Site Inspection Report
Lower Duwamish River (RK 2.5 to 11.5)
Seattle, Washington

Volume 2—Map Folio

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Duwamish River SI: Reach A Surface Sediment Sampling Locations

Map 3-1a

SCALE 1:6000

100 0 100 200 300 400

Feet

Symbol Explanation

Duwamish Waterway

PORT OF SEATTLE TERMINAL 105

LIPSETT COMPANY LLC

BIRMINGHAM STEEL

BIRMINGHAM STEEL

SEATTLE PARKS

PACCAR

SEATTLE PARKS

PORT OF SEATTLE

PORT OF SEATTLE TERMINAL 108

FEDERAL CENTER SOUTH (GSA)

PORT OF SEATTLE TERMINAL 107

KING COUNTY (SLIP 1)

KING COUNTY (MANSON LEASE)

HOLNAM INC

KING COUNTY (UTILITIES WAREHOUSE LEAS

KING COUNTY (NORTHWESTERN GLASS LEASE)

ALASKA MARINE LINES INC

DUWAMISH SHIPYARD INC

BALL-FOSTER GLASS CONTAINER

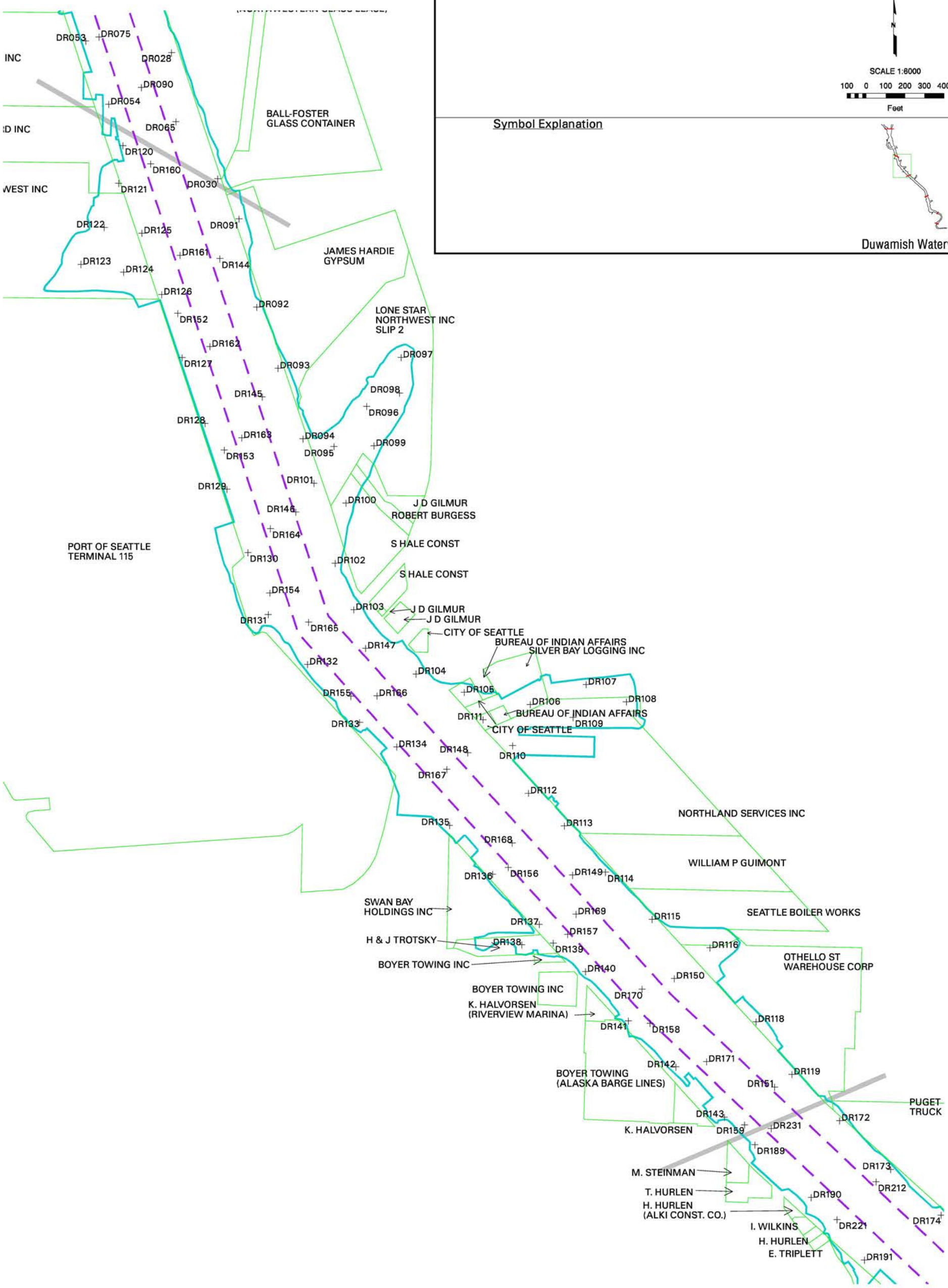
LONE STAR NORTHWEST INC

JAMES HARDIE GYPSUM

DR001 DR002 DR003 DR004 DR005 DR006 DR007 DR008 DR009 DR010 DR011 DR012 DR013 DR014 DR015 DR016 DR017 DR018 DR019 DR020 DR021 DR022 DR023 DR024 DR025 DR026 DR027 DR028 DR030 DR031 DR032 DR033 DR034 DR035 DR036 DR037 DR038 DR039 DR040 DR041 DR042 DR043 DR044 DR045 DR046 DR047 DR048 DR049 DR050 DR051 DR052 DR053 DR054 DR055 DR056 DR057 DR058 DR059 DR060 DR061 DR062 DR063 DR064 DR065 DR066 DR067 DR068 DR069 DR070 DR071 DR072 DR073 DR074 DR075 DR076 DR077 DR078 DR079 DR080 DR081 DR082 DR083 DR084 DR085 DR086 DR087 DR088 DR089 DR090 DR091 DR120 DR121 DR122 DR123 DR124 DR125 DR144 DR160 DR161

Duwamish River SI: Reach B Surface Sediment Sampling Locations

Map 3-1b



Duwamish River SI: Reach C Surface Sediment Sampling Locations

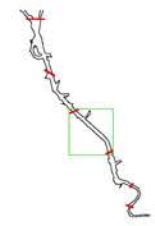
Map 3-1c

SCALE 1:6000

100 0 100 200 300 400

Feet

Symbol Explanation



Duwamish Waterway

DR118
DR119
DR151
DR231
DR189
DR172
DR173
DR212
DR190
DR221
DR174
DR191
DR175
DR213
DR192
DR222
DR232
DR193
DR194
DR223
DR195
DR224
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DR214
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DR234
DR218
DR184
DR185
DR219
DR186
DR235
DR187
DR220
DR188
DR236

CROWLEY MARINE SE

PUGET SOUND TRUCK LINES INC

SEATTLE CITY LIGHT

SEATTLE PARKS

PACIFIC TERMINALS INC

I. WILKINS
H. HURLEN
E. TRIPLETT

H. HURLEN CONSTRUCTION CO.

P. LUKAS

P. LUKAS
METRO

SILVER BAY LOGGING INC MARINE DIVISION

W. CARRIEL

KING COUNTY
CITY OF SEATTLE
PORT OF SEATTLE

A. LONG

G & A CHILDERS
T & A LONG
A. LONG

T. STONE
S. TEMPLETON
J D MARDEN
E. HALVORSEN
D. SLEMKO
HMH L.L.C
C. MOBERG

SOUTH PARK MARINA

RENN COMPANY INC

SOUTH PARK MARINA

MCW DBA DUWAMISH MANUFACTURING

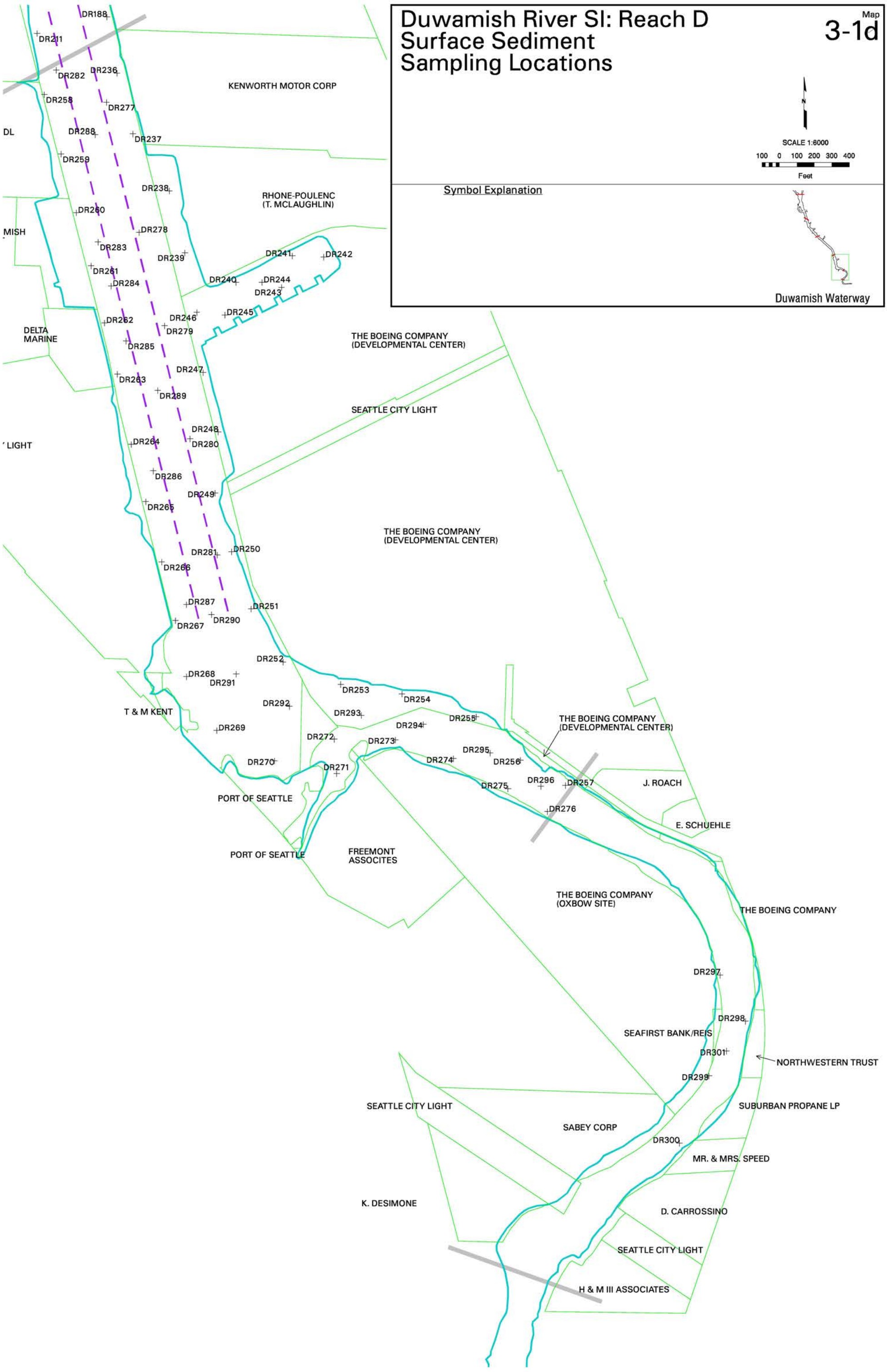
THE BOEING COMPANY (SOUTH PARK)

THE BOEING COMPANY (PLANT 2)

SEA-KING INDL PARK INC

Duwamish River SI: Reach D Surface Sediment Sampling Locations

Map 3-1d



Duwamish River SI: Reach A/B Subsurface Sediment Sampling Locations

Map
3-2a/b

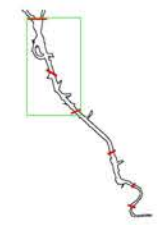
N

SCALE 1:10500

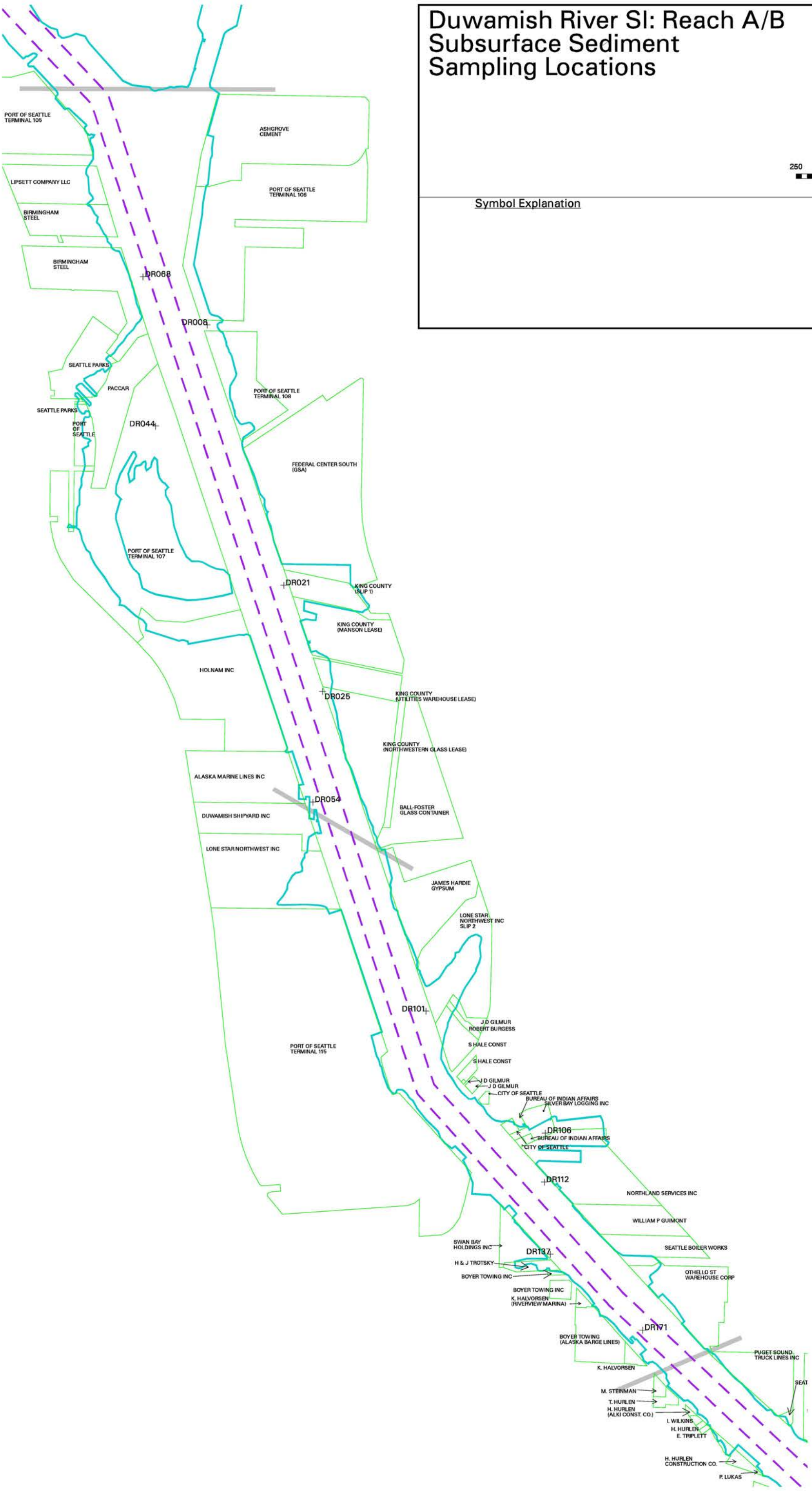
250 0 250 500 750 1000

Feet

Symbol Explanation

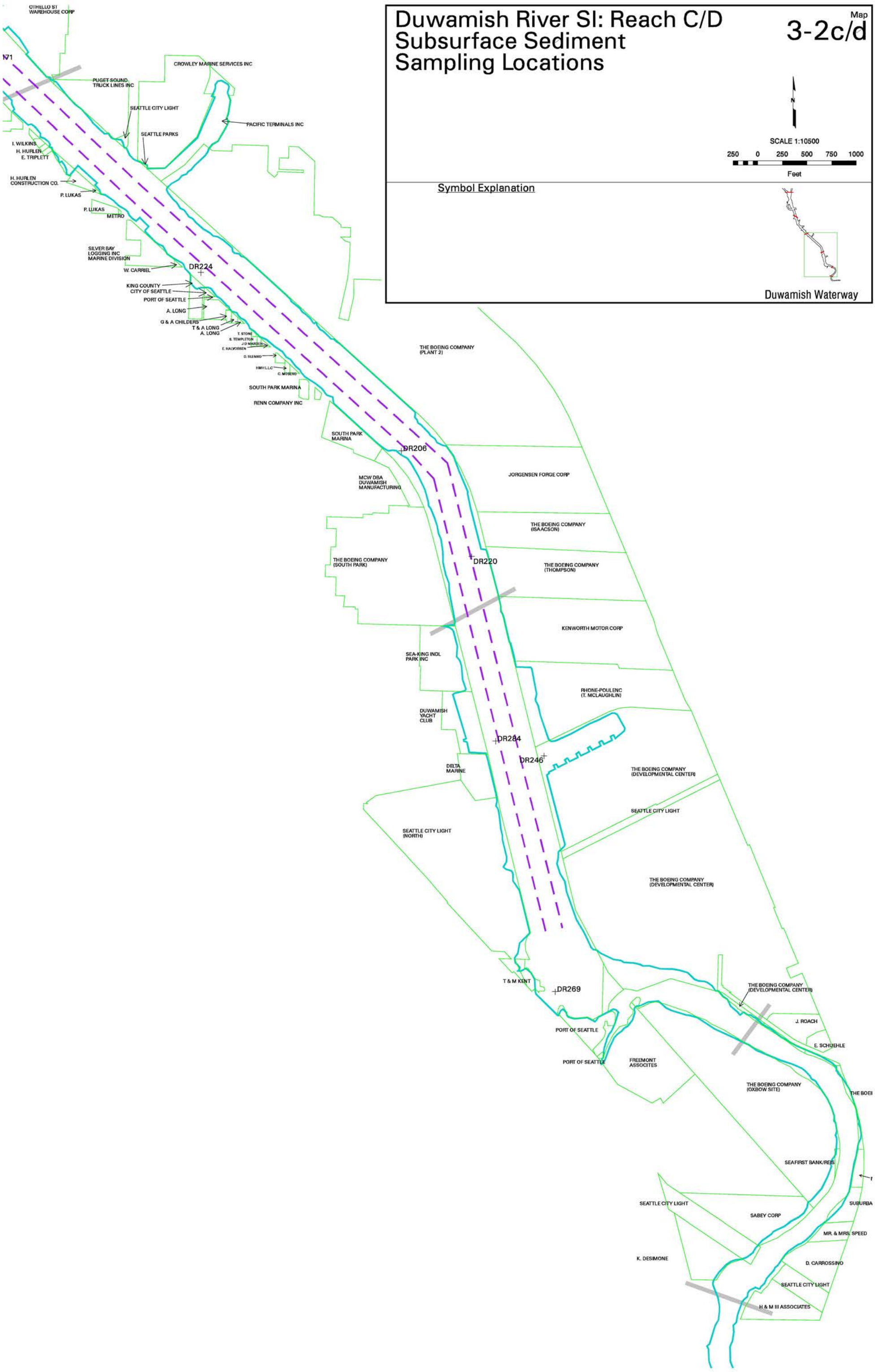


Duwamish Waterway



Duwamish River SI: Reach C/D Subsurface Sediment Sampling Locations

Map 3-2c/d



Duwamish River SI: Reach A/B Surface Sediment Porewater Sampling Locations

Map 3-3a/b

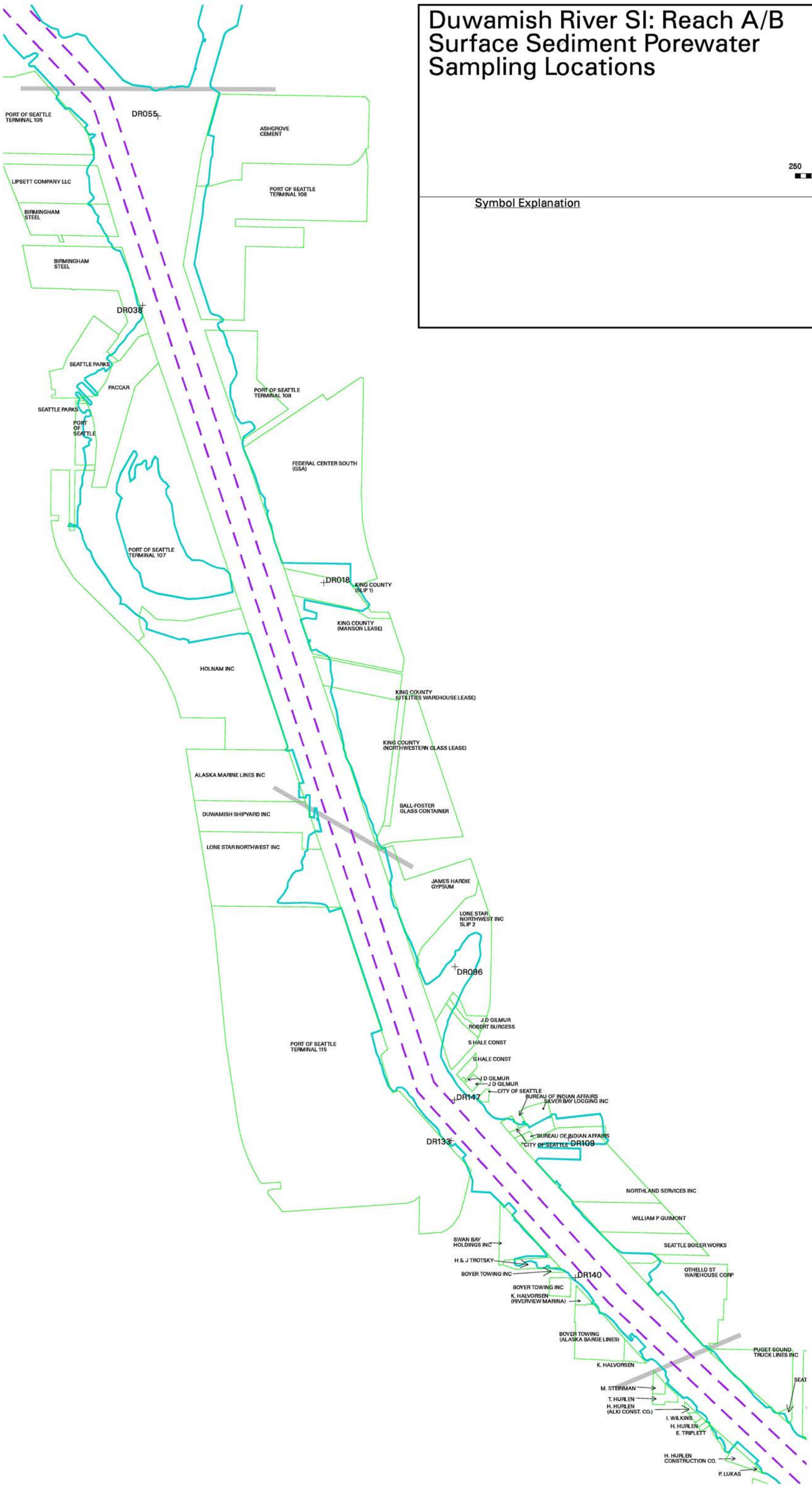
SCALE 1:10500

250 0 250 500 750 1000

Feet

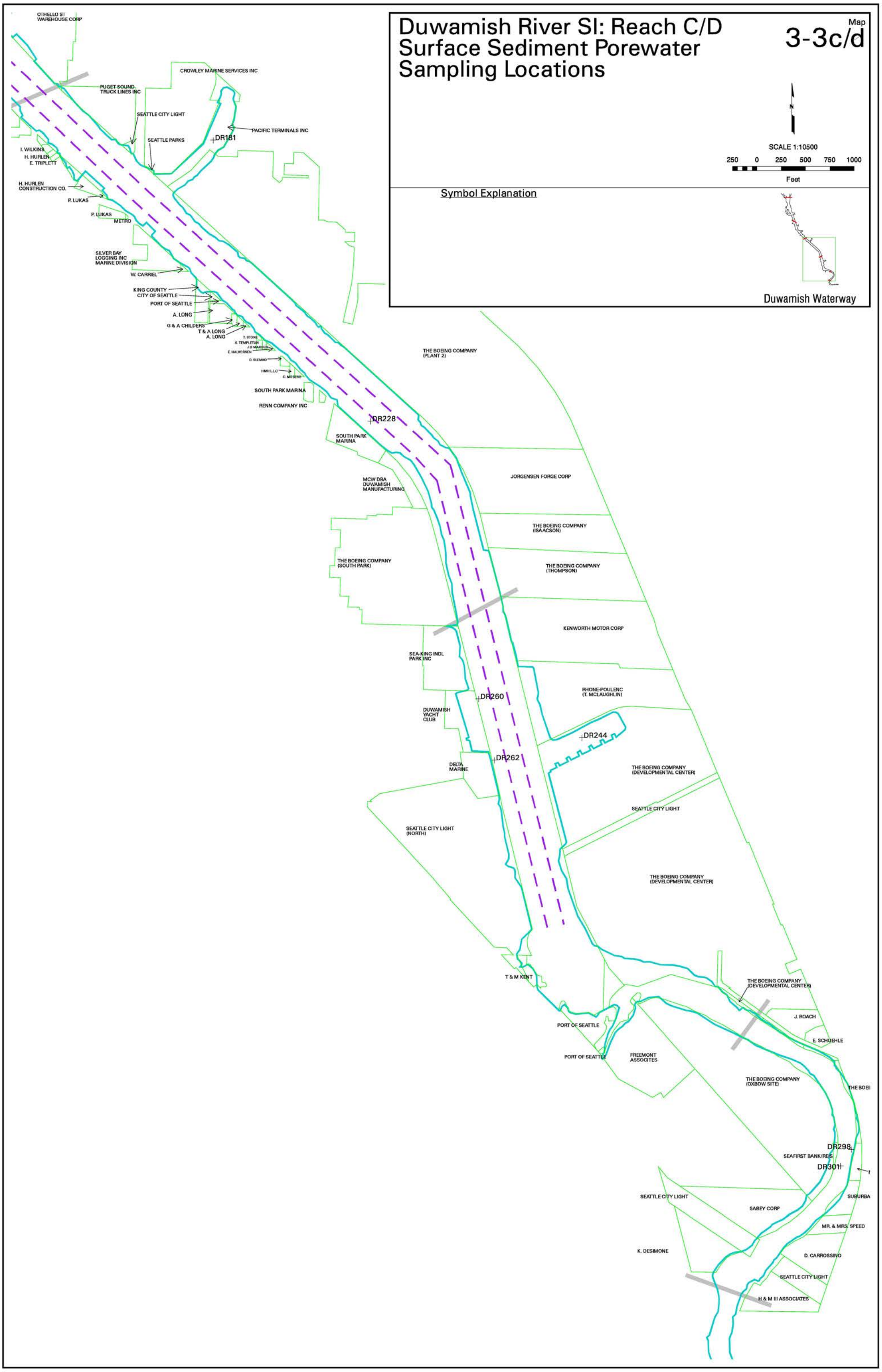
Symbol Explanation

Duwamish Waterway



Duwamish River SI: Reach C/D Surface Sediment Porewater Sampling Locations

Map 3-3c/d



Duwamish River SI: Reach A Surface Sample Location and Analysis Map

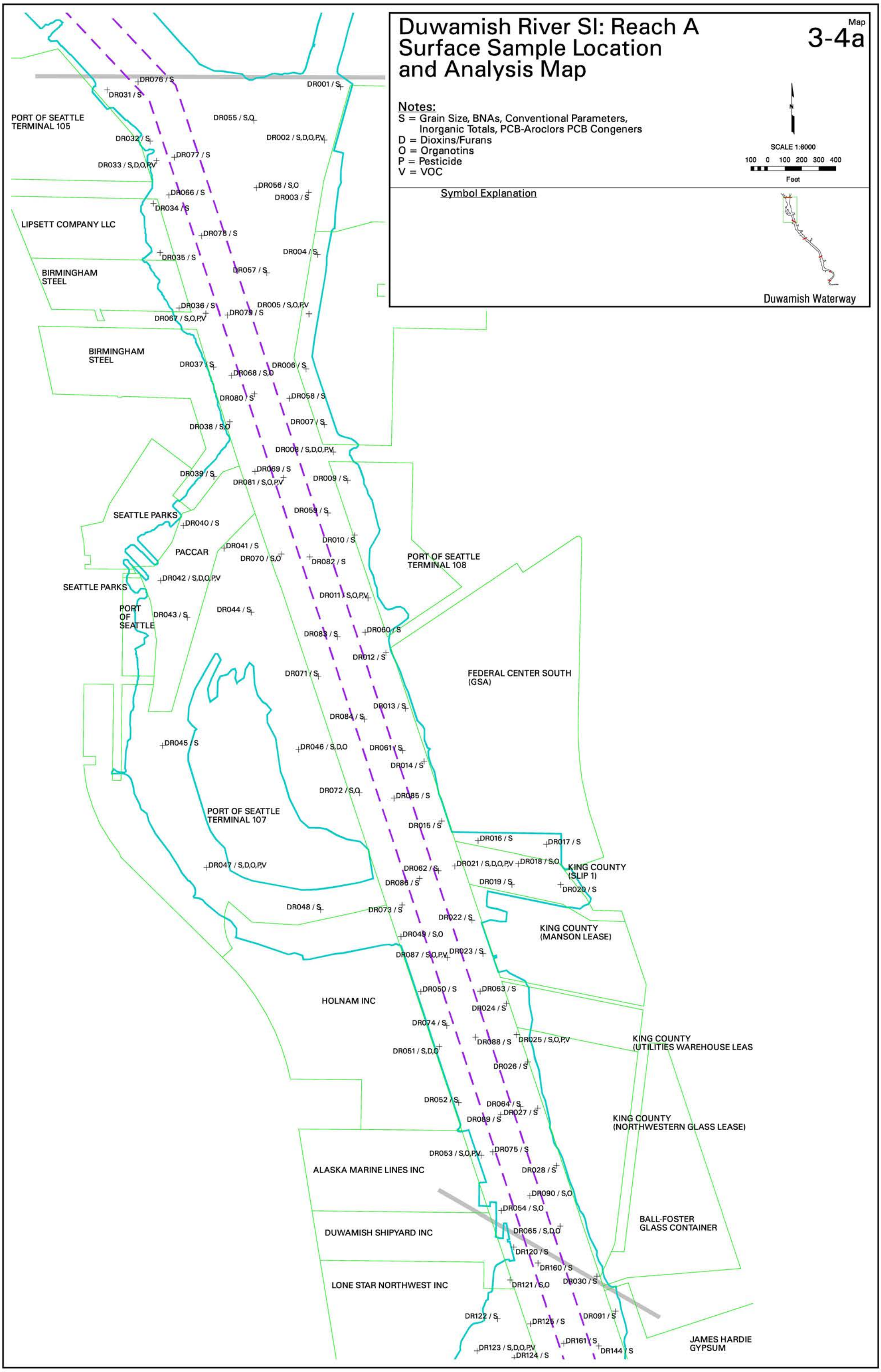
Map 3-4a

Notes:
S = Grain Size, BNAs, Conventional Parameters, Inorganic Totals, PCB-Aroclors PCB Congeners
D = Dioxins/Furans
O = Organotins
P = Pesticide
V = VOC

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Duwamish Waterway



Duwamish River SI: Reach B Surface Sample Location and Analysis Map

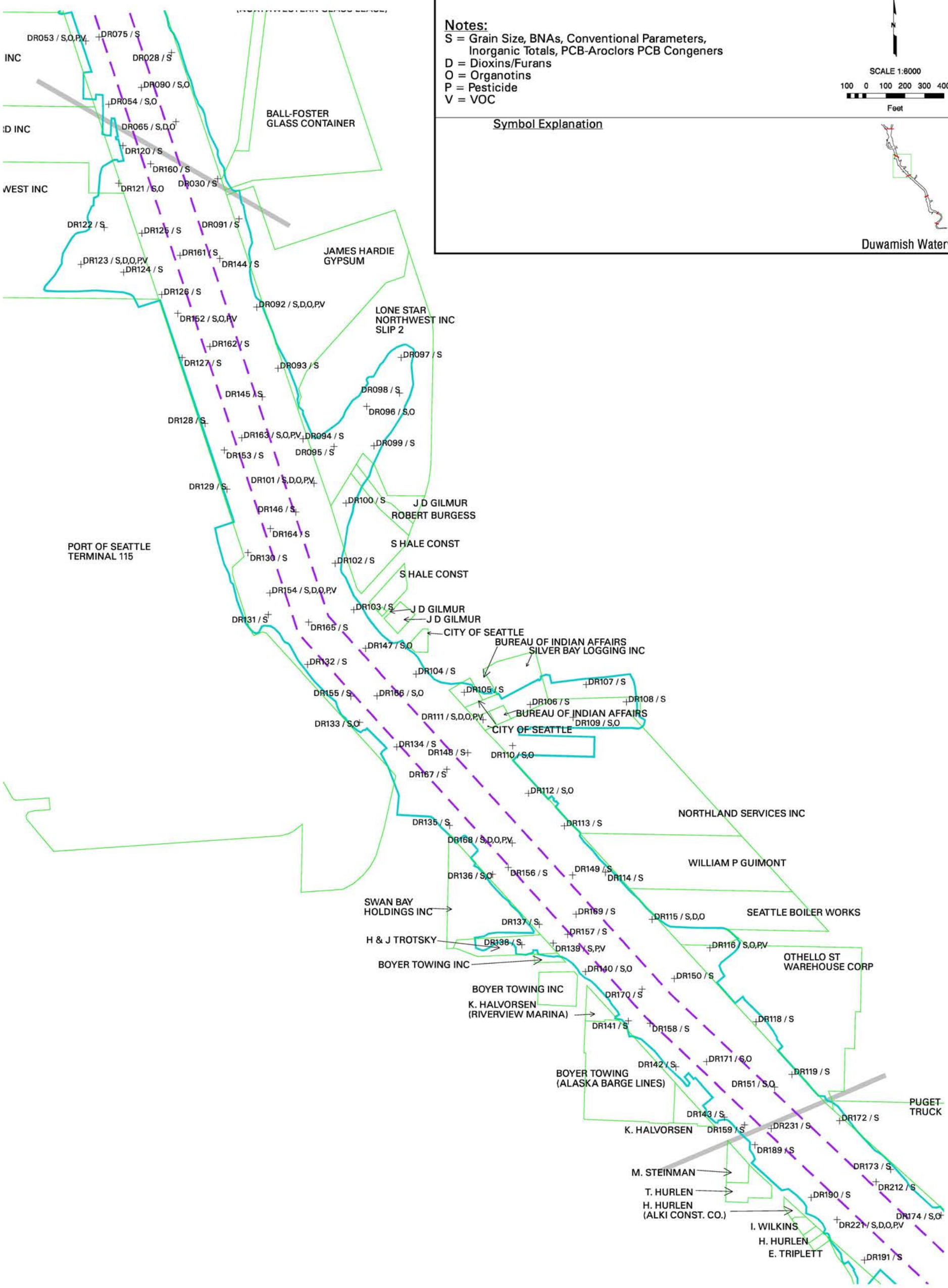
Map 3-4b

Notes:
S = Grain Size, BNAs, Conventional Parameters, Inorganic Totals, PCB-Aroclors PCB Congeners
D = Dioxins/Furans
O = Organotins
P = Pesticide
V = VOC

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Duwamish Waterway



Duwamish River SI: Reach C Surface Sample Location and Analysis Map

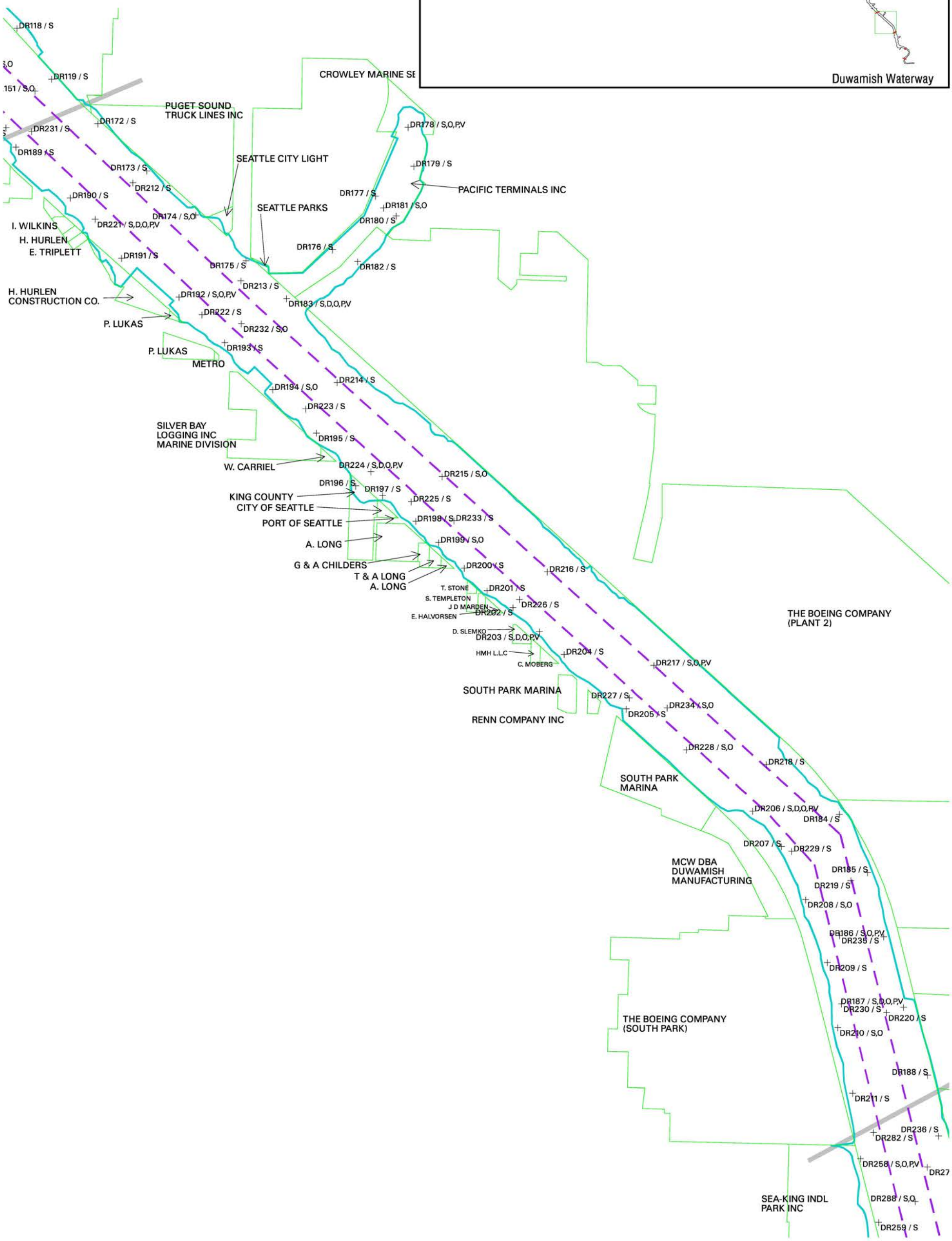
Map 3-4c

Notes:
S = Grain Size, BNAs, Conventional Parameters, Inorganic Totals, PCB-Aroclors PCB Congeners
D = Dioxins/Furans
O = Organotins
P = Pesticide
V = VOC

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Duwamish Waterway



Duwamish River SI: Reach D Surface Sample Location and Analysis Map

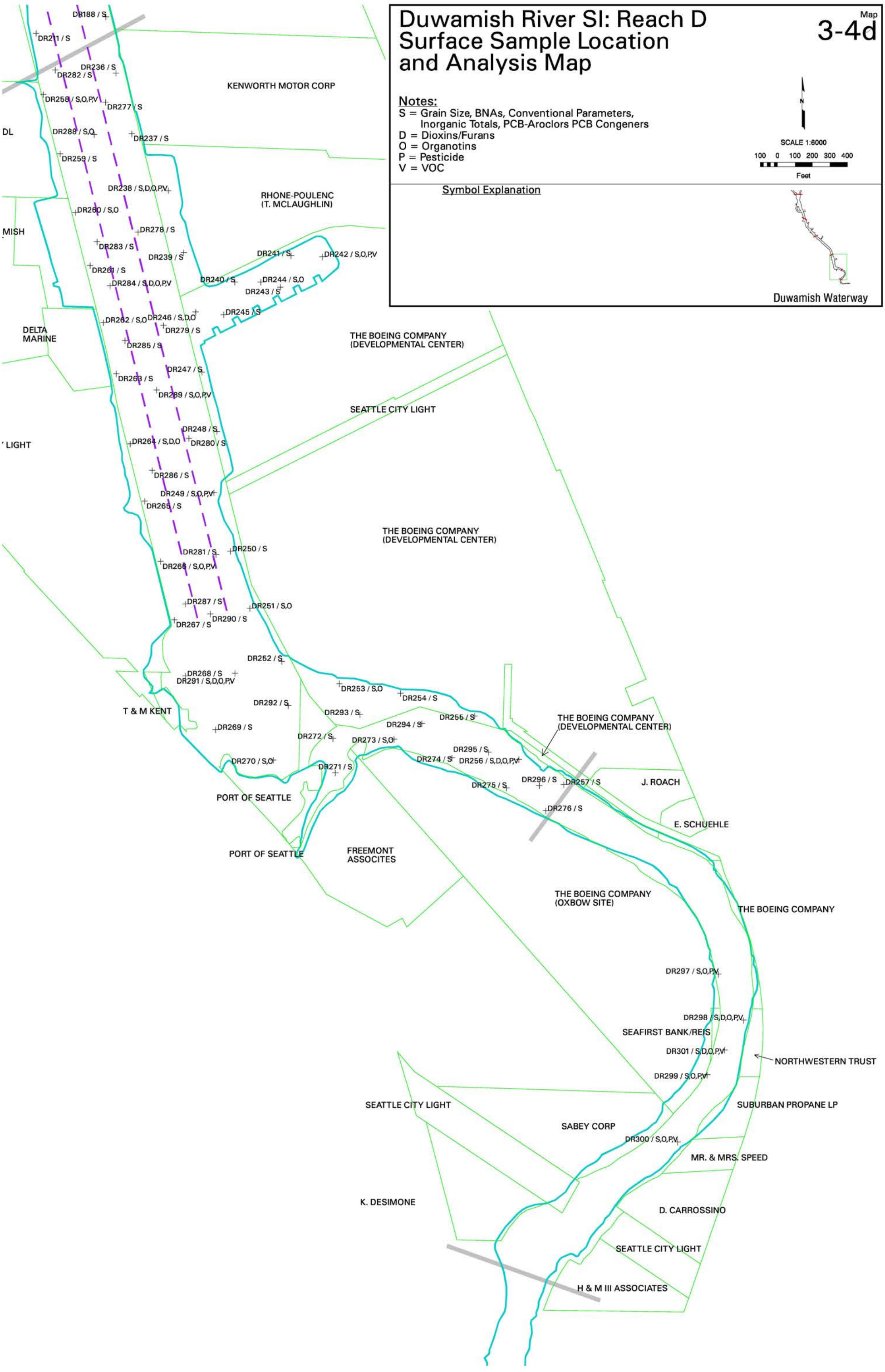
Map 3-4d

Notes:
S = Grain Size, BNAs, Conventional Parameters, Inorganic Totals, PCB-Aroclors PCB Congeners
D = Dioxins/Furans
O = Organotins
P = Pesticide
V = VOC

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Duwamish Waterway



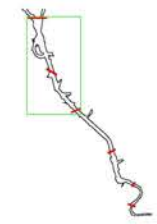
Duwamish River SI: Reach A/B Subsurface Sample Location and Analysis Map

Map 3-5a/b

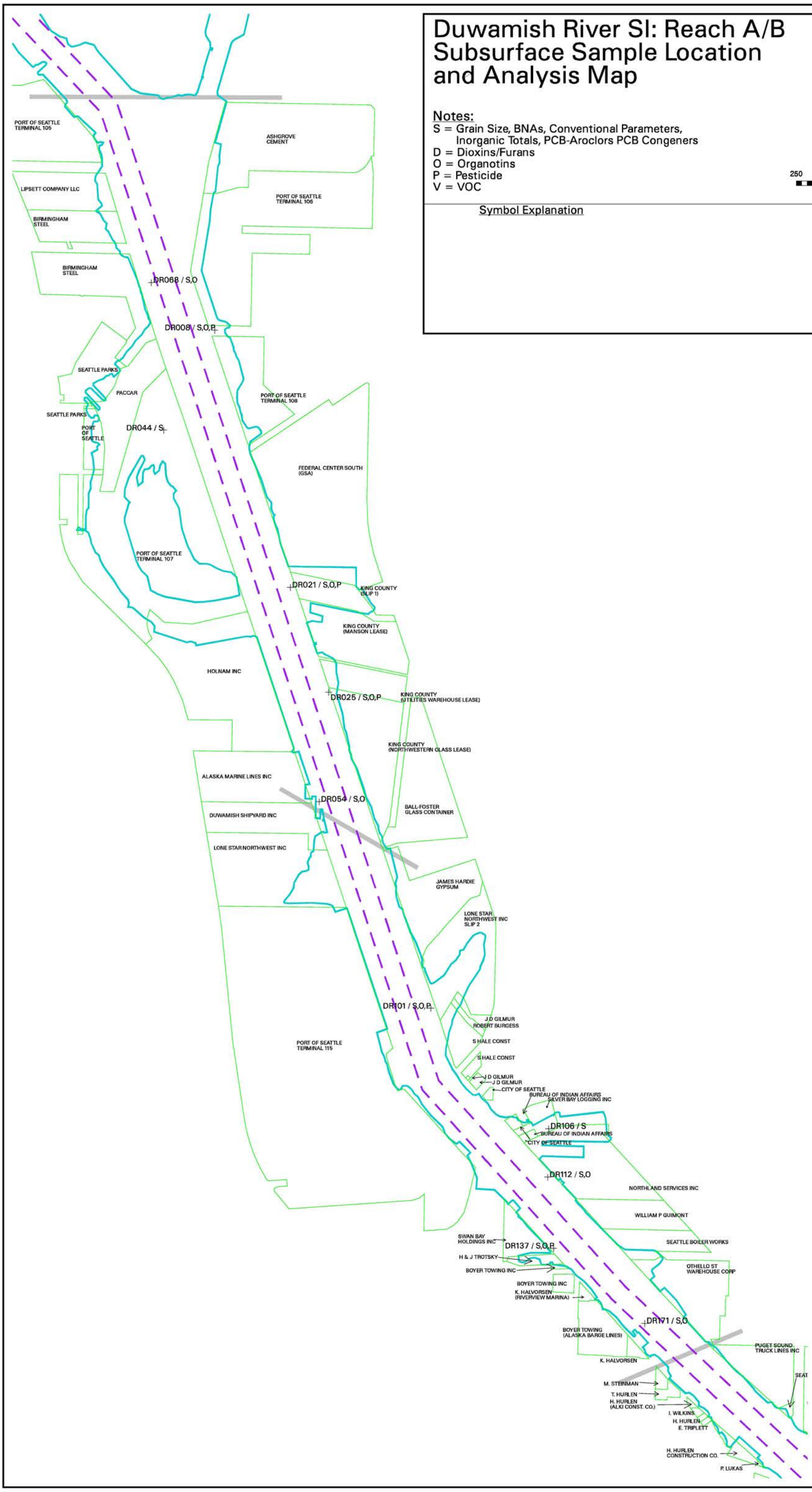
Notes:
S = Grain Size, BNAs, Conventional Parameters, Inorganic Totals, PCB-Aroclors PCB Congeners
D = Dioxins/Furans
O = Organotins
P = Pesticide
V = VOC

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation



Duwamish Waterway



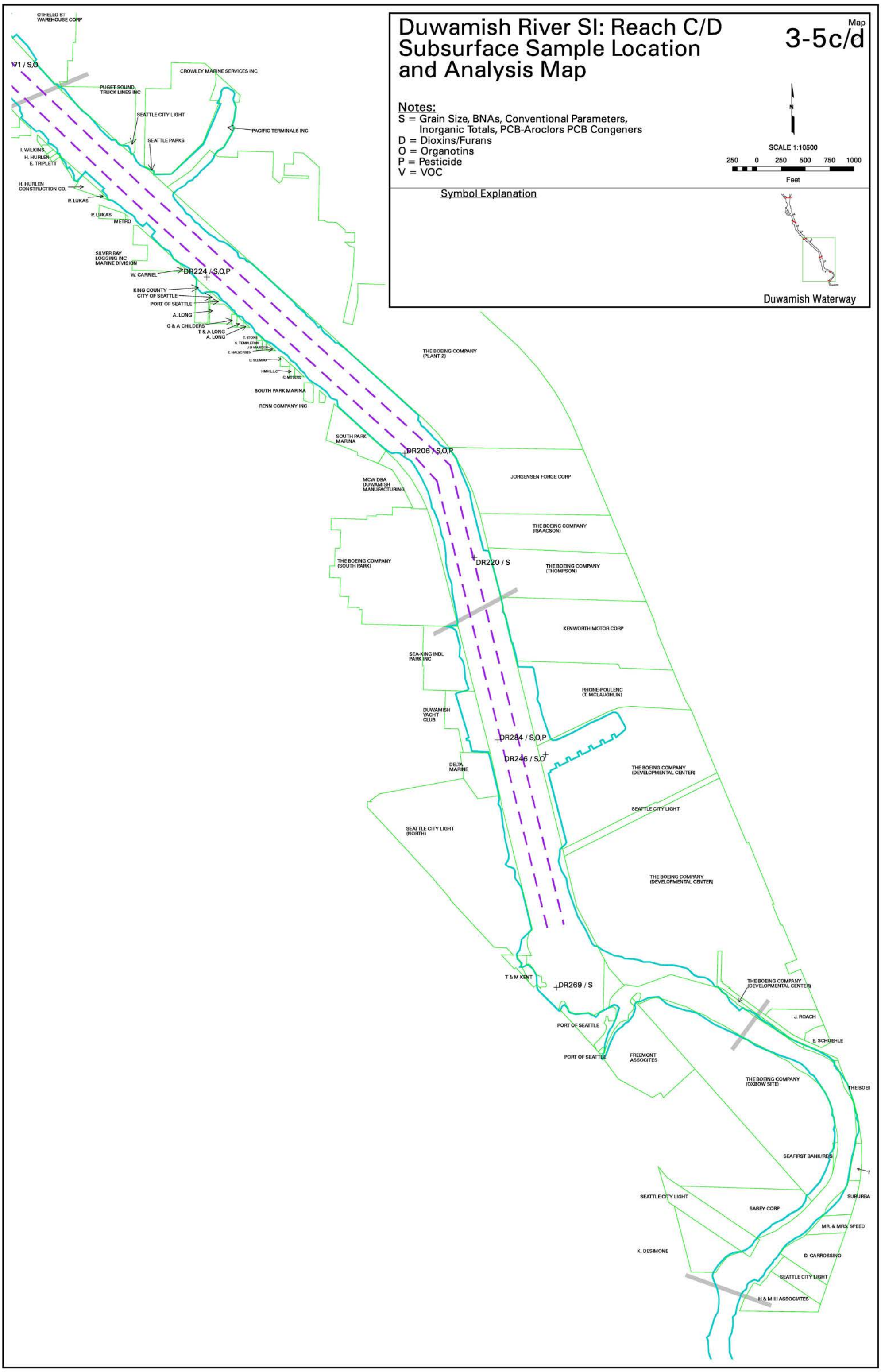
Duwamish River SI: Reach C/D Subsurface Sample Location and Analysis Map

Map 3-5c/d

Notes:
S = Grain Size, BNAs, Conventional Parameters, Inorganic Totals, PCB-Aroclors PCB Congeners
D = Dioxins/Furans
O = Organotins
P = Pesticide
V = VOC

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation



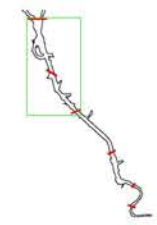
Duwamish River SI: Reach A/B Porewater Sample Location and Analysis Map

Map 3-6a/b

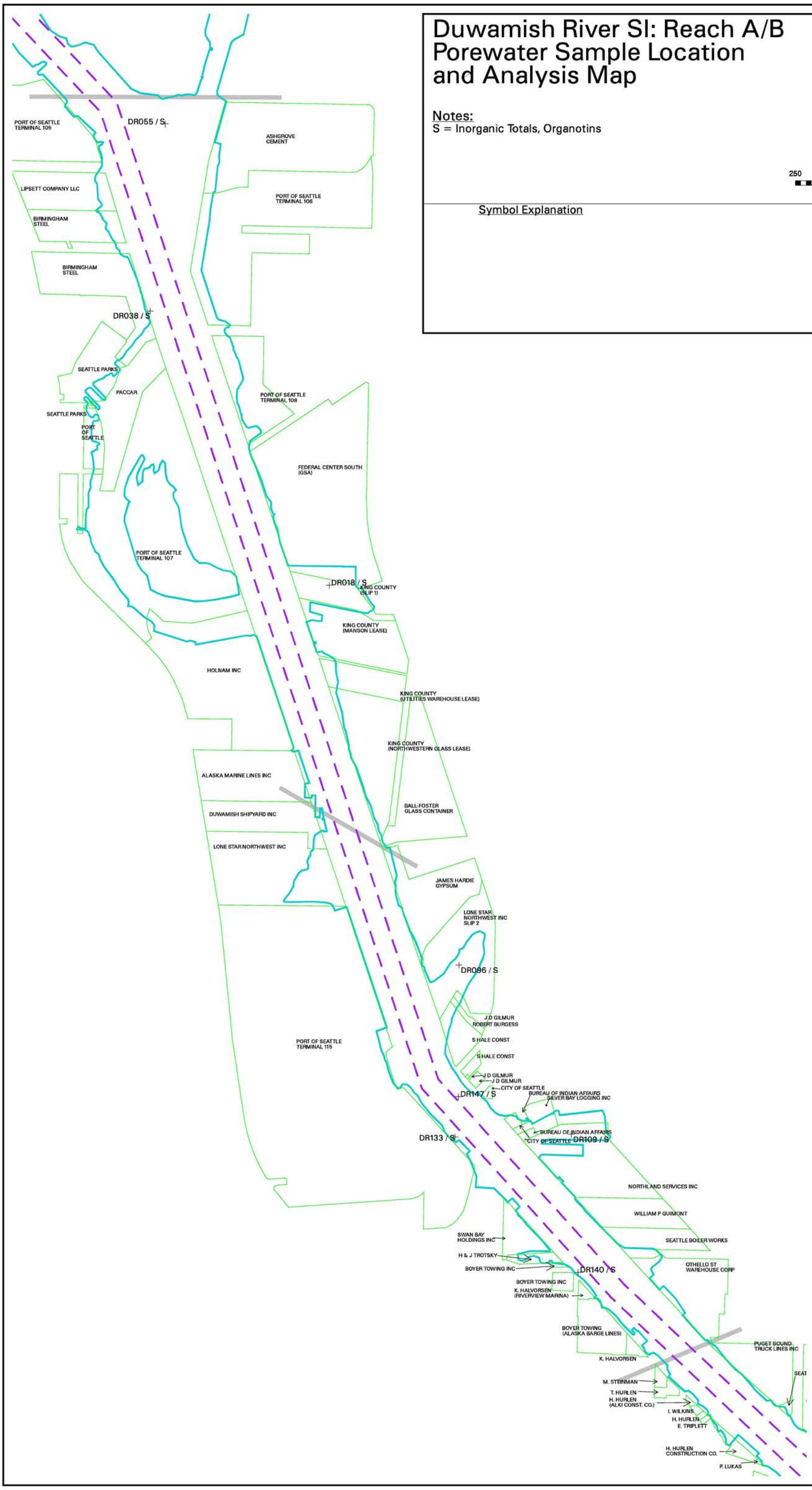
Notes:
S = Inorganic Totals, Organotins

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation



Duwamish Waterway



Duwamish River SI: Reach C/D Porewater Sample Location and Analysis Map

Map 3-6c/d

Notes:
S = Inorganic Totals, Organotins

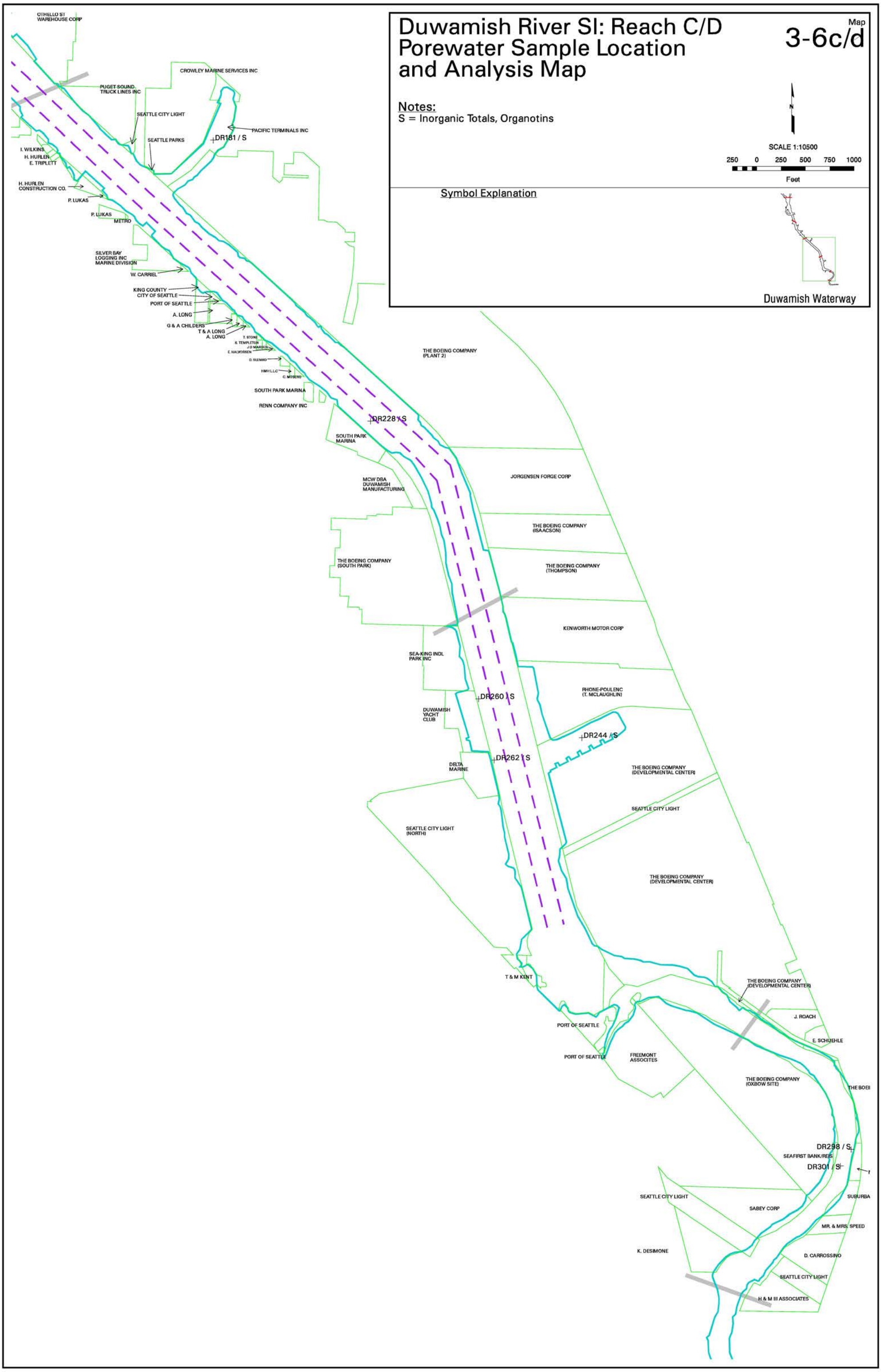
SCALE 1:10500

250 0 250 500 750 1000

Feet

Symbol Explanation

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Total PCB in Surface Sediment

Map 4-1a

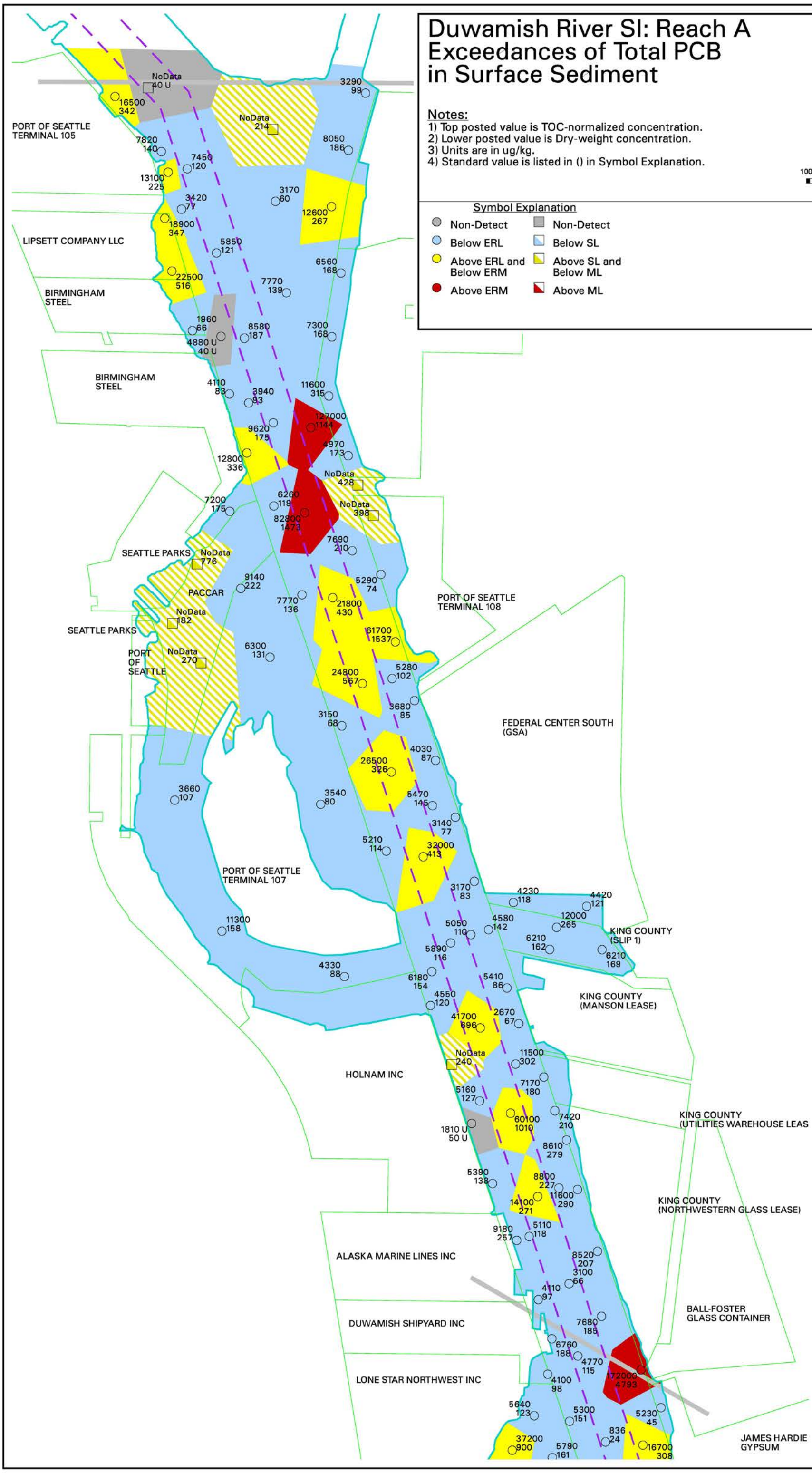
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach B Exceedances of Total PCB in Surface Sediment

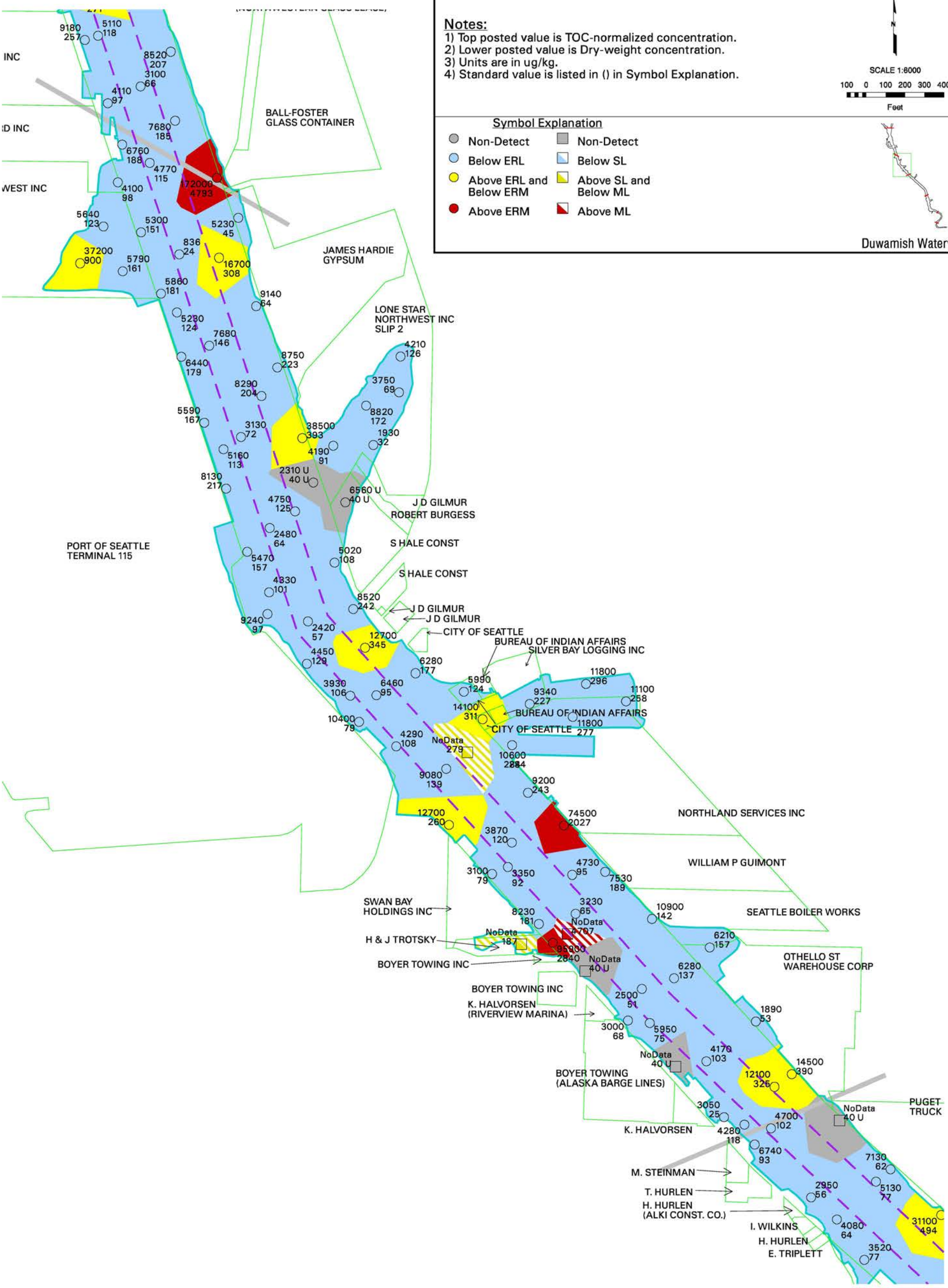
Map 4-1b

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML



Duwamish River SI: Reach C Exceedances of Total PCB in Surface Sediment

Map
4-1c

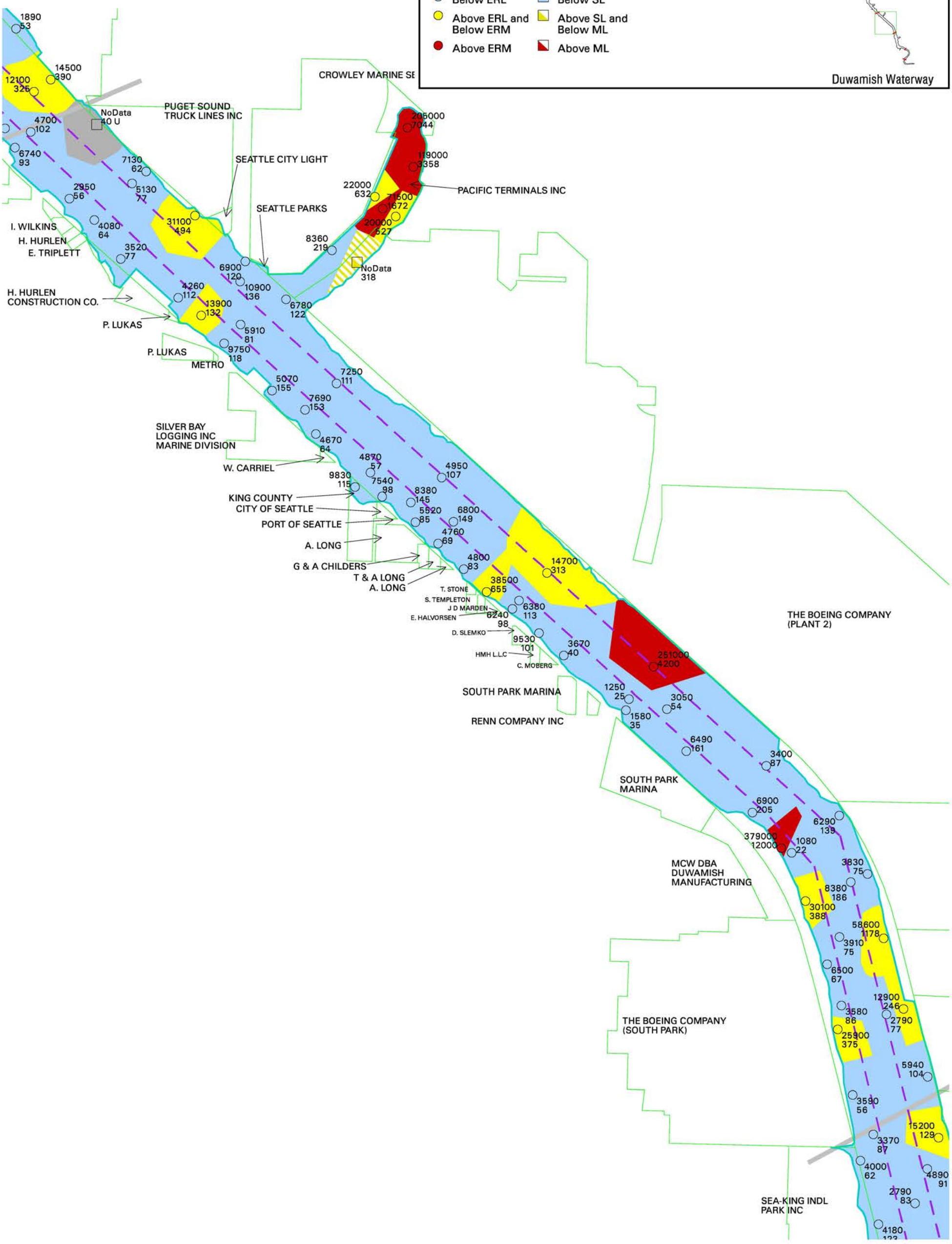
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach D Exceedances of Total PCB in Surface Sediment

Map 4-1d

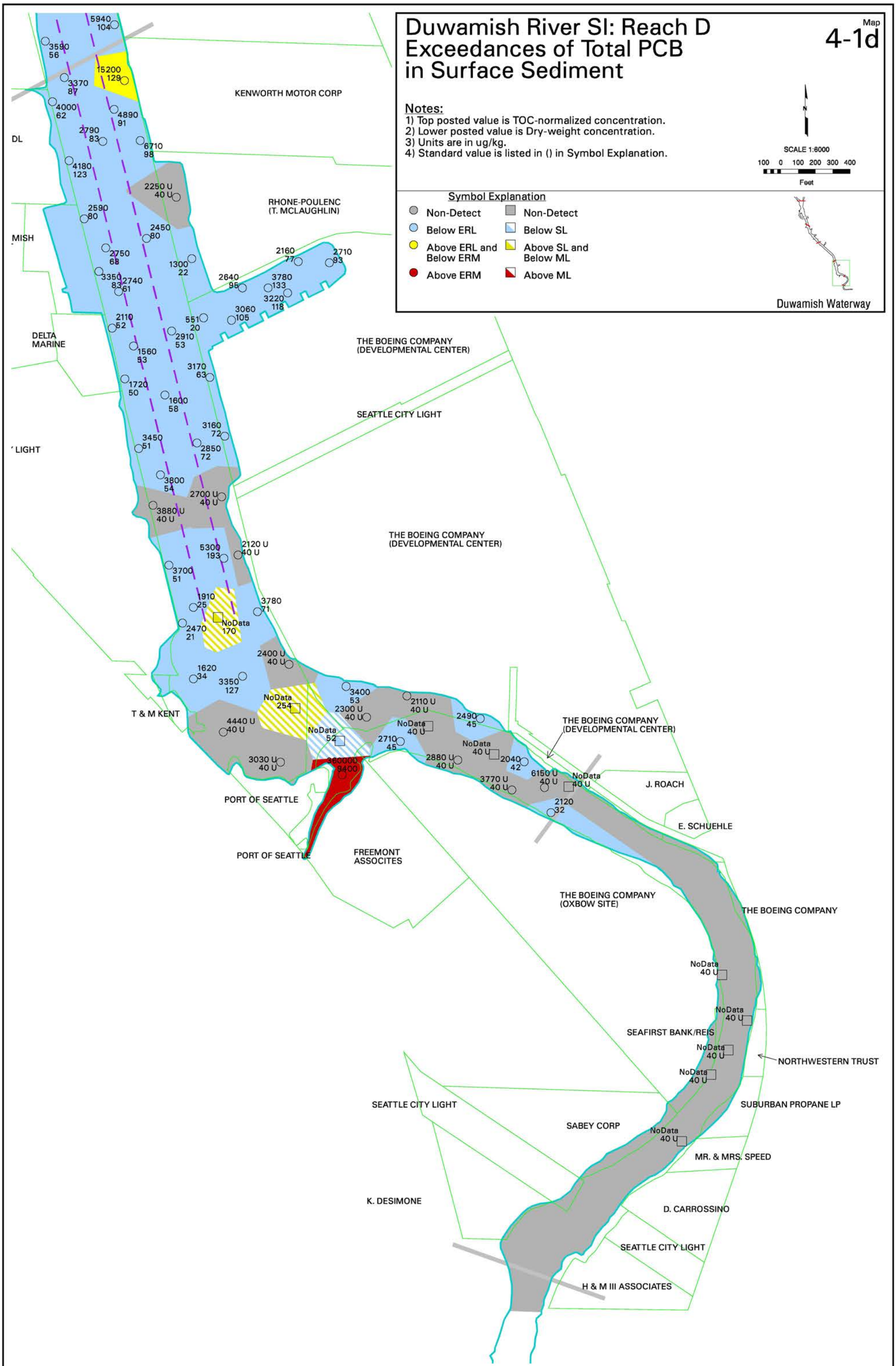
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Total HPAH in Surface Sediment

Map 4-2a

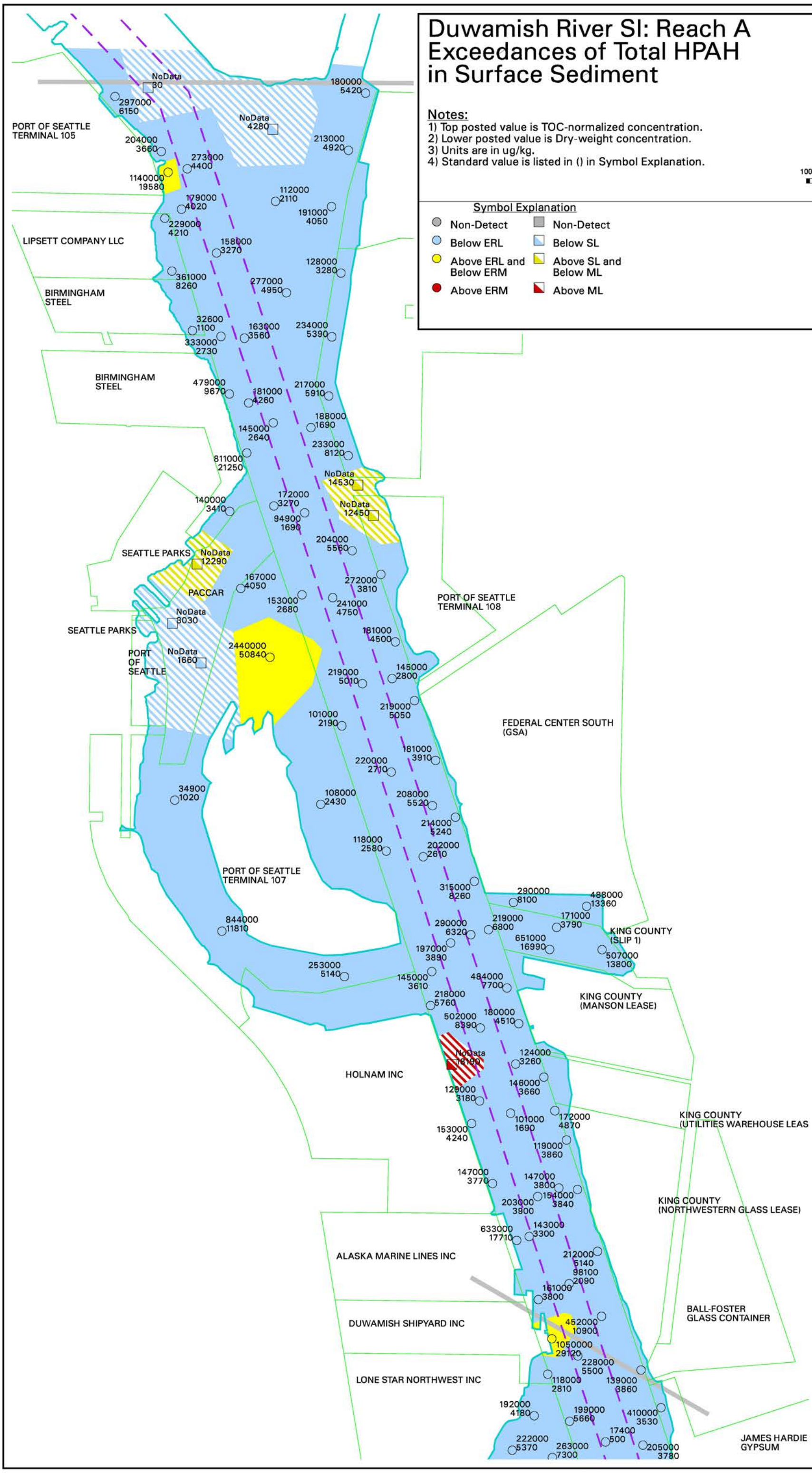
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach B Exceedances of Total HPAH in Surface Sediment

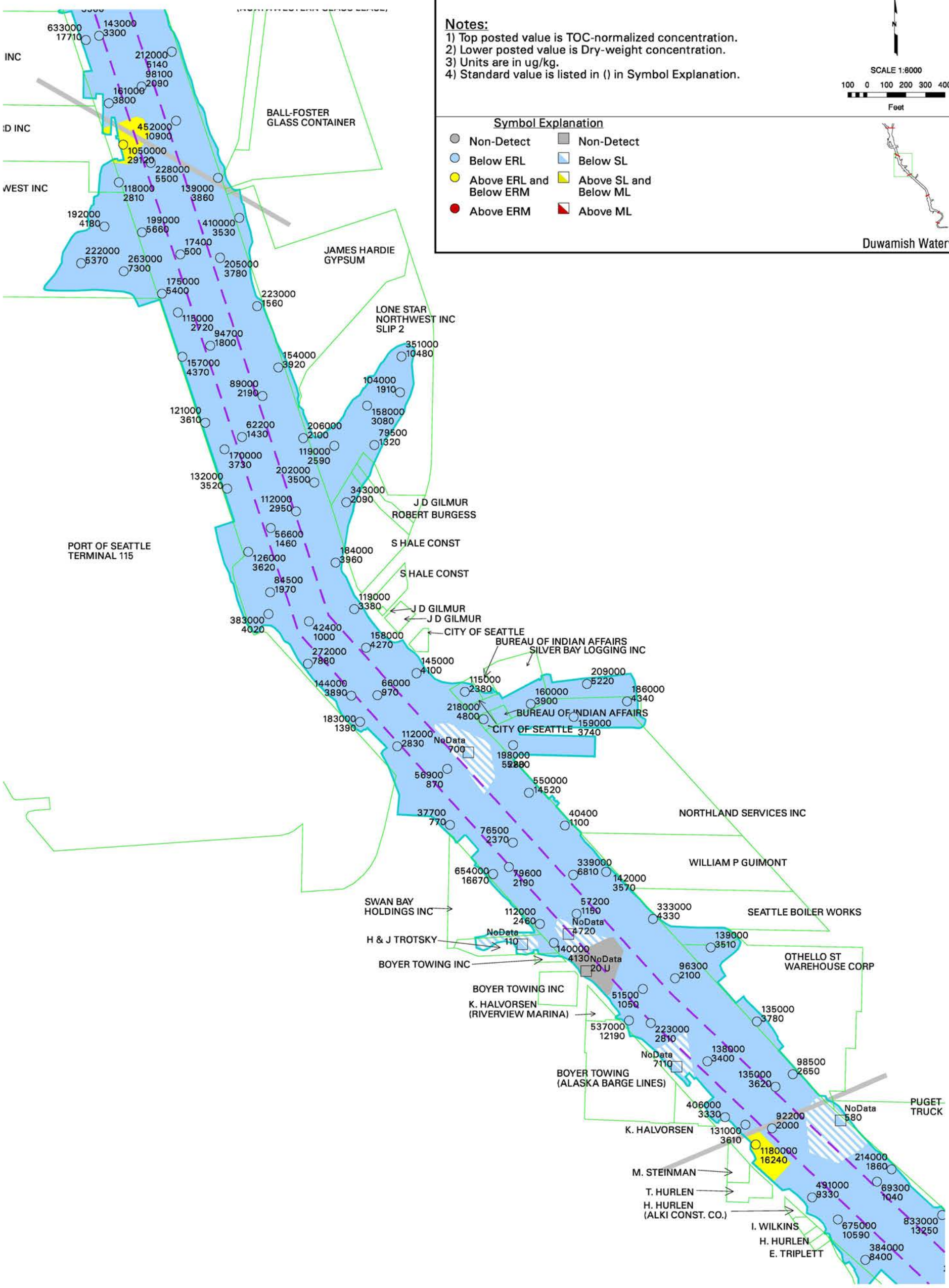
Map 4-2b

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML



Duwamish River SI: Reach C Exceedances of Total HPAH in Surface Sediment

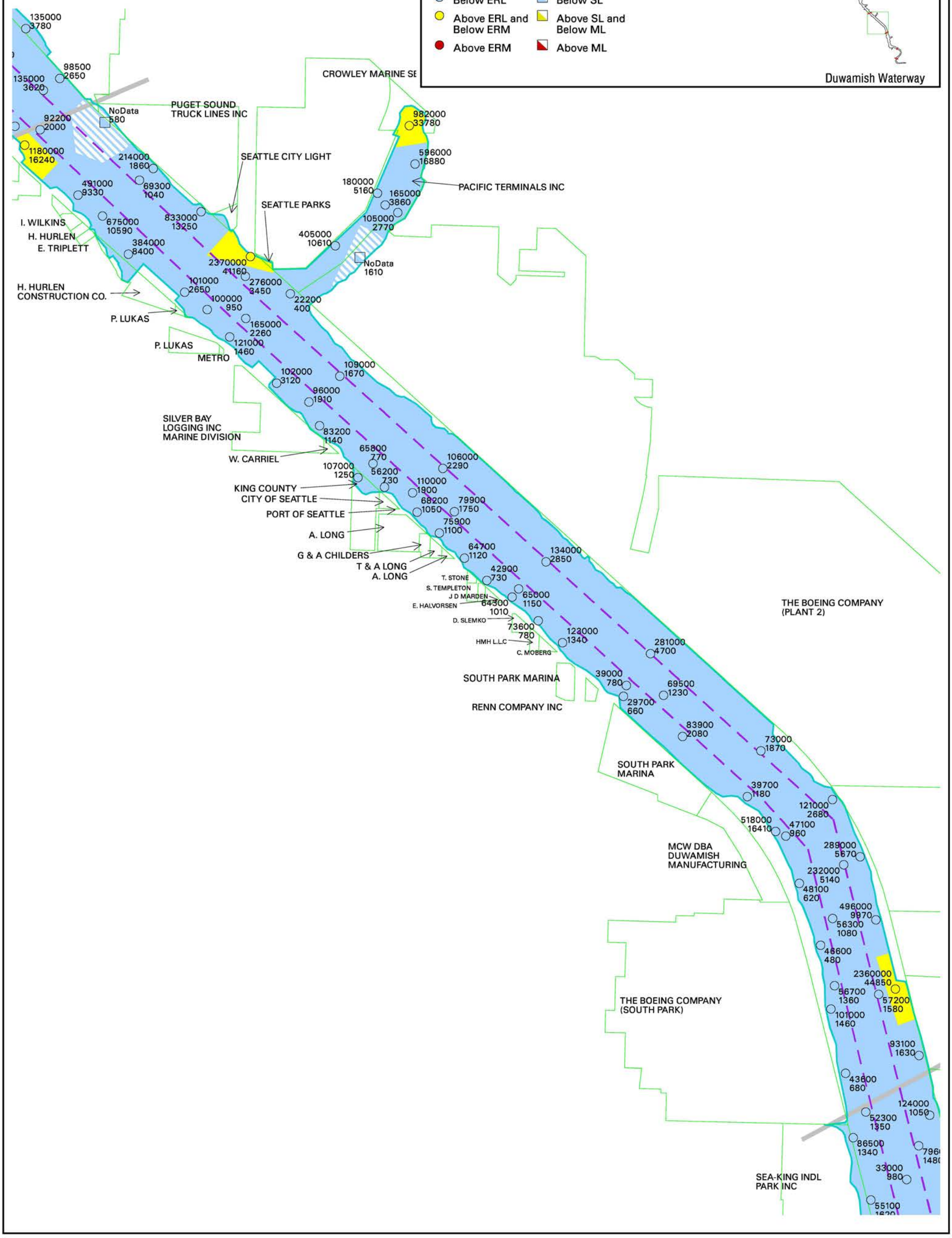
Map 4-2c

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML



Duwamish River SI: Reach D Exceedances of Total HPAH in Surface Sediment

Map 4-2d

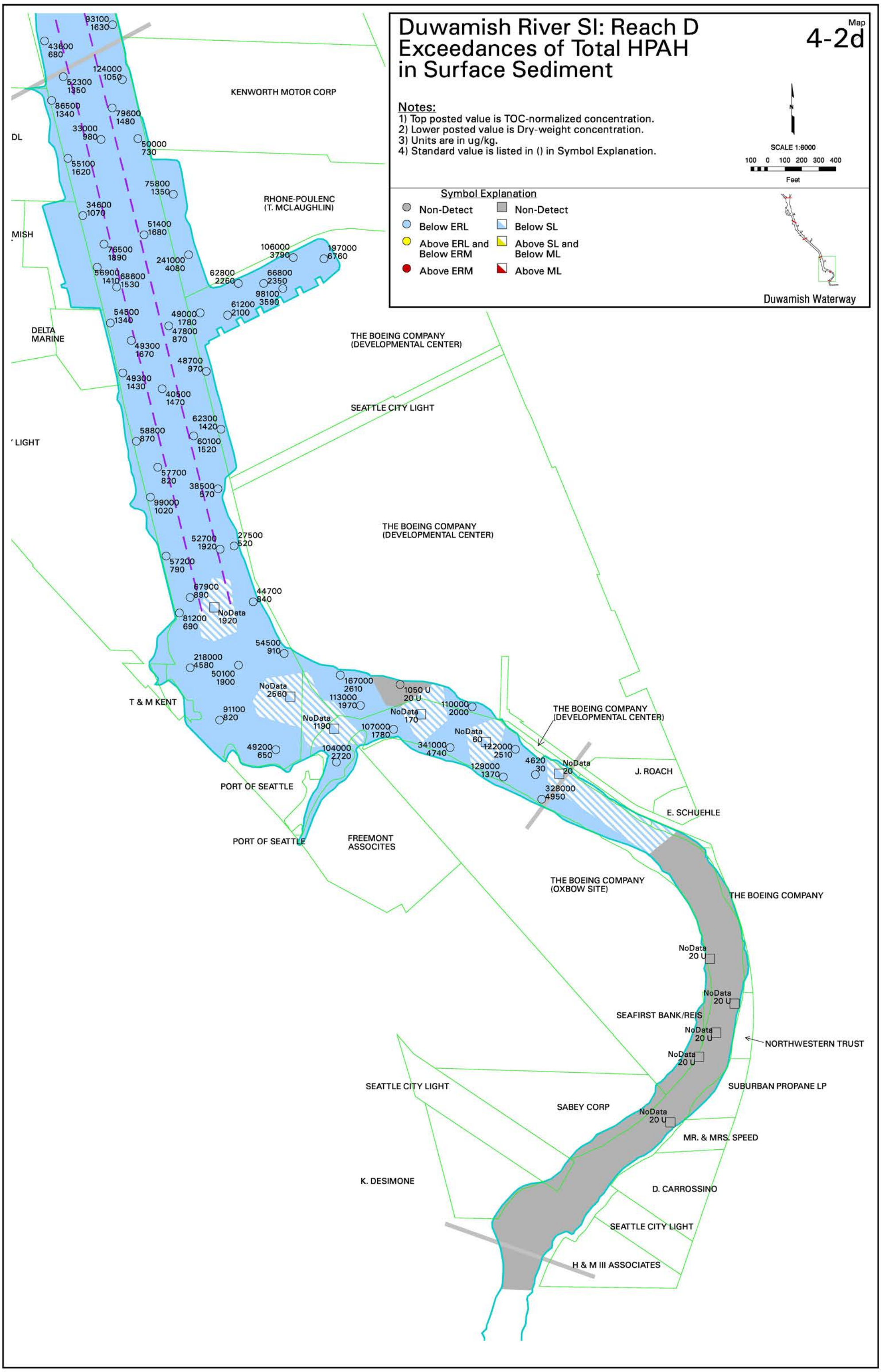
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Fluoranthene in Surface Sediment

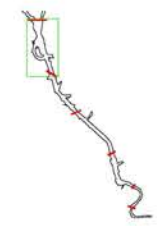
Map 4-3a

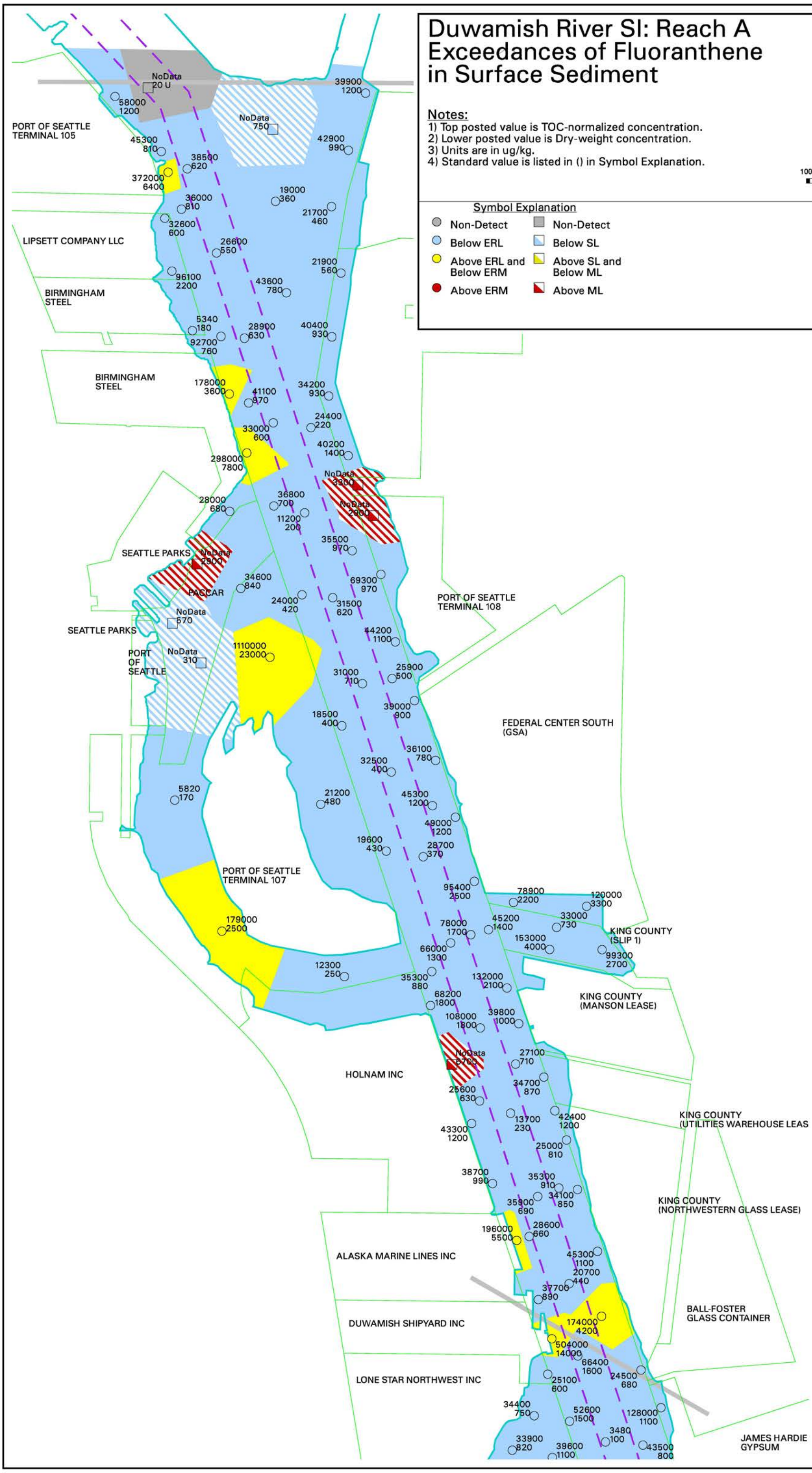
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML





Duwamish River SI: Reach B Exceedances of Fluoranthene in Surface Sediment

Map 4-3b

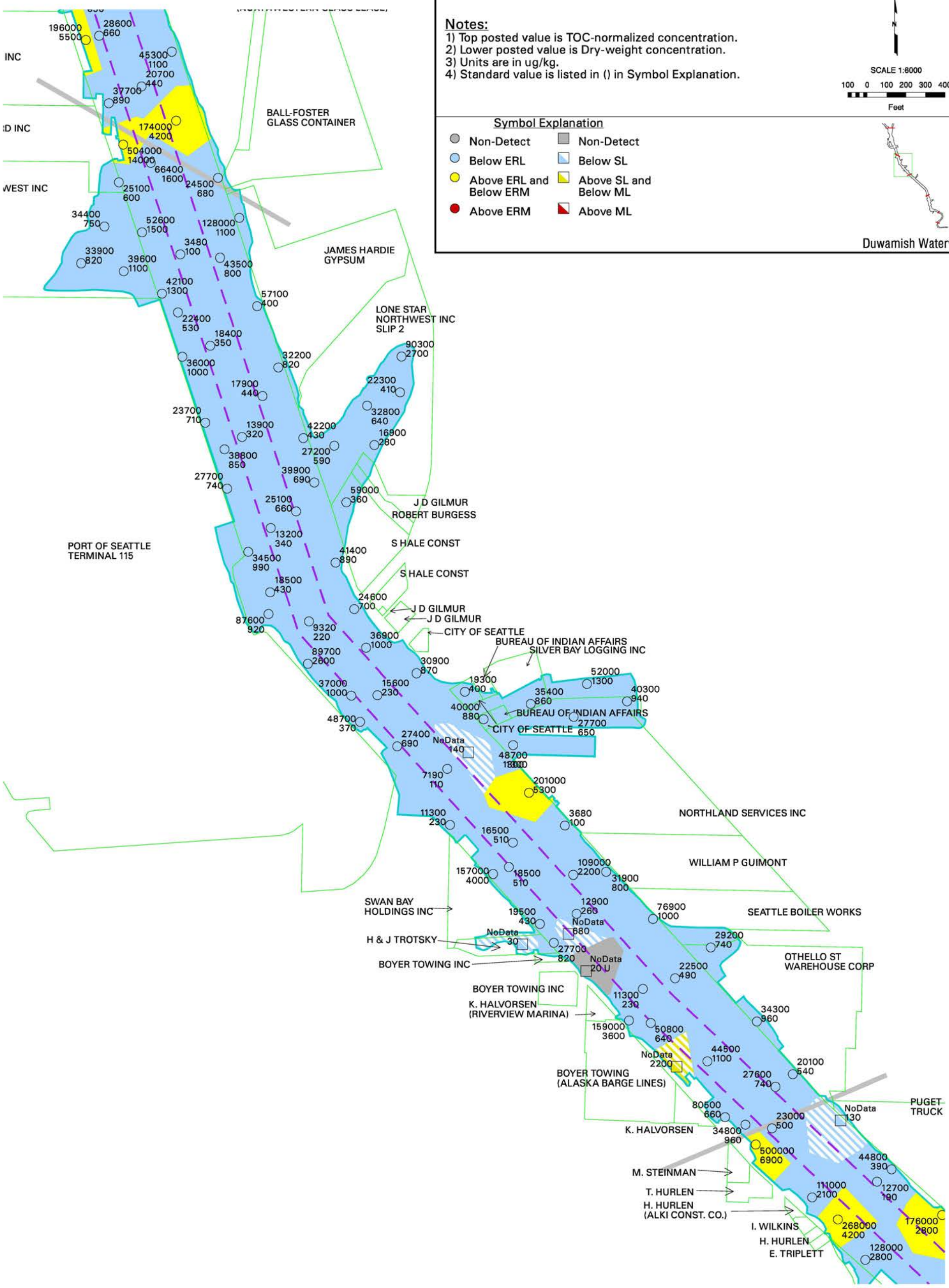
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach C Exceedances of Fluoranthene in Surface Sediment

Map 4-3c

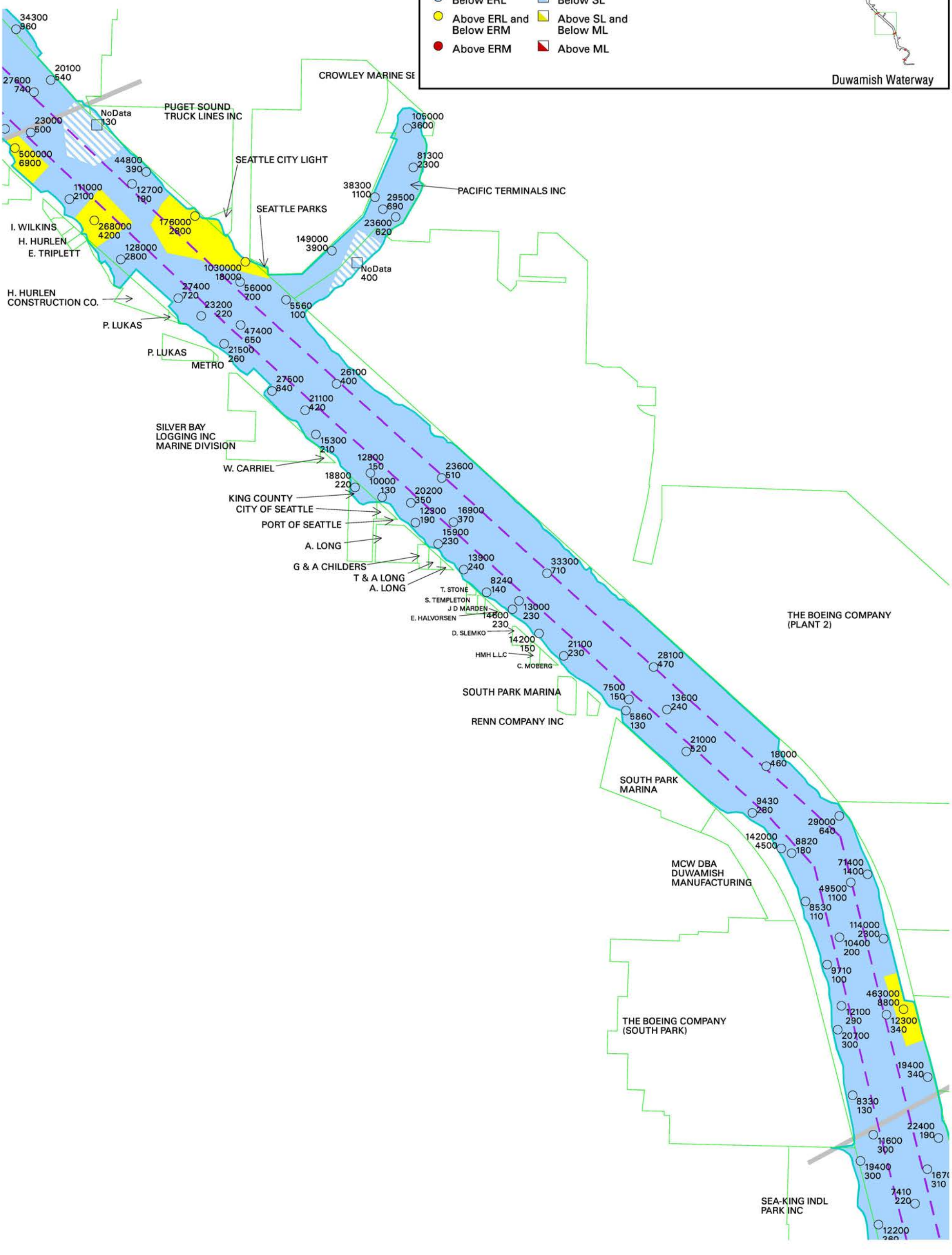
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach D Exceedances of Fluoranthene in Surface Sediment

Map 4-3d

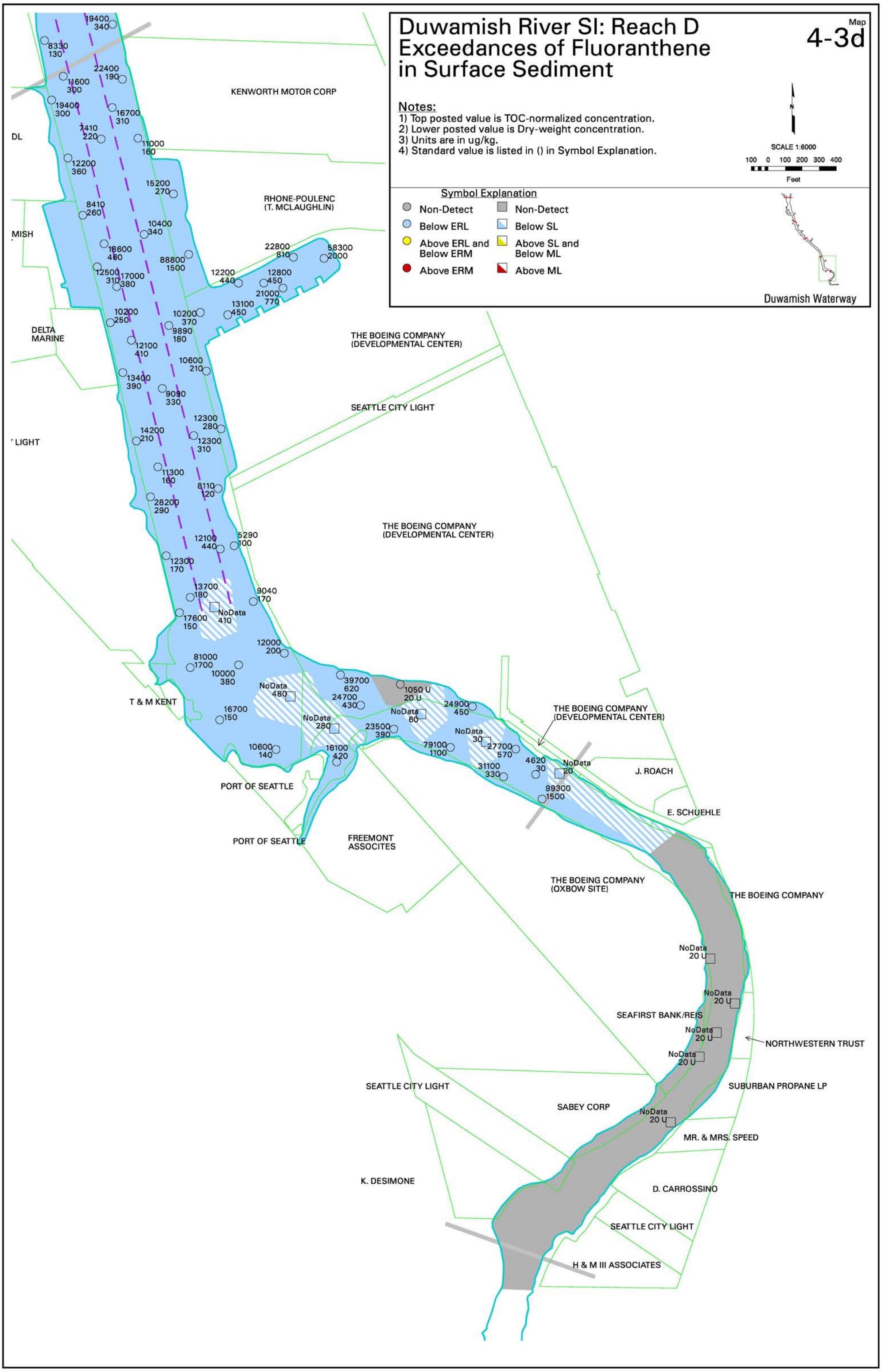
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Chrysene in Surface Sediment

Map 4-4a

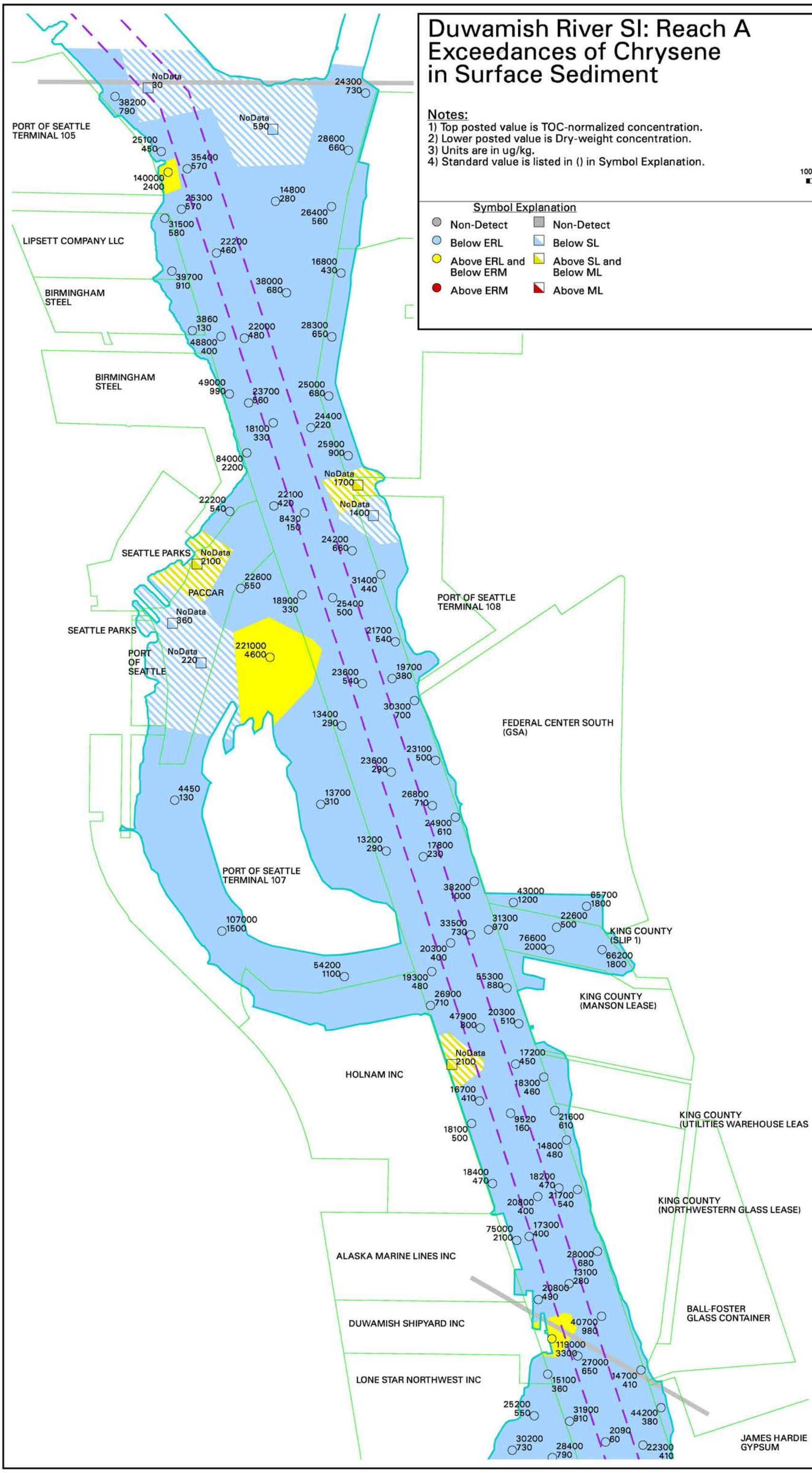
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach B Exceedances of Chrysene in Surface Sediment

Map 4-4b

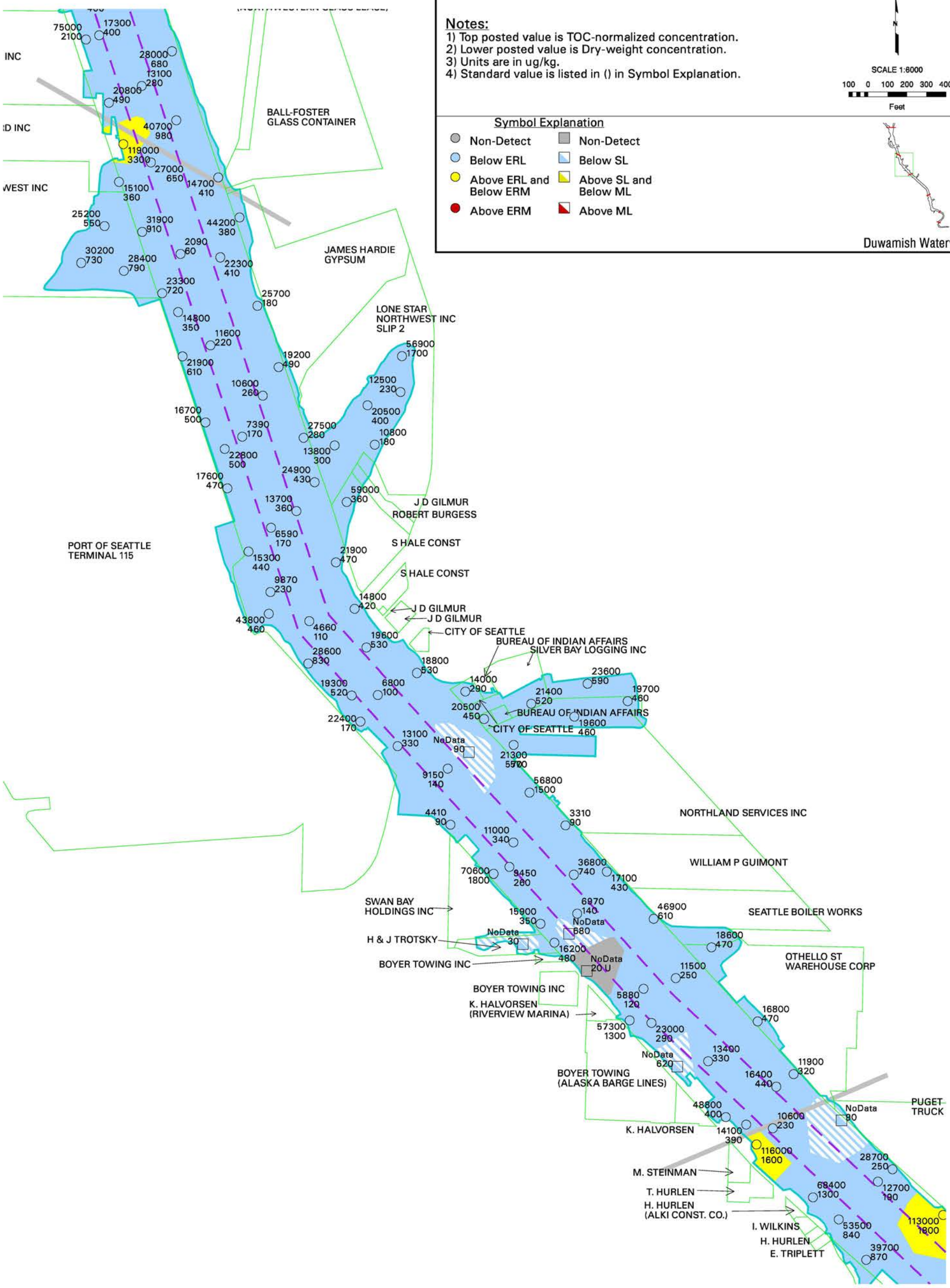
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach C Exceedances of Chrysene in Surface Sediment

Map 4-4c

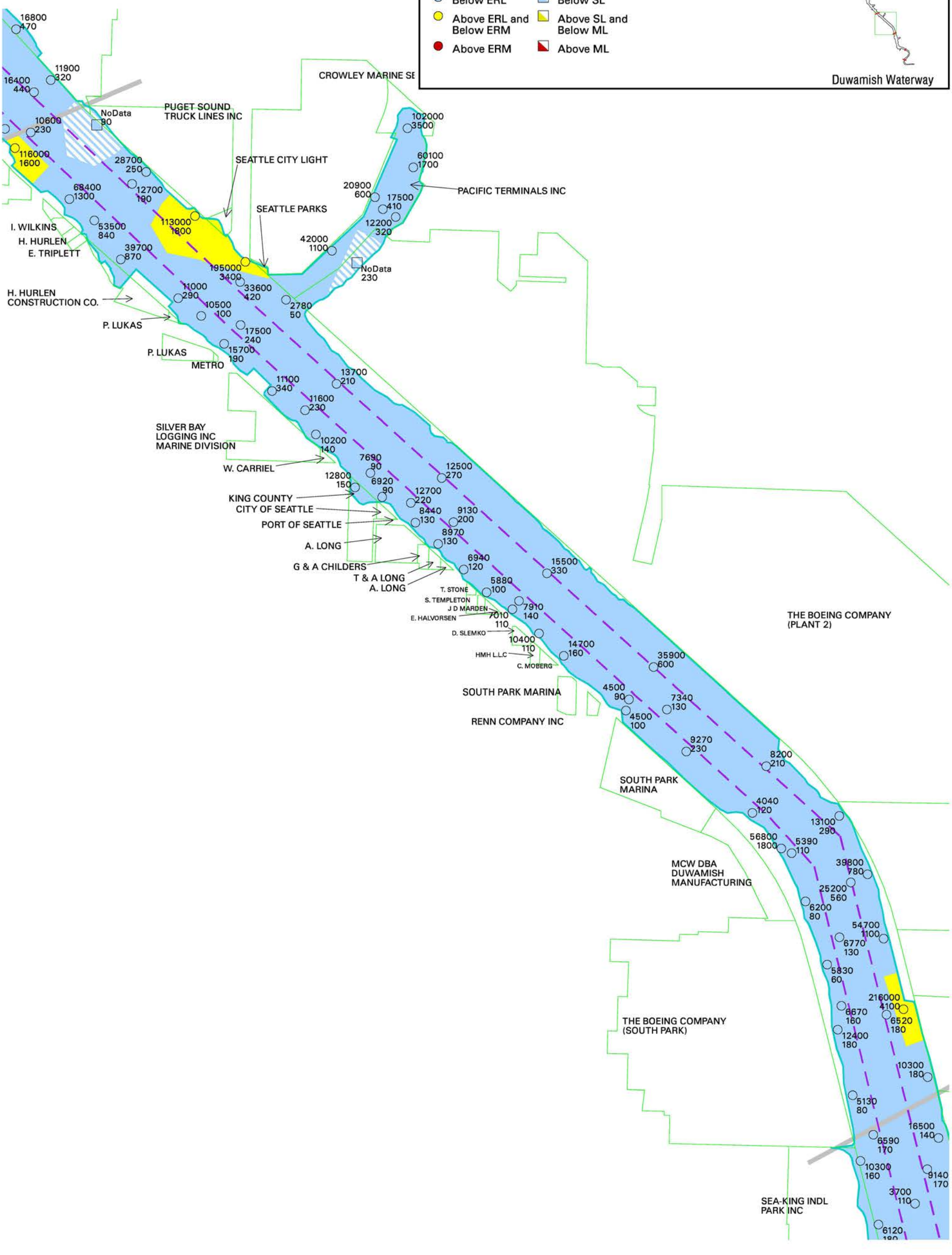
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach D Exceedances of Chrysene in Surface Sediment

Map 4-4d

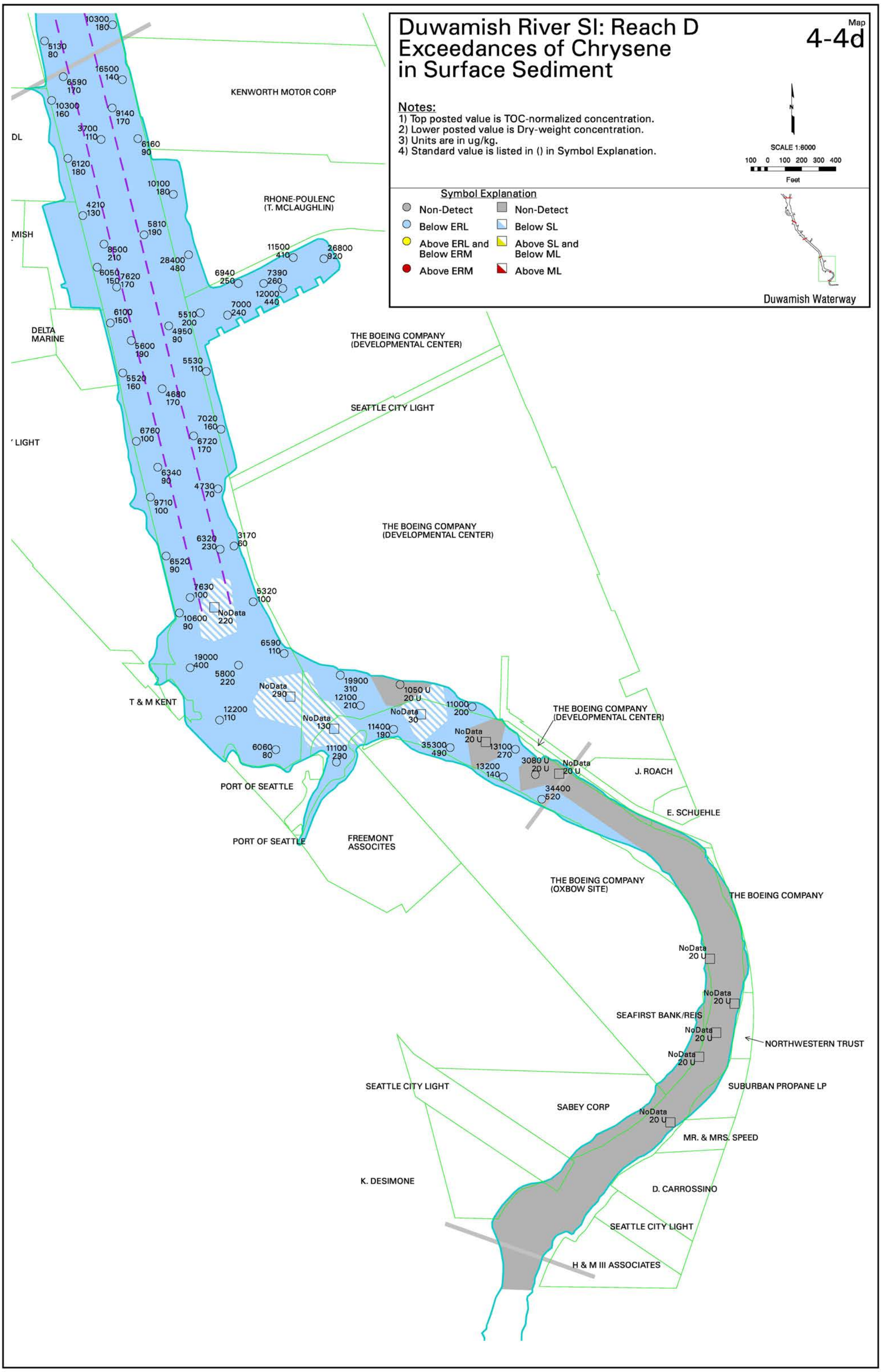
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Indeno(1,2,3-cd)pyrene in Surface Sediment

Map 4-5a

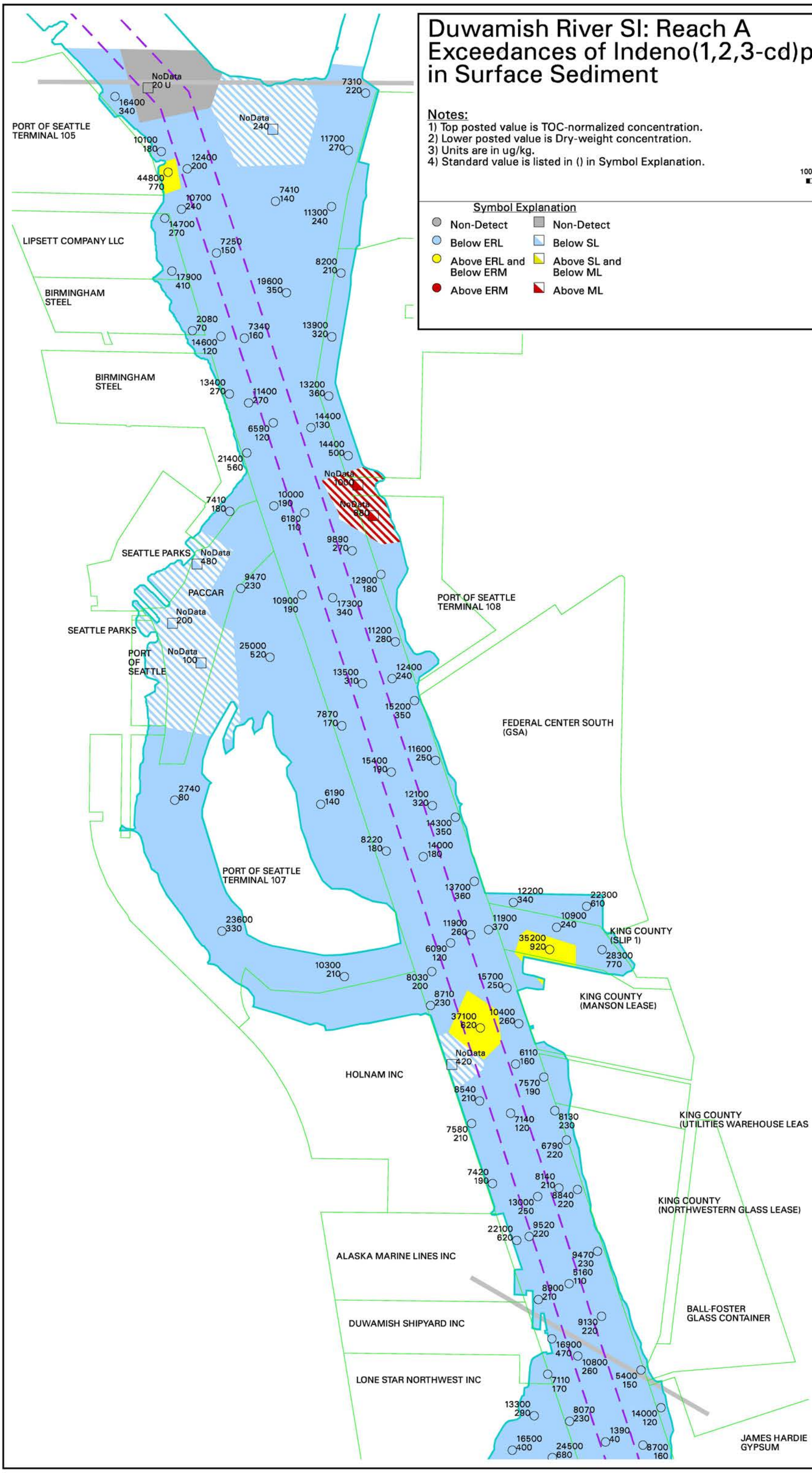
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach B Exceedances of Indeno(1,2,3-cd)pyrene in Surface Sediment

Map 4-5b

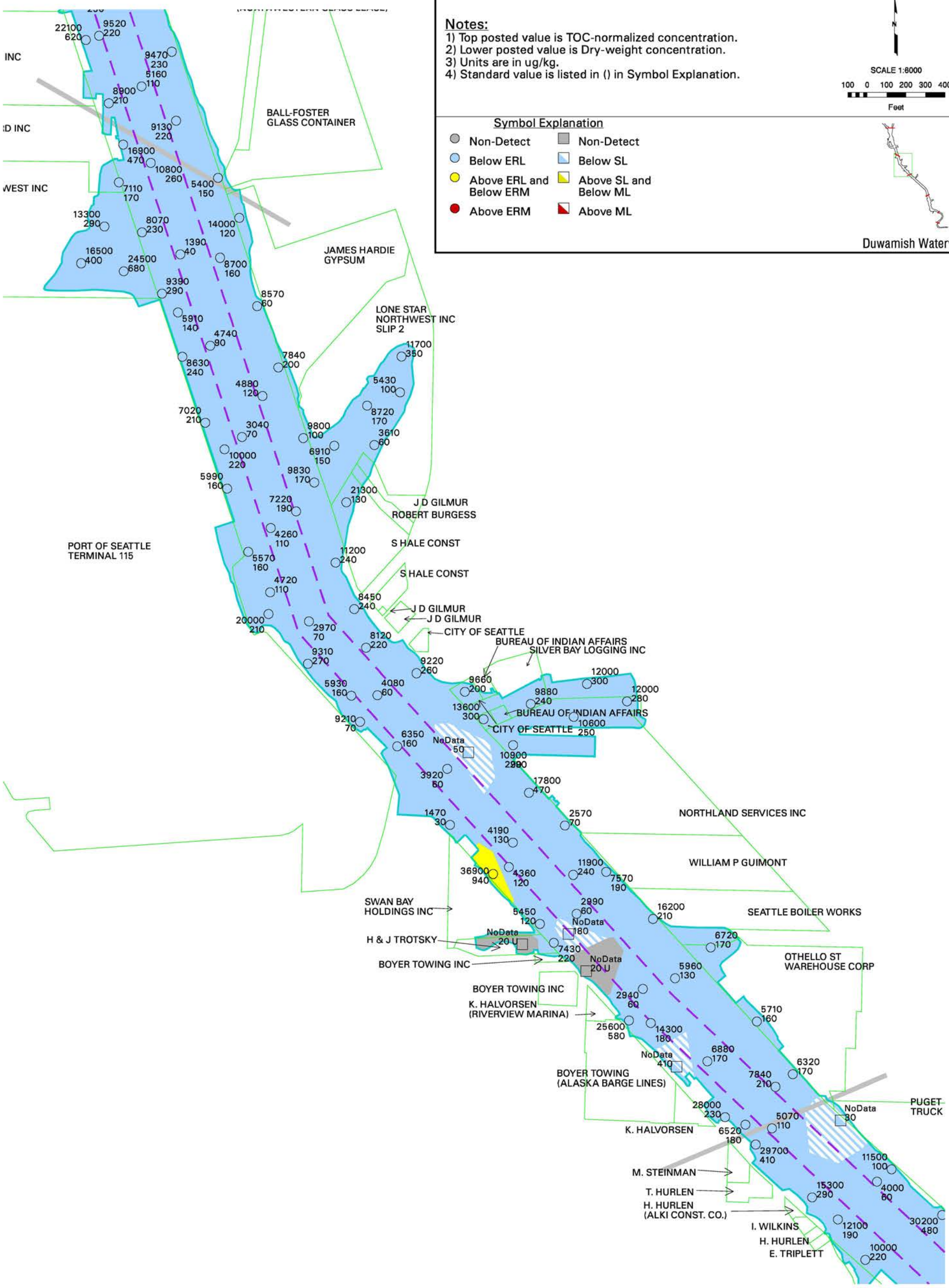
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach C Exceedances of Indeno(1,2,3-cd)pyrene in Surface Sediment

Map 4-5c

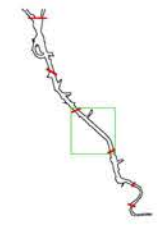
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

N

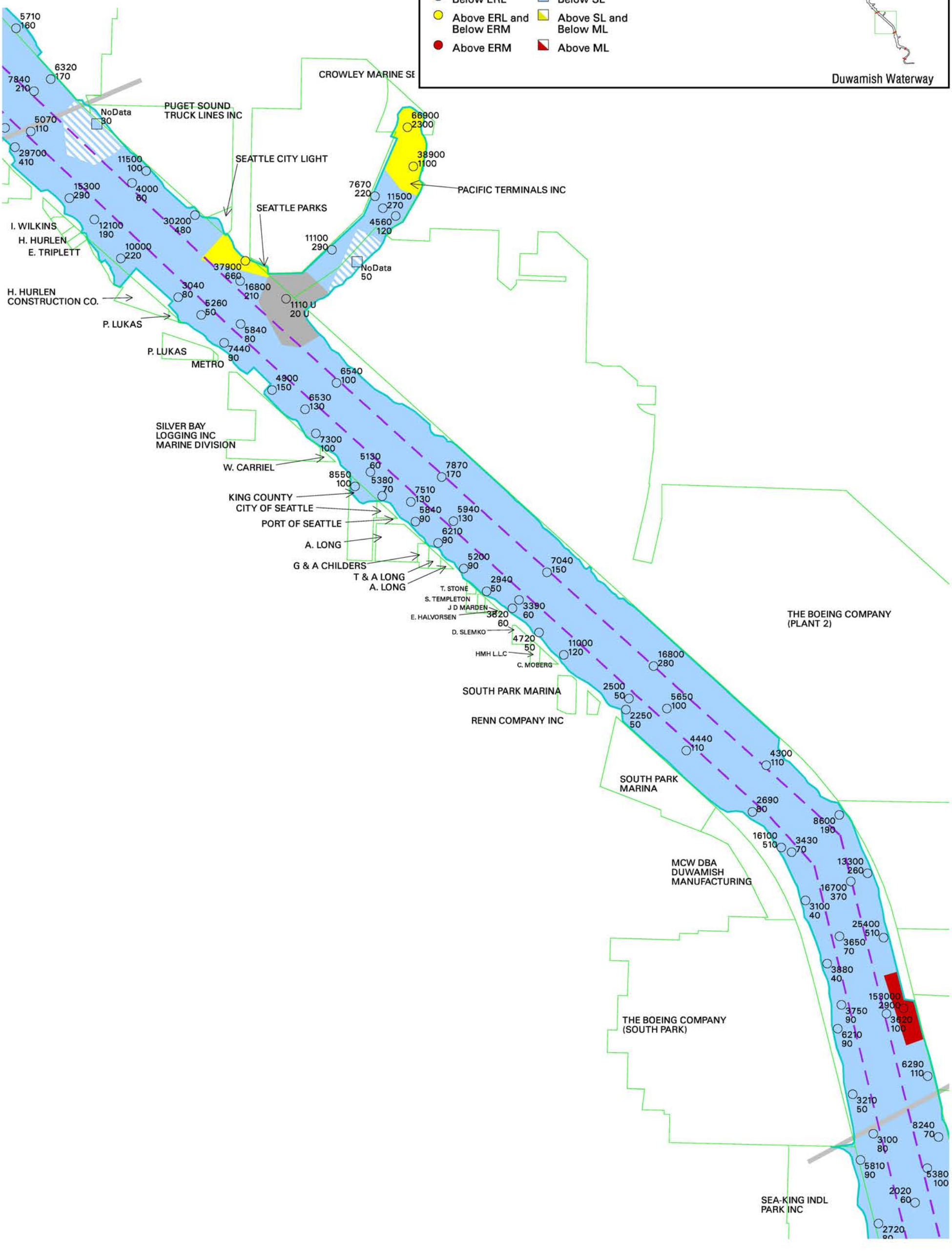
SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML



Duwamish Waterway



Duwamish River SI: Reach D Exceedances of Indeno(1,2,3-cd)pyrene in Surface Sediment

Map 4-5d

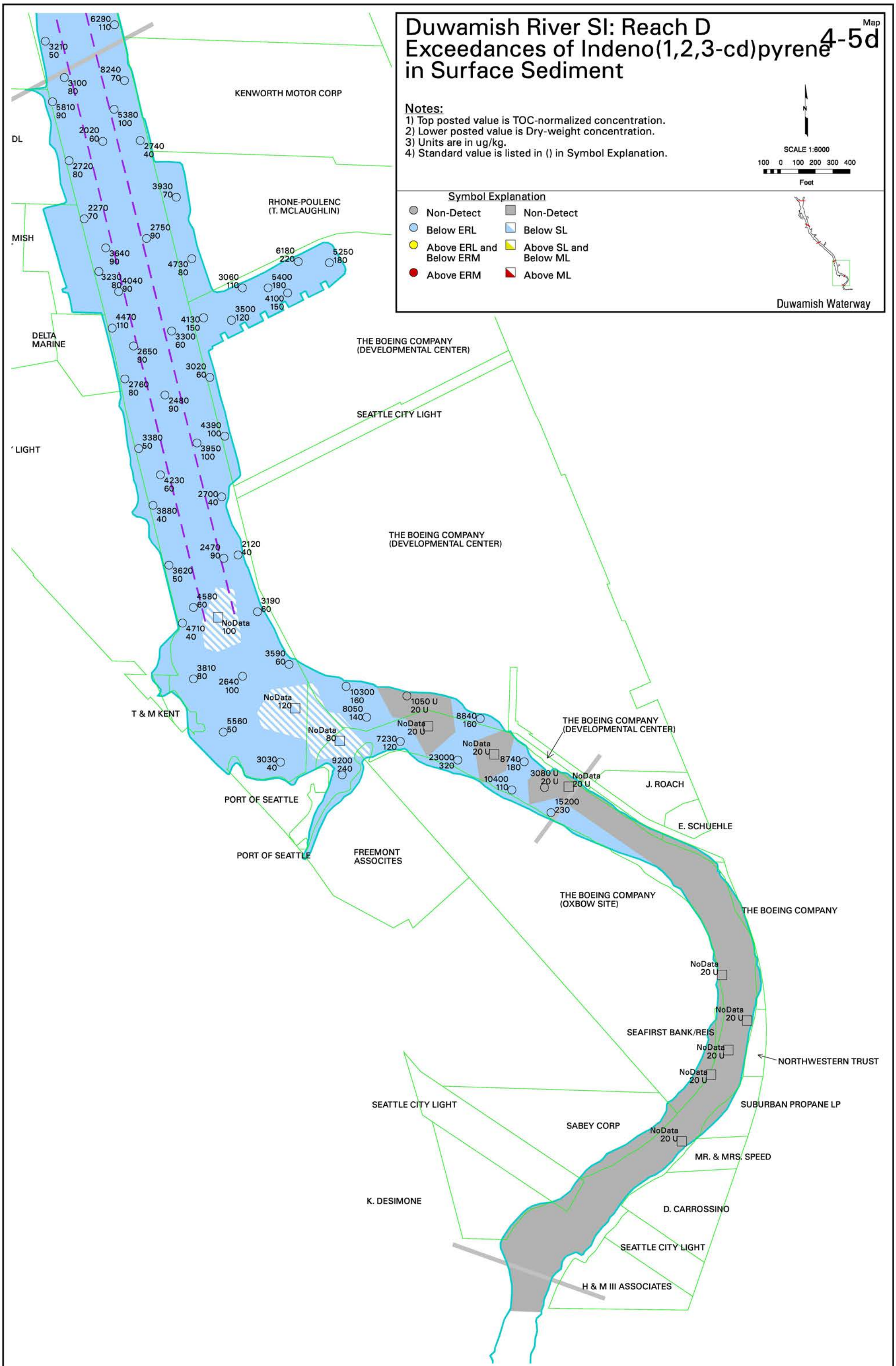
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Total LPAH in Surface Sediment

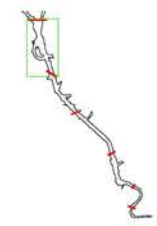
Map
4-6a

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

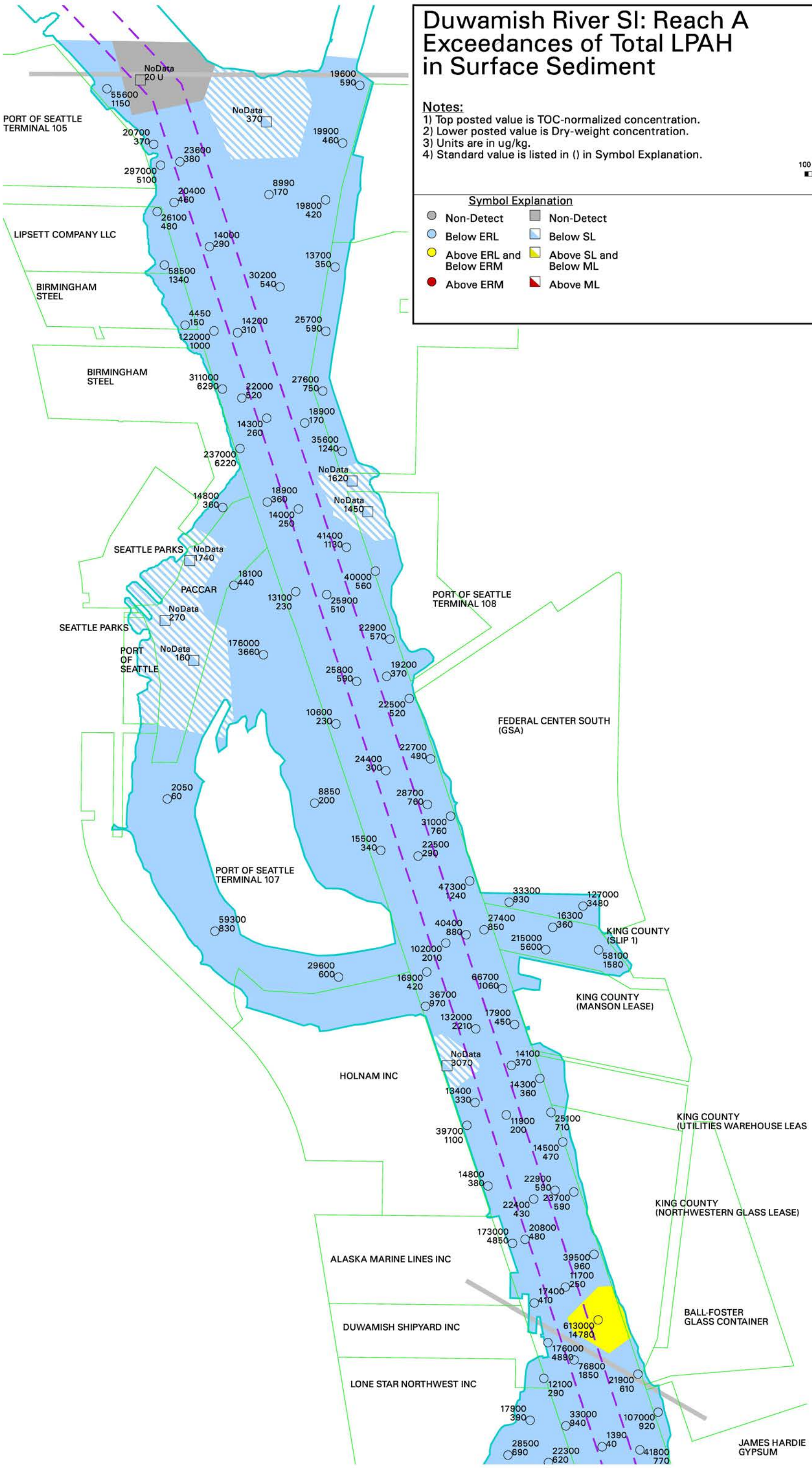
SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML



Duwamish Waterway



Duwamish River SI: Reach B Exceedances of Total LPAH in Surface Sediment

Map
4-6b

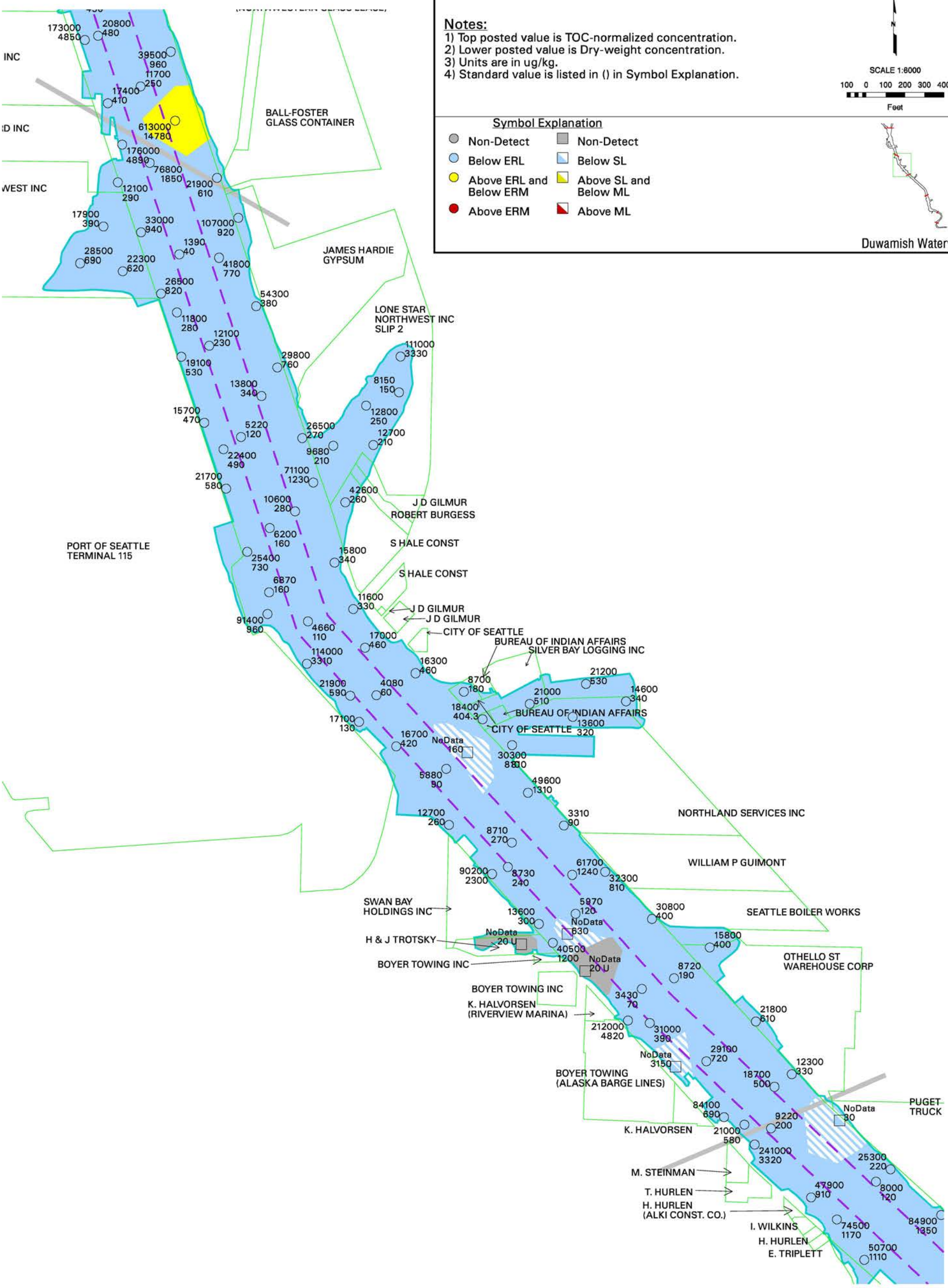
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach C Exceedances of Total LPAH in Surface Sediment

Map 4-6c

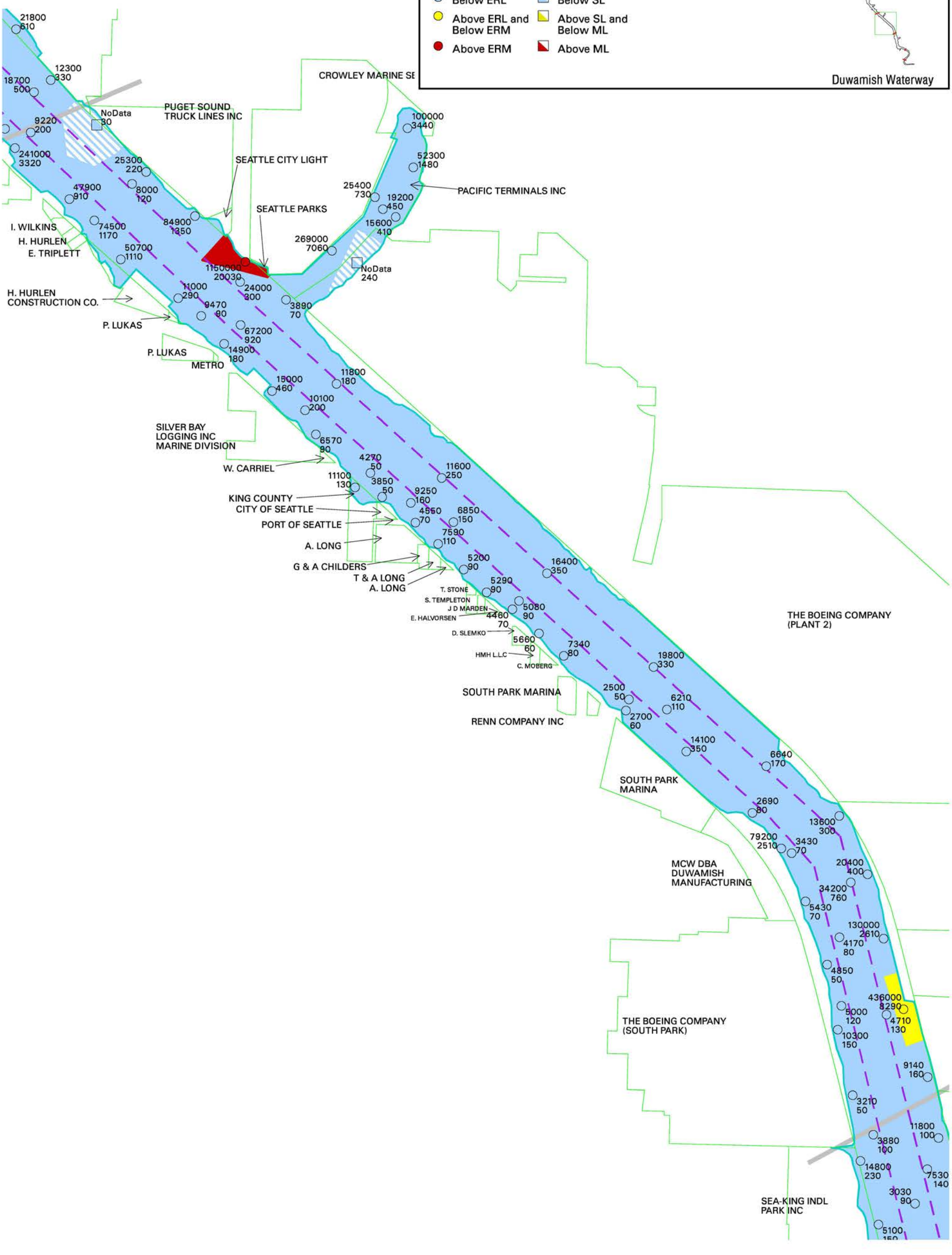
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach D Exceedances of Total LPAH in Surface Sediment

Map 4-6d

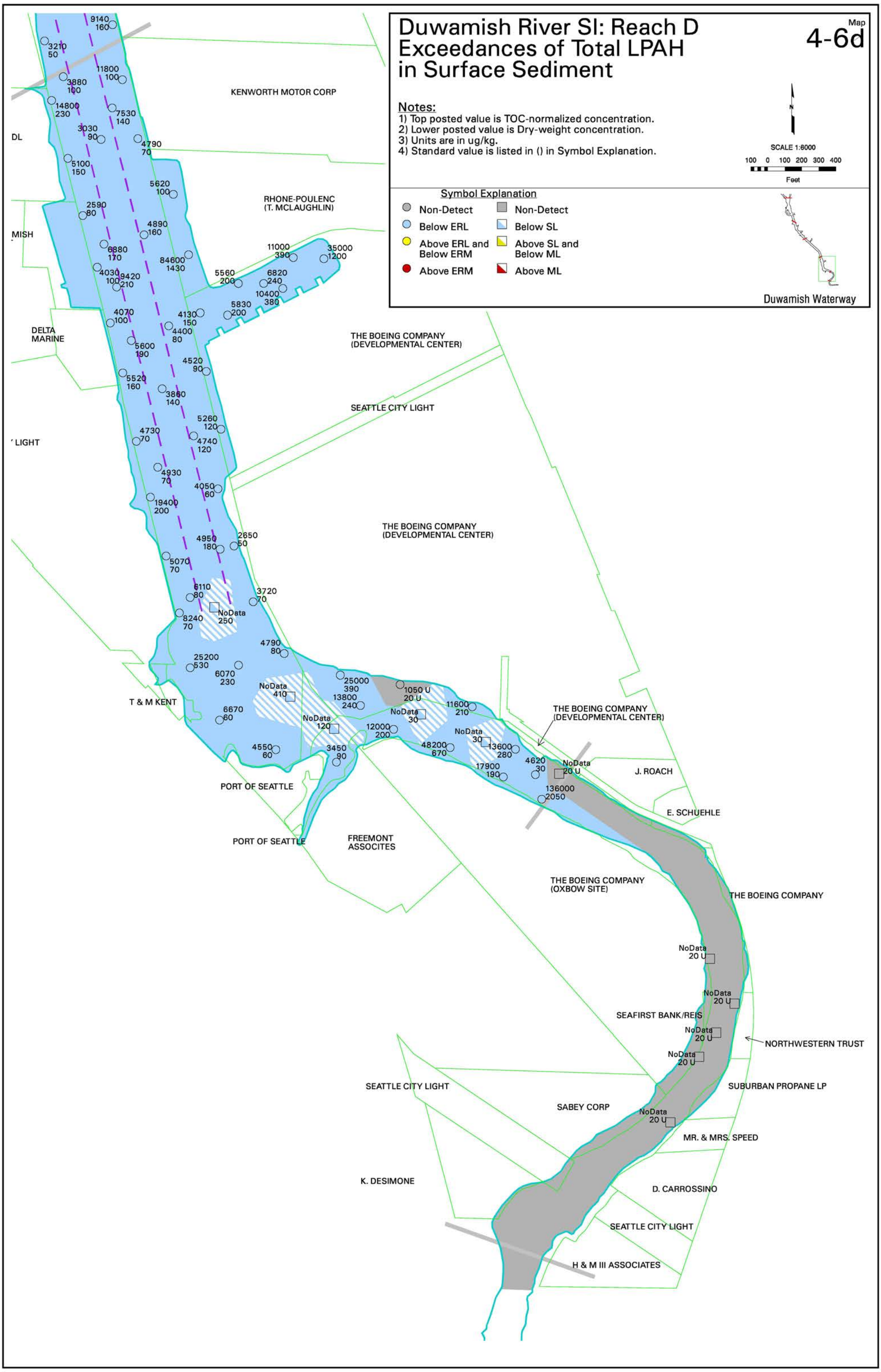
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Phenanthrene in Surface Sediment

Map 4-7a

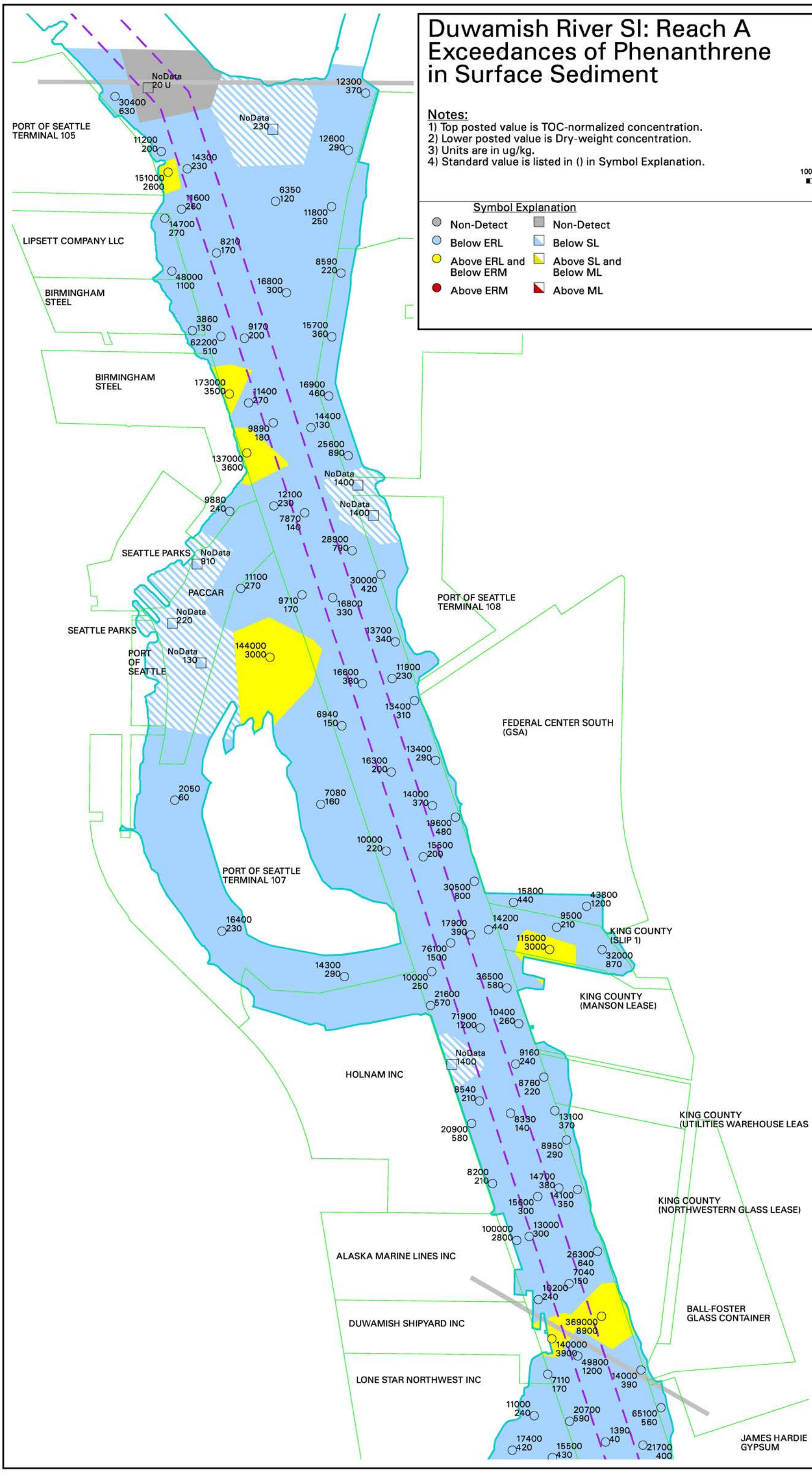
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach B Exceedances of Phenanthrene in Surface Sediment

Map 4-7b

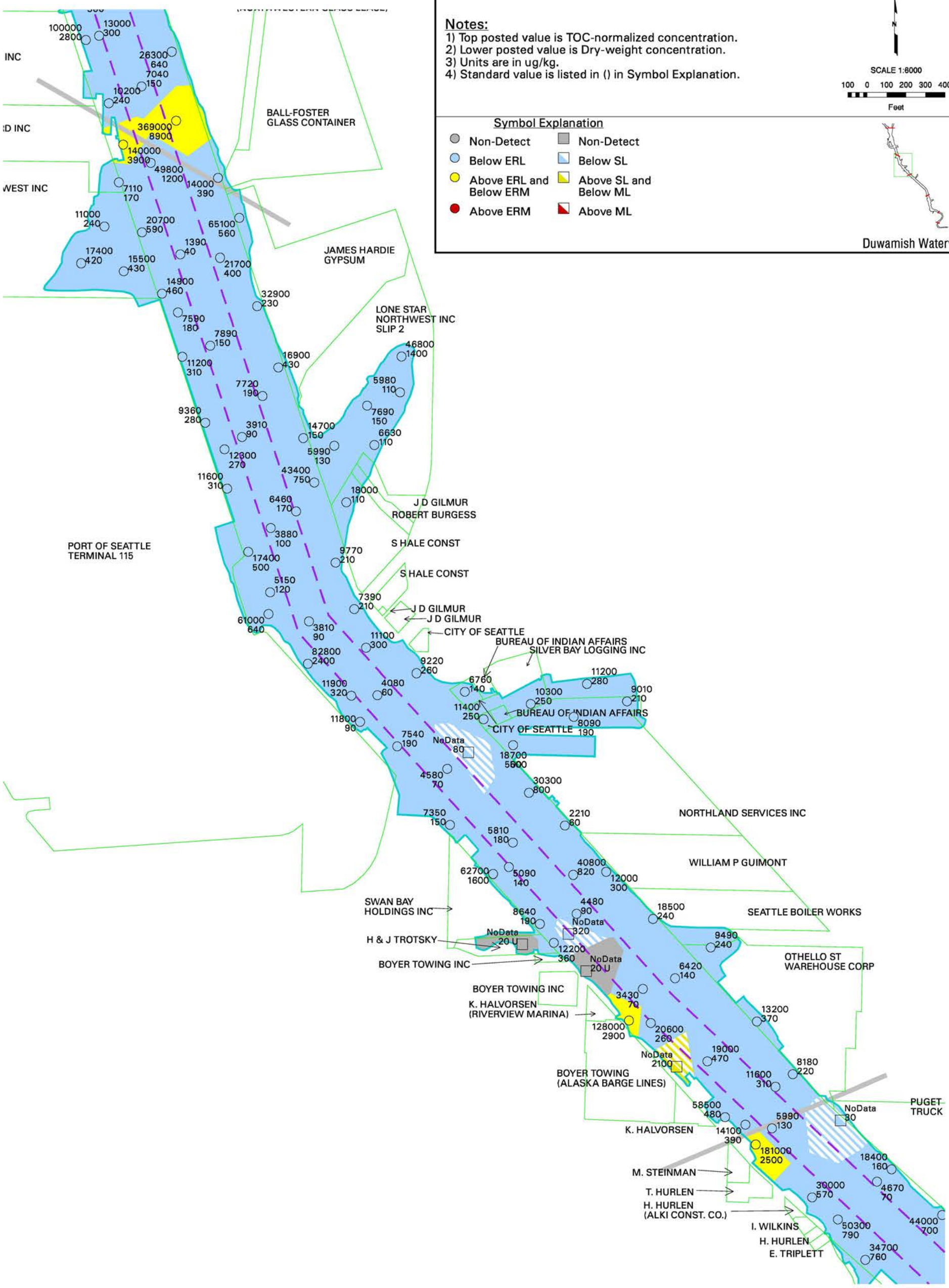
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach C Exceedances of Phenanthrene in Surface Sediment

Map 4-7c

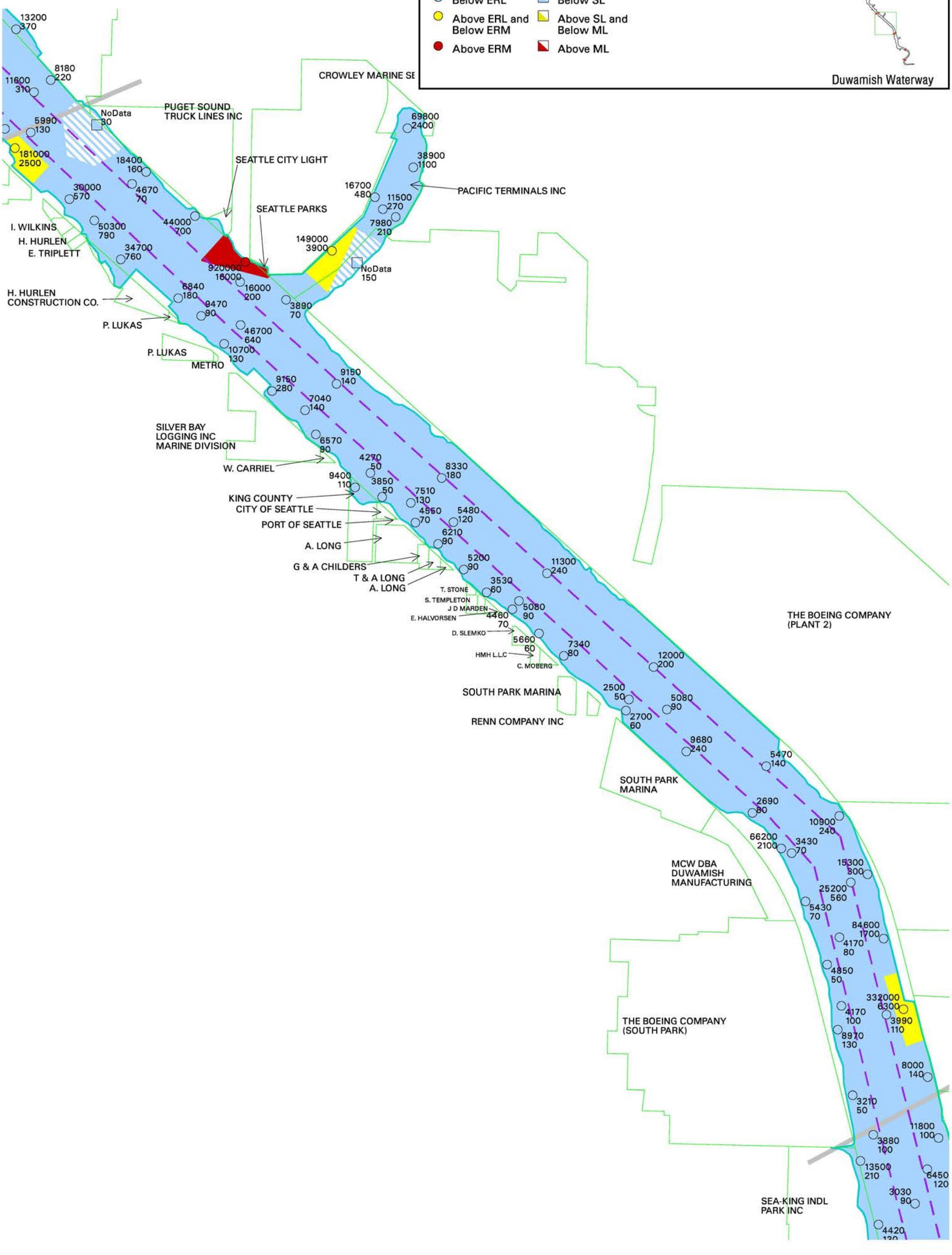
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach D Exceedances of Phenanthrene in Surface Sediment

Map 4-7d

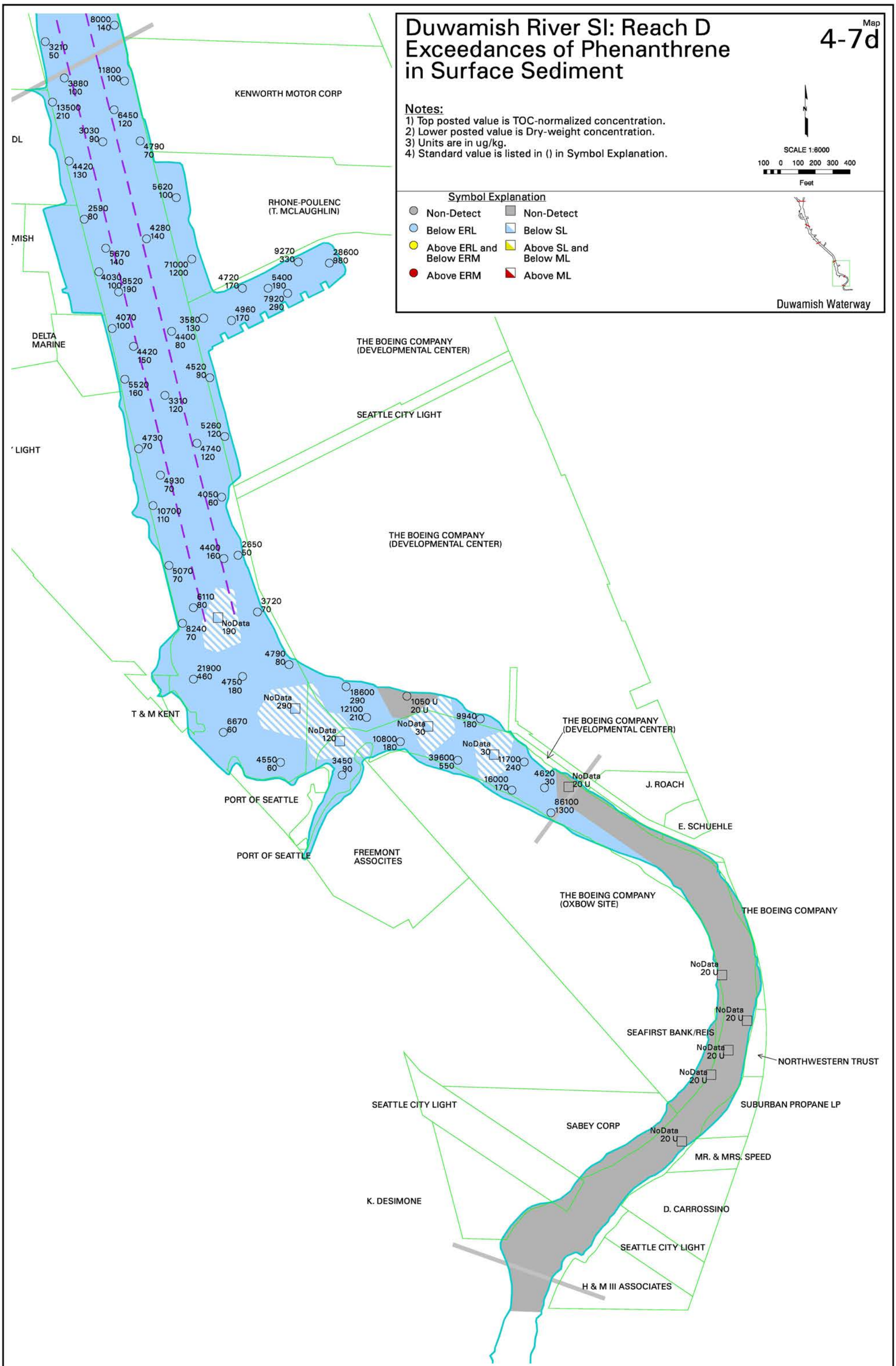
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Acenaphthene in Surface Sediment

Map 4-8a

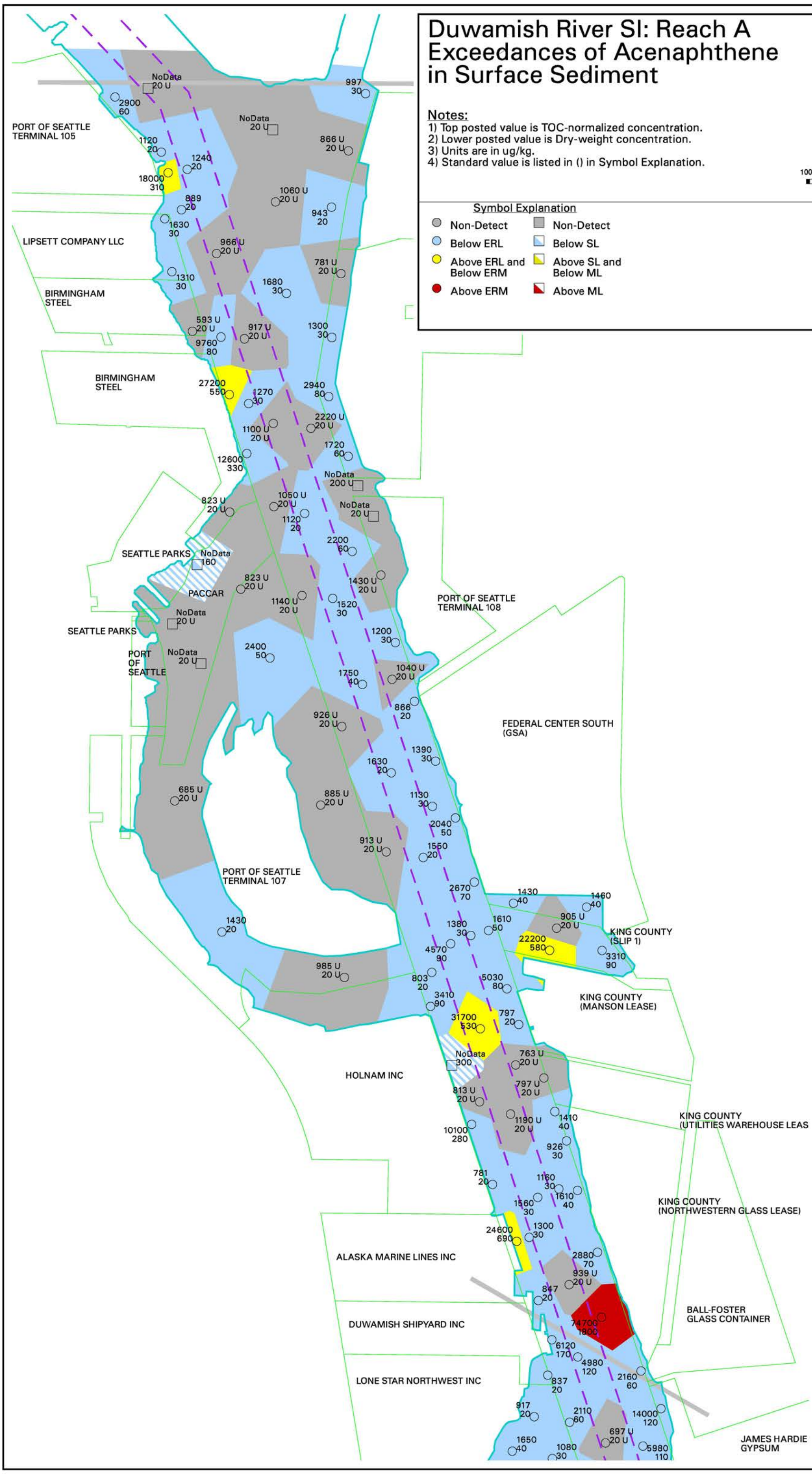
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach B Exceedances of Acenaphthene in Surface Sediment

Map 4-8b

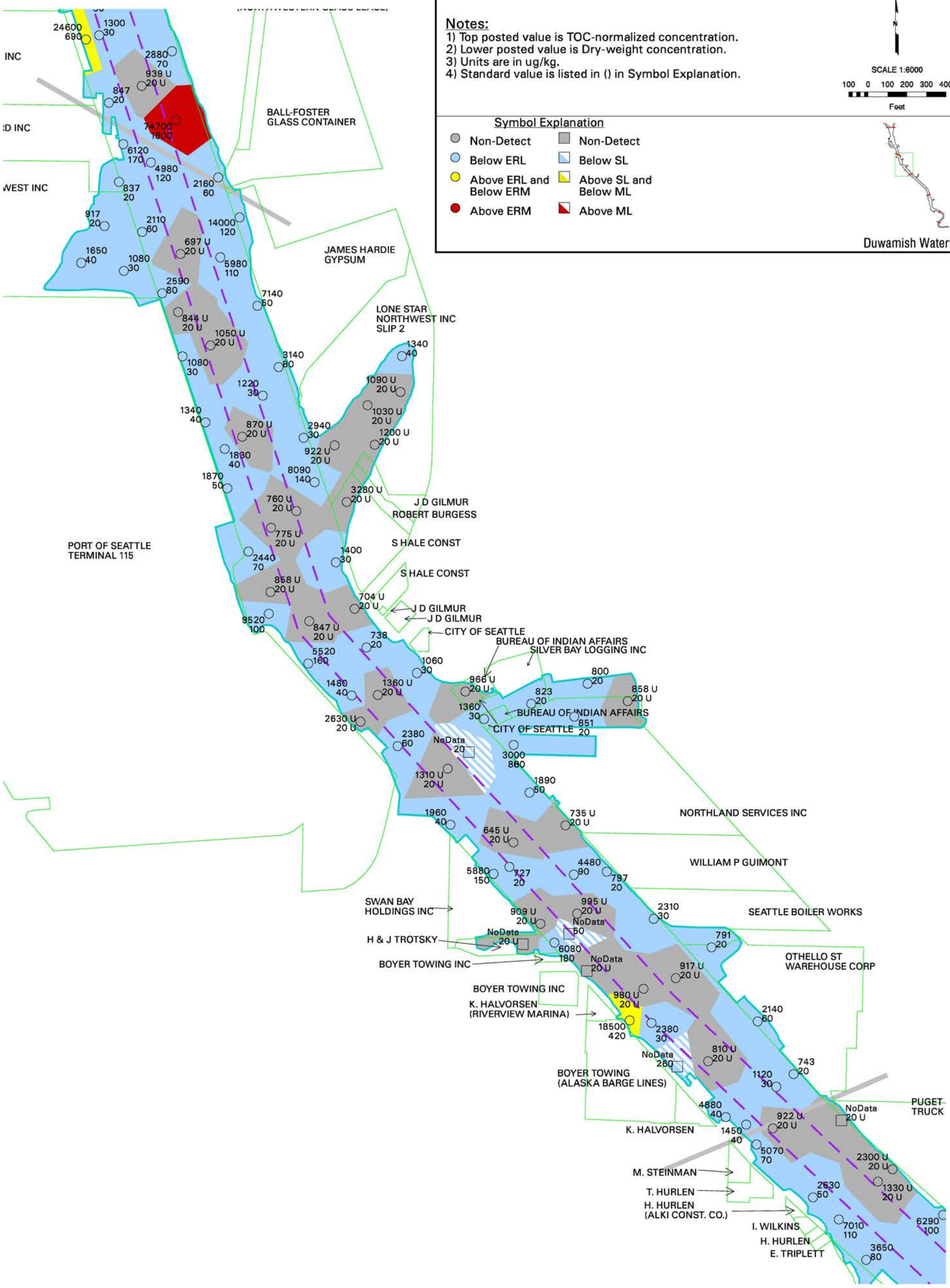
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach C Exceedances of Acenaphthene in Surface Sediment

Map 4-8c

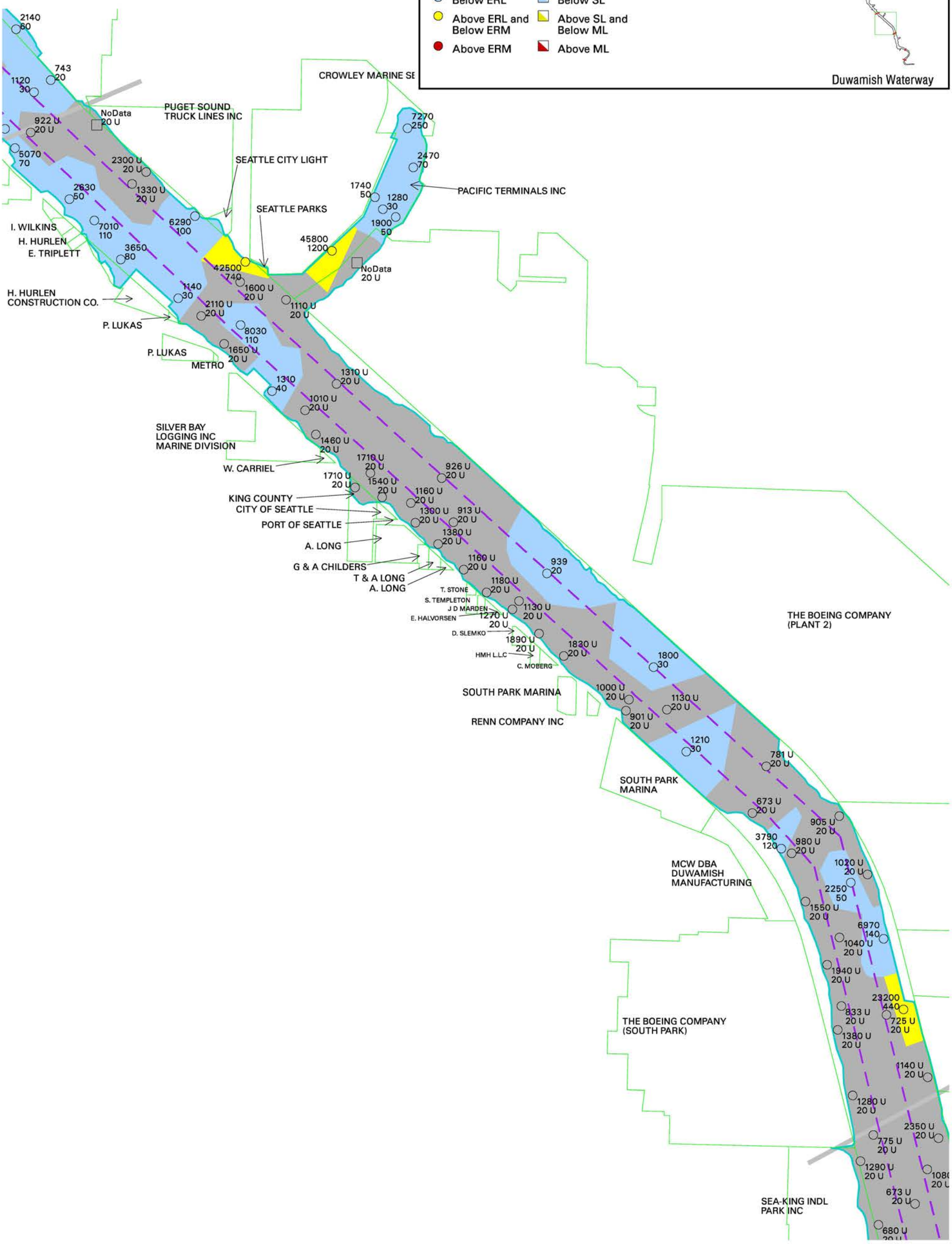
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach D Exceedances of Acenaphthene in Surface Sediment

Map 4-8d

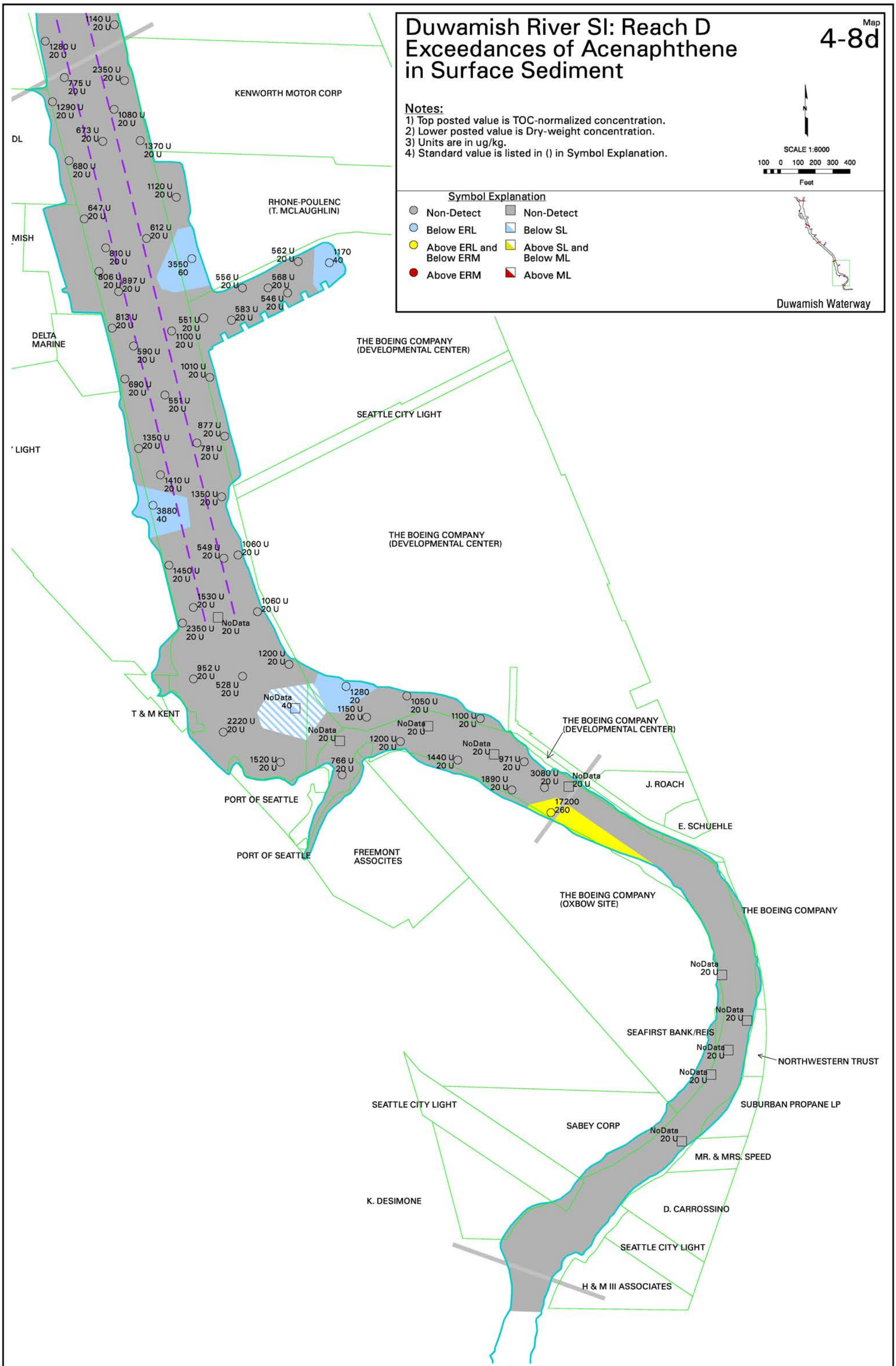
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Fluorene in Surface Sediment

Map 4-9a

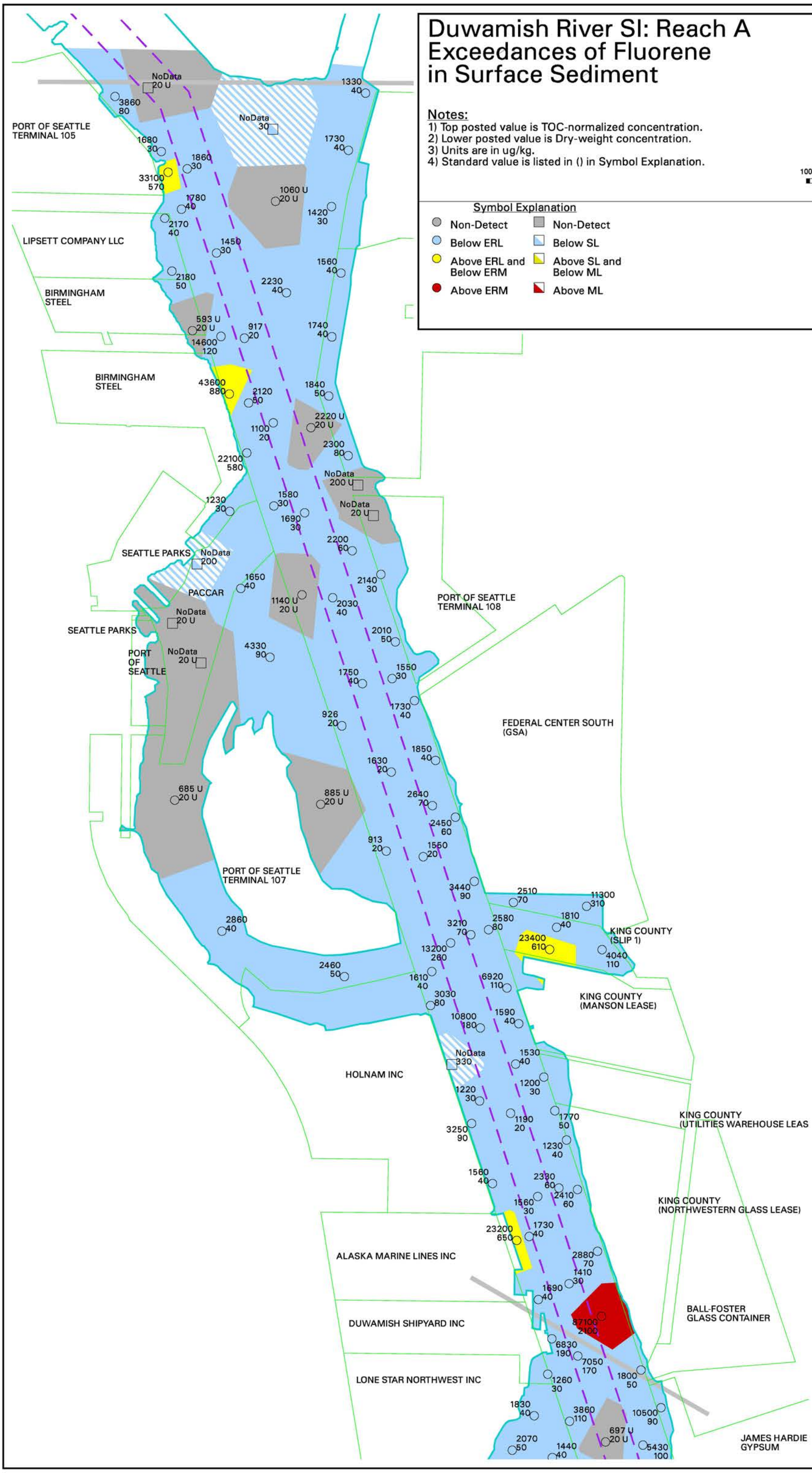
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach B Exceedances of Fluorene in Surface Sediment

Map 4-9b

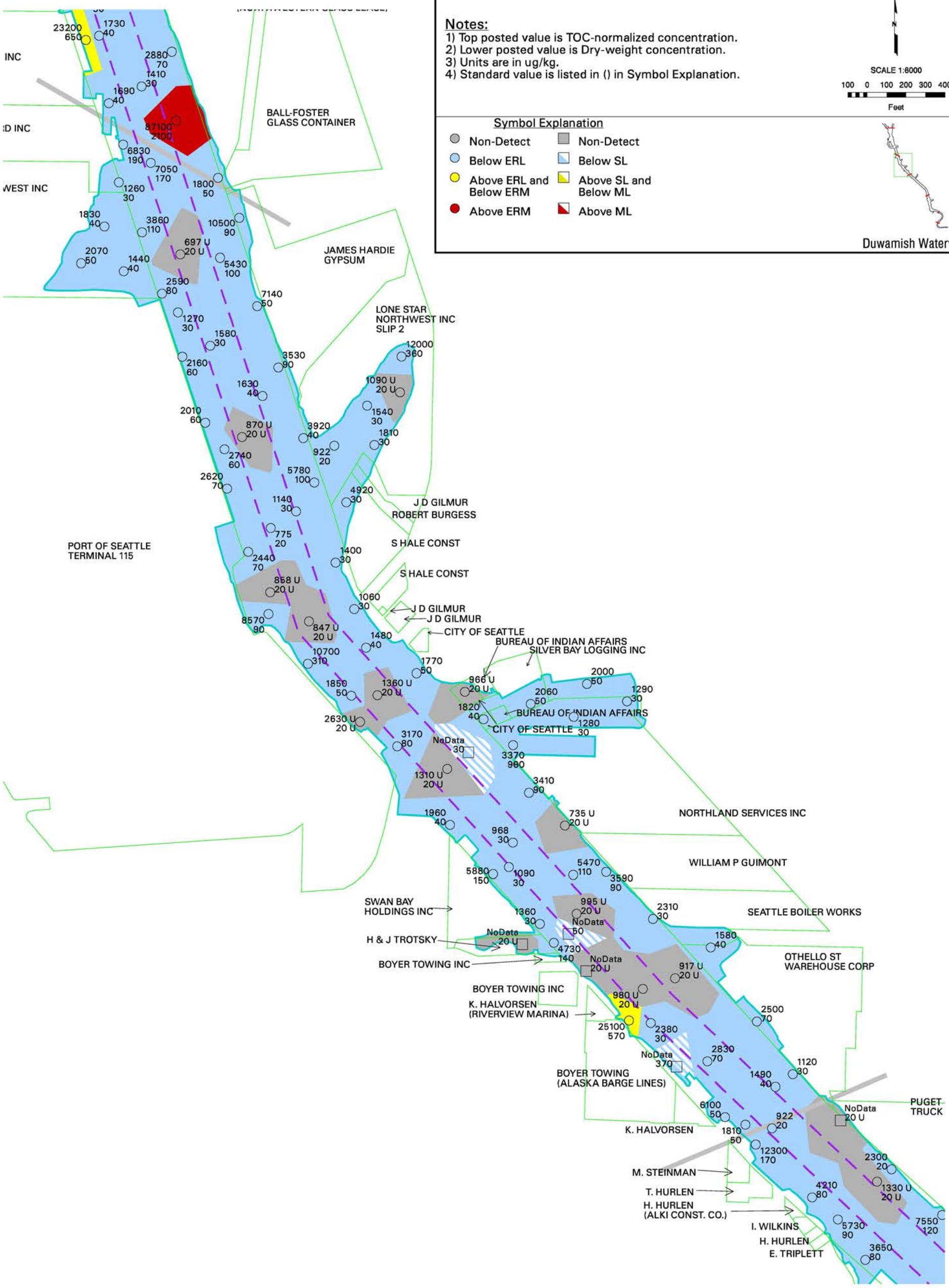
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach C Exceedances of Fluorene in Surface Sediment

Map 4-9c

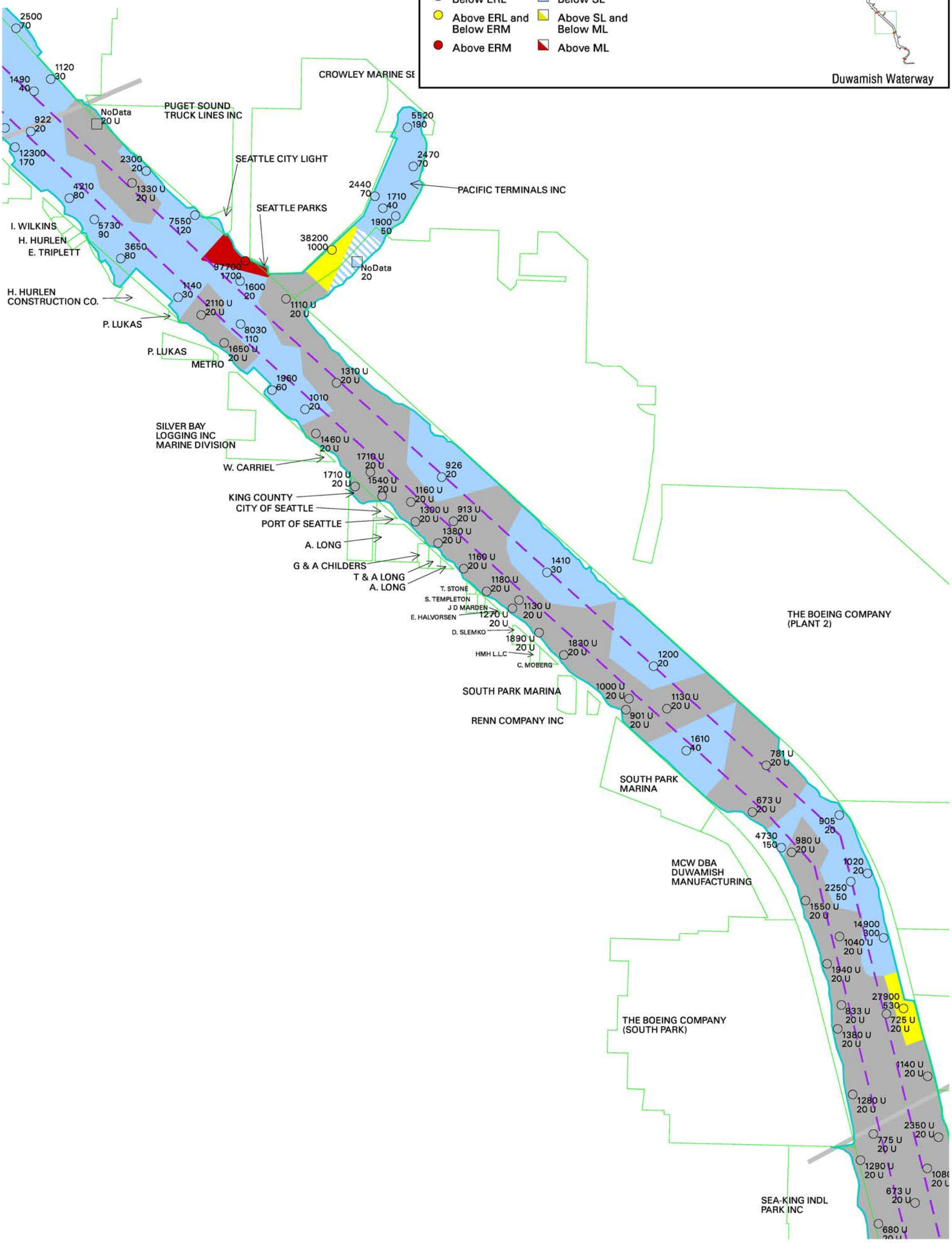
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach D Exceedances of Fluorene in Surface Sediment

Map 4-9d

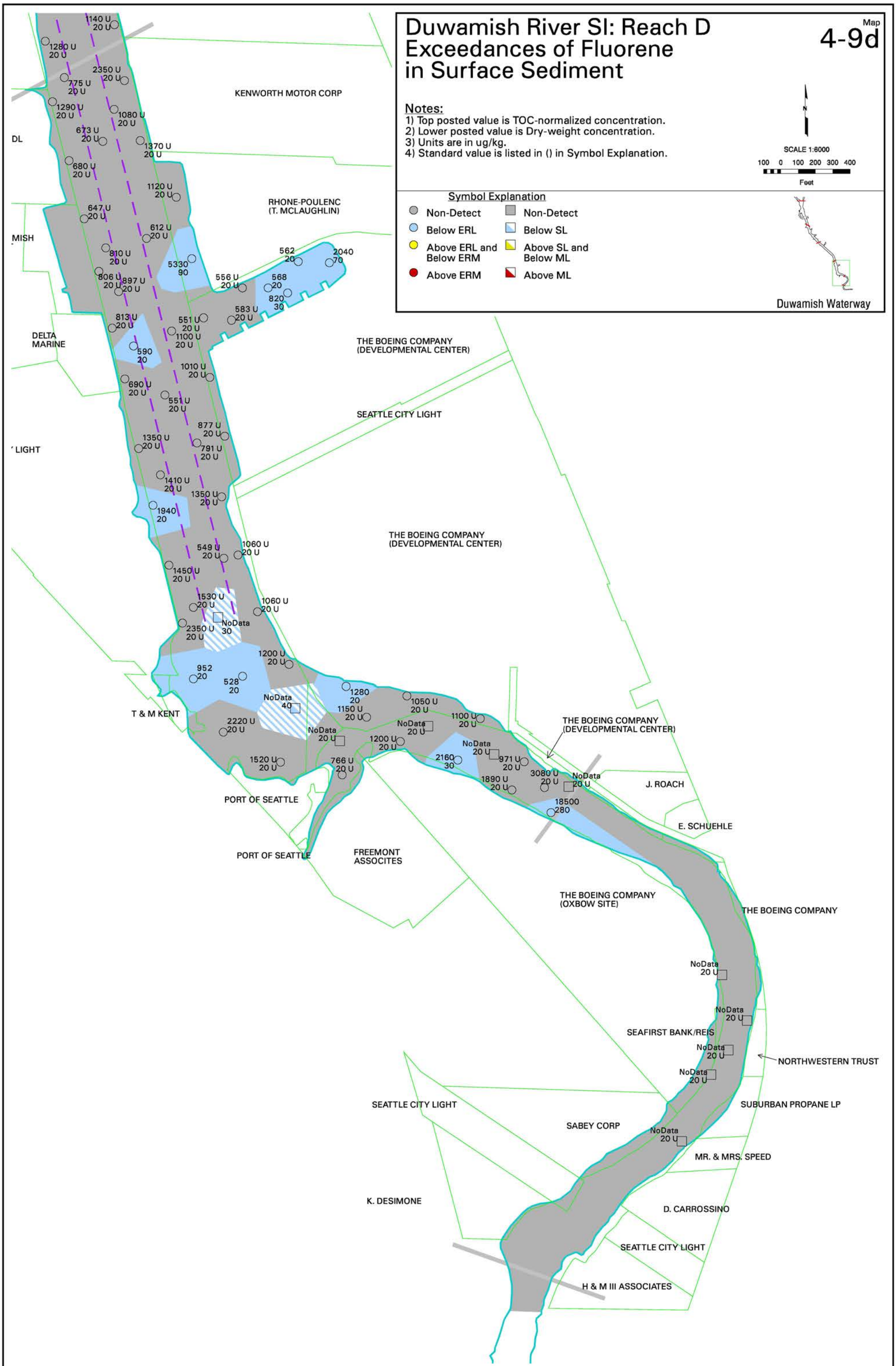
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Phenol in Surface Sediment

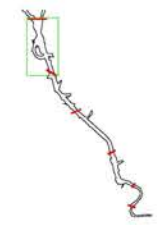
Map 4-10a

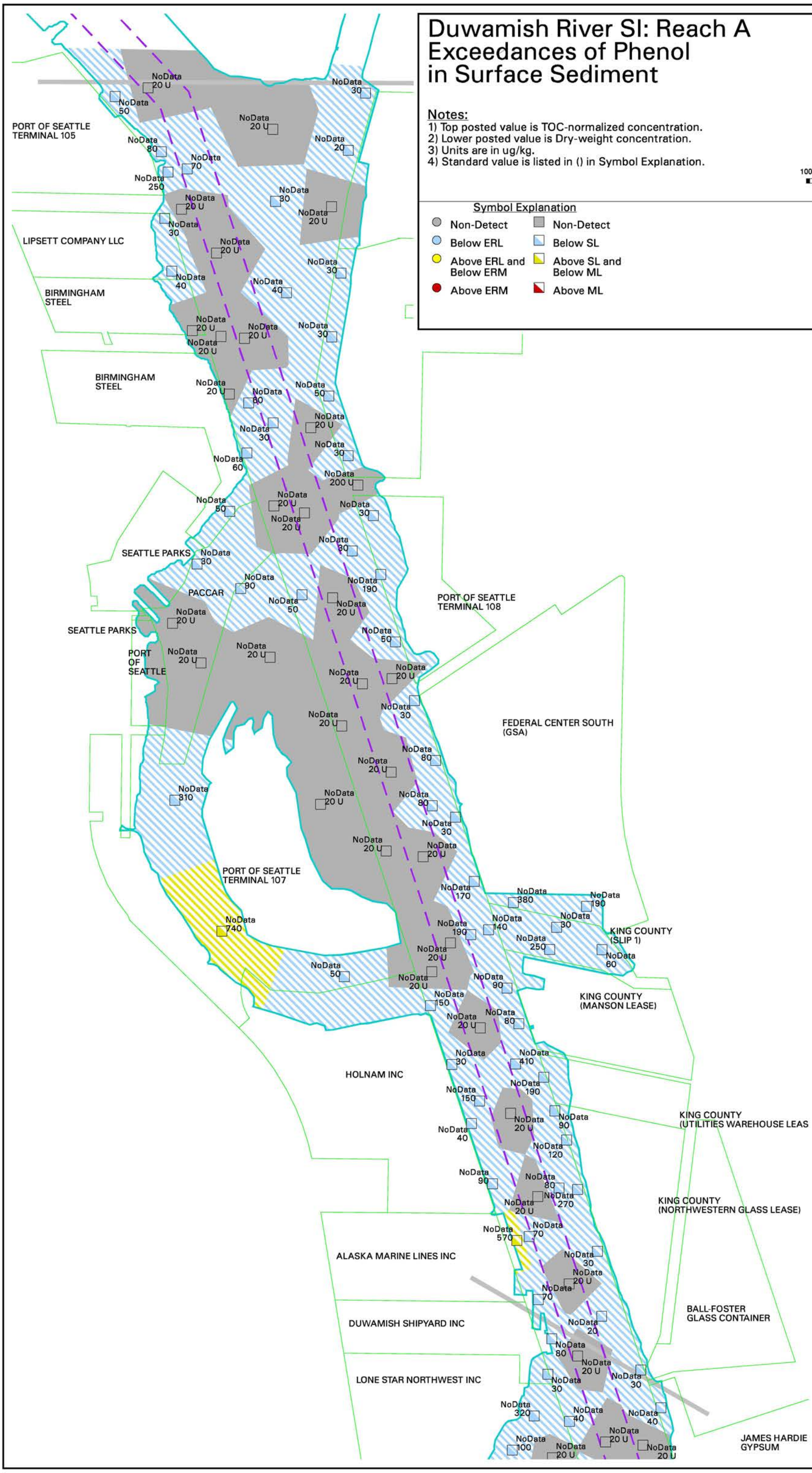
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML





Duwamish River SI: Reach B Exceedances of Phenol in Surface Sediment

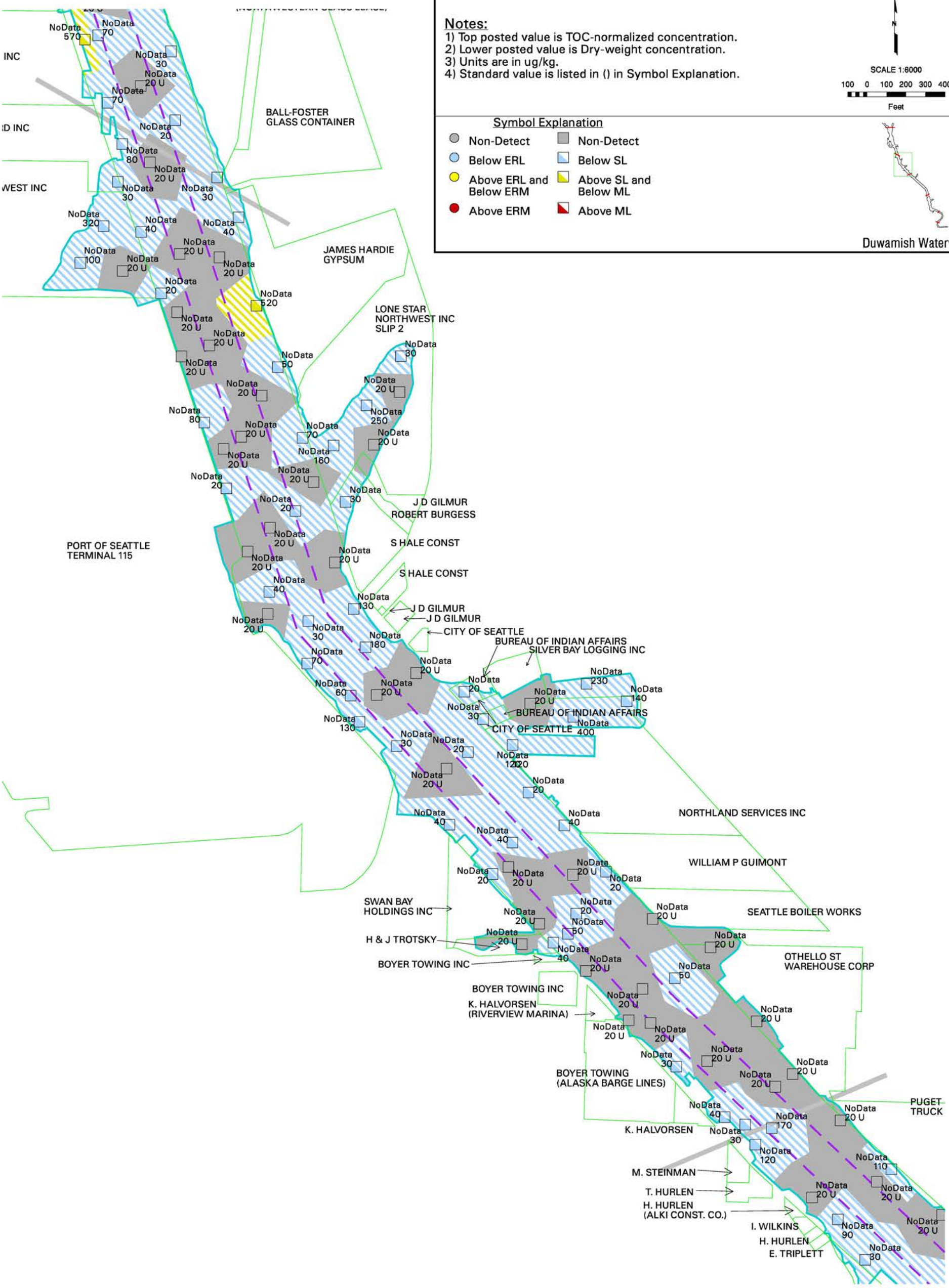
Map 4-10b

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML



Duwamish River SI: Reach C Exceedances of Phenol in Surface Sediment

Map 4-10c

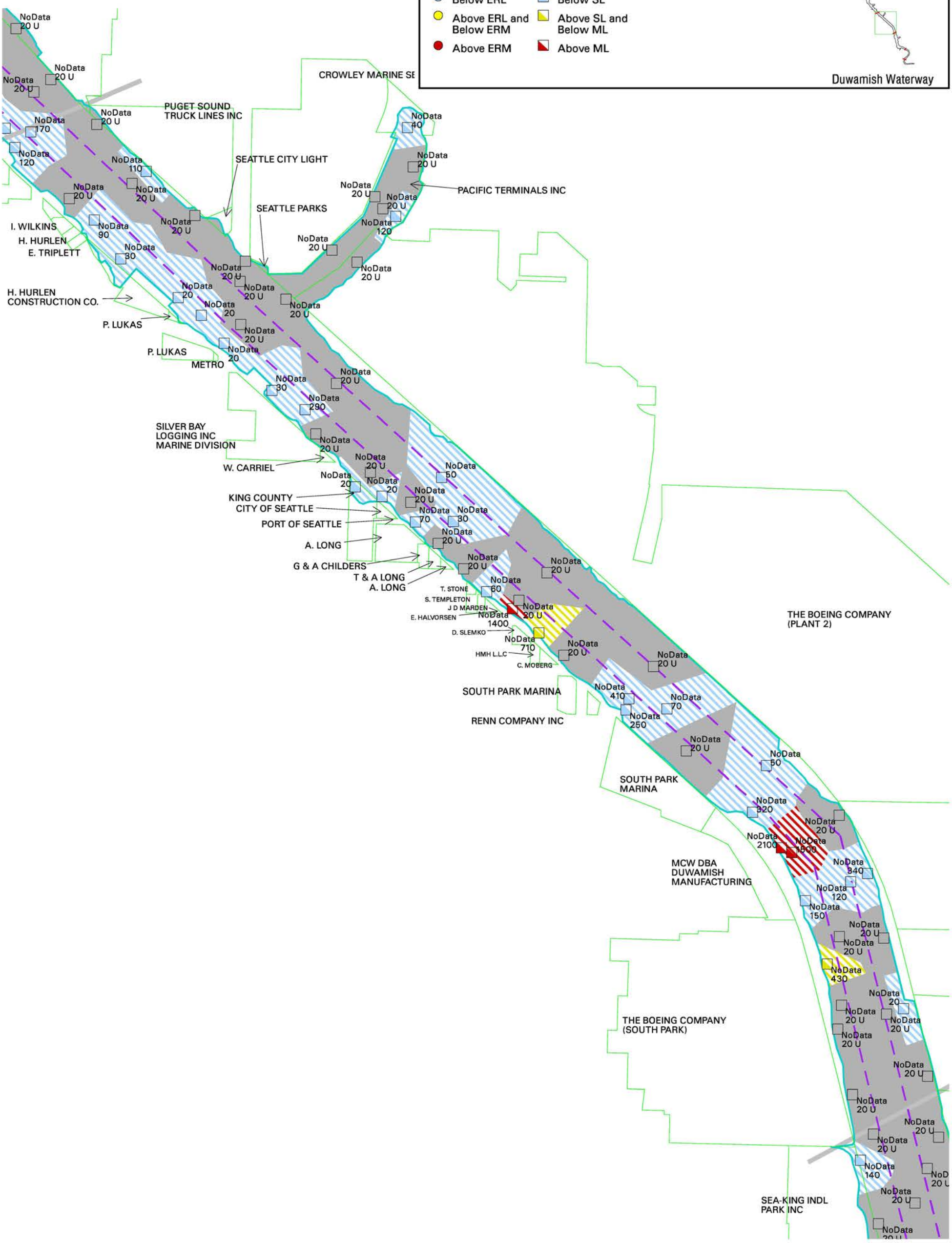
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach D Exceedances of Phenol in Surface Sediment

Map 4-10d

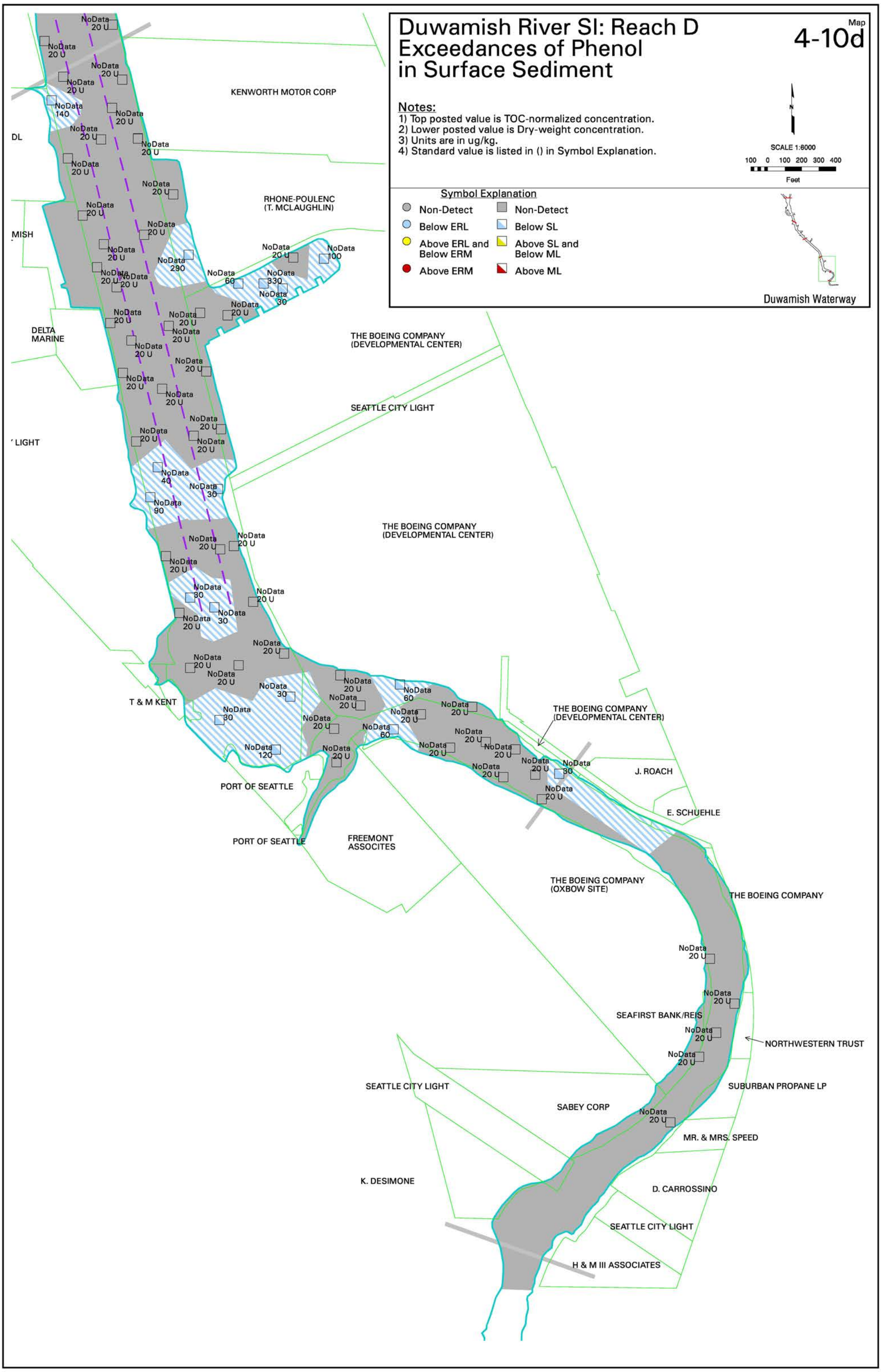
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Hexachlorobenzene in Surface Sediment

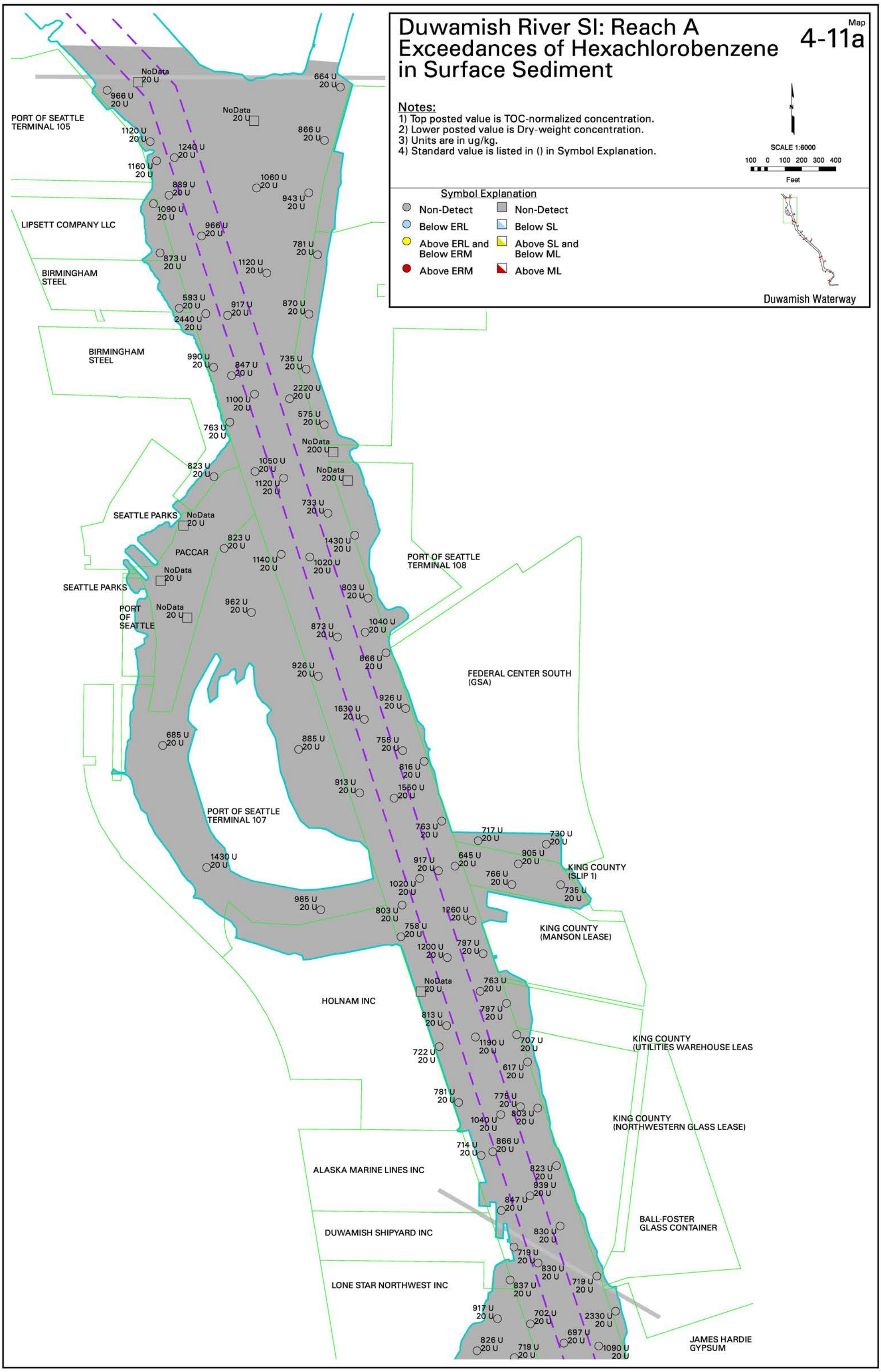
Map 4-11a

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML



Duwamish River SI: Reach B Exceedances of Hexachlorobenzene in Surface Sediment

Map 4-11b

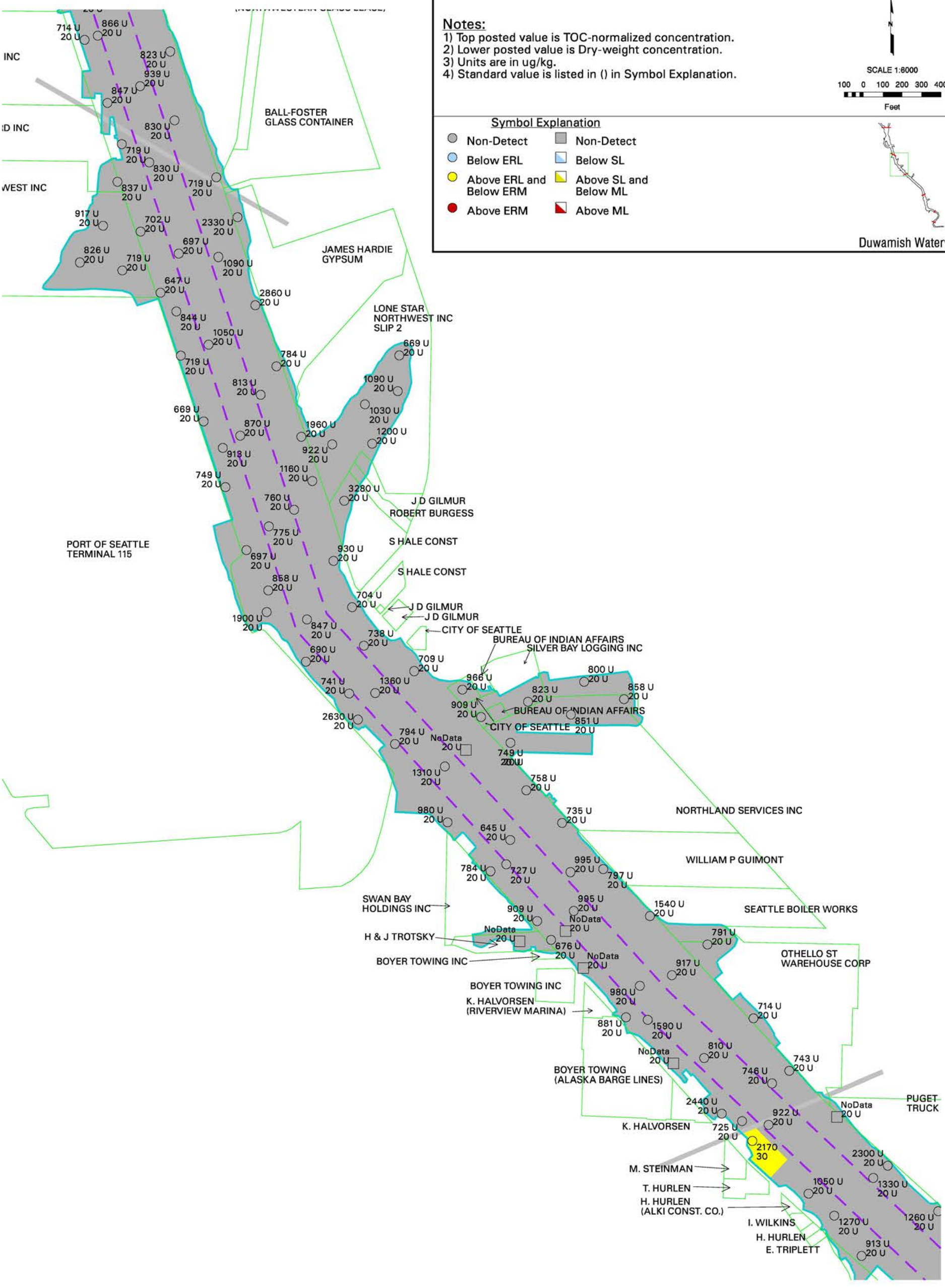
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



Duwamish River SI: Reach C Exceedances of Hexachlorobenzene in Surface Sediment

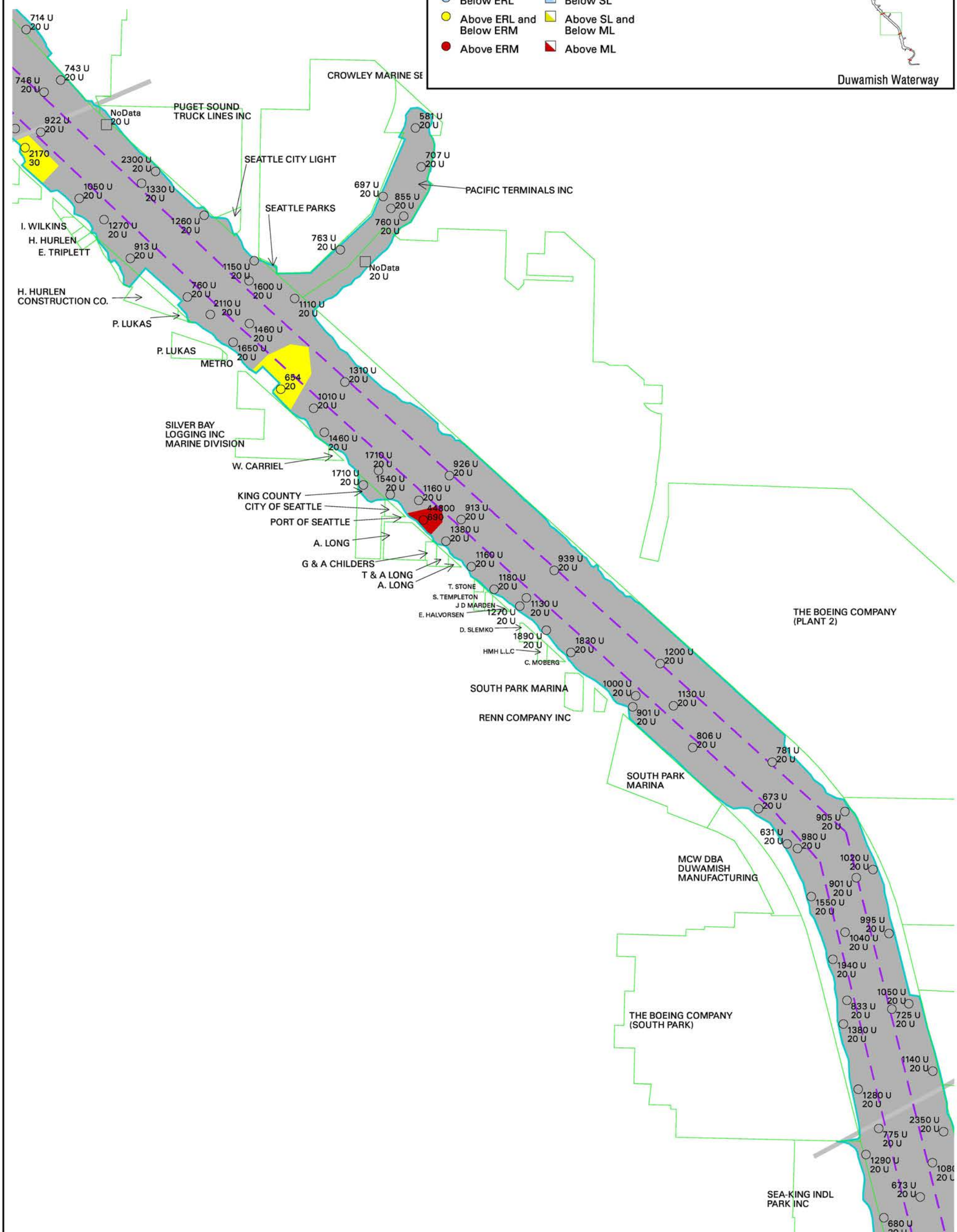
Map 4-11c

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML



Duwamish River SI: Reach D Exceedances of Hexachlorobenzene in Surface Sediment

Map 4-11d

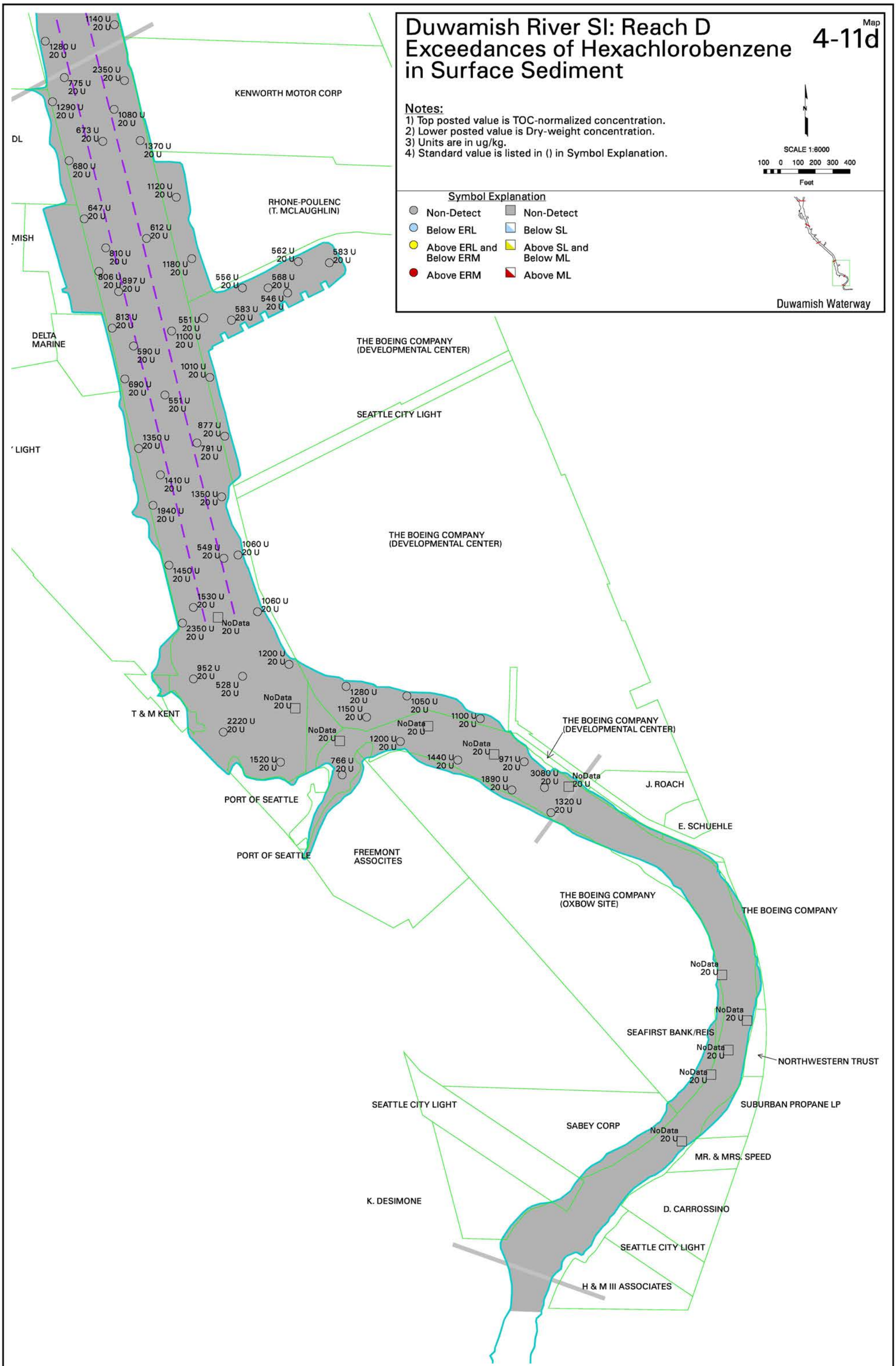
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Bis(2-ethylhexyl) Phthalate in Surface Sediment

Map 4-12a

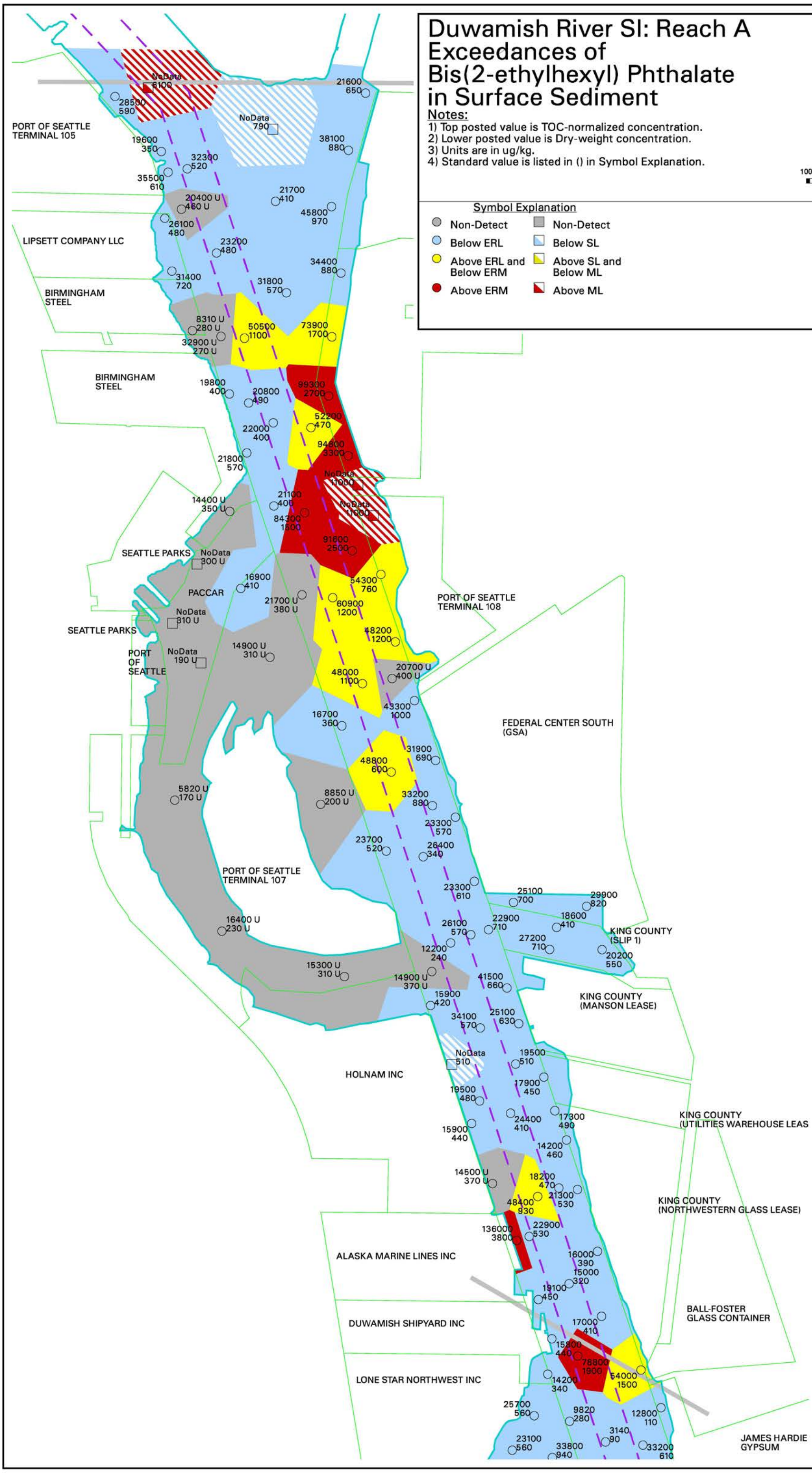
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach B Exceedances of Bis(2-ethylhexyl) Phthalate in Surface Sediment

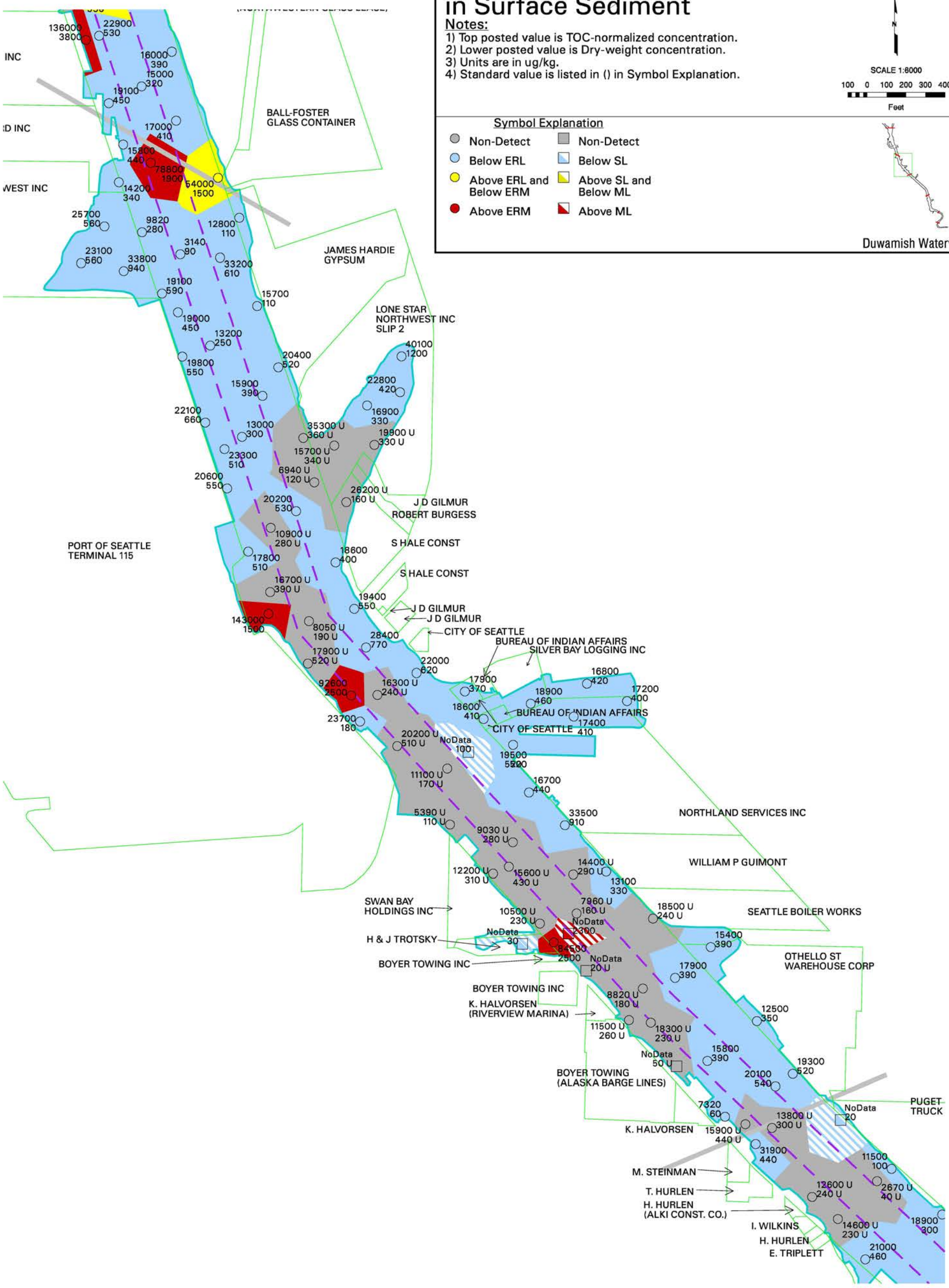
Map 4-12b

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML



Duwamish River SI: Reach C Exceedances of Bis(2-ethylhexyl) Phthalate in Surface Sediment

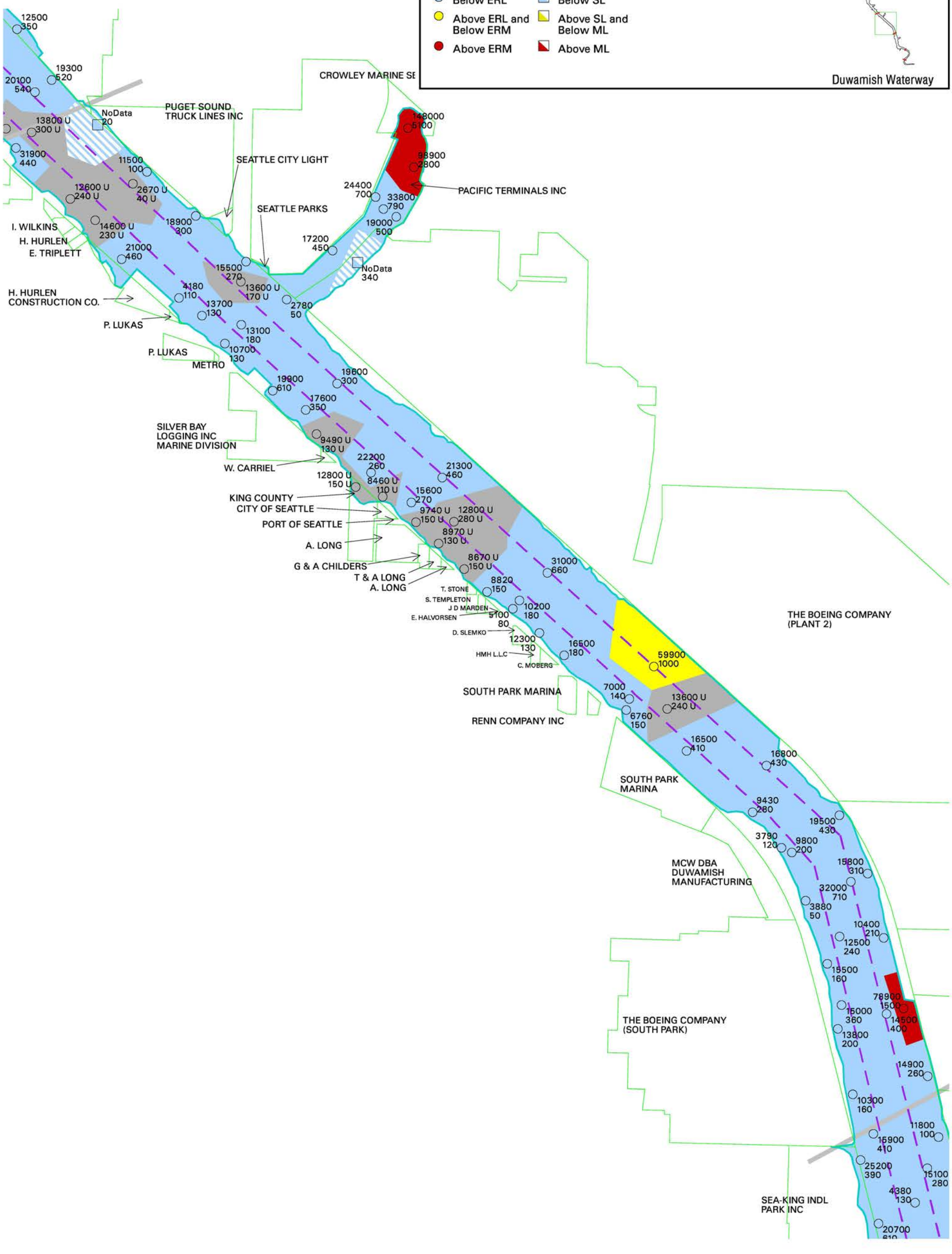
Map 4-12c

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML



Duwamish River SI: Reach D Exceedances of Bis(2-ethylhexyl) Phthalate in Surface Sediment

Map 4-12d

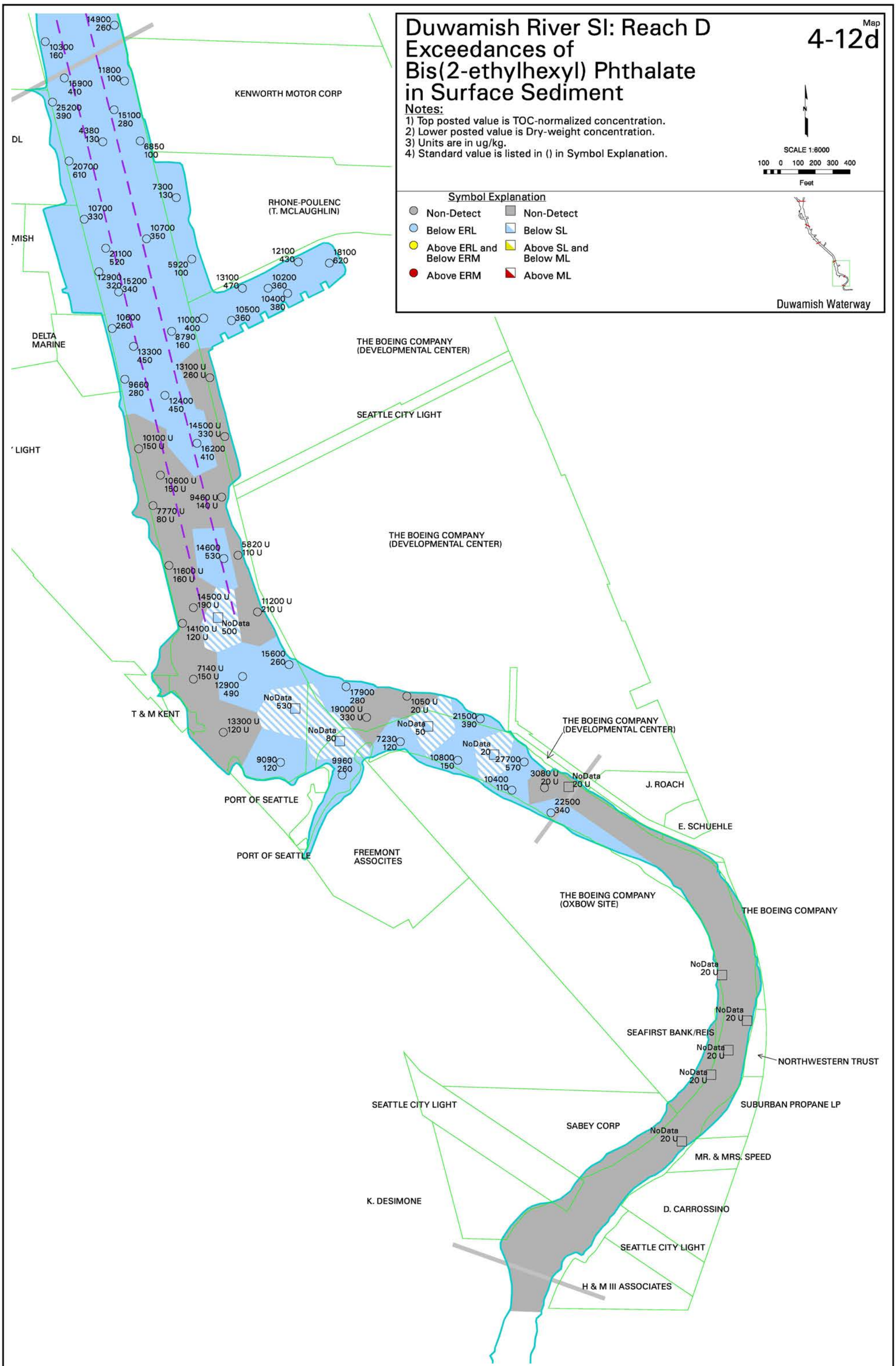
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Butyl Benzyl Phthalate in Surface Sediment

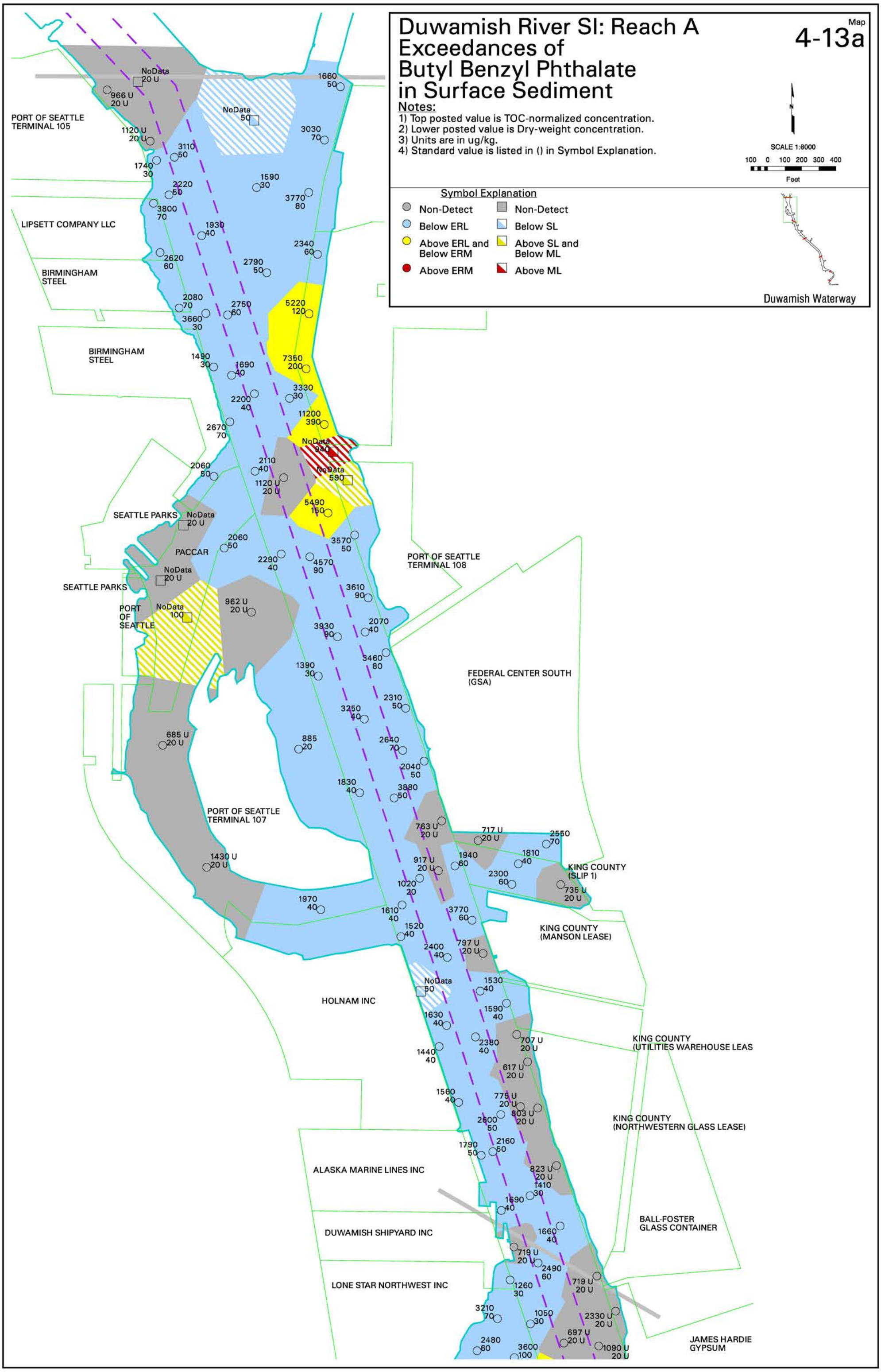
Map 4-13a

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML



Duwamish River SI: Reach B Exceedances of Butyl Benzyl Phthalate in Surface Sediment

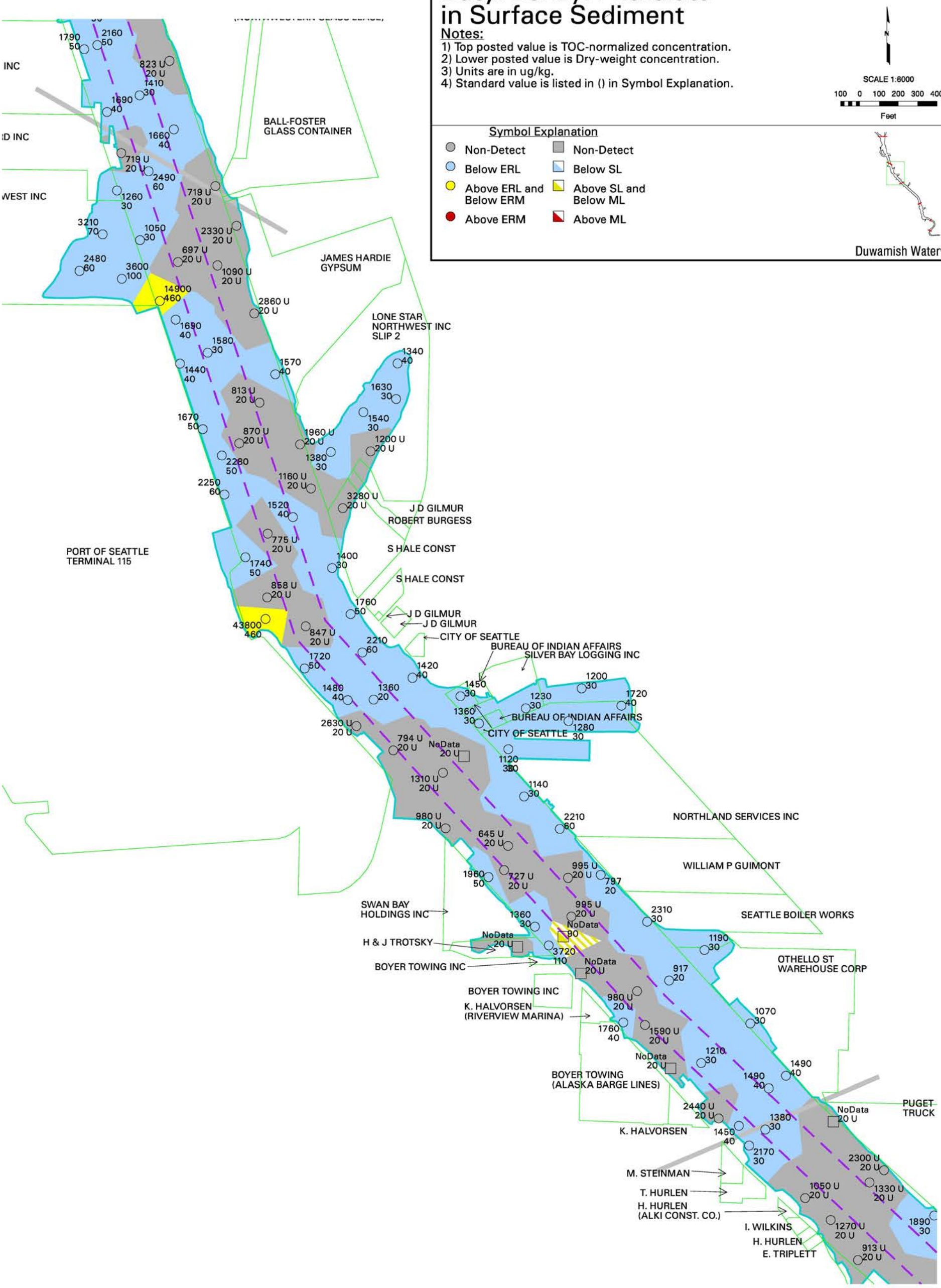
Map 4-13b

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML



Duwamish River SI: Reach C Exceedances of Butyl Benzyl Phthalate in Surface Sediment

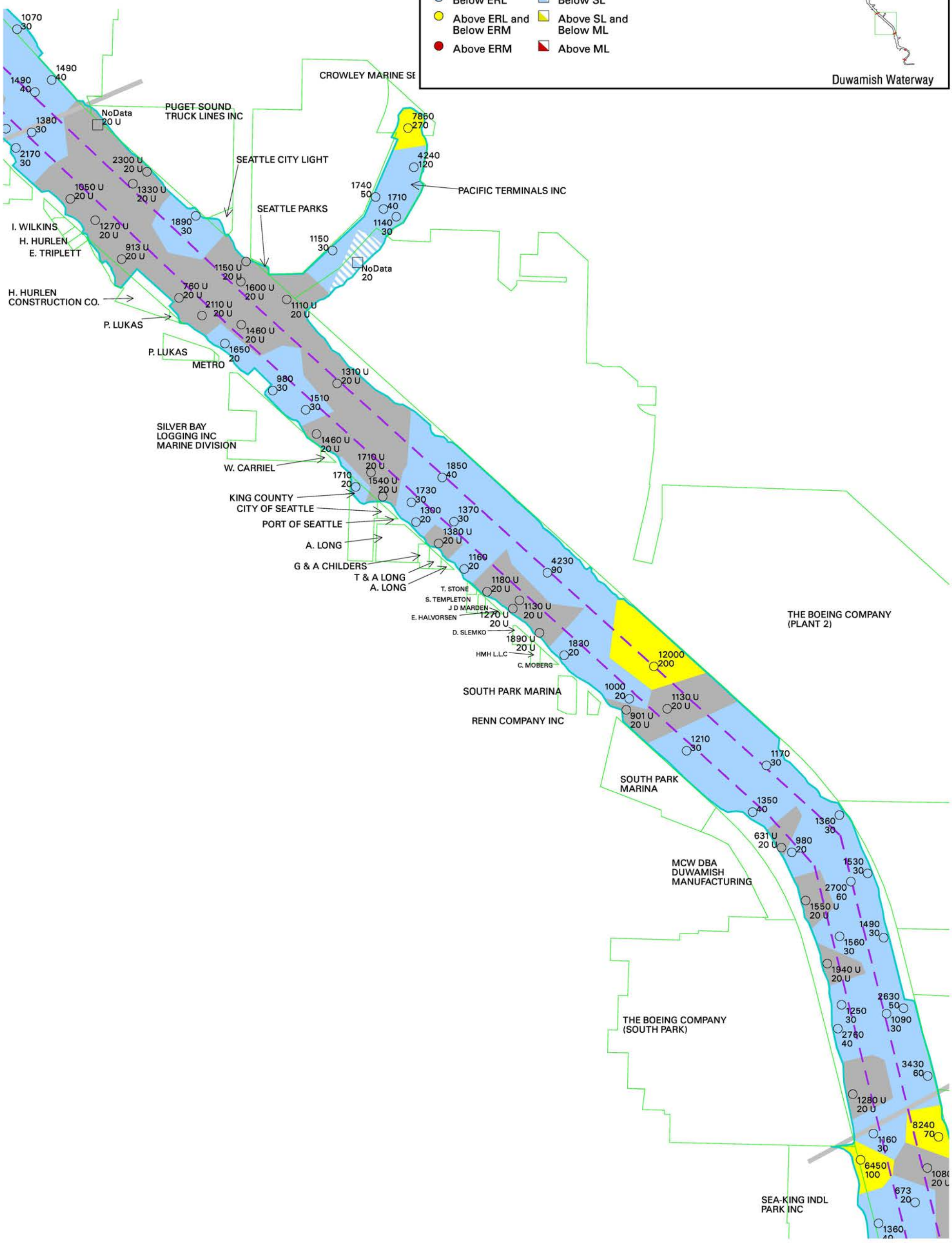
Map 4-13c

Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML



Duwamish River SI: Reach D Exceedances of Butyl Benzyl Phthalate in Surface Sediment

Map 4-13d

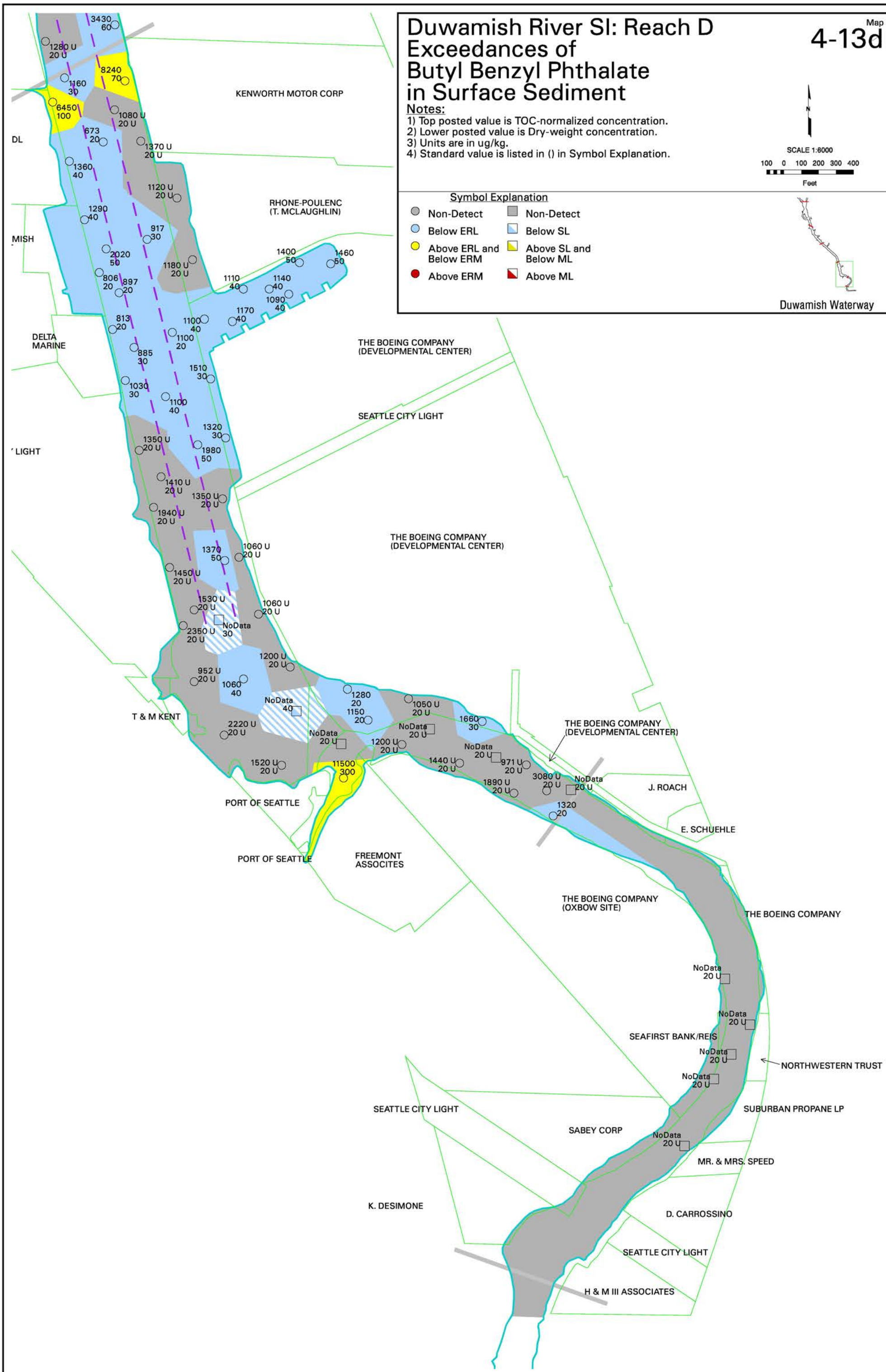
Notes:
1) Top posted value is TOC-normalized concentration.
2) Lower posted value is Dry-weight concentration.
3) Units are in ug/kg.
4) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Non-Detect	Non-Detect
Below ERL	Below SL
Above ERL and Below ERM	Above SL and Below ML
Above ERM	Above ML

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Mercury in Surface Sediment

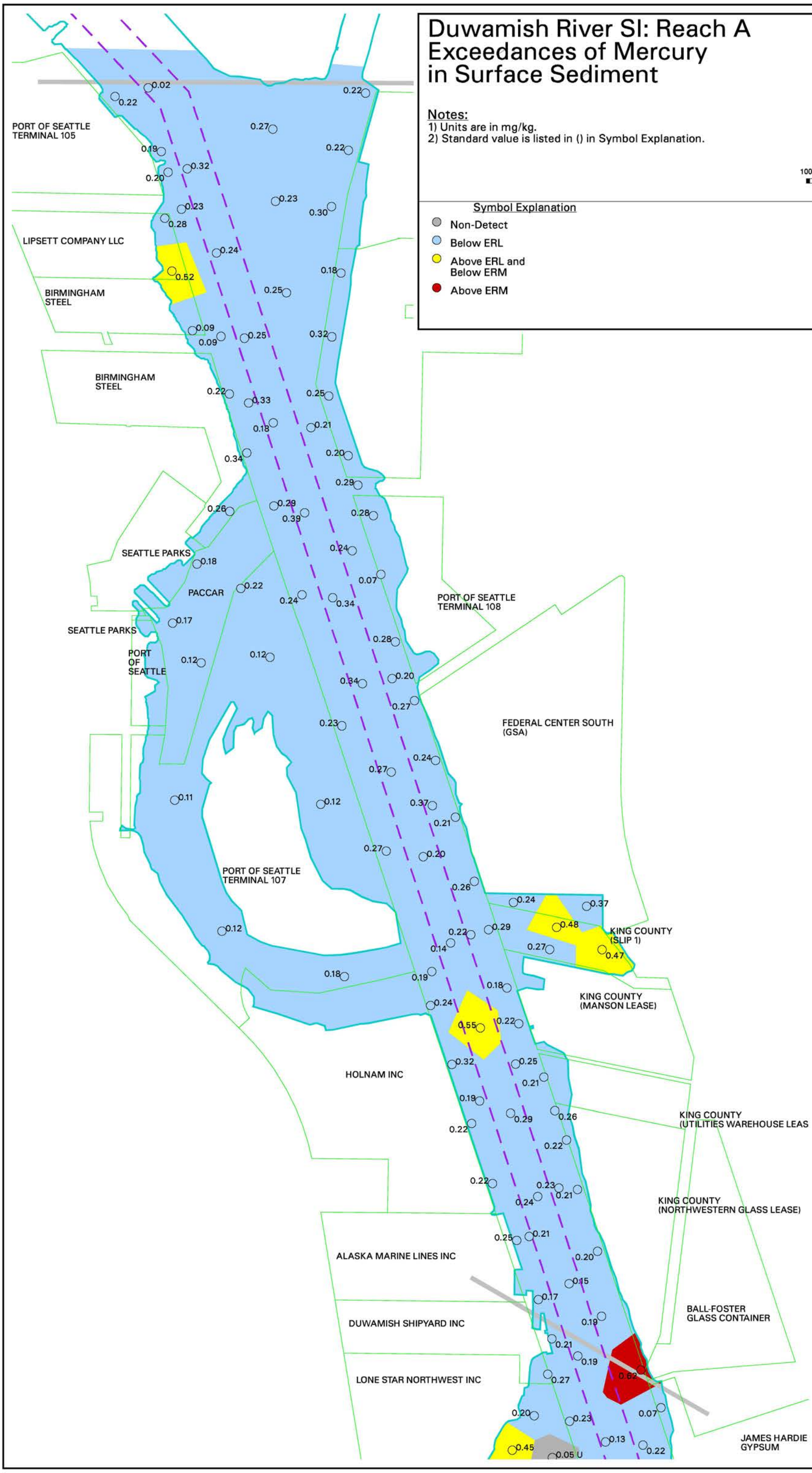
Map 4-14a

Notes:
1) Units are in mg/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM

Duwamish Waterway



Duwamish River SI: Reach B Exceedances of Mercury in Surface Sediment

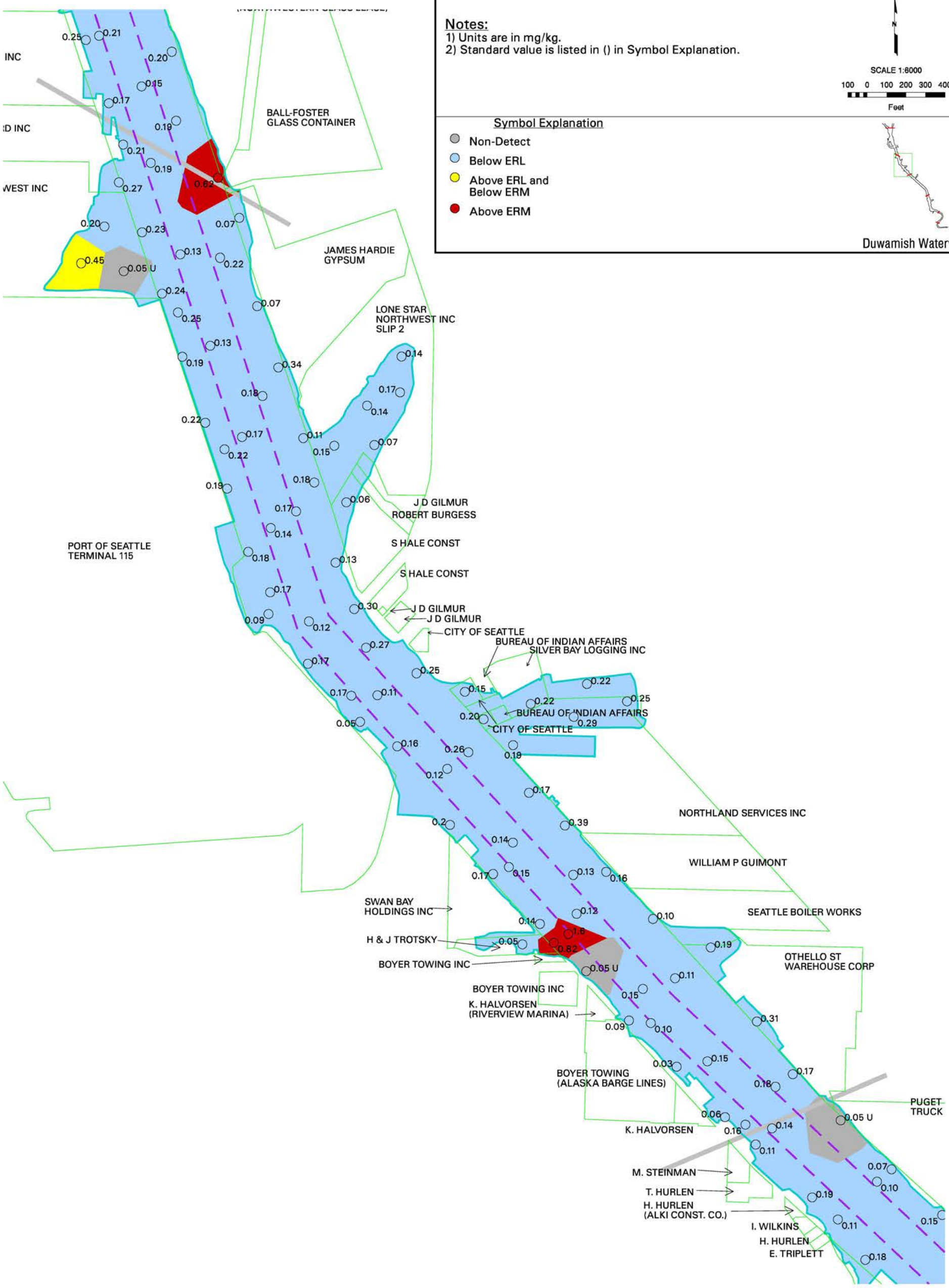
Map 4-14b

Notes:
1) Units are in mg/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM

Duwamish Waterway



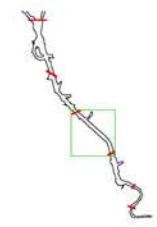
Duwamish River SI: Reach C Exceedances of Mercury in Surface Sediment

Map 4-14c

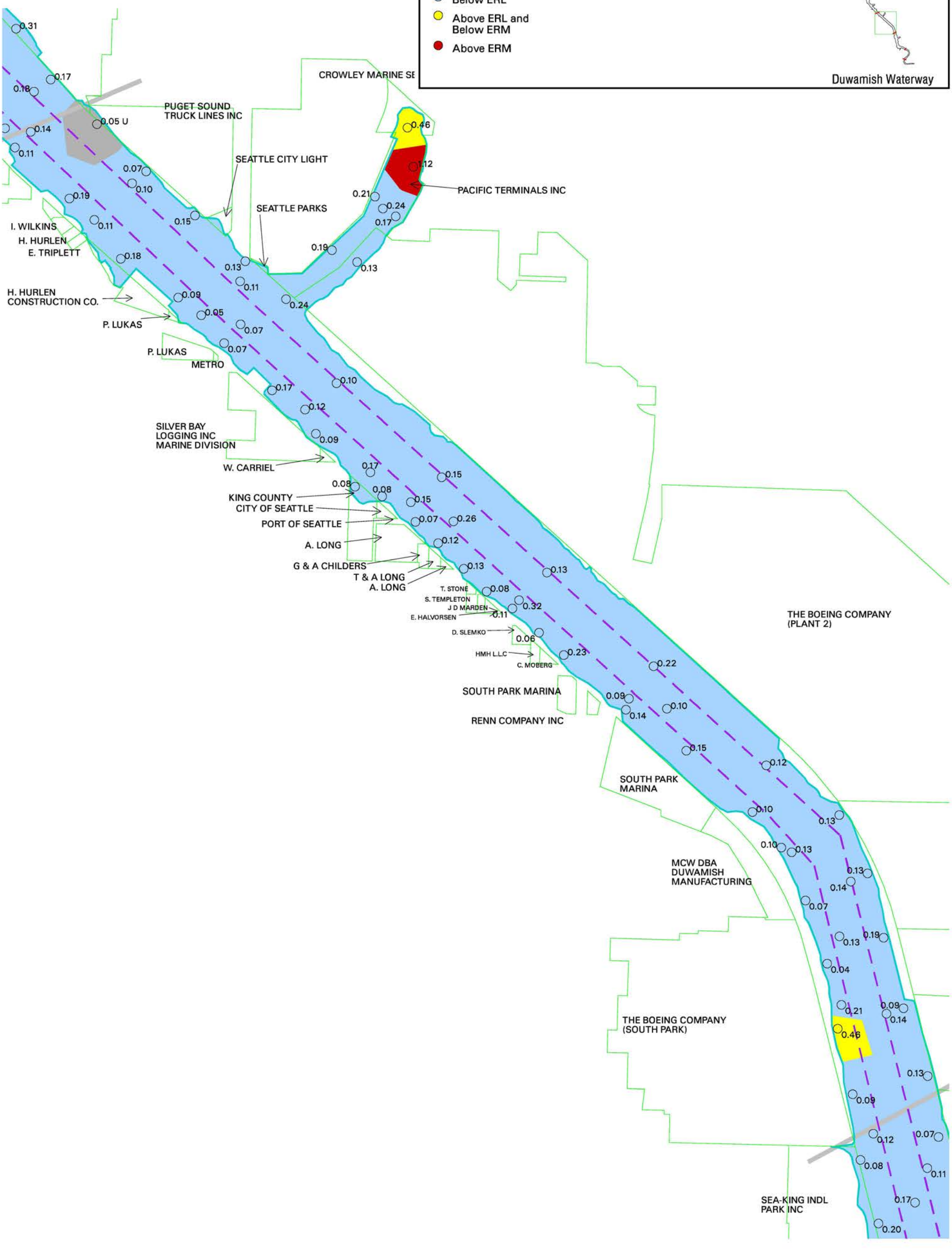
Notes:
1) Units are in mg/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM



Duwamish Waterway



Duwamish River SI: Reach D Exceedances of Mercury in Surface Sediment

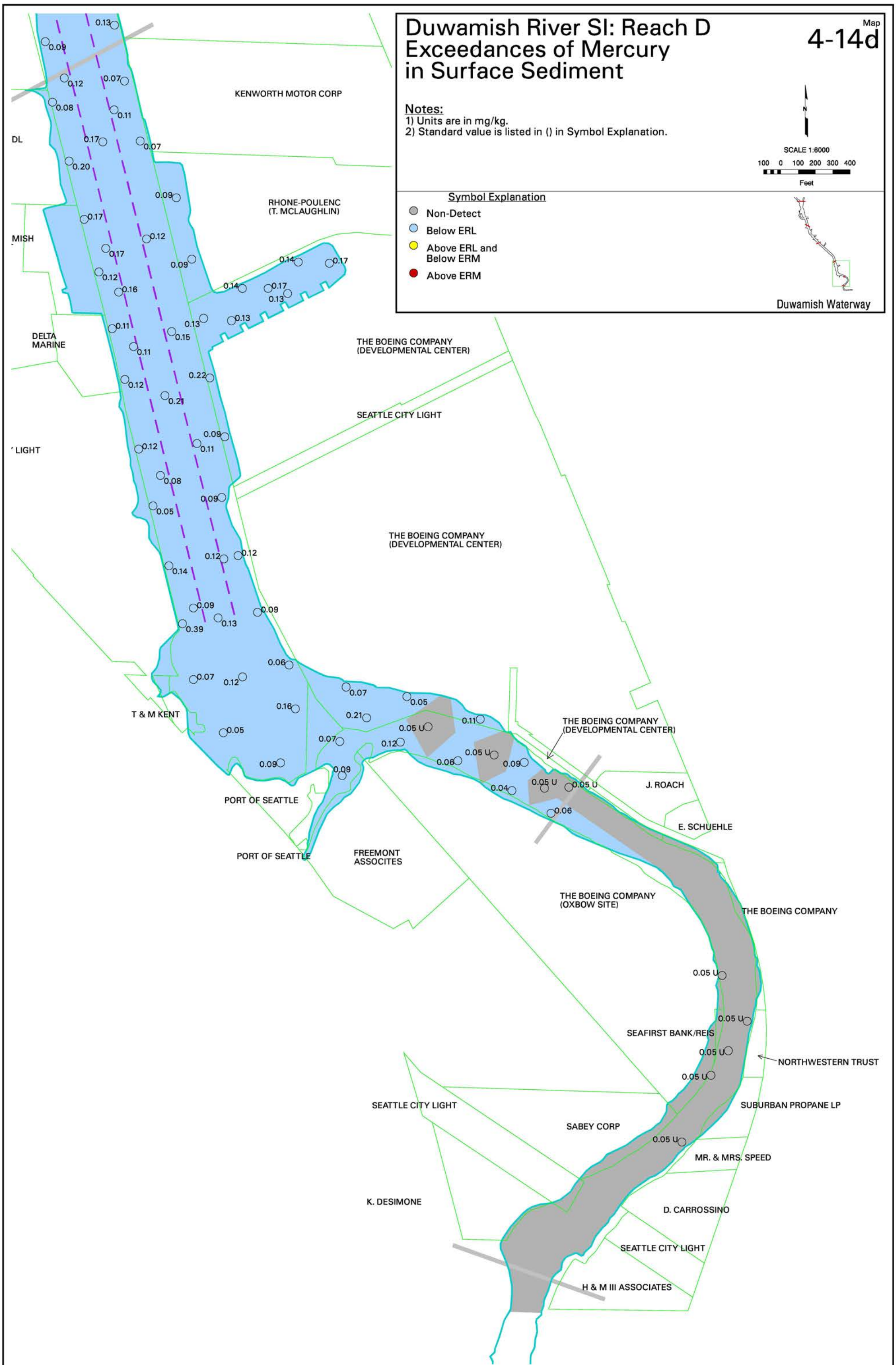
Map 4-14d

Notes:
1) Units are in mg/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Arsenic in Surface Sediment

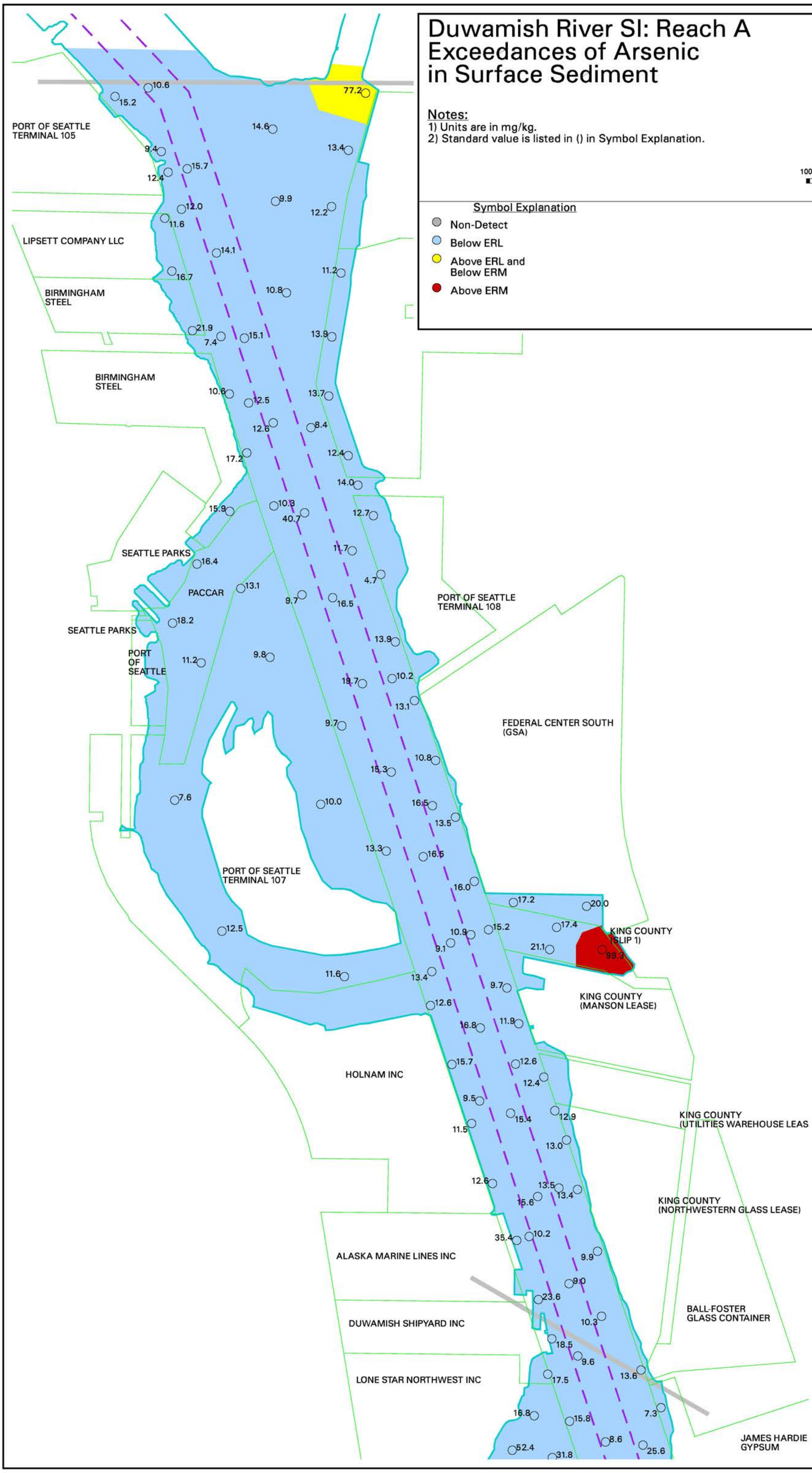
Map 4-15a

Notes:
1) Units are in mg/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Lead in Surface Sediment

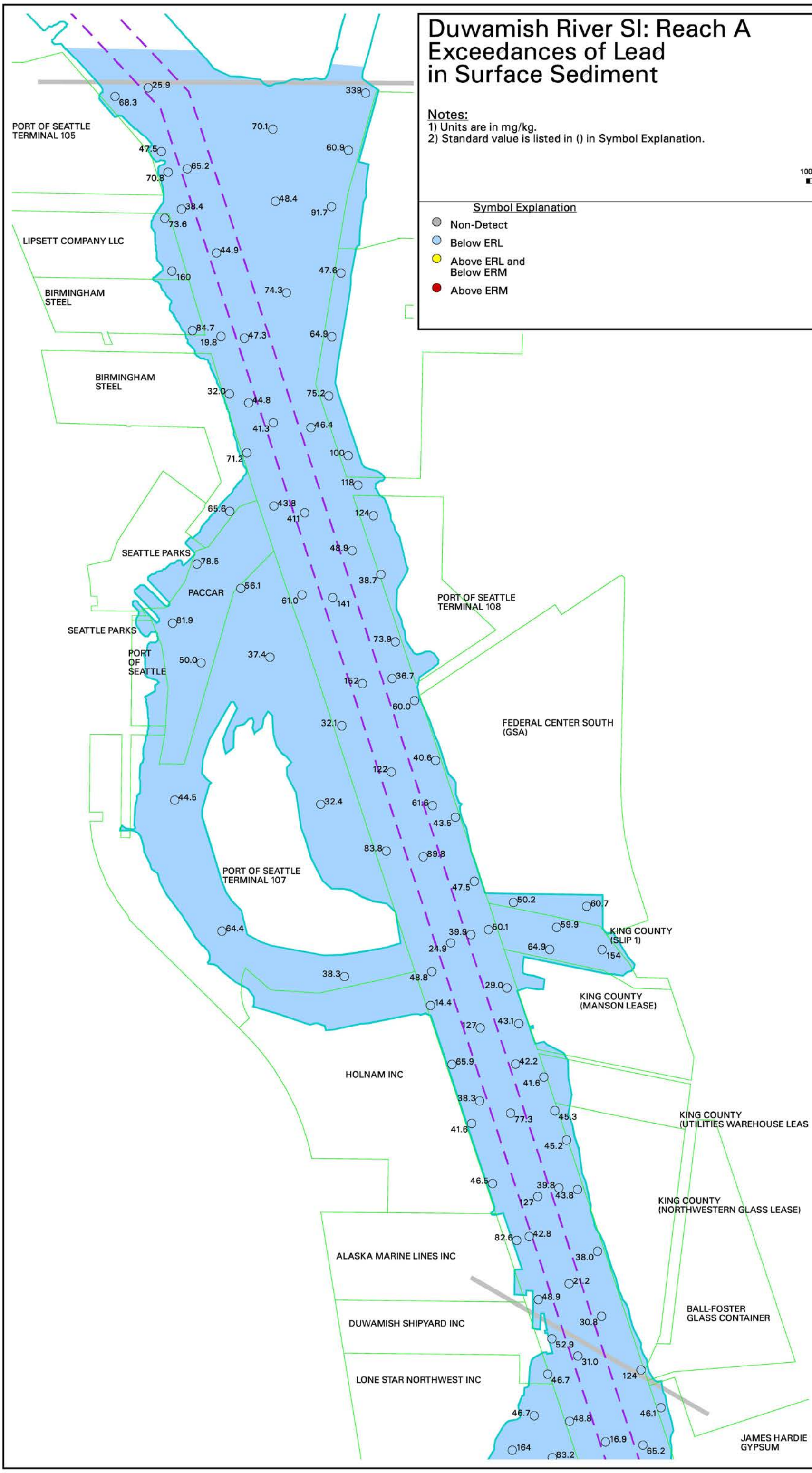
Map 4-16a

Notes:
1) Units are in mg/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Zinc in Surface Sediment

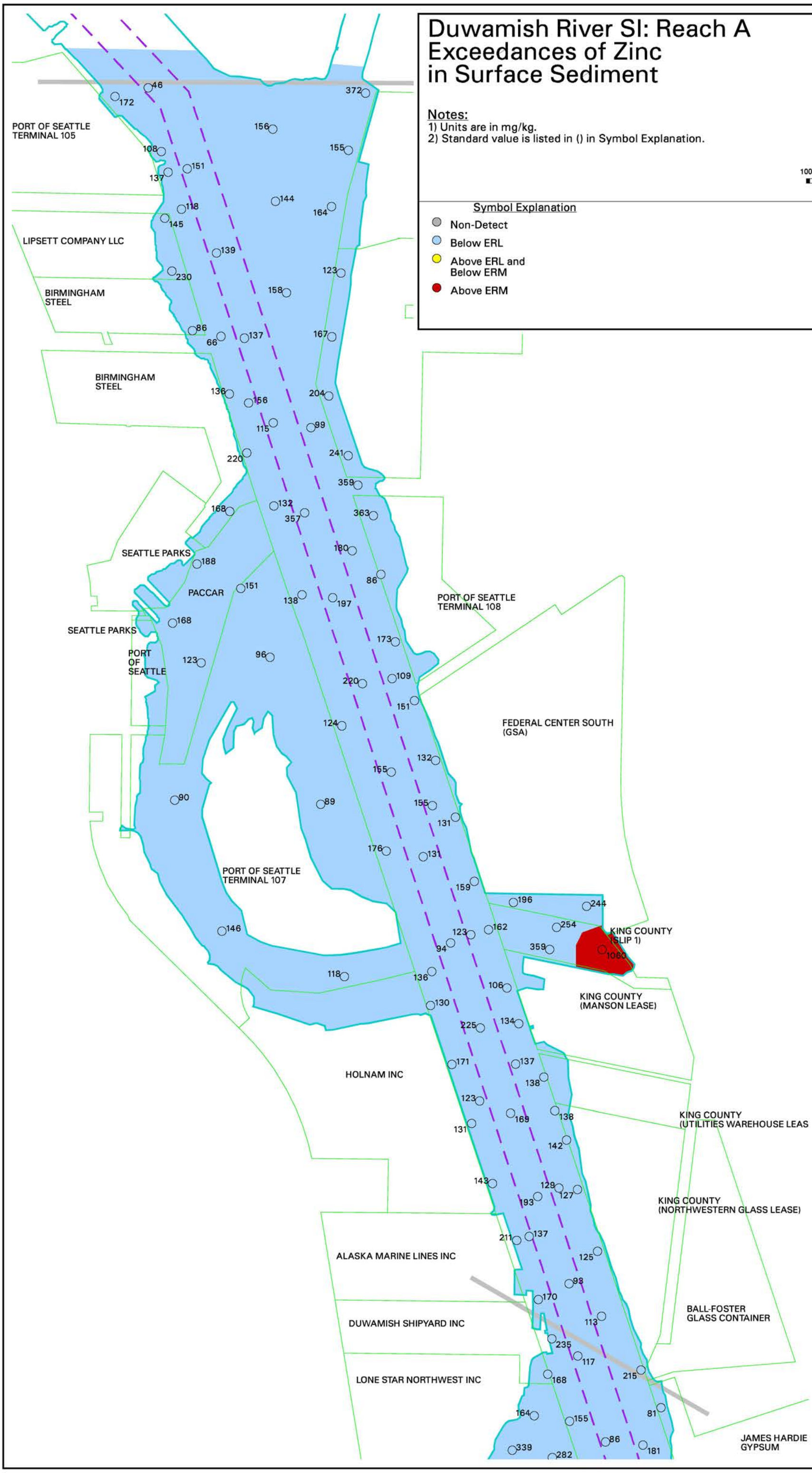
Map 4-17a

Notes:
1) Units are in mg/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below ERL
- Above ERL and Below ERM
- Above ERM

Duwamish Waterway



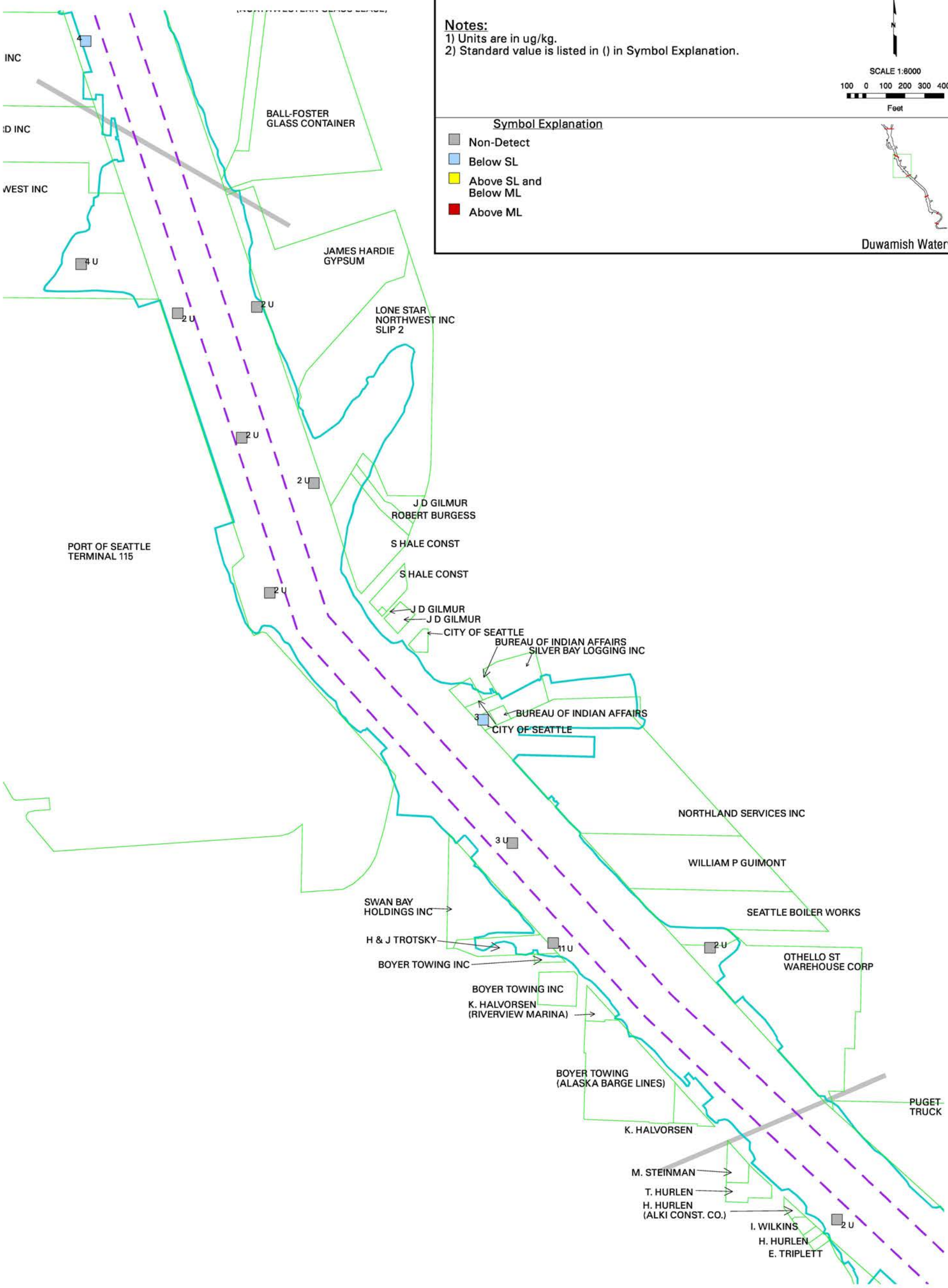
Duwamish River SI: Reach B Exceedances of 4,4'-DDT in Surface Sediment

Map 4-18b

Notes:
1) Units are in ug/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML



Duwamish River SI: Reach C Exceedances of 4,4'-DDT in Surface Sediment

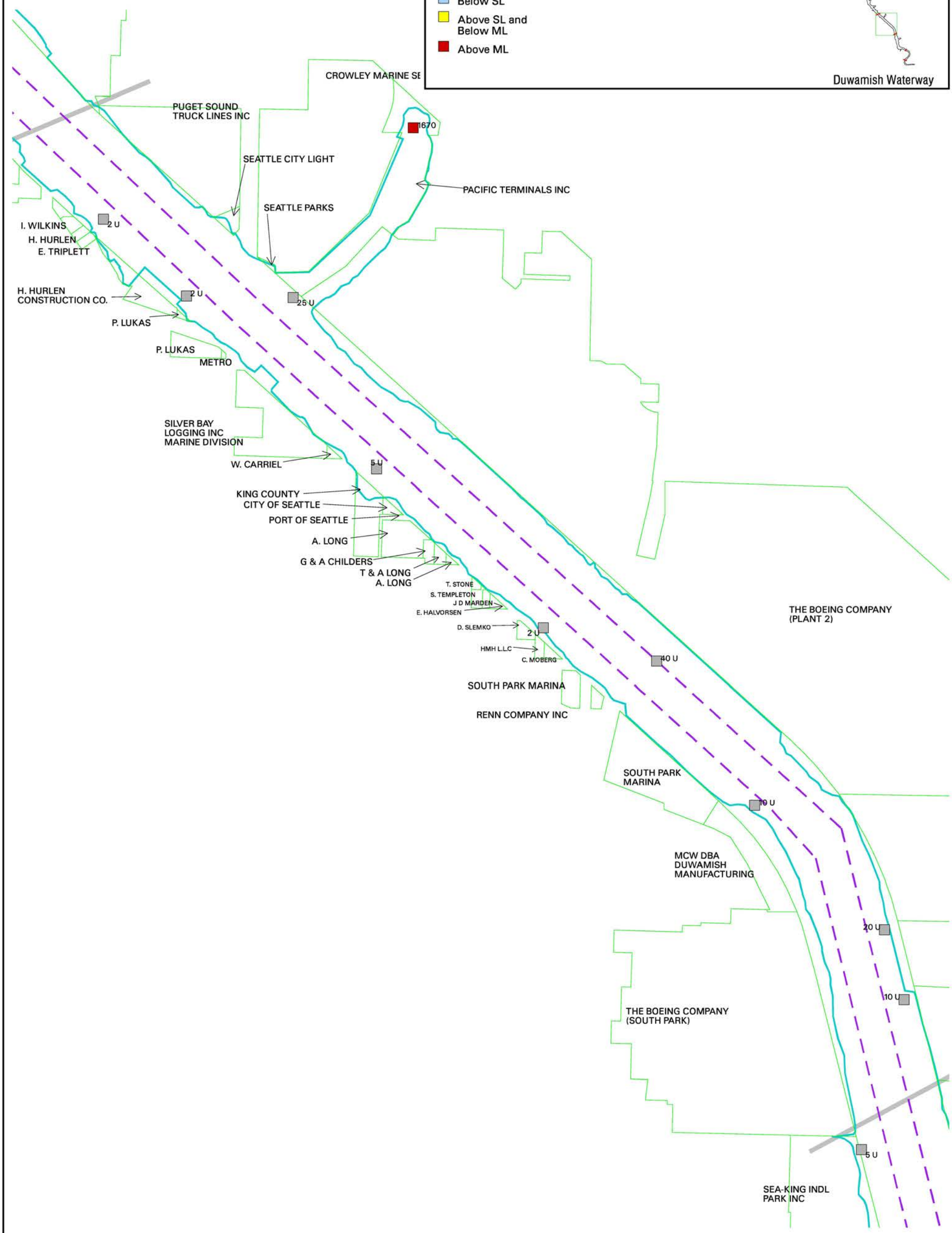
Map 4-18c

Notes:
1) Units are in ug/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



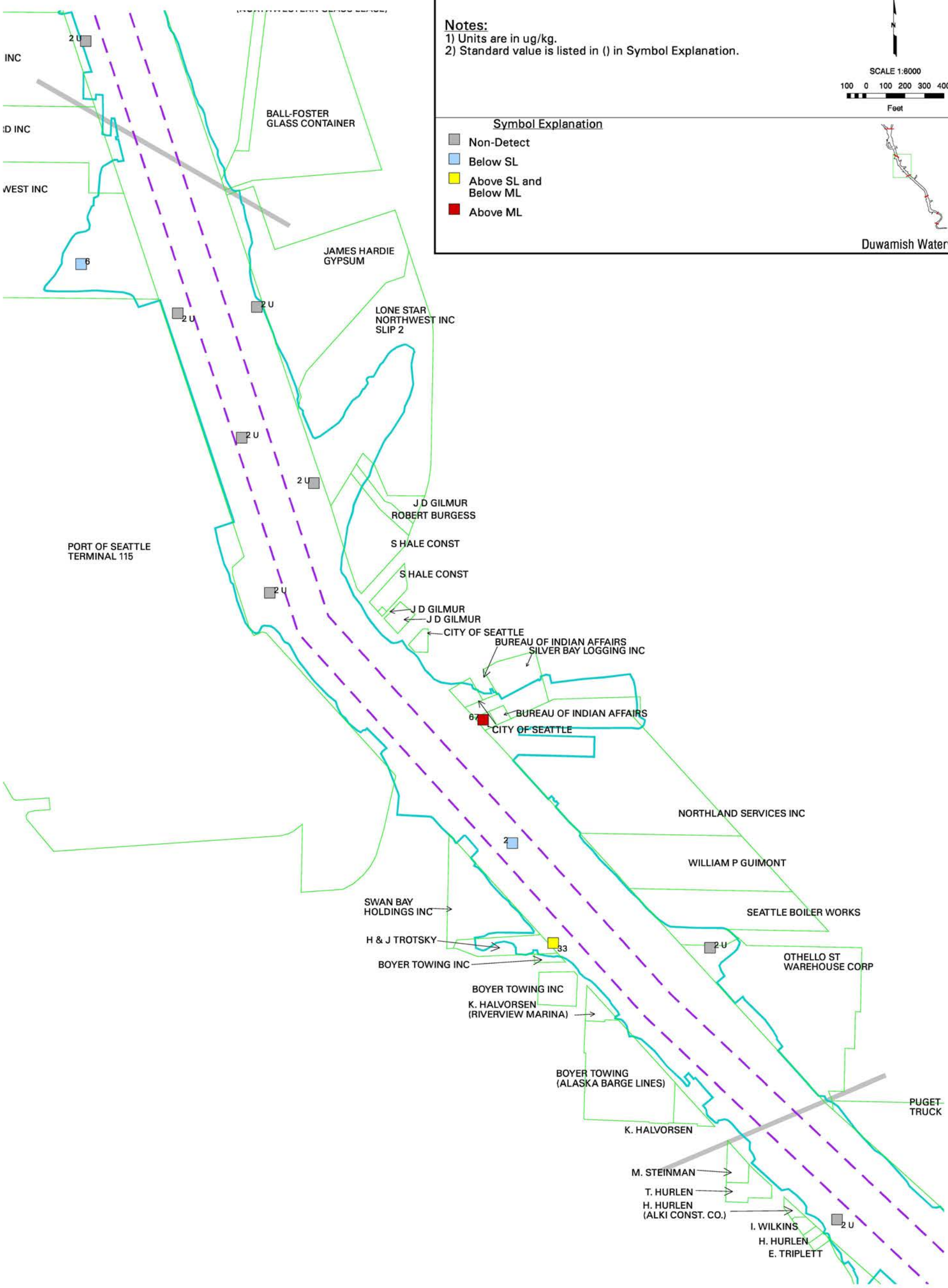
Duwamish River SI: Reach B Exceedances of 4,4'-DDD in Surface Sediment

Map 4-19b

Notes:
1) Units are in ug/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML



Duwamish River SI: Reach C Exceedances of 4,4'-DDD in Surface Sediment

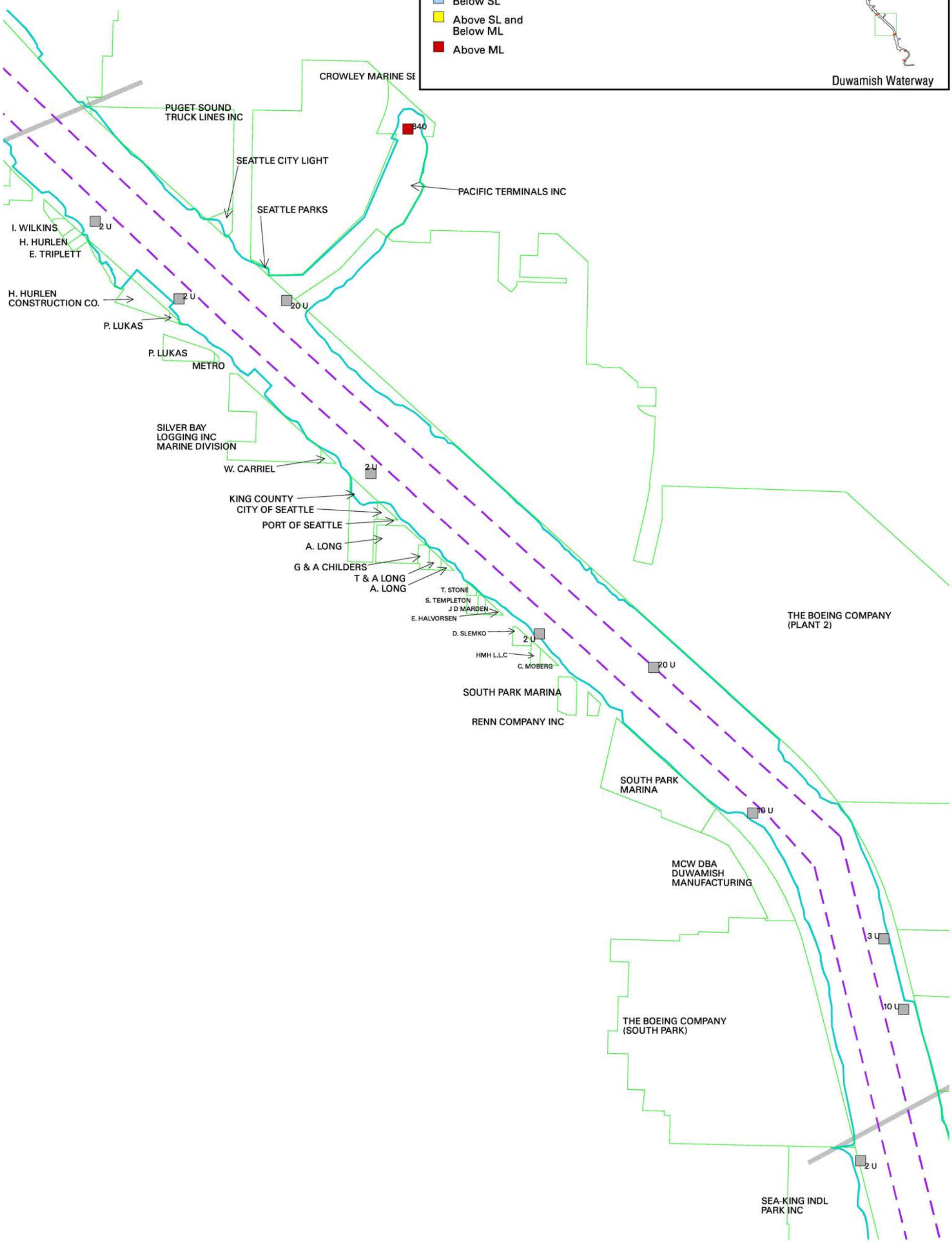
Map 4-19c

Notes:
1) Units are in ug/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway



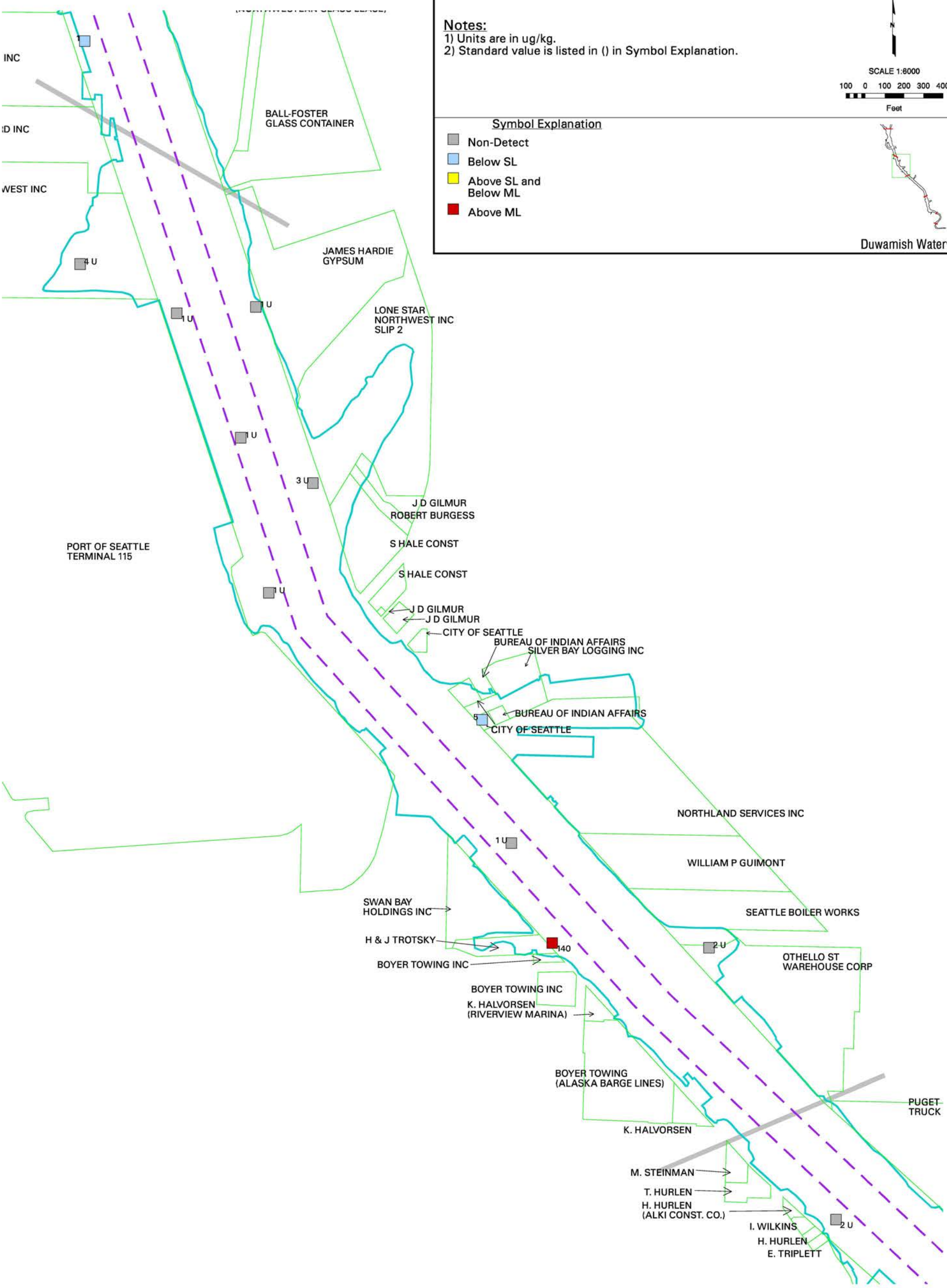
Duwamish River SI: Reach B Exceedances of 4,4'-DDE in Surface Sediment

Map 4-20b

Notes:
1) Units are in ug/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML



Duwamish River SI: Reach C Exceedances of 4,4'-DDE in Surface Sediment

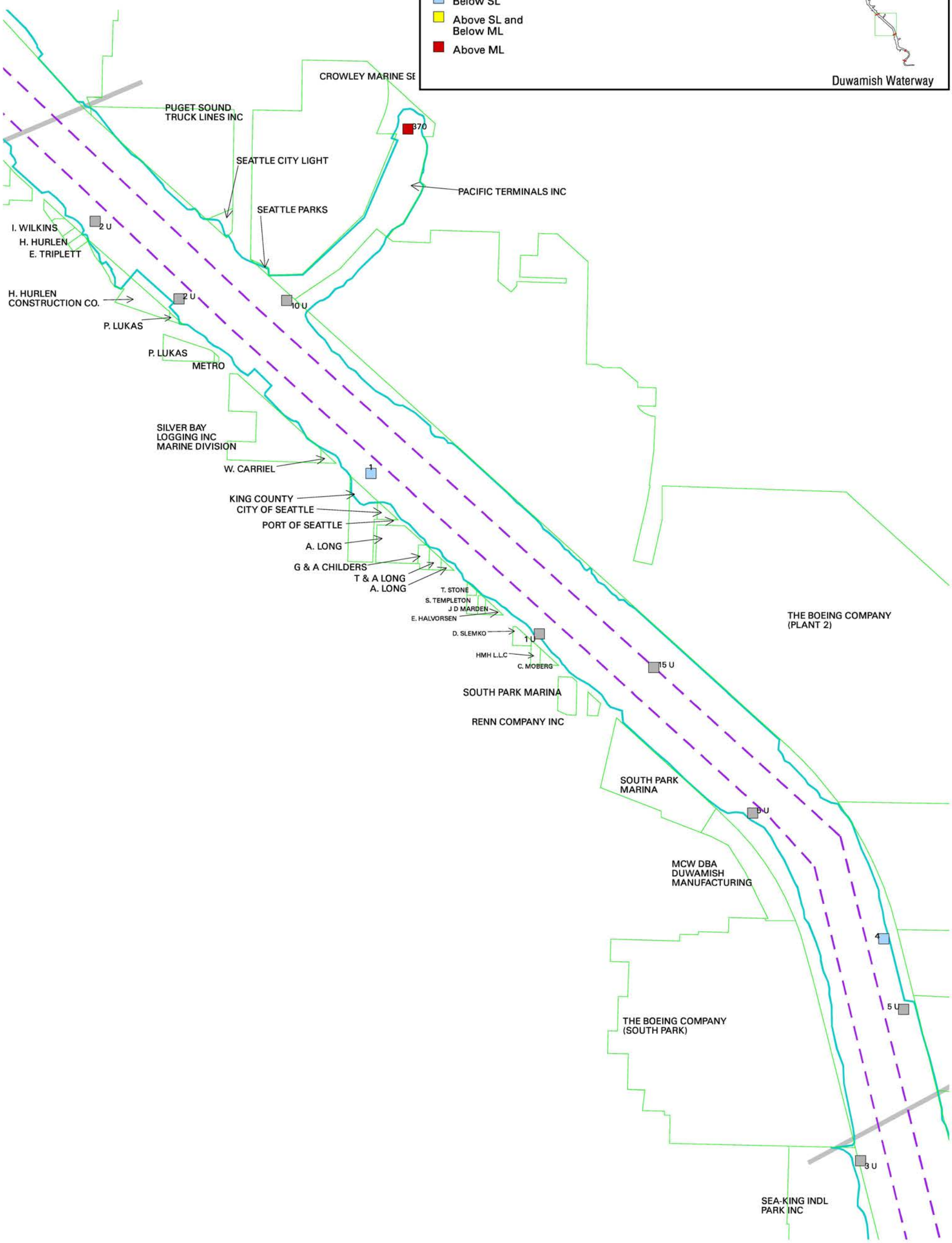
Map 4-20c

Notes:
1) Units are in ug/kg.
2) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation
- Non-Detect
- Below SL
- Above SL and Below ML
- Above ML

Duwamish Waterway

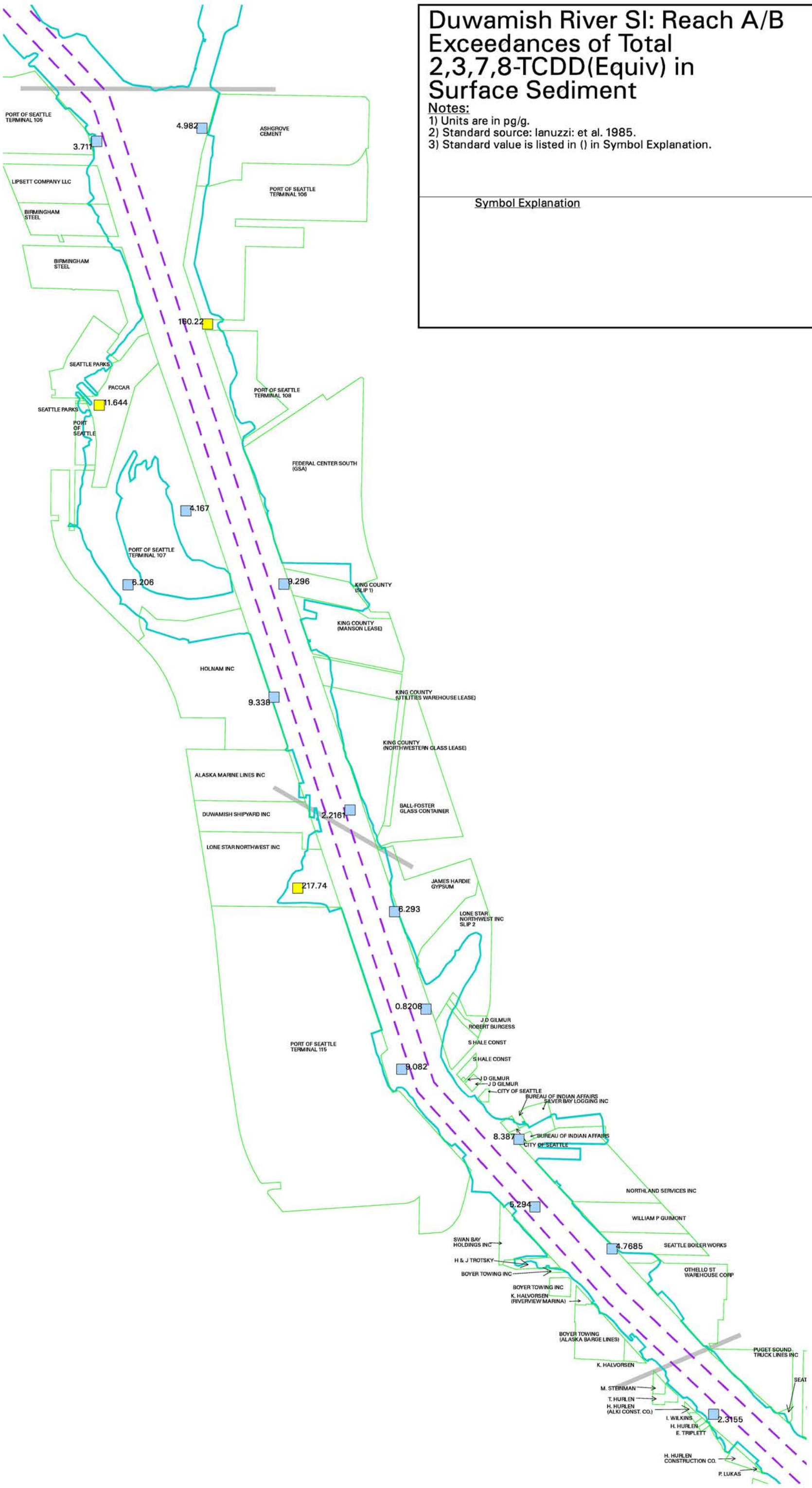


Duwamish River SI: Reach A/B Exceedances of Total 2,3,7,8-TCDD(Equiv) in Surface Sediment

Map 4-21a/b

Notes:
1) Units are in pg/g.
2) Standard source: Ianuzzi: et al. 1985.
3) Standard value is listed in () in Symbol Explanation.

Symbol Explanation

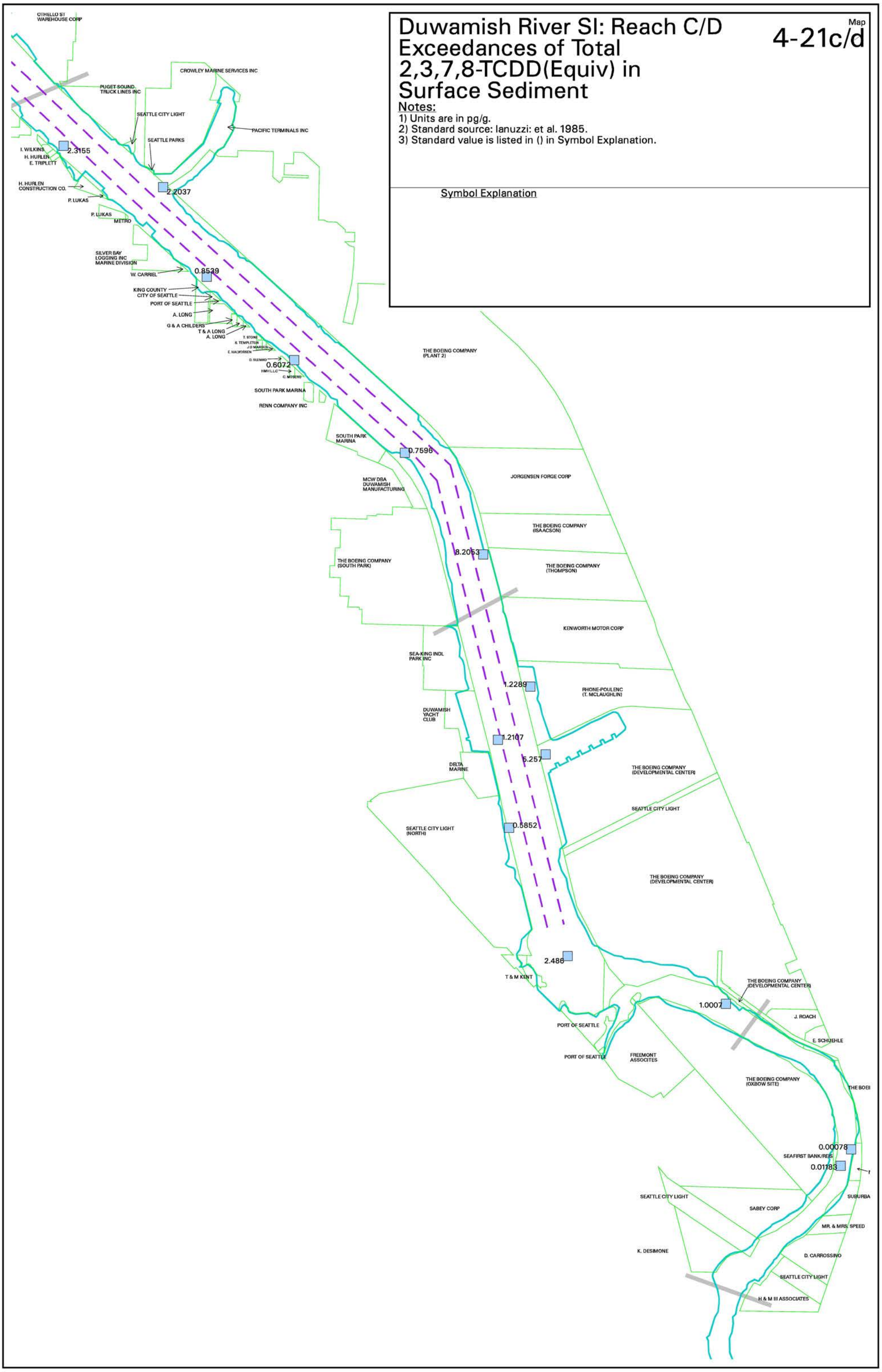


Duwamish River SI: Reach C/D Exceedances of Total 2,3,7,8-TCDD(Equiv) in Surface Sediment

Map 4-21c/d

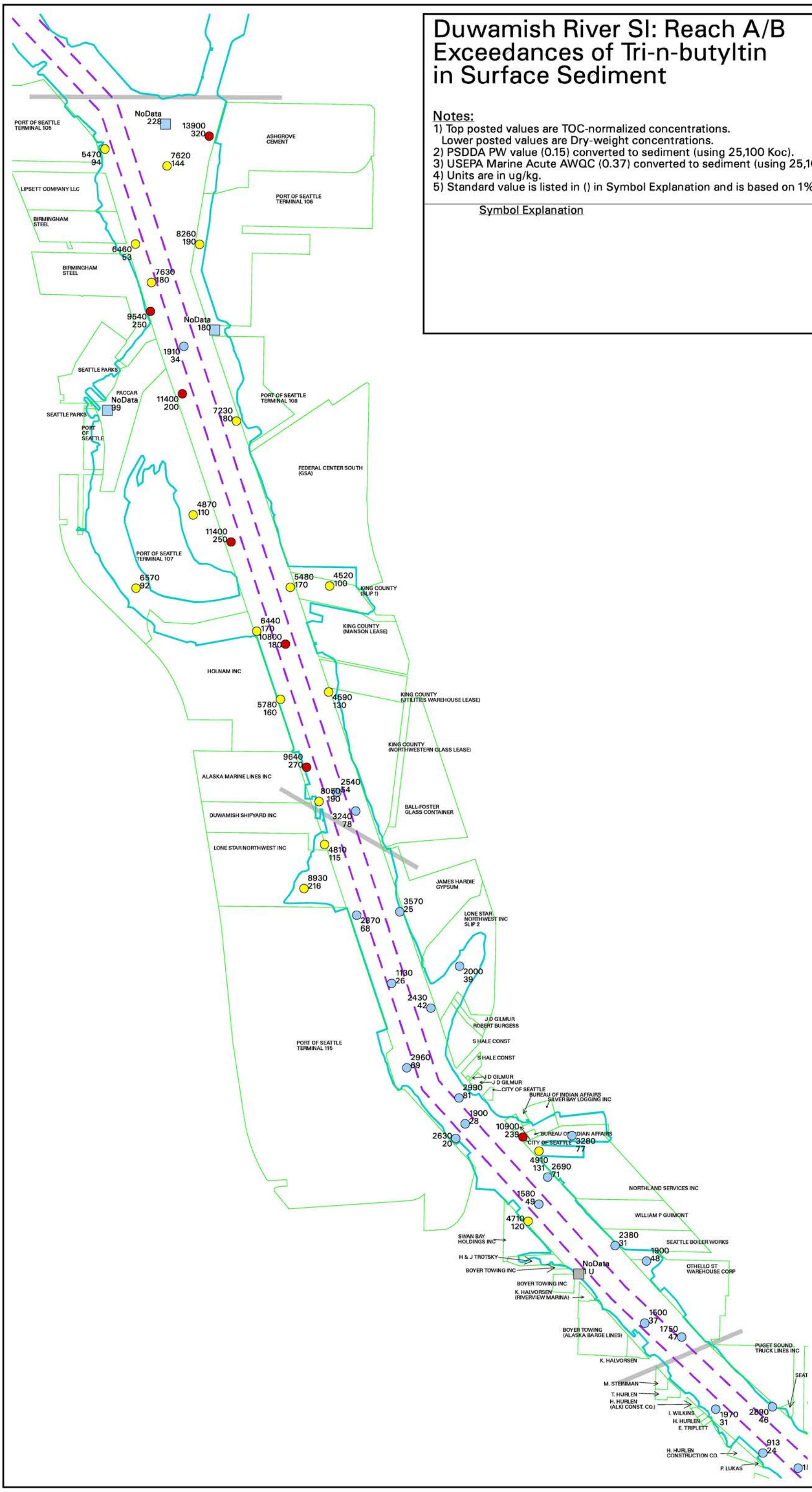
Notes:
1) Units are in pg/g.
2) Standard source: Ianuzzi: et al. 1985.
3) Standard value is listed in () in Symbol Explanation.

Symbol Explanation



Duwamish River SI: Reach A/B Exceedances of Tri-n-butyltin in Surface Sediment

Map
4-22a/b



Notes:
1) Top posted values are TOC-normalized concentrations.
Lower posted values are Dry-weight concentrations.
2) PSDDA PW value (0.15) converted to sediment (using 25,100 Koc).
3) USEPA Marine Acute AWQC (0.37) converted to sediment (using 25,100 Koc).
4) Units are in ug/kg.
5) Standard value is listed in () in Symbol Explanation and is based on 1% TOC.

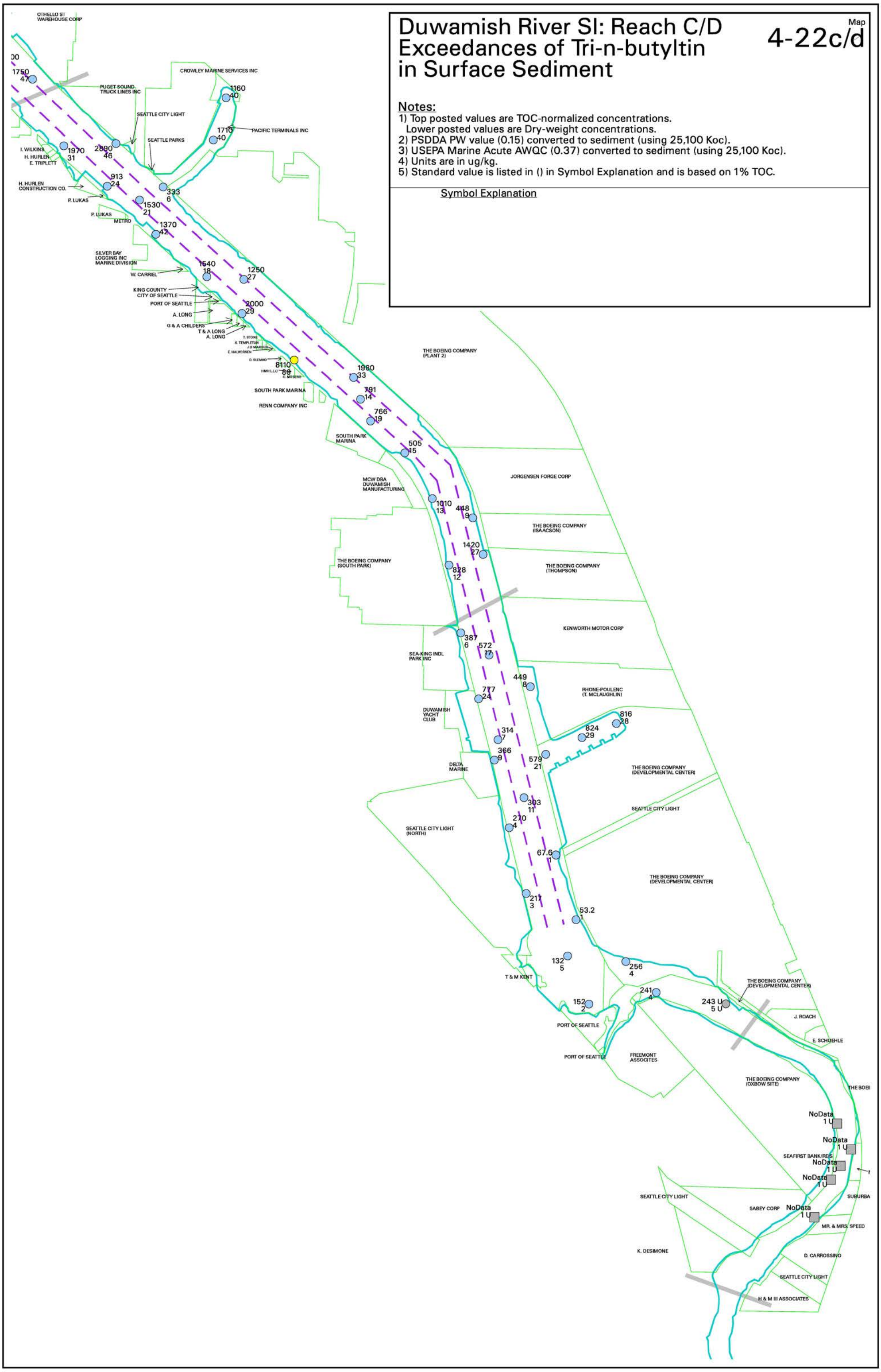
Symbol Explanation

Duwamish River SI: Reach C/D Exceedances of Tri-n-butyltin in Surface Sediment

Map 4-22c/d

Notes:
1) Top posted values are TOC-normalized concentrations.
Lower posted values are Dry-weight concentrations.
2) PSDDA PW value (0.15) converted to sediment (using 25,100 Koc).
3) USEPA Marine Acute AWQC (0.37) converted to sediment (using 25,100 Koc).
4) Units are in ug/kg.
5) Standard value is listed in () in Symbol Explanation and is based on 1% TOC.

Symbol Explanation



Duwamish River SI: Reach A Total Organic Carbon Concentrations in Surface Sediment

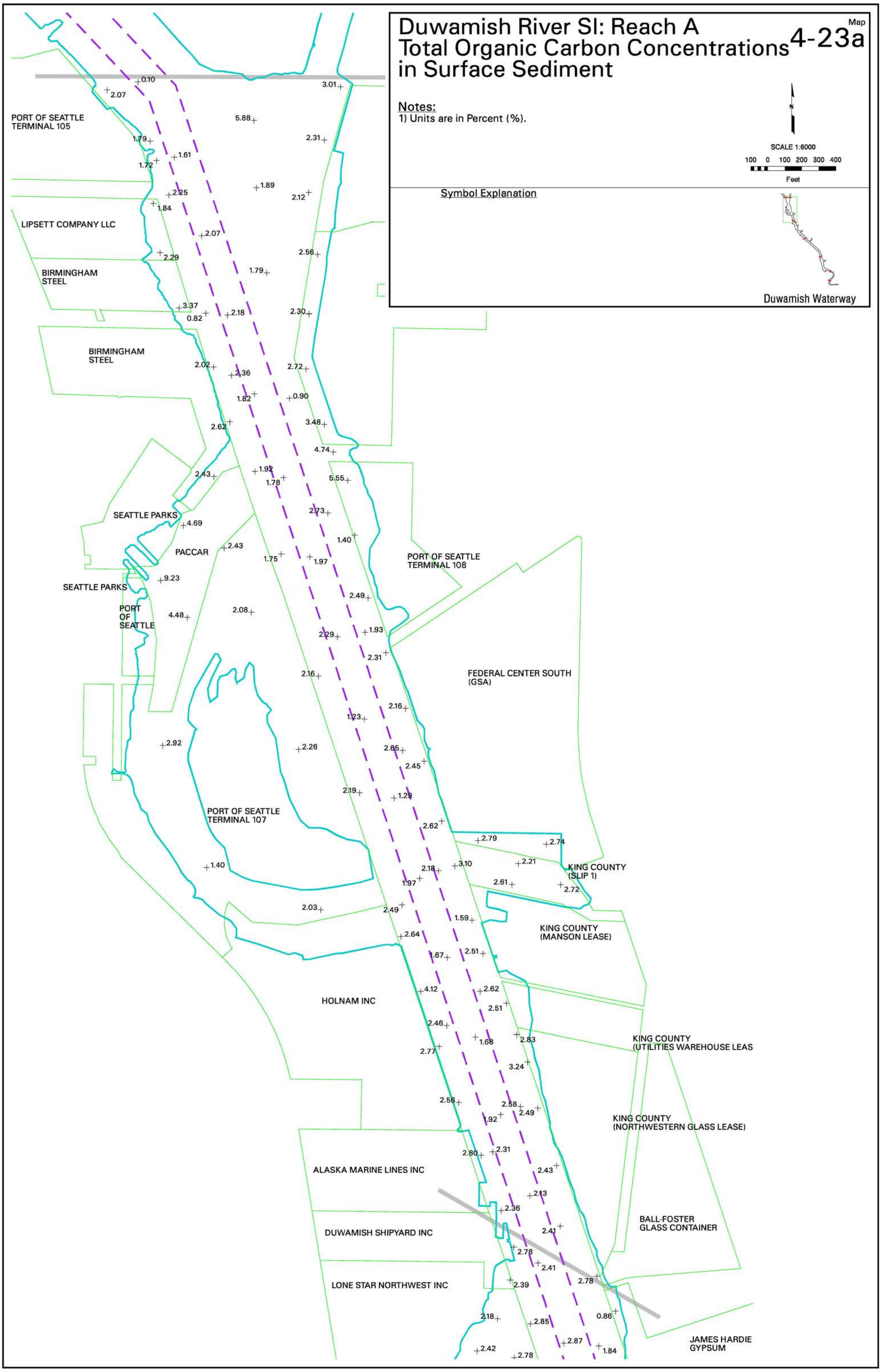
Map 4-23a

Notes:
1) Units are in Percent (%).

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Duwamish Waterway



Duwamish River SI: Reach B
Total Organic Carbon Concentrations in Surface Sediment

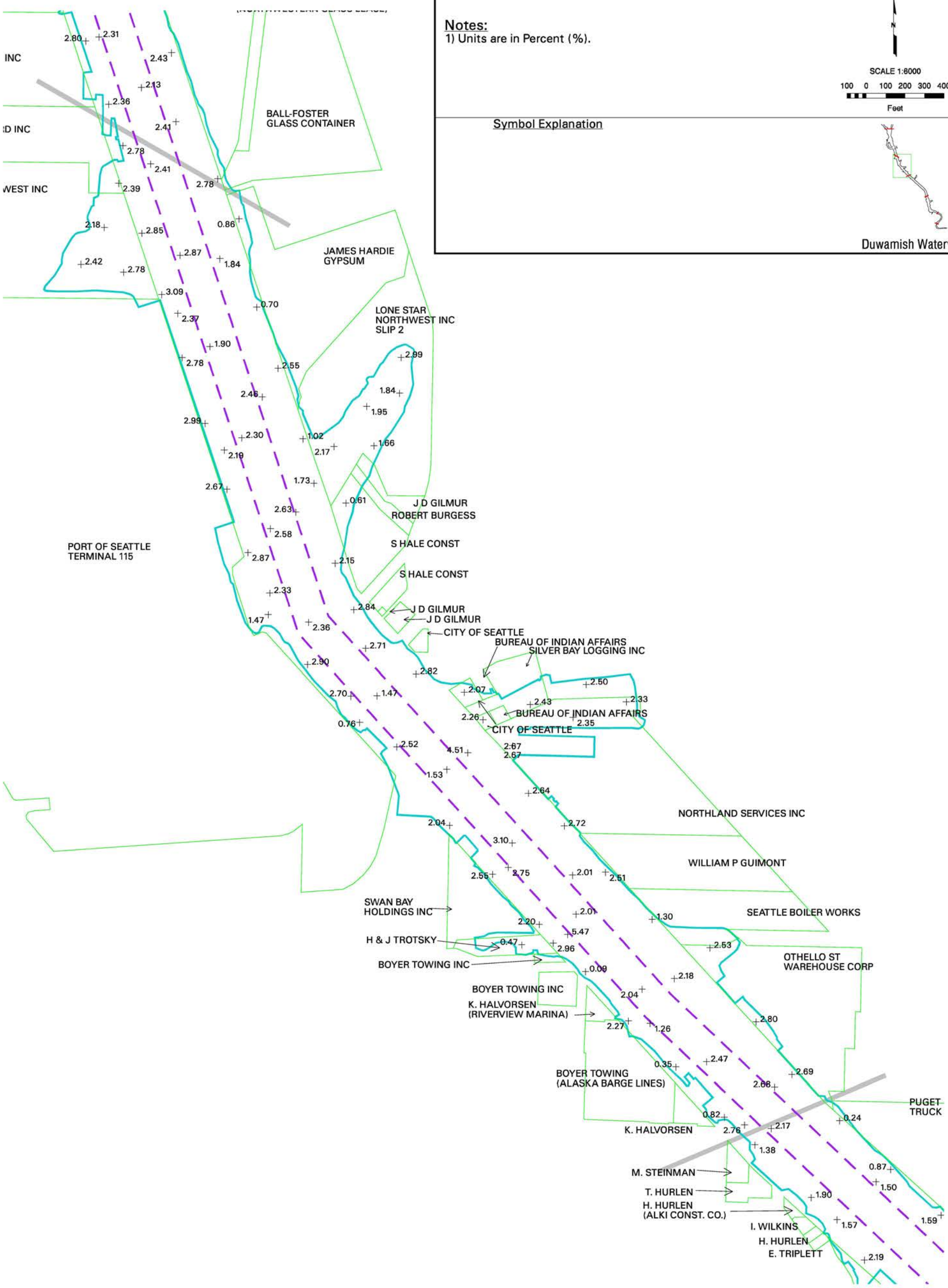
Map 4-23b

Notes:
1) Units are in Percent (%).

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

Duwamish Waterway



Duwamish River SI: Reach C
Total Organic Carbon Concentrations in Surface Sediment

Map 4-23c

Notes:
1) Units are in Percent (%).

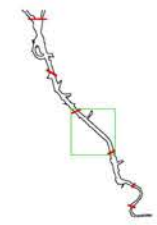
N

SCALE 1:6000

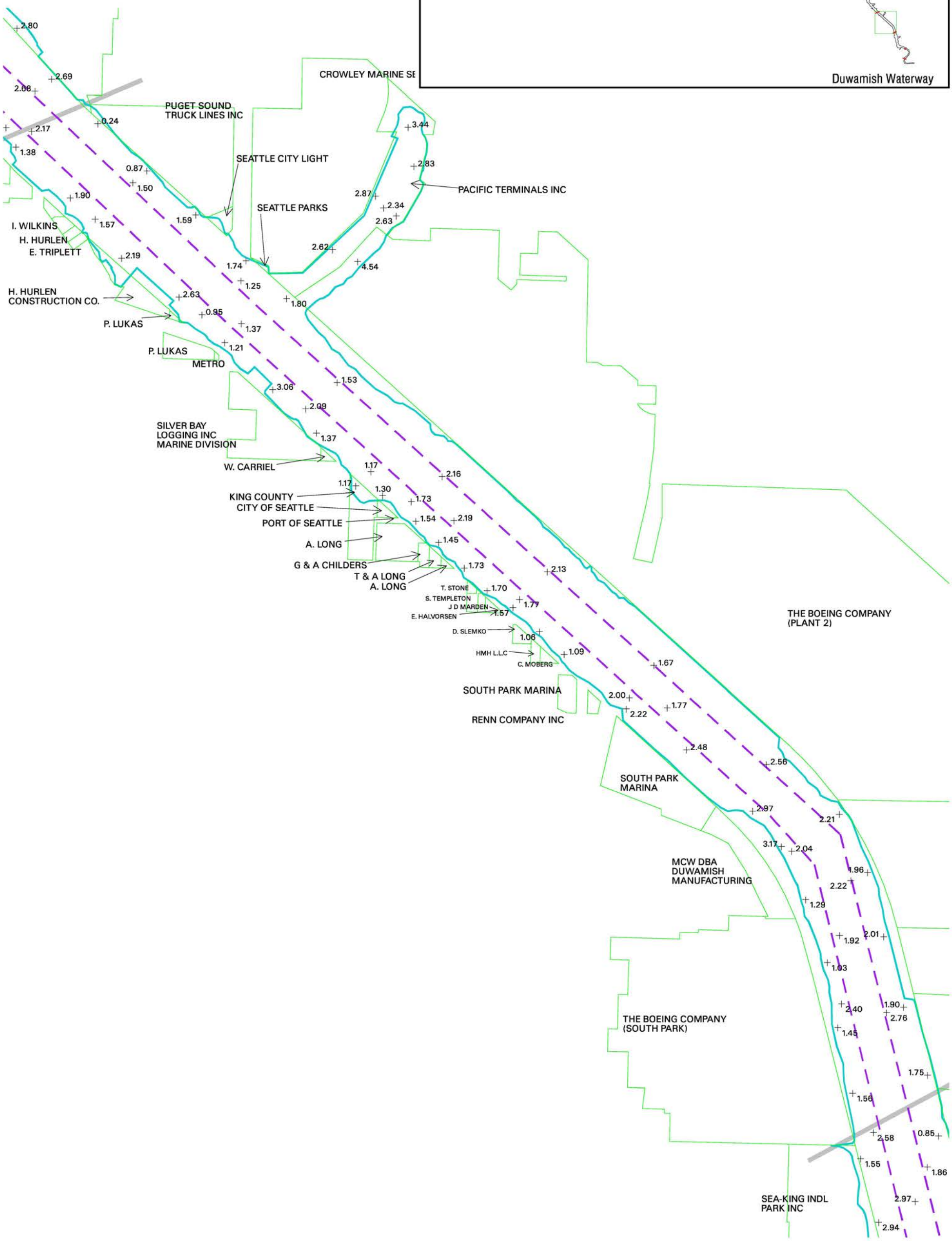
100 0 100 200 300 400

Feet

Symbol Explanation



Duwamish Waterway



Duwamish River SI: Reach D
Total Organic Carbon Concentrations in Surface Sediment

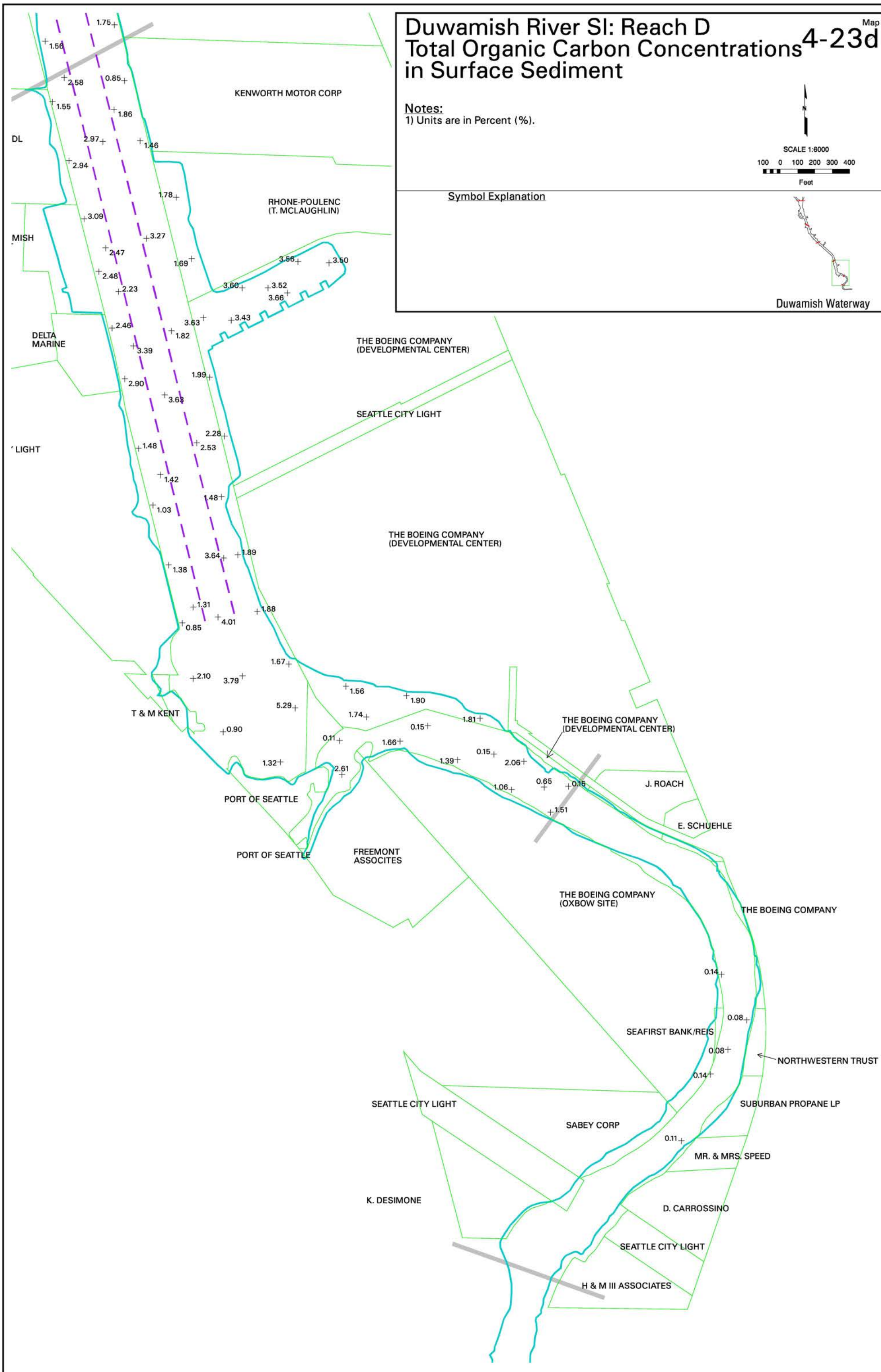
Map 4-23d

Notes:
1) Units are in Percent (%).

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

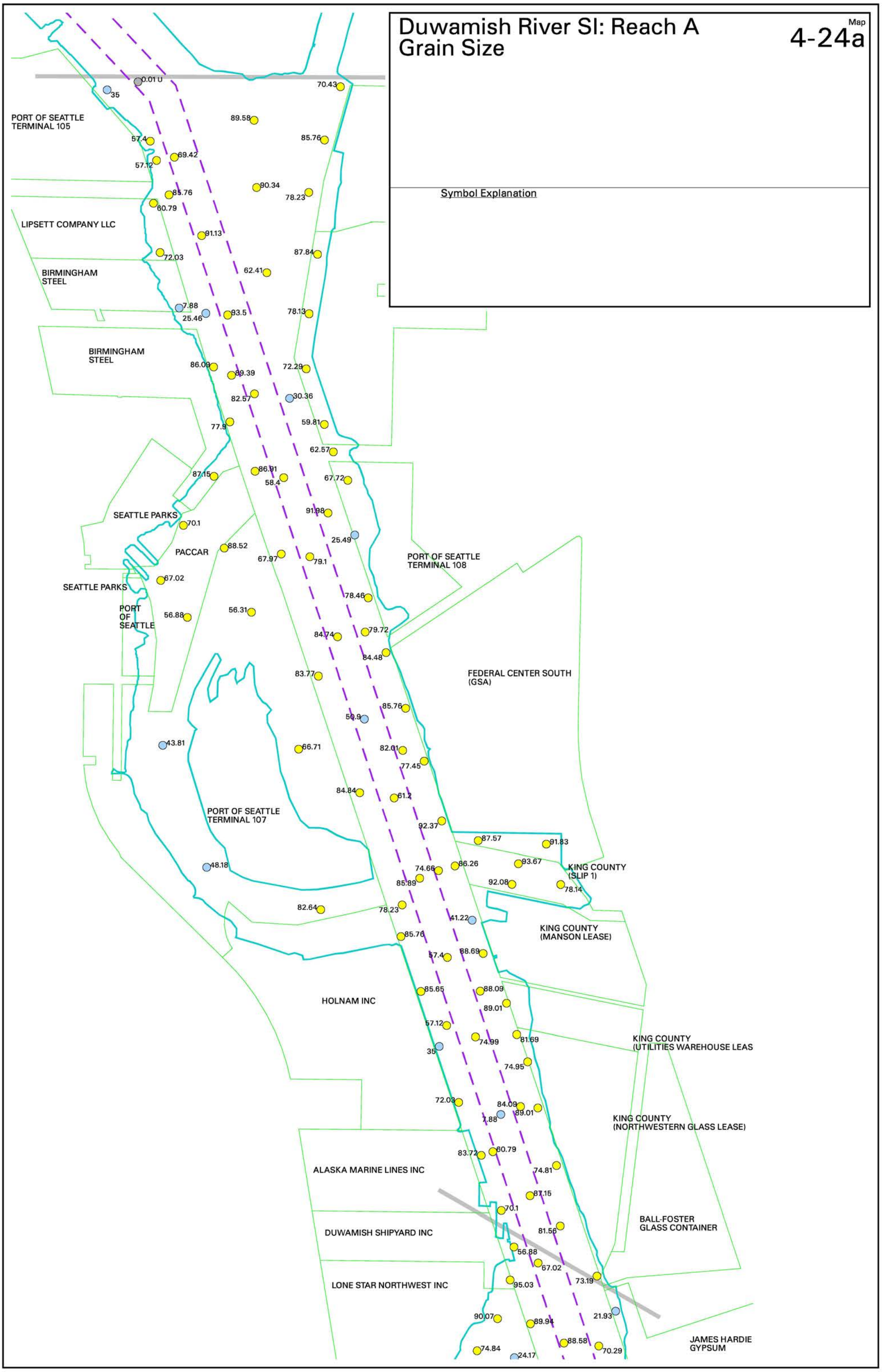
Duwamish Waterway



Duwamish River SI: Reach A Grain Size

Map 4-24a

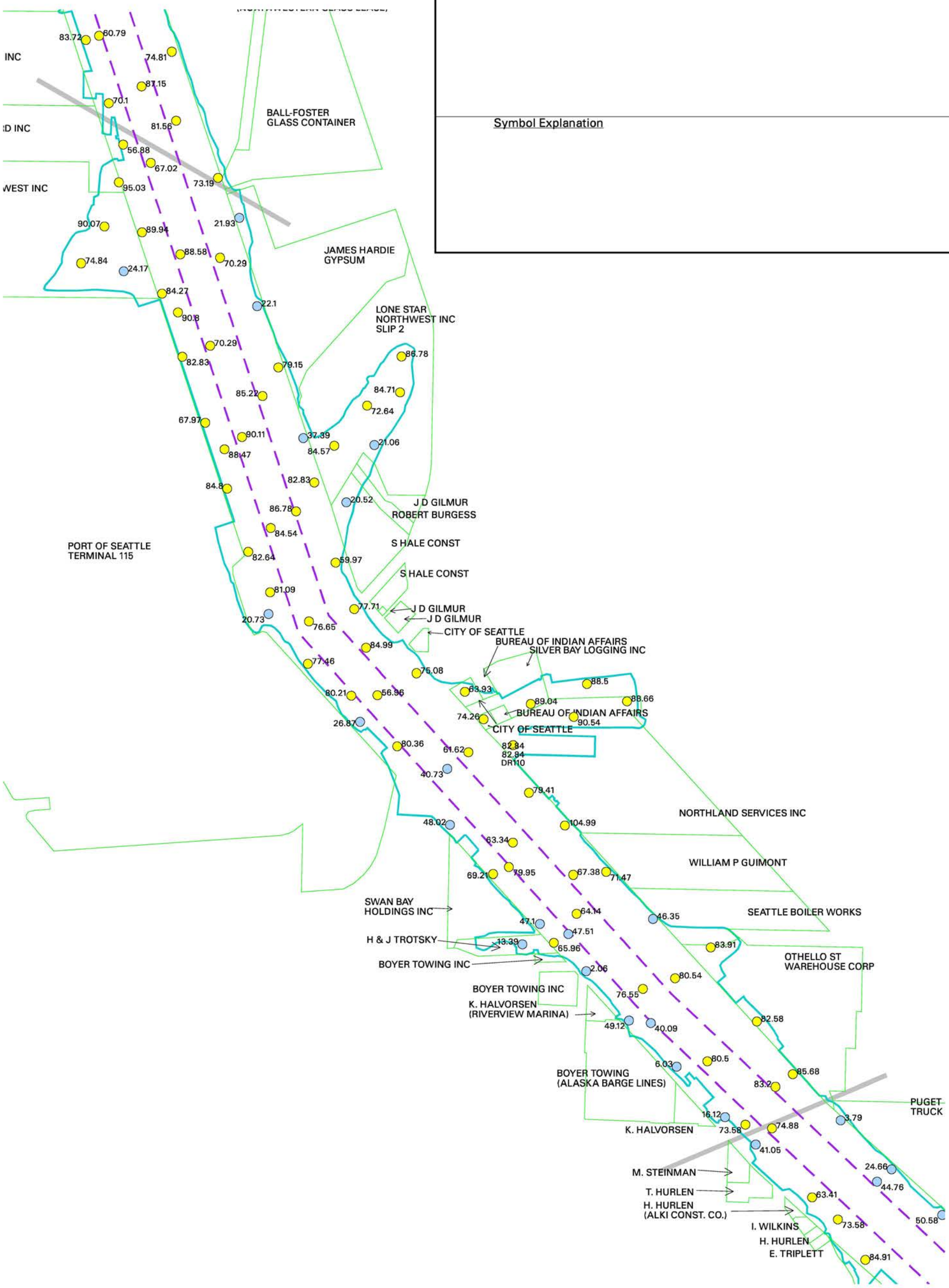
Symbol Explanation



Duwamish River SI: Reach B
Grain Size

Map
4-24b

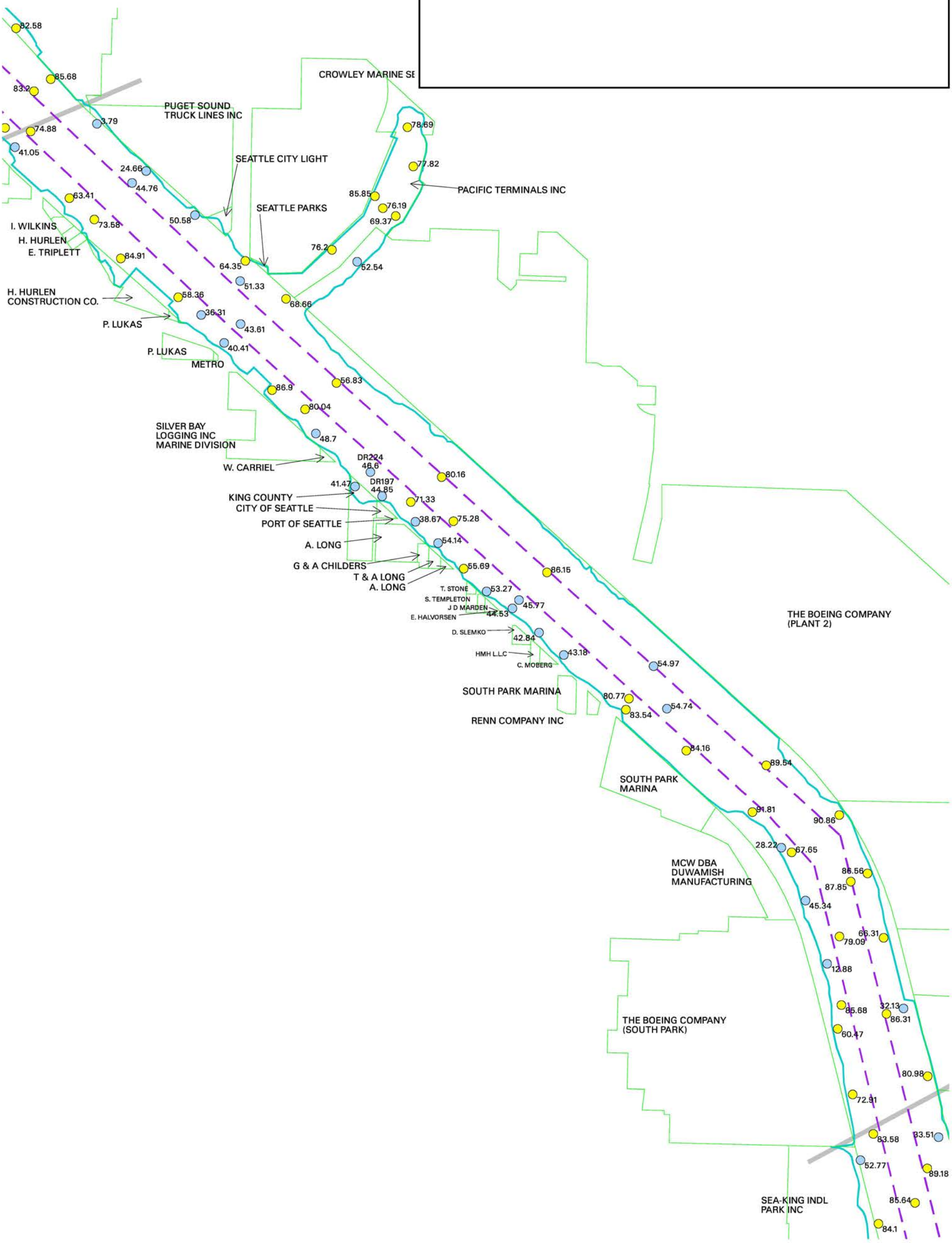
Symbol Explanation



Duwamish River SI: Reach C
Grain Size

Map
4-24c

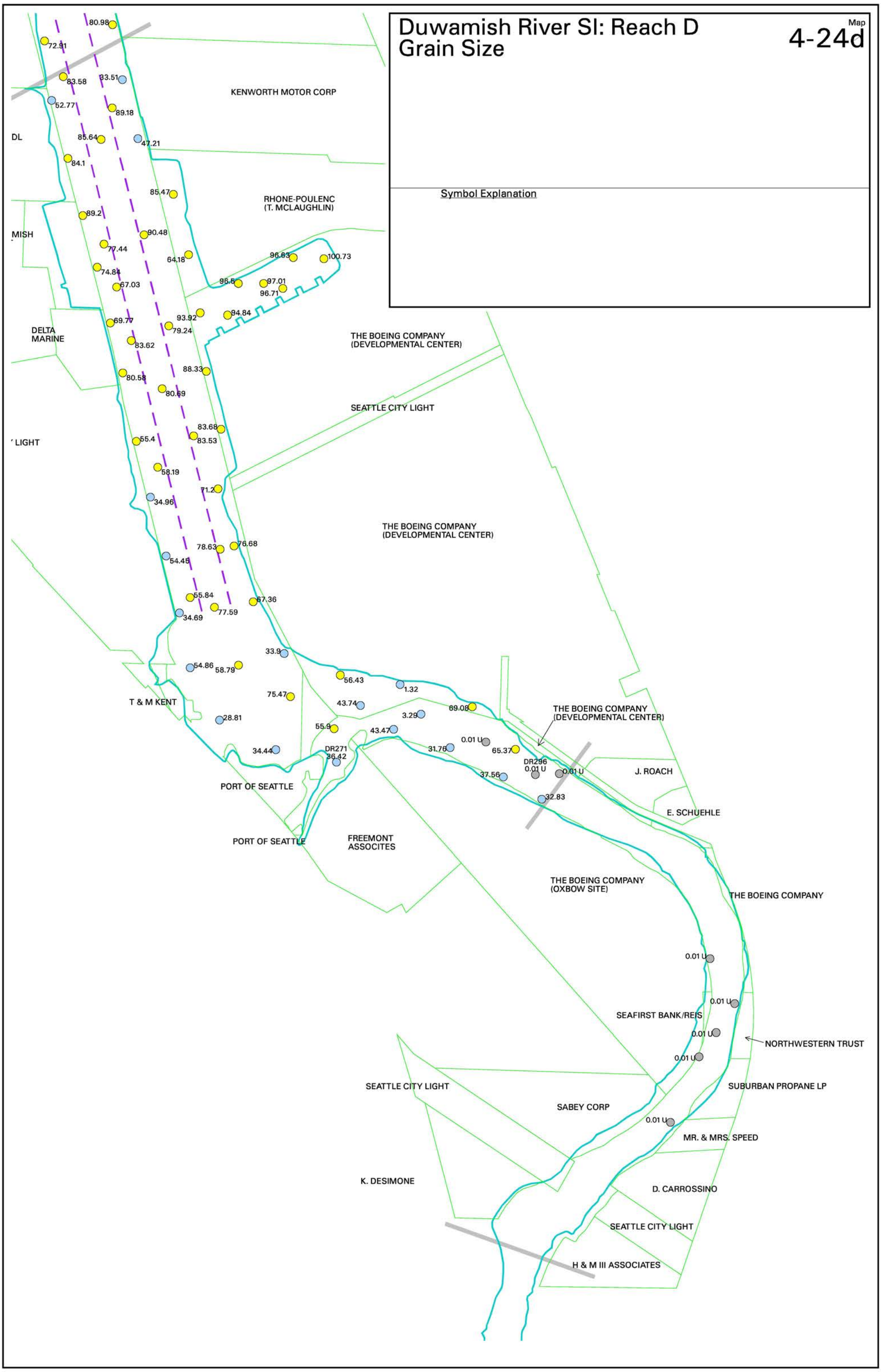
Symbol Explanation



Duwamish River SI: Reach D
Grain Size

Map
4-24d

Symbol Explanation



Duwamish River SI: Reach A/B Exceedances of Total PCB in Subsurface Sediment

Map 4-25a/b

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

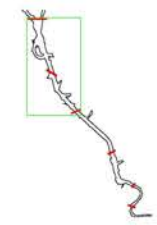
SCALE 1:10500

250 0 250 500 750 1000

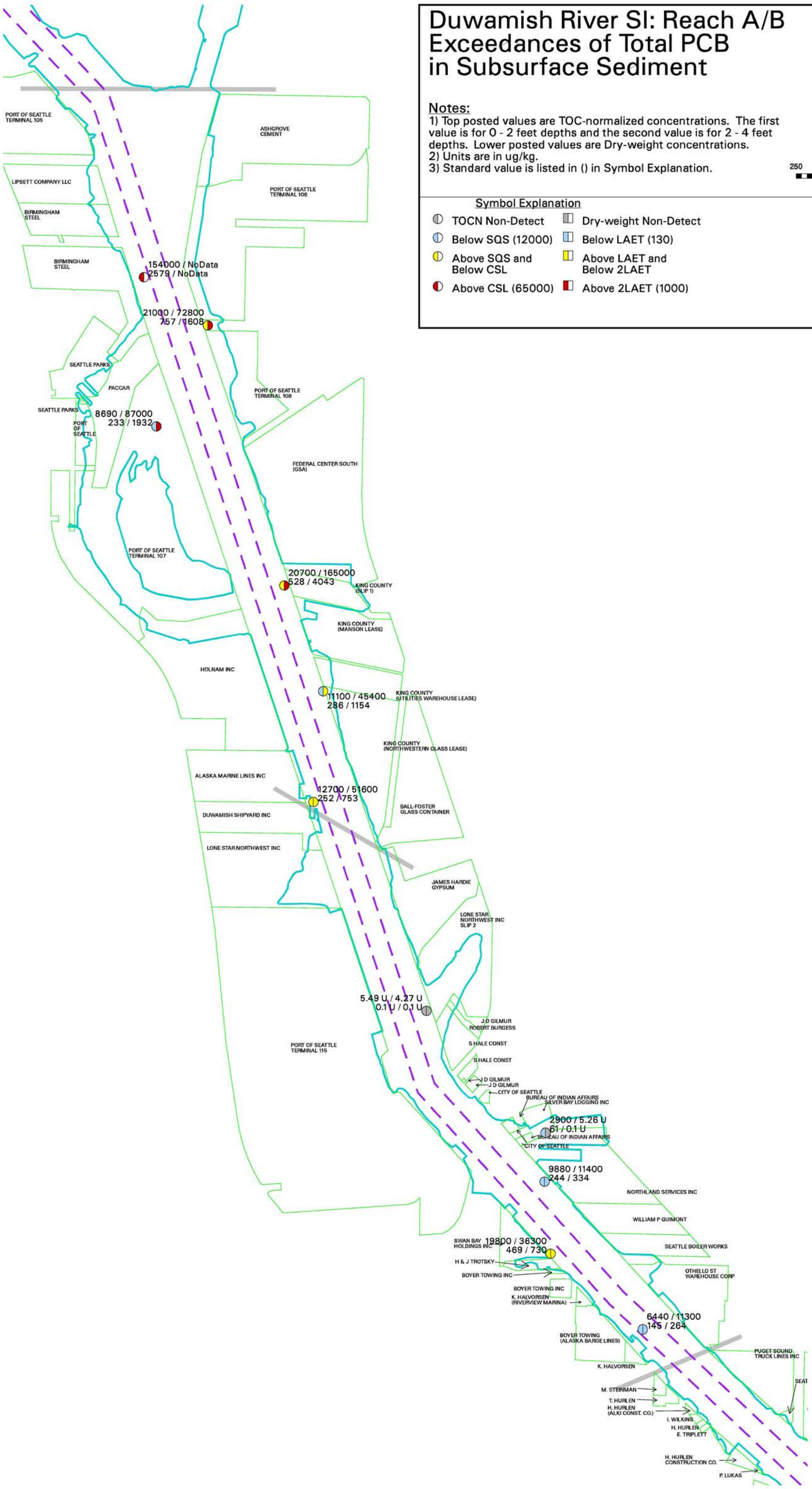
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (12000)
- Above SQS and Below CSL
- Above CSL (65000)
- Dry-weight Non-Detect
- Below LAET (130)
- Above LAET and Below 2LAET
- Above 2LAET (1000)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Total PCB in Subsurface Sediment

Map
4-25c/d

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

SCALE 1:10500

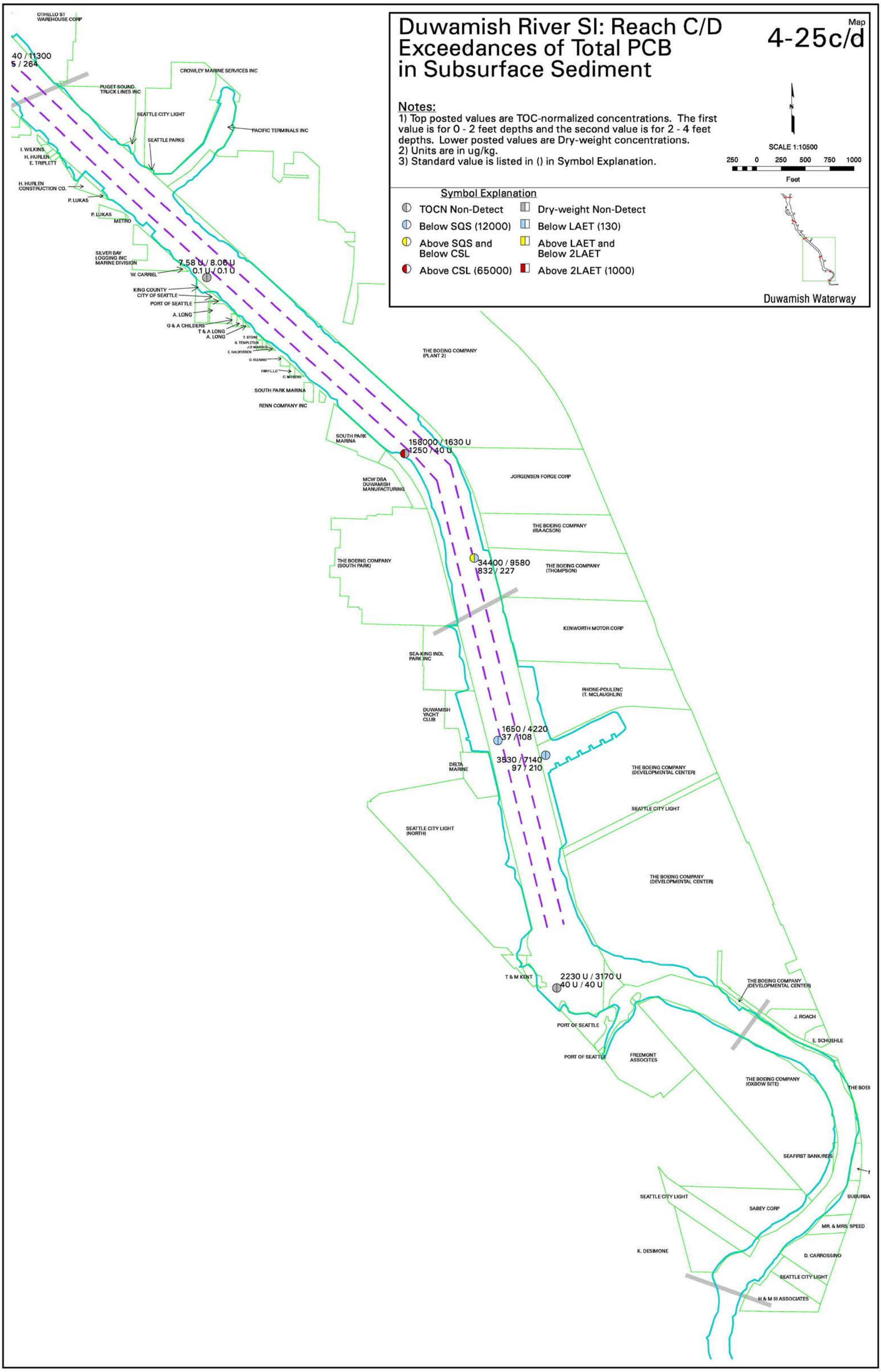
250 0 250 500 750 1000

Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (12000)
- Above SQS and Below CSL
- Above CSL (65000)
- Dry-weight Non-Detect
- Below LAET (130)
- Above LAET and Below 2LAET
- Above 2LAET (1000)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Total HPAH in Subsurface Sediment

Map
4-26a/b

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

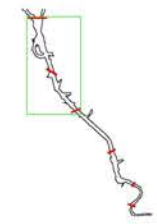
SCALE 1:10500

250 0 250 500 750 1000

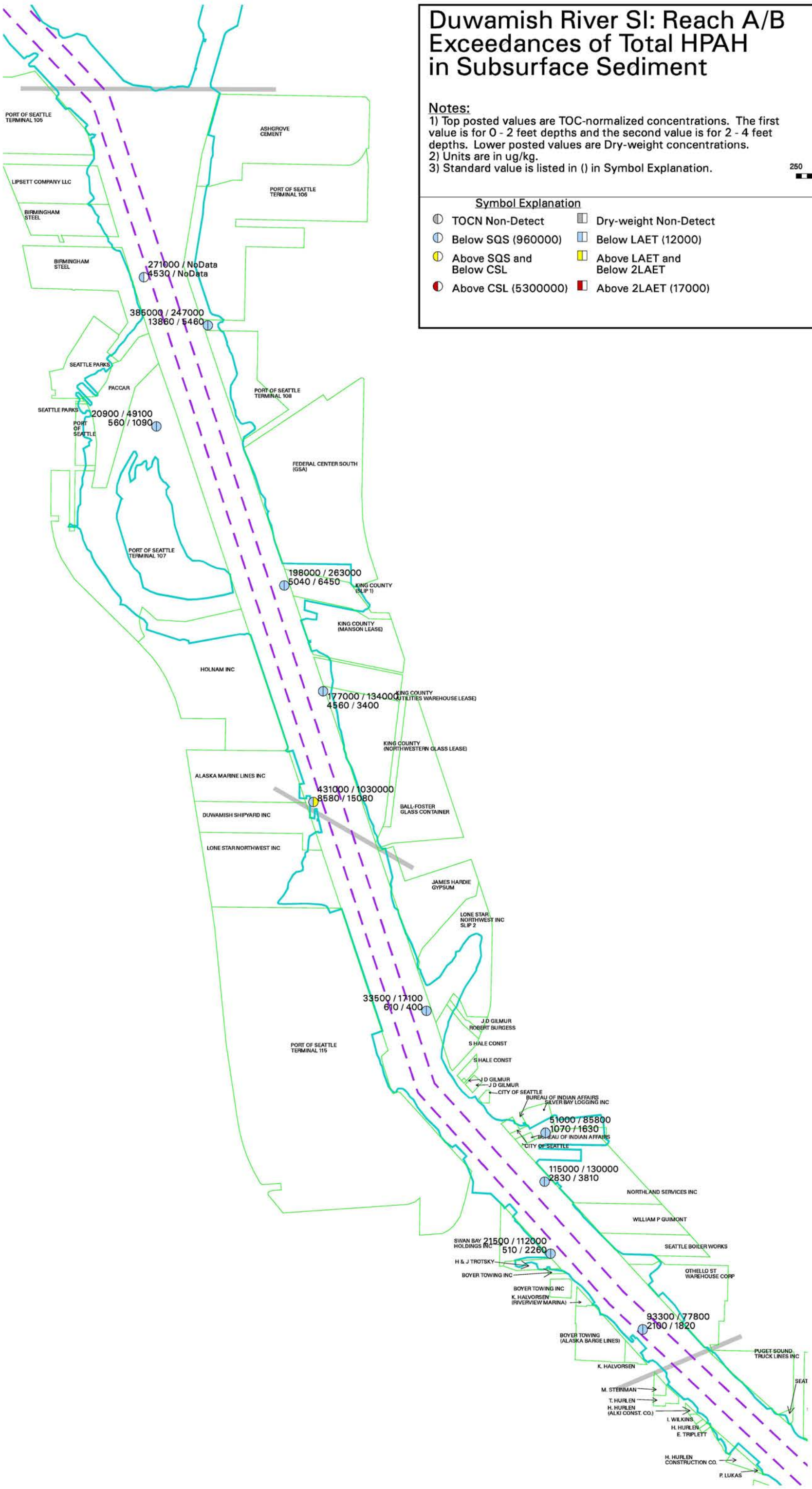
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (960000)
- Above SQS and Below CSL
- Above CSL (5300000)
- Dry-weight Non-Detect
- Below LAET (12000)
- Above LAET and Below 2LAET
- Above 2LAET (17000)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Total HPAH in Subsurface Sediment

Map
4-26c/d

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

SCALE 1:10500

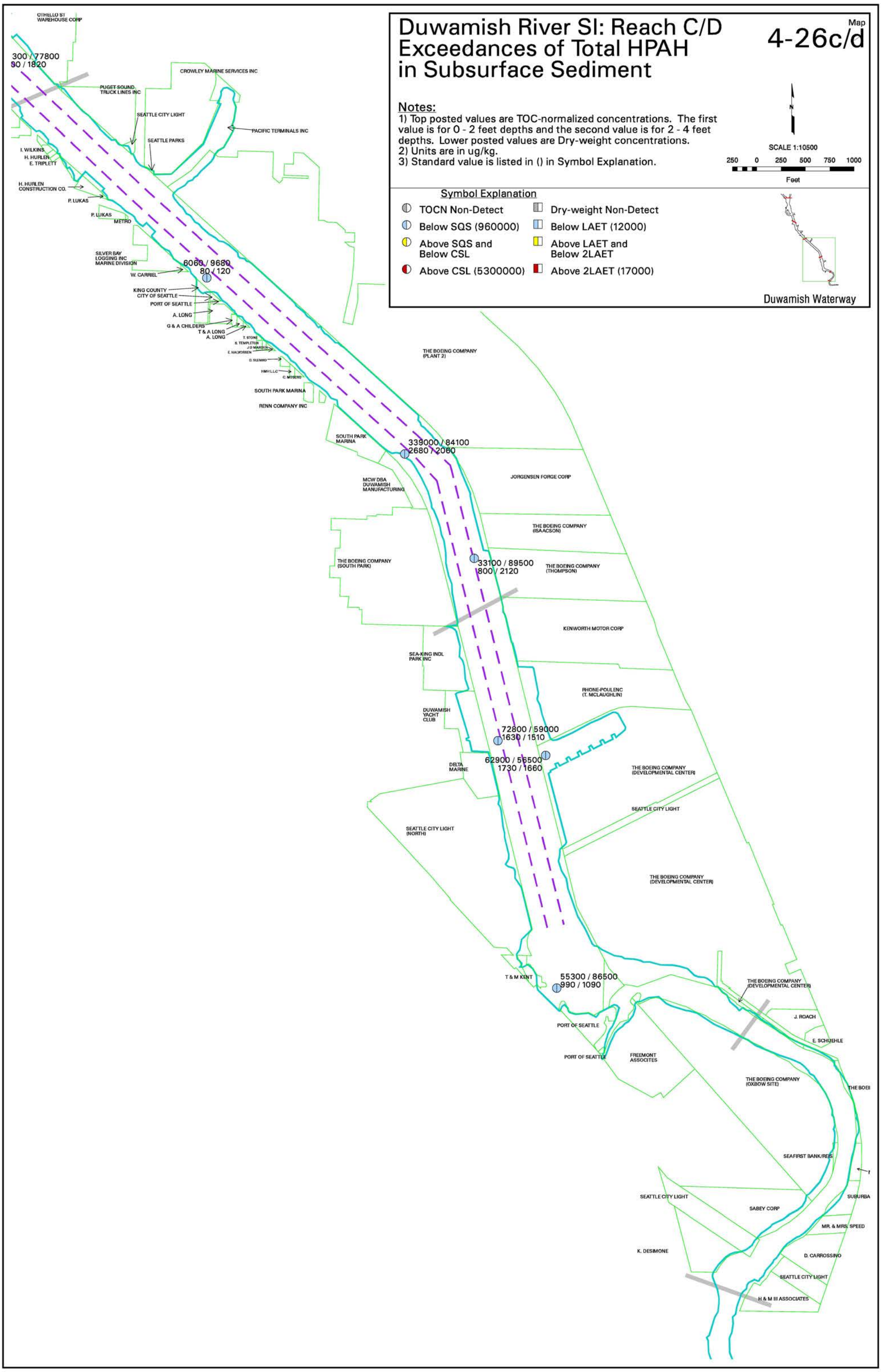
250 0 250 500 750 1000

Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (960000)
- Above SQS and Below CSL
- Above CSL (5300000)
- Dry-weight Non-Detect
- Below LAET (12000)
- Above LAET and Below 2LAET
- Above 2LAET (17000)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Fluoranthene in Subsurface Sediment

Map 4-27a/b

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

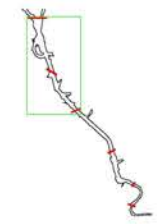
SCALE 1:10500

250 0 250 500 750 1000

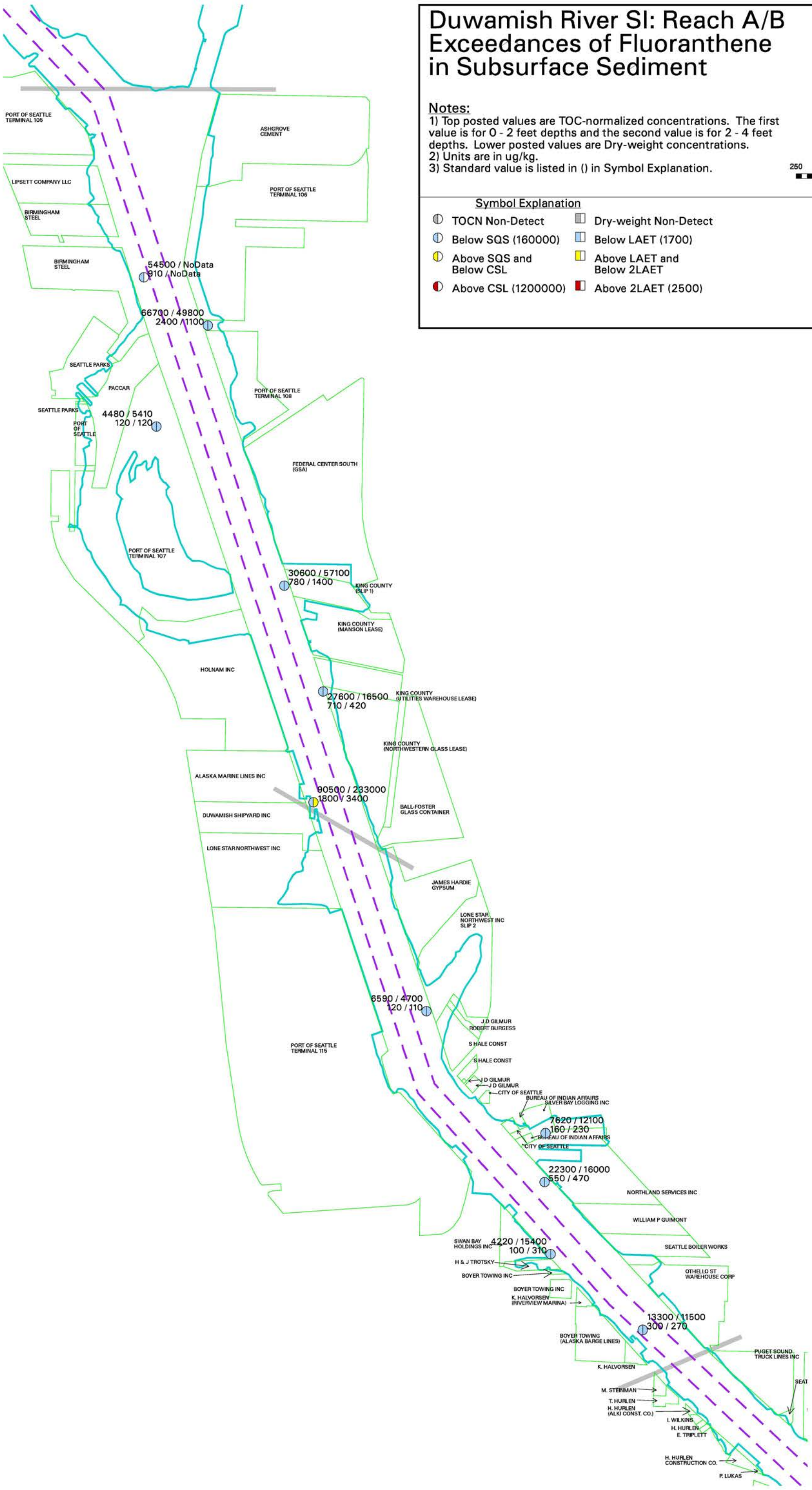
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (160000)
- Above SQS and Below CSL
- Above CSL (1200000)
- Dry-weight Non-Detect
- Below LAET (1700)
- Above LAET and Below 2LAET
- Above 2LAET (2500)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Fluoranthene in Subsurface Sediment

Map 4-27c/d

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

SCALE 1:10500

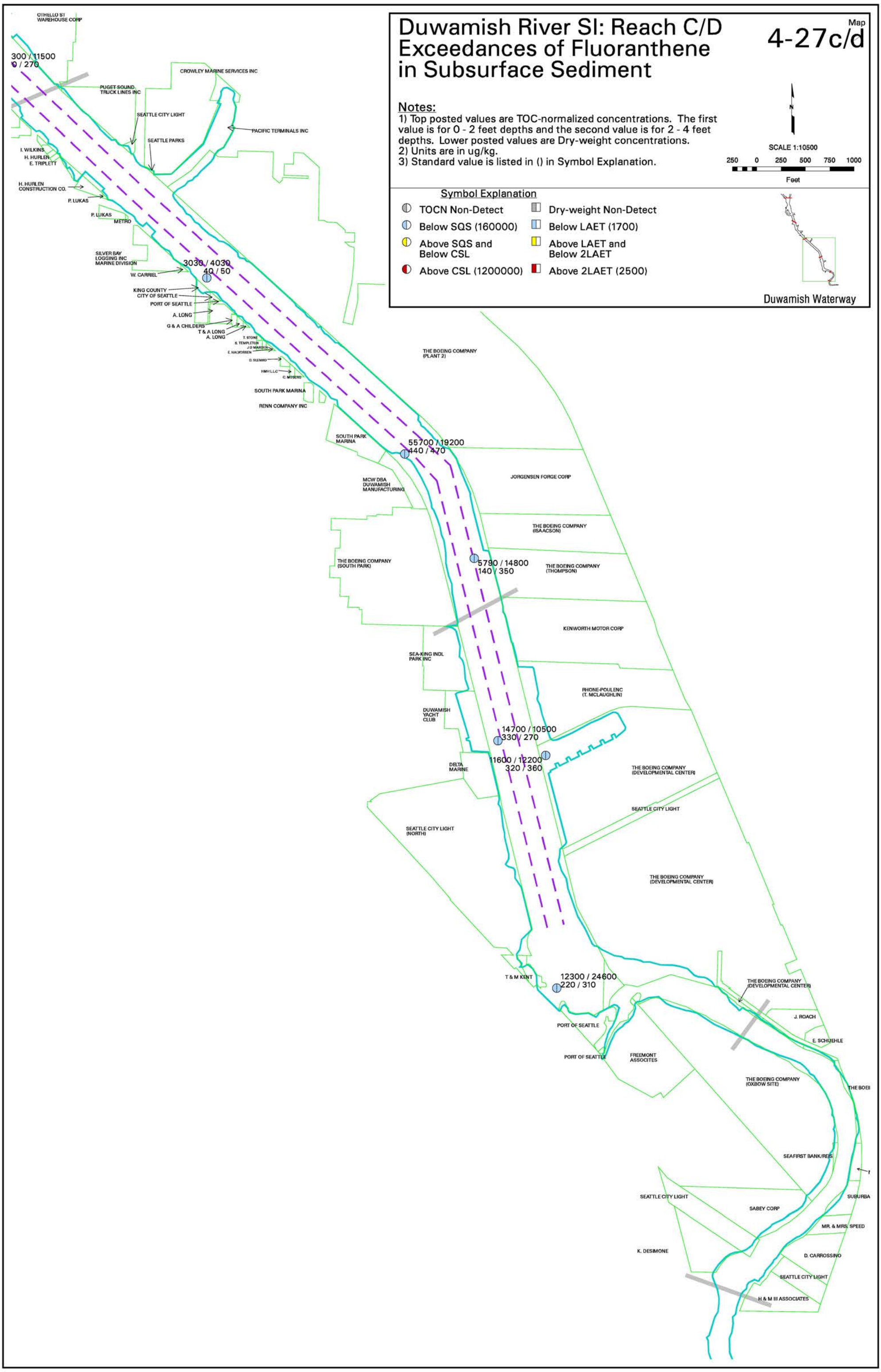
250 0 250 500 750 1000

Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (160000)
- Above SQS and Below CSL
- Above CSL (1200000)
- Dry-weight Non-Detect
- Below LAET (1700)
- Above LAET and Below 2LAET
- Above 2LAET (2500)

Duwamish Waterway



Duwamish River SI: Reach A Exceedances of Chrysene in Subsurface Sediment

Map 4-28a

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

SCALE 1:6000
100 0 100 200 300 400
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (110000)
- Above SQS and Below CSL
- Above CSL (460000)
- Dry-weight Non-Detect
- Below LAET (1400)
- Above LAET and Below 2LAET
- Above 2LAET (2800)

Duwamish Waterway

PORT OF SEATTLE TERMINAL 105
LIPSETT COMPANY LLC
BIRMINGHAM STEEL
BIRMINGHAM STEEL
29300 / NoData
490 / NoData
38900 / 28500
1400 / 630
SEATTLE PARKS
PACCAR
SEATTLE PARKS
PORT OF SEATTLE
1870 / 4050
50 / 90
PORT OF SEATTLE TERMINAL 108
FEDERAL CENTER SOUTH (GSA)
PORT OF SEATTLE TERMINAL 107
19600 / 30200
500 / 740
KING COUNTY (SLIP 1)
KING COUNTY (MANSON LEASE)
HOLNAM INC
20200 / 12200
520 / 310
KING COUNTY (UTILITIES WAREHOUSE LEAS
KING COUNTY (NORTHWESTERN GLASS LEASE)
ALASKA MARINE LINES INC
46200 / 116000
920 / 1700
BALL-FOSTER GLASS CONTAINER
DUWAMISH SHIPYARD INC
LONE STAR NORTHWEST INC
JAMES HARDIE GYPSUM

Duwamish River SI: Reach A Exceedances of Indeno(1,2,3-cd)pyrene in Subsurface Sediment

Map 4-29a

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

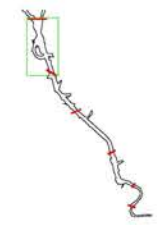
SCALE 1:6000

100 0 100 200 300 400

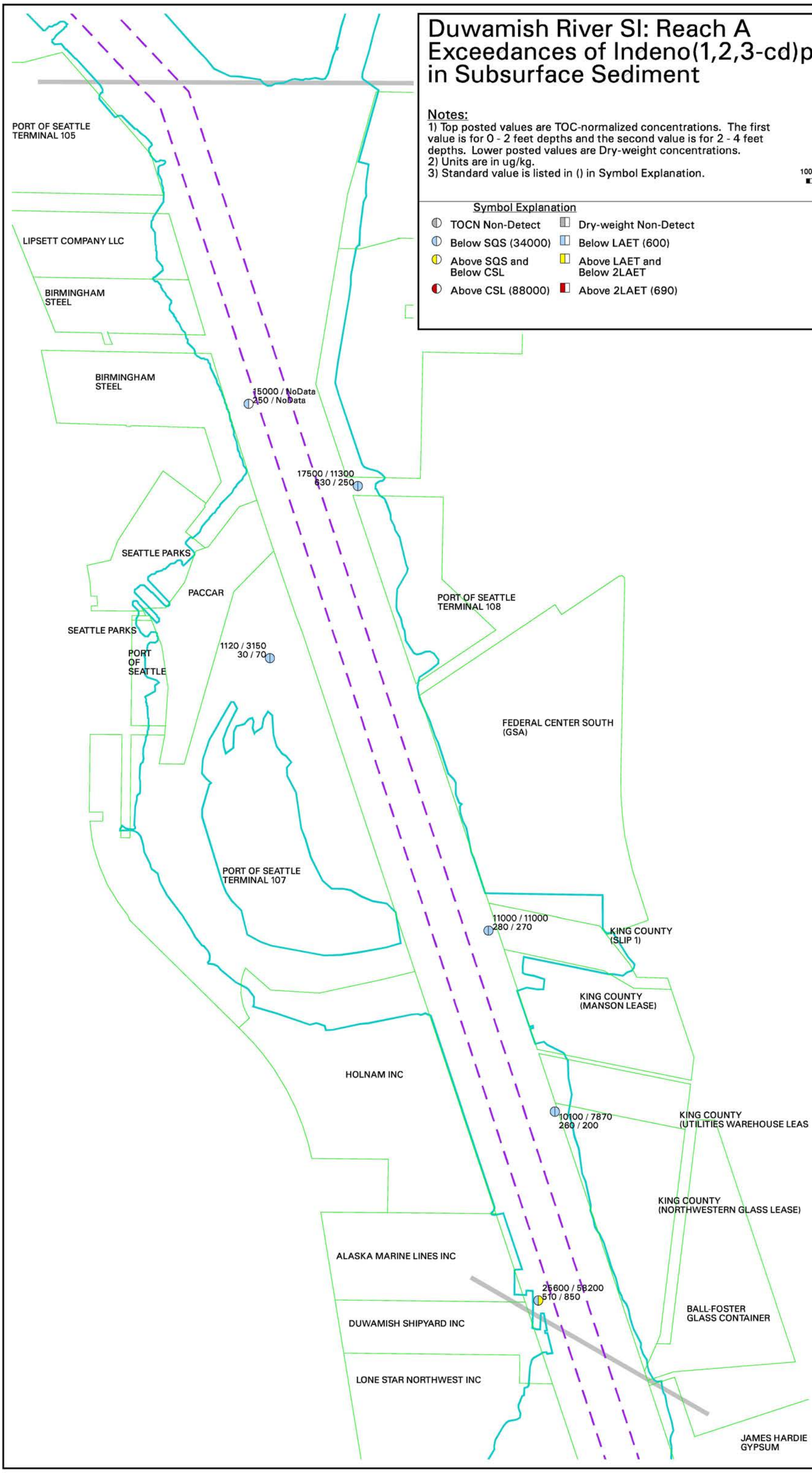
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (34000)
- Above SQS and Below CSL
- Above CSL (88000)
- Dry-weight Non-Detect
- Below LAET (600)
- Above LAET and Below 2LAET
- Above 2LAET (690)



Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Total LPAH in Subsurface Sediment

Map
4-30a/b

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

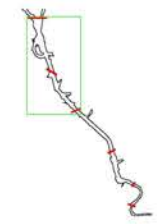
SCALE 1:10500

250 0 250 500 750 1000

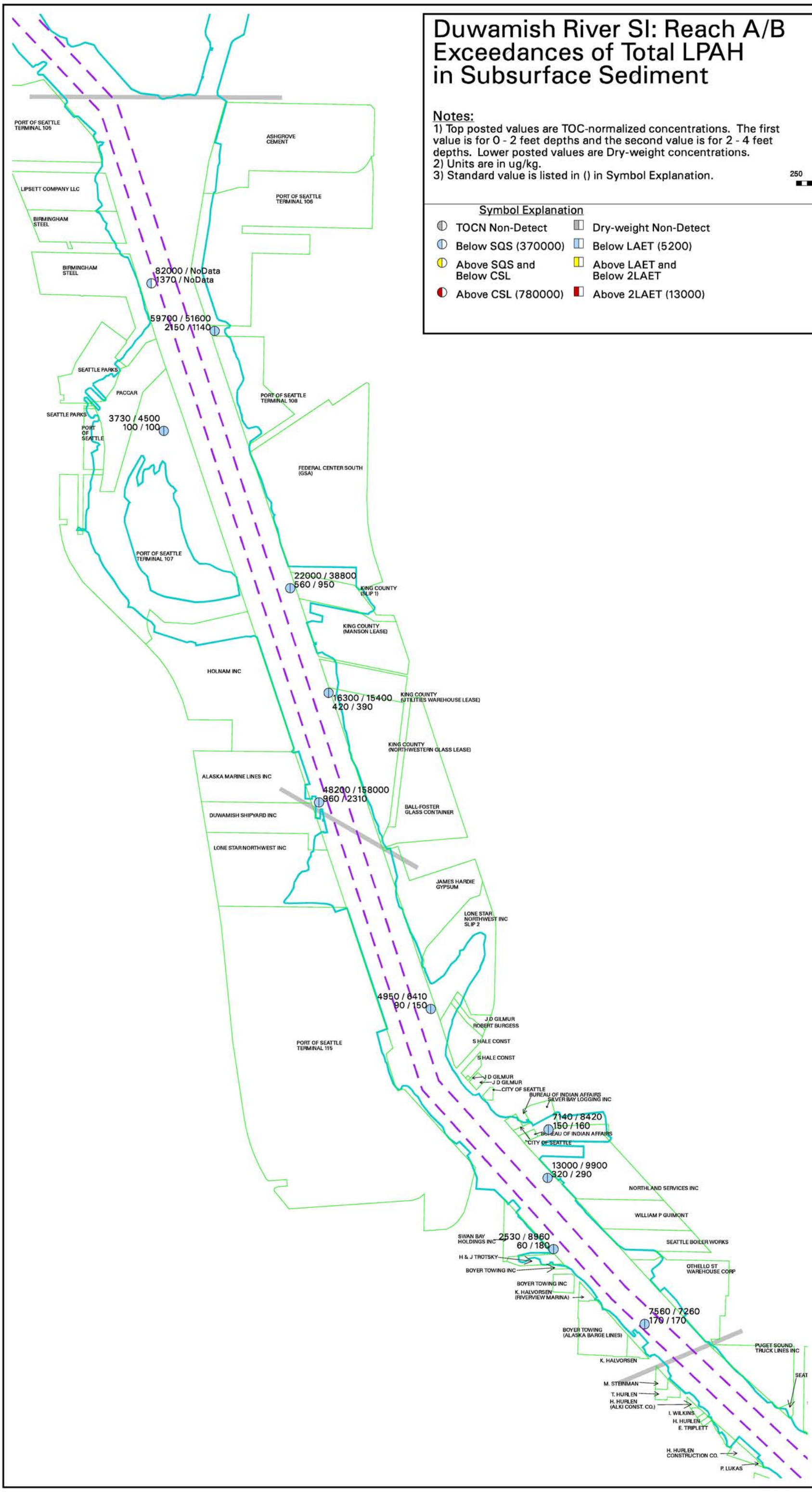
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (370000)
- Above SQS and Below CSL
- Above CSL (780000)
- Dry-weight Non-Detect
- Below LAET (5200)
- Above LAET and Below 2LAET
- Above 2LAET (13000)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Total LPAH in Subsurface Sediment

Map
4-30c/d

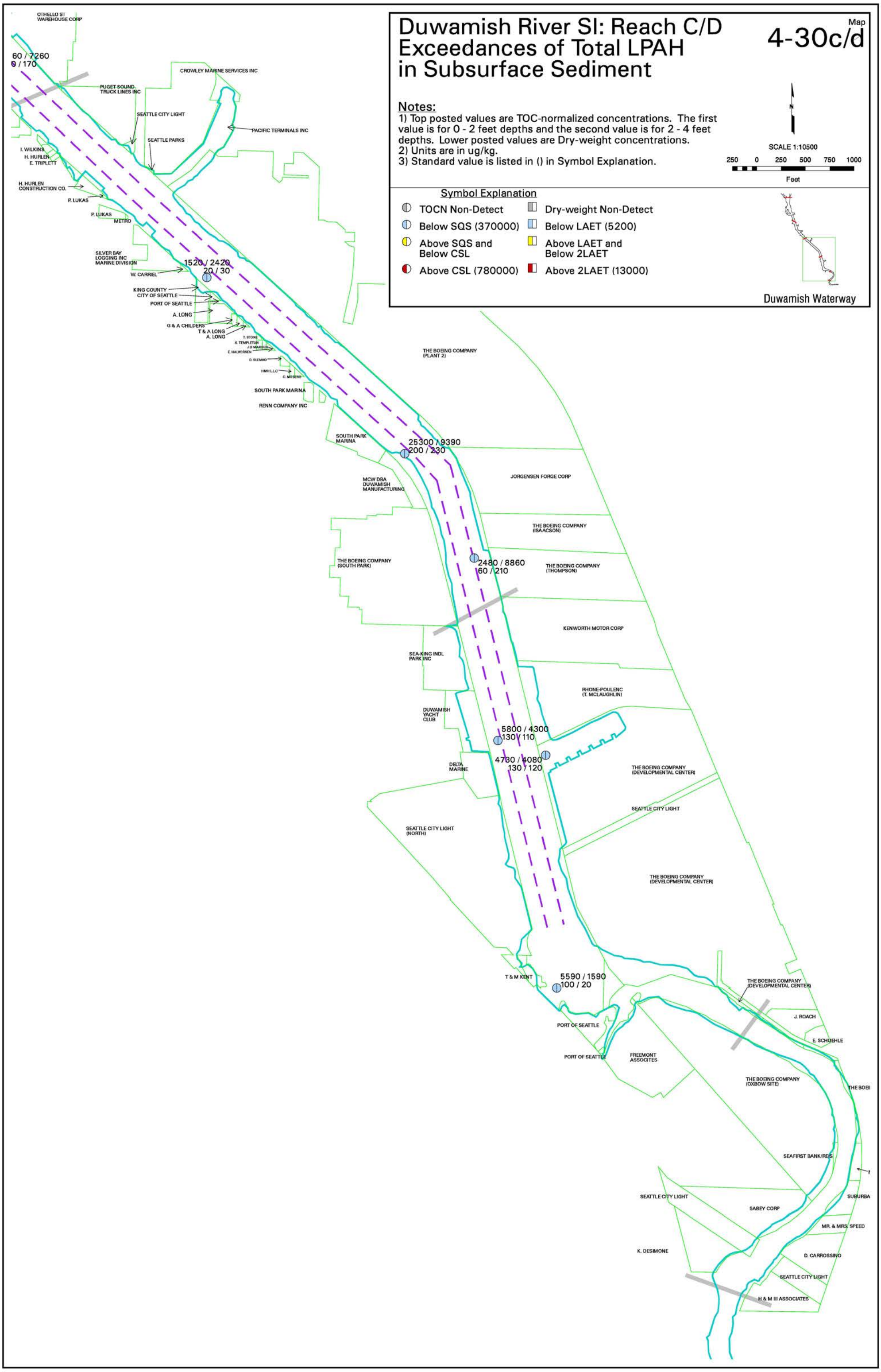
Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (370000)
- Above SQS and Below CSL
- Above CSL (780000)
- Dry-weight Non-Detect
- Below LAET (5200)
- Above LAET and Below 2LAET
- Above 2LAET (13000)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Phenanthrene in Subsurface Sediment

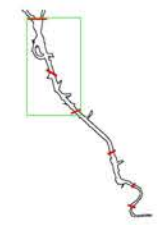
Map
4-31a/b

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

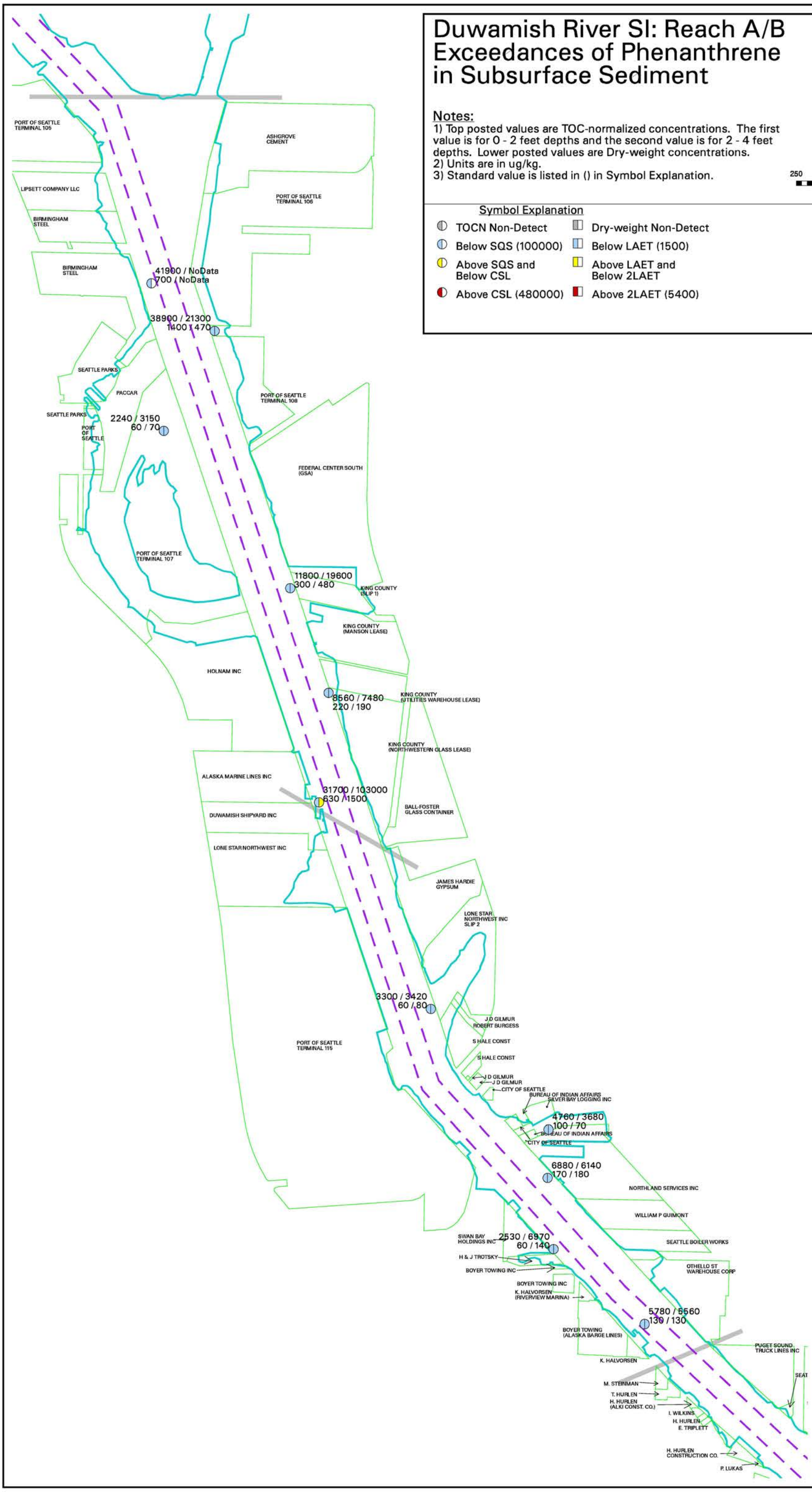
SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (100000)
- Above SQS and Below CSL
- Above CSL (480000)
- Dry-weight Non-Detect
- Below LAET (1500)
- Above LAET and Below 2LAET
- Above 2LAET (5400)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Phenanthrene in Subsurface Sediment

Map
4-31c/d

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

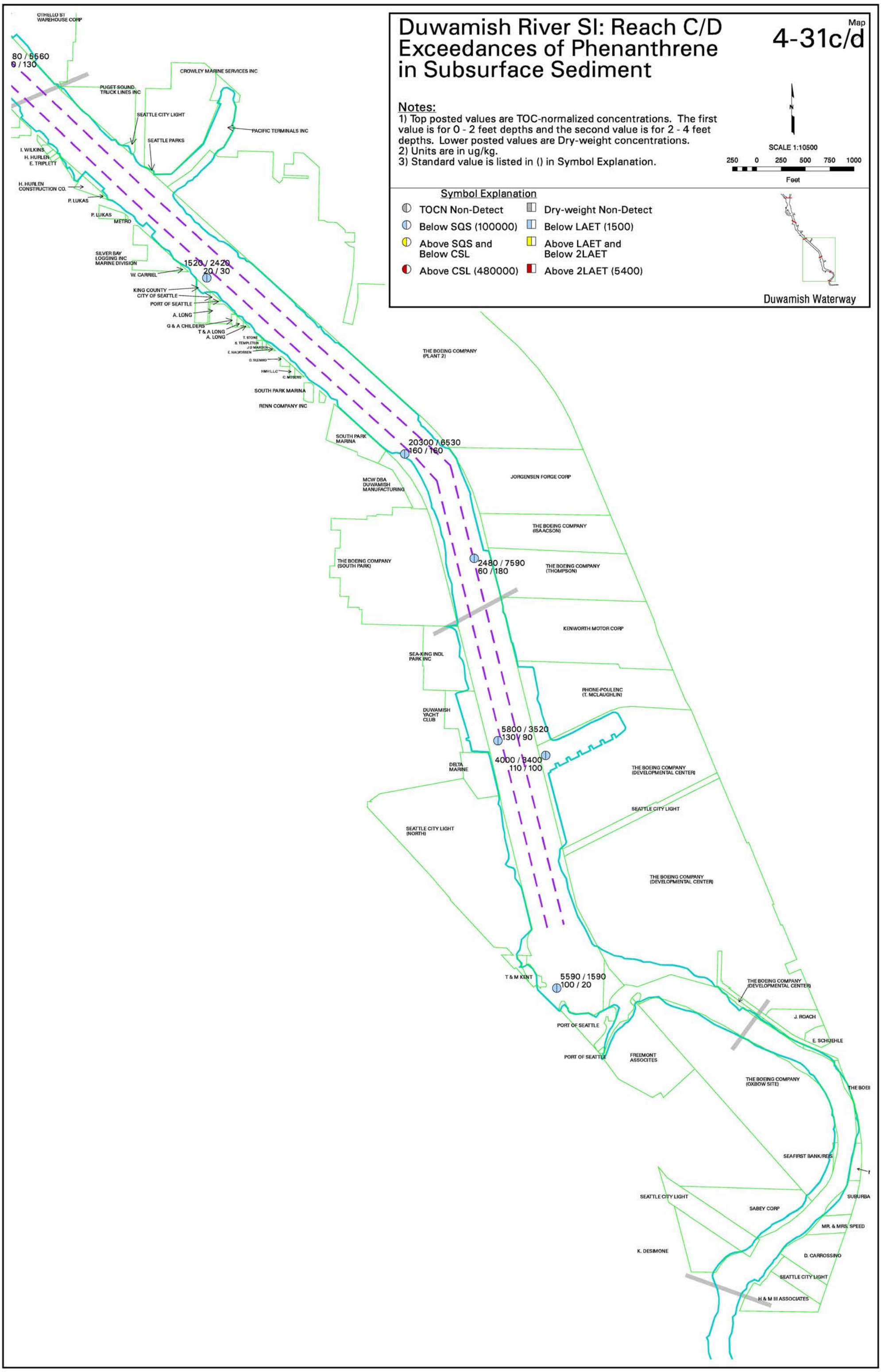
N

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (100000)
- Above SQS and Below CSL
- Above CSL (480000)
- Dry-weight Non-Detect
- Below LAET (1500)
- Above LAET and Below 2LAET
- Above 2LAET (5400)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Acenaphthene in Subsurface Sediment

Map 4-32a/b

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

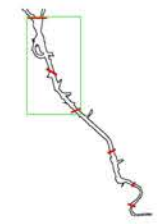
SCALE 1:10500

250 0 250 500 750 1000

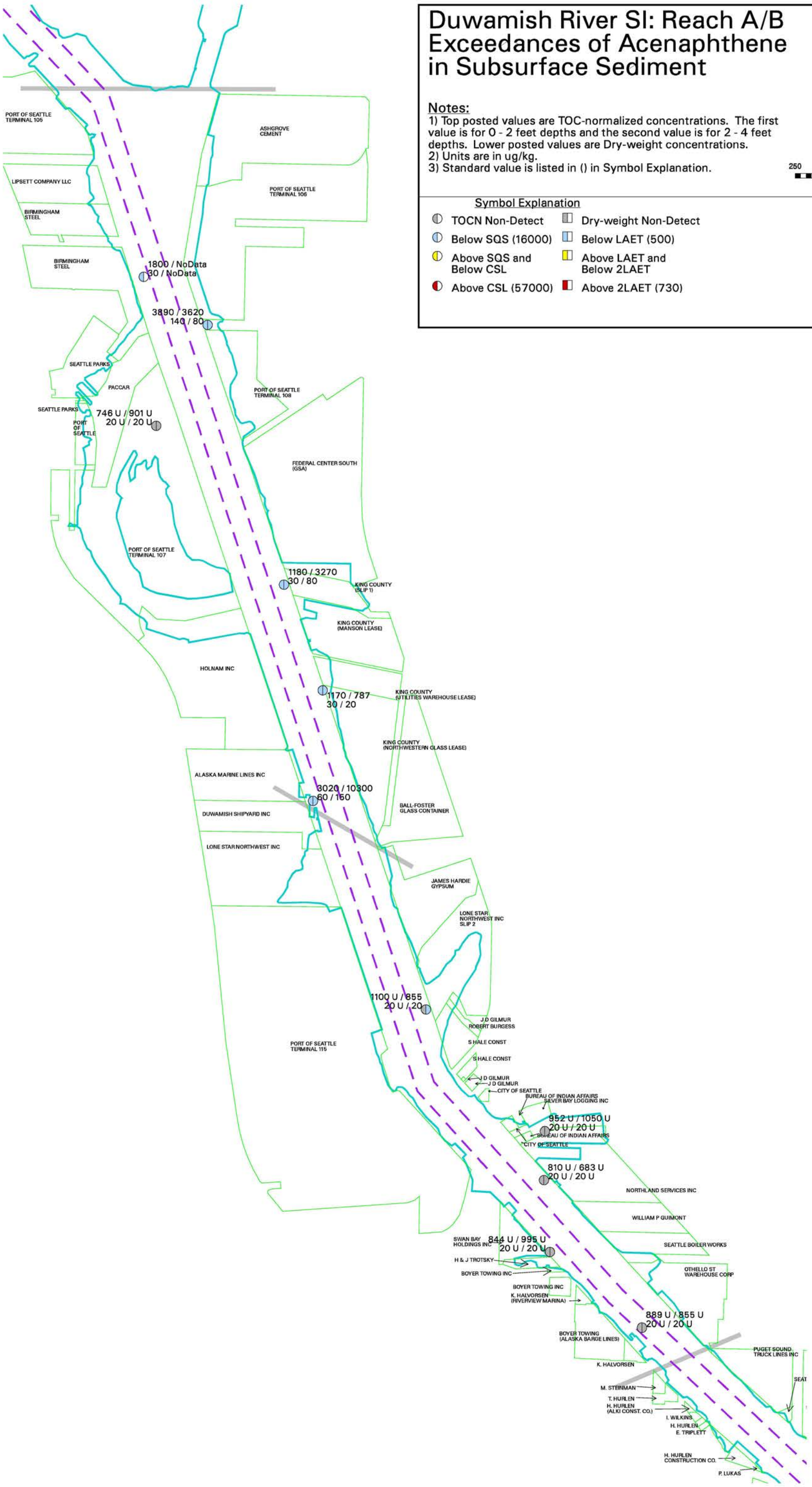
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (16000)
- Above SQS and Below CSL
- Above CSL (57000)
- Dry-weight Non-Detect
- Below LAET (500)
- Above LAET and Below 2LAET
- Above 2LAET (730)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Acenaphthene in Subsurface Sediment

Map 4-32c/d

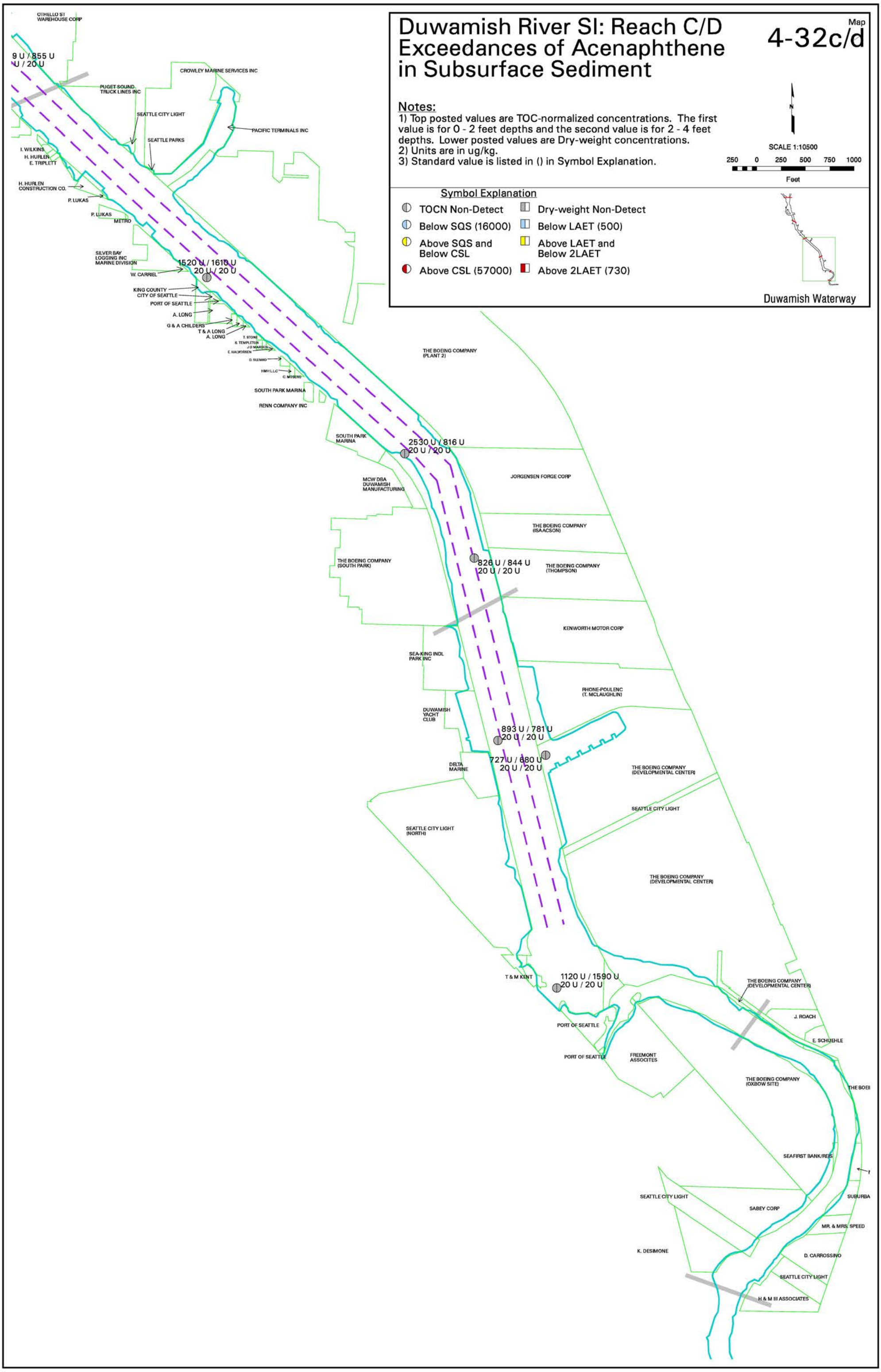
Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (16000)
- Above SQS and Below CSL
- Above CSL (57000)
- Dry-weight Non-Detect
- Below LAET (500)
- Above LAET and Below 2LAET
- Above 2LAET (730)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Fluorene in Subsurface Sediment

Map
4-33a/b

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

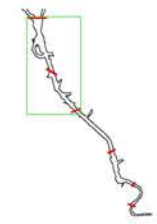
SCALE 1:10500

250 0 250 500 750 1000

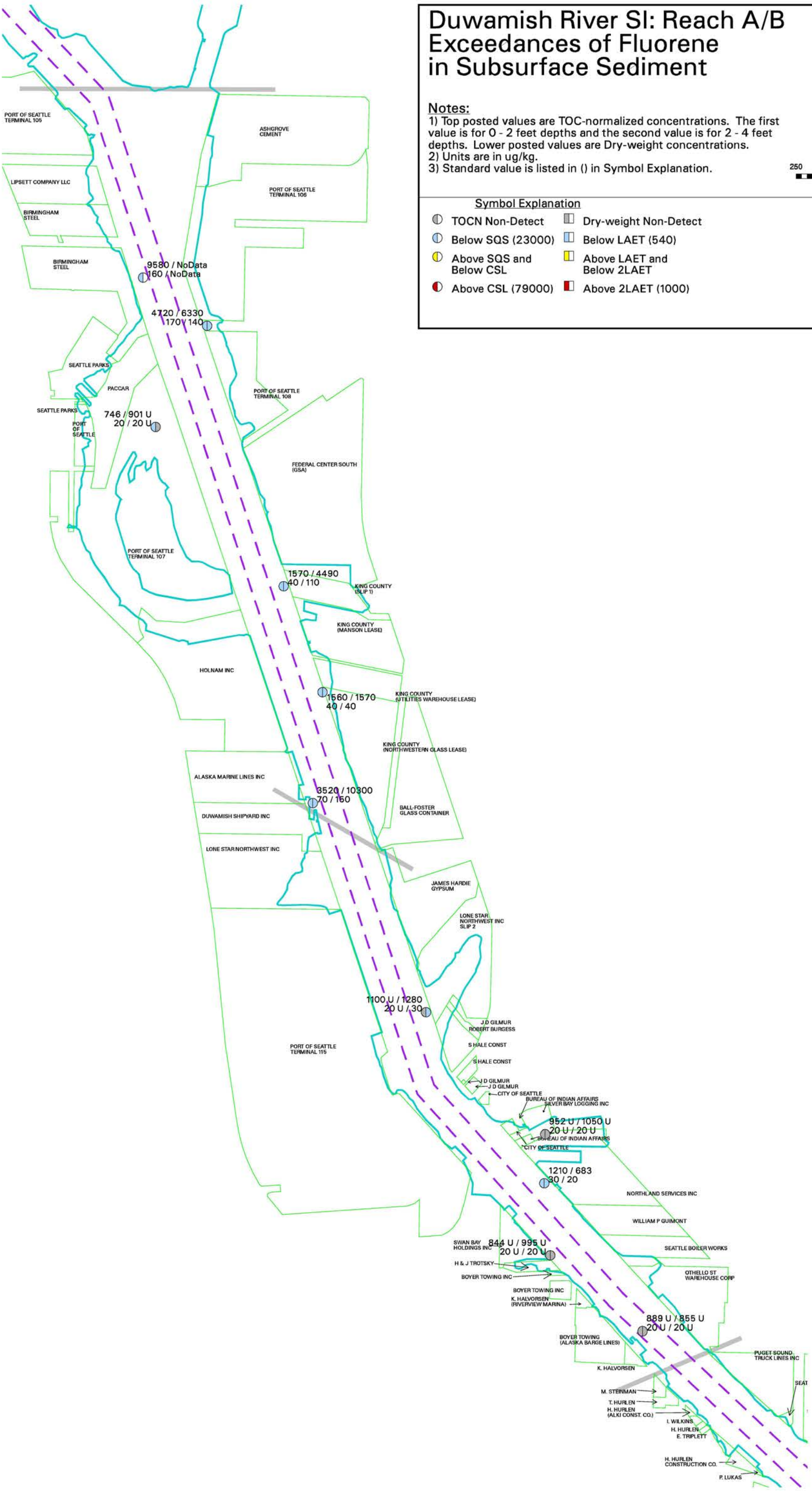
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (23000)
- Above SQS and Below CSL
- Above CSL (79000)
- Dry-weight Non-Detect
- Below LAET (540)
- Above LAET and Below 2LAET
- Above 2LAET (1000)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Fluorene in Subsurface Sediment

Map
4-33c/d

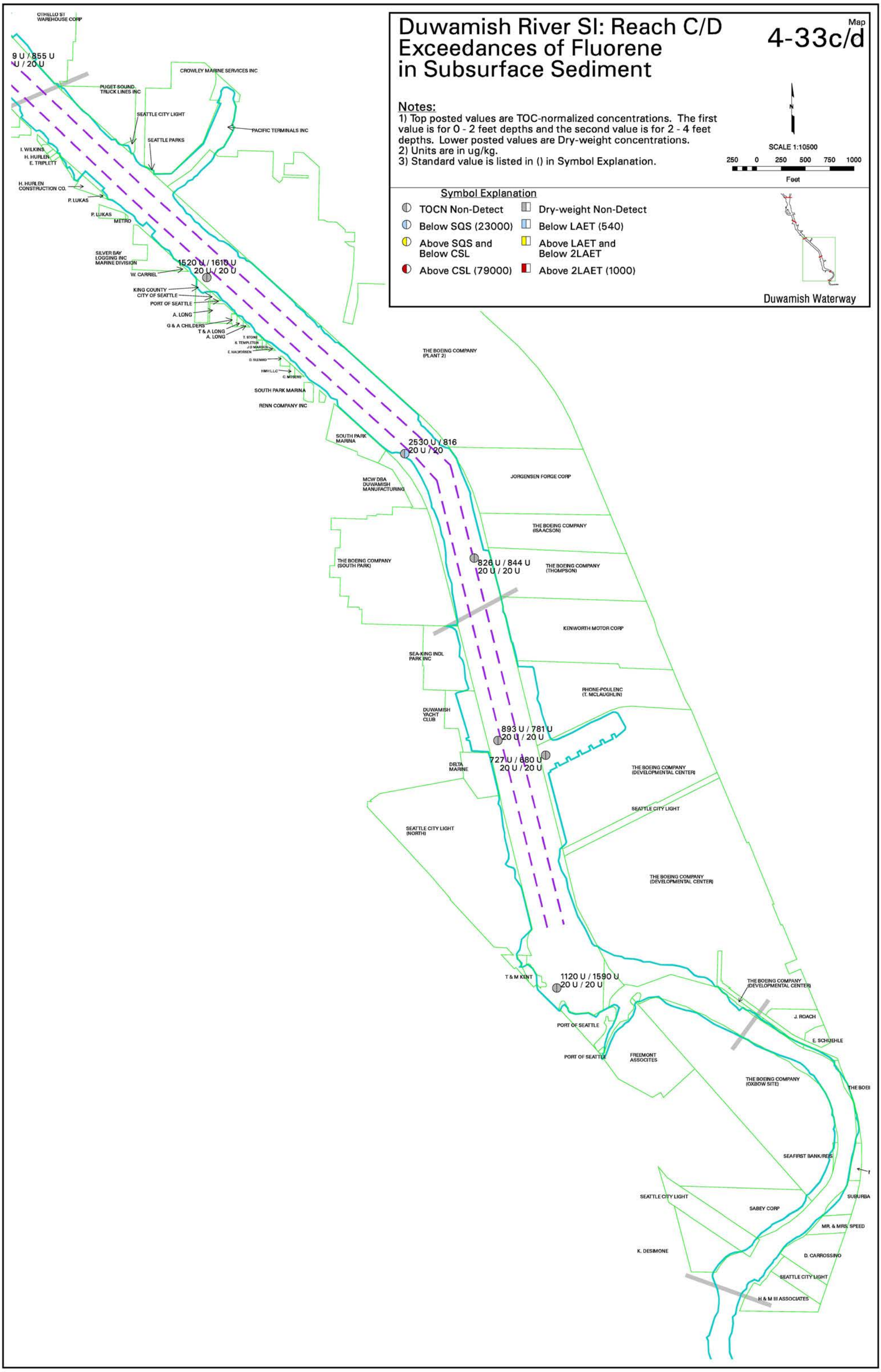
Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation

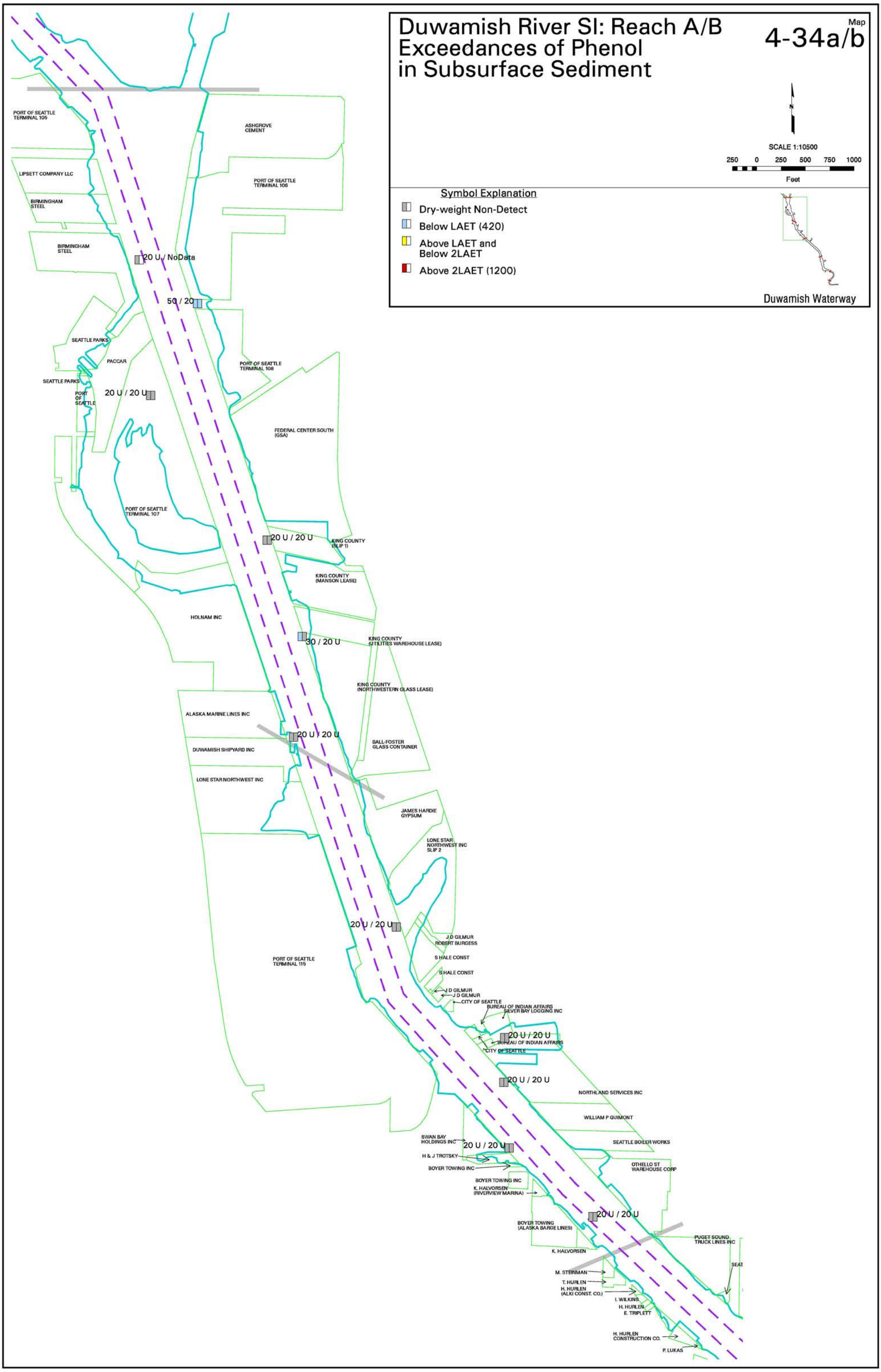
- TOCN Non-Detect
- Below SQS (23000)
- Above SQS and Below CSL
- Above CSL (79000)
- Dry-weight Non-Detect
- Below LAET (540)
- Above LAET and Below 2LAET
- Above 2LAET (1000)

Duwamish Waterway



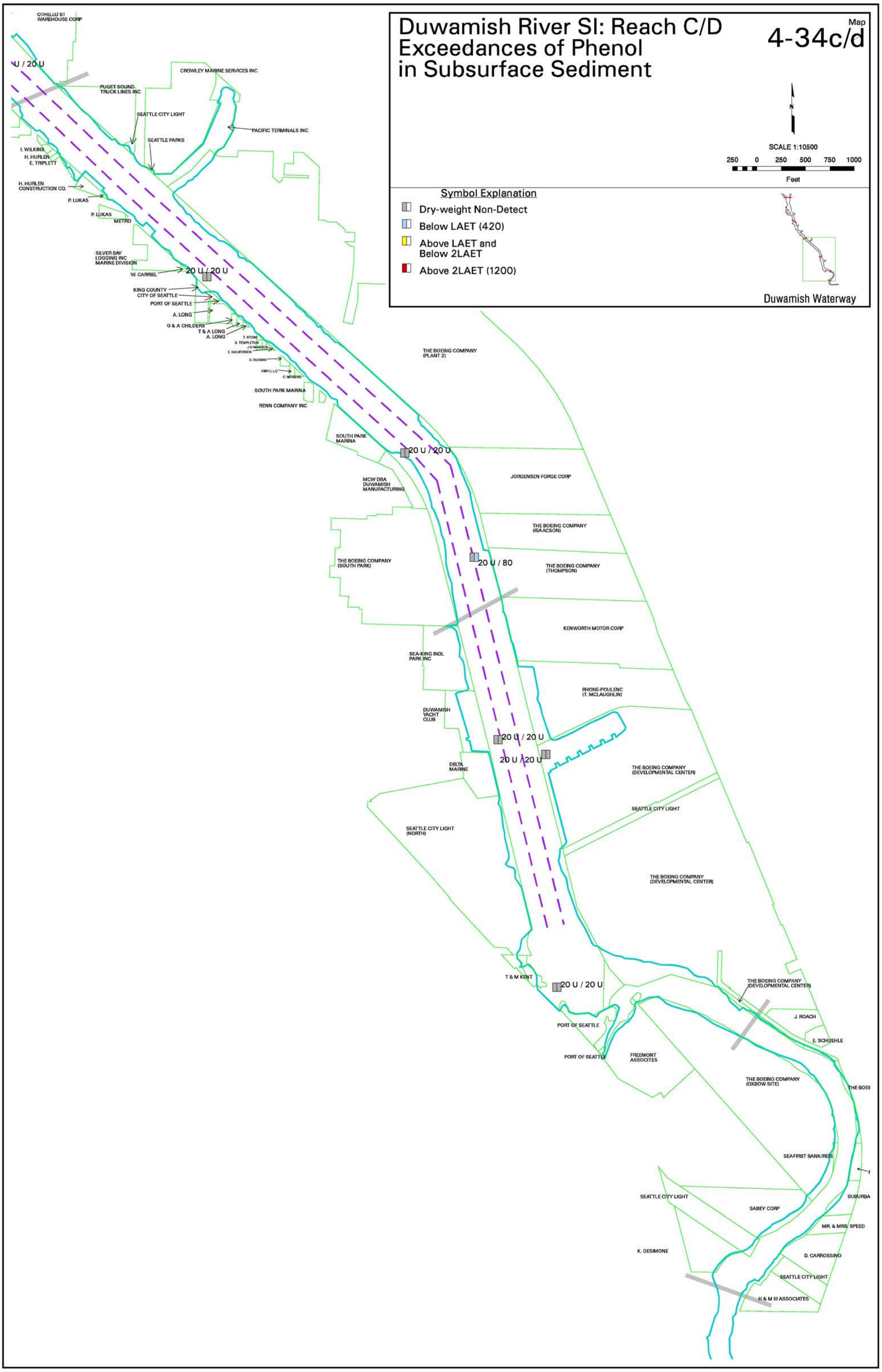
Duwamish River SI: Reach A/B Exceedances of Phenol in Subsurface Sediment

Map 4-34a/b



Duwamish River SI: Reach C/D Exceedances of Phenol in Subsurface Sediment

Map
4-34c/d



Duwamish River SI: Reach A/B Exceedances of Hexachlorobenzene in Subsurface Sediment

Map 4-35a/b

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

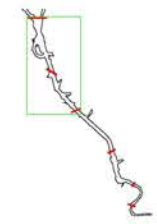
SCALE 1:10500

250 0 250 500 750 1000

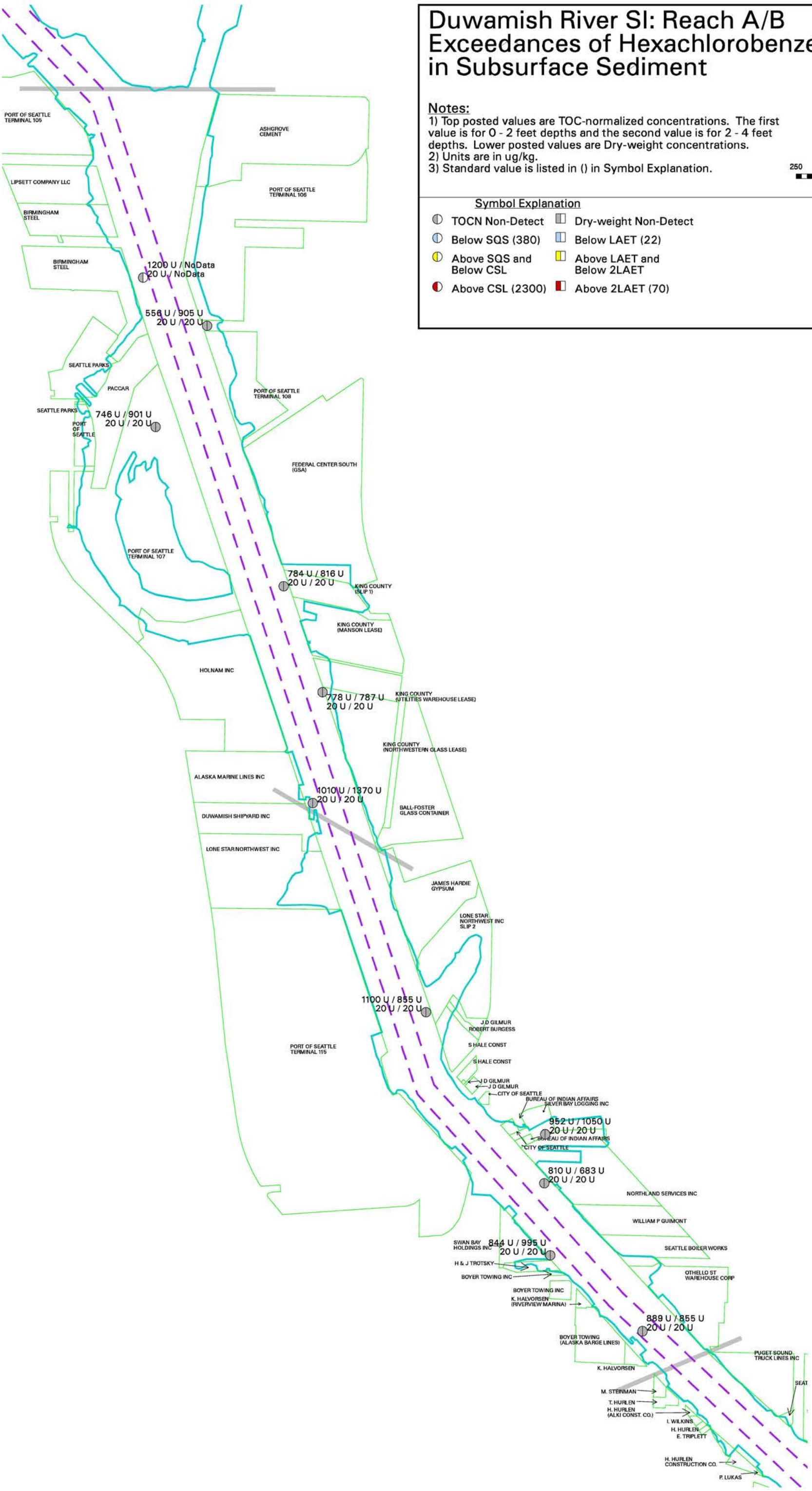
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (380)
- Above SQS and Below CSL
- Above CSL (2300)
- Dry-weight Non-Detect
- Below LAET (22)
- Above LAET and Below 2LAET
- Above 2LAET (70)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Hexachlorobenzene in Subsurface Sediment

Map 4-35c/d

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

SCALE 1:10500

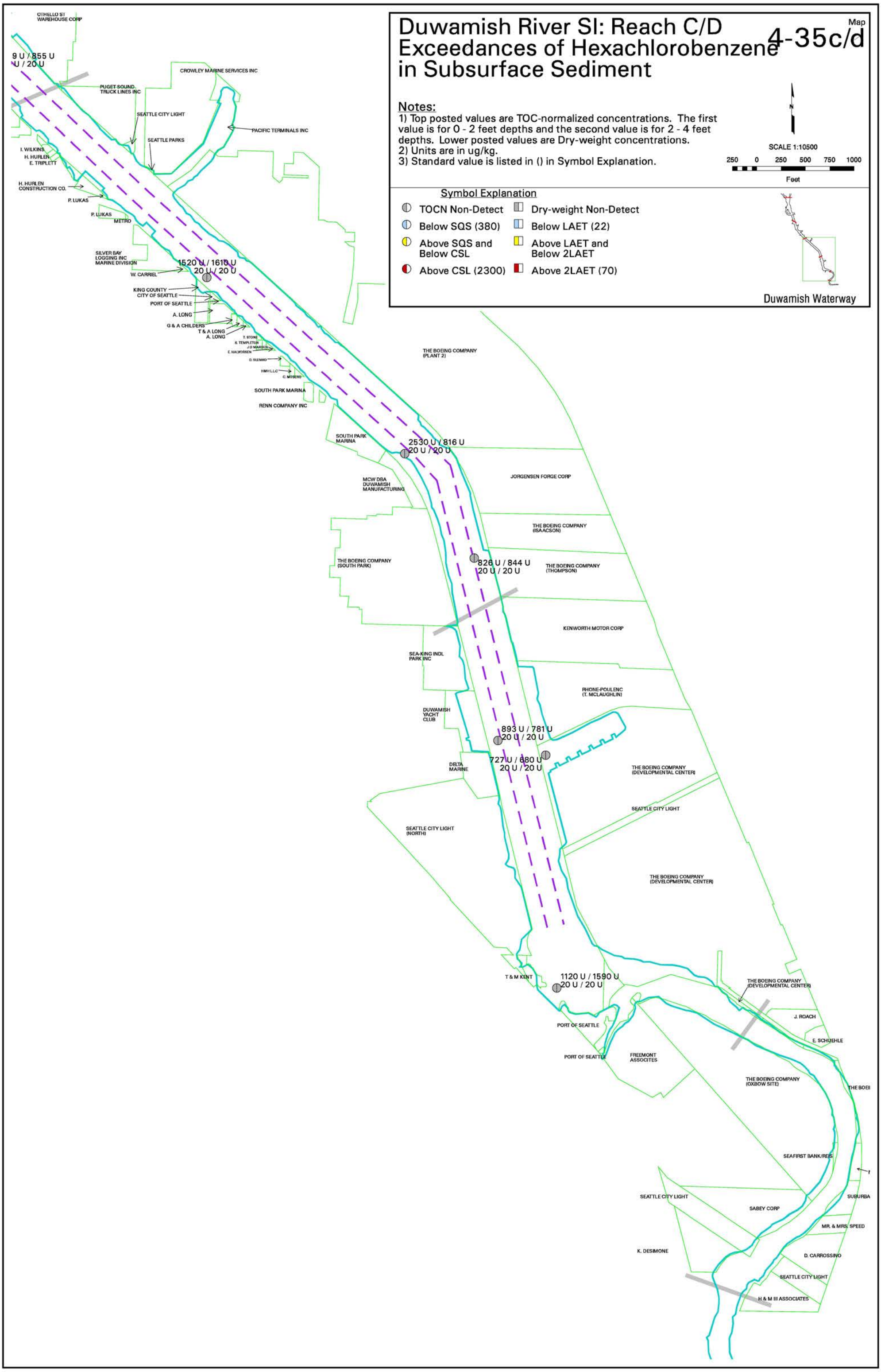
250 0 250 500 750 1000

Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (380)
- Above SQS and Below CSL
- Above CSL (2300)
- Dry-weight Non-Detect
- Below LAET (22)
- Above LAET and Below 2LAET
- Above 2LAET (70)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Bis(2-ethylhexyl) Phthalate in Subsurface Sediment

Map 4-36a/b

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

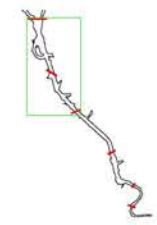
SCALE 1:10500

250 0 250 500 750 1000

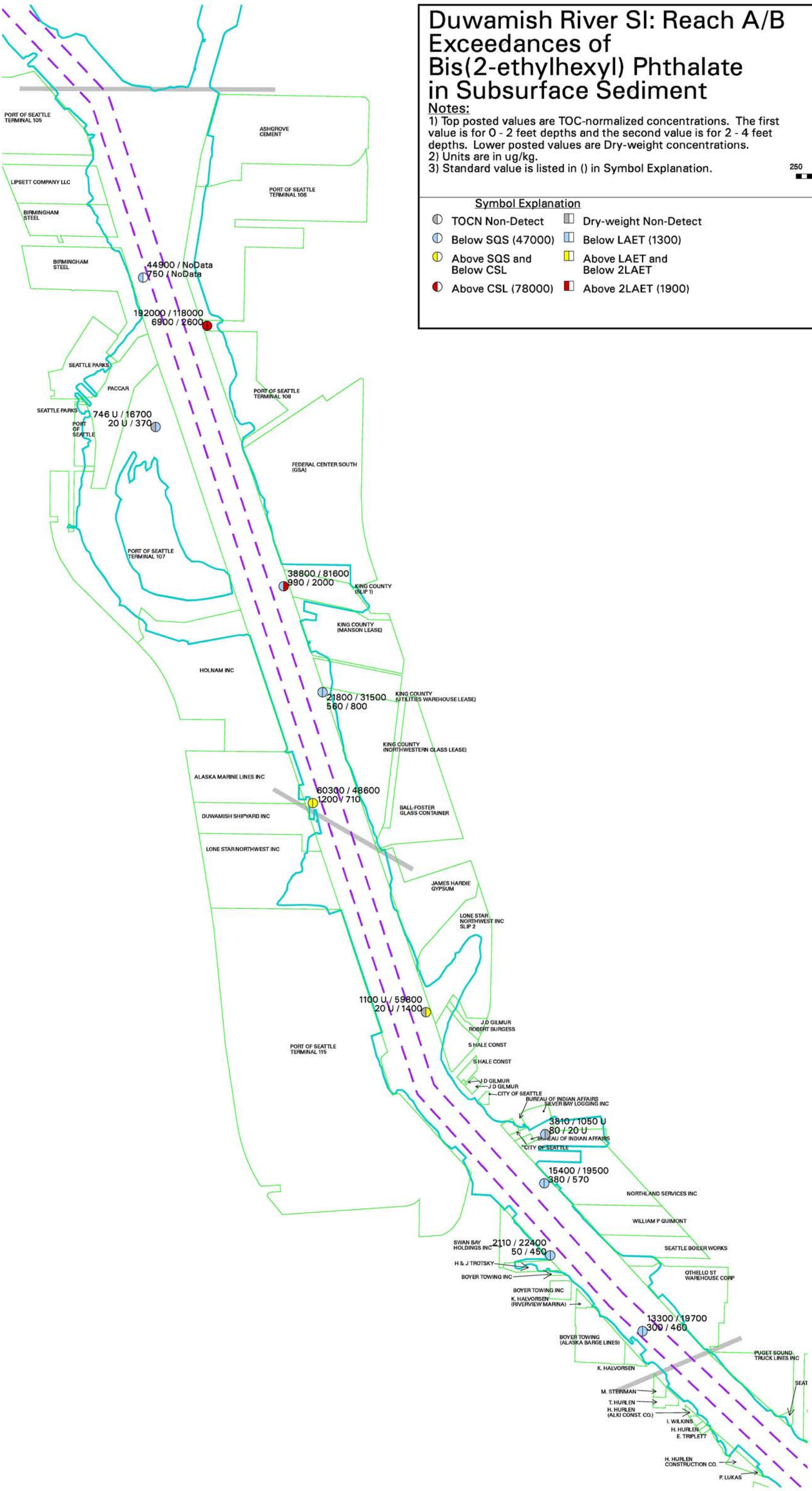
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (47000)
- Above SQS and Below CSL
- Above CSL (78000)
- Dry-weight Non-Detect
- Below LAET (1300)
- Above LAET and Below 2LAET
- Above 2LAET (1900)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Bis(2-ethylhexyl) Phthalate in Subsurface Sediment

Map 4-36c/d

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

SCALE 1:10500

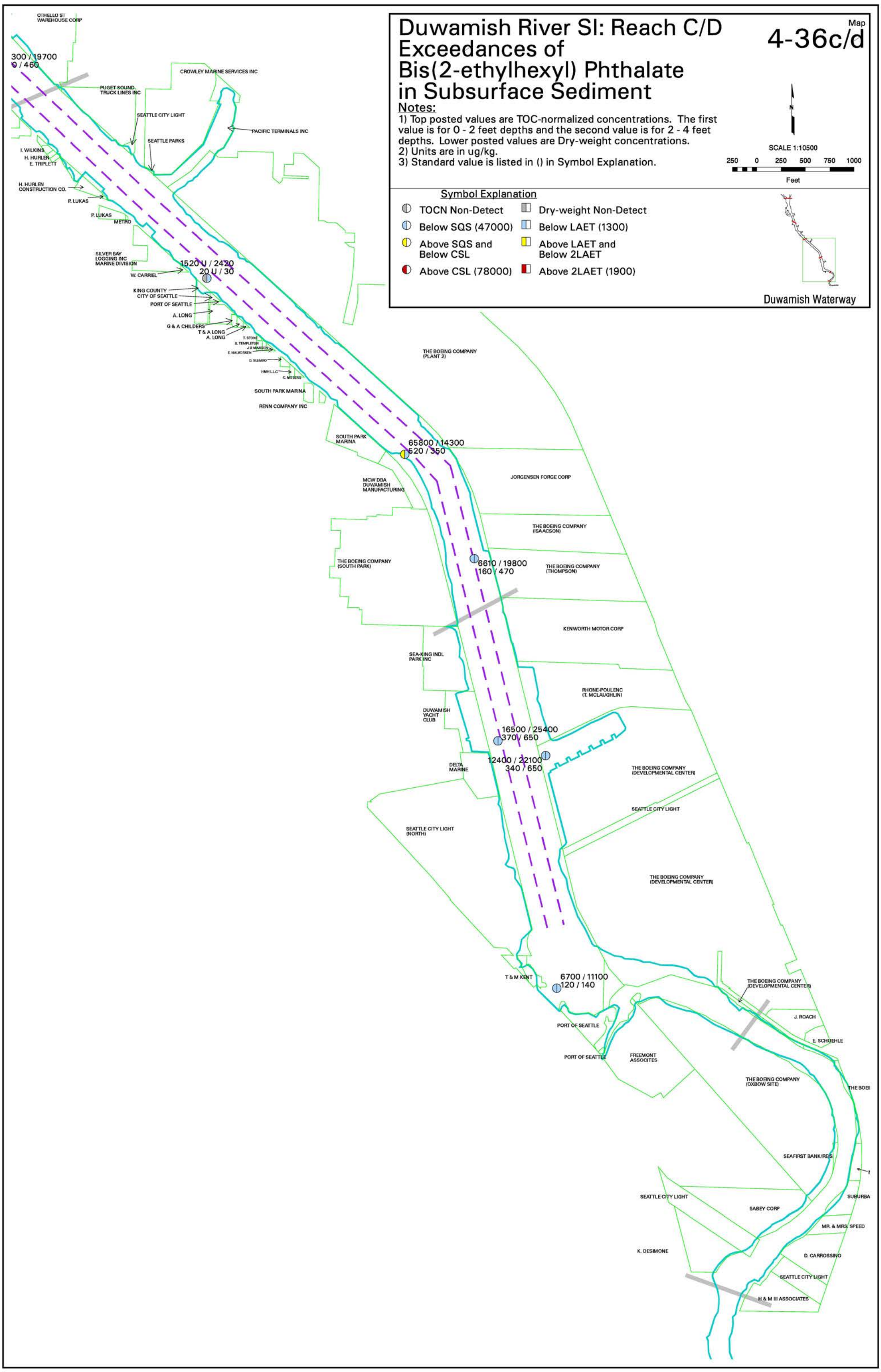
250 0 250 500 750 1000

Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (47000)
- Above SQS and Below CSL
- Above CSL (78000)
- Dry-weight Non-Detect
- Below LAET (1300)
- Above LAET and Below 2LAET
- Above 2LAET (1900)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Butyl Benzyl Phthalate in Subsurface Sediment

Map 4-37a/b

Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

N

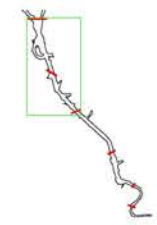
SCALE 1:10500

250 0 250 500 750 1000

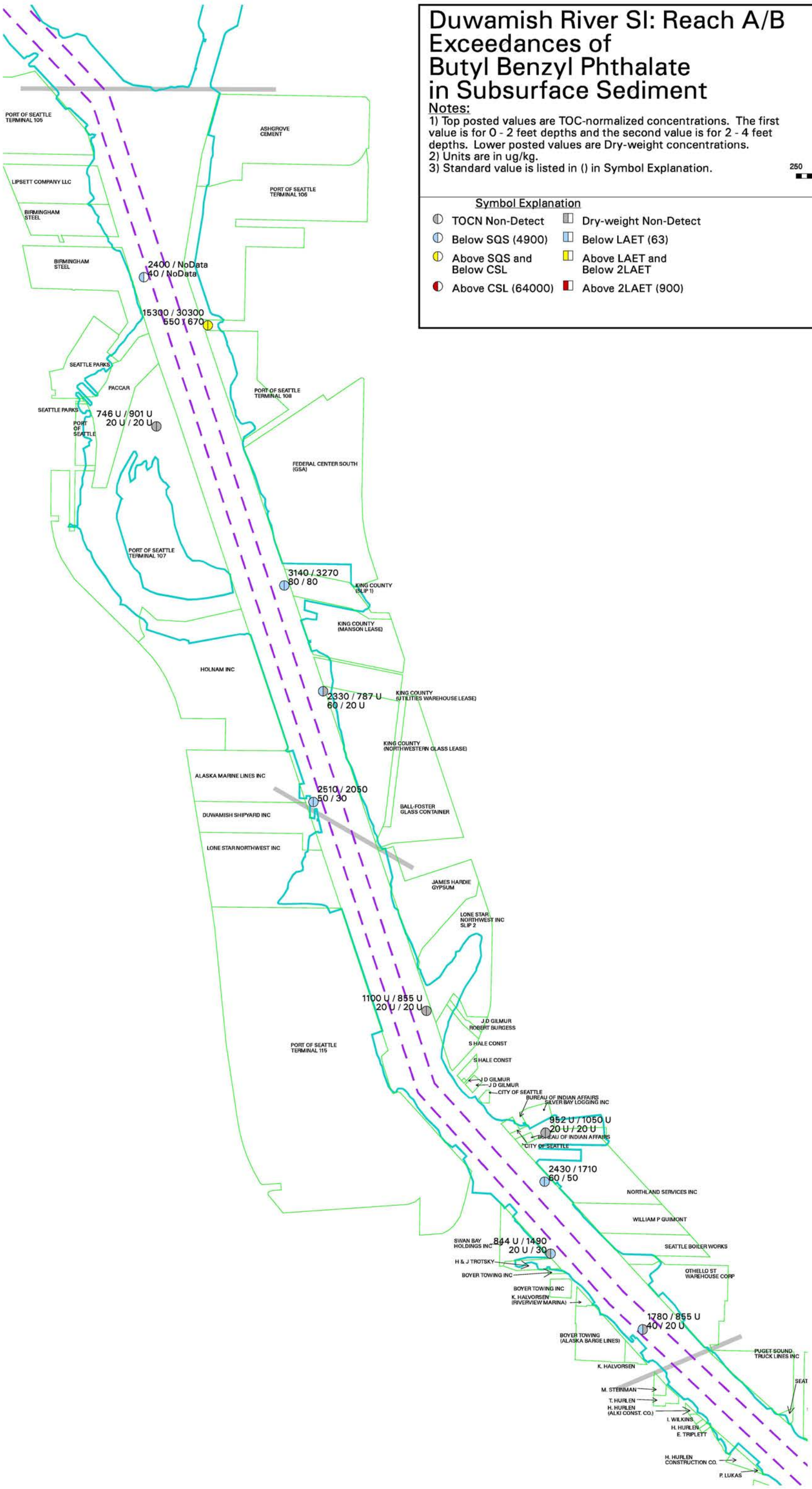
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (4900)
- Above SQS and Below CSL
- Above CSL (64000)
- Dry-weight Non-Detect
- Below LAET (63)
- Above LAET and Below 2LAET
- Above 2LAET (900)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Butyl Benzyl Phthalate in Subsurface Sediment

Map 4-37c/d

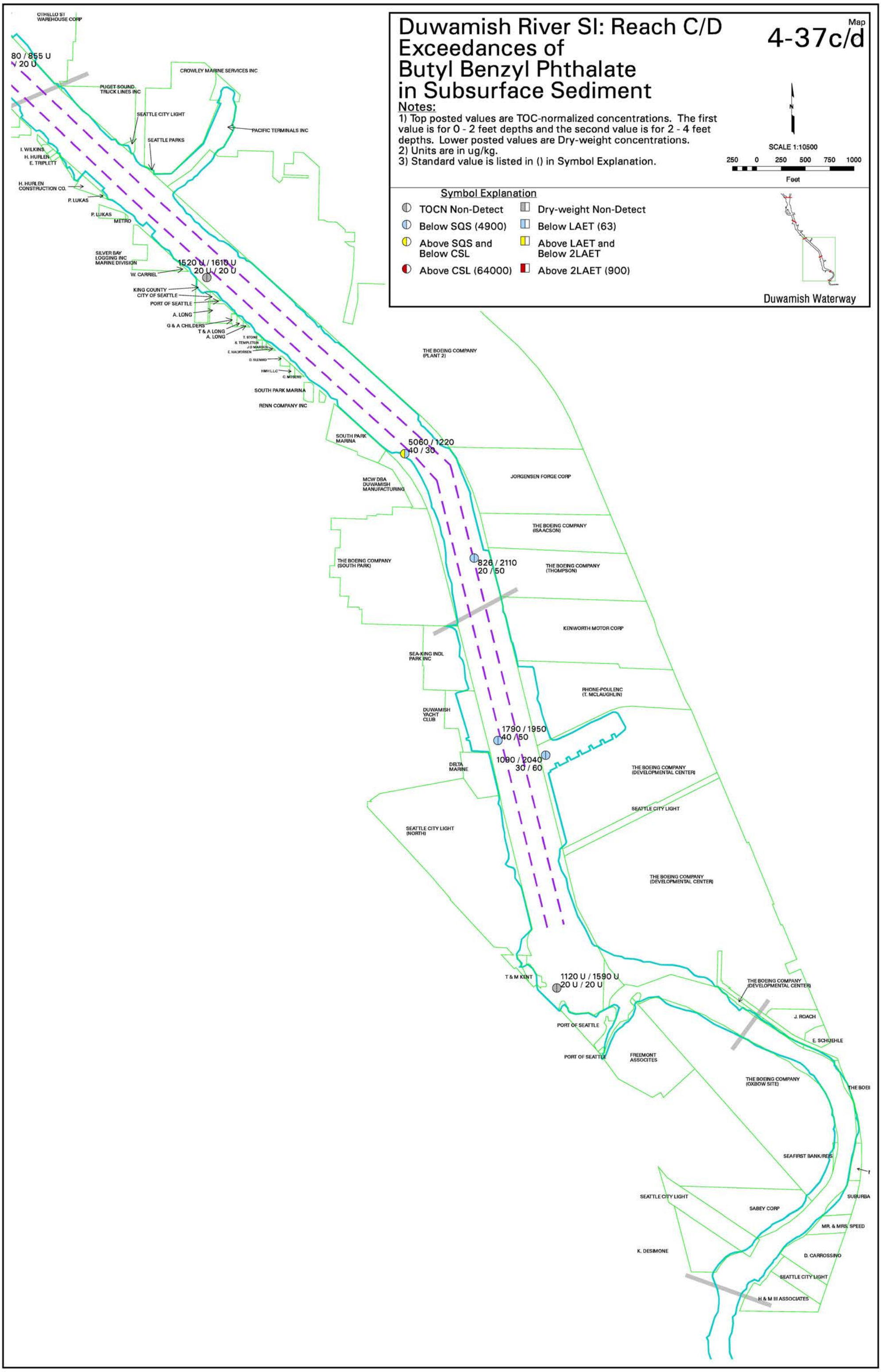
Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) Units are in ug/kg.
3) Standard value is listed in () in Symbol Explanation.

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation

- TOCN Non-Detect
- Below SQS (4900)
- Above SQS and Below CSL
- Above CSL (64000)
- Dry-weight Non-Detect
- Below LAET (63)
- Above LAET and Below 2LAET
- Above 2LAET (900)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Mercury in Subsurface Sediment

Map 4-38a/b

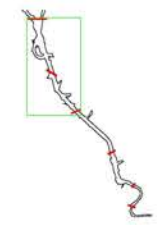
SCALE 1:10500

250 0 250 500 750 1000

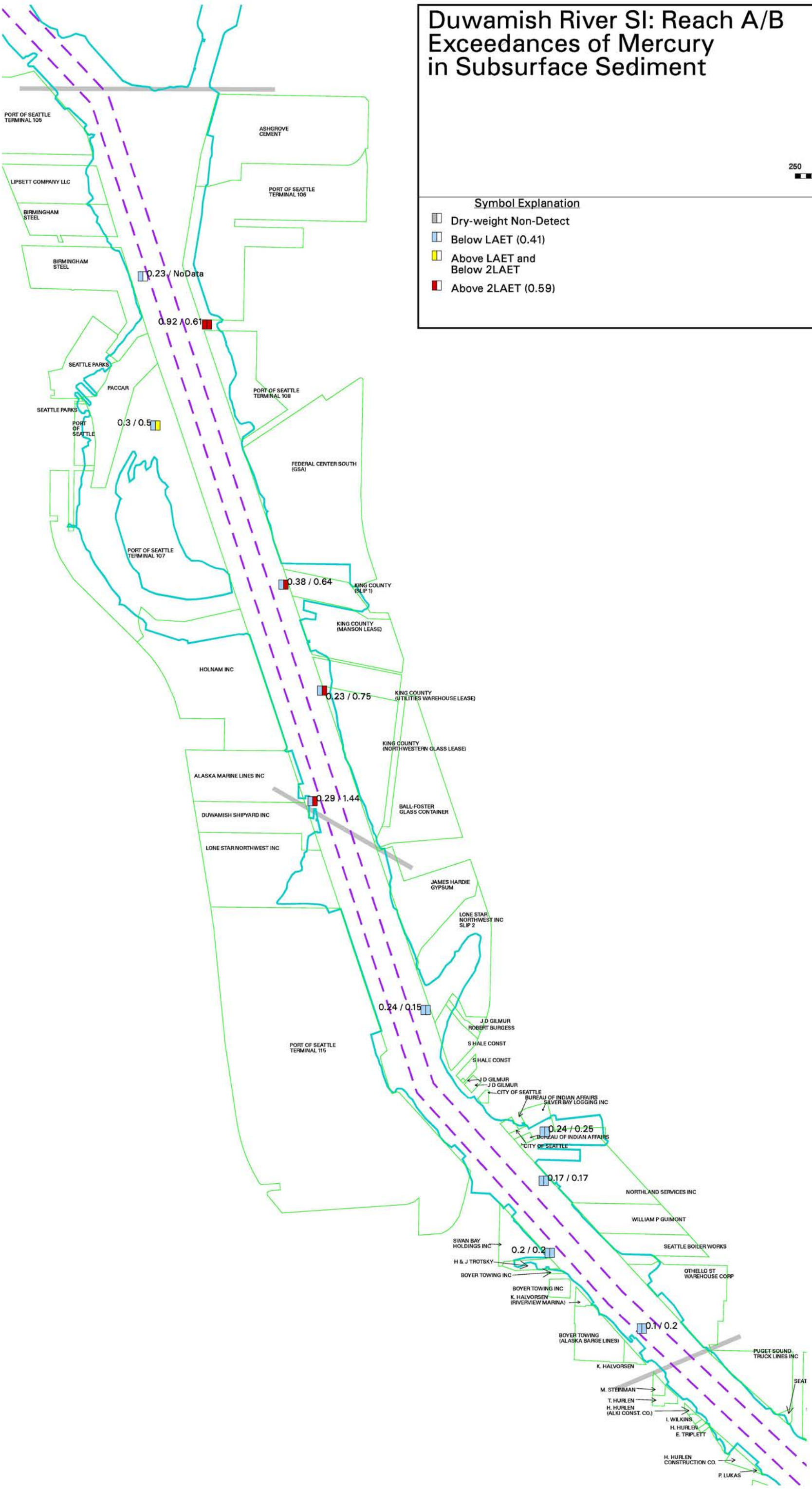
Feet

Symbol Explanation

- Dry-weight Non-Detect
- Below LAET (0.41)
- Above LAET and Below 2LAET
- Above 2LAET (0.59)

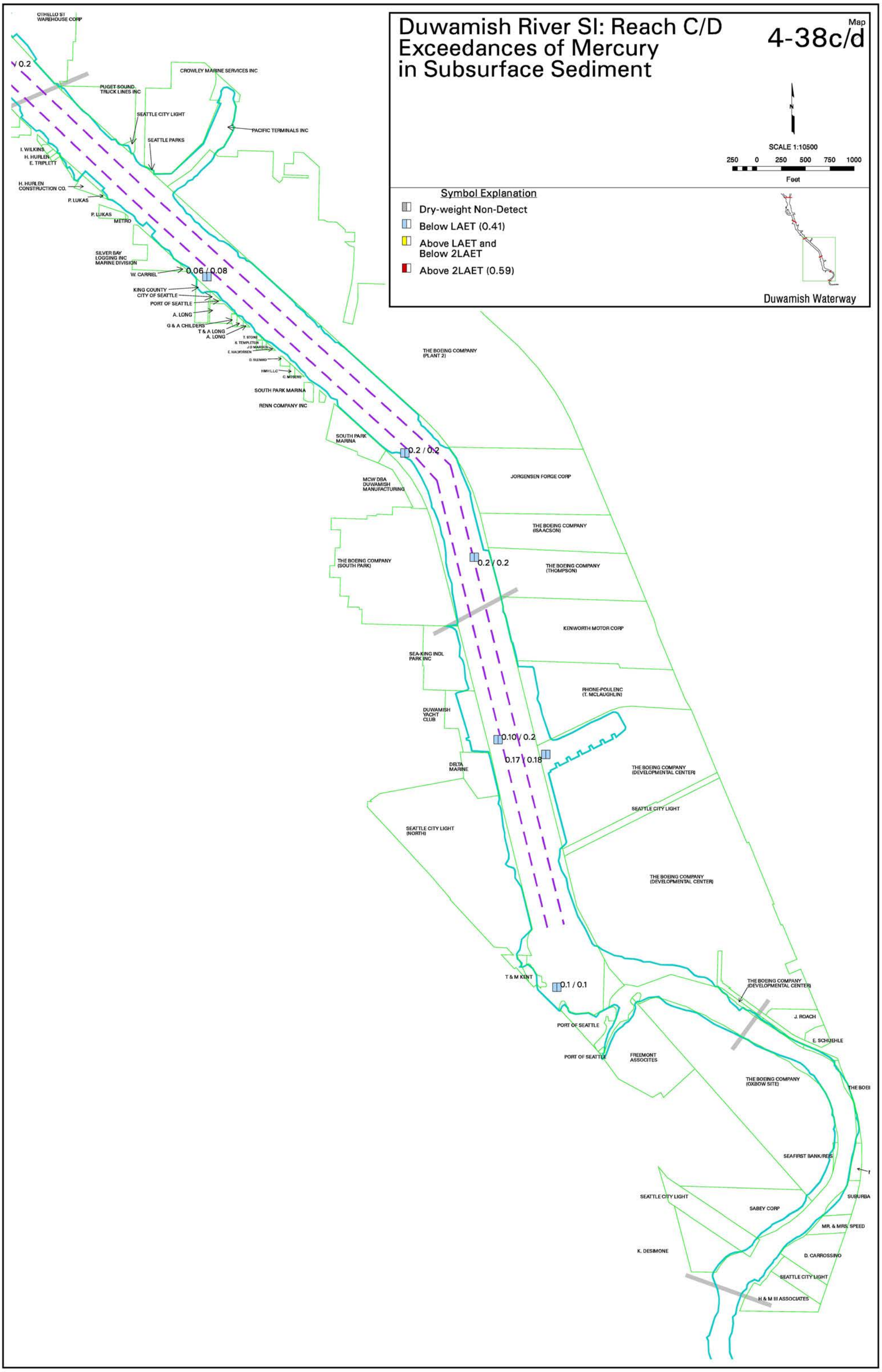


Duwamish Waterway



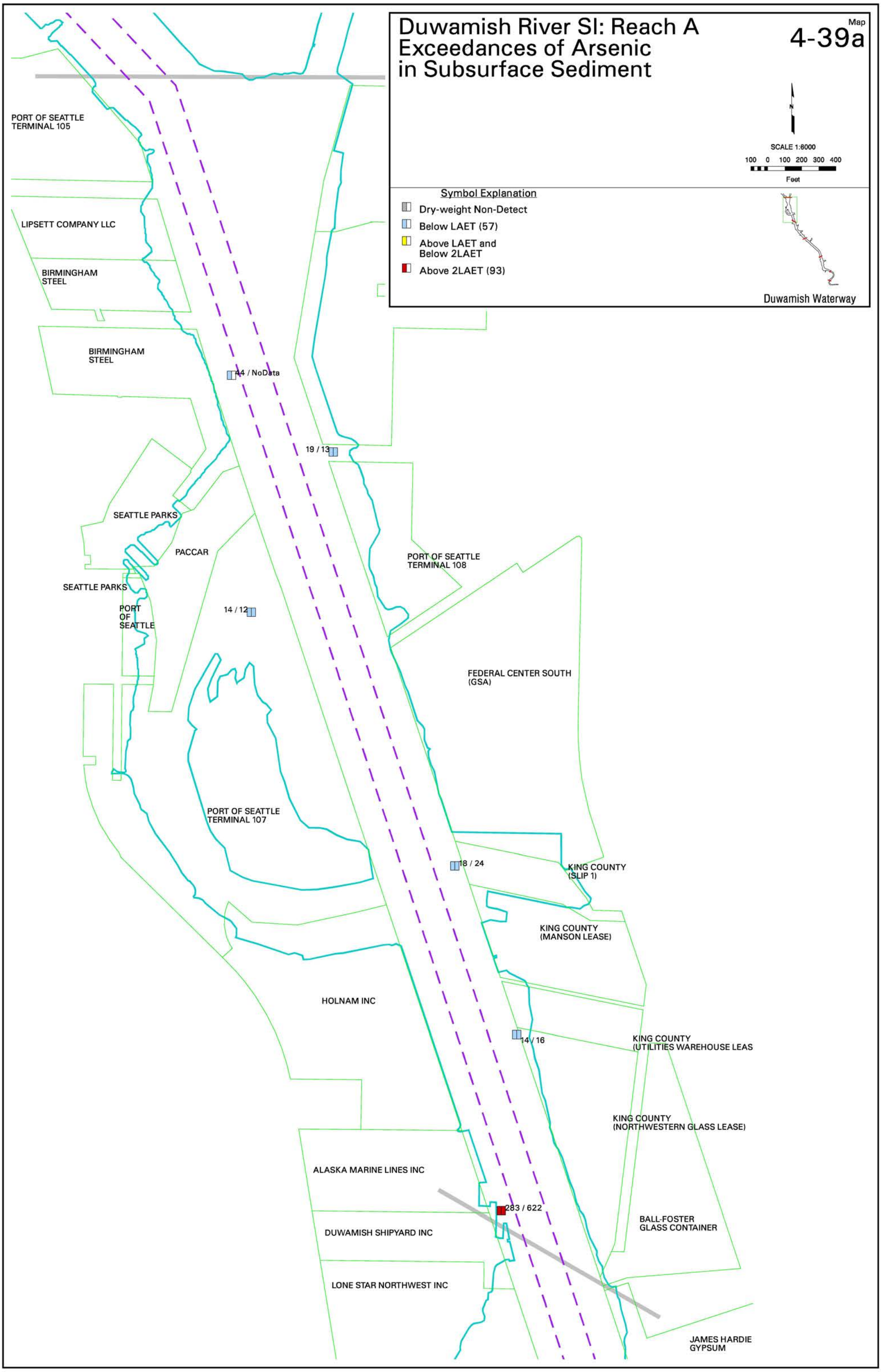
Duwamish River SI: Reach C/D Exceedances of Mercury in Subsurface Sediment

Map 4-38c/d



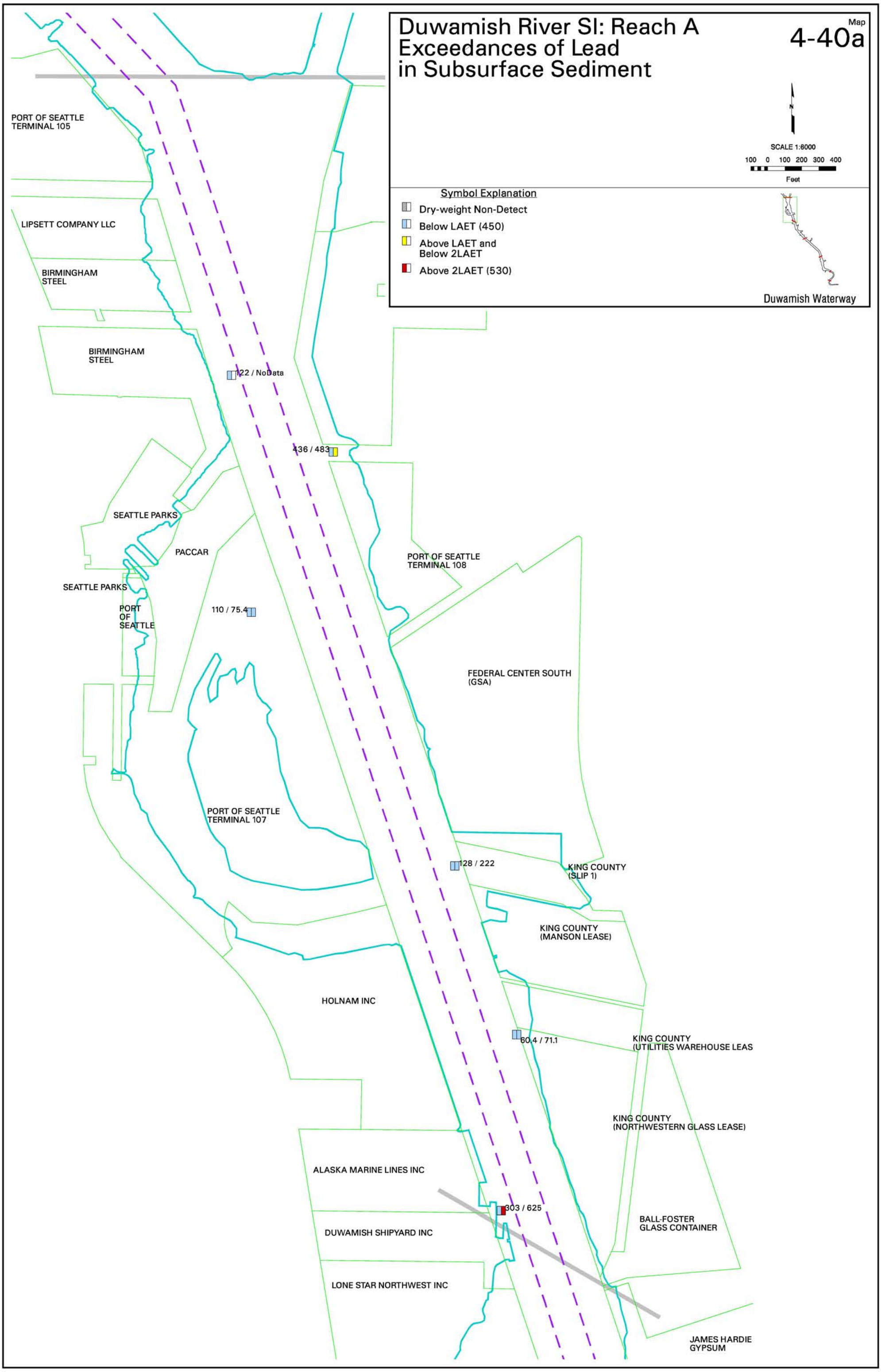
Duwamish River SI: Reach A Exceedances of Arsenic in Subsurface Sediment

Map 4-39a



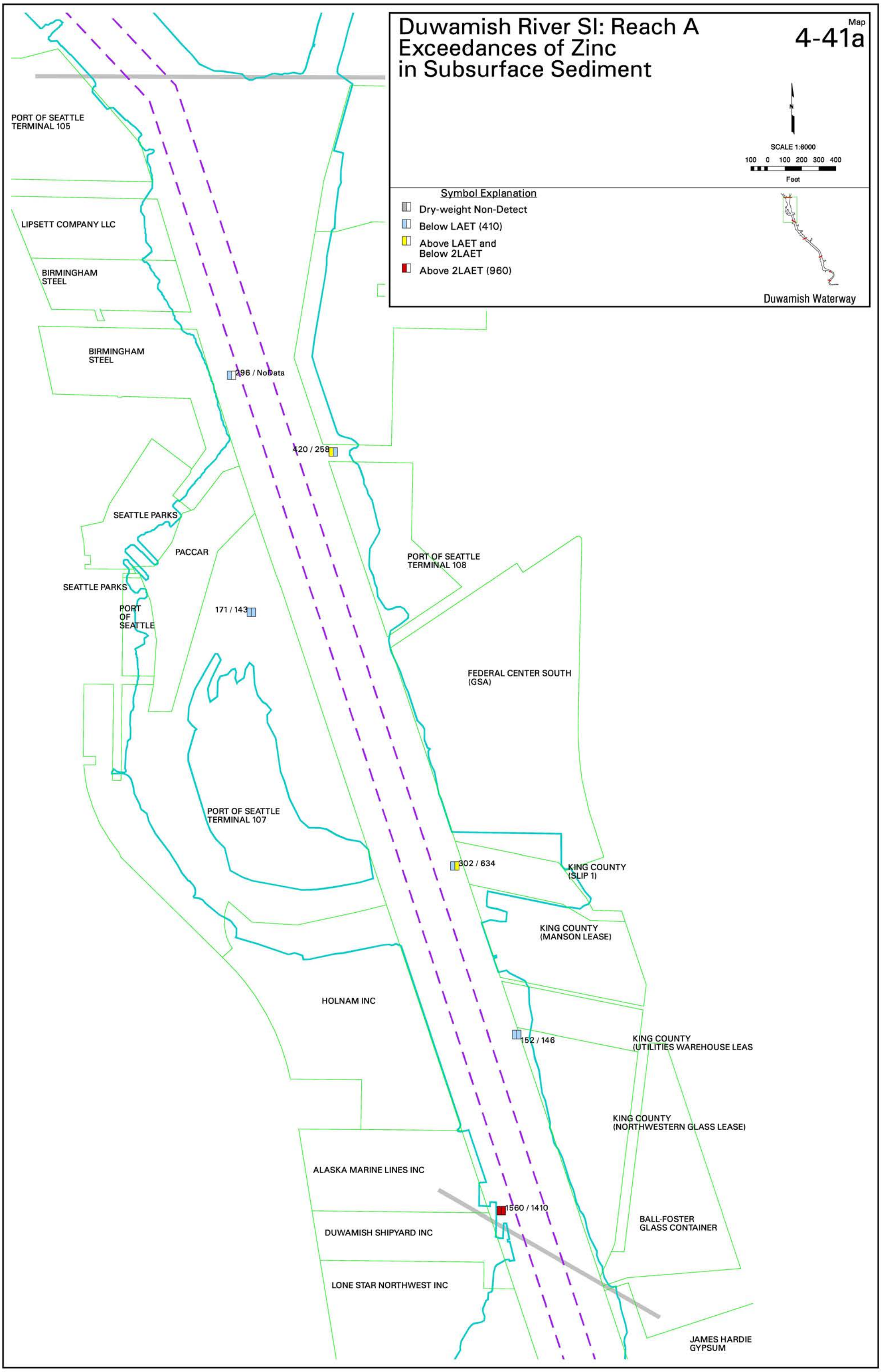
Duwamish River SI: Reach A Exceedances of Lead in Subsurface Sediment

Map 4-40a



Duwamish River SI: Reach A Exceedances of Zinc in Subsurface Sediment

Map 4-41a



Duwamish River SI: Reach A/B Exceedances of 4,4'-DDT in Subsurface Sediment

Map
4-42a/b

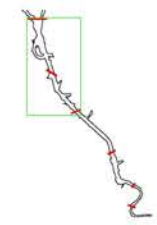
SCALE 1:10500

250 0 250 500 750 1000

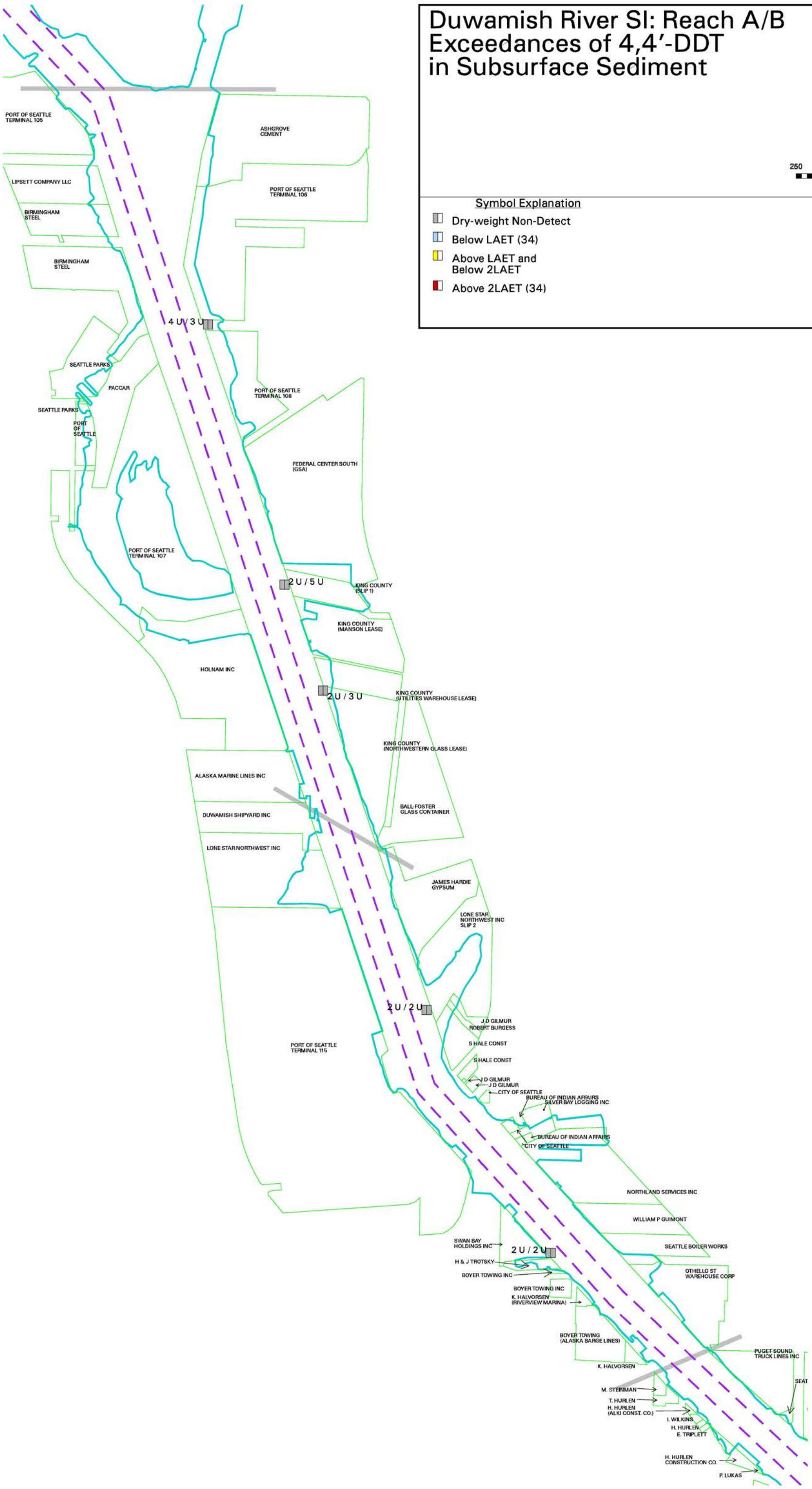
Feet

Symbol Explanation

- Dry-weight Non-Detect
- Below LAET (34)
- Above LAET and Below 2LAET
- Above 2LAET (34)

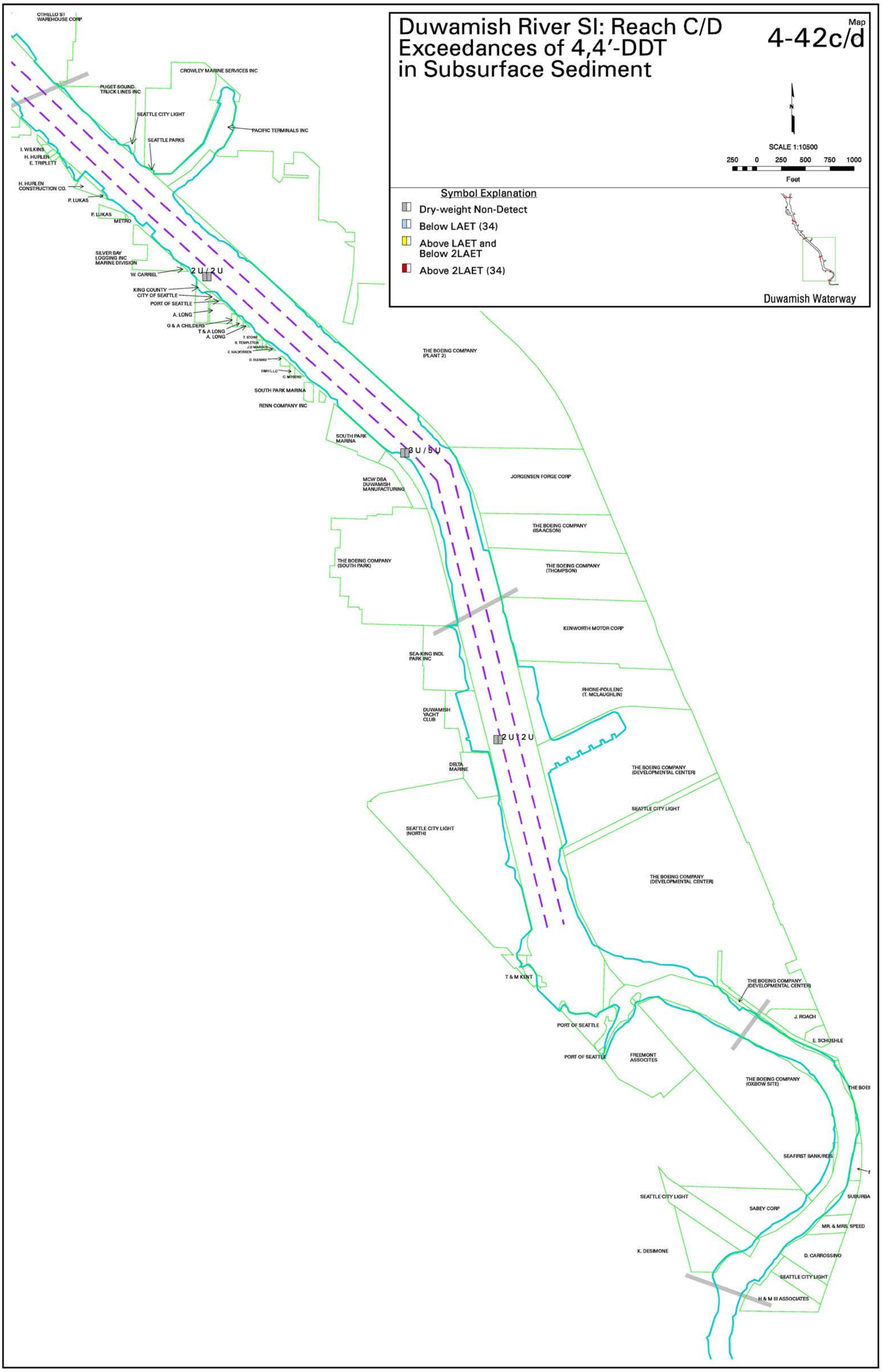


Duwamish Waterway



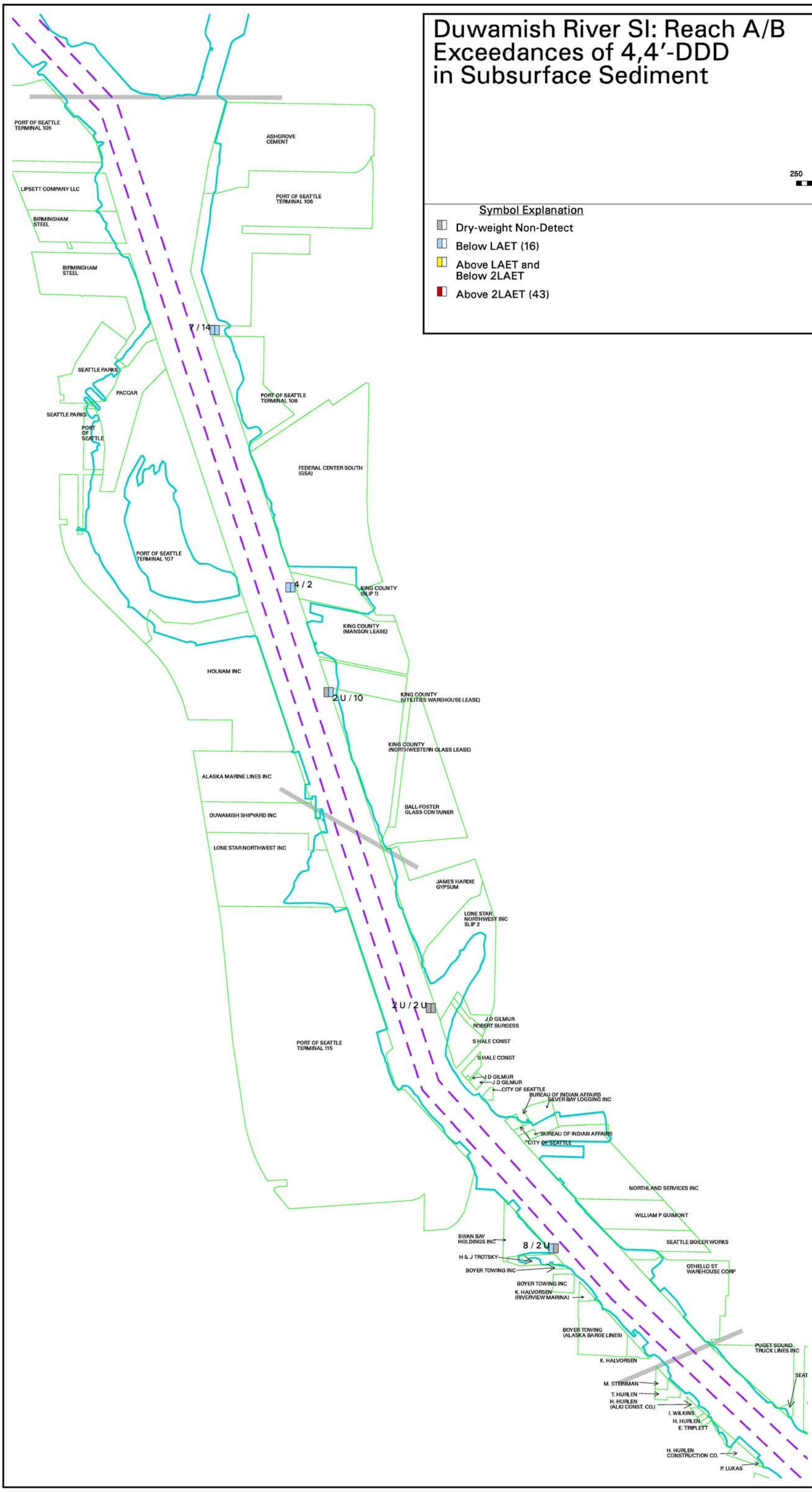
Duwamish River SI: Reach C/D Exceedances of 4,4'-DDT in Subsurface Sediment

Map 4-42c/d



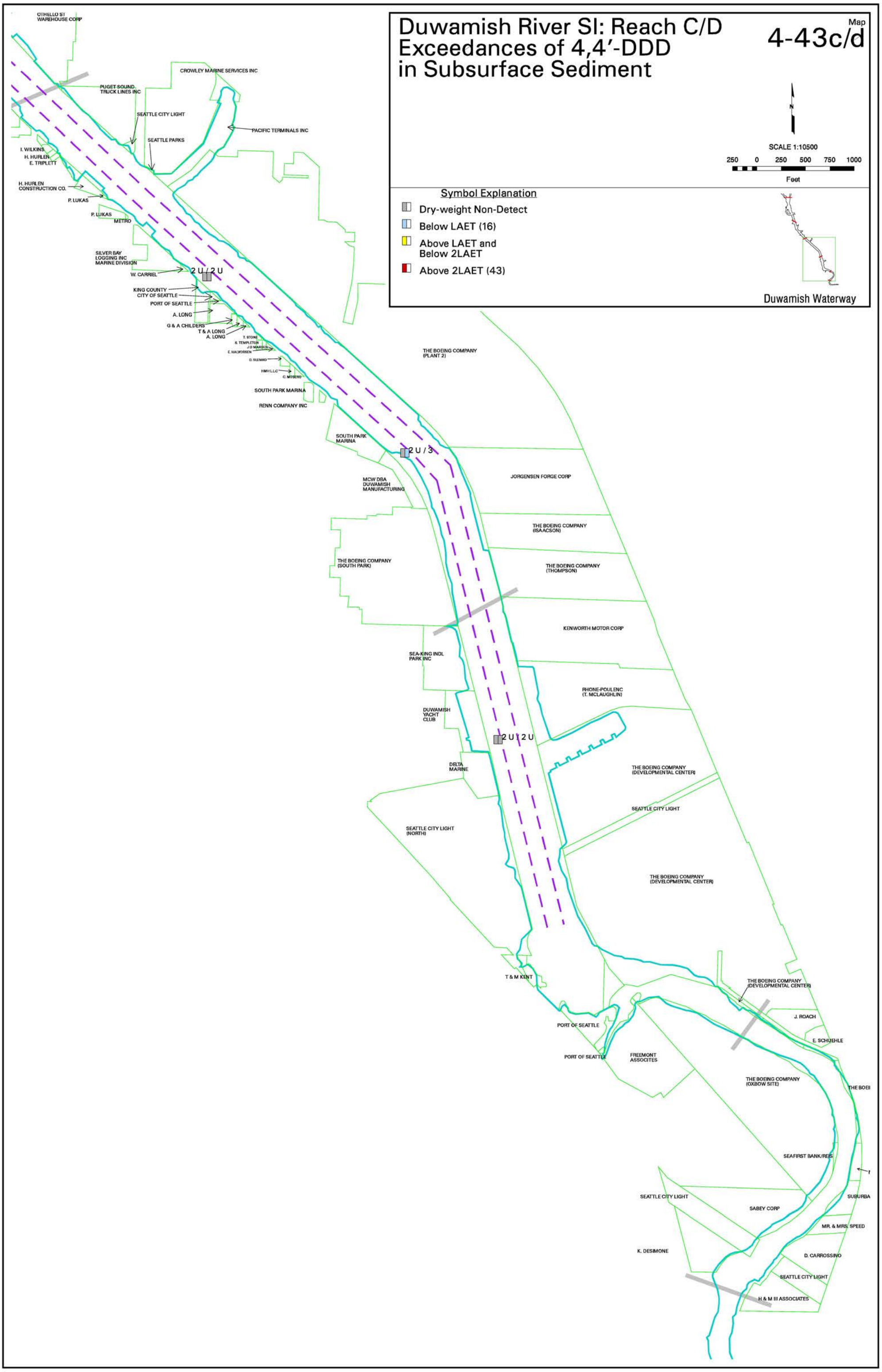
Duwamish River SI: Reach A/B Exceedances of 4,4'-DDD in Subsurface Sediment

Map
4-43a/b



Duwamish River SI: Reach C/D Exceedances of 4,4'-DDD in Subsurface Sediment

Map
4-43c/d



Duwamish River SI: Reach A/B Exceedances of 4,4'-DDE in Subsurface Sediment

Map
4-44a/b

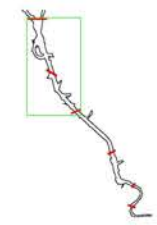
SCALE 1:10500

250 0 250 500 750 1000

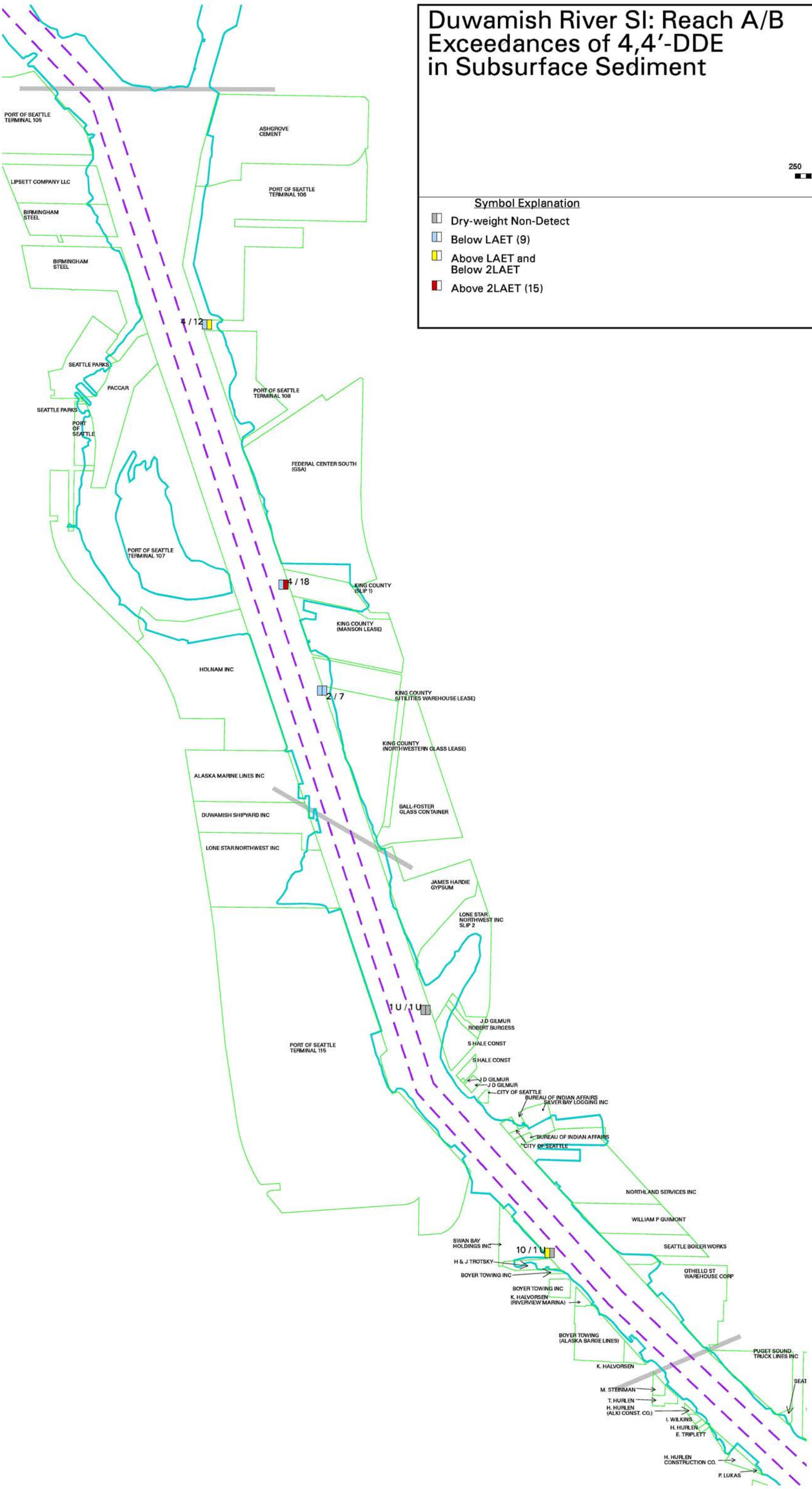
Feet

Symbol Explanation

- Dry-weight Non-Detect
- Below LAET (9)
- Above LAET and Below 2LAET
- Above 2LAET (15)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of 4,4'-DDE in Subsurface Sediment

Map
4-44c/d

SCALE 1:10500

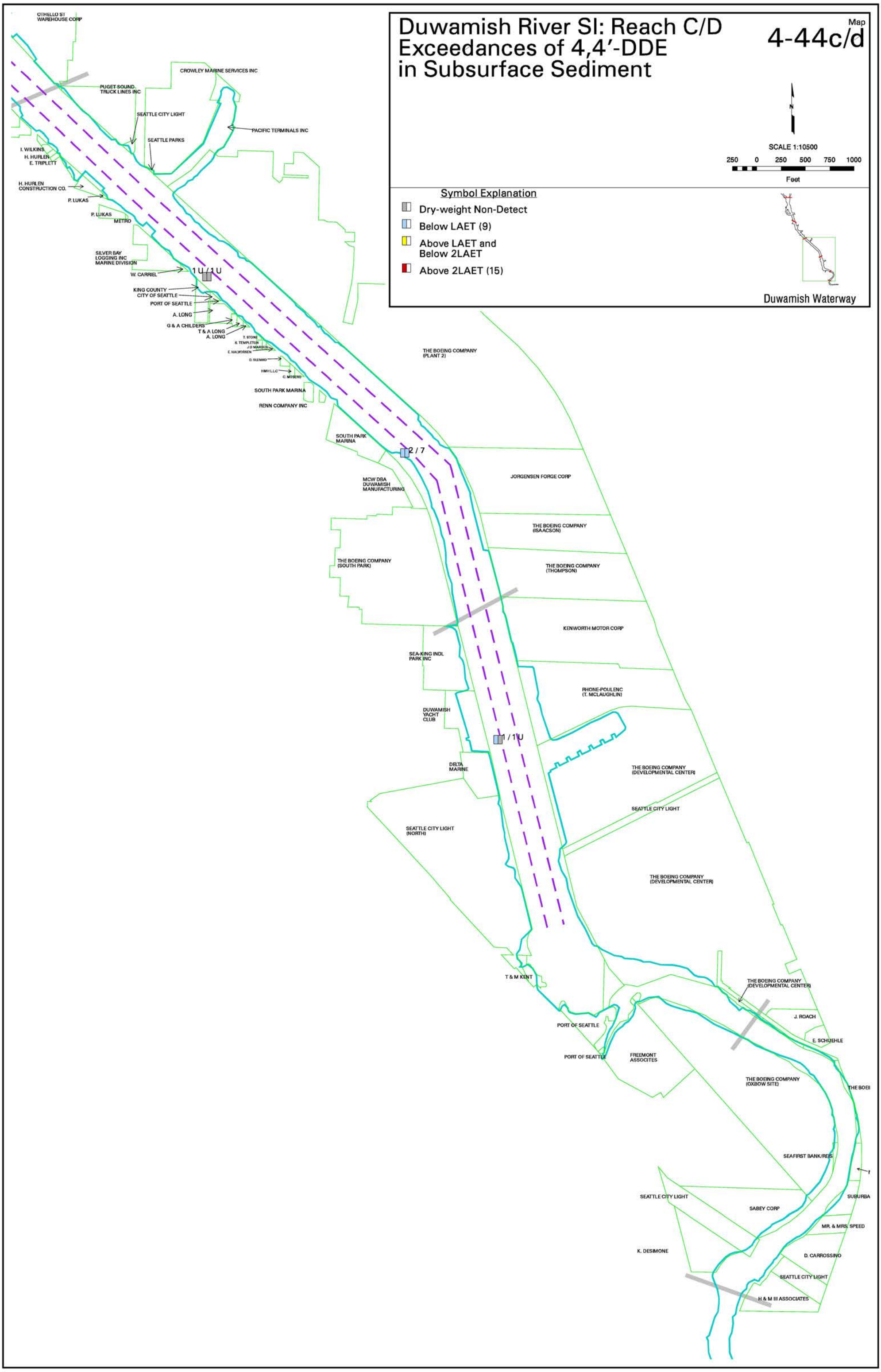
250 0 250 500 750 1000

Feet

Symbol Explanation

- Dry-weight Non-Detect
- Below LAET (9)
- Above LAET and Below 2LAET
- Above 2LAET (15)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Tri-n-butyltin in Subsurface Sediment

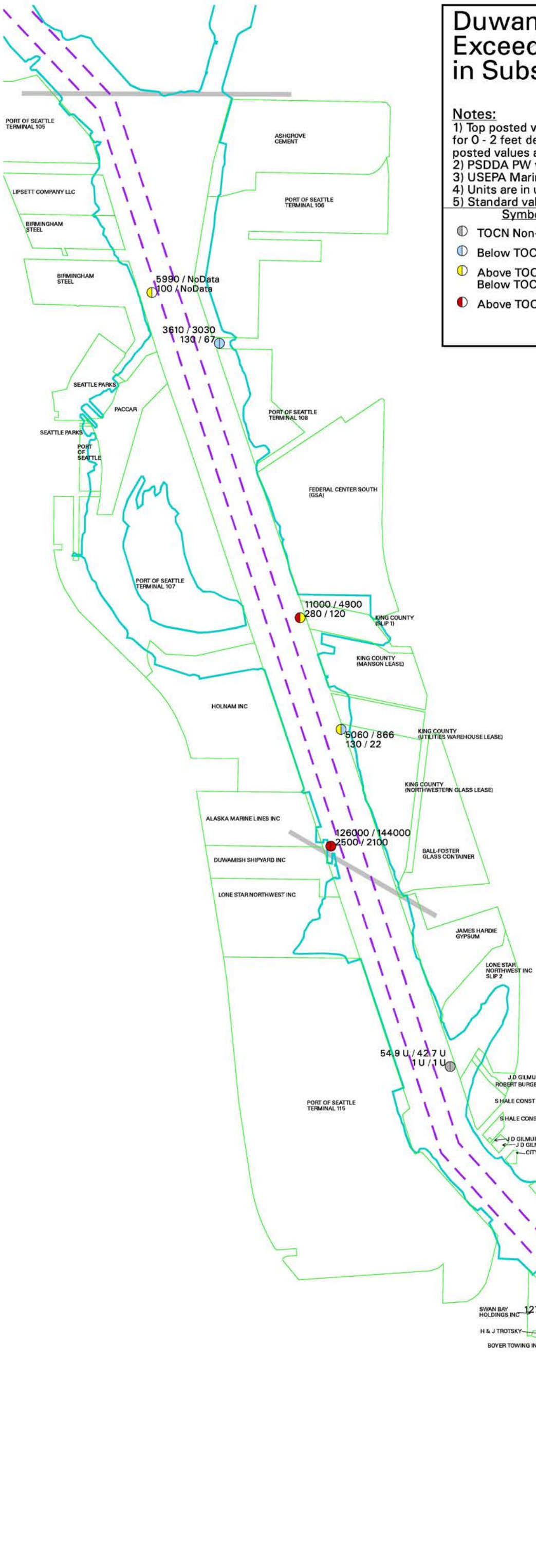
Map
4-45a/b

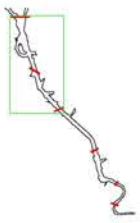
Notes:
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) PSDDA PW value (0.15) converted to sediment (using 25,100 Koc).
3) USEPA Marine Acute AWQC (0.37) converted to sediment (using 25,100 Koc).
4) Units are in ug/kg.
5) Standard value is listed in () in Symbol Explanation and is based on 1% TOC.

SCALE 1:10500
0 250 500 750 1000
Feet

Symbol Explanation

- TOCN Non-Detect
- Below TOCN TBT Low (3765)
- Above TOCN TBT Low and Below TOCN TBT High
- Above TOCN TBT High (9287)
- Dry-weight Non-Detect
- Below DW TBT Low (38)
- Above DW TBT Low and Below DW TBT High
- Above DW TBT High (93)





Duwamish Waterway

Duwamish River SI: Reach C/D Exceedances of Tri-n-butyltin in Subsurface Sediment

Map 4-45c/d

Notes:

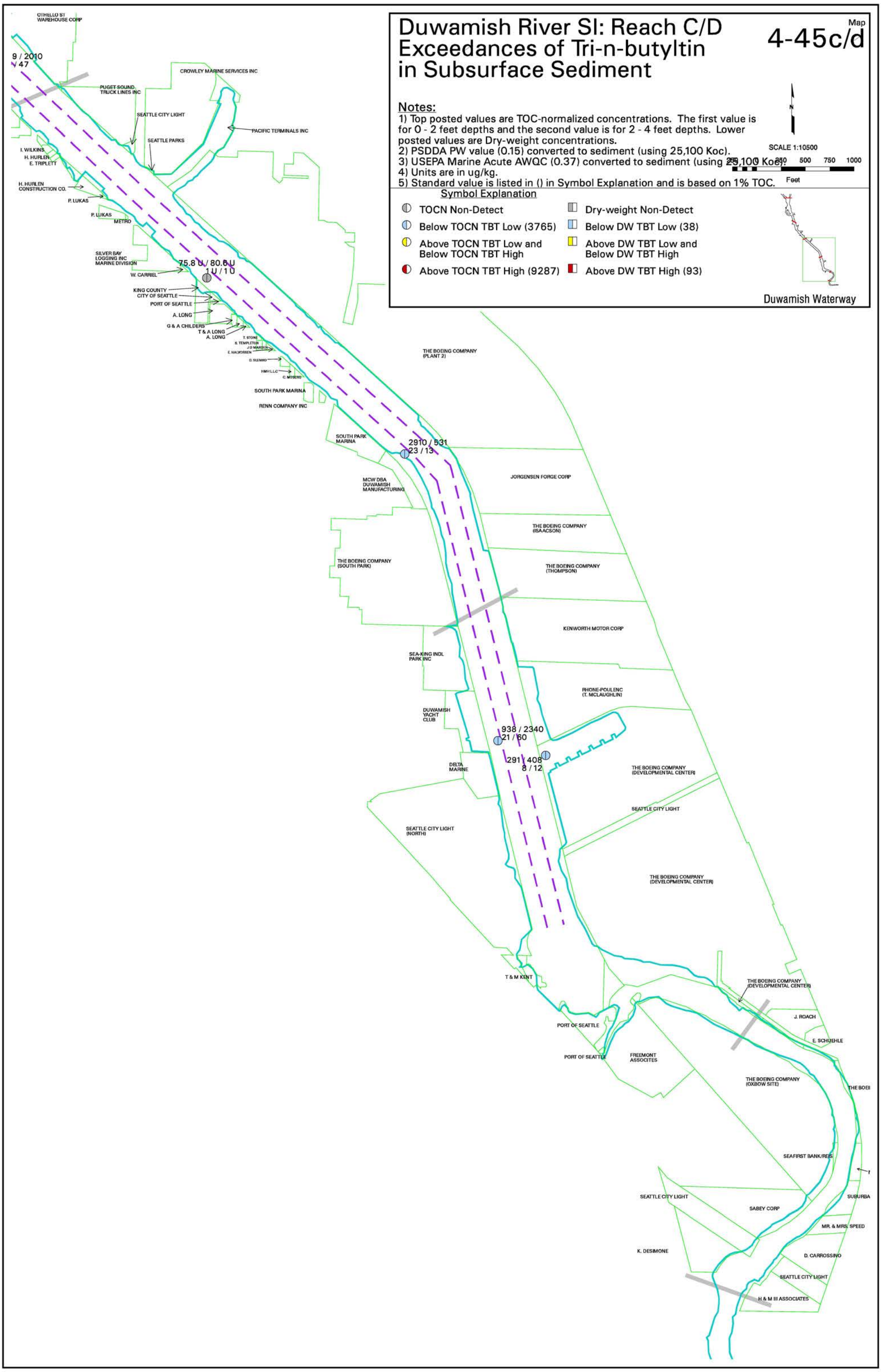
1) Top posted values are TOC-normalized concentrations. The first value is for 0 - 2 feet depths and the second value is for 2 - 4 feet depths. Lower posted values are Dry-weight concentrations.
2) PSDDA PW value (0.15) converted to sediment (using 25,100 Koc).
3) USEPA Marine Acute AWQC (0.37) converted to sediment (using 25,100 Koc).
4) Units are in ug/kg.
5) Standard value is listed in () in Symbol Explanation and is based on 1% TOC.

SCALE 1:10500

0 250 500 750 1000 Feet

Symbol Explanation

- TOCN Non-Detect
- Below TOCN TBT Low (3765)
- Above TOCN TBT Low and Below TOCN TBT High
- Above TOCN TBT High (9287)
- Dry-weight Non-Detect
- Below DW TBT Low (38)
- Above DW TBT Low and Below DW TBT High
- Above DW TBT High (93)



Duwamish River SI: Reach A/B Exceedances of Arsenic in Porewater

Map
4-46a/b

Notes:
1) ST_MAR_C - Washington State Marine Chronic.
ST_MAR_A - Washington State Marine Acute.
FEDMARCH - Federal Marine Chronic.
FEDMARAC - Federal Marine Acute.
2) Units are in ug/L.
3) Standard value is listed in () in Symbol Explanation.

N

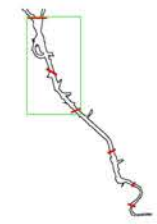
SCALE 1:10500

250 0 250 500 750 1000

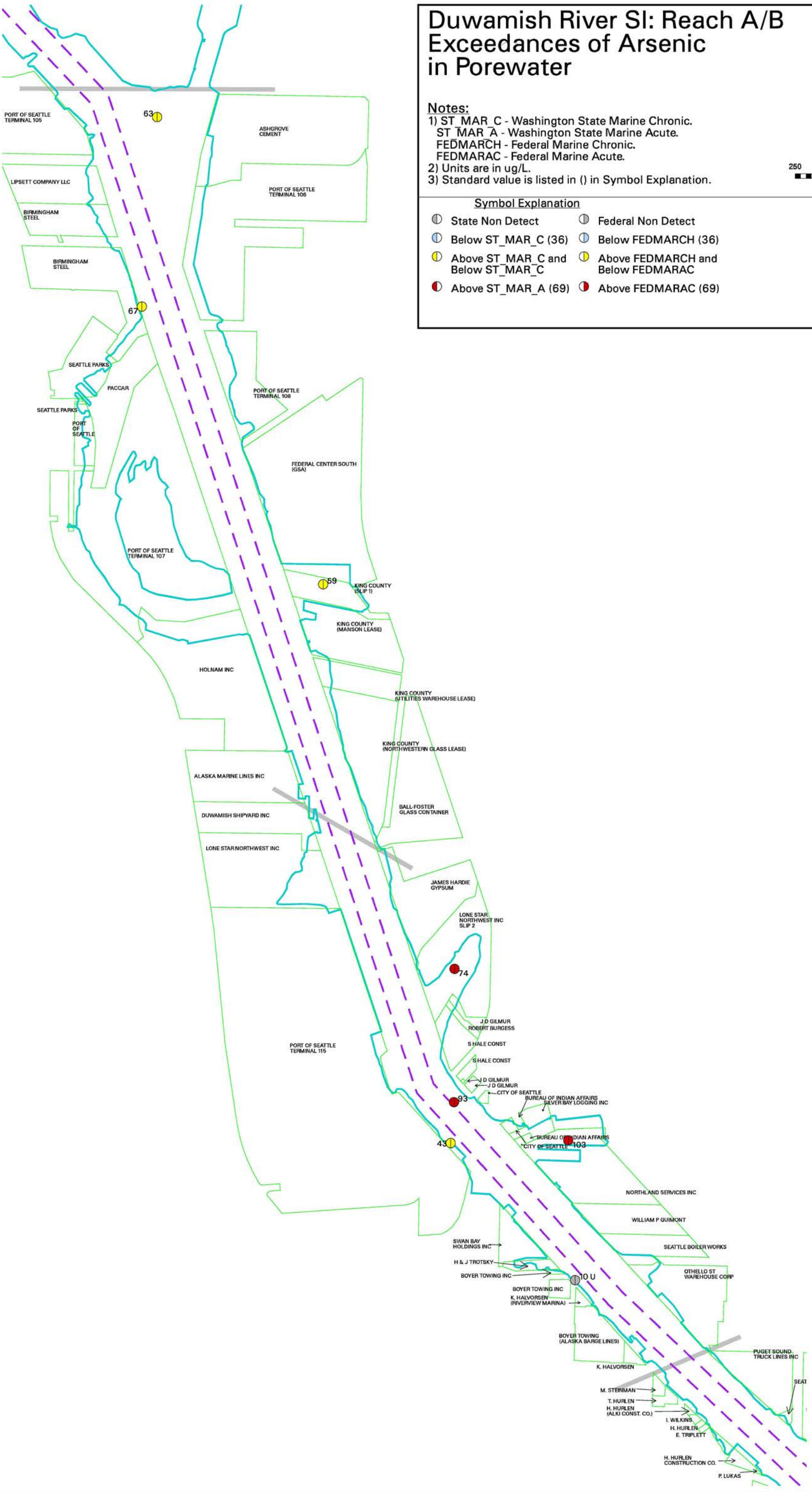
Feet

Symbol Explanation

- State Non Detect
- Below ST_MAR_C (36)
- Above ST_MAR_C and Below ST_MAR_C
- Above ST_MAR_A (69)
- Federal Non Detect
- Below FEDMARCH (36)
- Above FEDMARCH and Below FEDMARAC
- Above FEDMARAC (69)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Arsenic in Porewater

Map 4-46c/d

Notes:

1) ST_MAR_C - Washington State Marine Chronic.
   ST_MAR_A - Washington State Marine Acute.
   FEDMARCH - Federal Marine Chronic.
   FEDMARAC - Federal Marine Acute.
2) Units are in ug/L.
3) Standard value is listed in () in Symbol Explanation.

N

SCALE 1:10500

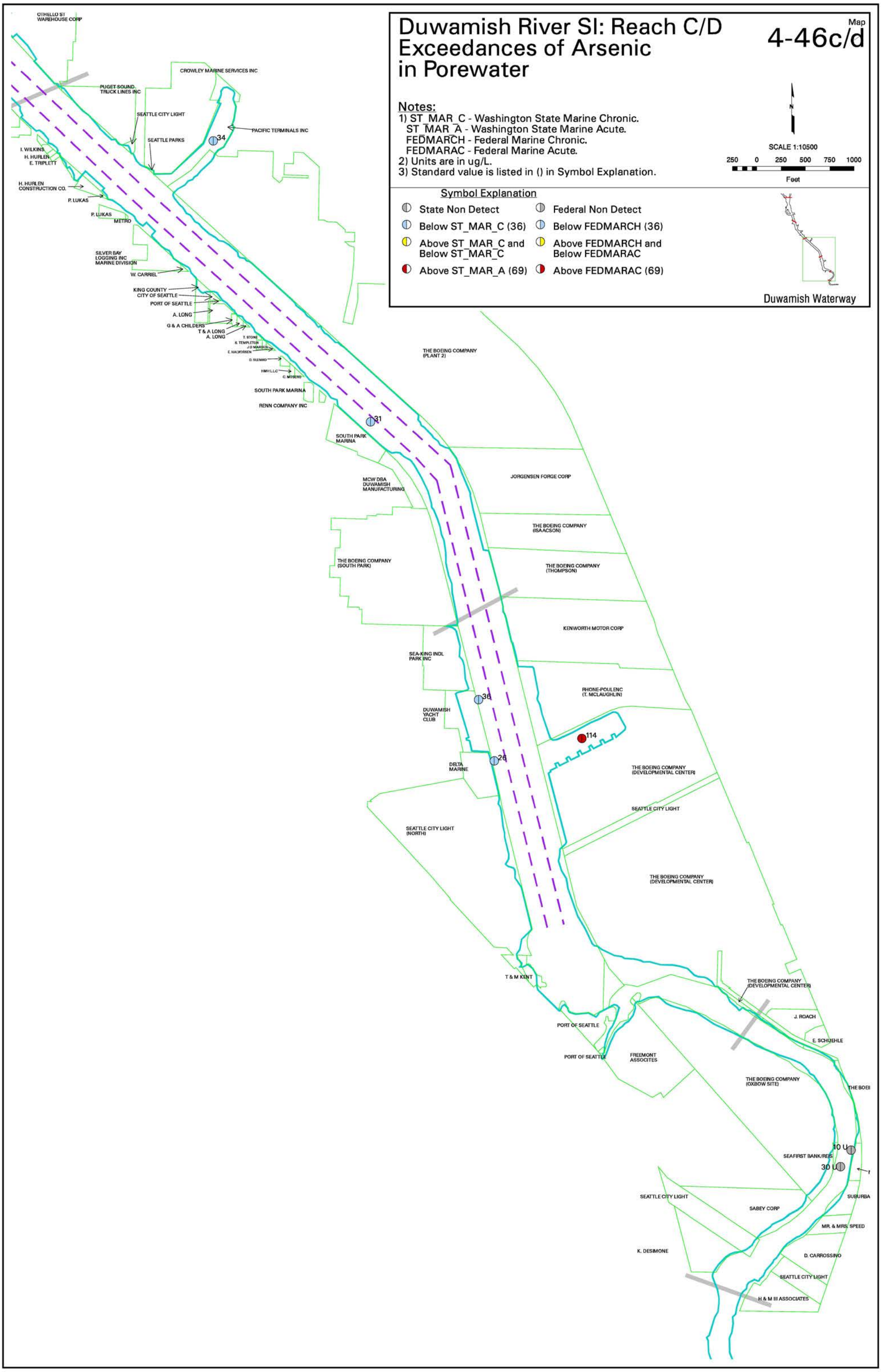
250 0 250 500 750 1000

Feet

Symbol Explanation

- State Non Detect
- Below ST_MAR_C (36)
- Above ST_MAR_C and Below ST_MAR_C
- Above ST_MAR_A (69)
- Federal Non Detect
- Below FEDMARCH (36)
- Above FEDMARCH and Below FEDMARAC
- Above FEDMARAC (69)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of Tri-n-butyltin in Porewater

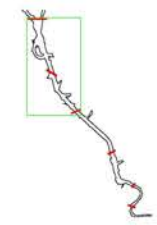
Map
4-47a/b

Notes:
1) FEDMARCH - Federal Marine Chronic.
FEDMARAC - Federal Marine Acute.
2) Units are in ug/L.
3) Standard value is listed in () in Symbol Explanation.

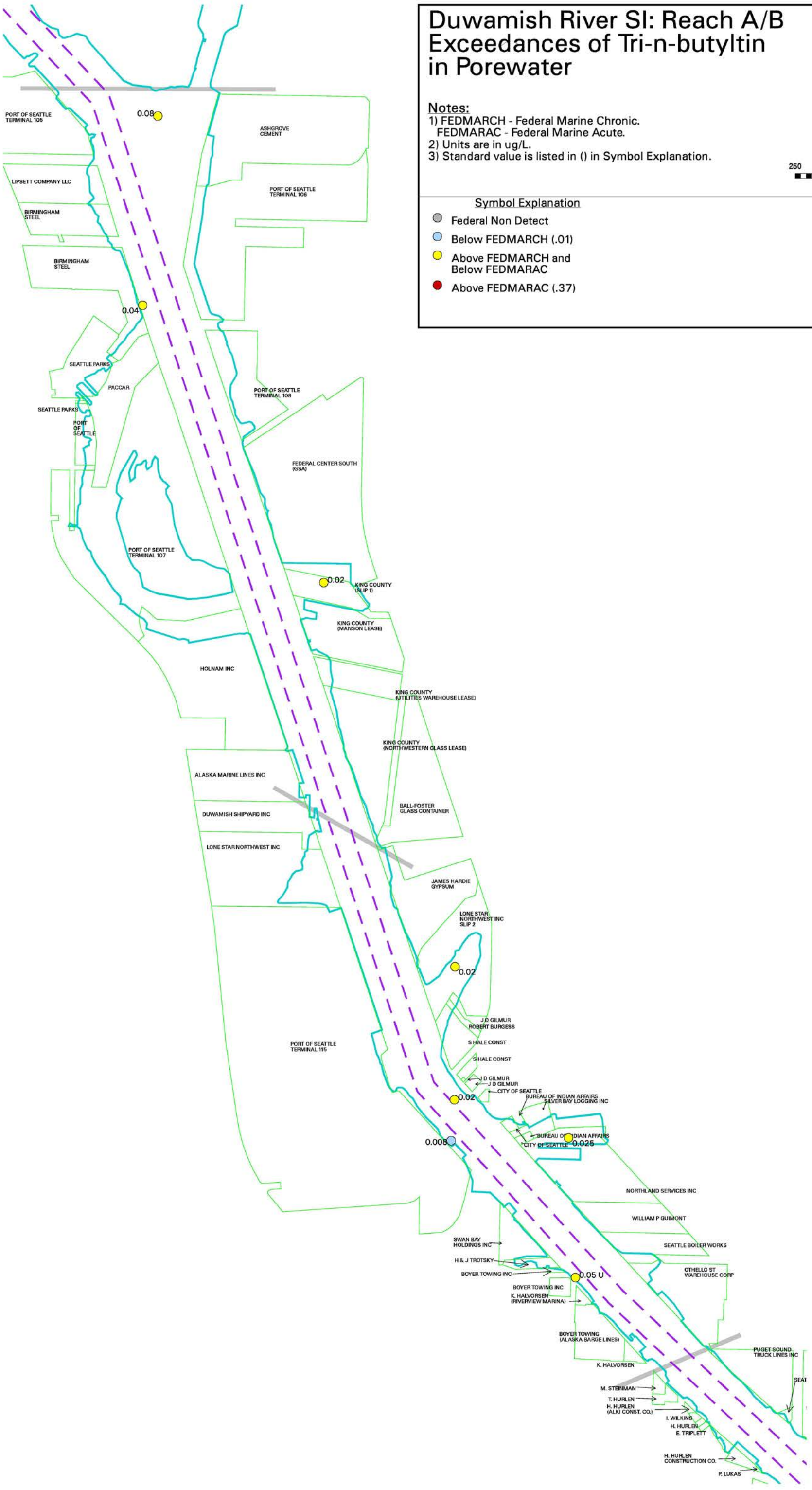
N

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation
- Federal Non Detect
- Below FEDMARCH (.01)
- Above FEDMARCH and Below FEDMARAC
- Above FEDMARAC (.37)



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of Tri-n-butyltin in Porewater

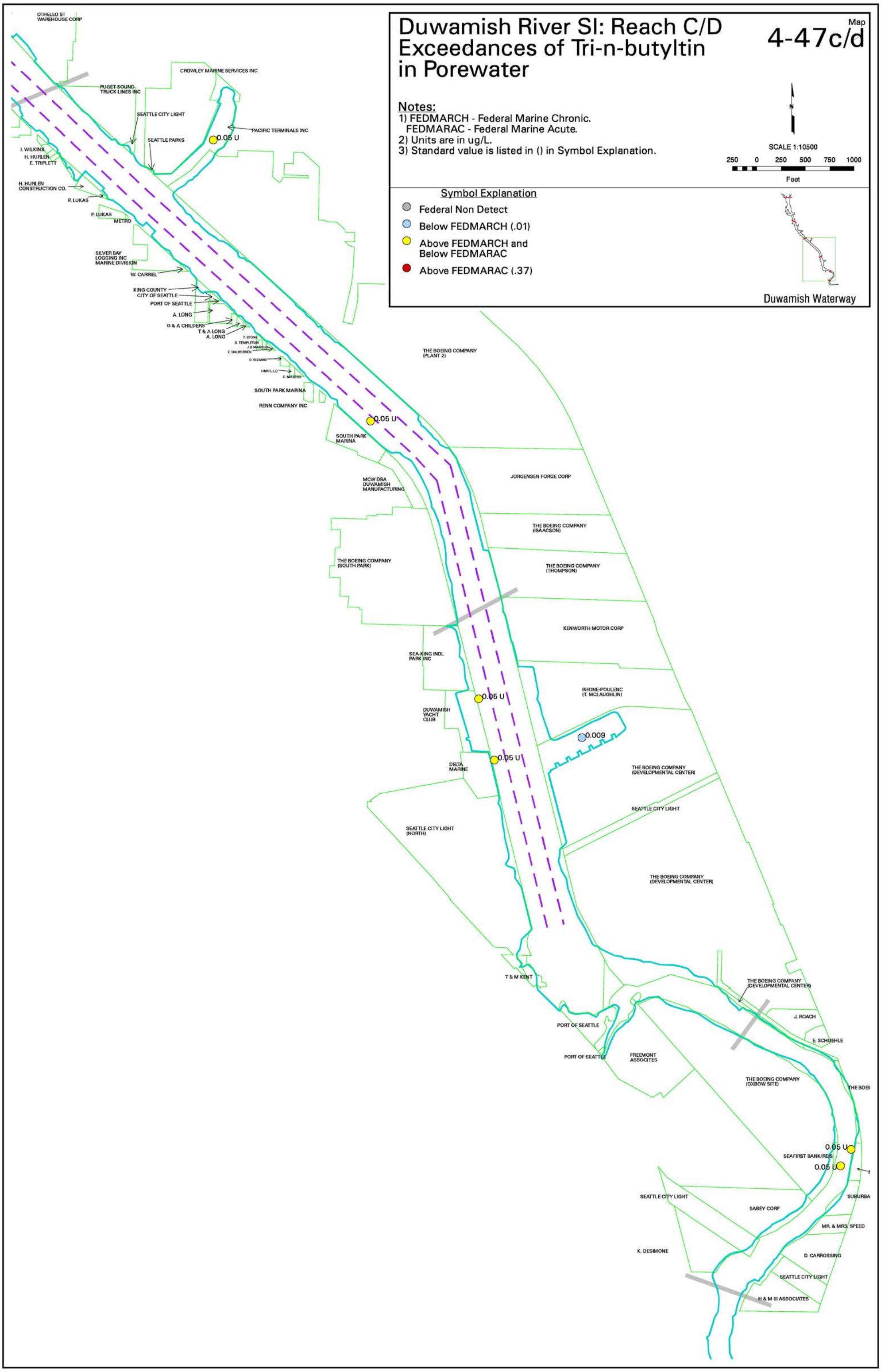
Map 4-47c/d

Notes:
1) FEDMARCH - Federal Marine Chronic.
FEDMARAC - Federal Marine Acute.
2) Units are in ug/L.
3) Standard value is listed in () in Symbol Explanation.

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation
- Federal Non Detect
- Below FEDMARCH (.01)
- Above FEDMARCH and Below FEDMARAC
- Above FEDMARAC (.37)

Duwamish Waterway



Duwamish River SI: Reach A/B Exceedances of SQS/CSL in Surface Sediment

Map
4-48a/b

Notes:
1) Polygons depicting exceedance are the result of at least one contaminant which was found to be in exceedance of the respective Sediment Management Standard at that location.

N

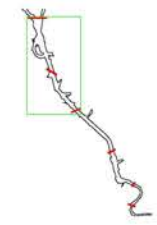
SCALE 1:10500

250 0 250 500 750 1000

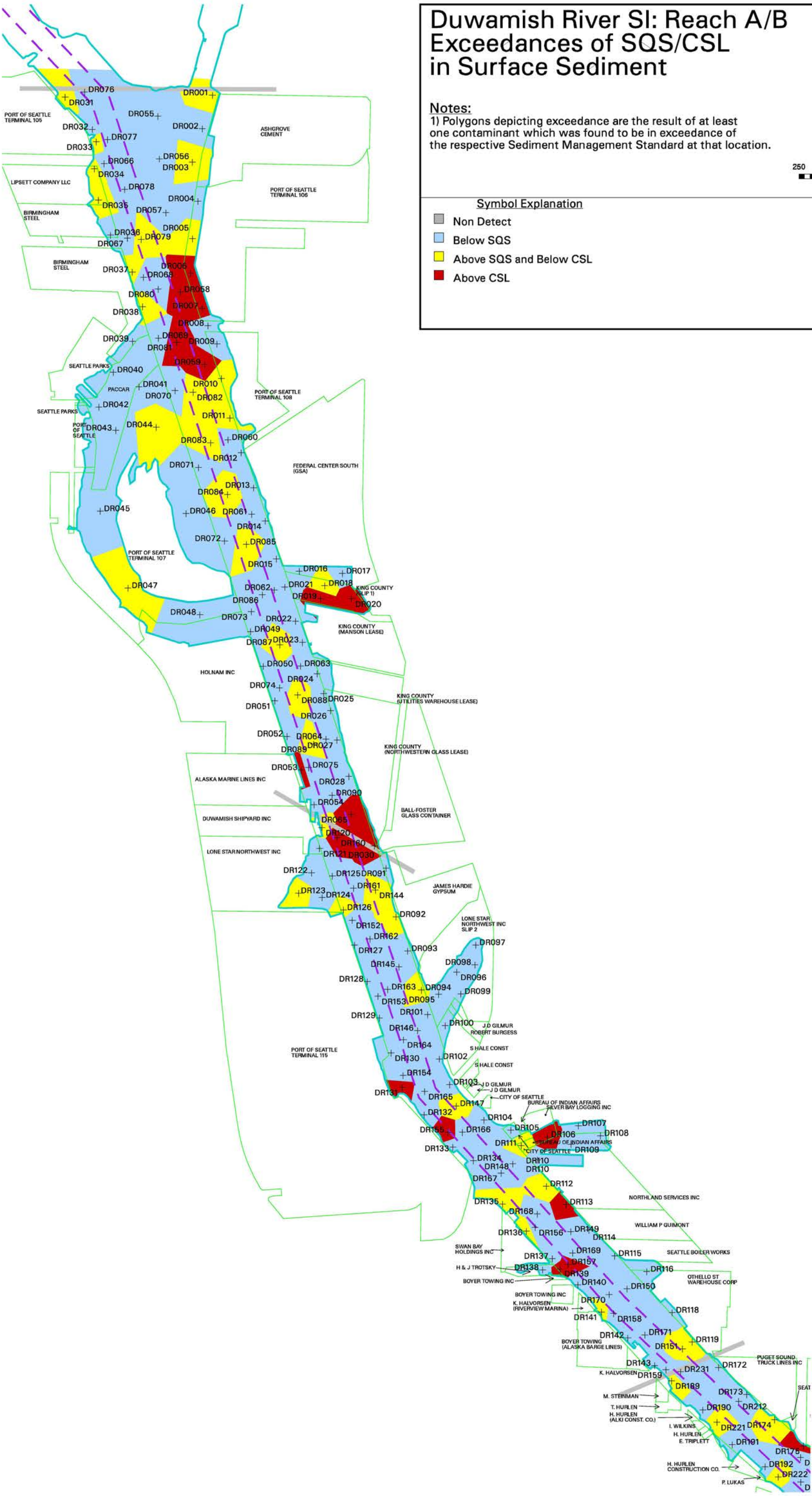
Feet

Symbol Explanation

- Non Detect
- Below SQS
- Above SQS and Below CSL
- Above CSL



Duwamish Waterway



Duwamish River SI: Reach C/D Exceedances of SQS/CSL in Surface Sediment

Map 4-48c/d

Notes:

1) Polygons depicting exceedance are the result of at least one contaminant which was found to be in exceedance of the respective Sediment Management Standard at that location.

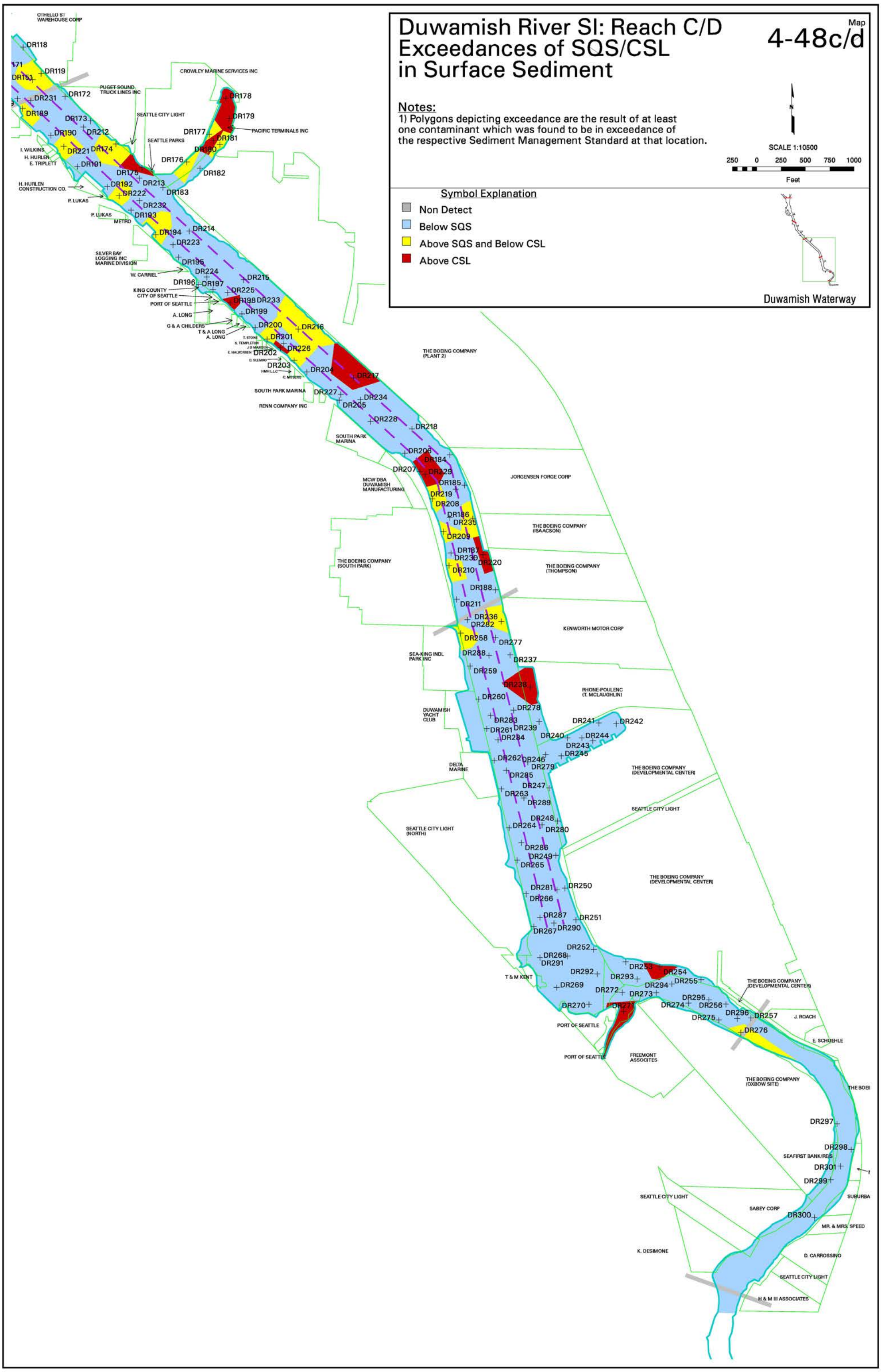
SCALE 1:10500

250 0 250 500 750 1000

Feet

Symbol Explanation

- Non Detect
- Below SQS
- Above SQS and Below CSL
- Above CSL



Duwamish River SI: Reach A/B Exceedances of LAET/2LAET in Surface Sediment

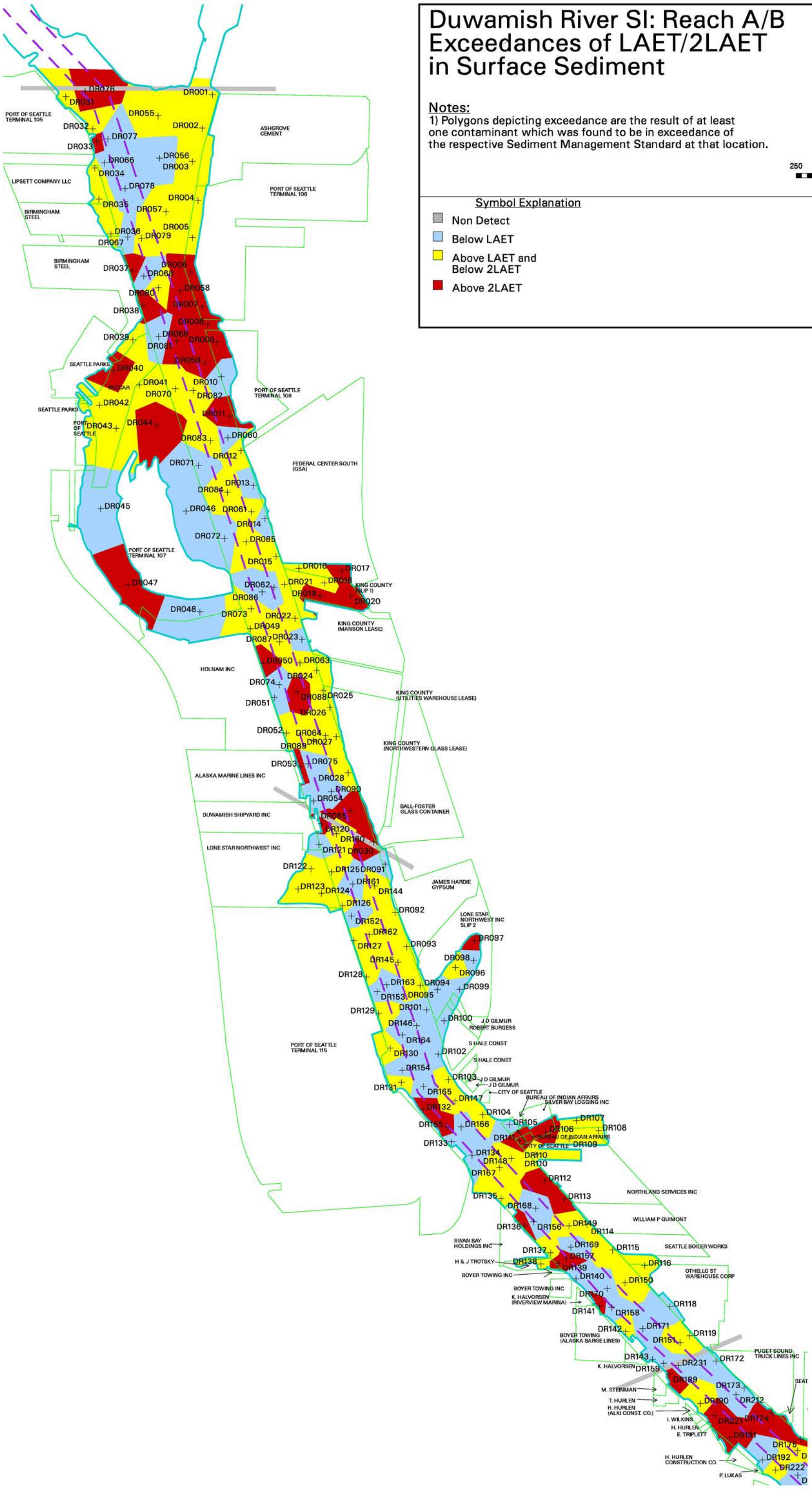
Map
4-49a/b

Notes:
1) Polygons depicting exceedance are the result of at least one contaminant which was found to be in exceedance of the respective Sediment Management Standard at that location.

SCALE 1:10500
250 0 250 500 750 1000
Feet

Symbol Explanation

- Non Detect
- Below LAET
- Above LAET and Below 2LAET
- Above 2LAET



Duwamish River SI: Reach C/D Exceedances of LAET/2LAET in Surface Sediment

Map 4-49c/d

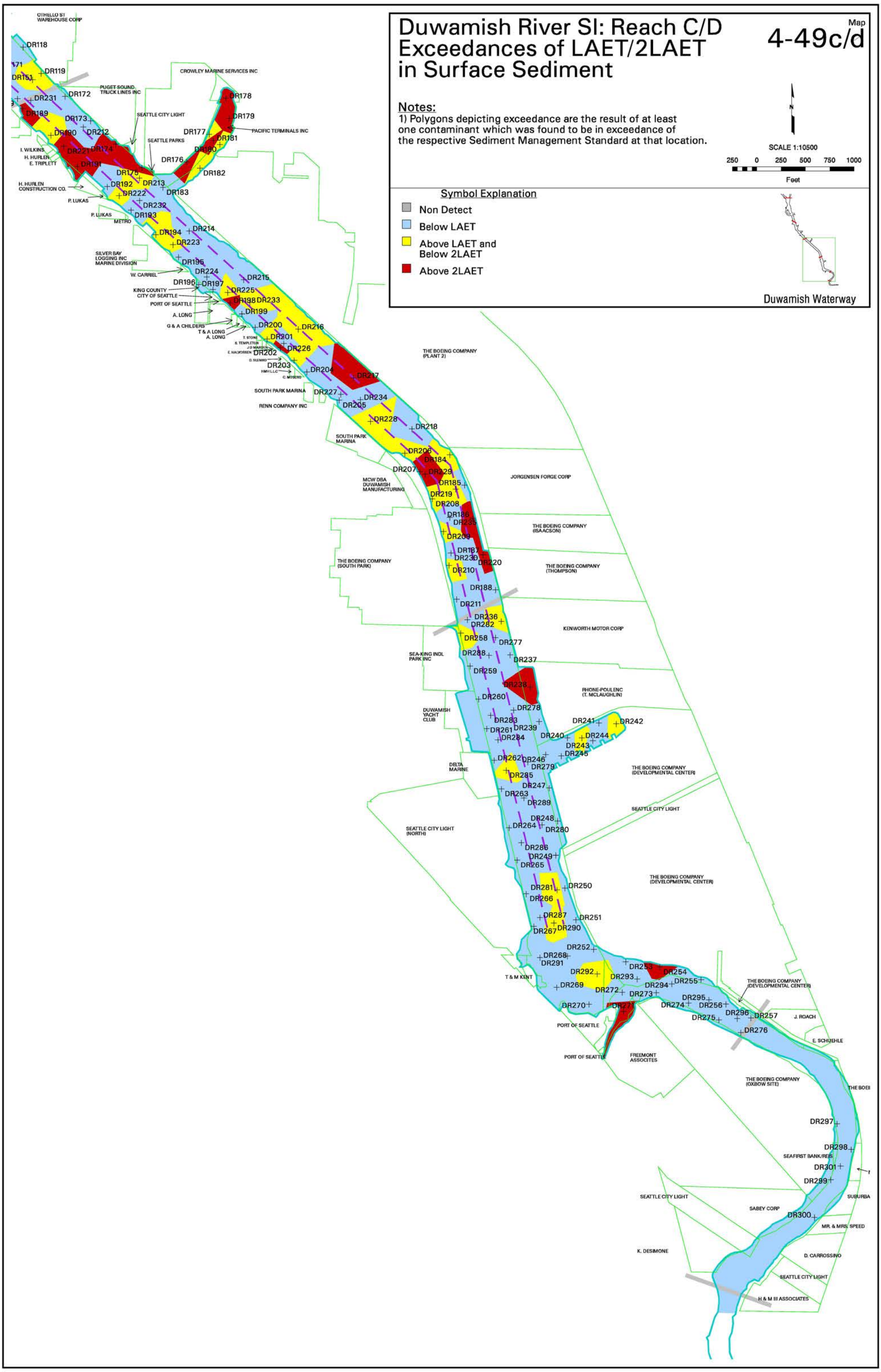
Notes:

1) Polygons depicting exceedance are the result of at least one contaminant which was found to be in exceedance of the respective Sediment Management Standard at that location.

SCALE 1:10500

250 0 250 500 750 1000

Feet

Symbol Explanation

- Non Detect
- Below LAET
- Above LAET and Below 2LAET
- Above 2LAET