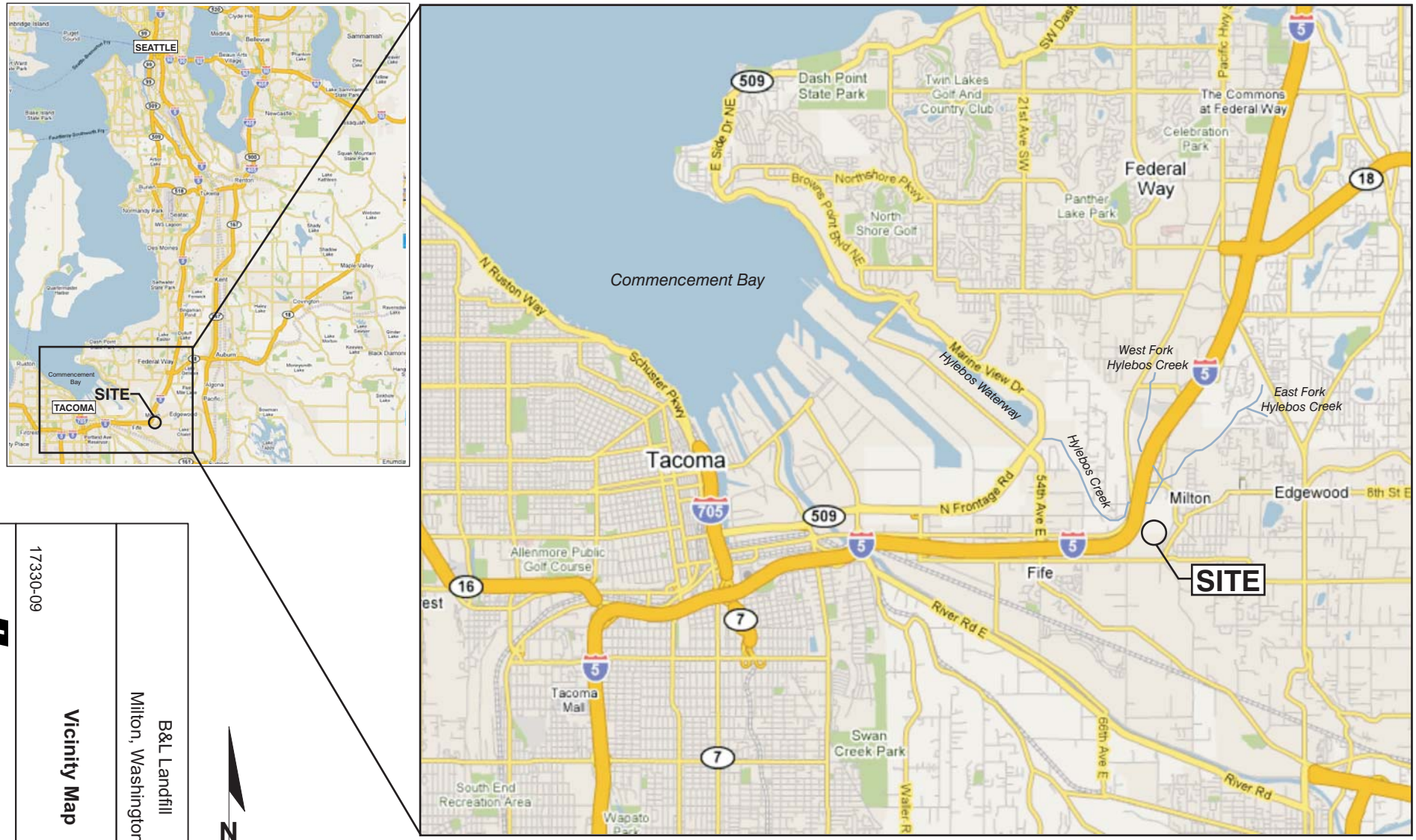

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Figure 1

Vicinity Map

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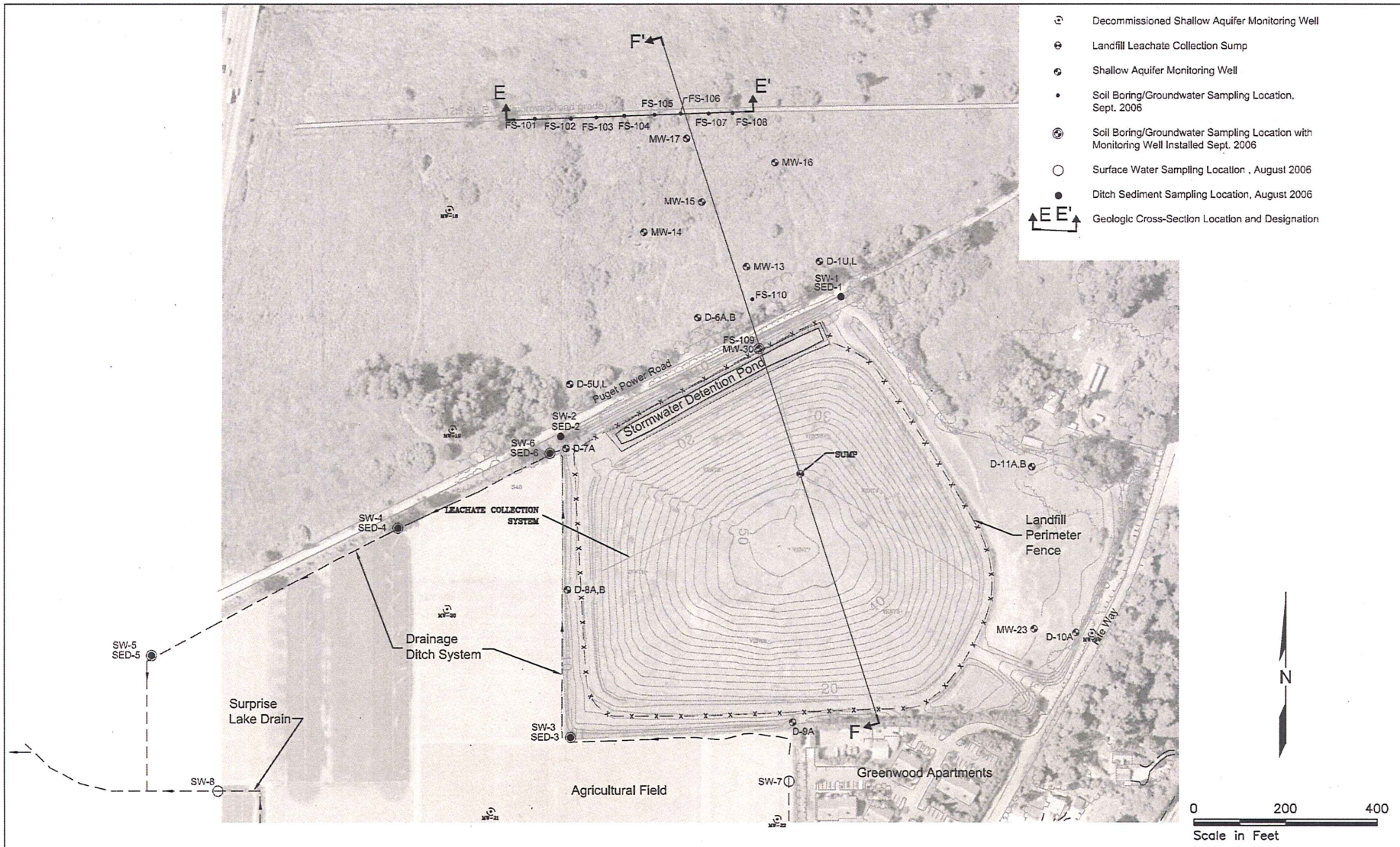

FLOYD | SNIDER strategy • science • engineering	Cleanup Action Plan B&L Landfill Milton, WA	Figure 2 Site Map and Cross Section Locations

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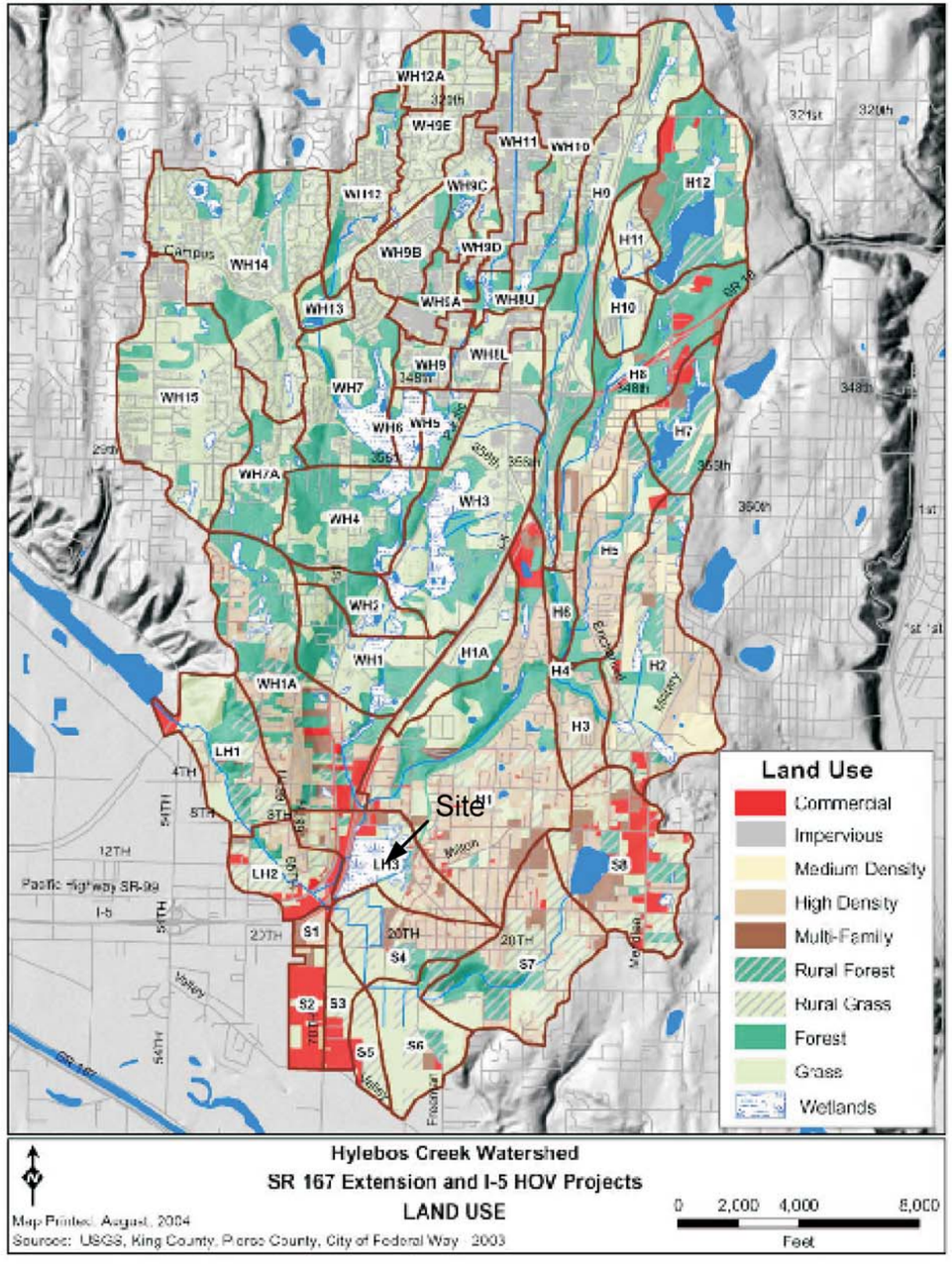
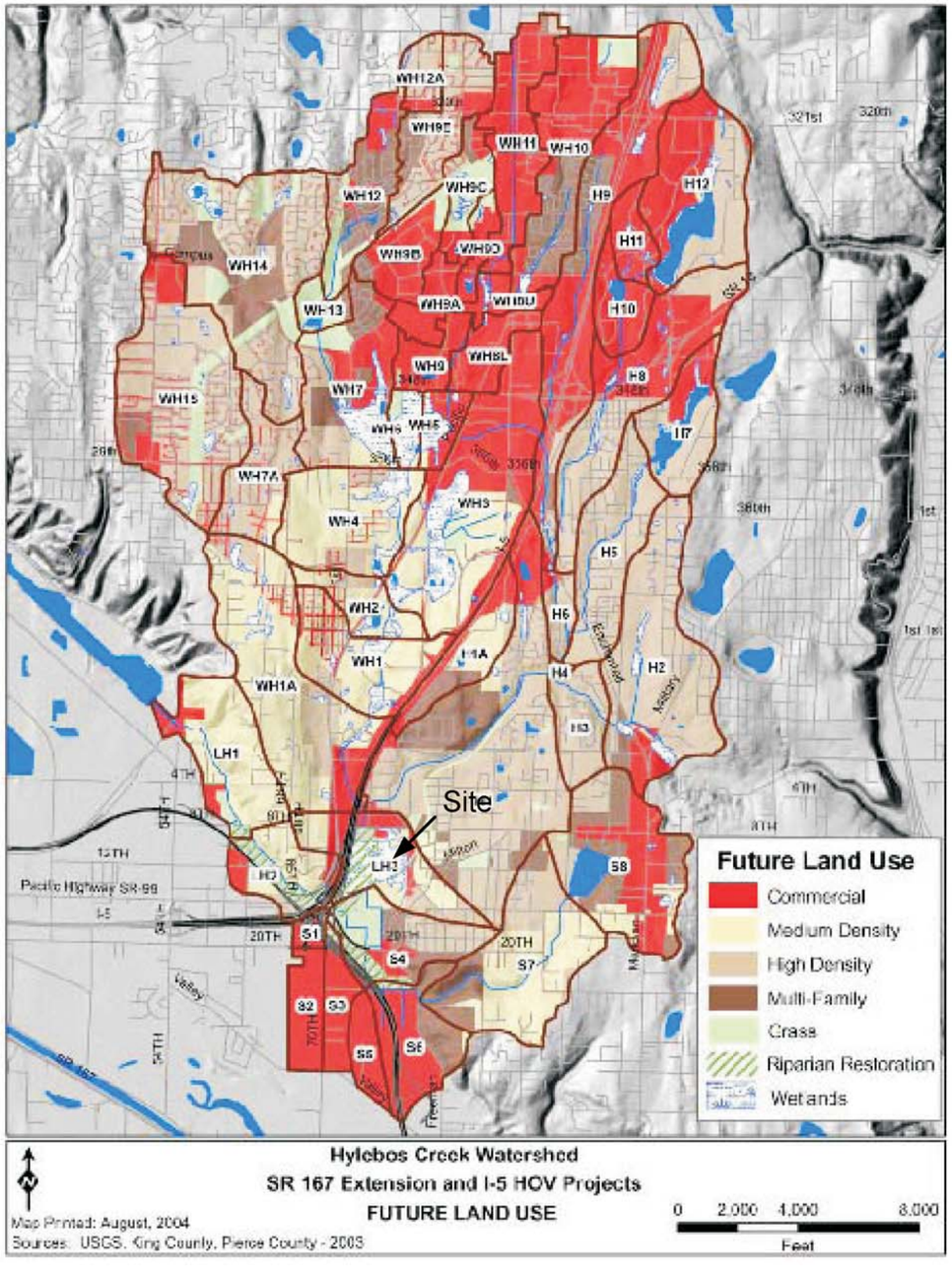
DATE: 01/08/07 09:49am

01/10 2007 Ecology Preliminary Review Draft





Source: Analysis of the SR 167 Extension and Riparian Restoration Proposal in the Hylebos Watershed Hydrology, Hydraulics and Geomorphology. MGS Engineering Consultants, Inc., Montgomery Water Group, Inc., GeoEngineers, and Kirsty Burt Geographic Information Services. November 2004.

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Current and Projected Changes in Land Use in Site Vicinity

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Figure 3

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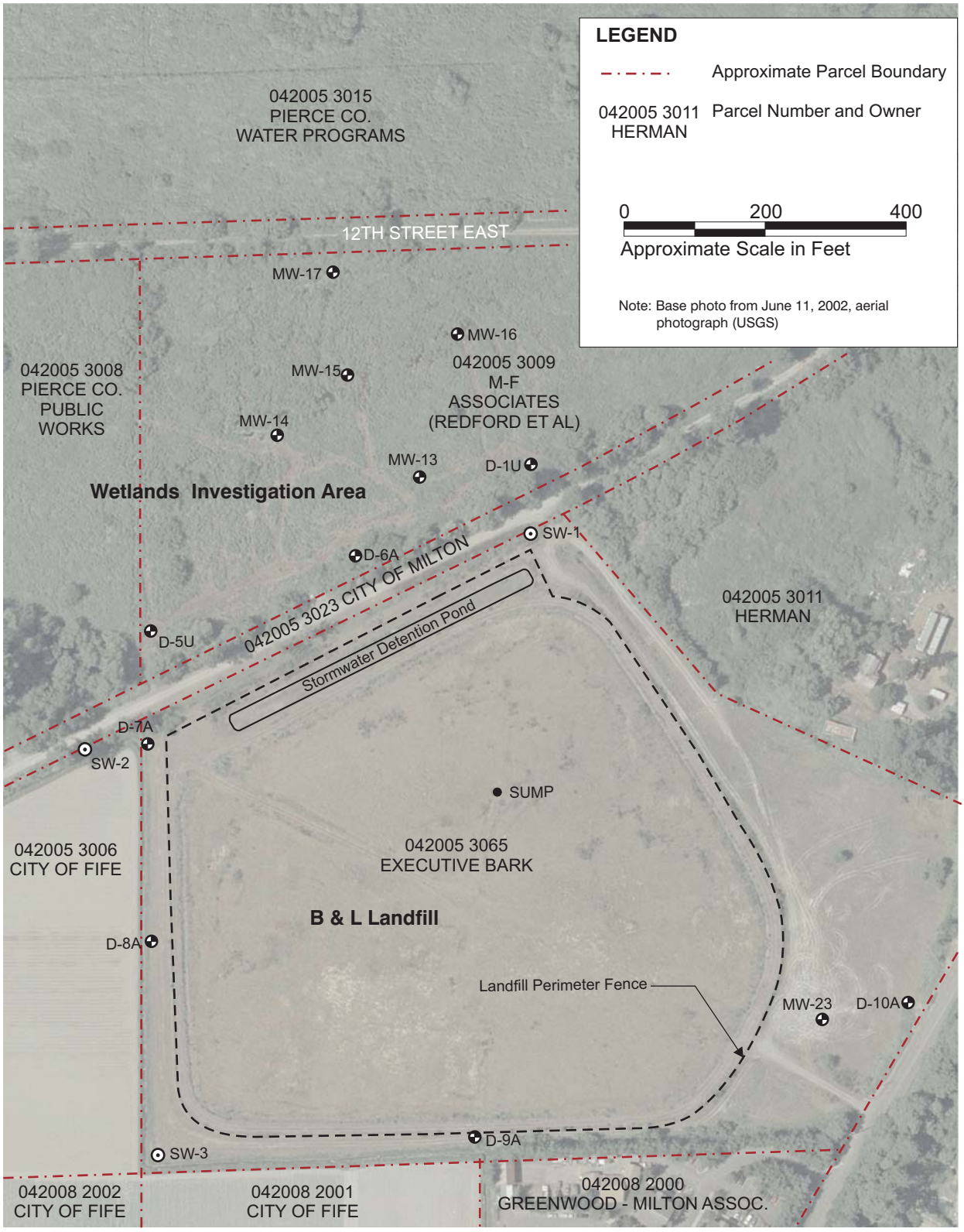

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Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Property Ownership

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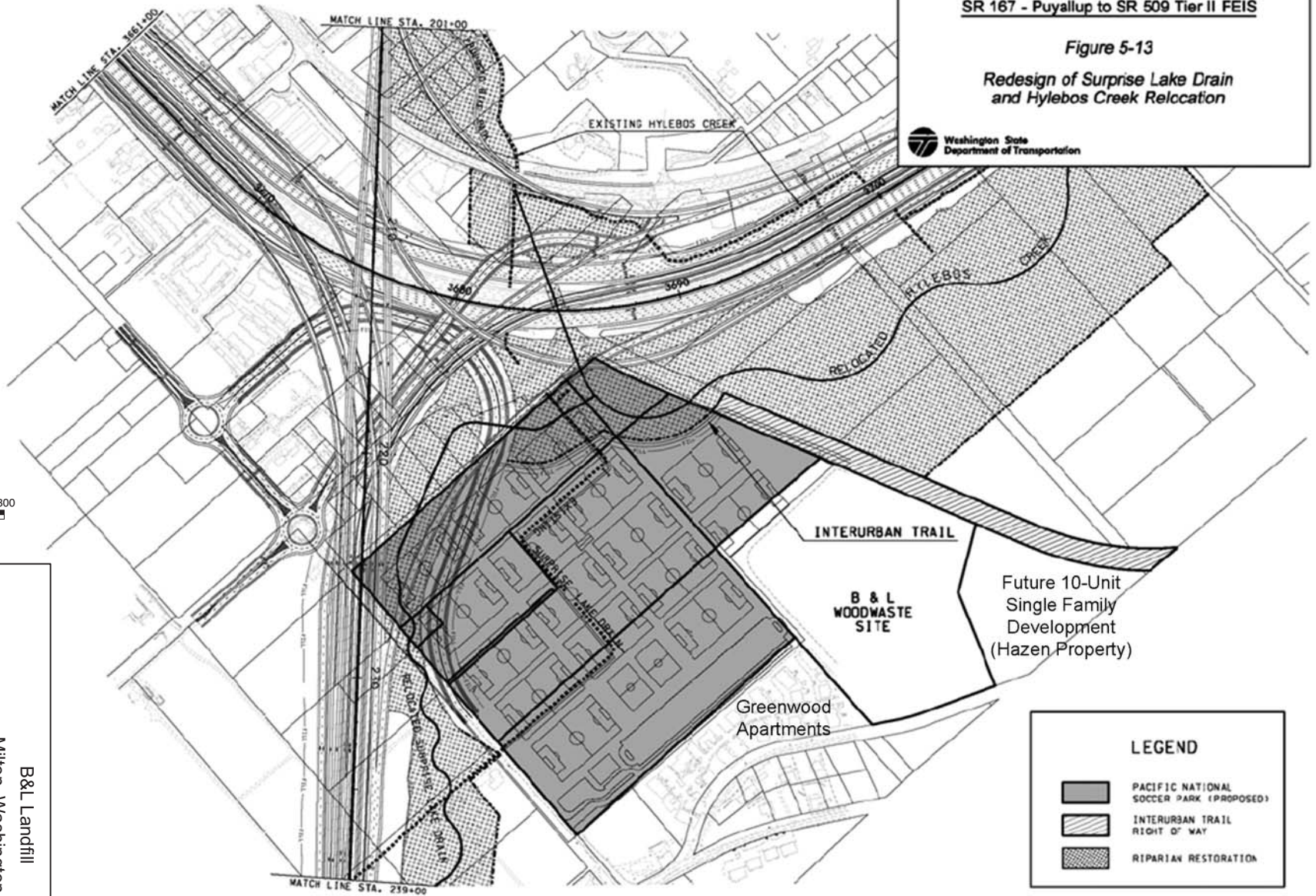
Figure 4

EAL 05/25/07 1733009-AK.cdr

EAL 05/25/07 1733009-AM.cdr



N

0 400 800

Approximate Scale in Feet

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Surrounding Land Use and WSDOT Proposed Relocation of Surprise Lake Drain and Hylebos Creek

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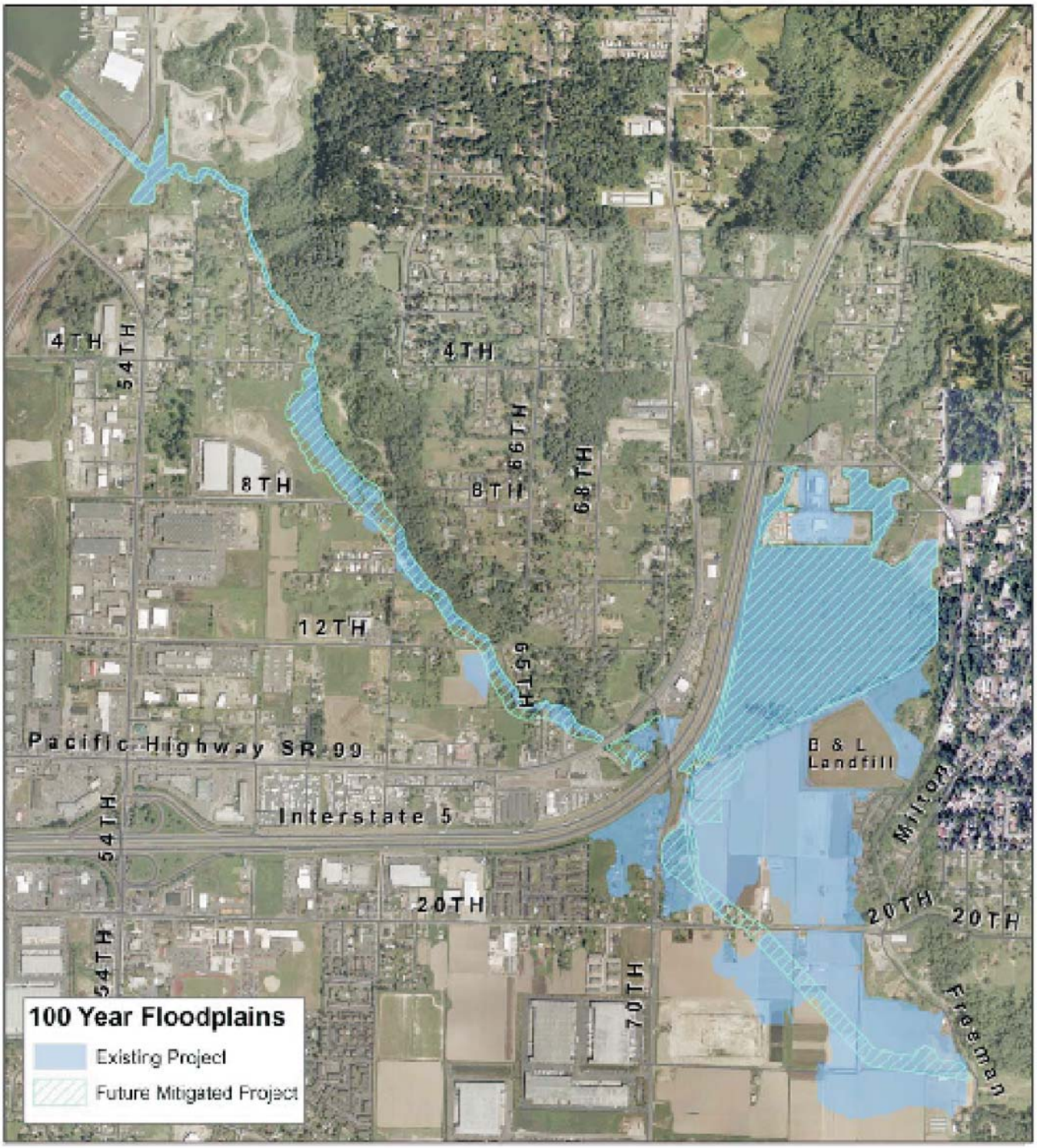
Figure **5**

Source: Tier II Final Environmental Impact Statement and Section 4(f) Evaluation SR 167 Puyallup to SR 509. U.S. Department of Transportation Federal Highway Administration,Washington State Department of Transportation, Army Corps of Engineers, and City of Fife. November 2006.

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.



Source: Analysis of the SR 167 Extension and Riparian Restoration Proposal in the Hylebos Watershed Hydrology, Hydraulics and Geomorphology. MSG Engineering Consultants, Inc., Montgomery Water Group, Inc., GeoEngineers, and Kirsty Burt Geographic Information Services. November 2004.

0 700 1400

Approximate Scale in Feet

N

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WSDOT Existing and Future Mitigated Project for Hylebos Creek 100-Year Floodplain

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Figure

6

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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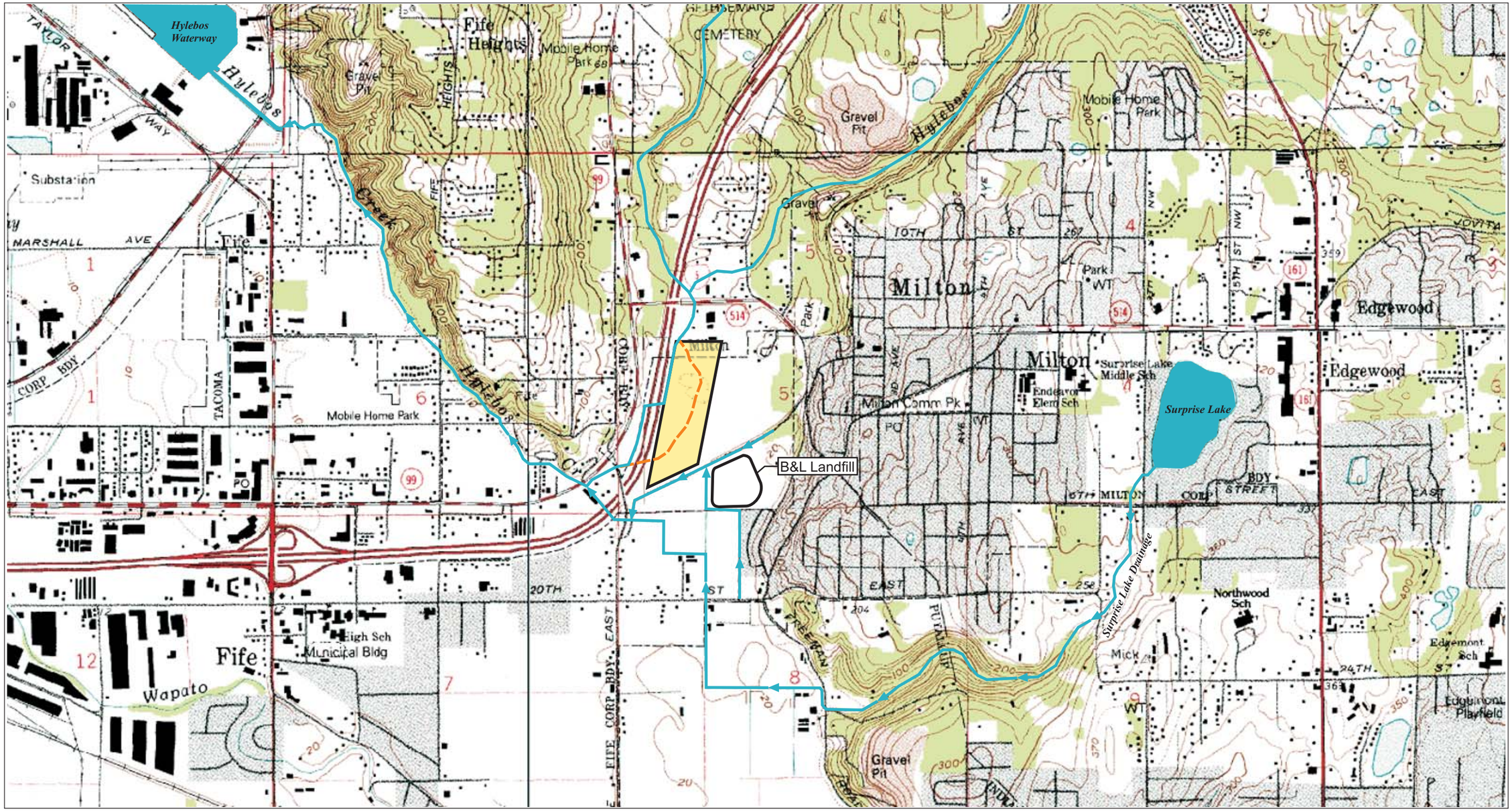

Existing Stream or Surface Water Conveyance

Approximate Location of Proposed Hylebos Creek Relocation Channel

Approximate Location of Proposed Riparian Restoration Area

0 1/4 1/2

Approximate Scale in Feet

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Topography and Drainage Features in Site Vicinity

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Figure 7

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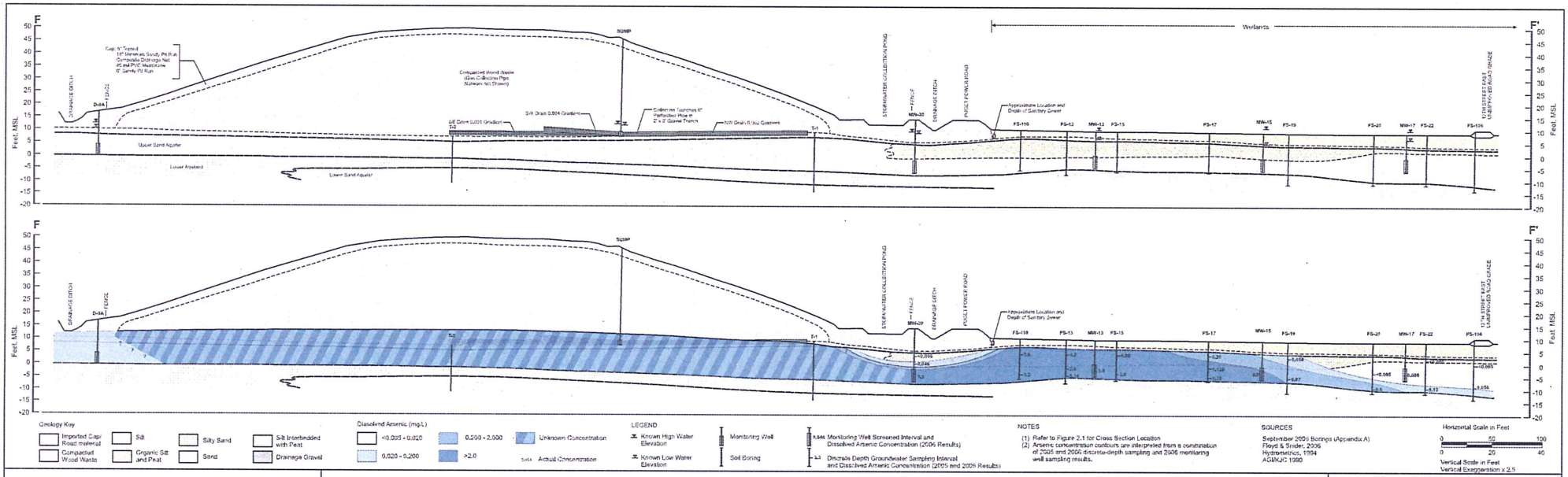

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Figure 8
Cross Section F-F'
Site Hydrostratigraphy and Dissolved Arsenic Concentrations in Groundwater

G:\projects\clients\Weyerhaeuser\B&L groundwater alternatives\Figure 2.1.cdrC

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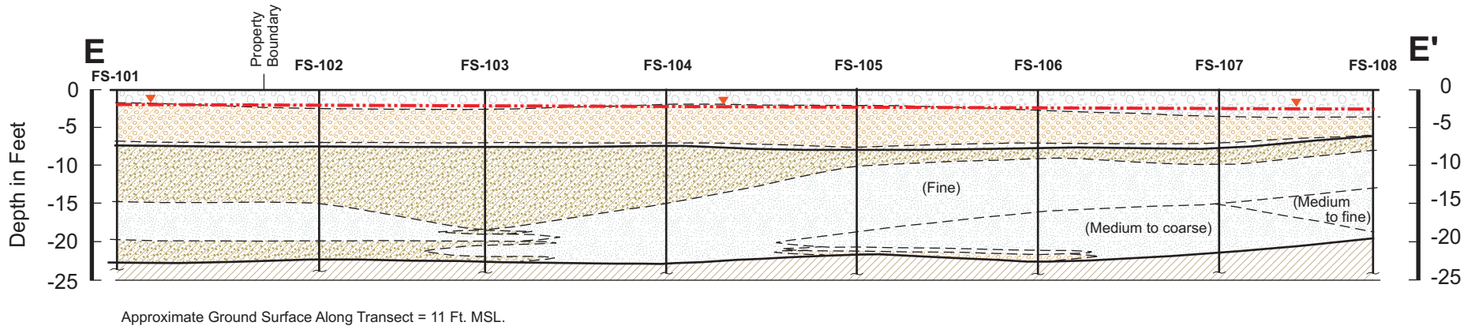
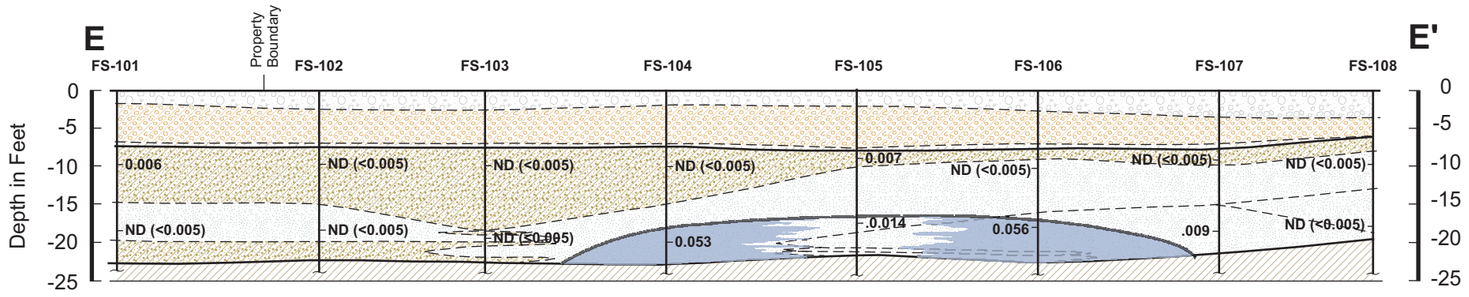


Approximate Ground Surface Along Transect = 11 Ft. MSL.



Geology Key

- Imported Road Material
- Silt
- Organic Silt and Peat
- Silty Sand
- Sand (Grain size)
- Silt Interbedded with Peat

Dissolved Arsenic in mg/L

- <0.005 to 0.020
- 0.020 to 0.200
- 0.200 to 2.000
- >2.0

0.054 Actual Concentration

Approximate Potentiometric Surface Elevation

Notes:
1. Refer to Figure 2 for cross section location.
2. Arsenic concentration contours are interpreted from 2006 discrete-depth sampling results.
3. Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

Horizontal Scale in Feet
0 50 100
0 20 40
Vertical Scale in Feet
Vertical Exaggeration x 2.5

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Cross Section E-E'
Site Hydrostratigraphy and Dissolved Arsenic Concentrations in Groundwater

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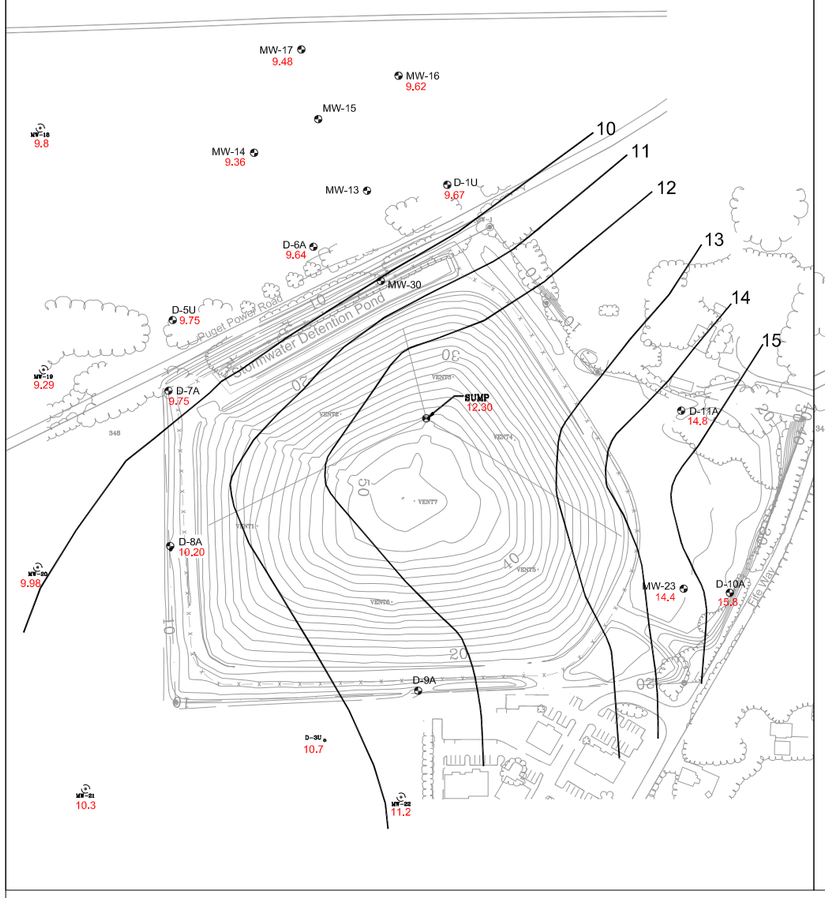
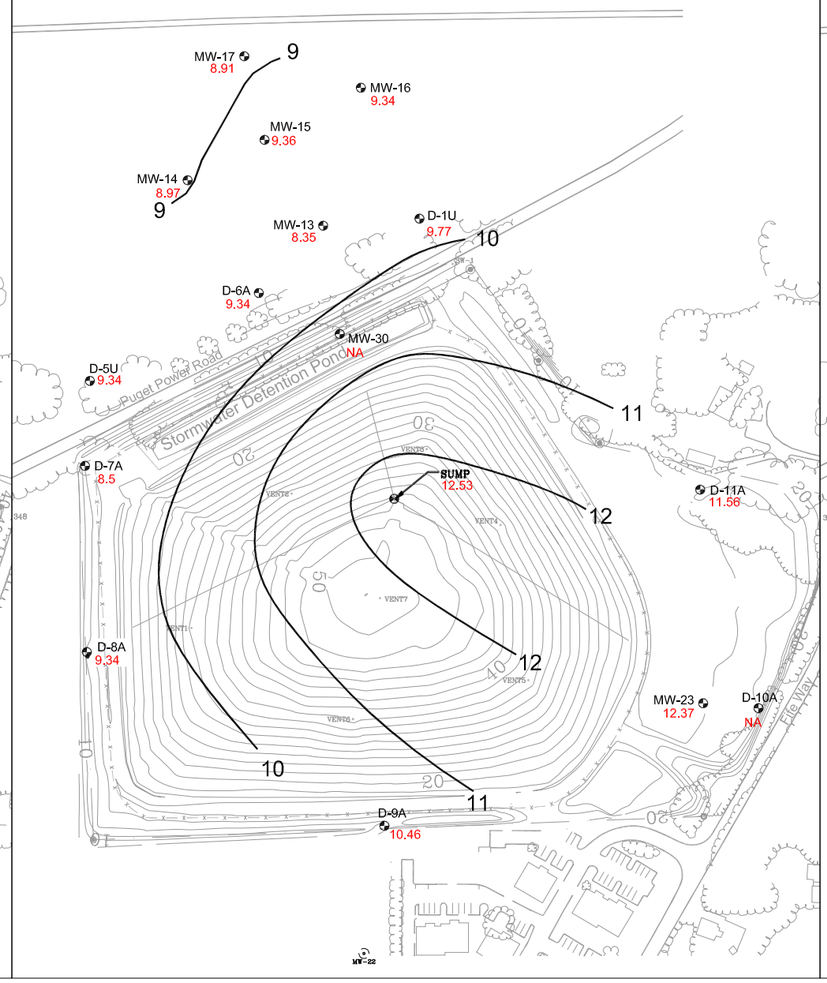
Figure
9

EAL 05/25/07 1733009-AG.cdr

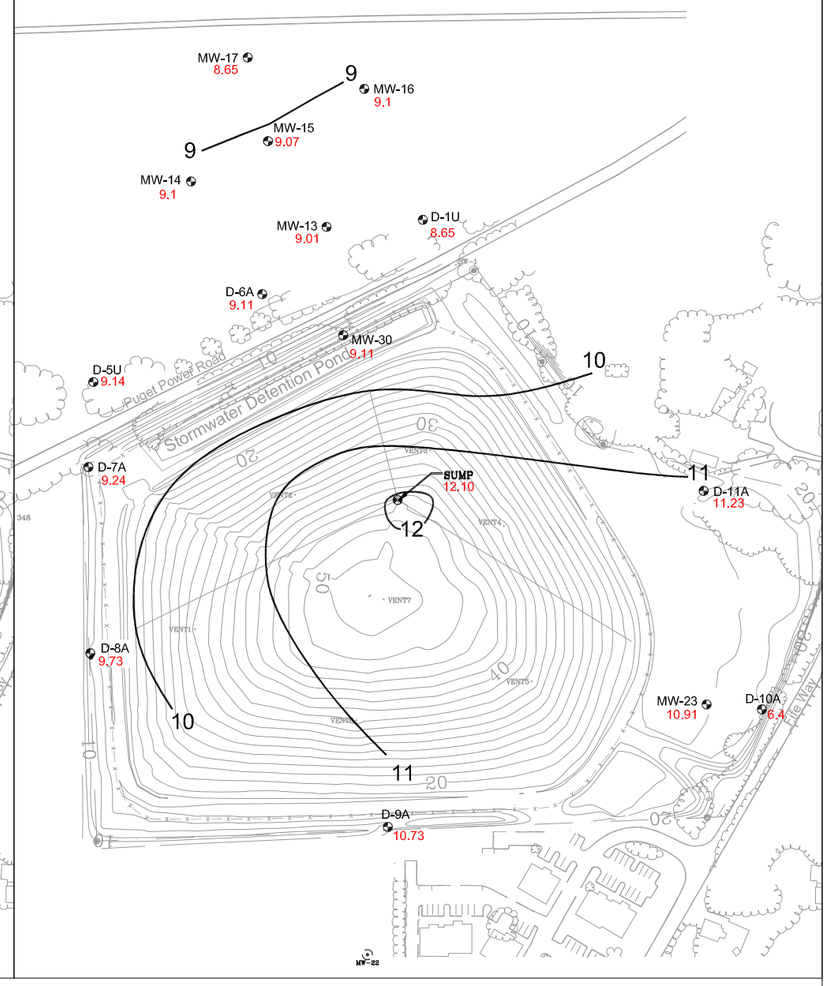
April 2002
(After Hydrometrics 2002)



August 2006



October 3, 2006



0 300 600
Scale in Feet

0 250 500
Scale in Feet

D-8A 9.34 Upper Sand Aquifer Monitoring Well and Groundwater Elevation in Feet (MSL)

10.3 Decommissioned Upper Sand Aquifer Monitoring Well and Groundwater Elevation in Feet (MSL)

— 10 — Potentiometric Elevation Contour in Feet (MSL)

N

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Potentiometric Surfaces in Upper Sand Aquifer

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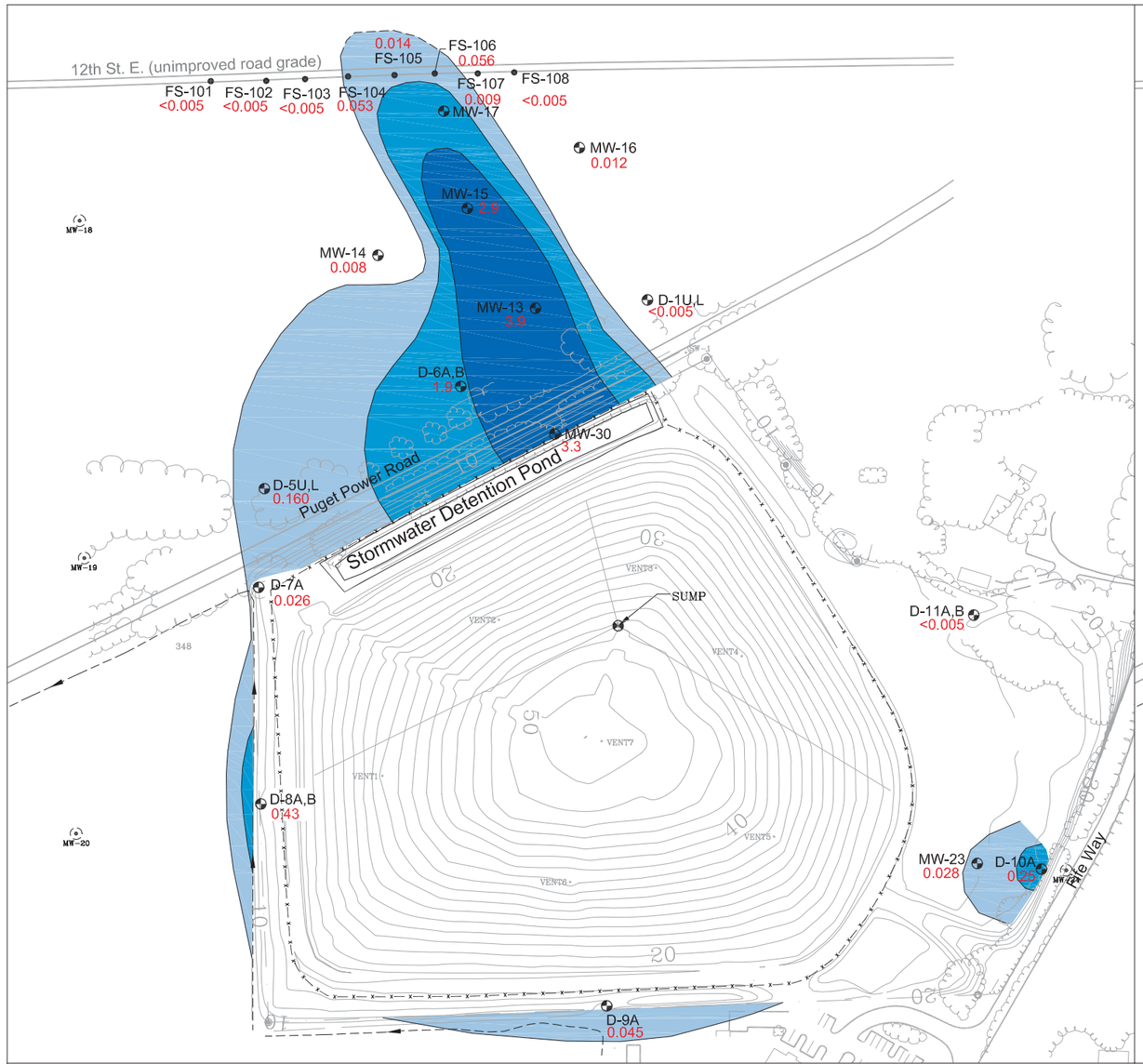
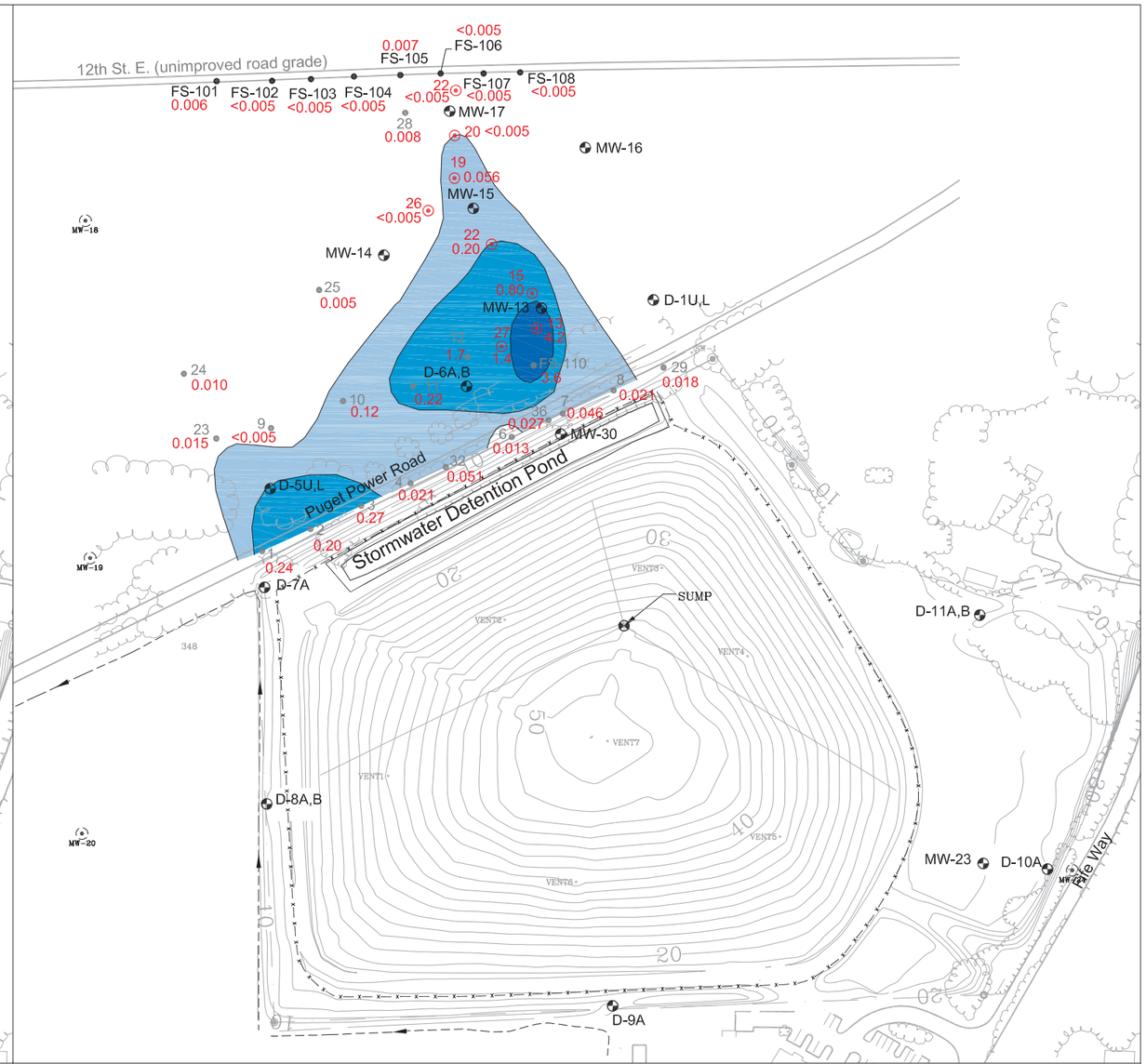
Figure 10

EAL 05/25/07 1733009-006.dwg





- FS-102 Geoprobe Groundwater Sampling Location, Sept. 2006
- MW-15 Shallow Aquifer Monitoring Well
- Decommissioned Shallow Aquifer Monitoring Well
- Sump Monitoring Well
- 1 Geoprobe Groundwater Sampling Location, Aug-Oct. 2005 ("FS" prefix omitted for clarity)
- 15 Geoprobe Groundwater Sampling and Temporary Piezometer Location
- 14 Temporary Piezometer Location

Dissolved Arsenic in mg/L

- <0.005 to 0.020
- 0.020 to 0.200
- 0.200 to 2.000
- > 2.0
- 0.023 Actual Concentration in mg/L

Notes:

1. Contours based on August 2006 sampling of monitoring wells with screened intervals in the bottom 5' of the Shallow Aquifer.
2. Results from MW-17 were excluded because MW-17 is screened above this interval.
3. Only Sept. 2006 discrete-depth probe groundwater samples from the deeper interval (16-20' to 19-23') at the base of the Upper Sand Aquifer are shown.

N

0 200 400

Scale in Feet

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Extent of Dissolved Arsenic in the Upper Sand Aquifer

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Figure 11

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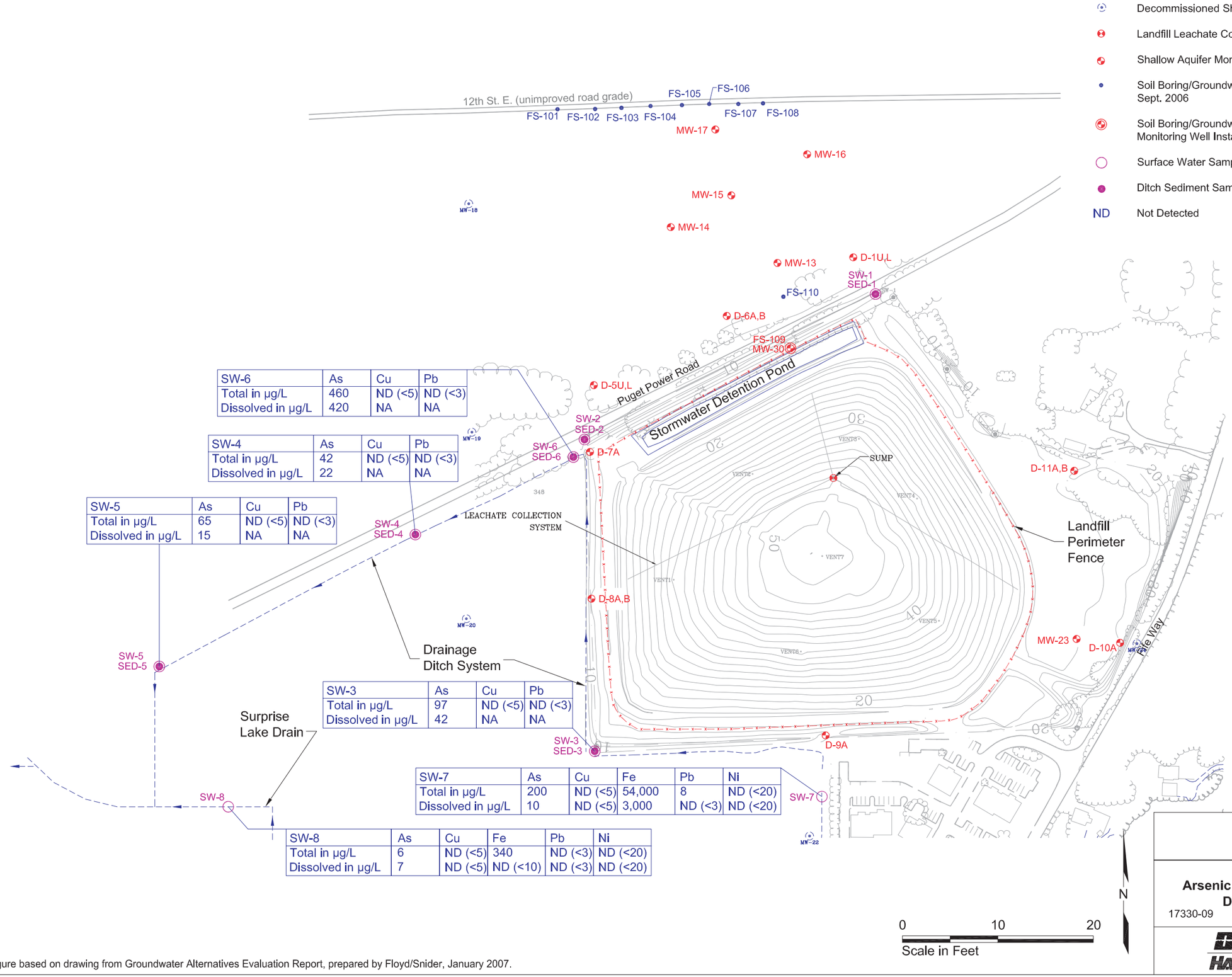

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Arsenic Concentrations along Agricultural Ditch System - Surface Water

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Figure 12

EAL 05/25/07 1733009-004.dwg

- Decommissioned Shallow Aquifer Monitoring Well
- Landfill Leachate Collection Sump
- Shallow Aquifer Monitoring Well
- Soil Boring/Groundwater Sampling Location, Sept. 2006
- Soil Boring/Groundwater Sampling Location with Monitoring Well Installed Sept. 2006
- Surface Water Sampling Location , August 2006
- Ditch Sediment Sampling Location, August 2006
- ND Not Detected

12th St. E. (unimproved road grade)

FS-101 FS-102 FS-103 FS-104 FS-105 FS-106 FS-107 FS-108

MW-17 MW-16 MW-15 MW-14 MW-18 MW-19 MW-20 MW-22 MW-13 MW-23

D-1U,L D-6A,B D-5U,L D-7A D-8A,B D-9A D-10A D-11A,B

FS-110 FS-109 MW-30

SW-1 SED-1 SW-2 SED-2 SW-3 SED-3 SW-4 SED-4 SW-5 SED-5 SW-6 SED-6 SW-7 SW-8

Puget Power Road

Stormwater Detention Pond

SUMP

LEACHATE COLLECTION SYSTEM

Drainage Ditch System

Surprise Lake Drain

Landfill Perimeter Fence

Pike Way

SED-2	Conc. in mg/kg		
Depth	As	Cu	Pb
0-2"	66	44	ND (<7.7)
2-6"	13	23	ND (<4.3)
6-12"	ND (<6)	12	ND (<3.8)

SED-1	Conc. in mg/kg		
Depth	As	Cu	Pb
0-2"	6	21	6.1
2-6"	ND (<6)	16	ND (<4.3)
6-12"	ND (<6)	15	ND (<4.1)

SED-6	Conc. in mg/kg			
Depth	As	Cu	Pb	Ni
0-2"	800	13	8.0	5.0
2-6"	220	47	14	17
6-12"	61	32	6.5	17

SED-4	Conc. in mg/kg			
Depth	As	Cu	Pb	Ni
0-2"	22	27	ND (<6.2)	17
2-12"	ND (<2.6)	17	ND (<2.6)	20

SED-5	Conc. in mg/kg			
Depth	As	Cu	Pb	Ni
0-2"	35	34	ND (<4.5)	17
2-12"	ND (<3.5)	13	ND (<3.5)	10

SED-3	Conc. in mg/kg			
Depth	As	Cu	Pb	Ni
0-2"	700	20	23	7.9
2-6"	77	26	10	11
6-12"	13	29	9.6	11

N

0 200 400

Scale in Feet

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Arsenic Concentrations along Agricultural Ditch System - Sediments

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Figure 13

Decommissioned Shallow Aquifer Monitoring Well

Landfill Leachate Collection Sump

Shallow Aquifer Monitoring Well

Soil Boring/Groundwater Sampling Location, Sept. 2006

Soil Boring/Groundwater Sampling Location with Monitoring Well Installed Sept. 2006

Surface Water Sampling Location , August 2006

Ditch Sediment Sampling Location, August 2006

E E' Geologic Cross Section Location and Designation

End of Plume CAA

Wetland CAA

Landfill CAA

12th St. E. (unimproved road grade)

E

E'

F

F'

FS-101 FS-102 FS-103 FS-104 FS-105 FS-106 FS-107 FS-108 FS-109 FS-110

MW-13 MW-14 MW-15 MW-16 MW-17 MW-18 MW-19 MW-20 MW-21 MW-22 MW-23 MW-30

D-1U,L D-5U,L D-6A,B D-7A D-8A,B D-9A D-10A D-11A,B

SW-1 SED-1

SW-2 SED-2

SW-3 SED-3

SW-4 SED-4

SW-5 SED-5

SW-6 SED-6

SW-7

SW-8

Puget Power Road

Stormwater Detention Pond

LEACHATE COLLECTION SYSTEM

SUMP

Drainage Ditch System

Surprise Lake Drain

Landfill Perimeter Fence

Pine Way

VENT1 VENT2 VENT3 VENT4 VENT5 VENT6 VENT7

348

0 200 400

Scale in Feet

N

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Cleanup Action Areas

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Figure 14

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PRIMARY SOURCE

PRIMARY RELEASE MECHANISM

SECONDARY RELEASE MECHANISMS AND POTENTIALLY AFFECTED ENVIRONMENTAL MEDIA

LANDFILL AREA

WETLANDS AND PERIMETER DITCHES

END OF PLUME AREA

OFF SITE

EXPOSURE ROUTES

POTENTIAL RECEPTORS

Human: Recreational Trespasser; Water Supply User; Recreational Fisherman; Tribal Fisherman

Ecological: Terrestrial (wetlands); Aquatic

LANDFILL WASTE

Methane Production from Wood Waste

Landfill Gas (Methane)

Passive Gas Collection System

Measurable landfill gas production has stopped.

Groundwater Leaching of Refuse

Arsenic-Contaminated Groundwater

Partitioning

Soils beneath Landfill in Upper Sand Aquifer

Direct Release of Refuse

Landfill Cap

Landfill Storm Water Controls

Stormwater Leaching of Refuse

Soil

Shallow Wetlands Soil

Deeper Aquifer Soils

No Exposures Exist

Partitioning

Groundwater

Base of Aquifer

Top of Aquifer

Ponded Surface Water in Wetlands

Ditch Surface Water

Partitioning

Ditch Sediments

Groundwater

Potential Future Drinking Water Well

Groundwater pathway to Hylebos Creek is not currently complete.

Surface water pathway to Hylebos Creek is not currently complete.

Hylebos Creek

DIRECT CONTACT

INGESTION

Assumes future drinking water source 1000 ft from landfill in the Upper Sand Aquifer.

DIRECT CONTACT

Assumes protection of wetlands plants in upper aquifer.

DIRECT CONTACT

Assumes recreational trespass scenario for humans.

INGESTION OF FISH

DIRECT CONTACT

DIRECT CONTACT

Assumes recreational trespass scenario for humans.

DIRECT CONTACT

Assumes recreational trespass scenario for humans.

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Conceptual Model of Potential Exposure Pathways and Receptors

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Figure 15

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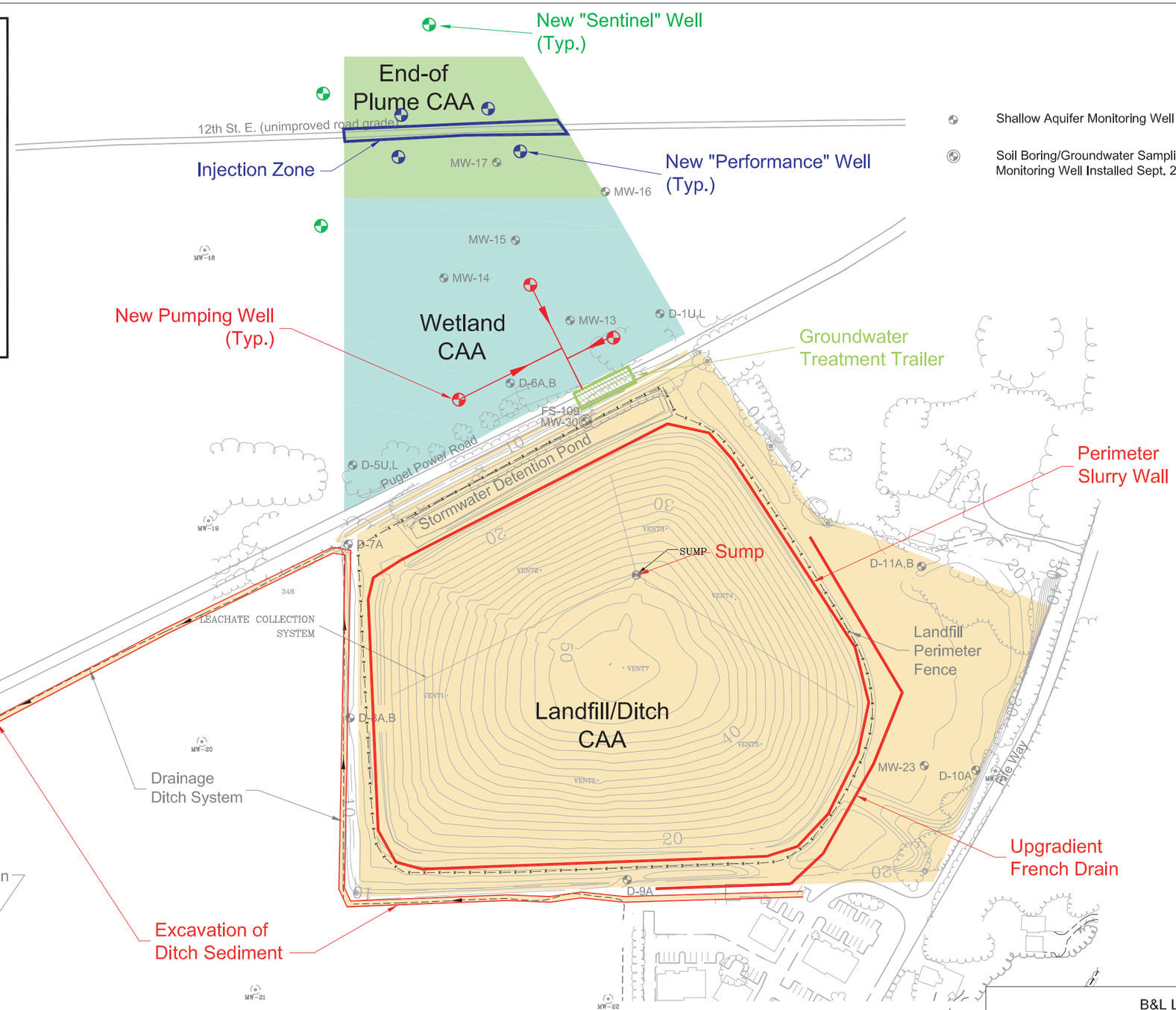
REMEDY COMPONENTS

LANDFILL/DITCH CAA:
- Slurry Wall
- French Drain
- Pumping of Central Sump (if necessary)
- Excavation of Ditch Sediments
- Removal of Water from Within the Slurry Wall

WETLANDS CAA:
- Pump and Treat
- Monitored Natural Attenuation

END OF PLUME CAA:
- Enhanced Monitored Natural Attenuation (Injection Zone, New Sentinel and Performance Wells)
- *In Situ* Sequestration



Shallow Aquifer Monitoring Well

Soil Boring/Groundwater Sampling Location with Monitoring Well Installed Sept. 2006

Note: Figure based on drawing from Groundwater Alternatives Evaluation Report, prepared by Floyd/Snider, January 2007.

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Preferred Remedy Components

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Figure **16**

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