered an estimate.

F: The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.

FS: Follow-up testing is suggested.

G: Result may be biased high due to biogenic interferences. Clean up is recommended.

H: Sample was analyzed outside recommended holding time.

HT: At client's request, samples was analyzed outside of recommended holding time.

HP: Sample was analyzed outside recommended holding time due to VOA having pH >2.

J: The results for this analyte is between the MDL and the PQL and should be considered an

Definitions:

estimated concentration.

K: Diesel result is biased high due to amount of Oil contained in the sample.

L: Diesel result is biased high due to amount of Gasoline contained in the sample.

M: Oil result is biased high due to amount of Diesel contained in the sample.

N: Gasoline result is biased high due to amount of Diesel contained in the sample.

MC: Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.

MI: Result is outside control limits due to matrix interference.

NH: Sample matrix is non-homogeneous

MSA: Value determined by Method of Standard Addition.

O: Laboratory Control Standard (LCS) exceeded laboratory control limits but meets CCV criteria. Data meets EPA requirements.

Q: Detection levels elevated due to sample matrix.

R: RPD control limits were exceeded

RF: Duplicate failed due to result being at or near the method-reporting limit.

RP: Matrix spike values exceed established QC limits; post digestion spike is in control.

S: Recovery is outside control limits.

SC: CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.

SL: LCS exceeded recovery control limits, but associated MS/MSD passing. Data meets EPA requirements.

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Definition Only

WO#: **2304265**
Date: **5/4/2023**

Definitions:

SV: CCV exceded low recovery control limits. ND as reported evaluated using EPA method 8260D section 11.4.3.2

TA: Sample treated with ascorbic acid for the removal of thiocyanates.

Apex Laboratories, LLC
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Thursday, June 29, 2023

Nick Thornton
PBS Engineering and Environmental
4412 S Corbett Ave
Portland, OR 97239

RE: A3F1594 - Quality Carriers Spill - 17822.100/0003

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A3F1594, which was received by the laboratory on 6/28/2023 at 10:06:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: cobrien@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Default Cooler	1.6 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Cameron O'Brien For Jason Woodcock, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Eastpit-floor	**A3F1594-01**	**Soil**	**06/27/23 12:40**	**06/28/23 10:06**
Westpit-floor1	**A3F1594-02**	**Soil**	**06/27/23 16:45**	**06/28/23 10:06**
Westpit-floor2	**A3F1594-03**	**Soil**	**06/27/23 16:50**	**06/28/23 10:06**
Westpit-floor3	**A3F1594-04**	**Soil**	**06/27/23 16:55**	**06/28/23 10:06**

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Cameron O'Brien For Jason Woodcock, Project Manager

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Eastpit-floor (A3F1594-01)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**332**	---	2.28	mg/kg dry	10	06/28/23 15:05	EPA 6020B	
Westpit-floor1 (A3F1594-02)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**22.5**	---	2.01	mg/kg dry	10	06/28/23 15:10	EPA 6020B	
Westpit-floor2 (A3F1594-03)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**245**	---	2.05	mg/kg dry	10	06/28/23 15:25	EPA 6020B	
Westpit-floor3 (A3F1594-04)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**4.96**	---	2.29	mg/kg dry	10	06/28/23 15:31	EPA 6020B	

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Cameron O'Brien For Jason Woodcock, Project Manager

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Eastpit-floor (A3F1594-01)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**95.0**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	
Westpit-floor1 (A3F1594-02)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**97.3**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	
Westpit-floor2 (A3F1594-03)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**98.7**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	
Westpit-floor3 (A3F1594-04)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**95.7**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	

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Cameron O'Brien For Jason Woodcock, Project Manager

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23F1054 - EPA 3051A												**Soil**
Blank (23F1054-BLK1)		Prepared: 06/28/23 11:57		Analyzed: 06/28/23 14:39								
EPA 6020B												
Copper	ND	---	2.00	mg/kg wet	10	---	---	---	---	---	---	
LCS (23F1054-BS1)		Prepared: 06/28/23 11:57		Analyzed: 06/28/23 14:44								
EPA 6020B												
Copper	51.0	---	2.00	mg/kg wet	10	50.0	---	102	80 - 120%	---	---	

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PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23F1043 - Total Solids (Dry Weight) - 2022												**Soil**

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Cameron O'Brien For Jason Woodcock, Project Manager

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23F1054							
A3F1594-01	Soil	EPA 6020B	06/27/23 12:40	06/28/23 11:57	0.461g/50mL	0.5g/50mL	1.08
A3F1594-02	Soil	EPA 6020B	06/27/23 16:45	06/28/23 11:57	0.511g/50mL	0.5g/50mL	0.98
A3F1594-03	Soil	EPA 6020B	06/27/23 16:50	06/28/23 11:57	0.495g/50mL	0.5g/50mL	1.01
A3F1594-04	Soil	EPA 6020B	06/27/23 16:55	06/28/23 11:57	0.456g/50mL	0.5g/50mL	1.10

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23F1043							
A3F1594-01	Soil	EPA 8000D	06/27/23 12:40	06/28/23 18:39			NA
A3F1594-02	Soil	EPA 8000D	06/27/23 16:45	06/28/23 18:39			NA
A3F1594-03	Soil	EPA 8000D	06/27/23 16:50	06/28/23 18:39			NA
A3F1594-04	Soil	EPA 8000D	06/27/23 16:55	06/28/23 18:39			NA

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

There are No Qualifiers on Sample or QC Data for this report

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported.

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

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Cameron O'Brien For Jason Woodcock, Project Manager

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PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation)
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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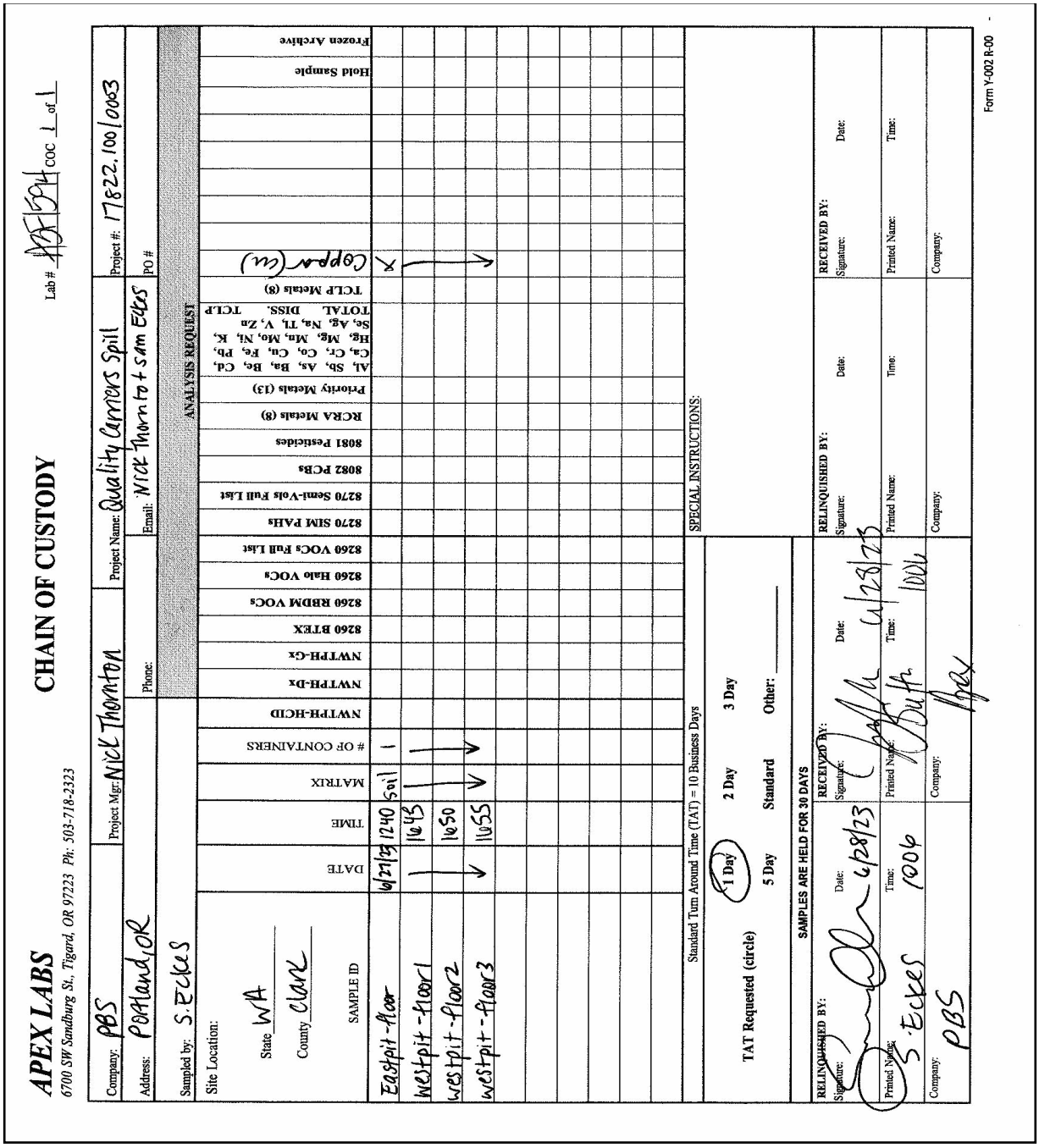
Cameron O'Brien For Jason Woodcock, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**



CHAIN OF CUSTODY

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

Lab # A3F1594 COC 1 of 1

Company: PBS | Project Mgr: Nick Thornton | Project Name: Quality Carriers Spill | Project #: 17822.100/0003
Address: Portland, OR | Phone: | Email: Nick Thornton + sam Eckes | PO #
Sampled by: S. Eckes

Site Location: State WA County Clark

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS
Eastpit-floor	6/27/23	1240	Soil	1
westpit-floor1	"	1043	"	"
westpit-floor2	"	1050	"	"
westpit-floor3	"	1055	"	"

ANALYSIS REQUEST

NWTPH-HCID
NWTPH-Dx
NWTPH-Gx
8260 BTEX
8260 RBDM VOCs
8260 Halo VOCs
8260 VOCs Full List
8270 SIM PAHs
8270 Semi-Vols Full List
8082 PCBs
8081 Pesticides
RCRA Metals (8)
Priority Metals (13)
Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP
TCLP Metals (8)
Copper (w) — X
Hold Sample
Frozen Archive

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day 2 Day 3 Day 5 Day Standard Other: _____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: S. Eckes Date: 6/28/23 Time: 1004 Printed Name: S. Eckes Company: PBS
RECEIVED BY: Signature: Date: Time: Printed Name: Company:
RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:
RECEIVED BY: Signature: Date: 6/29/23 Time: 1000 Printed Name: Company:
RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:
RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Form Y-002 R-00

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503-718-2323
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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1545**

APEX LABS COOLER RECEIPT FORM

Client: PBS Element WO#: A3 F1594

Project/Project #: Quality Carriers Spill 17822.100/0003

Delivery Info:

Date/time received: 6/28/23@ 1006 By: JS

Delivered by: Apex__Client X ESS__FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__

Cooler Inspection Date/time inspected: 6/28/23@ 1007 By: JS

Chain of Custody included? Yes ✓ No ____

Signed/dated by client? Yes ✓ No ____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.6						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/(N)) Possible reason why: ____

Green dots applied to out of temperature samples? Yes/(No)

Out of temperature samples form initiated? Yes/(No)

Sample Inspection: Date/time inspected: 6/28/23@ 1030 By: JS

All samples intact? Yes ✓ No ___ Comments: ____

Bottle labels/COCs agree? Yes ✓ No ___ Comments: ____

COC/container discrepancies form initiated? Yes ___ No ✓

Containers/volumes received appropriate for analysis? Yes ✓ No ___ Comments: ____

Do VOA vials have visible headspace? Yes ___ No ___ NA ✓

Comments ____

Water samples: pH checked: Yes___No___NA ✓ pH appropriate? Yes___No___NA ✓

Comments: ____

Additional information: ____

Labeled by: JS Witness: DJS Cooler Inspected by: JS

Form Y-003 R-00

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Cameron O'Brien For Jason Woodcock, Project Manager

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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Wednesday, July 19, 2023

Nick Thornton
PBS Engineering and Environmental
4412 S Corbett Ave
Portland, OR 97239

RE: A3G1127 - Quality Carriers Spill - 17822.100

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A3G1127, which was received by the laboratory on 7/17/2023 at 2:29:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: jwoodcock@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Default Cooler	2.3 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Jason Woodcock, Project Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW-N-5	A3G1127-01	Soil	07/17/23 12:55	07/17/23 14:29
SW-S-5	A3G1127-02	Soil	07/17/23 13:00	07/17/23 14:29
SW-E-5	A3G1127-03	Soil	07/17/23 12:50	07/17/23 14:29
SW-W-5	A3G1127-04	Soil	07/17/23 12:45	07/17/23 14:29
SW-N-10	A3G1127-05	Soil	07/17/23 11:30	07/17/23 14:29
SW-S-10	A3G1127-06	Soil	07/17/23 12:20	07/17/23 14:29
SW-E-10	A3G1127-07	Soil	07/17/23 10:55	07/17/23 14:29
SW-W-10	A3G1127-08	Soil	07/17/23 11:10	07/17/23 14:29
B-N-10	A3G1127-09	Soil	07/17/23 12:05	07/17/23 14:29
B-C-10	A3G1127-10	Soil	07/17/23 11:45	07/17/23 14:29
B-S-10	A3G1127-11	Soil	07/17/23 11:55	07/17/23 14:29

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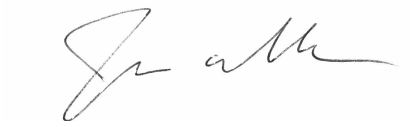

Jason Woodcock, Project Manager

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SW-N-5 (A3G1127-01)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**34.2**	---	2.08	mg/kg dry	10	07/17/23 20:36	EPA 6020B	
SW-S-5 (A3G1127-02)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**8.10**	---	2.16	mg/kg dry	10	07/17/23 20:41	EPA 6020B	
SW-E-5 (A3G1127-03)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**6.41**	---	2.14	mg/kg dry	10	07/17/23 20:46	EPA 6020B	
SW-W-5 (A3G1127-04)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**7.30**	---	2.10	mg/kg dry	10	07/17/23 20:51	EPA 6020B	
SW-N-10 (A3G1127-05)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**12.0**	---	2.08	mg/kg dry	10	07/17/23 21:07	EPA 6020B	
SW-S-10 (A3G1127-06)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**30.5**	---	2.91	mg/kg dry	10	07/17/23 21:12	EPA 6020B	
SW-E-10 (A3G1127-07)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**96.3**	---	2.17	mg/kg dry	10	07/17/23 21:17	EPA 6020B	
SW-W-10 (A3G1127-08)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**9.11**	---	2.11	mg/kg dry	10	07/17/23 21:22	EPA 6020B	
B-N-10 (A3G1127-09)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**100**	---	2.24	mg/kg dry	10	07/17/23 21:28	EPA 6020B	
B-C-10 (A3G1127-10)				**Matrix: Soil**				

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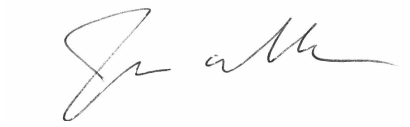

Jason Woodcock, Project Manager

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
B-C-10 (A3G1127-10)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**114**	---	2.28	mg/kg dry	10	07/17/23 21:33	EPA 6020B	
B-S-10 (A3G1127-11)				**Matrix: Soil**				
Batch: 23G0466								
Copper	**16.2**	---	2.35	mg/kg dry	10	07/17/23 21:38	EPA 6020B	

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Jason Woodcock, Project Manager

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SW-N-5 (A3G1127-01)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**95.4**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	
SW-S-5 (A3G1127-02)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**95.5**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	
SW-E-5 (A3G1127-03)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**95.7**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	
SW-W-5 (A3G1127-04)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**95.4**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	
SW-N-10 (A3G1127-05)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**94.0**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	
SW-S-10 (A3G1127-06)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**75.2**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	
SW-E-10 (A3G1127-07)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**94.2**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	
SW-W-10 (A3G1127-08)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**95.1**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	
B-N-10 (A3G1127-09)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**87.0**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	
B-C-10 (A3G1127-10)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**86.8**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	
B-S-10 (A3G1127-11)				**Matrix: Soil**		**Batch: 23G0490**		
% Solids	**83.0**	---	1.00	%	1	07/19/23 06:52	EPA 8000D	

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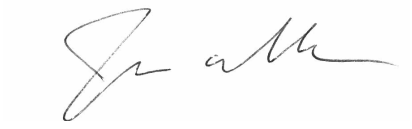

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ANALYTICAL REPORT

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4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0466 - EPA 3051A												**Soil**
Blank (23G0466-BLK1)		Prepared: 07/17/23 16:55		Analyzed: 07/17/23 20:10								
EPA 6020B												
Copper	ND	---	2.00	mg/kg wet	10	---	---	---	---	---	---	
LCS (23G0466-BS1)		Prepared: 07/17/23 16:55		Analyzed: 07/17/23 20:15								
EPA 6020B												
Copper	53.4	---	2.00	mg/kg wet	10	50.0	---	107	80 - 120%	---	---	

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ANALYTICAL REPORT

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4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23G0490 - Total Solids (Dry Weight) - 2022												**Soil**

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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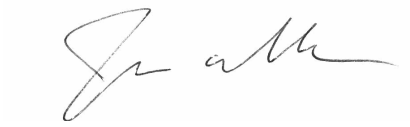

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SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0466							
A3G1127-01	Soil	EPA 6020B	07/17/23 12:55	07/17/23 16:55	0.503g/50mL	0.5g/50mL	0.99
A3G1127-02	Soil	EPA 6020B	07/17/23 13:00	07/17/23 16:55	0.484g/50mL	0.5g/50mL	1.03
A3G1127-03	Soil	EPA 6020B	07/17/23 12:50	07/17/23 16:55	0.489g/50mL	0.5g/50mL	1.02
A3G1127-04	Soil	EPA 6020B	07/17/23 12:45	07/17/23 16:55	0.498g/50mL	0.5g/50mL	1.00
A3G1127-05	Soil	EPA 6020B	07/17/23 11:30	07/17/23 16:55	0.512g/50mL	0.5g/50mL	0.98
A3G1127-06	Soil	EPA 6020B	07/17/23 12:20	07/17/23 16:55	0.457g/50mL	0.5g/50mL	1.09
A3G1127-07	Soil	EPA 6020B	07/17/23 10:55	07/17/23 16:55	0.49g/50mL	0.5g/50mL	1.02
A3G1127-08	Soil	EPA 6020B	07/17/23 11:10	07/17/23 16:55	0.498g/50mL	0.5g/50mL	1.00
A3G1127-09	Soil	EPA 6020B	07/17/23 12:05	07/17/23 16:55	0.514g/50mL	0.5g/50mL	0.97
A3G1127-10	Soil	EPA 6020B	07/17/23 11:45	07/17/23 16:55	0.505g/50mL	0.5g/50mL	0.99
A3G1127-11	Soil	EPA 6020B	07/17/23 11:55	07/17/23 16:55	0.512g/50mL	0.5g/50mL	0.98

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23G0490							
A3G1127-01	Soil	EPA 8000D	07/17/23 12:55	07/18/23 09:25			NA
A3G1127-02	Soil	EPA 8000D	07/17/23 13:00	07/18/23 09:25			NA
A3G1127-03	Soil	EPA 8000D	07/17/23 12:50	07/18/23 09:25			NA
A3G1127-04	Soil	EPA 8000D	07/17/23 12:45	07/18/23 09:25			NA
A3G1127-05	Soil	EPA 8000D	07/17/23 11:30	07/18/23 09:25			NA
A3G1127-06	Soil	EPA 8000D	07/17/23 12:20	07/18/23 09:25			NA
A3G1127-07	Soil	EPA 8000D	07/17/23 10:55	07/18/23 09:25			NA
A3G1127-08	Soil	EPA 8000D	07/17/23 11:10	07/18/23 09:25			NA
A3G1127-09	Soil	EPA 8000D	07/17/23 12:05	07/18/23 09:25			NA
A3G1127-10	Soil	EPA 8000D	07/17/23 11:45	07/18/23 09:25			NA
A3G1127-11	Soil	EPA 8000D	07/17/23 11:55	07/18/23 09:25			NA

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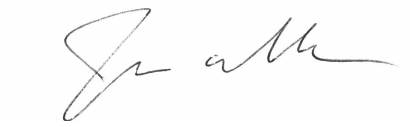

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ANALYTICAL REPORT

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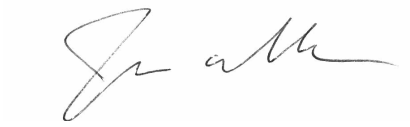
4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

There are No Qualifiers on Sample or QC Data for this report

Apex Laboratories



Jason Woodcock, Project Manager

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported.

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

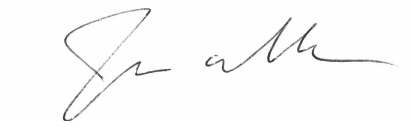
" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories



Jason Woodcock, Project Manager

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PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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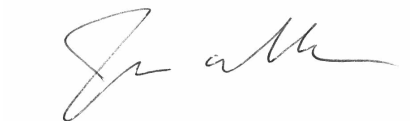

Jason Woodcock, Project Manager

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ANALYTICAL REPORT

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4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation)
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

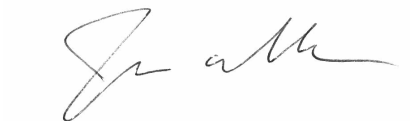
Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories



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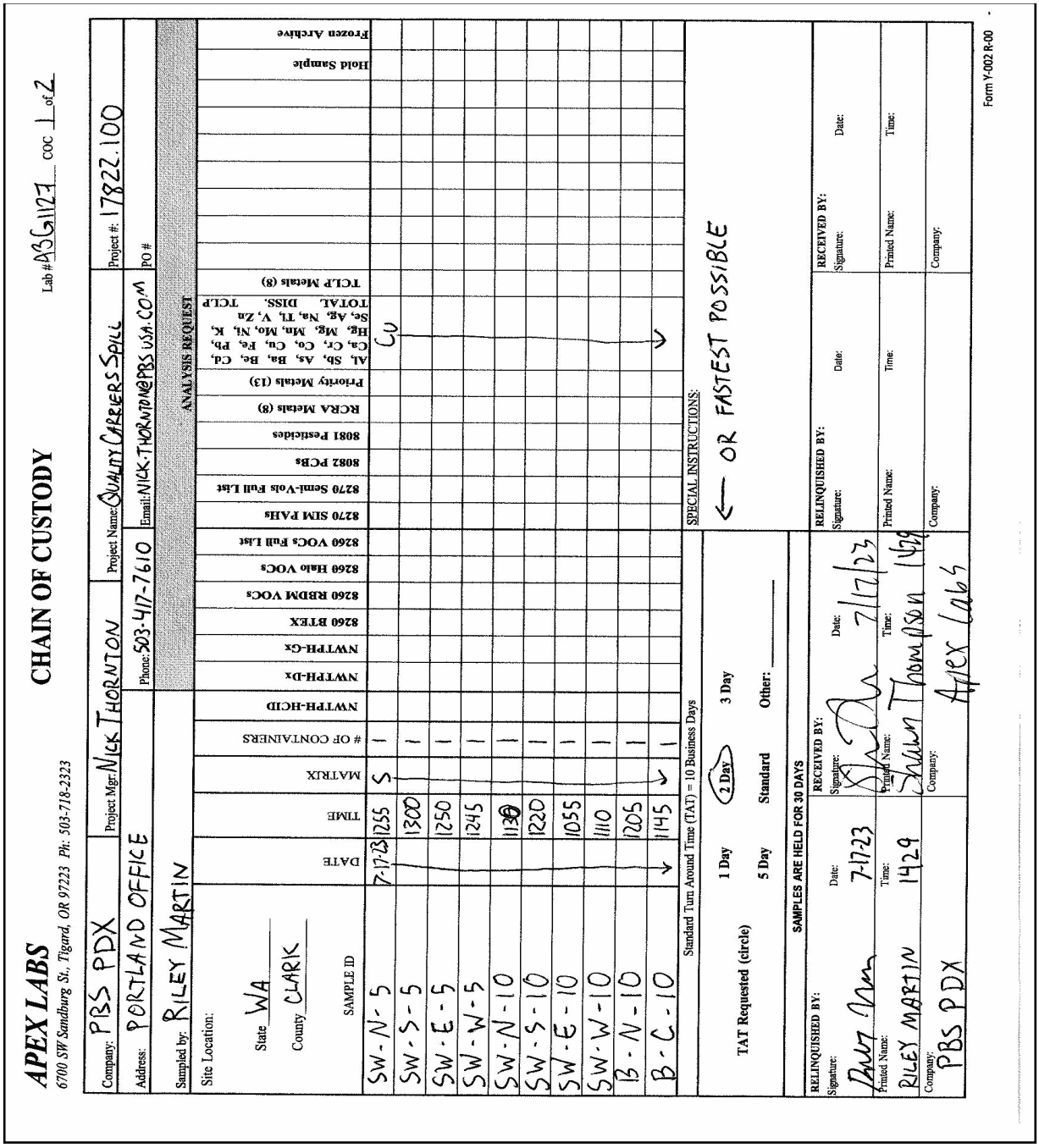

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A3G1127 COC 1 of 2

Company: PBS PDX | Project Mgr: NICK THORNTON | Project Name: QUALITY CARRIERS SPILL | Project #: 17822.100
Address: PORTLAND OFFICE | Phone: 503-417-7610 | Email: NICK.THORNTON@PBSUSA.COM | PO #
Sampled by: RILEY MARTIN

Site Location: State WA County CLARK

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
SW-N-5	7-17-23	1255	S	1														Cu			
SW-S-5		1300		1																	
SW-E-5		1250		1																	
SW-W-5		1245		1																	
SW-N-10		1130		1																	
SW-S-10		1220		1																	
SW-E-10		1055		1																	
SW-W-10		1110		1																	
B-N-10		1205		1																	
B-C-10	↓	1145	↓	1														↓			

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS: ← OR FASTEST POSSIBLE

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Date: 7-17-23 Printed Name: RILEY MARTIN Time: 1429 Company: PBS PDX
RECEIVED BY: Signature: Date: 7/17/23 Printed Name: Shawn Thompson Time: 1429 Company: Apex Labs
RELINQUISHED BY: Signature: Date: Printed Name: Time: Company:
RECEIVED BY: Signature: Date: Printed Name: Time: Company:

Form Y-002 R-00

Apex Laboratories

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Jason Woodcock, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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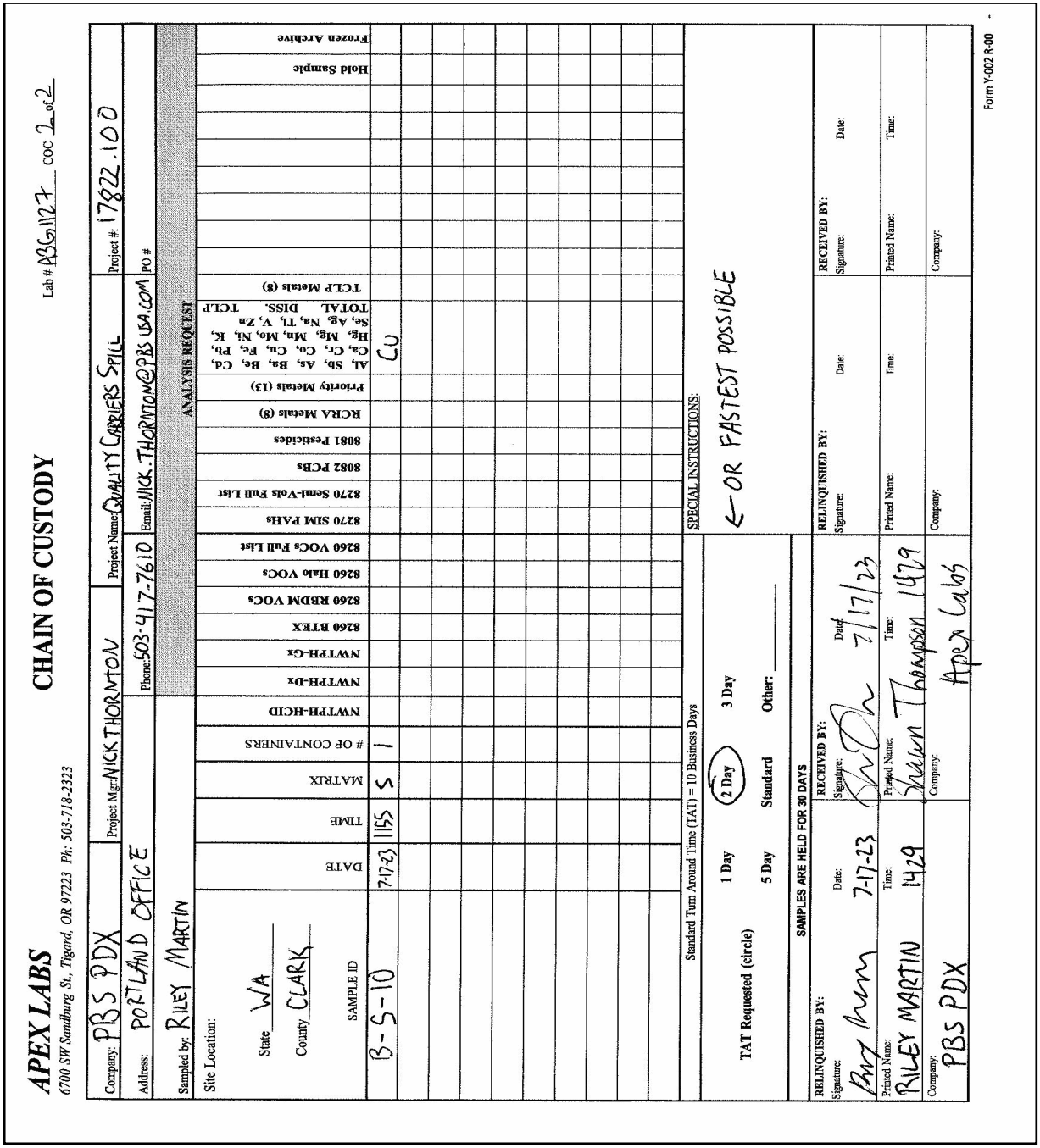
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**



APEX LABS — 6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY — Lab # A3G1127 COC 2 of 2

Company: PBS PDX | Project Mgr: NICK THORNTON | Project Name: QUALITY CARRIERS SPILL | Project #: 17822.100
Address: PORTLAND OFFICE | Phone: 503-417-7610 | Email: NICK.THORNTON@PBSUSA.COM | PO #
Sampled by: RILEY MARTIN

Site Location: State WA County CLARK

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Hold Sample	Frozen Archive
B-5-10	7-17-23	1155	S	1														CU			

ANALYSIS REQUEST

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day | 2 Day | 3 Day | 5 Day | Standard | Other: ____

SPECIAL INSTRUCTIONS: ← OR FASTEST POSSIBLE

SAMPLES ARE HELD FOR 30 DAYS

	RELINQUISHED BY:	Date:	Time:	RECEIVED BY:	Date:	Time:
1	Signature:	7-17-23	1429	Signature:	7/17/23	
	Printed Name: RILEY MARTIN			Printed Name: Shawn Thompson		1429
	Company: PBS PDX			Company: Apex Labs		
2	Signature:			Signature:		
	Printed Name:			Printed Name:		
	Company:			Company:		
3	Signature:			Signature:		
	Printed Name:			Printed Name:		
	Company:			Company:		

RELINQUISHED BY: Signature: Date: Time: | RECEIVED BY: Signature: Date: Time:
Printed Name: Printed Name:
Company: Company:

Form Y-002 R-00

Apex Laboratories

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3G1127 - 07 19 23 1153**

APEX LABS COOLER RECEIPT FORM

Client: PBS- PDX Element WO#: A3G1127

Project/Project #: Quality Carriers Spill 17822.100

Delivery Info:

Date/time received: 7/17/23 @ 1429 By: SAT

Delivered by: Apex X Client ESS FedEx UPS Radio Morgan SDS Evergreen Other

Cooler Inspection Date/time inspected: 7/17/23 @ 1430 By: SAT

Chain of Custody included? Yes Y No

Signed/dated by client? Yes Y No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.3						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	IN						

Cooler out of temp? (Y/(N)) Possible reason why:

Green dots applied to out of temperature samples? Yes/(No)

Out of temperature samples form initiated? Yes/(No)

Sample Inspection: Date/time inspected: 7/17/23 @ 14:45 By: AAW

All samples intact? Yes X No ___ Comments:

Bottle labels/COCs agree? Yes X No ___ Comments:

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments:

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments

Water samples: pH checked: Yes___No___NA X pH appropriate? Yes___No___NA X

Comments:

Additional information:

Labeled by: AAW Witness: Cooler Inspected by: AAW

Form Y-003 R-00

Apex Laboratories

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Jason Woodcock, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Thursday, June 29, 2023

Nick Thornton
PBS Engineering and Environmental
4412 S Corbett Ave
Portland, OR 97239

RE: A3F1594 - Quality Carriers Spill - 17822.100/0003

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A3F1594, which was received by the laboratory on 6/28/2023 at 10:06:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: cobrien@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Default Cooler	1.6 degC

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: Quality Carriers Spill	
4412 S Corbett Ave	Project Number: 17822.100/0003	Report ID:
Portland, OR 97239	Project Manager: Nick Thornton	A3F1594 - 06 29 23 1323

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Eastpit-floor	A3F1594-01	Soil	06/27/23 12:40	06/28/23 10:06
Westpit-floor1	A3F1594-02	Soil	06/27/23 16:45	06/28/23 10:06
Westpit-floor2	A3F1594-03	Soil	06/27/23 16:50	06/28/23 10:06
Westpit-floor3	A3F1594-04	Soil	06/27/23 16:55	06/28/23 10:06

DRAFT REPORT

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Eastpit-floor (A3F1594-01)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**332**	---	2.28	mg/kg dry	10	06/28/23 15:05	EPA 6020B	
Westpit-floor1 (A3F1594-02)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**22.5**	---	2.01	mg/kg dry	10	06/28/23 15:10	EPA 6020B	
Westpit-floor2 (A3F1594-03)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**245**	---	2.05	mg/kg dry	10	06/28/23 15:25	EPA 6020B	
Westpit-floor3 (A3F1594-04)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**4.96**	---	2.29	mg/kg dry	10	06/28/23 15:31	EPA 6020B	

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Eastpit-floor (A3F1594-01)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**95.0**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	
Westpit-floor1 (A3F1594-02)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**97.3**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	
Westpit-floor2 (A3F1594-03)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**98.7**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	
Westpit-floor3 (A3F1594-04)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**95.7**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	

DRAFT REPORT

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Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23F1054 - EPA 3051A												**Soil**
Blank (23F1054-BLK1)		Prepared: 06/28/23 11:57		Analyzed: 06/28/23 14:39								
EPA 6020B												
Copper	ND	---	2.00	mg/kg wet	10	---	---	---	---	---	---	
LCS (23F1054-BS1)		Prepared: 06/28/23 11:57		Analyzed: 06/28/23 14:44								
EPA 6020B												
Copper	51.0	---	2.00	mg/kg wet	10	50.0	---	102	80 - 120%	---	---	

DRAFT REPORT

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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23F1043 - Total Solids (Dry Weight) - 2022												**Soil**

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23F1054							
A3F1594-01	Soil	EPA 6020B	06/27/23 12:40	06/28/23 11:57	0.461g/50mL	0.5g/50mL	1.08
A3F1594-02	Soil	EPA 6020B	06/27/23 16:45	06/28/23 11:57	0.511g/50mL	0.5g/50mL	0.98
A3F1594-03	Soil	EPA 6020B	06/27/23 16:50	06/28/23 11:57	0.495g/50mL	0.5g/50mL	1.01
A3F1594-04	Soil	EPA 6020B	06/27/23 16:55	06/28/23 11:57	0.456g/50mL	0.5g/50mL	1.10

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23F1043							
A3F1594-01	Soil	EPA 8000D	06/27/23 12:40	06/28/23 18:39			NA
A3F1594-02	Soil	EPA 8000D	06/27/23 16:45	06/28/23 18:39			NA
A3F1594-03	Soil	EPA 8000D	06/27/23 16:50	06/28/23 18:39			NA
A3F1594-04	Soil	EPA 8000D	06/27/23 16:55	06/28/23 18:39			NA

DRAFT REPORT

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

There are No Qualifiers on Sample or QC Data for this report

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported.

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

DRAFT REPORT

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Portland, OR 97239	Project Manager:	**Nick Thornton**	**A3F1594 - 06 29 23 1323**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation)
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
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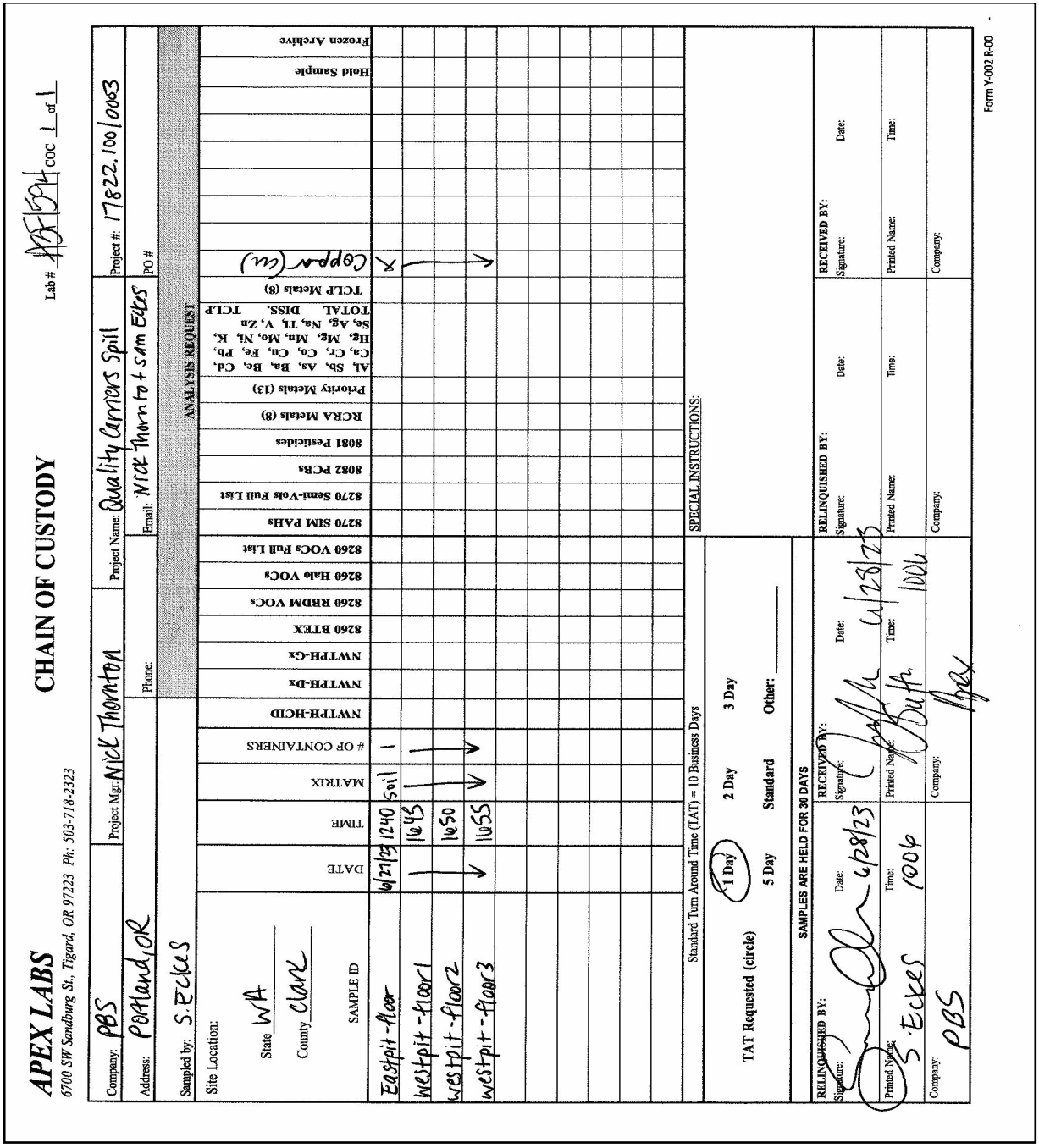

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A3F1594 COC 1 of 1

Company: PBS | Project Mgr: Nick Thornton | Project Name: Quality Carriers Spill | Project #: 17822.100/0003
Address: Portland, OR | Phone: | Email: Nick Thornton + sam Eckes | PO #
Sampled by: S. Eckes

Site Location: State WA County Clark

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Copper (w)	Hold Sample	Frozen Archive
Eastpit-floor	6/27/23	1240	Soil	1																X		
westpit-floor1		1043																				
westpit-floor2		1050																				
westpit-floor3		1055																				

Standard Turn Around Time (TAT) = 10 Business Days
TAT Requested (circle): 1 Day 2 Day 3 Day 5 Day Standard Other: _____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Date: 6/28/23 Time: 1004 Printed Name: S. Eckes Company: PBS
RECEIVED BY: Signature: Date: 6/28/23 Time: 1004 Printed Name: Company:
RELINQUISHED BY: Signature: Date: 6/28/23 Time: 1004 Printed Name: Company:
RECEIVED BY: Signature: Date: Time: Printed Name: Company:
RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:
RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Form Y-002 R-00

DRAFT REPORT

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ANALYTICAL REPORT

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4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
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APEX LABS COOLER RECEIPT FORM

Client: PBS Element WO#: A3 F1594

Project/Project #: Quality Carriers Spill 17822.100/0003

Delivery Info:

Date/time received: 6/28/23@ 1006 By: JS

Delivered by: Apex__Client X ESS__FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__

Cooler Inspection Date/time inspected: 6/28/23@ 1007 By: JS

Chain of Custody included? Yes ✓ No ____

Signed/dated by client? Yes ✓ No ____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.6						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/(N)) Possible reason why: ____

Green dots applied to out of temperature samples? Yes/(No)

Out of temperature samples form initiated? Yes/(No)

Sample Inspection: Date/time inspected: 6/28/23@ 1030 By: JS

All samples intact? Yes ✓ No ___ Comments: ____

Bottle labels/COCs agree? Yes ✓ No ___ Comments: ____

COC/container discrepancies form initiated? Yes ___ No ✓

Containers/volumes received appropriate for analysis? Yes ✓ No ___ Comments: ____

Do VOA vials have visible headspace? Yes ___ No ___ NA ✓

Comments ____

Water samples: pH checked: Yes___No___NA ✓ pH appropriate? Yes___No___NA ✓

Comments: ____

Additional information: ____

Labeled by: JS Witness: DJS Cooler Inspected by: JS

Form Y-003 R-00

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ANALYTICAL REPORT

Thursday, June 29, 2023

Nick Thornton
PBS Engineering and Environmental
4412 S Corbett Ave
Portland, OR 97239

RE: A3F1594 - Quality Carriers Spill - 17822.100/0003

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A3F1594, which was received by the laboratory on 6/28/2023 at 10:06:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: cobrien@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Default Cooler	1.6 degC

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: Quality Carriers Spill	
4412 S Corbett Ave	Project Number: 17822.100/0003	Report ID:
Portland, OR 97239	Project Manager: Nick Thornton	A3F1594 - 06 29 23 1323

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Eastpit-floor	A3F1594-01	Soil	06/27/23 12:40	06/28/23 10:06
Westpit-floor1	A3F1594-02	Soil	06/27/23 16:45	06/28/23 10:06
Westpit-floor2	A3F1594-03	Soil	06/27/23 16:50	06/28/23 10:06
Westpit-floor3	A3F1594-04	Soil	06/27/23 16:55	06/28/23 10:06

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: Quality Carriers Spill	
4412 S Corbett Ave	Project Number: 17822.100/0003	Report ID:
Portland, OR 97239	Project Manager: Nick Thornton	A3F1594 - 06 29 23 1323

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Eastpit-floor (A3F1594-01)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**332**	---	2.28	mg/kg dry	10	06/28/23 15:05	EPA 6020B	
Westpit-floor1 (A3F1594-02)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**22.5**	---	2.01	mg/kg dry	10	06/28/23 15:10	EPA 6020B	
Westpit-floor2 (A3F1594-03)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**245**	---	2.05	mg/kg dry	10	06/28/23 15:25	EPA 6020B	
Westpit-floor3 (A3F1594-04)				**Matrix: Soil**				
Batch: 23F1054								
Copper	**4.96**	---	2.29	mg/kg dry	10	06/28/23 15:31	EPA 6020B	

DRAFT REPORT

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APEX LABORATORIES

Apex Laboratories, LLC
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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Eastpit-floor (A3F1594-01)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**95.0**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	
Westpit-floor1 (A3F1594-02)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**97.3**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	
Westpit-floor2 (A3F1594-03)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**98.7**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	
Westpit-floor3 (A3F1594-04)				**Matrix: Soil**		**Batch: 23F1043**		
% Solids	**95.7**	---	1.00	%	1	06/29/23 07:40	EPA 8000D	

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ANALYTICAL REPORT

PBS Engineering and Environmental	Project: Quality Carriers Spill	
4412 S Corbett Ave	Project Number: 17822.100/0003	Report ID:
Portland, OR 97239	Project Manager: Nick Thornton	A3F1594 - 06 29 23 1323

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23F1054 - EPA 3051A							**Soil**					
Blank (23F1054-BLK1)		Prepared: 06/28/23 11:57		Analyzed: 06/28/23 14:39								
EPA 6020B												
Copper	ND	---	2.00	mg/kg wet	10	---	---	---	---	---	---	
LCS (23F1054-BS1)		Prepared: 06/28/23 11:57		Analyzed: 06/28/23 14:44								
EPA 6020B												
Copper	51.0	---	2.00	mg/kg wet	10	50.0	---	102	80 - 120%	---	---	

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ANALYTICAL REPORT

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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23F1043 - Total Solids (Dry Weight) - 2022												**Soil**

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23F1054							
A3F1594-01	Soil	EPA 6020B	06/27/23 12:40	06/28/23 11:57	0.461g/50mL	0.5g/50mL	1.08
A3F1594-02	Soil	EPA 6020B	06/27/23 16:45	06/28/23 11:57	0.511g/50mL	0.5g/50mL	0.98
A3F1594-03	Soil	EPA 6020B	06/27/23 16:50	06/28/23 11:57	0.495g/50mL	0.5g/50mL	1.01
A3F1594-04	Soil	EPA 6020B	06/27/23 16:55	06/28/23 11:57	0.456g/50mL	0.5g/50mL	1.10

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23F1043							
A3F1594-01	Soil	EPA 8000D	06/27/23 12:40	06/28/23 18:39			NA
A3F1594-02	Soil	EPA 8000D	06/27/23 16:45	06/28/23 18:39			NA
A3F1594-03	Soil	EPA 8000D	06/27/23 16:50	06/28/23 18:39			NA
A3F1594-04	Soil	EPA 8000D	06/27/23 16:55	06/28/23 18:39			NA

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

There are No Qualifiers on Sample or QC Data for this report

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ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported.

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
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Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

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See Percent Solids section for details of dry weight analysis.

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" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

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Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

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Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: Quality Carriers Spill	
4412 S Corbett Ave	Project Number: 17822.100/0003	Report ID:
Portland, OR 97239	Project Manager: Nick Thornton	A3F1594 - 06 29 23 1323

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation)
EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A3F1594 COC 1 of 1

Company: PBS | Project Mgr: Nick Thornton | Project Name: Quality Carriers Spill | Project #: 17822.100/0003

Address: Portland, OR | Phone: | Email: Nick Thornton + Sam Eckes | PO #

Sampled by: S. Eckes

Site Location:
State WA
County clark

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pesticides	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Copper (Cu)	Hold Sample	Frozen Archive
Eastpit-floor	6/27/23	1240	soil	1																X		
westpit-floor1	↓	1645	↓	↓																↓		
westpit-floor2	↓	1650	↓	↓																↓		
westpit-floor3	↓	1655	↓	↓																↓		

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): (1 Day) 2 Day 3 Day 5 Day Standard Other: ______

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date: 6/28/23	Signature: [signature] Date: 6/28/23	Signature: Date:	Signature: Date:
Printed Name: S. Eckes Time: 1006	Printed Name: Buth Time: 1006	Printed Name: Time:	Printed Name: Time:
Company: PBS	Company: Apex	Company:	Company:

Form Y-002 R-00

DRAFT REPORT

The results provided in this report are PRELIMINARY and are subject to change based on subsequent analysis, QC validation or final data review. Please use these results with the understanding that they may have not been finalized by the laboratory.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

PBS Engineering and Environmental	Project: **Quality Carriers Spill**	
4412 S Corbett Ave	Project Number: **17822.100/0003**	**Report ID:**
Portland, OR 97239	Project Manager: **Nick Thornton**	**A3F1594 - 06 29 23 1323**

APEX LABS COOLER RECEIPT FORM

Client: PBS Element WO#: A3F1594

Project/Project #: Quality Carriers Spill 17822.100/0003

Delivery Info:

Date/time received: 6/28/23@ 1006 By: JS

Delivered by: Apex__Client X ESS__FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__

Cooler Inspection Date/time inspected: 6/28/23@ 1007 By: JS

Chain of Custody included? Yes ✓ No ____

Signed/dated by client? Yes ✓ No ____

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.6						
Custody seals? (Y/N)	N						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition (In/Out):	In						

Cooler out of temp? (Y/(N)) Possible reason why: ____

Green dots applied to out of temperature samples? Yes/(No)

Out of temperature samples form initiated? Yes/(No)

Sample Inspection: Date/time inspected: 6/28/23@ 1030 By: JS

All samples intact? Yes ✓ No ___ Comments: ____

Bottle labels/COCs agree? Yes ✓ No ___ Comments: ____

COC/container discrepancies form initiated? Yes ___ No ✓

Containers/volumes received appropriate for analysis? Yes ✓ No ___ Comments: ____

Do VOA vials have visible headspace? Yes ___ No ___ NA ✓

Comments ____

Water samples: pH checked: Yes___No___NA ✓ pH appropriate? Yes___No___NA ✓

Comments: ____

Additional information: ____

Labeled by: JS Witness: DJS Cooler Inspected by: JS

Form Y-003 R-00

DRAFT REPORT

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Specialty Analytical

9011 SE Jannsen Rd
Clackamas, OR 97015
TEL: (503) 607-1331
Website: www.specialtyanalytical.com

May 04, 2023

Trevor Smith
GrayMar Environmental
905 NW Corporate Drive
Troutdale, OR 97060
TEL: (971) 270-7776
FAX:

RE: Quality Carriers Order No.: 2304265

Dear Trevor Smith:

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications, except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Marty French
Lab Director

Specialty Analytical

WO#: **2304265**
Date Reported: **5/4/2023**

CLIENT: GrayMar Environmental
Project: Quality Carriers

Lab ID: 2304265-001 **Matrix:** SOIL
Client Sample ID QC-01 **Collection Date:** 4/26/2023 8:57:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA_8_S				**SW 6020B**	**SW3050B**	Analyst: **AC**
ICP/MS METALS-TOTAL RECOVERABLE						
Copper	238	2.45		mg/Kg	50	5/4/2023 1:14:45 PM
CORROSIVITY BY PH				**SW9045D**		Analyst: **NK**
pH	7.15	1.00		pH Units	1	4/26/2023 4:25:22 PM

Lab ID: 2304265-002 **Matrix:** SOIL
Client Sample ID QC-02 **Collection Date:** 4/26/2023 9:02:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA_8_S				**SW 6020B**	**SW3050B**	Analyst: **AC**
ICP/MS METALS-TOTAL RECOVERABLE						
Copper	3680	24.5		mg/Kg	500	5/4/2023 1:29:51 PM
CORROSIVITY BY PH				**SW9045D**		Analyst: **NK**
pH	6.96	1.00		pH Units	1	4/26/2023 4:31:22 PM

Lab ID: 2304265-003 **Matrix:** SOIL
Client Sample ID QC-03 **Collection Date:** 4/26/2023 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA_8_S				**SW 6020B**	**SW3050B**	Analyst: **AC**
ICP/MS METALS-TOTAL RECOVERABLE						
Copper	3360	24.3		mg/Kg	500	5/4/2023 1:33:37 PM
CORROSIVITY BY PH				**SW9045D**		Analyst: **NK**
pH	6.50	1.00		pH Units	1	4/26/2023 4:34:22 PM

Qualifiers:
H Holding times for preparation or analysis exceeded
S Spike Recovery outside accepted recovery limits
R RPD outside accepted recovery limits

CLIENT: GrayMar Environmental
Project: Quality Carriers

Lab ID: 2304265-004 **Matrix:** SOIL
Client Sample ID QC-04 **Collection Date:** 4/26/2023 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA_8_S				**SW 6020B**	**SW3050B**	Analyst: **AC**
ICP/MS METALS-TOTAL RECOVERABLE						
Copper	5810	48.4		mg/Kg	1000	5/4/2023 1:37:23 PM
CORROSIVITY BY PH				**SW9045D**		Analyst: **NK**
pH	5.73	1.00		pH Units	1	4/26/2023 4:37:22 PM

Lab ID: 2304265-005 **Matrix:** SOIL
Client Sample ID QC-05 **Collection Date:** 4/26/2023 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA_8_S				**SW 6020B**	**SW3050B**	Analyst: **AC**
ICP/MS METALS-TOTAL RECOVERABLE						
Copper	32.6	0.471		mg/Kg	10	5/4/2023 1:41:09 PM
CORROSIVITY BY PH				**SW9045D**		Analyst: **NK**
pH	7.66	1.00		pH Units	1	4/26/2023 4:40:22 PM

Qualifiers:
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: 6020_S**

Sample ID: **ICV**	SampType: **ICV**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **ICV**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.46	0.0500	5.00	0	109	90	110				

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Qualifiers: H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode:** **6020_S**

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/3/2023**	SeqNo: **632093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Sample ID: **ICV**	SampType: **ICV**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **ICV**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.47	0.0500	5.00	0	109	90	110				

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Qualifiers: H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: 6020_S**

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCV**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.45	0.0500	5.00	0	109	90	110				

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCV**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.46	0.0500	5.00	0	109	90	110				

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Qualifiers: H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: 6020_S**

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **MB-21289**	SampType: **MBLK**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date: **4/28/2023**	RunNo: **49231**
Client ID: **PBS**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Sample ID: **LCS-21289**	SampType: **LCS**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date: **4/28/2023**	RunNo: **49231**
Client ID: **LCSS**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.50	0.500	5.00	0	110	80	120				

Sample ID: **2304265-001ADUP**	SampType: **DUP**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date: **4/28/2023**	RunNo: **49231**
Client ID: **QC-01**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	273	2.47						238	13.6	20	

Qualifiers: H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: 6020_S**

Sample ID: **2304265-001AMS**	SampType: **MS**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date: **4/28/2023**	RunNo: **49231**
Client ID: **QC-01**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	283	2.49	4.99	238	899	70	130				SMC

Sample ID: **2304265-001AMSD**	SampType: **MSD**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date: **4/28/2023**	RunNo: **49231**
Client ID: **QC-01**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	365	2.47	4.93	238	2590	70	130	283	25.6	20	RSMC

Sample ID: **CCV**	SampType: **CCV**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCV**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	5.49	0.0500	5.00	0	110	90	110				

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.0500									

Qualifiers: H Holding times for preparation or analysis exceeded R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: 6020_S**

Sample ID: **CCB**	SampType: **CCB**	TestCode: **6020_S**	Units: **mg/Kg**	Prep Date:	RunNo: **49231**
Client ID: **CCB**	Batch ID: **21289**	TestNo: **SW 6020B**	**SW3050B**	Analysis Date: **5/4/2023**	SeqNo: **632315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Specialty Analytical

WO#: **2304265**

5/4/2023

Client: GrayMar Environmental

Project: Quality Carriers **TestCode: PH_S**

Sample ID: **2304265-001ADUP** SampType: **DUP** TestCode: **PH_S** Units: **pH Units** Prep Date: RunNo: **49170**

Client ID: **QC-01** Batch ID: **R49170** TestNo: **SW9045D** Analysis Date: **4/26/2023** SeqNo: **631445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.09	1.00						7.150	0.843	20	

Qualifiers:

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Specialty Analytical
9011 SE Jannsen Rd
Clackamas, Oregon 97015
TEL: 503-607-1331 FAX: 503-607-1336
Website: www.specialtyanalytical.com

Sample Receipt Checklist

Client Name GRAYMAR Work Order Number 2304265

RcptNo: 1 Date and Time Received 4/26/2023 10:40:07 AM Received by: Mandy Wehe

Completed by Reviewed by:

Completed Date: 4/26/2023 Reviewed Date: 4/26/2023 12:07:20 PM

Carrier name: Client

Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	Not Present ☐
Are matrices correctly identified on Chain of custody?	Yes ☑	No ☐	
Is it clear what analyses were requested?	Yes ☑	No ☐	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Samples in proper container/bottle?	Yes ☑	No ☐	
Were correct preservatives used and noted?	Yes ☑	No ☐	NA ☐
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
Were container lables complete (ID, Pres, Date)?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
All samples received at a temp. of > 0° C to 6.0° C?	Yes ☐	No ☑	NA ☐
Response when temperature is outside of range:	Approved by client.		
Preservative added to bottles:			
Sample Temp. taken and recorded upon receipt?	Yes ☑	No ☐	To 17.1 ºC
Water - Were bubbles absent in VOC vials?	Yes ☐	No ☐	No Vials ☑
Water - Was there Chlorine Present?	Yes ☐	No ☐	NA ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	NA ☑
Are Samples considered acceptable?	Yes ☑	No ☐	
Custody Seals present?	Yes ☐	No ☑	
Traffic Report or Packing Lists present?	Yes ☐	No ☑	
Airbill or Sticker?	Air Bill ☐	Sticker ☐	Not Present ☑
Airbill No:			
Sample Tags Present?	Yes ☐	No ☑	
Sample Tags Listed on COC?	Yes ☐	No ☑	
Tag Numbers:			
Sample Condition?	Intact ☑	Broken ☐	Leaking ☐

Case Number: SDG: SAS:

Adjusted? _____ Checked by

Any No and/or NA (not applicable) response must be detailed in the comments section be

Specialty Analytical
9011 SE Jannsen Rd
Clackamas, Oregon 97015
TEL: 503-607-1331 FAX: 503-607-1336
Website: www.specialtyanalytical.com

Sample Receipt Checklist

Client Contacted? ☐ Yes ☑ No ☐ NA Person Contacted: Comments:

Contact Mode: ☐ Phone: ☐ Fax: ☐ Email: ☐ In Person:

Client Instructions:

Date Contacted: Contacted By:

Regarding:

CorrectiveAction:

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Clackamas, OR 97015
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Fax: 503-607-1336

Chain of Custody Record

Date: 4/26/23 | Page: 1 of: 1 | Laboratory Project No (internal): 2304265

Project Name: Quality Carriers | Temperature on Receipt: 17.1 °C

Client: GrayMar Environmental | Project No: | PO No: PDX | Cooling: | Shipped Via:

Address: 905 NW Corporate Dr | Collected by: Trevor Smith | Custody Seal: Y / (N) Intact / Broken | Cooler / Bottle

City, State, Zip: Troutdale, OR 97060 | State Collected: OR (WA) OTHER | MDL TIER IV EDD

Telephone: | Report To (PM): Trevor Smith | Sample Disposal: ☐ Return to client ☑ Disposal by lab (after 60 days)

AP Email: AccountsPayable@graymarenv.com | PM Email: tSmith@graymarenv.com

Sample Name	Sample Date 2023	Sample Time	Sample Matrix*	# of Containers	Requested Tests: RCRA 8 Metals	PH	Copper	Comments
1 QC-01	4/26	8:57	S	1	x	x	x	
2 QC-02	4/26	9:02	S	1	x	x	x	
3 QC-03	4/26	9:07	S	1	x	x	x	
4 QC-04	4/26	9:10	S	1	x	x	x	
5 QC-05	4/26	9:15	S	1	x	x	x	
6								
7								
8								
9								
10								

*Matrix: A = Air, AQ = Aqueous, L=Liquid, O = Oil, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water, M = Miscellaneous

Turn-around Time: Standard : _____ 3 Day: _____ 2 Day: _____ Next Day: X Same Day: _____

Expedited turn-around requests should be coordinated in advance

Relinquished	Date/Time	Received	Date/Time
x Trevor Smith	4/26/23 10:10	x [signature]	4/26/23 10:10
x		x	
x		x	

polly@specialtyanalytical.com

From: Trevor Smith <tsmith@graymarenv.com>
Sent: Thursday, April 27, 2023 10:45 AM
To: polly@specialtyanalytical.com; julie@specialtyanalytical.com
Cc: mandy@specialtyanalytical.com
Subject: RE: GrayMar Quality Carriers Samples

That would be great. Thank You

Trevor Smith
Operations Manager | Pacific Northwest
GrayMar Environmental Services, Inc.
905 NW Corporate Dr. Troutdale, OR 97060
(971) 401-0303
Email: tsmith@graymarenv.com
Website: http://www.graymarenvironmental.com

From: polly@specialtyanalytical.com <polly@specialtyanalytical.com>
Sent: Thursday, April 27, 2023 10:44 AM
To: Trevor Smith <tsmith@graymarenv.com>; julie@specialtyanalytical.com
Cc: mandy@specialtyanalytical.com
Subject: RE: GrayMar Quality Carriers Samples

Hi Trevor,

We have already prepped and run Mercury however I can take off the other 6 metals and just report out Copper and pH.

Thank you,

Polly Miller
Project Manager

Specialty Analytical
9011 SE Jannsen Road

Clackamas, OR 97015
503.607.1331

From: Trevor Smith <tsmith@graymarenv.com>
Sent: Thursday, April 27, 2023 10:41 AM
To: julie@specialtyanalytical.com; polly@specialtyanalytical.com
Subject: GrayMar Quality Carriers Samples

Hello, the customer has requested that we ONLY run the samples for Copper & PH. Is it too late to make the changes or have you already started running the other metals?

Also please use PO PDX767 for this order.

Thank You.

Trevor Smith
Operations Manager | Pacific Northwest
GrayMar Environmental Services, Inc.
905 NW Corporate Dr. Troutdale, OR 97060
(971) 401-0303
Email: tsmith@graymarenv.com
Website: http://www.graymarenvironmental.com

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Definition Only

WO#: **2304265**
Date: **5/4/2023**

Definitions:

KEY TO FLAGS

A: This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was qualified against gasoline calibration standards.

A1: This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was qualified against diesel calibration standards.

A2: This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was qualified against lube oil calibration standards.

A3: The results was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.

A4: The product appears to be aged or degraded.

B: The blank exhibited a positive result greater than the reporting limit for this compound.

CN: See Case Narrative.

E: Result exceeds the calibration range for this compound. The result should be considered an estimate.

F: The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.

FS: Follow-up testing is suggested.

G: Result may be biased high due to biogenic interferences. Clean up is recommended.

H: Sample was analyzed outside recommended holding time.

HT: At client's request, samples was analyzed outside of recommended holding time.

HP: Sample was analyzed outside recommended holding time due to VOA having pH >2.

J: The results for this analyte is between the MDL and the PQL and should be considered an

Definitions:

estimated concentration.

K: Diesel result is biased high due to amount of Oil contained in the sample.

L: Diesel result is biased high due to amount of Gasoline contained in the sample.

M: Oil result is biased high due to amount of Diesel contained in the sample.

N: Gasoline result is biased high due to amount of Diesel contained in the sample.

MC: Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.

MI: Result is outside control limits due to matrix interference.

NH: Sample matrix is non-homogeneous

MSA: Value determined by Method of Standard Addition.

O: Laboratory Control Standard (LCS) exceeded laboratory control limits but meets CCV criteria. Data meets EPA requirements.

Q: Detection levels elevated due to sample matrix.

R: RPD control limits were exceeded

RF: Duplicate failed due to result being at or near the method-reporting limit.

RP: Matrix spike values exceed established QC limits; post digestion spike is in control.

S: Recovery is outside control limits.

SC: CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.

SL: LCS exceeded recovery control limits, but associated MS/MSD passing. Data meets EPA requirements.

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Definition Only

WO#: **2304265**
Date: **5/4/2023**

Definitions:

SV: CCV exceded low recovery control limits. ND as reported evaluated using EPA method 8260D section 11.4.3.2

TA: Sample treated with ascorbic acid for the removal of thiocyanates.