



Go East Corp Landfill Cleanup Site

Draft Remedial Investigation/Feasibility Study and Draft Cleanup Action Plan

Public Meeting: March 21, 2024

Welcome to the Go East Corp Landfill Meeting

Alan Noell

Site Manager, Environmental Engineer

Tim O'Connor

Hydrogeologist

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Facilitator

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Public Outreach Specialist

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Media Relations



Also Joining as Panelists



Megan Bertolacci

Environmental Health Specialist

Hannah Beddoe

Environmental Health Specialist



Stacia Bloom

Land Development Manager



Garrett Leque

Senior Geologist



Tyson Wright

Landfill Gas

Engineer of Record

Camryn Steiner

Engineer

Michael Spillane

President & CEO

Agenda



- Site background
- Permitting & cleanup process
- Landfill closure & site development
- Environmental investigations
- Landfill cleanup and post-closure care
- Next steps for public participation

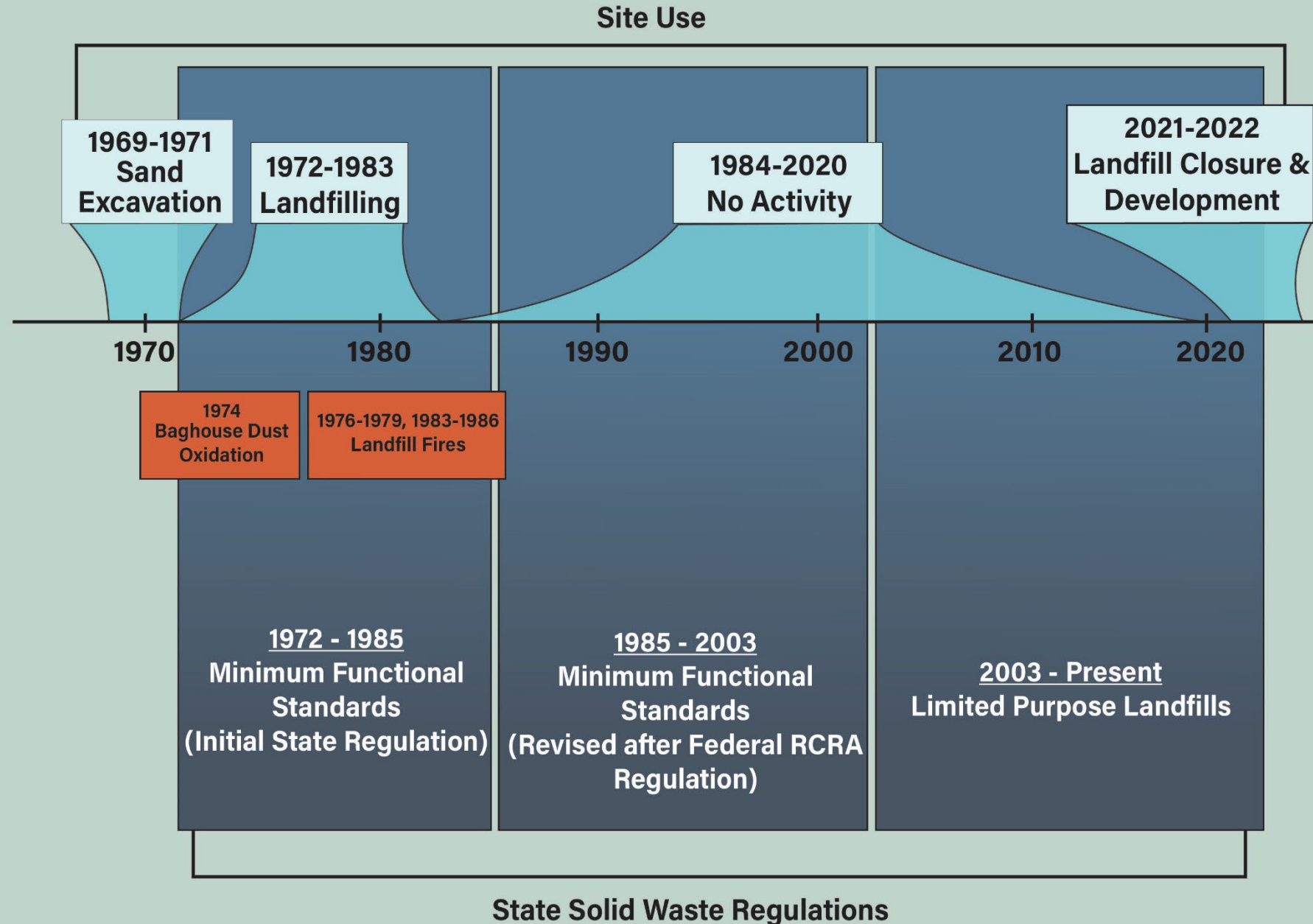
Site Location



Site Background



Landfill Regulations Timeline



Permitting and Cleanup Process

Site
Development
Permits



Solid Waste
Permits



Model Toxics
Control Act

Site Development Permits

- **Land disturbing activity permits**

- Landfill closure & site grading
- Residential development



- **Requires permits from other agencies**

- Landfill closure
- Stream relocation
- Wetlands mitigation
- Construction stormwater

- **State Environmental Policy Act (SEPA)**

- Mitigated determination of non-significance (May 17, 2017)
- Upheld by Snohomish County Hearings Board and Washington's Pollution Control Hearing Board with modifications

Solid Waste Permitting

- Snohomish County Health Department
 - Local jurisdictional health department (JHD)
 - Ecology Solid Waste Management Program technical assistance
- Limited purpose landfills
 - Regulates for closure and post-closure care
 - Explosive gas control
 - Groundwater monitoring
 - Financial assurance
 - Closure standards, documentation, and environmental covenants
 - Post-closure and functional stability
- Cleanup
 - Ecology's Solid Waste Management Program has primacy
 - Health Department may participate and must exercise its permit authority for solid waste activities not addressed by a formal cleanup order

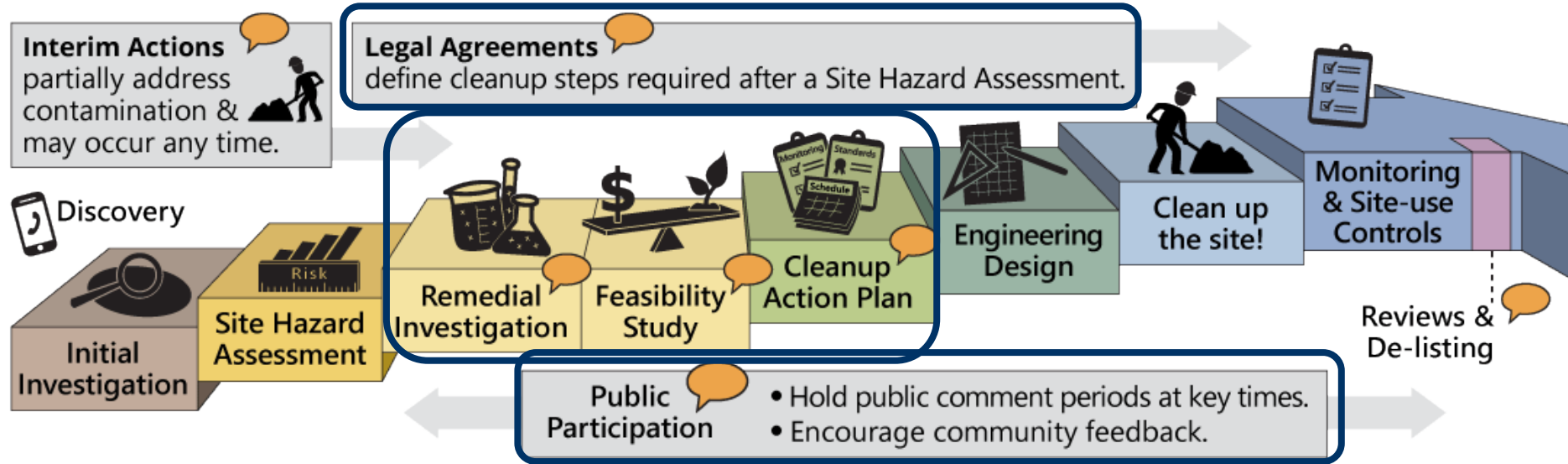


How they work together



	Solid Waste Management	Cleanup
Regulation	Solid Waste Handling Standards (Limited Purpose Landfills) WAC 173-350-400	Model Toxics Control Act Cleanup Regulations WAC 173-340
Purpose	Authorizes waste placement	Protects human health & the environment
Objective	Ensure waste containment	Cleanup releases of contamination
Provides	Facility management standards	Site cleanup standards
Types of standards	Location, operating, closure, post-closure care	Cleanup, investigation, remedy selection, public participation
Evolving standards	Superseding regulations, not retroactive	Retroactive
Responsible party	Owner or operator	Potential Liable Persons (PLPs) Strict, joint & several liability

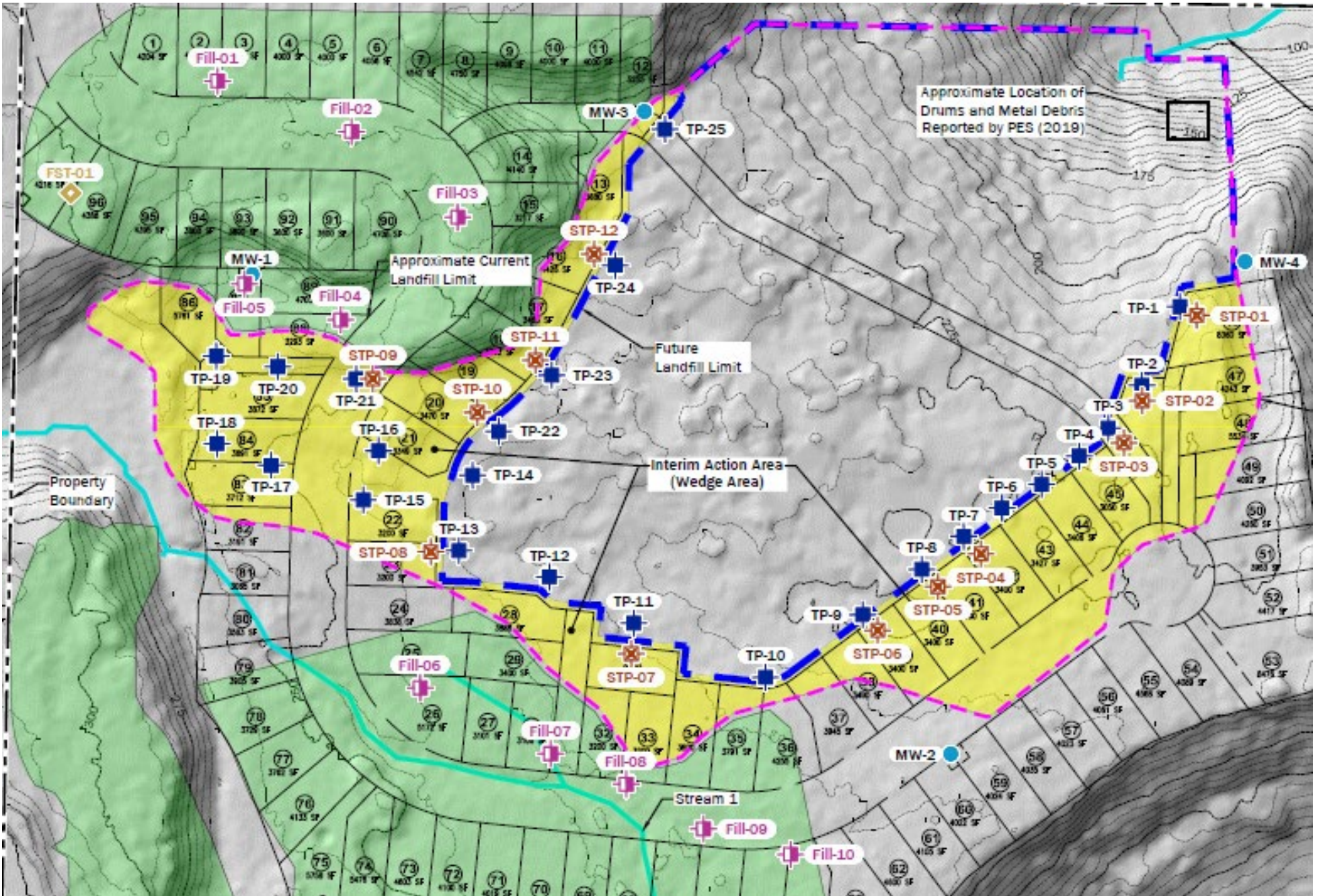
Formal MTCA Cleanup Process



1984-87 **1989** **2004** **2019** **2020-21** **2021-22** **2024**

- 1984-87**
 - Superfund
 - Preliminary Assessment/ Site Inspection Reports
 - No further action (NFA) recommended
- 1989**
 - MTCA enacted
- 2004**
 - Site Hazard Assessment
 - NFA letter
 - Landfill Closure Plan
- 2019**
 - Initial Investigation
 - Repealed NFA
- 2020-21**
 - Agreed Order
 - Interim Action Work Plan
 - Public Participation Plan
 - Pre-construction soil sampling results
 - Responsiveness Summary Report
 - Remedial Investigation Work Plan
 - Landfill closure documentation
 - Interim action completion reports
- 2021-22**
- 2024**
 - Draft Remedial Investigation/ Feasibility Study
 - Draft Cleanup Action Plan
 - Landfill Gas Monitoring & Contingency Plan
 - Landfill Gas Monitoring Readiness Report
 - Construction confirmation reports for homes

Landfill Waste Sampling














Excavation Landfill Material from Wedge Area

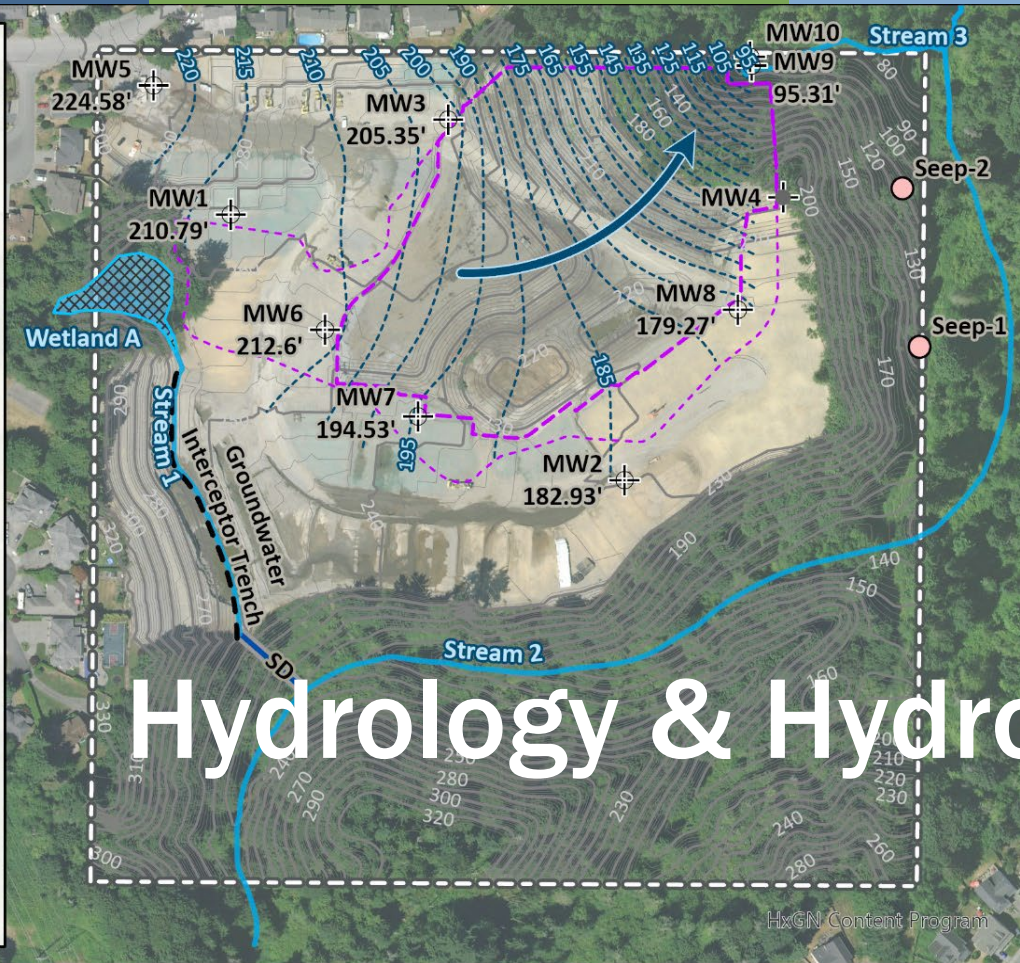


Go East Corp Landfill Site Everett, Washington

Legend

-  Property Boundary
-  Final Landfill Limit
-  Former Extent of Wedge Area
-  Decommissioned Groundwater Monitoring Well
-  Groundwater Monitoring Well and Groundwater Elevation
-  Seep Location
-  Groundwater Contour
-  Groundwater Flow Direction
-  Storm Drain

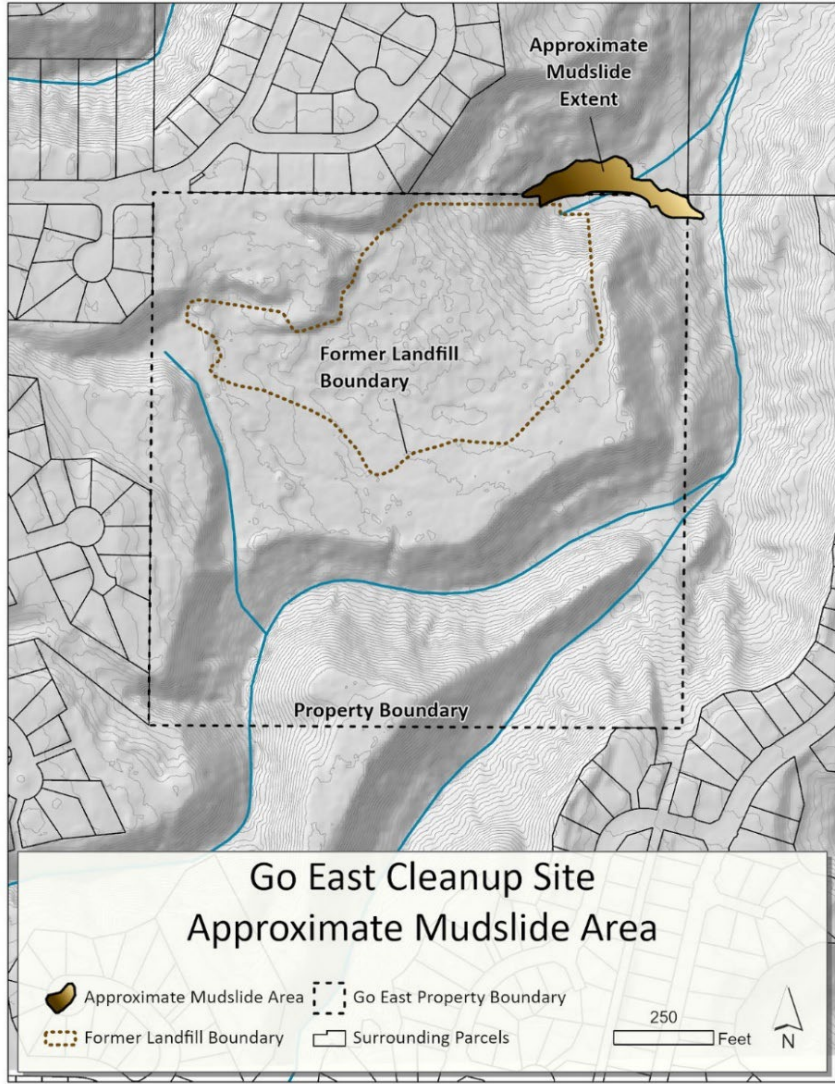
Source: Draft RI/FS, GeoEngineers



Hydrology & Hydrogeology









Mudflow & Wetlands Restoration

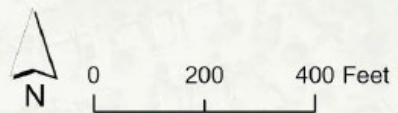


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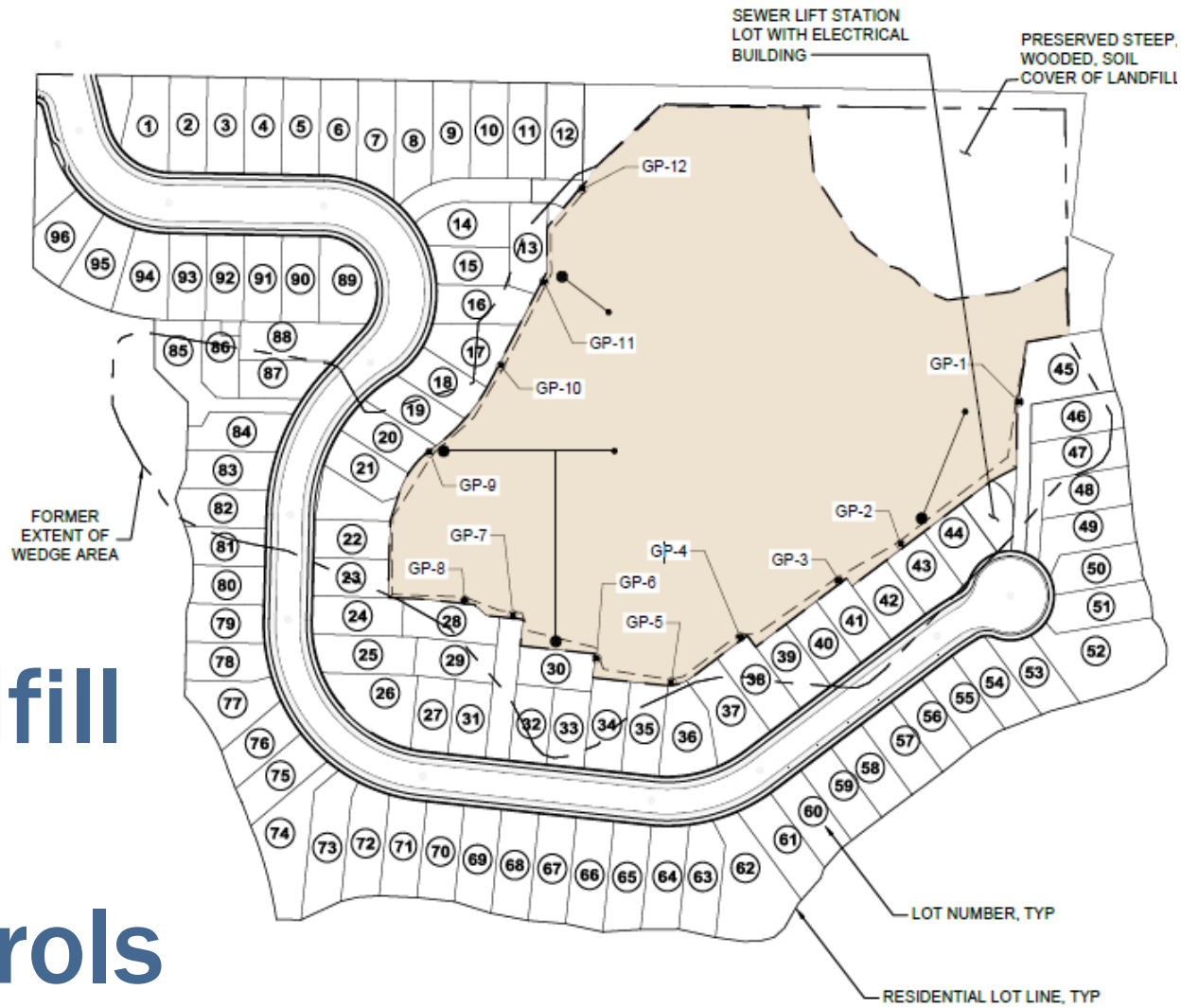
Legend

-  Property Boundary
-  Final Landfill Limit
-  Former Extent of Wedge Area
-  SD Storm Drain
-  Engineered Cap
-  Double-lined stormwater pond

Source: Draft RI/FS, GeoEngineers



Landfill Gas Controls



LEGEND

- GP-# LANDFILL PERIMETER SOIL GAS PROBE
- LANDFILL GAS SUMP
- LANDFILL GAS VENT
- GRAVEL TRENCH WITH 2 IN PERF PIPE
- GRAVEL TRENCH WITH 2 IN PIPE
- CAPPED AND CLOSED LANDFILL AREA

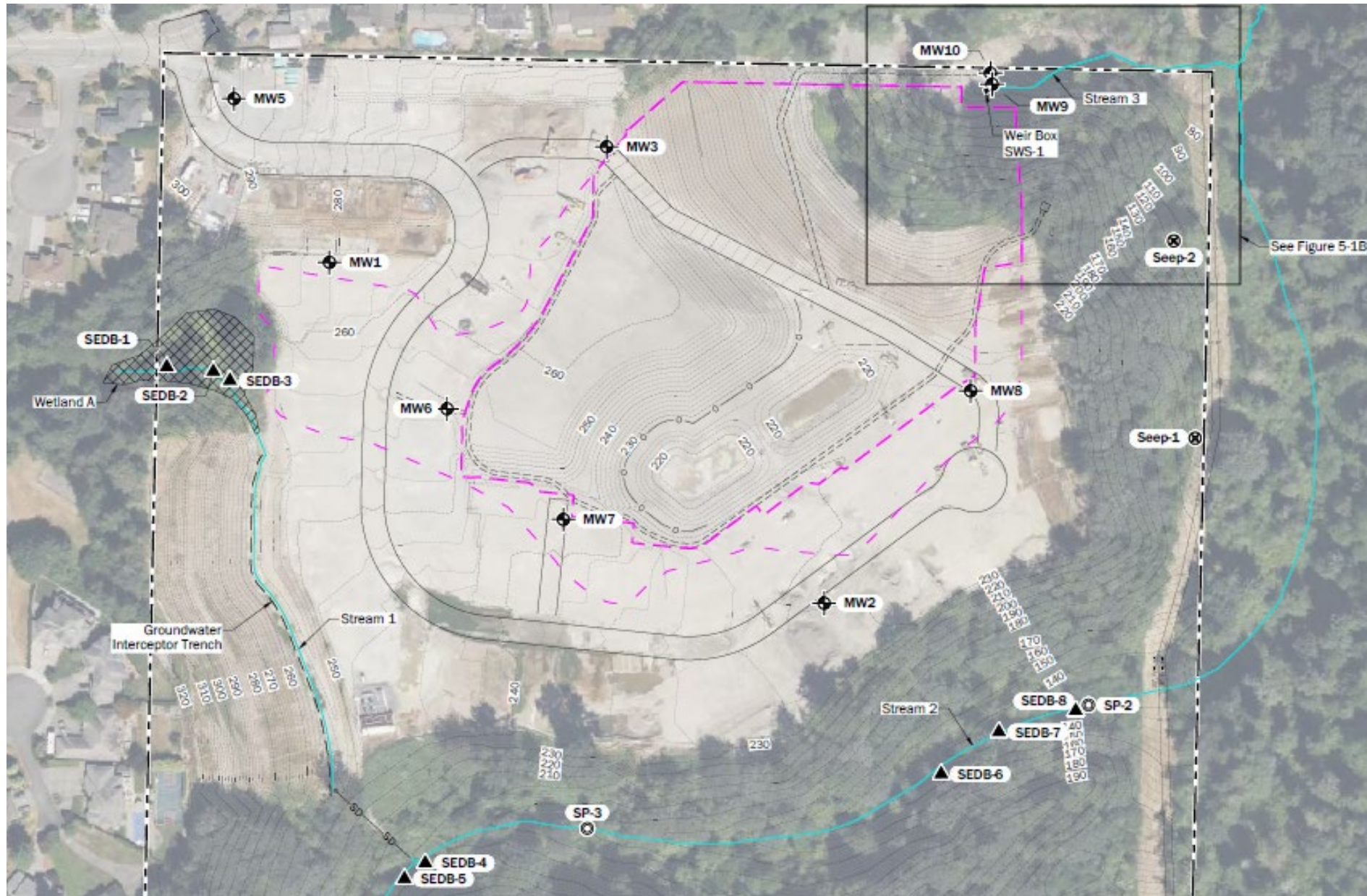


Remedial Investigation

- Excludes
 - Waste within the landfill
 - Explosive gas control
- Potential releases of contamination
 - Soil
 - Groundwater, surface water, sediment
 - Landfill gas
- Types of contamination
 - Full-suite analytical parameters
 - Identifies compounds that exceed preliminary cleanup levels

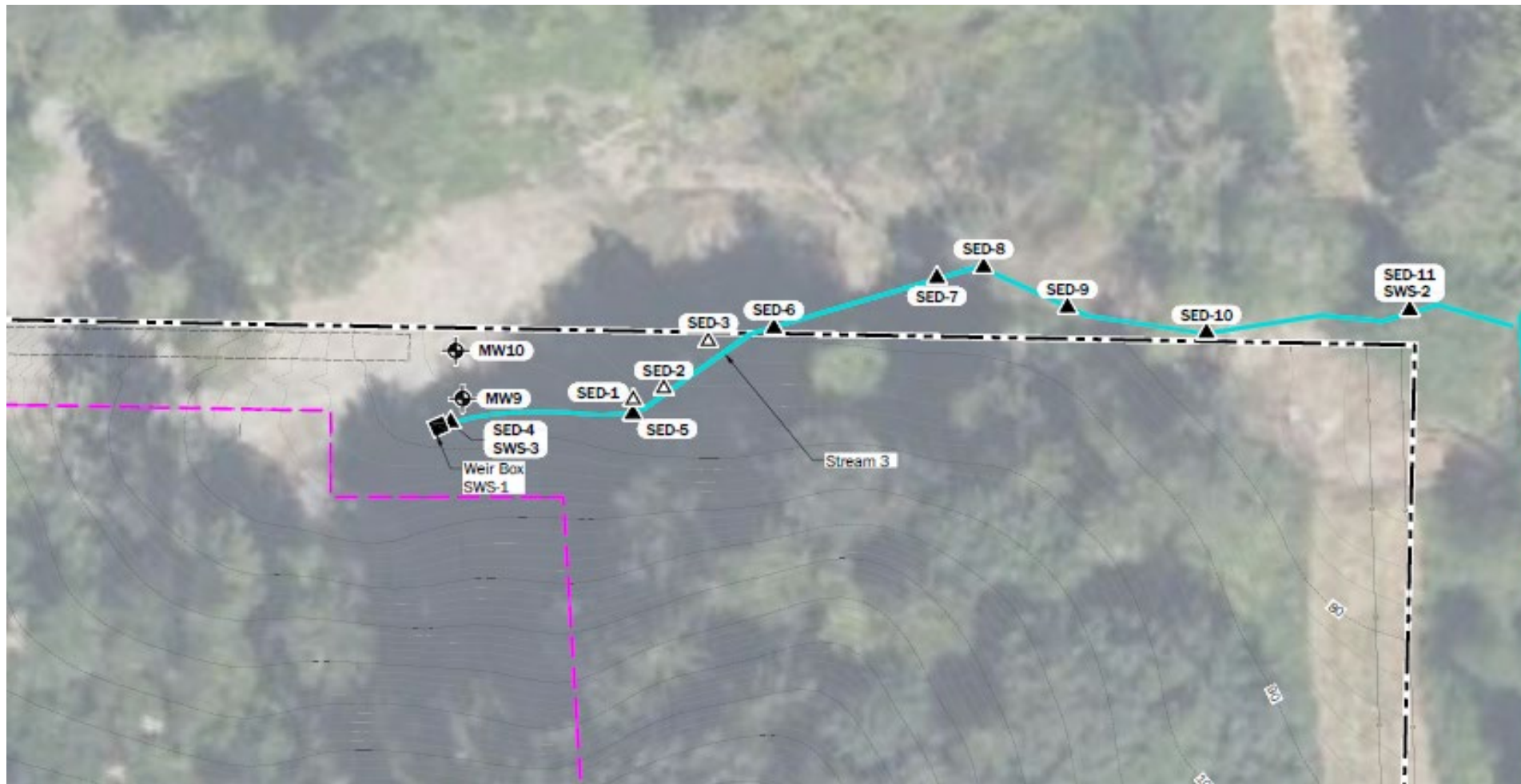


Remedial Investigation Sampling Locations



- Legend**
- Property Boundary
 - - - Final Landfill Limit
 - - - Former Wedge Area
 - ⊕ Groundwater Well
 - ▲ Sediment Sample
 - ⊗ Seep
 - ⊙ Surface Water

Remedial Investigation Sampling Locations Downstream of Landfill



Legend

- ⊕ Groundwater Well
- ▲ Sediment Sample
- △ Sediment Sample (before mudflow)

Remedial Investigation

- Findings
 - Biological reactions consume oxygen – mobilizes manganese and iron
 - Polycyclic aromatic hydrocarbons – detected in waste, in groundwater, and in surface water, both downstream and in an adjacent stream
 - Pesticides – detected in sediment upstream and downstream of landfill
- Cleanup Levels
 - Protects all exposure pathways
 - Fish consumption exposure pathway not present
 - Site-specific background concentrations of arsenic, iron, and manganese

Cleanup Level Exceedances

Media	Complies with cleanup levels ?	Comments
Soil	Yes	Confirmed by interim actions
Landfill gas	Yes for non-methane VOCs	Methane - solid waste regulations
Groundwater	No	Metals mobilized by reducing conditions; PAH exceedances in wedge area now below detection limits
Surface water	No	Metals mobilized by reducing conditions
Sediment	Yes	Iron and heptachlor exceedance prior to mudflow; no exceedances after mudflow

Cleanup Level Exceedances

Sample Location	Area	Cleanup Level Exceedances (Persistent)	Cleanup Level Exceedances (Infrequent)
MW-1	Upgradient	None	Manganese, nickel
MW-2	Upgradient	None	Arsenic, iron
MW-3	Upgradient	None	Iron
MW-5	Upgradient	None	Arsenic, manganese
MW-6	Wedge area	Manganese	Pyrene, cPAH
MW-7	Wedge area	Arsenic	Manganese, iron, cPAH
MW-8	Wedge area	Manganese	Nickel
MW-9	Downstream	Manganese	Iron
MW-10	Downstream	Manganese	Iron
SWS-1 (Weir Box)	Downstream	Manganese, iron	Lead, nickel

Completed Actions

- **Waste removed beyond landfill**
- **Landfill cover**
 - Prevents exposure
 - Restricts infiltration and leaching
 - Gas ventilation
- **Water diverted from landfill**
 - Stream diverted
 - Perched groundwater intercepted and diverted
- **Landfill gas**
 - Gas ventilation trench adjacent to lots
 - Home gas barrier & ventilation systems
- **Environmental covenant**
- **Wetlands mitigation & restoration**

Feasibility Study

- **Develops post-closure cleanup alternatives:**
 - No further action
 - Monitored natural attenuation (MNA) of contamination in groundwater and surface water
 - Active surface water treatment and MNA
- **Recommends MNA**

Draft Cleanup Action Plan

- Ecology's Decision Document
 - Subject to public comment
- Defines the Cleanup Standards
 - Chemicals of concern
 - Points of compliance
 - Cleanup levels
 - Compliance criteria
- Selects the Cleanup Action
 - Recognizes completed source removal and source control
 - Selects monitored natural attenuation
 - Requires compliance monitoring plan

Next Steps under MTCA

- Public participation under MTCA
- Our website: <https://apps.ecology.wa.gov/cleanupsearch/site/4294>
- Public comment period
- How to comment
- Finalization of documents

Environmental Covenant for Landfill



- Must be filed following closure of the landfill
- Ecology's template includes:
 - General and specific requirements
 - Access and notice requirements
- Specific prohibitions and requirements address:
 - Land use
 - Containment of waste materials
 - Stormwater facilities
 - Vapor/gas controls
 - Groundwater use
 - Preservation of monitoring locations

Landfill Gas Reports and Plan



- Landfill Gas Monitoring Readiness Report
 - Baseline monitoring report after landfill closure
- Construction confirmation reports for gas barrier & ventilation systems
 - Developed for all homes, followed by approval and initial inspection
- Landfill Gas Monitoring & Contingency Plan
 - Defines regulatory and action levels at soil gas probes, monitoring locations beneath homes, and within homes
 - Requires notification and contingency plans



Next Steps under Permit

- Our website: <https://apps.ecology.wa.gov/cleanupsearch/site/4294>
- Stakeholder input
- Planned activities following public comment period
 - Landfill permit renewal by July 1, 2024
 - Record environmental covenant for landfill tracts
 - Finalize code, covenant, and restrictions for lots
 - Complete Compliance Monitoring Plan
 - Formalize agreements to implement Compliance Monitoring Plan and Landfill Gas Monitoring & Contingency Plan

Comment Online

<https://swm.ecology.commentinput.com/?id=EDsrcQhCB>



How to Comment



Contact Site Manager

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Thank you



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