FINAL DESIGN REPORT
EVERETT SMELTER SITE

FINAL

Prepared by:

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CERTIFICATE OF ENGINEER

This Final Design package was prepared in accordance with the requirements of the Enforcement Order No. 02TCPNR-4059, Agreed Judgment No. 03-2-08502-1, Final Cleanup Action Plan, and Interim Action Report. This Final Design package has incorporated comments from the State of Washington Department of Ecology and is consistent with the requirements of WAC 173-340-400, WAC 173-340-430, and WAC 173-340-840.

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David K. Nation, P.E. Date
Project Supervisor
ASARCO Consulting, Inc.

1.0 PURPOSE AND GENERAL REQUIREMENTS

The Final Design Report for the Everett Smelter Site has been prepared to comply with Enforcement Order No. 02TCPNR-4059 issued by the Washington Department of Ecology (Ecology) to ASARCO Incorporated (Asarco) in July 2002. In October 2003, the Snohomish County Superior Court issued Agreed Judgment No. 03-2-08502-1 (October 20, 2003) establishing a schedule for the tasks contained in the Enforcement Order. The Final Design Report is directed primarily at the Enforcement Order tasks but also includes alternatives to implement further remediation of the Fenced Area as described in the Interim Action Report for the Everett Smelter (IAR) approved by Ecology in April 2003.

This document has been prepared to meet the requirements of WAC 173-340-400 (4), applicable to the Fenced Area, and additional project requirements of the City of Everett. It is based on the IAR and subsequent field investigations conducted by Asarco in July and September 2003. The document does not reiterate information previously described in the IAR; however, information or design modifications developed since the approval of the IAR are included in this document.

The WAC requirements addressed by this Final Design Report are comprised of the following three components:

(a) The Engineering Design Report
(b) Construction Plans and Specifications
(c) Operations and Maintenance Plan

The City of Everett of requirements consist of the following:

(a) Transportation Plan
(b) Landscape Plan
(c) Final Site Restoration Plan
(d) Final Program of Institutional Controls & Monitoring

Of these four plans, only the Transportation Plan is included at this time because it directly affects the planned remediation. Asarco and the Everett Housing Authority (EHA) have entered into an agreement that will result in the sale of Asarco's property to the EHA if the conditions in the agreement are satisfied. If the EHA acquires the property it would proceed with redevelopment of the area, which would require the integration of items (b), (c), and (d) above. Asarco and the EHA expect to reach a decision on the purchase and sale of the property in the second quarter of 2004. In light of this potential acquisition, Asarco has not prepared these plans at this time because the ultimate development plans have not been prepared and any plans prepared now would inevitably be inconsistent with the end use and redevelopment. Asarco proposes that it will prepare these plans and submit them either a) as part of the redevelopment permitting process if the property sale is negotiated, b) within 60 days following the termination of negotiations between the EHA and Asarco for acquisition of the property, or c) by July 30, 2004, whichever is sooner, unless otherwise authorized by Ecology.

The project schedule specified by the Agreed Judgment is outlined below:

Submit Engineering Design Report to Ecology	January 30, 2004
Submit associated planning documents to City of Everett	January 30, 2004
Procure Contractor	February 27, 2004
Approval of Final Design by Ecology	March 31, 2004
Approval of planning documents by City of Everett	April 30, 2004
Contractor Mobilization On-site	June 1, 2004
Substantial completion per Enforcement Order	August 20, 2004
Final Completion per Enforcement Order	October 31,2004
Submit Draft As-Built Report to Ecology	December 31, 2004
Submit Final As-Built Report to Ecology	30 days after receipt of Ecology comments

2.0 ENGINEERING DESIGN REPORT

This section presents the basis for the design presented in the Construction Plans and Specifications and supplemental plans. It also incorporates the subsequent site investigations conducted since the IAR and provides the most current site characterization related to the work to be performed.

2.1 SOIL AND DEBRIS EXCAVATION, REMOVAL, AND REPLACEMENT

This section describes the design approach for soil removal and replacement within the Fenced Area. General plans illustrating the sequence and methodology for this activity are included in the construction plans in addition to the rationale for conducting the work as described.

The following subsections of WAC 173-340-400 (4)(a) are addressed in this subsection:

(i) Goals of the cleanup action
(ii) General facility information
(iii) Identification of who will own, operate, and maintain the cleanup
(iv) Sequence and staging flowcharts
(v) Characteristics, quantities, and location of materials to be managed
(vi) Schedule and options for construction
(vii) Description and plans of the excavation, removal, and replacement tasks

2.1.1 Cleanup Goals and Summary of Cleanup Responsibilities

There are two cleanup goals for the cleanup of the Fenced Area:

- Remove the soil and debris greater than 3,000 mg/kg As (i.e., Source Material) with ultimate disposal of this material in the On-site Containment Facility (OCF) at Asarco's former Tacoma smelter.

- Remove the remaining soil greater than 150 mg/kg As (i.e., Residential material or Residential Soils) and dispose of it at the former Tacoma smelter, where it will be used as subgrade backfill and placed underneath the site-wide cap. Following removal of this material, and prior to site development, a marker barrier similar to that used in the surrounding residential areas will be placed and the Fenced Area will be backfilled with at least two feet of soil with arsenic concentrations less than 20 mg/kg or other alternative cap approved by Ecology (e.g., building foundations).

At the completion of the remediation, the requirements of the Final Clean Up Action Plan (FCAP - Washington Department of Ecology, November 1999) for cleanup to residential standards will be satisfied in the Fenced Area (e.g., no material greater than 150 mg/kg arsenic will be within two feet of the final revegetated surface). This will allow subsequent redevelopment of the property within the range of land uses allowed by the City of Everett, including residential development.

Asarco expects that it will be the entity that conducts the cleanup of the Fenced Area, probably through use of its own personnel and independent contractors, both at Everett and at Tacoma. Asarco has not selected a construction contractor for Everett at this time; however, engineering design and field oversight will be performed by ASARCO Consulting, Inc. (ACI). Most of the laboratory analyses will be performed at ACI's XRF lab in Tacoma, a field XRF and/or laboratory XRF on-site at Everett, or samples will be sent to an independent laboratory. Some analyses, such as soil fertility and soil organic content tests, will be performed by local commercial laboratories.

Asarco owns the non-public property in the Fenced Area, several individual properties surrounding the Fenced Area, as well as the former Tacoma smelter property. Streets and an alley are the only public property in the Fenced Area and are owned by the City of Everett. Access to and removal of the streets, overhead electrical distribution lines, and other underground utilities will be needed to complete remediation of the Fenced Area. Asarco expects to use barge loading facilities in Everett owned by others. Access and related

provisions for other privately owned facilities and public areas needed to conduct the cleanup are discussed further in Section 2.3.

2.1.2 Fenced Area Layout and Designations for Cleanup

The Fenced Area and surrounding area has been previously described in the IAR and subsequent site verification investigations. For design and construction purposes, the Fenced Area has been designated at a finer level of detail based on the anticipated excavation methodology:

- The Fenced Area is subdivided into two sub-areas: an Upper (U) area and Lower (L) area (see the Interim Action Report –December, 2002 Figures 3-1 a - c and 3-2 a - f; note these figures also include Tables 3-1 and 3-2). The Upper area is bounded on the east by Pilchuck Path and the west by Hawthorne Dr. The Lower area extends from Pilchuck Path east to East Marine View Dr. and includes 5th St. and the alley east of Pilchuck Path.

- Sub-areas are further designated by the primary type of material that will be removed from it: Source (S) material designates areas likely to have concentrations > 3,000 mg/kg As, and Residential (R) soils that will probably have concentrations <3,000 but > 150 mg/kg As. The Source and Residential designations are the same used to describe similar material at the former Tacoma smelter and will facilitate the correct handling of the material upon receipt there. The U.S. Environmental Protection Agency (EPA) has directed that Source material >30,000 mg/kg As be managed discretely from other Source material (i.e., Subtitle C material).

- Sub-areas are numbered sequentially based on the previous two designations. In the Upper area, sub-areas are designated US-1 through US-12 and UR-1 through UR-24. The Lower area designations are LS-1 through LS-84 and LR-1 through LR-11.

In general, the Upper area consists mainly of R material with well defined areas of S material near the southern portion of the Upper area and west of the north end of Pilchuck Path. In

contrast, the Lower area consists primarily of S materials that are underlain by R materials. Additional field investigations were completed in July and September 2003 to refine the likely Source area boundary and quantity estimates. The estimated quantities based on this additional information for the sub-areas expected to contain Source material are shown in Table 2-1. No allowance for shrink/swell are reflected in these quantities; however, these estimates take into account the fact that excavation will not be done in a "neat line" manner (i.e., excavation will not exactly follow the concentration boundaries shown in the Exhibits or Construction Plans) and that some additional material will need to be excavated to assure removal of Source and Residential materials.

The Pre-Excavation Source Material Verification Report issued in September 2003 indicated that a concentration of 2,500 mg/kg As would be used to demarcate Source material. Subsequent field work conducted in September 2003 and reported in Appendix D of this document has provided sufficient information to re-establish a field concentration threshold of 3,000 mg/kg As for Source material. Source material as mapped in this document and the Construction Plans is based on concentration ranges between 3,000 to 30,000 mg/kg As.

The refined estimates of Source material are about 5,000 CY less than the quantities presented in the IAR. Source material removal of about 19,500 CY will be accompanied by the removal, stockpiling, and replacement and/or disposal of about 12,500 CY of Residential soils. There is an estimated 46,440 CY of Residential material in the Fenced Area. If Residential soil associated with Source area excavation is also disposed off-site, there will still be about 33,900 CY of Residential soil remaining in the Fenced Area that will need to be removed at some point to complete the removal action before regrading and capping can occur.

TABLE 2-1. SUMMARY OF ESTIMATED QUANTITIES

Area and Type of Material	*Estimated Quantity (CY)*
Upper Source	3,700
Upper Residential	4,100
Subtotal Upper	**7,800**
Lower Source	15,710
Lower Residential	8,400
Subtotal Lower	**24,110**
Subtotal Source	19,410
Subtotal Residential	12,500
Total Source and Residential	**31,910**

2.1.3 General Plan of Material Excavation and Replacement

The logistics for the excavation, sampling, stockpiling and off-site disposal necessitates a prescribed sequence and schedule to minimize the effort and costs associated with the remedial action. In addition, the cross-contamination potential between S and R areas is much higher due to the greater aerial extent of S material, the deeper excavation depths required, and the surface water drainage paths across the Lower area. As such, smaller sub-areas that can be more easily controlled as they are excavated are needed. The recommended overall sequence of excavation, stockpiling, off-site disposal and interim surface restoration is outlined below (see also Construction Specifications – Appendix F and associated Construction Plan Sheet ES-SL-01). This sequence has been modified from that proposed in the IAR and is focused on removal of the Source material only. If remediation of Residential materials in the Fenced Area is conducted in conjunction with the Source area removals, the plan presented in the IAR can be accomplished with minimal revisions to the sequence described below (see Section 2.4). Also, the remedial contractor may deviate from the proposed plan if the alternate plan offers a benefit to the project and is authorized by Asarco.

STEP 1

a.) Prepare Stockpile A in Area 1.

b.) Construct stormwater controls.

STEP 2

a.) Excavate truck load-out area in Area 2 adjacent to East Marine View Drive (EMVD). The load-out area shall be 60 (+/-) feet wide, parallel to EMVD, and constructed to allow truck access from and onto EMVD. Place Residential soils/concrete in temporary stockpile close to Area 2.

b.) Place Source soils in Stockpile A or use containers.

c.) Place Subtitle C soils in containers for direct shipment to off-site disposal.

d.) Construct stormwater sediment detention pond.

e.) Utilize temporarily stockpiled Residential soils and demolition concrete for construction of load-out pad. Grade to drain to detention pond and cover with filter fabric.

f.) Construct load-out area with surface drainage to detention pond; match grade from EMVD. Construct facilities (scale, hopper, screen, etc.).

g.) Establish remaining surface water BMPS in Area 2.

STEP 3

a.) Excavate Subtitle C soils from Area 3. Some Source material removal will be necessary to access Subtitle C soils but contractor can elect to continue excavating remaining Source soils in Area 3 as field conditions and stockpile/container capacity allow.

b.) Place Residential soils in Stockpile B.

c.) Place Source soils in Stockpile A or containers.

d.) Place Subtitle C soils in containers for direct shipment; stage at rail load-out. Begin load-out of Subtitle C soil and export to Subtitle C facility.

STEP 4

a.) Excavate Subtitle C soils in Area 4, placing in containers for direct disposal per Step 3. Some Source material removal will be necessary to access Subtitle C soils, but do not advance excavation below Subtitle C depths.

b.) Place Source soil in Stockpile A.

c.) Place Subtitle C soils in containers for direct shipment off-site.

d.) Subtitle C excavation limits include the removal of Pilchuck Alley.

STEP 5

a.) Excavate Subtitle C soils from Area 5 and place in containers for direct load-out/disposal. Some source material removal will be necessary to access Subtitle C soils, but do not advance excavation below Subtitle C depths. Maintain Pilchuck Path. Complete load-out of Subtitle C soil and export to Subtitle C facility.

b.) Place Residential soils in Stockpile B.

c.) Place Source soils in Stockpile A.

d.) As Subtitle C load-out is completed, begin loading and transporting containers with Source soil to Tacoma, expanding stockpile in Area 6 as needed to accomplish this task.

e.) Excavate Source soil in Area 4 (area east of Pilchuck Path) to final excavation depths, stockpiling/loading containers in Area 6. Remove Pilchuck Path as required to access Source and/or Subtitle C soils. Remaining Subtitle C soils need to be loaded directly for disposal without stockpiling.

f.) Excavate remaining Source soils in Area 5 and stockpile/load-out for transport.

g.) Excavate Area 1; Residential soils to Stockpile B, Source soils to Stockpile A/load-out as work progresses.

STEP 6

a.) Complete Source soil excavation in Area 6, proceeding south to north. Place soils in Stockpile A as needed, or load to containers for shipment to Tacoma.

b.) Complete excavation of Source soils in Area 6, including the area of Stockpile B. Place in Stockpile A or load-out directly.

c.) Excavate remaining Source material from Pilchuck Path, 5th Street, Area 6 east of the alley, incidental surface material in the load-out area, and sediments from stormwater detention features and export to Tacoma OCF. Export concrete used on-site to Tacoma OCF.

d.) Backfill excavation in Area 5 with stockpiled Residential soils. Slope excavation areas to drain, establish surface water BMPs for winter, hydroseed, and re-establish site-security.

e.) Demobilize from site.

2.1.4 Excavation Volumes

It is estimated that 51,000 tons of soil will be excavated in the process of removing the material with arsenic concentrations above 3,000 mg/kg.

- 3600 tons (2250 cubic yards) of Subtitle C material – arsenic above 30,000 mg/kg.
- 27,500 tons (17,160 cubic yards) of Source material – arsenic above 3,000 mg/kg.
- 20,000 tons (12,500 cubic yards) of Residential material –arsenic above 150 mg/kg.

The soil excavation volumes do not include any material associated with the Clear & Grub or Structure Demolition work scope items. In addition to the quantities listed above, there is another 34,000 CY of Residential material that will need to be removed from the Fenced Area to meet the 150 mg/Kg As criteria.

Excavation of all material outside the Fenced Area and within the Everett Smelter Site with arsenic concentrations greater than 3,000 mg/kg As is required under the Enforcement Order. There is a small area of Source material under the roadway of East Marine View Drive that may not be excavated at this time. The City of Everett expects to reconstruct this street in 2005, although the City prefers that this material be removed as part of the overall removal described above. The location of this material is known and plans for its removal and disposal will either a) be incorporated with the City's design effort and the enforcement order amended to allow removal after October 31, 2004, including provisions for placing sufficient funds with allowance for contingencies in escrow by that date, or b) be incorporated with the work described above and completed under the existing schedule of the Agreed Judgment.

2.2 ENGINEERING DESIGN CRITERIA AND FEATURES

This section describes the engineering design criteria and parameters upon which the overall cleanup is based. The following subsections of WAC 173-340-400 (4)(a) are addressed in this section:

(viii) Engineering justification for the design and operations parameters, including:

(A) Design criteria, assumptions, and calculations for components of the cleanup that have not already been designed.

(B) Containment effectiveness – (see also Record of Decision for the Tacoma Smelter, EPA, March 1995).

(C) Demonstration that cleanup will achieve compliance with cleanup criteria of FCAP.

(ix) Design for control of spills or accidental releases.

(x) Design features to assure long-term safety of workers and local residences.

2.2.1 Engineering Design Evaluation

The plan presented in the IAR and further described in this Final Remedial Design is based on combining the removal actions in the Fenced Area at Everett with the ultimate disposal facilities Asarco has constructed at the former Tacoma smelter, which is being remediated under EPA oversight. At the Tacoma smelter, a much larger amount of the same type of material present at Everett (i.e., Source material) is being excavated and disposed of at the smelter in an OCF. The capacity of the OCF is 260,000 CY and the current estimate of the quantity of material from the Tacoma smelter that will be disposed of in the OCF is expected to range between about 210,000 – 230,000 CY. Under the terms of the ROD for the Tacoma smelter, EPA determined that the OCF must be constructed to exceed RCRA Subtitle C standards for hazardous waste landfills in order for the source area materials to be disposed there without further treatment.

The remaining capacity of the OCF at Tacoma is available to dispose of the same type of material from Everett within the Fenced Area. This volume has been estimated to be about 20,000 CY, less than 10% of the amount of material that will be disposed of from Tacoma and well within the remaining capacity of the OCF.

The key elements of the approach Asarco plans to implement for removal of the Fenced Area material at Everett are:

- The Source material greater than 3,000 mg/kg but less than 30,000 mg/kg arsenic within the Fenced Area will be removed and transported to the Tacoma smelter for disposal in the OCF without treatment.

- The Source material greater than 30,000 mg/kg arsenic within the Fenced Area will be removed and transported off-site for disposal in a RCRA Subtitle C facility or in the Tacoma OCF. Disposal in the OCF may include treatment to minimize arsenic mobility. Smelter residual by-products >30,000 mg/kg arsenic encountered that can be segregated from surrounding soil will be disposed of in a Subtitle C facility.

- Residential material greater than 150 mg/kg arsenic will be handled in one of two ways. It may be removed from the Fenced Area, transported to Tacoma, and placed beneath the smelter site-wide cap along with other soils from the cleanup of residential yards in Ruston and north Tacoma. Alternatively, it will be excavated and stockpiled on-site until the Source material is removed, followed by placement in the Source area excavations until removal with the balance of the Residential soils in the Fenced Area.

- After removal of the all Source and Residential material from the Fenced Area, this area will be remediated consistent with the soil cleanup requirements of FCAP. The site will be backfilled and graded with clean material following remediation. As mentioned previously, it may be possible and advantageous to integrate the final grading of the site with that needed for site development. Specific plans to accomplish this will need to be prepared and approved by Ecology. At that point, the property will be in a condition to support further redevelopment.

This overall concept greatly simplifies the type and extent of engineering design needed to perform the cleanup. The WAC requirements regarding ultimate disposal, particularly containment effectiveness, are met and documented in EPA's ROD for the Tacoma smelter and the associated design documents submitted to EPA and Ecology during the design process at that site. The Source and Residential material from Everett will be handled in the same fashion as the comparable material at Tacoma. As stated in the IAR, no further documentation or analysis is needed regarding the ultimate disposal of this material at the former Tacoma smelter.

Similarly, the FCAP for the Everett site addressed the issues regarding the cleanup and containment effectiveness for material up to 150 mg/kg As at a depth of 2 feet or more. As this will be the site condition following completion of the remediation of the Fenced Area, it does not need to be further evaluated. Finally, the FCAP specifies removal of material greater than 3,000 mg/kg from the Fenced Area, which is provided for in this design.

The remaining engineering design evaluations needed are:

- Assessment of the removal methodology's ability to achieve cleanup goals;
- Evaluation of surface and groundwater control measures needed during and after the cleanup;
- Materials management issues; and
- Performance sampling to assure compliance with the cleanup standards.

The first two bulleted items are covered in Sections 2.2.2 and 2.2.3 below. The other two items are addressed in Section 2.3.

2.2.2 Assessment of the Removal Methodology

The approach and methodology selected for the Fenced Area have been developed based on Asarco's experience at many other sites with a wide range of soil-metals concentrations. The Everett site, particularly the Fenced Area, has a few key features that provide a high degree of confidence that the removal methodology will achieve cleanup goals:

- ✓ The relatively shallow depth of surface soils/fill which are underlain by glacial till of significantly lower permeability. Previous sampling data, supported by the supplemental investigations in 2003, shows that metals concentrations decrease rapidly with depth into undisturbed glacial till, limiting excavation depth needed to achieve the 150 mg/kg As cleanup (see Exhibits ES-FDR-2 through 4 and Appendix E).

- ✓ Groundwater flux across the Fenced Area is low (less than 1gpm per 1,000 lineal feet – see Everett Smelter RI) and is mainly confined to the shallow surface fill strata. While some groundwater will be present, quantities are expected to be small and can be managed as part of the surface water control system. Significant groundwater dewatering is not anticipated.

- ✓ The highest concentrations identified in the Fenced Area are closely tied to smelter debris and residual by-products. These areas have been thoroughly mapped previously (see Everett Smelter Site Remedial Investigation, Hydrometrics, Inc. September 1995) and this information provides a clear guide to excavating the Source material. In addition, the debris and by-products are visually distinct from the native material, making it much easier and more reliable to excavate based on a visual as well as a chemical basis. The additional field investigations conducted in 2003 corroborated these conclusions and allowed the excavation sequence to be adjusted to minimize the amount of material excavated to accomplish Source material removal. (See also Appendix D and Exhibits ES-FDR-2 through 4).

- ✓ The residential superstructures in the Fenced Area have been previously demolished and removed. All remaining foundations and soil below them will be removed as part of the cleanup. Also, the portions public roads that bisect the Fenced Area (Pilchuck Path, 5th St., and the alley east of Pilchuck Path), as well as underground and overhead utilities in these roadways and in the Fenced Area proper, will be removed to be able excavate Source and Residential soils in these areas. As such, the removal action will be total in this area; all remaining material will meet the concentration and depth requirements of the FCAP.

The excavation sequence and associated compliance sampling plans have been prepared to take advantage of these site characteristics. The key design elements incorporated into the excavation and removal plan are summarized in Table 2-2.

2.2.3 Evaluation of Surface Water and Groundwater Controls

Surface water and groundwater controls will be implemented during the interim action. As previously discussed, groundwater flux across the Fenced Area is low and is mainly confined to the shallow surface fill. While some groundwater will be present, only small quantities are expected and will be managed as part of the surface water control system. Significant groundwater dewatering is not anticipated.

TABLE 2-2. EXCAVATION AND REMOVAL DESIGN ELEMENTS

Design Element	Issue to Address	How Issue is Addressed in Design
Area and depth of excavation	How large an area to excavate and to what depth?	Source and Residential areas divided into discrete excavation units. Size of areas based on production of 750 to 1,250 CY/day using conventional excavating equipment capable of over-the-road delivery and use. Layout and target depths will allow excavation to proceed in controlled manner while still allowing for unplanned excavation of Source material if is encountered outside of expected areas. Active excavation areas will be minimized, making dust control and ESC provisions more manageable.
Area and depth of excavation	How will debris be handled if encountered outside of S areas?	Based on results of the 2003 investigations, only limited debris will be considered S material, primarily smelter flue dust and residuals as well arsenic trioxide. This type of material will be separated from soil where practical and sent to a Subtitle C facility for disposal. Other debris encountered (e.g., bricks, concrete) is not Source material and can be either disposed of in the Tacoma OCF or under the site-wide cap. Separation of these materials will not be needed; bricks and concrete can be included in residential stockpiles and handled as Residential soils with the exception of concrete foundations in Source areas. This concrete will be used as needed on-site to build ramps and for other construction needs in the excavation areas, after which it will be transported to Tacoma for disposal in the OCF. In the Lower area, almost all of the areas with R material will be excavated to remove S material first. As such, the likelihood of significant amounts of debris from R sites is low. However, a separate stockpile for debris will be established in the Lower area if needed.
Slope Stability	What are the provisions for cut slopes to assure safe excavation?	Previous investigations and Ecology's work in this area show that material can be excavated without excessive slope-back for stability. Shallow cuts (up to 4 ft.) may extend vertically while deeper excavations will need to be sloped back about 1:1. Trenches will be avoided and the contractor will be allowed to cut back or otherwise reduce side-slopes as needed based on conditions encountered. Protection from direct rainfall and runoff on cut slopes will be implemented via temporary sheeting or surface water diversions.

TABLE 2-2 EXCAVATION AND REMOVAL DESIGN ELEMENTS (continued)

Design Element	Issue to Address	How Issue is Addressed in Design
Slope Stability	Final site grading.	The existing Fenced Area topography has several terraced areas running north/south and has a general slope of about 1V:10H across the site from west to east and north to south. The post-cleanup topography will match existing elevations along Hawthorne St., East Marine View Dr., and at the southern limit of the Fenced Area. Final elevations before redevelopment will generally be lower across the site and the north/south slope will be decreased toward the northern end of the Fenced Area. The overall site will have a general slope about 1V:10H from west to east after remediation and will be graded so steeper transitions will be nominally 1V:3H. Redevelopment of the site will likely result in some variation of slopes within the Fenced Area but the overall slopes and match points to the surrounding properties will generally be as described above.
Cross-contamination	How will S and R material be kept from contaminating other areas, particularly those already remediated?	The excavation sequence is based on removal of S material occurring before R material. Source area boundaries extend beyond the neat-line limit established during the smelter area investigation to allow for variations in the distribution of S debris and material. Separate stockpiles for S and R materials will be established. Segregation of the site into clean, R, and S areas with a separate loadout area and traffic control and decontamination stations will limit potential cross-contamination. Surface water controls will be established to route runoff away from disturbed areas and to avoid runoff from S areas flowing across R or clean areas.
Surface Features	How will surface features be addressed?	Surface features include: vegetation and sod layer; concrete foundations; roads/road base; underground and overhead utilities. They will be addressed as shown in the Construction Plans and Specifications.
Confirmation at excavation depth	How will confirmation of cleanup levels be achieved? What if further excavation is needed?	Confirmation sampling is planned as described in Appendices A and C of this Final Design. The general approach for material that fails confirmation testing is to excavate another discrete interval (e.g., 4 – 6 inches) across the sub-area rather than implement a complex and time consuming sampling plan to chase “hot spots”. Simply removing another depth interval and retesting provides the best assurance that any material remaining above the cleanup level is removed. This approach may be modified if it is clear that a smaller area is probably the source of higher concentrations (i.e., debris or residual by products) is visually evident and can be excavated and retested without the need for excavating the entire sub-area.

TABLE 2-2. EXCAVATION AND REMOVAL DESIGN ELEMENTS (continued)

Design Element	Issue to Address	How Issue is Addressed in Design
Decontamination	How will contamination be controlled beyond the Fenced Area?	Separate clean and contamination zones will be established at the site and people/equipment subject to decontamination before they exit the contaminated zone. A separate paved loading area along East Marine View Drive will be used to load trucks with containers for transport to the barge staging area. Trucks or other equipment that moves outside the active construction area will be subject to tire washing before they leave the site. Trucks and containers containing S or R material will be covered when they leave the site and during transportation by plastic sheeting or by application of a dust palliative to the surface in the container. Decontamination of this equipment will occur before it is released for other tasks. Decontamination procedures for S and R materials will generally include water wash/street sweeping to remove residual soil and/or physical removal (e.g., brooming, high pressure/low volume washing) to assure appropriate decontamination.
Stockpiling	Where and how will material be stockpiled on-site?	Stockpiling of materials will be needed prior to loadout and transport to Tacoma. Three different types of stockpiles may be used: ✓ Day piles – either S or R materials will be temporarily stockpiled in areas of the same type of material (i.e., no S material in an R sub-area) before loading to truck or container for transport later in the day. These piles should be less than 500 CY capacity. ✓ Accumulation pile – Stockpile A will be constructed to handle up to 4,000 CY nominal that may be used to aggregate sufficient volume to allow the S or R material to be transported and loaded to a barge. ✓ Debris piles – will only be used if necessary and will be kept small. They should be about 50 CY capacity. The existing shed at the north end of Pilchuck Path may also be used for this purpose if needed. All stockpiles will have appropriate surface water diversion and ESC measures (i.e., City of Everett requirements) as part of their construction and operation and will be covered at the end of each work day. Specifications for these stockpiles are included as part of the final design package.

Surface water controls for remediation of the residential properties adjacent to the Fenced Area are specified in the FCAP and will be implemented when remediation of these properties occur. For the remediation of the Fenced Area, surface water controls will be implemented based on the City of Everett Stormwater Management Manual (*Stormwater Management Manual – City of Everett Public Works Department*, Rev. 4/00). For this site, the primary surface water issues are:

- ✓ Minimizing, to the extent practical, the contact of direct precipitation, run-off within the Fenced Area, and run-on from outside the Fenced Area from contacting disturbed or stockpiled soils; and

- ✓ Collecting surface water that has come in contact with disturbed soils and removing suspended sediment before discharge to the City of Everett stormwater system.

The surface water control measures are in conformance with the Everett Stormwater Management Manual and are included in the Construction Specifications (Appendix F). The Everett Stormwater Management Manual provisions are incorporated as part of the final design specifications along with specific provisions to be implemented (see also *City of Everett Design and Construction Standards and Specifications for Development,* Rev. 4/02). The surface water management design is consistent with the Stormwater Management Manual and incorporates both Best Management Practices (BMPs) and Erosion and Sediment Control (ESC) practices. (See also Appendix H).

The remedial excavation is scheduled to be performed from May through August, which is the driest time of the year in Everett. While some rainfall can be expected, the storms are generally of short duration and low to medium intensity. The excavation sequence will allow any surface water that needs to be collected to be routed to the deepest areas excavated or to the on-site stormwater retention basin. Runoff collection, detention, and sediment removal will be needed before discharge. This will be accomplished by constructing a network of diversion dikes or hard-pipelines to route surface water to a detention pond or trap at the lowest portion of the site adjacent to Marine View Drive. A sedimentation pond 30 ft. X 90

ft. X 6 ft. will treat the design storm runoff. It is feasible to build a facility with sufficient capacity in this area; the actual configuration and design parameters are included as part of the Construction Plans and Specifications. The pond will treat the entire volume of a 10 year -24 hour storm and discharges storm water via constant flow orifice to the storm sewer system. The BMP's and pond will be constructed at the outset of the work and will remain in service until the remediation work in the Fenced Area, including removal of all Residential soils, is completed.

The other key aspects regarding surface water control for the Fenced Area are summarized below:

- ✓ A permit is required by the City of Everett to discharge treated water to the storm sewer during the period from May through August 2004 (see Appendix I). After removal of the Source material is complete, a permit is not needed because the stormwater concentrations of arsenic and other metals will be below threshold at which a permit is required.
- ✓ General BMPs include, but are not limited to sediment detention ponds or traps, filter fabric fences, straw bale barriers, diversion dikes, inlet controls at catch basins, pipe slope drains, terracing, construction entrance rock pads, and hydroseeding.
- ✓ Intercepted groundwater (i.e., groundwater that "daylights") will be routed to the surface water system and handled as surface water from the point of collection on.
- ✓ Excavation, fill, and backfill work areas shall be continually and effectively drained. In particular, water will not be permitted to accumulate in excavations that are receiving material that will be compacted.
- ✓ The contractor shall be required to construct suitable dikes, drainage ways, hard-pipes, or provide portable pumping equipment to divert water flows away from work areas.
- ✓ Off-site water shall be routed around the site if possible; if it must flow across the site it will be prevented from contacting disturbed soils.
- ✓ Surface water originating from R areas will be prevented from contacting S soils insofar as is practical.

- ✓ Existing vegetative cover will remain in each sub-area until active excavation of that area begins.
- ✓ Stockpiles will be covered and BMPs implemented to divert surface water around the stockpile as well as to prevent migration of stockpiled material beyond the stockpile boundary.
- ✓ Periodic testing of surface water discharges will document the metals concentrations of surface water discharged from the Fenced Area during the interim action.

2.3 MATERIALS MANAGEMENT AND DISPOSAL

This section describes how material will be excavated, stockpiled, transported, and disposed of at the former Tacoma smelter and how clean backfill will be placed and graded following remediation. The following subsections of WAC 173-340-400 (4)(a) are addressed in this section:

(xi) Methods for management and disposal of any materials excavated and disposed of at the Tacoma smelter.

(xii) Facility specific characteristics that affect the movement and placement of materials at Everett and Tacoma, including;

(A)Relationship of the cleanup to the surrounding area.

(B)Probability of flooding, seismic, and other local planning and/or development issues that could affect the cleanup.

(C)Soil characteristics and groundwater system interactions with the cleanup.

2.3.1 Unit Operations for Excavation, Removal, and Backfill

Section 2.1.3 describes the excavation, stockpile, and backfill sequence for the Fenced Area. This section describes the individual unit operations associated with these activities. Unit operations are the distinct steps associated with the excavation, stockpiling, transportation and disposal of material from the Fenced Area.

The Fenced Area Excavation Flowcharts (Construction Specifications – Appendix F and Plan Sheet ES-SL-01) illustrate these unit operations for Source and Residential materials. Table 2-3 summarizes the key elements of each unit operation for both types of materials.

TABLE 2-3. UNIT OPERATIONS SUMMARY– EVERETT SMELTER

Unit Operation	Description of Operation and Alternatives
Clearing & Grubbing	Vegetation and sod layer: trees and shrubs within the Fenced Area will be removed and sent for off-site disposal at a permitted Subtitle D facility. The surface sod layer in R areas will be included with R soils for disposal at the Tacoma smelter. Surface sod which is also Source material will be stockpiled separately from other S material and sent for disposal at a Subtitle C facility.
Foundation/Road/ Utilities Demolition	Concrete foundations: these will be removed from S and R areas and handled in the same manner as the soils from the areas in which they are currently located. Foundations from Source areas will be used as needed on-site to build ramps and for other construction needs in the excavation areas, after which it will be transported to Tacoma for disposal in the OCF. Crushing and other size reduction, if needed, may occur at Everett or at the Tacoma smelter. In general, noise levels associated with crushing or any other on-site activities will be typical of a heavy construction site with large earthwork equipment and haul trucks/trailers (see also Construction Specifications, Section 1-5 Control of Noise). Roads and road base: asphalt will be removed and either recycled or disposed of at Tacoma. If the asphalt is recycled it will be sampled and analyzed as required by the recycling facility before excavation and shipment. Road base material will be will be removed from S and R areas and handled in the same manner as the soils from the areas in which they are currently located. Underground and overhead utilities: material will be removed and, if requested by the utility owner, decontaminated (if possible), and returned to them. Otherwise, these systems will be handled in the same manner as the soils from the areas in which they are currently located. Disposal will be at a Subtitle D facility for R material and a Subtitle C facility for S material.
Excavate & Load to Stockpile	Excavation is anticipated to use conventional equipment (e.g., CAT 300 series excavator nominal). More than one excavator may be used if space allows, particularly in deeper excavations. Production is anticipated to be about 750 – 1,250 TPD. The excavator(s) will load to 10 - 15 CY nominal dump trucks for transfer to stockpiles unless they are proximate enough to load to stockpile directly. Excavators will load containers that will subsequently be transported to the Tacoma smelter or to other off-site facilities

TABLE 2-3. UNIT OPERATIONS SUMMARY– EVERETT SMELTER (continued)

Unit Operation	Description of Operation and Alternatives

Unit Operation	Description of Operation and Alternatives
Stockpile	Three options are available: ✓ Day piles – either S or R materials will be temporarily stockpiled in areas of the same type of material (i.e., no S material in an R sub-area) before loading to truck or container for transport later in the day. These piles should be less than 500 CY capacity. ✓ Accumulation piles – these are larger stockpiles (up to 4,000 CY) that will be used to aggregate sufficient volume to allow the S or R material to be transported and loaded to a barge. ✓ Containers – the option of using shipping containers capable of containing and transporting soil is the preferred choice available; these are typically the size of standard shipping containers and can handle up to 20 CY ±. These will either be loaded from a day pile or directly from the point of excavation and transported to the container staging area adjacent to the barge tie-up. Stockpiles need to be worked and shaped by a loader and will be covered at the end of each workday.
Loadout & Transportation to Tacoma	Loadout and transportation to Tacoma may occur via any or all of the following methods: ✓ Load from either day or accumulation piles via front end loader to containers and transport via truck for short-haul to the barge loading area,. Barge logistics are based on movement of about 75 – 100 containers at a time. Barges containing 1,500 – 2,000 CY of material would be towed to the Tacoma smelter. ✓ Loadout of containers to barge will probably use two fork lifts or a crane in a "pass-pass" method where one forklift or crane picks the container on shore and passes it to another forklift on the barge. ✓ Loadout from stockpiles to 30 ton (nominal) "truck and pup" over-the-road trucks and transport to the Tacoma smelter via road. A front end loader would load the truck.

TABLE 2-3. UNIT OPERATIONS SUMMARY– EVERETT SMELTER (continued)

Unit Operation	Description of Operation and Alternatives
Unload & Stockpile at Tacoma, Decon	Unloading at the Tacoma smelter is essentially the reverse of the previous unit operation: ✓ Container unloading would will probably use two fork lifts or a crane in a "pass-pass" method where one forklift or crane picks the container from the barge and passes it to another forklift on the shore. Empty containers would be loaded in reverse manner. Decon of containers will follow final transfer of Source or Residential materials. ✓ Unloading the containers in the OCF will be accomplished by hauling them into the cell using off-road dump trucks with the chassis modified to accept containers. If possible, unloaded material will be immediately placed in the OCF. Decontamination following delivery of the final shipment for each container will be accomplished at the Tacoma smelter.
Size S or R material	Source material must be less than 24 inches to be placed in the Tacoma OCF; R material must conform to the subgrade cap specifications at Tacoma for placement below the site-wide cap. Material that needs to be sized will be screened and/or crushed at Tacoma after delivery. If material meets the size requirements upon delivery then it may be able to be placed directly.
Place S or R material	Source material that is appropriately sized can be placed in the OCF provided it passes the "paint filter test". As this material is being received essentially dry, this requirement should easily be satisfied. Residential material that is the appropriate size and meets the other requirements for sub-grade backfill can be placed below the site wide cap.

The on-site requirements for material management have previously been discussed. Off-site requirements will be governed by state and federal regulations covering hazardous materials. These requirements are well established for over-the-road transportation of S and R materials to the Tacoma smelter or to other permitted disposal facilities. There are several licensed transporters that can move the material to disposal facilities and comply with all the applicable containment, spill response, and decontamination requirements. While feasible, over-the-road transport may pose disadvantages in terms of higher cost, truck availability to support site work schedules, and traffic disruption, both at Everett and Tacoma. The use of over-the-road trucks to transport the majority material to Tacoma is less preferable than other options; however, trucks and/or rail transport to other facilities will be necessary.

The option of transporting Source and possibly Residential soils to Tacoma utilizing shipping containers and barge has been arranged and the specific logistics will be finalized before contractor mobilization on-site (see Transportation Plan, Appendix G). There are two potentially available barge loadout facilities in Everett close enough to be practical. Figure G-1 (Appendix G) shows the proposed staging areas and transportation routes for truck, rail, and barge. This is the preferred alternative and barging appears to be the most cost effective means to move material from Everett to the Tacoma smelter and will likely reduce or eliminate traffic delays and impacts, both to the public and project-related at Everett and Tacoma. The Tacoma smelter has received material by barge, most recently the import of several hundred thousand tons of material needed to build the OCF berm.

Control of any spillage, decontamination measures, and other steps needed to keep S and R material contained and secure from loading in Everett to its receipt at the Tacoma smelter are greatly reduced with the use of shipping containers. The containers are conventional 8 ft X 8 ft X 20 ft and have a maximum weight capacity of 32 tons (about 20 CY) and will still have about 4 ft of “freeboard” between the top of the container and the top of the material inside. Loadout of the containers at Everett allows the material to be contained until placement in the OCF without any intermediate material transfer steps. Containers can be stacked or tarped to limit contact with rain during the transport and staging. Additional details

regarding the transportation of materials off-site are included in the Transportation Plan (Appendix G).

2.3.2 Other Facility-Specific Characteristics

The FCAP and documents previously submitted to Ecology by Asarco (e.g., the Everett RI/FS and the IAR)) characterize the Everett site in detail and this information is not repeated in this Final Design Report except for supplemental site verification investigations conducted in 2003 (see Appendices D and E and Exhibits ES-FDR-1 through 4). The FCAP also addresses removal of S material from the Fenced Area. The FCAP, as amended, contains provisions for removal of all the R material from the Fenced Area as well as removal of all material outside the Fenced Area with concentrations greater than 3,000 mg/kg As (see *IAR*).

The other facility specific characteristics that affect the movement and placement of materials at Everett and Tacoma are summarized below:

Relationship of the Cleanup to the Surrounding Area

The area surrounding the Fenced Area is primarily residential to the west and south with arterial streets bounding the site to the north and east. Access to the Fenced Area is limited to Hawthorne St., Pilchuck Path, 5th St., and East Marine View Dr. The sequence of remediation activities described in Section 2.1.3 takes this constraint into account. The main transportation routes are via East Marine View Drive, Pilchuck Path, and 5th St. Pilchuck Path, the alley immediately to the east, and 5th St. will all be removed during the interim remedial construction and not replaced until the site development phase. The primary site access loadout and haul will be via East Marine View Drive during this period. Contractor access to the site will be controlled at Hawthorne Drive, Pilchuck Path, and 5th St.

The most noticeable aspect of the remediation with the surrounding area is likely to be the amount of truck traffic to and from the site. Unfortunately, there is no other alternative to remove and deliver material at the site except to use trucks. A similar situation exists at the Tacoma smelter; the primary route for truck traffic between Everett and Tacoma is via Ruston Way. This two-lane arterial can pose significant delays on truck cycle times,

especially during commuting hours or on fair weather days in the spring and summer. Barging the majority of the material to the Tacoma smelter will avoid this problem and will substantially minimize the impacts in Everett and Tacoma. The Transportation Plan has been prepared to deal with the anticipated affects based on the transportation methods(s) selected. Even with barge transport, some over-the-road truck traffic will occur at Everett because not all material will be shipped to the Tacoma smelter. Material that is transported to other disposal facilities will be shipped either by commercial truck or via rail.

The provisions for public health and safety are addressed in the Health and Safety Plan in Appendix B and in the Construction Specifications in Appendix F.

Flooding, Seismic, and Other Local Planning and/or Development Issues

The potential for flooding and seismic issues affecting the cleanup at this site are minimal. The site is geologically stable, on relatively shallow slopes, and at the top of a hill that receives incidental run-on from surrounding areas. The surface water control plan is based on a 10 year-24 hour design storm as required by the City of Everett. Excavation and re-grading will occur during the drier months of the year, avoiding the major potential for storm events and run-off volumes in excess of the stormwater control capacity.

Redevelopment of the site is probable and desirable; however, this remediation design does not incorporate redevelopment features, particularly roads and utility services at this time. Should Asarco and/or a developer pursue redevelopment of the site, these features could be integrated into the final grading, a move that could be cost effective. Any redevelopment would follow the normal process for such activities governed by the City of Everett. The final grading plan will be prepared to accommodate the development if it can be accomplished in conjunction with the backfill of the site.

Soil Characteristics and Groundwater System Interactions with the Cleanup

As previously described, there are no inherent soil characteristics or groundwater conditions that will materially interfere or hinder the cleanup. Excavation to depths of 15 ft. $\pm$ into glacial till is expected to be difficult but surmountable with conventional equipment. Smelter

debris will probably give rise to some surprises during the excavation; the design acknowledges this potential by keeping production rates reasonable and disturbed areas to a minimum. The material handling flowsheets shown in the Construction Specifications (see Appendix F) further explain how different materials will be handled as they are encountered.

2.4 PROVISIONS FOR REMOVAL OF REMAINING RESIDENTIAL MATERIAL

The IAR provided the overall removal sequence and logistics for Residential material in the Fenced Area and the surrounding residential properties. As discussed in Section 1, the EHA and Asarco are negotiating the purchase and sale of all company-owned properties with provisions for remediation of the associated properties. While this Final Design Report addresses the remediation of the Source material, the planning to incorporate remediation of Residential soils as described in the IAR as part of the Purchase and Sale is proceeding. Because of the timing of the property transactions anticipated and the ongoing revisions to the Residential remediation plans to address property acquisition conditions, it is premature to present plans beyond those described in the IAR.

If the EHA and Asarco reach agreement on the purchase and sale of the property such that Residential soils will be remediated, the following revisions to the plans in this document will be made and submitted to Ecology for approval:

- Construction Specifications (Appendix F) will be revised to incorporate removal of Residential material in the Fenced Area and surrounding properties;
- Construction Plans will be revised in the same manner to incorporate removal of Residential material in the Fenced Area and surrounding properties; and
- The Transportation Plan (Appendix G) will be revised accordingly.

The other plans contained in this document (i.e., Appendices A, B, C, H, and I) already address the potential remediation of Residential soils and will not require further revisions to implement this action.

3.0 REGULATORY COMPLIANCE

This section completes the requirements of the Engineering Design Report and addresses the following subsections of WAC 173-340-400 (4)(a):

(xiii) General Description of construction quality control and testing to be performed

(xiv) General Description of compliance monitoring to meet the requirements of WAC 173-340-410

(xv) General Description of construction procedures to assure the safety and health requirements of WAC 173-340-810 are met

(xvi) Not needed

(xvii) Permitting requirements and access issues

(xviii) Not needed

(xix) Institutional controls per the FCAP (residential properties) and otherwise needed for the Fenced Area

3.1 COMPLIANCE MONITORING

The FCAP describes the procedures and protocols for these items in the residential areas adjacent to the Fenced Area. The FCAP, as amended, addresses removal both S and R material from the Fenced Area. The compliance monitoring requirements for the Fenced Area are addressed in Appendix A and are based on protocols in the Interim Action Report, which are part of the amended FCAP/FEIS..

Quality control (QC) provisions are included in the Compliance Monitoring Plan (Appendix A) and the Sampling and Analysis Plan (Appendix C). The Compliance Monitoring Plan is primarily aimed at chemical data obtained by sampling the excavated surface following removal. It also addresses chemical requirements and basic physical properties of imported material used as backfill as specified in the FCAP. The specifications for backfill material as well as the physical testing to be accomplished during backfilling and final grading have not been finalized yet in expectation that site redevelopment will be integrated with the final cleanup. Once a decision is reached regarding the development approach and timeline, these specifications, including quality control requirements based on

the *City of Everett Design and Construction Standards and Specifications for Development,* Rev. 4/02, will be finalized and incorporated into the attached plans and specifications. Additional quality control requirements applicable to backfill and grading activities may also be included from ASTM or WSDOT protocols as needed.

The Health and Safety Plan (Appendix B) addresses monitoring for field personnel and for the general public. The primary exposure path for both workers and the general public will be via airborne emissions. As such, rigorous dust control provisions will be instituted to control emissions to levels below applicable standards. A general "no visible dust" standard will be imposed to assure that no visible dust is present at the fence line. The contractor will be required to rigorously implement demonstrated dust suppression methods (e.g., water sprays) at the points of dust generation anywhere on the site to assure compliance with the no visible dust standard (see Appendix B-4 Dust Control Plan). Air sampling will be conducted for both field personnel (personal samples) and at the fence line to measure ambient concentrations.

3.2 PERMITTING REQUIREMENTS

MTCA provides an exemption from the procedural requirements of the following state laws, though their substantive requirements must be met:

- RCW 70.94, Washington Clean Air Act
- RCW 70.95, Solid Waste Management Reduction and Recycling
- 70.105, Hazardous Waste management
- RCW 75.20, Construction Projects in State Waters
- RCW 90.48, Water Pollution Control, and
- RC 90.58, Shoreline Management Act of 1971

Ecology's FCAP incorporates the substantive requirements of applicable or relevant and appropriate requirements of the state laws listed above. (FCAP, Section 3.3). Because the proposed interim cleanup action is consistent with and meets or exceeds the requirements of the FCAP, the proposed interim action also complies with the substantive requirements of these laws and regulations.

Regarding local permits for construction activities entailed in the interim cleanup action, MTCA also provides an exemption from the procedural requirements of laws authorizing local government permits or approval for remedial actions. Again, the substantive requirements of local ordinances affecting land use, development and construction must be met. Asarco will provide a copy of all substantive permit requirements to Ecology. These requirements will become part of the Enforcement Order.

The City of Everett has advised Ecology that substantive requirements for grading, storm water control, work in City rights-of-way, and other construction-related requirements will apply to the final cleanup and, by extension, to this interim cleanup action. In Everett, the applicable requirements are implemented through the City's Public Works permit process. Section 4.2 of the IAR (Applicable Permits) addresses how the substantive requirements are met in the design implementation of the interim cleanup action.

Asarco will require access to property that it does not own to complete the interim action. In the vicinity of the Fenced Area, access to roadways and other public areas will need to be obtained from the City of Everett. Utility providers will also need to provide access to their systems or equipment during the cleanup.

A wastewater discharge permit will be needed to allow stormwater discharge during the period which Source material will be removed from the site (i.e., May – August, 2004). This permit application and supporting information is in Appendix I.

3.3 INSTITUTIONAL CONTROLS

The FCAP describes the Institutional Controls required for the residential properties adjacent to the Fenced Area. These will be implemented upon completion of the remediation of these properties, whenever that occurs. Because the Fenced Area is being remediated to the same standard as other residential properties, the Institutional Controls will be the same as for other residential properties under the FCAP, with the exception that Asarco-owned property must have deed covenants to address future handling of any contaminated soil remaining on the property. These will be implemented after the cleanup of the Fenced Area is finished.

4.0 SUPPLEMENTAL PLANS

Per WAC 173-340-44 (4) (b), the following supplemental plans are included in the Construction Plans and Specifications. Theses plans were presented in the IAR but have been updated and revised to incorporate the final design and construction details.

4.1 OPERATION AND MAINTENANCE PLAN

The Operation and Maintenance Plan conforms to the requirements of WAC 173-340-4 (4) (c) for this Interim Action and appropriate O&M provisions are included in the Construction Plans and Specifications (see also the provisions and deadlines for other plans in Section 1).

4.2 AMENDMENT AND SEPA ADDENDUM (DECEMBER 2002)

As required by the *Everett Smelter Site – Amendment and SEPA Addendum to the Integrated Final Cleanup Action Plan and Final Environmental Impact Statement for the Upland Area,* Asarco has prepared a Transportation Plan. This Plan is included in Appendix G.

As discussed in Section 1, the Landscape Buffer Plan, the Final Site Restoration Plan, and the Final Program of Institutional Controls & Monitoring Plan will be completed in conjunction with the site development phase. Asarco is currently exploring potential post-remediation uses with the EHA for the site the remaining plans will be included into the overall site development plan.

4.3 CITY OF EVERETT SUBMITTALS

There are two submittals to the City of Everett included with this document:

- The Site Stormwater Plan (Appendix H)
- The Wastewater Discharge Permit Application (Appendix I)

5.0 CONSTRUCTION PLANS AND SPECIFICATIONS

In accordance with WAC 173-340-4 (4) (b), Construction Plans and Specifications were developed based upon the design criteria described in this report and inclusive of the FCAP remedial goals. Appendix F contains the Construction Specifications. Construction Plans have been prepared and are an additional submittal to Ecology accompanying this report.

6.0 REFERENCES

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