Third Periodic Review
Eastmont Junior High

905 8th Street NE, Wenatchee, Chelan County
Facility Site ID: 83426117, Cleanup Site ID: 1904

Toxics Cleanup Program, Central Region

Washington State Department of Ecology
Union Gap, Washington

July 2022

Document Information

This document is available on the Department of Ecology's Eastmont Junior High cleanup site page.[1]

Related Information

- Facility Site ID: 83426117
- Cleanup Site ID: 1904

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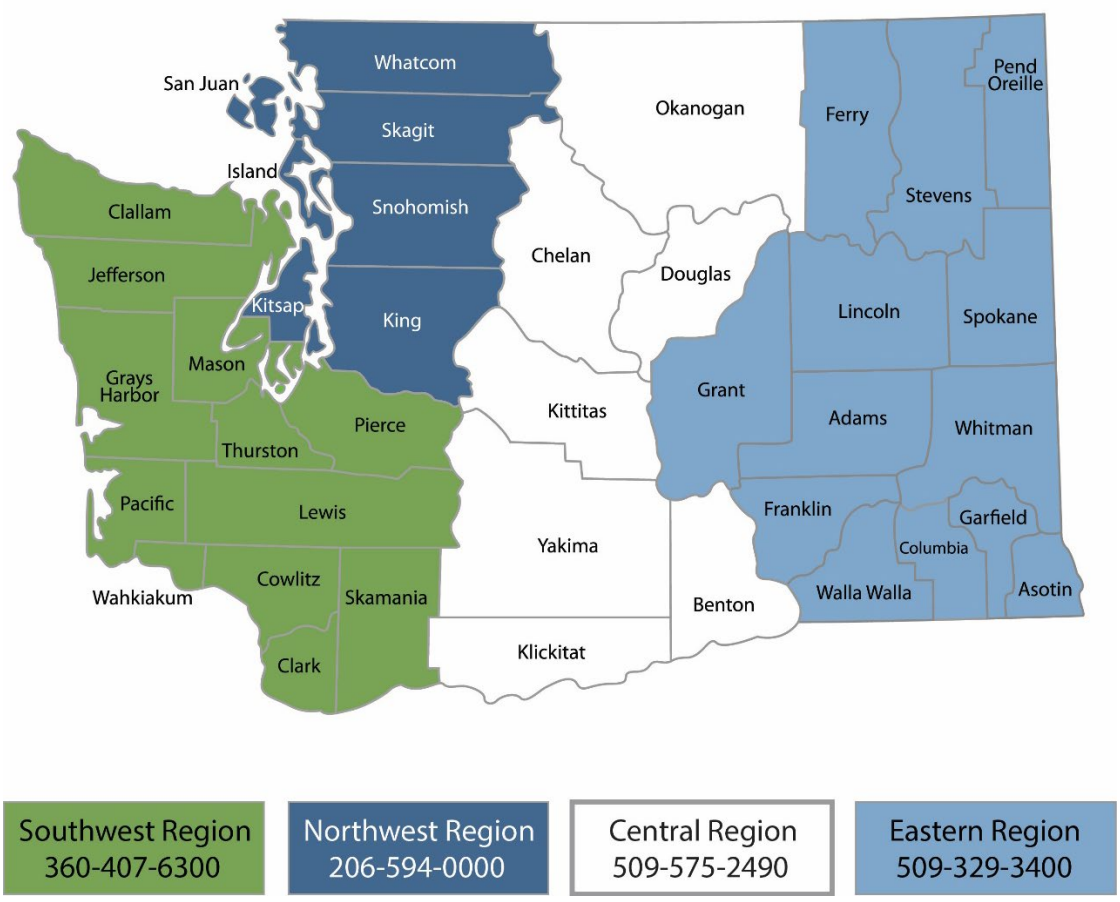
[1] https://apps.ecology.wa.gov/cleanupsearch/site/1904
[2] https://ecology.wa.gov/About-us/Who-we-are/Our-Programs/Toxics-Cleanup
[3] https://ecology.wa.gov/About-us/Accountability-transparency/Our-website/Accessibility

Department of Ecology's Regional Offices

Map of Counties Served



Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 47600 Olympia, WA 98504	360-407-6000

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Introduction

The Washington State Department of Ecology (Ecology) reviewed post-cleanup site conditions and monitoring data to ensure human health and the environment are being protected at the Eastmont Junior High (Site). Site cleanup was implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC). This is the third periodic review conducted for this Site. Ecology completed the first and second periodic reviews in September 2010 and November 2015.

Cleanup activities at this Site were completed under the Voluntary Cleanup Program (VCP). Residual concentrations of lead and arsenic that exceeded MTCA cleanup levels remain on the property. The MTCA cleanup levels for soil and groundwater are established under WAC 173-340-740[4] and WAC 173-340-720,[5] respectively.

Ecology determined institutional controls in the form of a restrictive covenant would be required as part of the cleanup action for the Site. WAC 173-340-420(2)[6] requires Ecology to conduct a periodic review of certain sites every five years. For this Site, a periodic review is required because the department issued a no further action opinion, and an institutional control is required as part of the cleanup action.

When evaluating whether human health and the environment are being protected, Ecology must consider the following factors (WAC 173-340-420(4)):

a) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the site

b) New scientific information for individual hazardous substances or mixtures present at the site

c) New applicable state and federal laws for hazardous substances present at the site

d) Current and projected site and resource uses

e) The availability and practicability of more permanent remedies

f) The availability of improved analytical techniques to evaluate compliance with cleanup levels

Ecology publishes a notice of all periodic reviews in the *Site Register* and provides an opportunity for public comment.

[4] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-740
[5] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-720
[6] https://app.leg.wa.gov/wac/default.aspx?cite=173-340-420

Summary of Site Conditions

Site description and history

The Eastmont Junior High Site is located in the City of East Wenatchee in Douglas County, Washington. The subject property consists of a 36-acre rectangular parcel of land. The property is a former apple orchard located immediately west of North Iowa Avenue between 8th Street Northeast and 10th Street Northeast. Apple growing and harvesting occurred on the Site beginning in the early 1900s and continued through the year 2000. The trees were removed in spring 2001.

Lead arsenate and organochlorine pesticides were common agricultural chemicals utilized in apple orchard operations in Washington State; lead arsenate was used about the turn of the century through the 1940s, at which time organochlorine pesticides debuted. These chemicals were applied to the orchard that formerly occupied the school property to control pests that affect orchard productivity. In the early years of orchard operation, these chemicals were mixed on Site and reportedly distributed to all areas of the orchard through a subsurface piping system. The piping laterals were reportedly spaced about 250 feet apart. Chemical preparation took place at a mixing facility that was located on the center-west border of the property. In later years, mobile sprayers consisting of a tank with sprayer mounted on a wheeled trailer were used. These mobile sprayers were filled with water at a filling station in the north central portion of the Site.

Three residences and associated outbuildings were present on the Site. These buildings were removed from the Site prior to sampling and remedial activities.

A vicinity map is in Appendix A, and a Site plan is in Appendix B.

Site investigations

In 2001, Forsgren Associates collected 98 soil samples from 31 sampling locations at the Site. Samples were collected using a hand auger from 0.5, 1.5 and 3.0 feet below ground surface (bgs). Samples were analyzed for arsenic, lead, and dichlorodiphenyltrichloroethane (DDT). Samples were collected on a grid pattern across the entire Site.

Additional samples were collected from the former pesticide batch mixing area, from beneath a former pesticide distribution pipeline, and from the mobile sprayer filling station.

All surface soil samples collected from the Site contain measurable concentrations of arsenic and lead. Arsenic was detected at a maximum concentration of 405 milligrams per kilogram (mg/kg) and lead was detected at a maximum concentration of 2,200 mg/kg. Typically, samples with elevated concentrations of arsenic also had elevated levels of lead.

Higher arsenic and lead concentrations were detected in samples in the north central area of the Site and in the area near the former chemical mixing area. DDT was found distributed

throughout the Site. Comparatively high DDT concentrations were found in only two sample locations.

TCLP analysis of three samples resulted in arsenic concentrations of 0.62 mg/kg, 0.58 mg/kg and 0.25 mg/kg, respectively. Lead concentrations were not detected in any of the three samples at or above the practical quantitation limit of 0.1 mg/kg.

Cleanup actions

Protective capping was selected as the remedial action for the pesticide contamination at the Site. Following constructing of the school buildings, all grass and landscaped areas were covered with a minimum of 15 inches of clean soil. Areas surrounding play equipment were also covered with landscaping fabric followed by wood chips.

Remedial Action Plan

The following cleanup action alternatives were proposed in the Remedial Action Plan for the Site:

- Arsenic-, lead-, and DDT-contaminated soils were to be interred on-site and placed under either an impervious cap (in this case asphalt parking areas and driveways; tennis courts; and building foundations) or a suitable thickness of clean topsoil and/or a combination of borrow cap and clean topsoil in areas where play fields and landscaping were to be developed.
- Drainage was to be controlled so that runoff from the Site would be directed away from and prevented from contacting contaminated materials.
- Institutional controls included asphalt and topsoil cap maintenance, property deed notice, and limitations on landscape irrigation.

Remedial Activities

Site soil was graded as appropriate for construction of the school building, driveways, and level parking areas, and as appropriate for landscaped grounds around the school facilities. In general, soil was relocated on Site to produce a series of level terraces consistent with the original northeast-to-southwest slope of the Site.

Grading of the north and west portions of the Site consisted of creating several level areas to accommodate sports fields. The southeast quarter of the Site was graded into a series of level tiers or slopes for placement of the school building as well as parking and driveway areas.

Excess Site soil was selectively placed in two topsoil disposal areas onsite. One is a rectangular area south of the school building oriented lengthwise along 8th Street. The second is a triangular area in the northwest corner of the property. Later in the project, with permission from Ecology, some of these soils were utilized as backfill under the floor slabs of the building.

Both cap and topsoil sources were tested for contamination and found to be clean for project purposes. Lawn, landscaped areas, topsoil disposal areas, and sports fields received a cap of 6

inches of uncontaminated, compacted fill followed by 6 inches of topsoil. The fill consists of graded material containing some angular rock that was compacted to a firm layer to prevent children and others from accidentally reaching the contaminated soils when digging by hand. This layer provides not only a physical barrier, but a visual and tactile warning to potential future excavation in these areas.

Material excavated for the placement of the building foundation, utility lines, and rockery structures were incorporated into the overall grading. Utility and irrigation system trenches were filled with clean bedding and backfill so that future utility work could be completed without concern about working in contaminated soils.

The Remedial Action Plan required soil testing in the area of the proposed storm water retention/infiltration basin. This testing was to ensure that the bottom of the basin was below the contaminated soil horizon. The bottom of the pond was excavated beyond the fine-grained soils and into the underlying gravel layer. This was then backfilled with clean soils that would support vegetation and landscaping.

Confirmational Sampling

In an effort to confirm the effectiveness of the remediation program at the Site, Forsgren Associates and Ecology representatives visited the Site on April 16, 2003, to sample selected areas for lead and arsenic analysis. Ecology provided and operated a hand-held field x-ray fluorescence (XRF) instrument for on-site analysis of lead and arsenic. The instrument was a Niton XL700 Series detector. Ten tests were completed using the XRF instrument at locations.

All arsenic tests indicated concentrations below the detection limits for the XRF instrument. Half of the lead tests showed concentrations below instrument detection limits. Four samples showed concentrations above the detection limit but below the Washington State Method A cleanup level for lead of 250 mg/kg. The remaining sample was analyzed in the City of East Wenatchee right-of-way south of the Eastmont School property boundary. That sample showed a concentration of lead in the soil above the Method A cleanup level. The arsenic concentration in this sample was below the instrument detection limit. This area was addressed as part of City of East Wenatchee 8th Street Improvements that were completed during school construction activities.

Cleanup standards

Cleanup standards include cleanup levels, the location where these cleanup levels must be met (point of compliance), and any other regulatory requirements that apply to the Site. WAC 173-340-704[7] states MTCA Method A may be used to establish cleanup levels at sites that have few hazardous substances, are undergoing a routine cleanup action, and where numerical standards are available for all indicator hazardous substances in the media for which the Method A cleanup level is being used.

[7] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-704

MTCA Method A cleanup levels for unrestricted land use were determined to be appropriate for contaminants at this Site. The cleanup actions conducted at the Site were determined to be routine, few hazardous substances were found at the Site, and numerical standards were available in the MTCA Method A table for each hazardous substance.

The point of compliance is the area where the cleanup levels must be attained. For soil cleanup levels based on the protection of groundwater, as they are for this Site, the point of compliance is established as soils throughout the Site (standard point of compliance).

Restrictive Covenant

Ecology determined that institutional controls would be required as part of the cleanup action to document the remaining contamination, protect the cleanup action, and protect human health and the environment. On October 25, 2005, institutional controls in the form of an restrictive covenant[8] (Covenant) were recorded for the Site.

The Covenant recorded for the Site imposes the following limitations:

1. The Property contains lead and arsenic contaminated soil located beneath a 6" clean soil cover and black geotextile fabric or a 12" clean cover soil. The Owner shall not alter, modify, or remove the existing clean cap in any manner that may result in the release or exposure to the environment of that contaminated soil or create a new exposure pathway without prior approval from Ecology.

2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.

3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.

4. The Owner of the property must give thirty (30) day advance written notice to Ecology of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.

5. The Owner must restrict leases to uses and activities consistent with the Restrictive Covenant and notify all lessees of the restrictions on the use of the Property.

[8] https://apps.ecology.wa.gov/cleanupsearch/document/4160

6. The Owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Restrictive Covenant. Ecology may approve any inconsistent use only after public notice and comment.

7. The Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial Action; to take samples, to inspect remedial actions conducted at the property, and to inspect records that are related to the Remedial Action.

8. The Owner of the Property reserves the right under WAC. 173-340-440 to record an instrument that provides that this Restrictive Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

Periodic Review

Effectiveness of completed cleanup actions

During the Site visit Ecology conducted on July 11, 2022, Site conditions overall appeared to be protective in preventing contact with contaminated soils remaining at the Site. The Site is currently operating as a public school. A photo log is in Appendix C.

Direct contact

The cleanup actions were intended to eliminate exposure to contaminated soil at the Site. Exposure pathways to contaminated soils by ingestion and direct contact were reduced by the clean soil cap. The clean soil cap on the Site continues to prevent the human exposure to contaminated soils.

Based on the Site visit, some maintenance activities are warranted to address the following:

- Distressed turf in various areas around the school (Photos 2, 3, 5, and 6).
- Exposed soil in the southwest corner of the schoolyard (Photo 4).

Maintenance activities are warranted to prevent erosion in areas of uncovered soil that could lead to potential future exposures to contaminated soils.

Institutional controls

Institutional controls in the form of a Covenant were implemented at the Site in 2005. The Covenant remains active and discoverable through the Douglas County Auditor Office. Ecology found no evidence a new instrument has been recorded that limits the effectiveness or applicability of the Covenant. This Covenant prohibits activities that will result in the release of contaminants contained as part of the cleanup action and prohibits any use of the property that

is inconsistent with the Covenant, unless approved by Ecology in advance. This Covenant ensures the long-term integrity of the cleanup action will be protected.

New scientific information for individual hazardous substances or mixtures present at the Site

There is no new relevant scientific information for the hazardous substances remaining at the Site.

New applicable state and federal laws for hazardous substances present at the Site

There are no new applicable or relevant state or federal laws for hazardous substances remaining at the Site.

Current and projected site and resource uses

The Site is used for commercial purposes. There have been no changes in current or projected future Site or resource uses. The current Site use is not likely to have a negative impact on the protectiveness of the cleanup action.

Availability and practicability of more permanent remedies

The remedy implemented included containing hazardous substances, and it continues to be protective of human health and the environment. While more permanent remedies may be available, they are still not practicable at this Site.

Availability of improved analytical techniques to evaluate compliance with cleanup levels

The analytical methods used at the time of the cleanup action were capable of detection below the selected MTCA cleanup levels. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

Conclusions

- The cleanup actions completed at the Site appear to be protective of human health and the environment.
- Soil cleanup levels have not been met at the Site; however, the cleanup action is determined to comply with cleanup standards under WAC 173-340-740(6)(f), since the long-term integrity of the containment system is ensured and the requirements for containment technologies have been met.

- The Covenant for the property is in place and is effective in protecting human health and the environment from exposure to hazardous substances and the integrity of the cleanup action.

Based on this periodic review, Ecology has determined the requirements of the Covenant are being followed. Some surface maintenance activities are recommended as discussed herein. No additional cleanup actions are required by the property owner at this time. The property owner is responsible for continuing to inspect the Site to ensure the integrity of the cap is maintained.

Next review

Ecology will schedule the next review for the Site five years from the date of this periodic review. If additional cleanup actions or institutional controls are required, the next periodic review will be scheduled five years after those activities are completed.

References

Forsgren Associates, Inc. *Site Assessment and Remedial Action Report*. June 2001.

Forsgren Associates, Inc. *Independent Cleanup Action Report*. April 8, 2005.

Ecology. *Restrictive Covenant*. October 27, 2005.

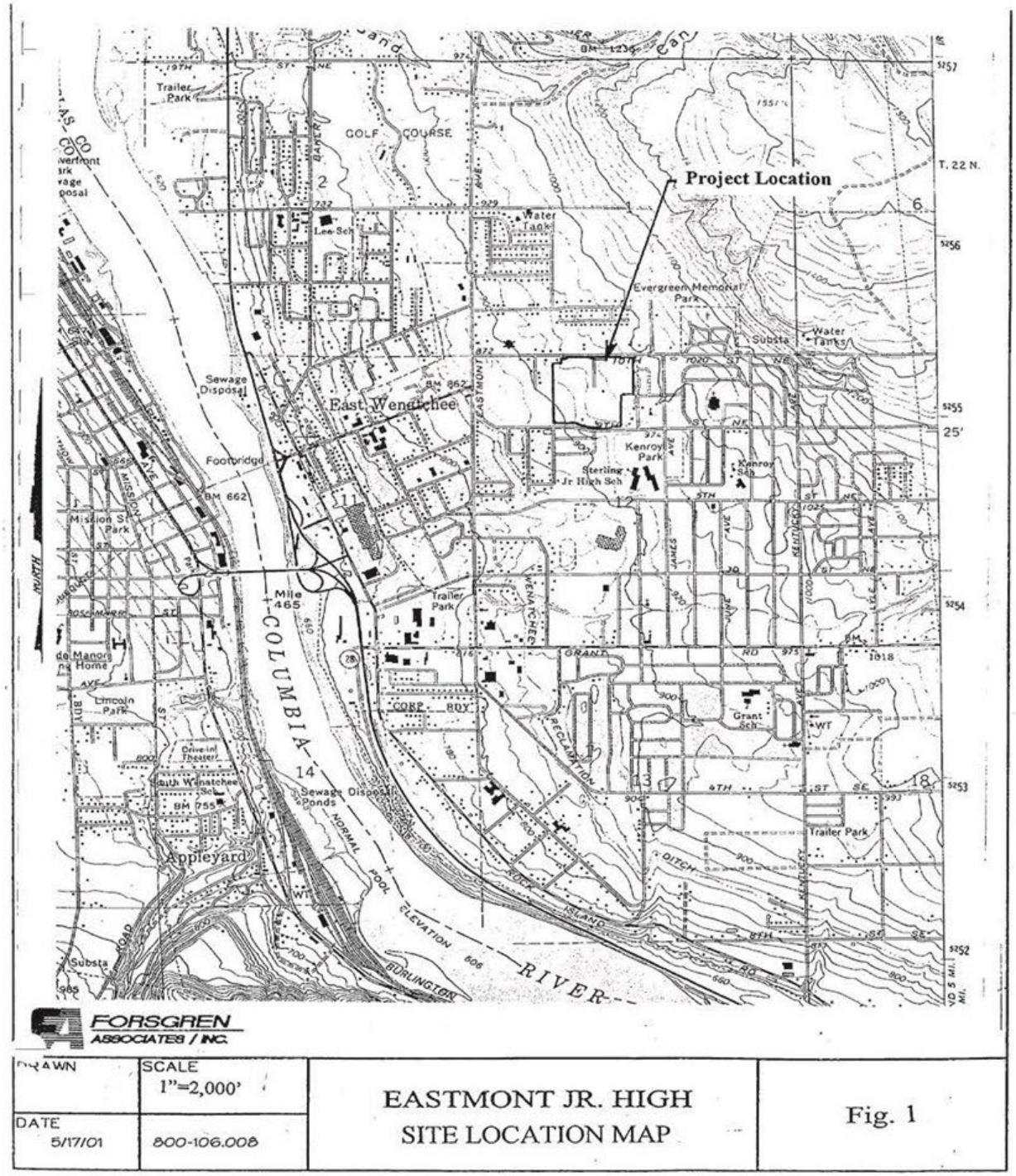
Ecology. "No Further Action Determination." November 30, 2005.

Ecology. *Second Periodic Review*. November 2015

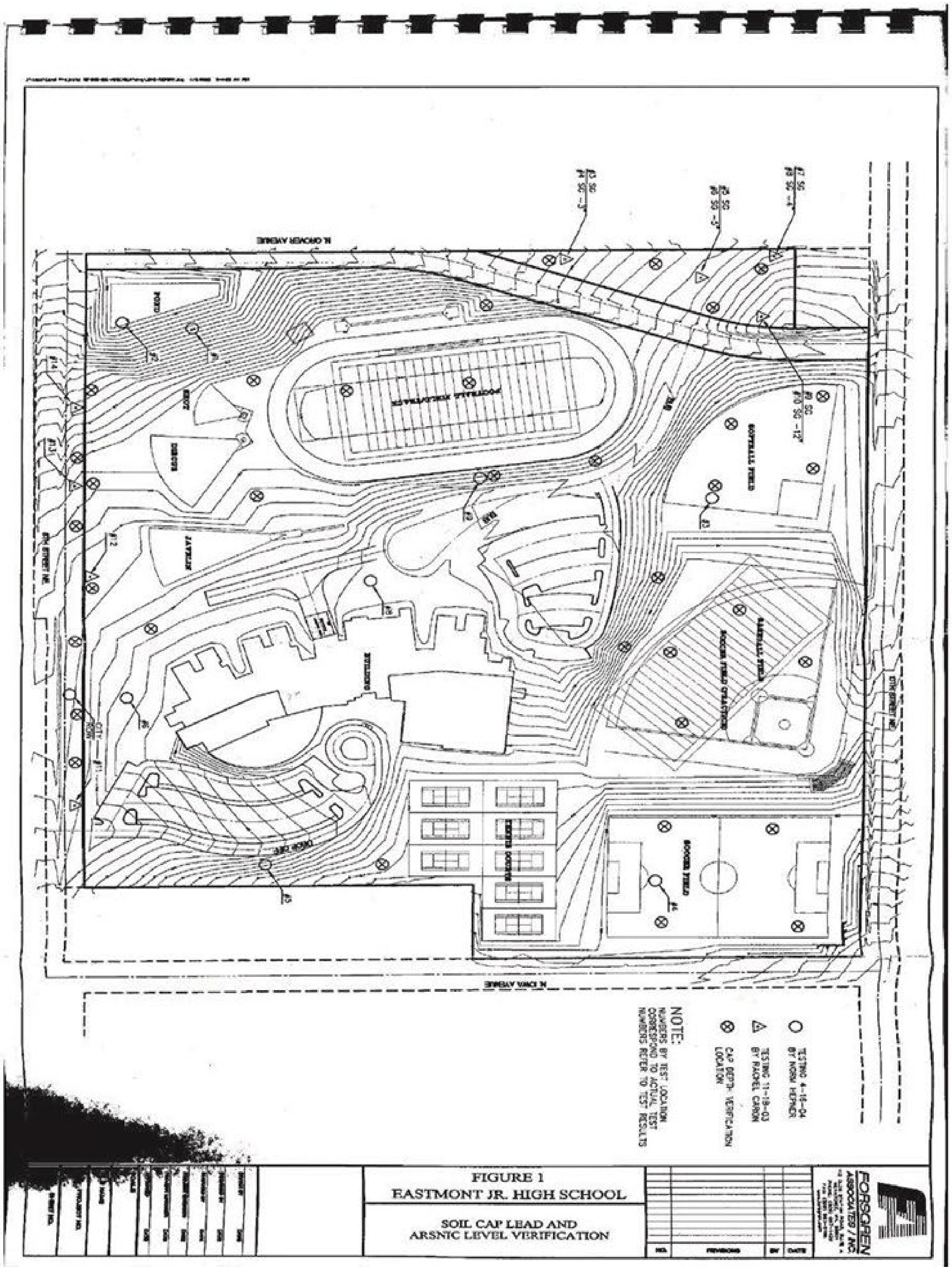
Ecology. *Periodic Review*. September 2010

Ecology. Site visit. July 11, 2022.

Appendix A. Vicinity Map



Appendix B. Site Plan



Appendix C. Photo Log

Photo 1: Eastmont Junior High School (view to west)

Photo 2: Area northwest of the school (view to southeast)

Note distressed turf

Photo 3: Field south of the football field (view to north)

Note distressed turf.

Photo 4: Southwest corner of the schoolyard (view to north)

Note bare soil.

Photo 5: Sloped are north of the school (view to west)

Note distressed turf.

Photo 6: Field northeast of the school (view to northeast)

Note distressed turf.