



Soil Cap Management Plan

Former Nielsen Manufacturing
Property
3501 Portland Road NE
Salem, Oregon

Issued:
December 12, 2021

Prepared for:

Salem-Keizer School District
3630 State Street
Salem, OR 97301

Prepared by:



Offices in Portland and Bend, Oregon / San Rafael, California
P.O. Box 14488, Portland, Oregon 97293
T. 503-452-5561 / E. ENW@EVREN-NW.com

Project No. 689-14001-09

Purpose

This Soil Cap Management Plan (Plan) has been prepared to assist Salem-Keizer School District with implementing Oregon Department of Environmental Quality (ODEQ)-mandated ***institutional and engineering controls*** at 3501 Portland Road NE in Salem, Oregon (the “Subject Property”). These controls are designed to minimize risk to human health and the environment from historic soil contamination beneath the site.

Use

This document details the following:

- Contaminated soil – historical use, chemicals present and estimated extent.
- Overview of requirements, including:
 - Annual soil cap inspections
 - Staff training
 - Maintenance and inspection
 - Procedures for preventing unauthorized subsurface work
- Annual report
- Management of contaminated soil and soil cap during subsurface work.

Identified personnel who have responsibility for exterior areas of the Subject Property should review this Plan on an annual basis.

Documentation of Compliance

Please acknowledge the **completion** of required actions on an annual basis, to be completed when the annual report is completed.

Year	Annual Report Submitted		Document Completion & Inclusion of Attachments in Annual Report		
	Date	By (Name & Initials)	B	C	D
2021					
2022					
2023					
2024					
2025					
2026					
2027					
2028					
2029					
2030					
2031					

This

Soil Cap Management Plan

for the

Former Nielsen Manufacturing Property

3501 Portland Road NE
Salem, Marion County, Oregon

Has been prepared for the sole benefit and use of our client:

Salem-Keizer School District

3630 State Street
Salem, OR 97301

and its assignees

Issued December 12, 2021 by:

Victoria Bennett

Principal Environmental Scientist

Lynn D. Green, C.E.G.

Principal Engineering Geologist

Limitations. No warranties are expressed or implied concerning potential contaminants or environmental media not addressed through sampling and analysis. EVREN Northwest, Inc. is not responsible for conditions or consequences arising from relevant information that is concealed or not fully disclosed at the time of Plan preparation. This Plan was prepared in accordance with generally accepted professional practice in the area at this time for the exclusive use of our client and their agents or authorized third parties. No other warranty, either expressed or implied, is made.

Table of Contents

Purpose.....	ii
Use	ii
Documentation of Compliance	ii
1.0 Site Setting and Environmental Conditions	1
1.1 Site Setting	1
1.2 Overview of Known Residual Soil Contamination	2
1.2.1 Soil	2
1.2.2 Reconnaissance Ground Water.....	2
1.3 Residual Risk Assessment.....	2
1.4 Remedial Action Development	3
1.5 Remedial Action Implementation.....	4
2.0 INSTITUTIONAL CONTROLS.....	5
3.0 STAFF - REQUIRED ACTIONS.....	6
3.1 Soil Cap Annual Inspection	7
3.2 Annual Training	7
3.3 Approval Process for Authorization to Breach the Soil Cap	7
3.4 Maintain Log of Authorized Soil Cap Breaches	8
3.5 Submit an Annual Report	8
4.0 SUBSURFACE WORK – METHODS AND PROCEDURES	9
4.1 Prior to Starting Any Work	9
4.2 Shallow Soil / Soil Cap ONLY Work.....	9
4.3 Earthwork On Site.....	9
4.4 Reporting Requirements.....	10

Tables (in Text)

4-1 Key Staff and Roles

Figures

Figure 1 Site Vicinity Map
Figure 2 Site Plan
Figure 3 Soil Sample Location Diagram
Figure 4 Ground Water Sample Location Diagram
Figure 5 Managed Soil Cap Diagram

Attachments

A Soil Cap Annual Inspection Form
B Documentation Form for Annual Staff Training
C Subsurface Work Log Form
D Subsurface Work Documentation Form

1.0 Site Setting and Environmental Conditions

This Plan applies to the former Nielsen Manufacturing property located at 3501 Portland Road NE in Salem, Oregon (subject site or subject property). Please reference Figure 1 for a site vicinity map and Figure 2 for site features.

1.1 Site Setting

The subject property is identified by Marion County as Tax Lot 500 of Map 07S3W12CC comprising 7.83 acres. The subject property is located northeast of the city of Salem, bounded by Portland Road to the east and Burlington Northern Santa Fe (BNSF) Railroad to the west. A single building occupies the site and most of the space is occupied by the Career and Technical Education Center (CTEC) for the Salem-Keizer School District. The site is bordered by a mix of commercial and industrial uses. The City of Salem has zoned the subject property and north and south adjoining properties IC – Industrial Commercial. Properties across Portland Road NE to the east are zoned CR – Retail Commercial. The properties across the railroad line to the west are zoned IG – General Industrial.

Historical Use. Historical research has indicated that the subject site was developed with residential and/or agricultural structures by the mid-1930s, as well as agricultural fields used for the cultivation of field crops. By the late 1940s, additional structures appeared on site that were industrial in use and were occupied by Electro Watt Industries, a furnace manufacturer. By the early 1950s, the industrial buildings were identified to contain a plate shop, sheet metal works, and paint booth, with a wood yard occupying the northwest portion of the site. By the mid-1960s the site was developed with additional industrial structures which contained welding operations, a print shop, tin storage, and lumber storage. The subject site remained industrial in use for several decades and was occupied by Nielsen Manufacturing, a metal fabricator. By the early 2000s, the residential and commercial structures were removed from the site, and the industrial building expanded to its current footprint today. By the 2010s, the site switched occupancy to the Career Training Educational Center and has operated as an education facility to present day.

Topography. The subject site is located within the U.S. Geological Survey (USGS) Salem West, OR 7.5-minute quadrangle, at an approximate elevation of 166 feet above mean sea level (see Figure 1). The subject property is generally level and surrounding areas slope gently to the northwest.

Regional Geologic Setting. The site is in the central Willamette Basin, a major physiographic province in western Oregon, centered on the north-south trending Willamette Valley and north-flowing Willamette River. Marine and volcanic basement rocks, and sediments have filled the Willamette Basin over long periods of time.

Local Geologic Setting. The site area is underlain, in order of increasing depth, by the Willamette Silt of Gannett and Caldwell (1998),¹ the Troutdale Formation, basalt flows of the Miocene age Columbia River Group, and marine rocks.

- **Willamette Silt unit** - consists of silt and fine sand deposited in the central and southern Willamette Valley by late Pleistocene glacial outburst floods. Borings completed at the subject property penetrated the Willamette Silt unit, which locally consisted of brown, medium stiff to

¹Gannett, M.W. and Caldwell, R.R., 1998. Geologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington, U.S. Geological Survey Professional Paper 1424-A, 32 p., maps (1:250,000).

stiff fine sandy silts to depths of 16.5 to 27.5 feet bgs. Well logs within ½ mile of the site document the Willamette Silt unit extending to depths of 22 to 50 feet bgs.

- **Troutdale Formation** – consists of sandy gravels with lesser amounts of silt and clay, which are interpreted as coarse-grained proximal alluvial-fan and braided-stream deposits. Beneath the Willamette Silt unit site borings encountered uncemented to partly cemented sandy gravels with up to cobble-sized clasts extending to the maximum depth explored of 100 feet bgs. Some borings encountered a discontinuous layer of medium dense, gray sand approximately six inches thick at the top of the Troutdale Formation. The Troutdale Formation correlates with the Willamette Aquifer of Woodward and others (1998),² which is the predominant aquifer beneath the Salem-Keizer area.

Surface Water and Ground Water. The subject property is generally level and the vicinity slopes gently to the northwest. Consequently, surface drainage in the surrounding areas is expected to be directed northwest. There are no surface waters on site. The nearest surface water is Claggett Creek located approximately one-quarter mile to the north.

ENW accessed the State of Oregon Water Resources Department (OWRD) online Well Log Query to determine ground-water conditions at the subject site. The database had on record 29 well logs for the subject site. Two of the well logs pertained to ground water monitoring wells installed in eastern and northwestern areas, respectively in December 2017. According to these investigations, ground water at the site is expected to be between approximately 34 and 38 feet below ground surface.

1.2 Overview of Known Residual Soil Contamination

1.2.1 Soil

Hexavalent chromium (CrVI) and total lead were detected in soils in the former chromating areas and former still bottom disposal area at the site exceeding their respective ODEQ SLRBCs

1.2.2 Reconnaissance Ground Water

Chloroform and CrVI were detected in ground water at the site exceeding their respective ODEQ SLRBCs.

1.3 Residual Risk Assessment

Human Health. A residual risk assessment³ was performed by ENW and defined the locality of facility (LOF) for soil as the property margins to the south, east, and west and the northern edge of the CTEC building. The LOF for ground water was defined as bounded to the northeast by up-gradient temporary borings absent of impacts, to the north by the property margin, to the west-northwest (down-gradient) by the railroad right-of-way, and to the east by the subject property boundary and Portland Avenue.

An initial screening identified total lead and CrVI as constituents of potential concern (COPCs) in surface and subsurface soils and chloroform and CrVI as COPCs in ground water. Identified receptors were current and future part-time students and occupational workers, construction workers, and excavation workers. Complete exposure pathways were as follows:

²Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998. Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington: US Geological Survey, Professional Paper 1424-B, 32 p., maps (1:250,000).

³ ENW, July 15, 2020. *Risk Assessment*, Former Nielsen Manufacturing Property, 3501 Portland Road NE, Salem, Oregon.

- *Soil Ingestion, Dermal Contact, and Inhalation* for Part-Time Students, Occupational Workers, Construction Workers, and Excavation Workers (onsite surface soil).
- *Volatilization to Outdoor Air and Vapor Intrusion into Buildings* for Part-Time Students and Occupational Workers (onsite subsurface soil).
- *Soil Ingestion, Dermal Contact, and Inhalation* for Excavation Workers (onsite subsurface soil).
- *Volatilization to Outdoor Air and Vapor Intrusion into Buildings* for Part-Time Students and Occupational Workers (onsite and offsite ground water).
- *Ground Water in an Excavation* for Construction and Excavation Workers (onsite and offsite ground water).

Comparison of both maximum detected concentrations and EPCs (where calculated) for COPCs to applicable RBCs for each of the complete exposure pathways indicated no unacceptable risk was present in surface soil, subsurface soil, and/or ground water.

Ecological. The Scoping Level Ecological Risk Assessment within the Residual Risk Assessment determined ecological screening was not warranted at the site because of the following:

- Contaminated soils are only present at depths greater than three feet bgs, or, if present at a shallower depth, such soils cover an area no greater than 0.125 acre;
- Surface water has not been affected by the release;
- Contaminated ground water does not, and is not, reasonably likely to discharge to surface waters or otherwise reach the surface in a manner that might result in contact with ecological receptors; and
- Contaminated groundwater does not and is not reasonably likely to come into contact with aquatic sediments.

Institutional controls were selected as the remedial action for the site. This remedial action controls potential exposure pathways by ensuring that impacted media is overlain by a soil cap, minimizing the potential for direct contact with underlying soils and infiltration to ground water.

1.4 Remedial Action Development

The managed soil cap was selected as the preferred remedial alternative on the basis of being effective in reducing residual risk, achieving the RAOs (remedial action objectives), meeting long-term reliability objectives, being straightforward to implement, and reducing implementation risk. The primary elements of the managed cap are as follows:

- Institutional Controls (see Section 2)
 - **Groundwater Use Restrictions.** Owner may not extract through wells or by other means or use the groundwater at the Property for consumption or other beneficial use. This prohibition does not apply to extraction of groundwater associated with groundwater treatment or monitoring activities approved by DEQ or to temporary dewatering activities related to construction, development, or the installation of sewer or utilities at the Property. Owner must conduct a waste determination on any groundwater that is

extracted during such monitoring, treatment, or dewatering activities and handle, store and manage wastewater according to applicable laws.

- No growing of any food crops, without prior ODEQ approval.
- Long-Term soil cap monitoring and management (see Sections 3 and 4) including:
 - Maintain all protective surfaces (i.e., concrete, asphalt) which includes driveways, parking lots and floors to reduce direct soil contact and storm water infiltration.
 - Implement the Contaminated Media Management Plan (CMMP)⁴

1.5 Remedial Action Implementation

Soil Cap. The soil cap was in place at the time this Plan was prepared. It consists of the existing building footprint, paved drive areas and exposed soil areas with underlying demarcation.

Institutional Controls. At the time this Plan was prepared (November 2021), SKSD was working with ODEQ to complete an easement and equitable servitude (EES) and meet all legal requirements of implementing institutional controls (described in the next section).

⁴ Ktec. October 8, 2014. Contaminated Media Management Plan, Neilsen Manufacturing, Inc.

2.0 INSTITUTIONAL CONTROLS

An *institutional control* is a legal or administrative tool to prevent unacceptable exposure to hazardous substances remaining on the property. The following ensure compliance with existing institutional controls:

- The soil cap in is to be regularly inspected and maintained under a management plan as long as hazardous substances remain at the site in quantities in excess of SLRBCs. (This Plan serves as the site's management plan)
- Management of impacted media will be performed under a Contaminated Media Management Plan (CMMP)⁴ developed for the subject site.
- Procedures to ensure that all responsible persons that need to know about the restrictions are informed and trained in known practices to ensure that all subsurface work is done in accordance with the management plan.
- A health and safety plan as part of the site management plan to be followed whenever the soil cap is breached.
- Any digging/excavating will require prior permission from the property owner.
- A log of all work that breaches the cap will be maintained and include information on how the cap was restored to be protective.
- Preparation and submittal of an annual report documenting compliance with all of the above.

3.0 STAFF - REQUIRED ACTIONS

Maintaining the soil cap integrity and security is an ongoing responsibility. The **Director** shall be designated as the person responsible for ensuring this Plan is implemented, that the soil cap integrity is maintained and that this Plan will be reviewed on an annual basis.

Table 4-1. Key Staff & Roles

Date	Name	Role	Company	Contact
November 2021	Joel Smallwood	Director - Maintenance & Construction Services	Salem-Keizer School District	Office: (503) 399-3095 smallwood_joel@salkeiz.k12.or.us
November 2021	Lynn Green	Consultant	EVREN Northwest, Inc.	Cell: (503) 849-5895 lynng@evren-nw.com

3.1 Soil Cap Annual Inspection

The soil cap is to be inspected on an annual basis. Attachment A provides an example form that may be used to conduct this inspection. The entire extent of the soil cap must be inspected for erosion, wildlife disturbance and any unauthorized human activity that is breaching (penetrating) the soil cap, cap thickness, and vegetation establishment. If any such conditions are found, measures will be immediately taken to secure the area and remedy the situation.

In addition, additional inspections should be considered following “significant storm events or other unexpected or infrequent occurrences such as significant soil disturbances, earthquakes or similar events.” Examples of events that could trigger a cap inspection are:

- Greater than 2 inches of precipitation during a 24-hour period, or any short-duration, high intensity rain event that causes erosion by running water: sheet erosion, rill erosion, and/or gully erosion.
- Mass wasting, mass movement, or slope movement: slides, slumps, debris flows, earth flows, creep, etc.
- Earthquakes: which may promote mass wasting.
- Wildfires: which may strip the surface vegetation and make the surface more susceptible to erosion by running water and mass wasting.

3.2 Annual Training

The following tasks to be conducted annually will ensure that all individuals who need to know about site restrictions are informed:

- The soil cap will be explained to all appropriate persons (e.g., anyone with responsibilities including the property and anyone actively working on the property). The nature of the site, the importance of and legal obligations of maintaining soil cap integrity, the importance of not breaching the soil cap, as well as procedures for obtaining approval to breach the cap will be discussed. All operations and maintenance staff should be encouraged to report conditions they may observe (e.g., erosion, wildlife disturbance or unauthorized human activities such as digging) that pose a threat to the integrity of the cap and safety to humans on site to the Director.
- The Director, along with staff designated by him or her, will review this Plan and acknowledge their understanding of Plan requirements. Designated staff should include all landscape and maintenance personnel, and any staff responsible for contracting work conducted at the site.

Attachment B provides a form that may be used to collect acknowledgement signatures. These will be included with the Annual Report.

3.3 Approval Process for Authorization to Breach the Soil Cap

The Director is responsible for development of an approval process for any subsurface work, so that no unauthorized work is conducted. This includes work conducted by any contractors or utilities. The process must:

- Allow for documentation required by the work log described in the next section.

- Require personnel or entity conducting work to review, acknowledge understanding and agree to adhere to both this Plan and the *Contaminated Media Management Plan*.⁴

These procedures will be reviewed on an annual basis and adjusted as necessary to improve effectiveness or allow for changing conditions.

3.4 Maintain Log of Authorized Soil Cap Breaches

Anytime work is conducted that breaches the soil a log must be maintained. Attachment C provides a form that may be used as a log of work. At a minimum, the following should be documented:

- Personnel/entity performing work.
- Reason for and description of work performed.
- Management and disposal of any impacted soils.
- Precautions taken to prevent exposure to impacted excavated soils.

3.5 Submit an Annual Report

The forms in Attachments A through D have been designed to document compliance on an annual basis. These should be submitted to the Director for permanent filing.

The Director shall establish a due date for the Annual Report. This due date may be scheduled for convenience, but once established should be adhered to annually.

4.0 SUBSURFACE WORK – METHODS AND PROCEDURES

Work conducted on the Subject Property must be done in a manner that is protective of human health and is consistent with the ODEQ institutional controls described previously in this Plan.

Users of the plan are advised that regulations may change in the future and therefore the regulations should be reviewed prior to commencing any subsurface work. If it is believed that local and State regulations have changed, revisions to the Plan may be necessary from time to time to reflect current regulatory standards.

4.1 Prior to Starting Any Work

Any personnel or entity who will be breaching the soil cap must first:

- Obtain authorization following the approval process developed according to Section 4.4 of this Plan.
- Read and provide signature acknowledgement of the requirements of and intention to adhere to this Plan.
- Obtain all required permits to complete scope of work.
- Complete the Project Initiation portion of the Subsurface Work Documentation form in Attachment D, including designation of responsible parties.

4.2 Shallow Soil / Soil Cap ONLY Work

Anyone performing only small scopes of work that may disturb the soil cap, but that does not anticipate working at depths that may encounter impacted media (for example landscape work):

- Must complete the requirements of Section 4.1, above.
- Must replace the soil cap material with the same or similar type of material (silt and/or clay) to a depth/height no less than the original surface of the soil cap.
- For disturbances requiring replacement of greater than nine cubic yards of cap material, the replacement material must first be approved by the Director working in consultation with the Environmental Consultant. Such approval must be accompanied by a gradation analysis to confirm that the material is consistent with the existing cap and laboratory analysis to confirm that the material meets ODEQ's clean fill criteria.
- Any disturbance that requires breaching the demarcation layer underlying the soil cap must proceed in accordance with these requirements and the requirements outline in Section 4.3.

Should impacted media be encountered, stop work immediately and notify the Director or their designee. Impacted media may only be removed following the protocol established in the Contaminated Media Management Plan.⁴ Measure and record the depth of the soil cap over impacted media and supply this information, along with the location of work, to the Director or their designee

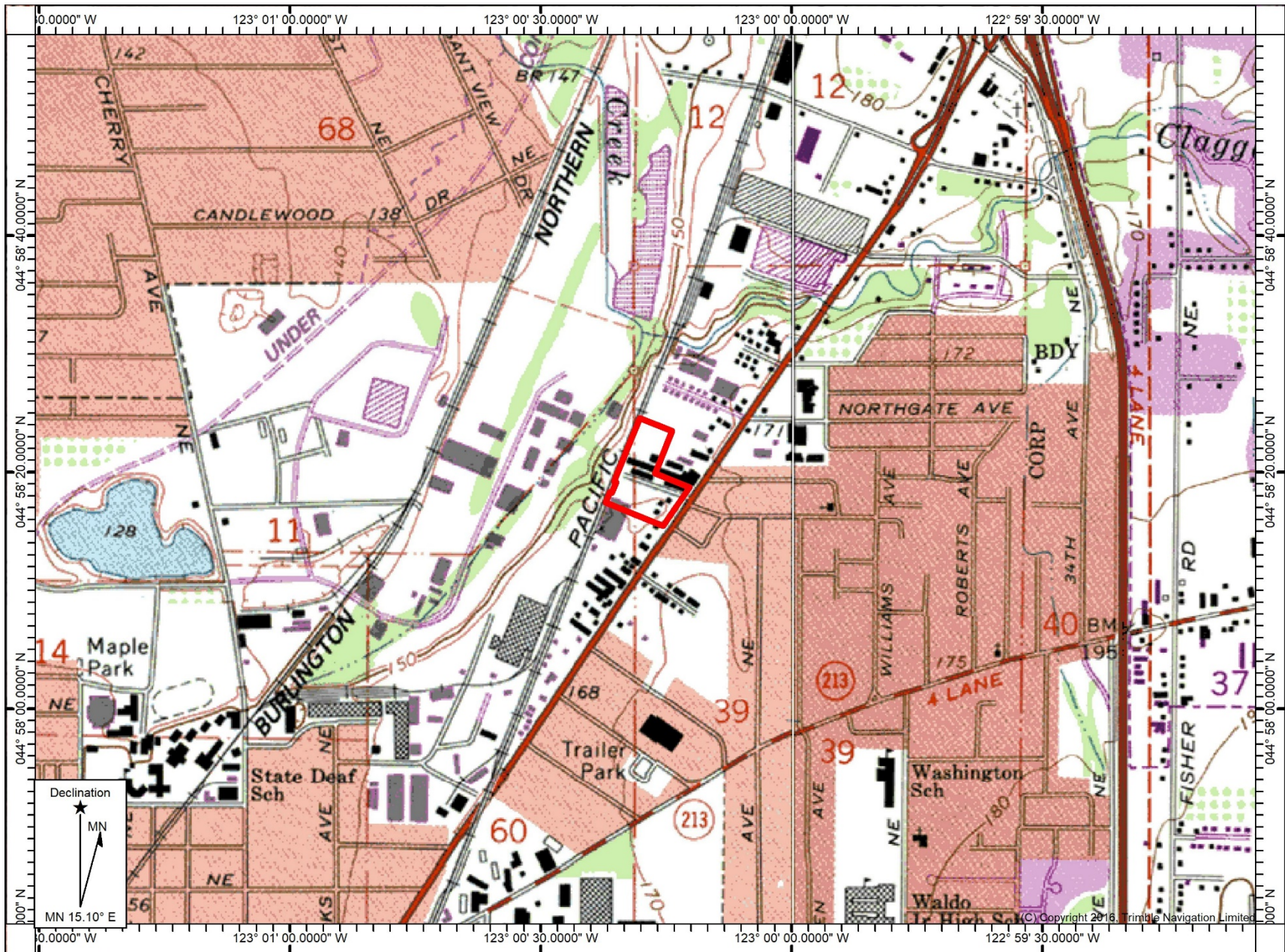
4.3 Earthwork On Site

Anyone conducting any earthwork that that will encounter impacted media or trapped water beneath the soil cap **MUST** reference and adhere to the **Contaminated Media Management Plan**⁴ for complete soil and water management protocol.

4.4 Reporting Requirements

Detailed notes of field work shall be kept and submitted to the Director or their designee using the Subsurface Work Documentation form in Attachment D. Reason for and dates of work, personnel/contractor/utility performing work, location of soil excavation, soil and water management and disposal, waste disposal receipts and maps/photos of work shall be submitted.

FIGURES



Name: SALEM WEST
Date: Jan 1, 1986

Location: 044° 58' 19.4236" N, 123° 00' 17.4883" W
Contour Interval: 10 ft

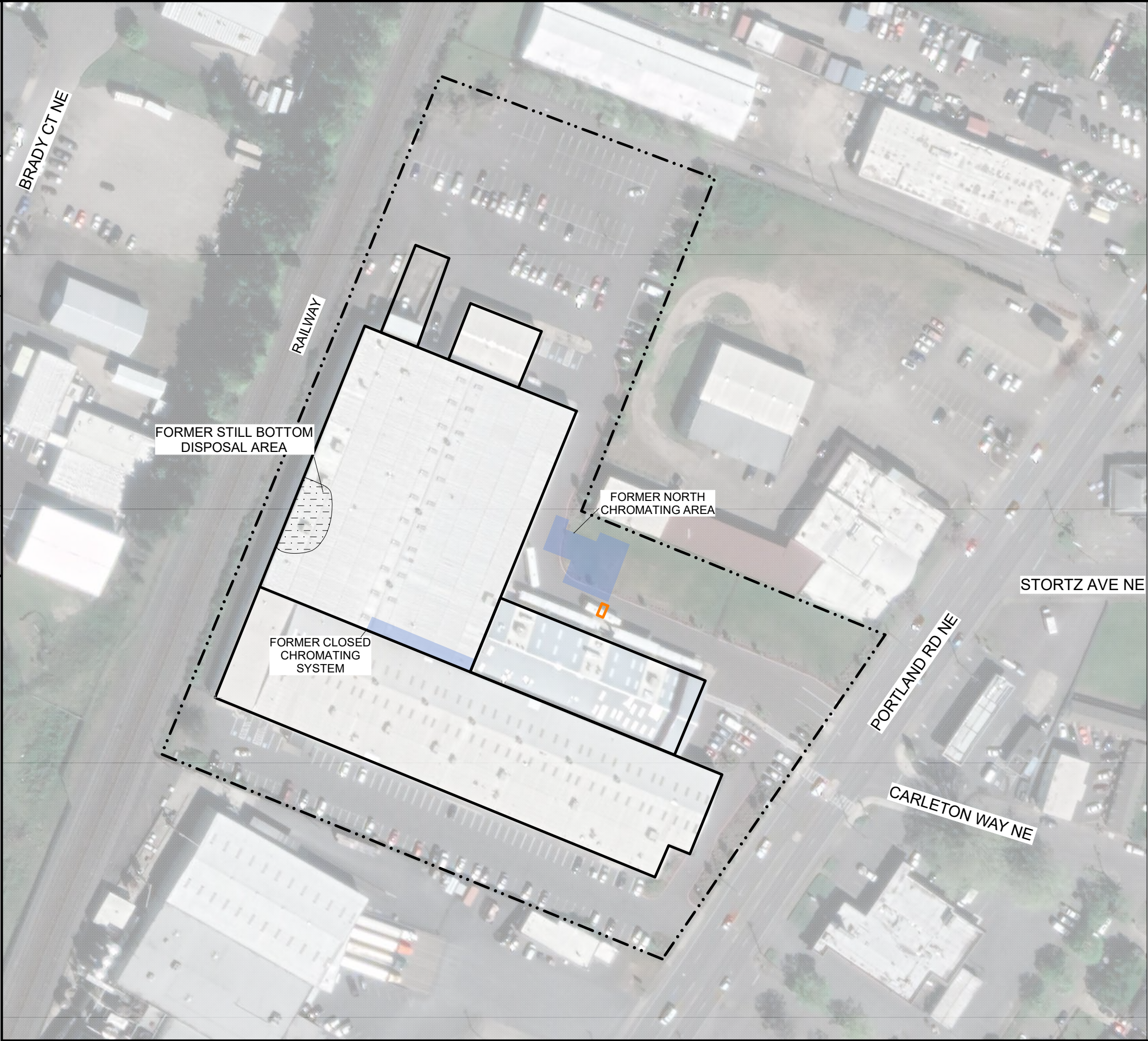


Date Drawn: 7/14/2020
CAD File Name: 689-14001fig1sv_map(v01)
Drawn By: CLR
Approved By: LDG

Former Nielsen Manufacturing Property
3501 Portland Road NE
Salem, Oregon

**Site Vicinity
Map**

Project No.
689-14001-24
Figure No.
1



LEGEND:

SUBJECT BUILDINGS

AREA OF FORMER CHROMATING ACTIVITY

SUBJECT PROPERTY BOUNDARIES

BUILDING LOCATIONS

ABANDONED UNDERGROUND FUEL STORAGE TANK

- NOTES:
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2021 AND ENW FIELD NOTES.

2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.

APPROXIMATE SCALE

0100200FEET

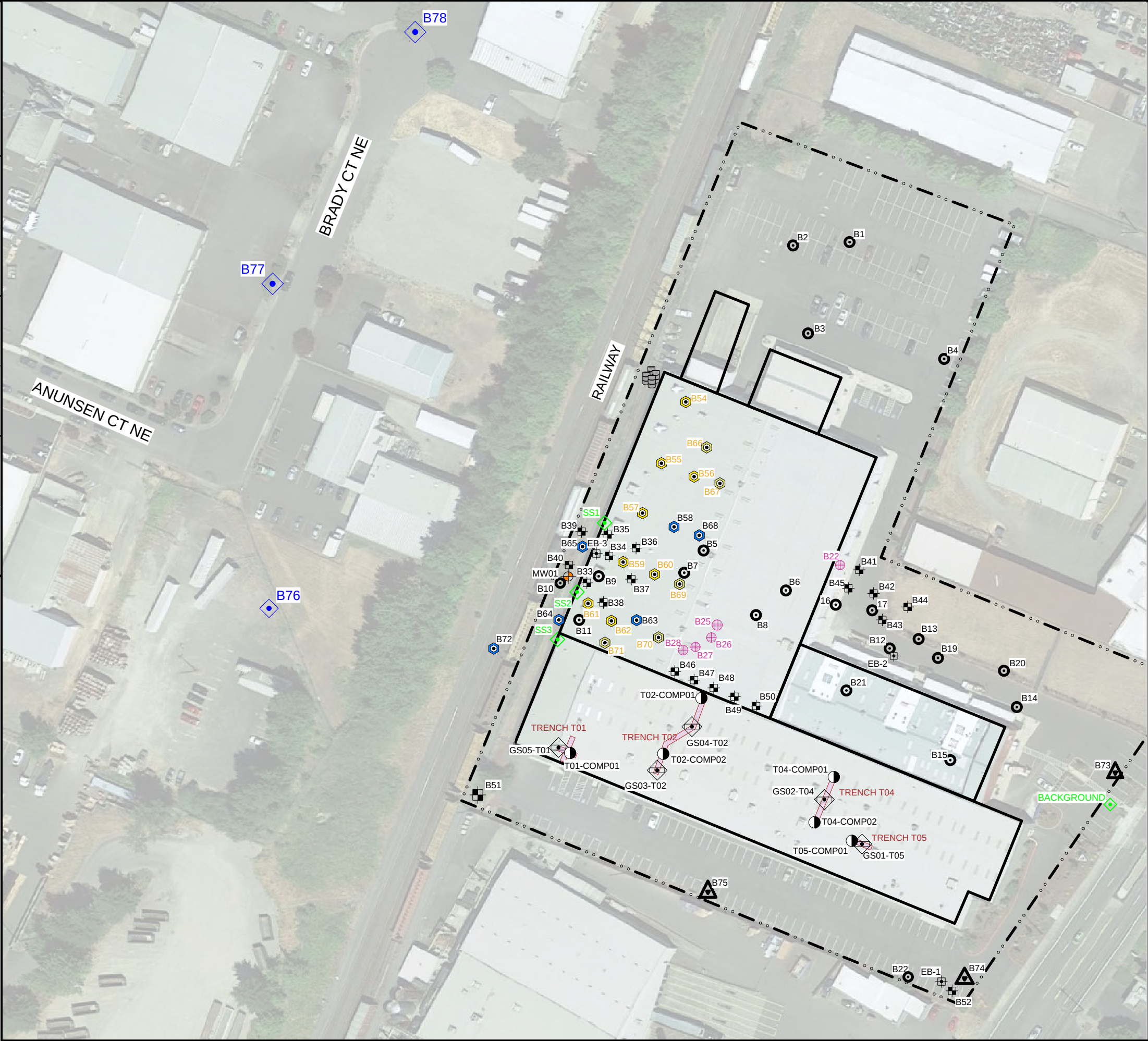
environmental natural resource consultants

PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 2

SITE PLAN

FORMER NEILSEN MANUFACTURING PROPERTY
3501 PORTLAND ROAD NE
SALEM, OREGON



LEGEND:

SUBJECT BUILDINGS

SUBJECT PROPERTY BOUNDARIES

E&E SOIL SAMPLE LOCATIONS (1988-07)

GEOTECHNICAL RESOURCES, INC. SOIL SAMPLE LOCATIONS (1990-01)

KTEC SOIL SAMPLE LOCATIONS (2014-03)

KTEC SOIL SAMPLE LOCATIONS (2014-06)

KTEC SOIL SAMPLE LOCATIONS (2016-08)

KTEC SOIL SAMPLE (2017-01)

KTEC SOIL AND GROUNDWATER SAMPLE (2017-01)

ENW GRAB SAMPLES FROM TRENCHES (2017-08)

ENW COMPOSITE SAMPLE LOCATIONS (2017-08)

ENW BACKGROUND EVALUATION BOREHOLES (2018)

OFFSITE BOREHOLE LOCATION (2020-02)

APPROXIMATE MONITORING WELL LOCATION

TRENCHED AREA (2017-08)

- NOTES:
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2012 AND ENW FIELD NOTES.

2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.

3. COPC = CONSTITUENTS OF POTENTIAL CONCERN
- APPROXIMATE SCALE

0

100

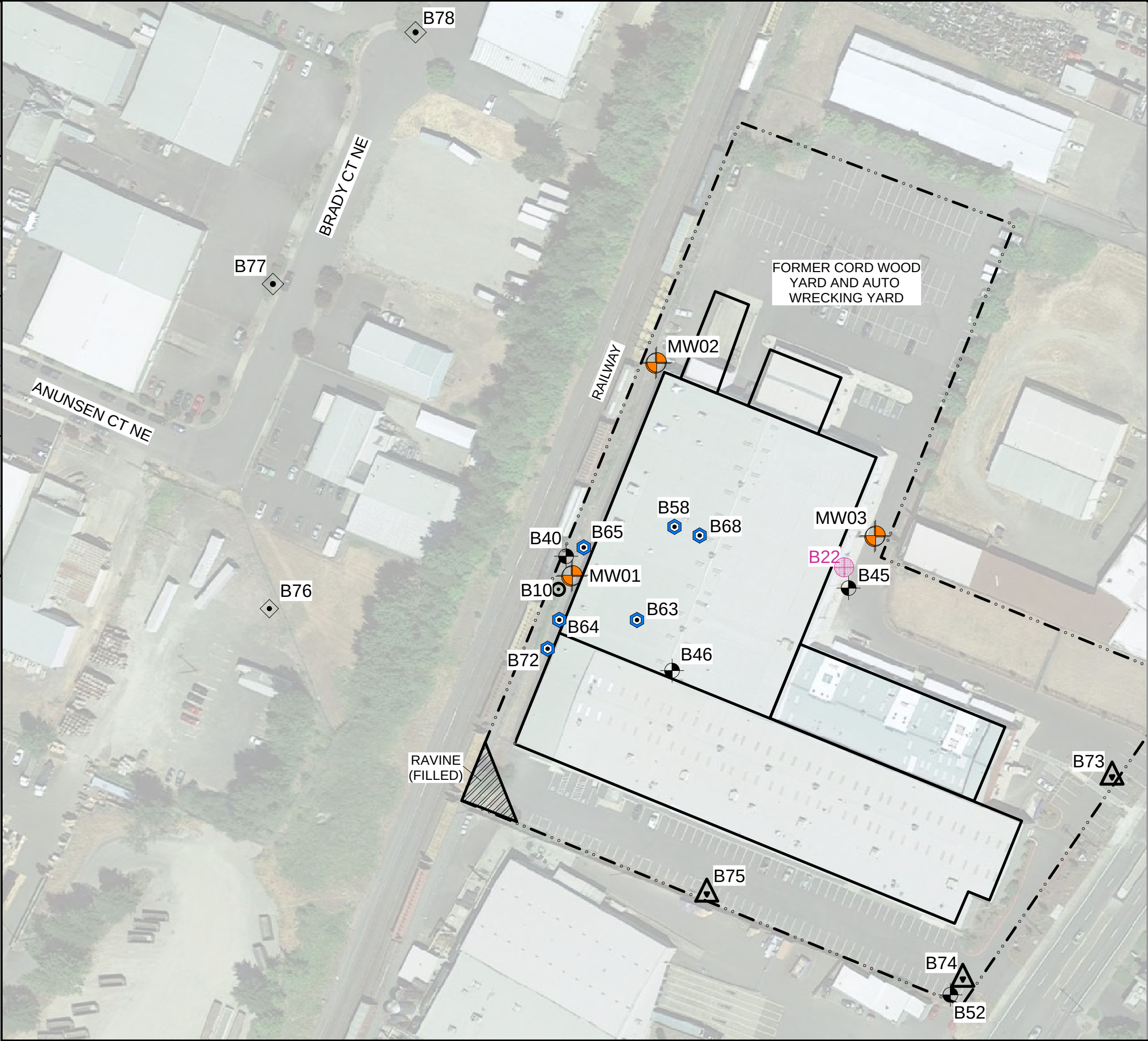
200FEET
-
- 

PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 3

SOIL SAMPLE LOCATION DIAGRAM

FORMER NIELSEN MANUFACTURING PROPERTY
3501 PORTLAND ROAD NE
SALEM, OREGON



LEGEND:

SUBJECT BUILDINGS

SUBJECT PROPERTY BOUNDARIES

KTEC GROUNDWATER SAMPLE LOCATION (2014-03)

KTEC GROUNDWATER SAMPLE LOCATION (2014-06)

KTEC GROUNDWATER SAMPLE LOCATIONS (2016-08)

KTEC GROUNDWATER SAMPLE LOCATIONS (2017-01)

ENW BACKGROUND EVALUATION BOREHOLES (2018)

ENW OFFSITE BOREHOLE LOCATIONS (2020-02)

APPROXIMATE MONITORING WELL LOCATIONS

- NOTES:
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2018 AND ENW FIELD NOTES.

2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.

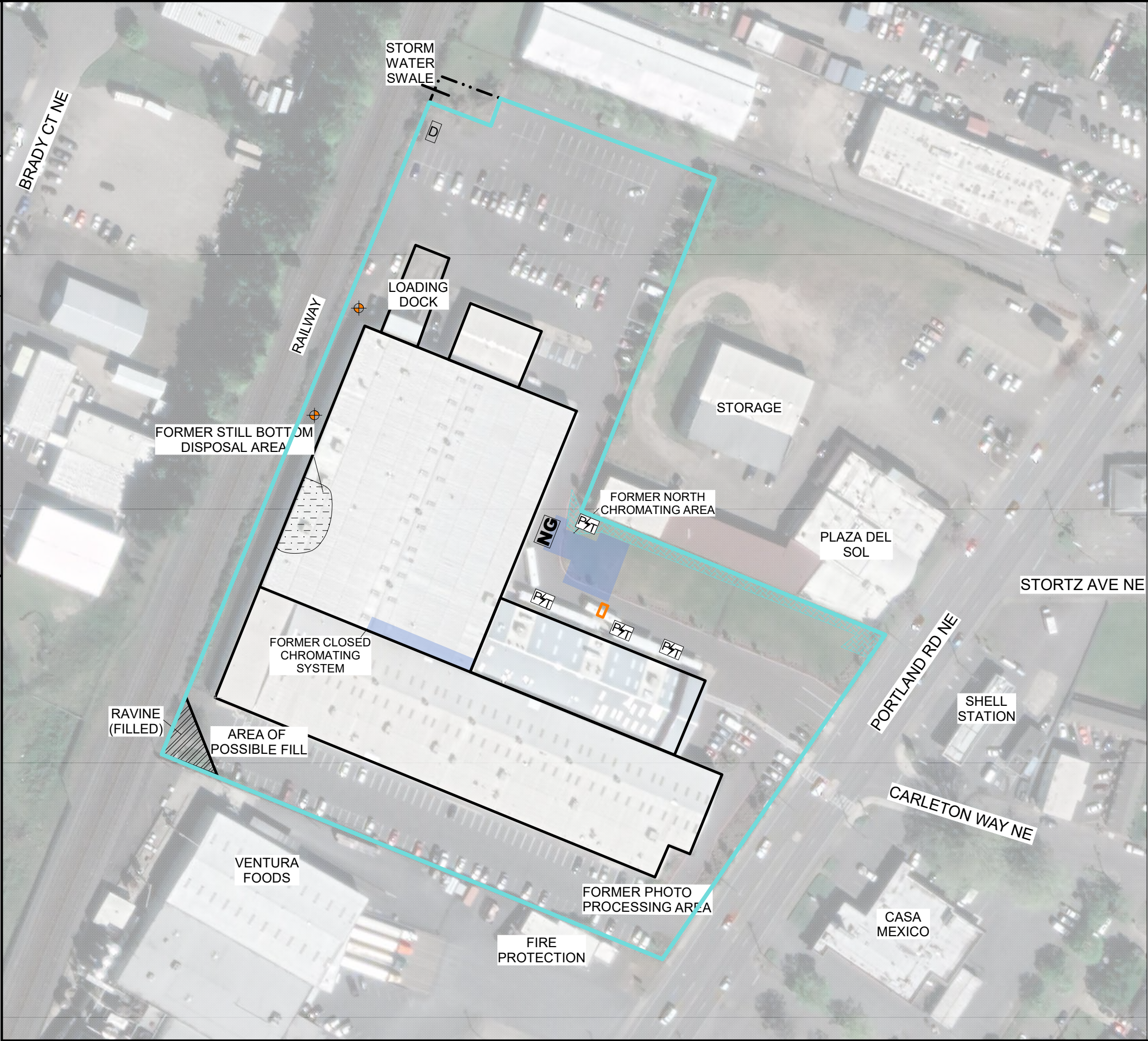
3. COPC = CONSTITUENTS OF POTENTIAL CONCERN
- APPROXIMATE SCALE

PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 4

GROUND WATER LOCATION DIAGRAM

FORMER NEILSEN MANUFACTURING PROPERTY
3501 PORTLAND ROAD NE
SALEM, OREGON



LEGEND:

SUBJECT BUILDINGS

SUBJECT PROPERTY BOUNDARIES

SUBJECT BUILDING LOCATIONS

FORMER BUILDING LOCATION (PLANT #3)

AREA OF FORMER CHROMATING ACTIVITY

ABANDONED UNDERGROUND FUEL STORAGE TANK

ASPHALT SOIL CAP (HATCHED WHERE CAP CONSISTS OF APPROXIMATELY TWO FEET OF SOIL OVERLYING DEMARCATION FABRIC)

PAD TRANSFORMER

NATURAL GAS METER

- NOTES:
1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2021 AND ENW FIELD NOTES.

2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.

APPROXIMATE SCALE

0100200FEET

PO BOX 14488, PORTLAND, OREGON 97293
P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 5

MANAGED SOIL CAP DIAGRAM

FORMER NEILSEN MANUFACTURING PROPERTY
3501 PORTLAND ROAD NE
SALEM, OREGON

ATTACHMENT A

Soil Cap Annual Inspection Form

Copy and use the following form to document the ODEQ-required annual soil cap inspection.

Soil Cap Annual Inspection Form

Date of Inspection: _____

Inspected by: _____

Maintaining the soil cap integrity and security **protects individuals** from exposure to contaminated soil and ground water beneath the site and is an ongoing responsibility. *At a minimum, the soil cap will be inspected annually.* Such inspections include monitoring cap thickness, erosion, and vegetation establishment. More frequent inspections are encouraged and should also be documented with this form.

Persons performing the inspection must have a thorough understanding of the engineered soil cap and the Soil Cap Management plan.

SOIL CAP

Evaluate all areas for erosion, wildlife disturbance, any unauthorized human activity that is breaching (penetrating) the soil cap and vegetation establishment. At least 12 inches of clean soil must be maintained over the original impacted soil.

Is any unauthorized digging occurring? Y / N

If yes, immediately take steps to secure the area and manage the breach according to the Soil Cap Management or Contaminated Media Management Plan, as appropriate.

Are any natural elements (e.g., wind, rain, surface water, etc.) disturbing topsoil? Y / N

Are there any signs of wildlife (e.g., gophers, deer, dogs, etc.) disturbing topsoil? Y / N

Are there any potential conditions that may disturb topsoil / breach the cap? Y / N

Has vegetation been established on the cap and is there adequate vegetative cover to minimize erosion during storm events? Y / N

Has the cap thickness been maintained to be at a minimum two (2) feet thick in all areas of the soil cap? Y / N

If the answer is yes to any of these questions, please document the conditions by 1) taking photographs, 2) showing location on a map, 3) describing condition and the measures taken to remedy the situation. Documentation should be kept with this form and submitted with the Annual Report.

ACTION OR ADDITIONAL DOCUMENTATION REQUIRED?

SIGNATURE OF PERSON PERFORMING INSPECTION:

ATTACHMENT B

Documentation Form for Annual Training

Copy and use the following form to document compliance with ODEQ's requirement for training.

ANNUAL PERSONNEL TRAINING

Person responsible for training (name, position):

ANNUAL REVIEW OF SOIL CAP MANAGEMENT PLAN

By signing below you acknowledge that you have reviewed, understand, and will adhere to the requirements of the Soil Cap Management Plan. Attach additional pages as needed.

[illegible]

ATTACHMENT C

Subsurface Work Log Form

This form may be used to document any work that breaches the soil cap, creating a work log. Make copies as needed.

WORK LOG

For Any Breach of Soil Cap

For Year: _____

Maintaining the soil cap integrity and security **to protect individuals** from exposure to contaminated soil and ground water beneath the site is an ongoing responsibility. ODEQ requires a log of all work conducted that penetrates the soil cap. This form is to be submitted with the Annual Report to ODEQ. Make copies as necessary.

Responsible Party (Name, Position, Company):	Start Date:	End Date:
Has a subsurface work documentation form been completed?		
Please describe Scope of Work and reason for need to breach soil cap. Details and supporting documentation should be submitted with separate Subsurface Work Documentation form.		
Was any impacted soil excavated? If yes, briefly describe method of management and disposal.		
Describe precautions taken to prevent individuals from being exposed to hazardous constituents in soil		
Responsible Party (Name, Position, Company):	Start Date:	End Date:
Has a subsurface work documentation form been completed?		
Please describe Scope of Work and reason for need to breach soil cap. Details and supporting documentation should be submitted with separate Subsurface Work Documentation form.		
Was any impacted soil excavated? If yes, briefly describe method of management and disposal.		
Describe precautions taken to prevent individuals from being exposed to excavated soils		

ATTACHMENT D

Subsurface Work Documentation Form

Copy and provide the following form to personnel, contractors or utilities who will be performing work that breaches the soil cap. ***Completing and following instructions on this form will ensure work is done according to this Soil Cap Management Plan.*** Once work is finished, a completed form and any required supporting information should be placed in the work log file.

Subsurface Work Documentation Form

Name of Project: _____

This form is to be completed by any personnel, contractor or utility performing work that will penetrate the soil cap. Work is not to be conducted unless the criteria described below are met and the Director (or designee) has approved the work.

PROJECT INITIATION

Responsible Party (Name, Position, Company):	Requested Work Start Date:
CERTIFICATION: I have read the Soil Cap Management plan (Plan) and I understand its importance for protecting the soil cap. I agree to abide by these measures and safety rules and all applicable safety regulations while working on the property. <i>FURTHER, I take responsibility for training all field personnel for this project on the requirements of this Plan.</i> I understand that any violation of these rules will result in my removal from the work area. Signature of Responsible Party Listed Above:	
Please describe proposed work, any anticipated excavation of impacted soil, proposed methods of management and disposal, proposed methods of replacing soil cap at work completion.	

PROJECT APPROVAL

Person Approving Proposed Work (Name, Position, Company):	Date of Approval:
CERTIFICATION: I have a thorough understanding of the Soil Cap Management plan (Plan). The proposed work methods meet the requirements of the Plan and I grant approval for the work to be conducted as described. Signature of Approving Party:	
Designated personnel to contact in case of change in scope or questions regarding Plan:	Phone Number:

Complete the following information upon project completion. Please attach appropriate supporting documentation including, but not limited to, field work photographs, and a map showing location and extent of work.

Responsible Party (Name, Position, Company):	Start Date:	End Date:
Detailed Description of Work:		
Was any contaminated soil from below the soil cap excavated? Y / N If yes, <u>please provide supporting documentation</u> and describe in detail the methods used to manage any impacted soils onsite and method(s) of disposal. <u>Waste receipts must be provided.</u>		
Describe precautions taken to prevent individuals from being exposed to impacted soils and ground water.		
Describe method of replacing soil cap at work completion.		
Signature of Responsible Party Listed Above:		