STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by: **CITY OF BELLINGHAM**	FIRST AMENDMENT TO AGREED ORDER No. DE 8073

I. INTRODUCTION

Agreed Order No. DE 8073 (2010 Order), entered into by the State of Washington, Department of Ecology (Ecology) and the City of Bellingham (City) in November 2010, requires the City to prepare a Remedial Investigation/Feasibility Study (RI/FS) report, plus a draft cleanup action plan, for the Eldridge Municipal Landfill Site (Site). The Site is generally located in Little Squalicum Park in Bellingham, Washington, west of the Bellingham Technical College campus parking lot.

This First Amendment to the 2010 Order (First Amendment) requires that the City perform an interim action to remove municipal solid waste plus contaminated soils at the Site that exceed specified remediation levels, and dispose of them in an approved upland landfill.

II. JURISDICTION

This amendment to the 2010 Order is issued by Ecology pursuant to RCW 70.105D.050(1).

III. AMENDMENT

This amendment does not attempt to recite all the provisions of the 2010 Order. Provisions of the 2010 Order not specifically addressed in this amendment remain in full force and effect.

The 2010 Order is hereby amended as follows:

A. Section VI (Ecology Determinations) of the 2010 Order is amended to add the following determination in addition to the determinations already set forth:

F. Under WAC 173-340-430, an interim action is a remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance, that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed, or that is needed to provide for completion of a site hazard assessment, remedial investigation/feasibility study or design of a cleanup action. The interim action will remove municipal solid waste and contaminated soils to specified remediation levels, which will substantially reduce, and potentially eliminate, pathways for exposure to hazardous substances. Such circumstances warrant interim action consistent with WAC 173-340-430.

B. Section VII (Work to Be Performed) of the 2010 Order is hereby amended to add the following requirements in addition to those requirements already set forth:

E. Scope of Work and Schedule for Interim Action: The City shall perform an interim action to remove municipal solid waste plus contaminated soils at the Site that exceed specified remediation levels, and dispose of them in an approved upland landfill, by implementing the attached Work Plan, Exhibit B. The interim action will be

implemented according to the schedule contained in Exhibit B. Exhibit B sets out the schedule for this interim action to be performed in 2011. In the event construction cannot begin this year, the City may elect not to perform the interim action or to perform in 2012 instead. In that event, the City shall advise Ecology in writing of its inability to begin construction in 2011 and its decision on whether to perform. If the City chooses to perform later, it shall request a schedule extension from Ecology under the terms of the 2010 Order. If the City chooses to forgo performance, the requirement for performance of the interim action shall become null and void.

C. Section VIII.P (Compliance with Applicable Laws) of the 2010 Order is replaced in its entirety by the following language:

1. All actions carried out by the City pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in RCW 70.105D.090. At this time, no federal, state or local requirements have been identified as being applicable to the actions related to the RI/FS work required by this Order. The permits or specific federal, state or local requirements that the agency has determined are applicable to the interim action required by this Order and that are known at the time of entry of this Order have been identified in Exhibit C.

2. Pursuant to RCW 70.105D.090(1), the City is exempt from the procedural requirements of Chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals. However, the City shall comply with the substantive requirements of such permits or approvals. At this time, no state or local permits or approvals have been identified as being applicable but

procedurally exempt for the RI/FS work required by this Order. As to the interim action required by this Order, the exempt permits or approvals and the applicable substantive requirements of those permits or approvals, as they are known at the time of entry of this Order, have been identified in Exhibit D.

The City has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order. In the event either Ecology or the City determine that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify the other party of its determination. Ecology shall determine whether Ecology or the City shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, the City shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by the City and on how they must meet those requirements. Ecology shall inform the City in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. The City shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

3. Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency that is necessary for the State to administer any federal law, the exemption shall not apply and

the City shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits.

D. Exhibits B, C, and D attached to this First Amendment shall hereby become Exhibits B, C, and D, respectively, to the 2010 Order. As such, they are integral and enforceable parts of the 2010 Order.

IV. SIGNATURE AUTHORITY

The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this First Amendment and to execute and legally bind such party to the same.

V. EFFECTIVE DATE

This First Amendment shall be effective upon execution by the City and Ecology.

Effective date of this Order: 7/18/11

CITY OF BELLINGHAM

Dan Pike
Mayor, City of Bellingham
(360) 778-8100

Date Signed: 7/18/11

APPROVED AS TO FORM:

Office of the City Attorney

ATTEST:
Finance Director
Date Signed: 7/19/11

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Robert W. Warren, P. Hg., MBA
Section Manager
Toxics Cleanup Program
Northwest Regional Office
(425) 649-7054
Date Signed: 7/28/11

EXHIBIT B

INTERIM ACTION WORK PLAN

Eldridge Municipal Landfill Site
Bellingham, Washington

Prepared for

City of Bellingham, Public Works Department
210 Lottie Street
Bellingham, WA 98225

Prepared by

Herrenkohl Consulting LLC
321 Summerland Road
Bellingham, WA 98229

With Assistance from

Integral Consulting Inc.
411 1st Avenue South, Suite 550
Seattle, WA 98104

July 2011

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LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
BTC	Bellingham Technical College
CAP	Cleanup Action Plan
cy	cubic yard
DCAP	draft Cleanup Action Plan
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
JARPA	Joint Aquatic Resources Permit Application
MTCA	Model Toxics Control Act
mg/kg	milligrams per kilogram
NAVD88	North American Vertical Datum 1988
Oeser	Oeser Company
PAH	polycyclic aromatic hydrocarbon
Park	Little Squalicum Park
PLP	potential liable person
RI/FS	remedial investigation and feasibility study
RTP	reconnaissance test pit (sample name prefix)
SEPA	State Environmental Protection Act
TCP	Toxics Cleanup Program
TEE	terrestrial ecological evaluation
TP	test pit (sample name prefix)
WAC	Washington Administrative Code

1 INTRODUCTION

This interim action work plan describes the interim cleanup action proposed by the City of Bellingham (City) for the removal of municipal wastes and contaminated soils at the Eldridge Municipal Landfill Site (the Site) in Bellingham, Washington (Figure 1). The plan was developed using information presented in the *Eldridge Municipal Landfill Remedial Investigation and Feasibility Study, Draft Report* (Herrenkohl Consulting 2011) and the *Little Squalicum Park Remedial Investigation, Draft Report* (Integral 2008). The interim action will be conducted under an amendment to Agreed Order No. DE 8073 between the City and the Washington State Department of Ecology (Ecology). The interim action will be implemented in advance of selection of the final cleanup action for the Site, and as such, must not foreclose reasonable alternatives for the cleanup action [WAC 173-340-430(3)(b)].

1.1 BASIS OF INTERIM ACTION

An interim cleanup action partially addresses the cleanup of a site and achieves one of the following purposes [WAC 173-340-430(1)]:

- Reduces the threat to human health and the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance [WAC 173-340-430(1)(a)];
- Corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed [WAC 173-340-430(1)(b)]; or
- Completes a site hazard assessment, remedial investigation/feasibility study, or designs a cleanup action [WAC 173-340-430(1)(c)].

The proposed interim action will achieve the first and third bullets above. The interim action will remove municipal wastes and contaminated soils from the Site, eliminating exposure to human and ecological receptors by direct contact. In addition, the interim action will likely significantly reduce contact of hazardous substances remaining in soil with groundwater, surface water and sediments, thus reducing or eliminating the leaching pathway.

An interim cleanup action may also meet one of the following general requirements [WAC 173-340-430(2)]:

- Achieve cleanup standards for a portion of the site;
- Provide a partial cleanup (clean up hazardous substances from all or part of the site, but not achieve cleanup standards); or
- Provide a partial cleanup and not achieve cleanup standards, but provide information on how to achieve cleanup standards.

The proposed interim action will provide a partial cleanup by removing approximately 2,400 cubic yards (cy) of municipal wastes and contaminated soils from the Site which will greatly reduce exposure of hazardous substances to humans and ecological receptors (second bullet above).

1.2 SITE DESCRIPTION AND BACKGROUND

While performing a Remedial Investigation (RI) under separate order (Agreed Order No. DE 2016)[1] for the Little Squalicum Park (Park) site, a separate and distinct area of contamination from an old municipal landfill was discovered in the Park. In the mid- to late-1930s, the City had used a portion of the Park as a "sanitary landfill" for burning and burying local municipal waste hauled by a garbage collection contractor. The landfill was operated for only a few years before operations ceased. The landfill area is located on property owned by Whatcom County (Parcel Number: 38022347 32190000), which is currently leased by the City for management of the Park. The remains of the landfill are located west of the Bellingham Technical College (BTC) campus parking lot and north of Building-U (Figure 1).

The initial boundaries of the landfill were delineated in January 2006 as part of the draft Park RI, through the excavation of reconnaissance test pits in which evidence of municipal garbage was found within various fill materials. The types of municipal garbage observed consisted of glass bottles, metal scraps, ash, ceramics, construction debris, and various indiscernible rusted materials.

Upon completion of the draft Park RI in December 2008, the area of the historical landfill was estimated to be approximately 7,100 ft^2. The draft Park RI documented the presence of low levels of polycyclic aromatic hydrocarbons (PAHs), benzoic acid, phthalates, and pentachlorophenol in surface soil samples collected in the landfill area, as well as elevated concentrations of some heavy metals (e.g., lead). Higher levels of metals were detected in subsurface soils.

In November 2009, Ecology listed the landfill area as a separate site and named both the City and County as potentially liable persons (PLPs). Soon after, the City and Ecology began negotiating an Agreed Order for completing a remedial investigation/feasibility study (RI/FS) and draft cleanup action plan (DCAP) for the Site.

In September 2010, the United States Environmental Protection Agency (EPA) uncovered additional landfill material during excavations in support of the cleanup at the Oeser/Little Squalicum Creek site. In order to allow the EPA work to continue, the City undertook an independent action to investigate, analyze, relocate and secure most of the contaminated soil. Some contaminated soil that was left in-place will be addressed, along with the relocated material, as part of the landfill cleanup. The estimated area of the historical landfill was revised to be approximately 19,000 ft^2 (Figure 2).

[1] The Agreed Order for the Little Squalicum Park site is no longer in effect.

The Agreed Order (No. DE 8073) requiring the City to complete a RI/FS report and DCAP for the Site was signed by the City and Ecology on November 19, 2010.

A draft RI/FS report was completed for the Site in February 2011 (Herrenkohl Consulting 2011). After review by Ecology and further discussion between parties, the City agreed to conduct an interim cleanup action for the Site in summer 2011.

1.3 DOCUMENT ORGANIZATION

The purpose of this document is to describe the City's proposed interim cleanup action for the Site, consistent with MTCA requirements (WAC 173-340-430). In summary, this document provides the following information:

- A description of the interim action, including soil remediation levels is provided in Section 2.
- Compliance monitoring and contingency actions are described in Section 3.
- A description of the proposed schedule for completing the design and implementation of the interim cleanup action is provided in Section 4.
- References are listed in Section 5.

2 INTERIM ACTION

The interim cleanup action includes removal of the stockpiled fill materials and the excavation of the upper four feet of municipal waste and the soil from the Site that exceeds remediation levels specified below. The mixed soil and municipal wastes will be transported to a Subtitle D landfill for disposal. The excavation will be stabilized, back-filled with clean soil, and vegetated with native plants. As shown in Figure 3, the approximate area of the excavation based on the previous Site characterization is 13,000 ft^2 for a total volume of impacted soil/waste removal of approximately 1,900 cy (~3,000 tons[2]) (plus the 500 cy or 800 tons stockpiled onsite) and allowable over-excavation. Additional excavation will be performed if landfill debris is observed beyond the estimated landfill boundaries, and/or if soil contamination that exceeds remediation levels extends beyond the estimated area of excavation, subject to performance monitoring.

The soil remediation levels for the Site are as follows:

- Arsenic: 10 mg/kg, based on natural background
- Cadmium: 45 mg/kg, based on direct human contact
- Copper: 50 mg/kg, based on the site-specific terrestrial ecological evaluation (TEE)
- Lead: 50 mg/kg, based on the TEE
- Mercury: 0.1 mg/kg, based on the TEE
- Zinc: 86 mg/kg, based on natural background
- Pentachlorophenol: 2.5 mg/kg, based on direct human contact

The point of compliance for each of the proposed Site remediation levels, all of which are based on direct contact with soil for either human or ecological receptors, is 15 ft bgs[3].

Remediation levels will be used during construction to assess performance as described in Section 3.2.

[2] Assumes 1.6 tons per cubic yard of material excavated.
[3] Some of the direct contact remediation levels were adjusted up to natural background concentrations per WAC 173-340-740(5)(c).

3 COMPLIANCE MONITORING

Compliance monitoring needs to address three important elements to assure the effectiveness of the interim action: 1) protection of human health and the environment during cleanup activities, 2) performance of the interim action in meeting remediation levels, and 3) confirmation of the long-term effectiveness of the interim action once the remediation levels and other performance standards have been attained. MTCA requires compliance monitoring for all cleanup actions, including interim actions, as described in WAC 173-340-410. The three forms of compliance monitoring are discussed below.

3.1 PROTECTION MONITORING

Protection monitoring will address worker health and safety for activities related to construction of the interim action, as well as protection of the general public. Worker health and safety will be addressed through a project health and safety plan (HASP). The requirements for a project HASP will be included in the project construction documents[4]. The HASP will address potential physical and chemical hazards associated with Site activities consistent with the requirements of WAC 173-340-810, and field monitoring to confirm that potential exposure to chemical hazards do not exceed health-based limits. Anticipated potential physical hazards include working in proximity to heavy equipment, heat stress or cold stress, and vehicular traffic. Anticipated potential chemical hazards include exposure to Site contaminants through various exposure pathways (i.e., direct contact, inhalation, and ingestion).

It is anticipated that the health and safety measures implemented to protect worker safely will also adequately protect the general public. The use of best management practices (e.g., dust control measures) will also assure protection of public health.

3.2 PERFORMANCE MONITORING

Performance monitoring and contingency responses will be implemented for the Site in accordance with WAC 173-340-410. The requirements of performance monitoring and appropriate contingency responses will be described in a monitoring plan as part of the final engineering design report for the project. The objective of the monitoring is to confirm that soil remediation levels have been achieved by the interim cleanup action for the Site. The monitoring plan will contain information on the number of samples and required testing, the trigger for contingency response actions, and the justification for discontinuing monitoring. The plan will be subject to Ecology review as part of the draft 90% engineering design report for the Site.

[4] A HASP will also be developed for construction oversight activities and included in the final design documents.

Performance monitoring will include the collection and chemical analysis of soil samples from the bottom and sidewalls of the excavation to confirm metals and pentachlorophenol concentrations are below the remediation levels. Although there are no remediation levels for PAHs, selected soil samples will be analyzed for these contaminants.

Construction contingency responses will be defined in the monitoring plan. A possible construction contingency may include the need to remove additional soil above remediation levels from the excavation bottom or sidewall(s).

3.3 CONFIRMATION MONITORING

Confirmation monitoring will be performed at a later date. The scope of the confirmation monitoring may include groundwater, surface water, or sediment monitoring.

4 IMPLEMENTATION OF INTERIM ACTION

The design and implementation of the interim action for the Site will be completed over a period of approximately 4-6 months. The schedule for design and implementation of the interim action is described below.

- **Engineering Design and Permitting** – A draft (90%) engineering design report (including plans and specifications, compliance monitoring plan, HASP, and other ancillary documents) for the interim action will be completed, and submitted to Ecology for review and approval during the month of June 2011. A compliance monitoring plan will be presented as an appendix to the draft engineering design report. Upon approval by Ecology, the City shall prepare a final engineering design report with plans and specifications the first week of July 2011.

  The City expects that permit applications [e.g., Joint Aquatic Resource Permits Application (JARPA)] will be completed in May 2011 in anticipation of construction beginning in the summer of 2011. It may take up to 1-2 months for agency review of applications and completion of permits for construction.

- **Cleanup Construction** –The start of construction will be during the month of August 2011. Construction must be completed when access to the BTC campus is available (before September 20).

- **Compliance Monitoring** – Compliance monitoring will be performed as defined in the monitoring plan, to be prepared as part of the engineering design report. As described briefly in Section 3 and to be discussed in more detail in the engineering design report, confirmation of remediation levels will take place during construction. A contingency response may include the removal of additional soil above remediation levels.

- **Interim Action Construction Completion Report** – Within 90-days of completing the interim action work, a draft Interim Action Construction Completion Report, describing the methods and outcome of the interim action, will be prepared and submitted to Ecology for review and comment. The data collected during the interim action will be uploaded to Ecology's EIM database.

5 REFERENCES

Herrenkohl Consulting. 2011. Draft Remedial Investigation and Feasibility Study Report, Eldridge Municipal Landfill Site, Bellingham, Washington. Prepared for the City of Bellingham, Public Works, Bellingham, Washington. Prepared by Herrenkohl Consulting LLC of Bellingham, Washington with assistance from Integral Consulting, Inc. of Seattle, Washington. February 2011.

Integral. 2008. Draft Final. Little Squalicum Park Remedial Investigation Report, Bellingham, Washington. Prepared for the Washington State Department of Ecology, Bellingham, WA and City of Bellingham, Parks & Recreation and Public Works Departments, Bellingham, Washington. Prepared by Integral Consulting Inc., Bellingham, Washington. December 2008.

MTCA Cleanup Regulation. Model Toxics Control Act Cleanup Regulation (Chapter 173-340 WAC). Promulgated by the Washington State Department of Ecology, Toxics Cleanup Program. Last Updated November 2007.

EXHIBIT C

APPLICABLE PERMITS AND REQUIREMENTS

The interim action to be performed at the Site requires the following permit and environmental review process:

- **Nationwide 38 Permit**

  Required for impact to wetlands during the interim action pursuant to Section 404 of the Clean Water Act, 33 U.S.C. § 1344 (with Section 106 Review of the National Historic Preservation Act, 16 U.S.C. § 470f)

  State Environmental Policy Act Integrated Compliance (RCW 43.21C.036 and WAC 197-11-250 through 259)
  Compliance with SEPA, Chapter 43.21C RCW, will be achieved by conducting SEPA review in accordance with applicable regulatory requirements, including WAC 197-11-268, and Ecology guidance as presented in Ecology Policy 130A (Ecology 2004). SEPA review will be conducted concurrent with public review of the interim action. The City will act as the SEPA lead agency and will coordinate SEPA review. It is planned that public review for the interim action plan and associated Agreed Order amendment will be conducted by Ecology concurrently with public review for the SEPA documentation. The City will coordinate closely with Ecology to ensure that the two public review processes are consistent and concurrent.

EXHIBIT D

APPLICABLE SUBSTANTIVE REQUIREMENTS

The applicable substantive requirements of the following exempt permits or approvals are identified below, to the extent known at this time, and will be more particularly identified during remedial design of the interim action:

- **City of Bellingham Fill and Grade Permit (BMC 16.70.070)**

  Pursuant to the City of Bellingham Grading Ordinance (BMC 16.70), a Major Grading permit is required from the City for grading projects that involve more than 500 cubic yards of grading. The City grading ordinance identifies a number of standards and requirements for obtaining a grading permit. The City standards and requirements will be integrated into the construction plans and specification for the interim action to ensure that the interim action complies with the substantive requirements of the City grading ordinance. Those substantive requirements include: staking and flagging property corners and lines when near adjacent property, location and protection of potential underground hazards, proper vehicle access point to prevent transport of soil off-site, erosion control, work hours and methods compatible with weather conditions and surrounding property uses, prevention of damage or nuisance, maintaining a safe and stable work site, compliance with noise ordinances and zoning provisions, development of a traffic plan when utilizing City streets and written permission for grading from legal property owner.

- **City of Bellingham Construction Stormwater Permit (BMC 15.42)**
  Pursuant to the City of Bellingham Stormwater Management ordinance (BMC 15.42), the interim action must meet the requirements of a City Stormwater Permit. The substantive requirements include preparation of a stormwater site plan, preparation of a construction stormwater pollution prevention plan, source control of pollution, preservation of natural drainage systems and outfalls, on-site stormwater management, runoff treatment, flow control, and system operations and maintenance.

- **City of Bellingham Land Clearing Permit (BMC 16.60.060)**

  Pursuant to the City of Bellingham Land Clearing ordinance (BMC 16.60.060), the interim action must meet the requirements of a City Land Clearing Permit. Clearing, cutting or removal of vegetation shall not occur on any lot or parcel without the consent of the property owner. Clearing, cutting or removal of vegetation shall not result in any damage to abutting lots or parcels, public property or water resources, including but not limited to, trunk, bark, limb or leaf damage, damage to roads, trails or utilities, water or soil contamination, alteration of drainage courses, transport and disposition of dirt, mud or sediment or the creation of a fire hazard or other unsafe condition. All public rights of ways including easements for roads, trails and utilities shall be kept clear of silt, dirt, mud and debris and immediately cleaned and/or restored to their original condition prior to impact.

- **City of Bellingham Critical Area Ordinance (BMC 16.55.420)**

  Critical area substantive requirements are applied to land development activities in the City of Bellingham. The interim action will occur on land designated as "erosion" and "landslide" hazard areas by BMC 16.55.420 Critical Areas. The substantive requirements include an assessment or characterization of the hazard areas, a hazard analysis and a geotechnical engineering report by a licensed professional.