Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: MLH, RBP

Page: 1 of 11	
Date: 1/26/21	Ice Present? Yes
No. of Coolers: 6	Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	Full List SVOCs	PCB Aroclor	Metals	Notes/Comments
TB-2-01262021	1/26/21	0820	Water	1	X		X	X					
SB-2021-035:11-01262021		0855	Soil	6	X	X	X						
SB-2021-035:138-01262021		0900		6	X	X	X						
SB-2021-033:11-01262021		0930		6	X	X	X	X					
SB-2021-033:15-01262021		0935		6	X	X	X						
SB-2021-033:18-01262021		0940		6	X	X	X						
Asphalt-004-01262021		1020		1							X		
SB-2021-046:2-01262021		1030		3		X			X		ND X	X	
SB-2021-046:5,6-01262021		1033		3		X			X			X	
SB-2021-046:10,7-01262021		1035		2		X			X			X	

Comments/Special Instructions
X = run analysis
H = hold analysis

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	RYAN PETERSON	Jacobia Ho		
Company:	S&W	ARI		
Date & Time:	1/27/21 0515	01/27/2021 1705		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: RBP, MCH

Page: 2 of 11

Date: 1/26/21 Ice Present? Yes

No. of Coolers: 6 Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	Full List SVOCs	PCB Aroclors	Metals	Notes/Comments
SB-2021-046:13.9-01262021	1/26/21	1040	Soil	3		H			H			H	
SB-2021-003:2-01262021		1140		5		X	X	X	X			X	
SB-2021-003:10.3-01262021		1145		5		X	X	X	X			X	
SB-2021-003:11.5-01262021		1150		5		X	X	X	X			X	
SB-2021-003:13.1-01262021		1155		5		H	H	H	H			H	
SB-2021-038:2-01262021		1230		2		X			X		X	X	
SB-2021-038:6.9-01262021		1235		2		X			X		X	X	
SB-2021-038:7.6-01262021		1240		2		X			X		X	X	
SB-2021-038:12.9-01262021		1245		2		H			H		H	H	
SB-2021-018:4.5-01272021	1/27/21	1020		1		X					X		

Comments/Special Instructions
X = run analysis
H = hold analysis

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	RYAN PETERSON	Jacob Galt		
Company:	S&W	ARI		
Date & Time:	1/27/21 1705	01/27/2021 1705		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard	Page: 3 of 11	
ARI Client Company: Shannon & Wilson	Phone:	Date: 1/27/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 6	Cooler Temps: See CRF
Client Project Name: LDW			
Client Project #: 21-1-12596	Samplers: RBP, JXS		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	Full Cpd SVOCs	PCB Aroclor		Notes/Comments
SB-2021-018:2.5-01272021	1/27/21	1025	Soil	1		X					X		
SB-2021-018:5.5-01272021		1030		1		X					X		
SB-2021-018:7.2-01272021		1035		1		X					X		
SB-2021-018:8.2-01272021		1040		1		H					H		
SB-2021-018:11-01272021		1045		1		H					H		
SB-2021-019:0.8-01272021		1100		1		X					X		
SB-2021-019:2.5-01272021		1105		1		X					X		
SB-2021-019:5-01272021		1110		1		X					X		
SB-2021-019:7-01272021		1115		1		X					X		1602 collected for lab QC
SB-2021-019:8.5-01272021		1120		1		H					H		

Comments/Special Instructions
X = run analysis
H = hold analysis

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	RYAN PETERSON	Jacob Salter		
Company:	S&W	ARI		
Date & Time:	1/27/21 1705	01/27/2021 1705		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: RBP, JXS

Page: 4 of 11

Date: 1/27/21 Ice Present? Yes

No. of Coolers: 6 Cooler Temps: See COC

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-Dx	Analysis Requested: PCB Aroclors	Notes/Comments
SB-2021-019:12-01272021	1/27/21	1125	Soil	1	H	H	
SB-2021-020:1.5-01272021		1140		1	X	X	
SB-2021-020:2.2-01272021		1145		1	X	X	
SB-2021-020:6-01272021		1150		1	X	X	
SB-2021-020:7-01272021		1155		1	X	X	
SB-2021-020:8.2-01272021		1200		1	H	H	
SB-2021-020:11-01272021		1205		1	H	H	
SB-2021-021:1.5-01272021		1230		1	X	X	
SB-2021-021:2.5-01272021		1235		1	X	X	
SB-2021-021:5.2-01272021		1240		1	X	X	

Comments/Special Instructions

X = run analysis
H = hold analysis

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	RYAN PETERSON	Jacob Laltz		
Company:	S&W	ARI		
Date & Time:	1/27/21 1705	01/07/2021 1705		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard	Page: 5 of 11	
ARI Client Company: Shannon & Wilson	Phone:	Date:	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 6	Cooler Temps: See COC
Client Project Name: LDW			
Client Project #: 21-1-12596	Samplers: RBP, JXS		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-Dx	Analysis Requested: PCB Aroclors	Notes/Comments
SB-2021-021:7-01272021	1/27/21	1245	Soil	1	X	X	
SB-2021-021:10-01272021		1250		1	H	H	
SB-2021-021:11-01272021		1255		1	H	H	
SB-2021-103:2.5-01272021		1300		1	X	X	
SB-2021-022:1.5-01272021		1305		1	X	X	
SB-2021-022:2.5-01272021		1310		1	X	X	
SB-2021-022:5.5-01272021		1315		1	X	X	
SB-2021-022:7-01272021		1320		1	X	X	
SB-2021-022:10-01272021		1325		1	H	H	
SB-2021-022:11-01272021		1330		1	H	H	

Comments/Special Instructions

X = Run analysis
H = Hold analysis

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	Ryan Peterson	Jacob Haith		
Company:	S&W	ARI		
Date & Time:	1/27/21 1705	01/27/2021 1705		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard	Page: 6 of 11	
ARI Client Company: Shannon & Wilson	Phone:	Date: 1/27/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 6	Cooler Temps: See CRF
Client Project Name: LDW			
Client Project #: 21-1-12596	Samplers: RBP, JKS		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-Dx	Analysis Requested: PCB Aroclors	Notes/Comments
SB-2021-023:1.5-01272021	1/27/21	1340	Soil	1	X	X	
SB-2021-023:2.7-01272021		1345		1	X	X	
SB-2021-023:5.5-01272021		1350		1	X	X	
SB-2021-023:7-01272021		1355		1	X	X	160z volume for lab QC
SB-2021-023:10-01272021		1400		1	H	H	
SB-2021-023:11-01272021		1405		1	H	H	
SB-2021-024:0.5-01272021		1410		1	X	X	
SB-2021-024:2.4-01272021		1415		1	X	X	
SB-2021-024:5.6-01272021		1420		1	X	X	
SB-2021-024:7-01272021		1425		1	X	X	

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: RYAN PETERSON	Printed Name: Jacob Laffer	Printed Name:	Printed Name:
	Company: S&W	Company: ARI	Company:	Company:
	Date & Time: 1/27/21 1705	Date & Time: 01/27/2021 1705	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: RBP, JXS

Page: 7 of 11

Date: 1/27/21 Ice Present? Yes

No. of Coolers: 6 Cooler Temps: See COC

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested								Notes/Comments
							TPH-Dx				RB Aroclors		
SB-2021-024:8.4-01272021	1/27/21	1430	Soil	1			H				H		
SB-2021-024:11-01272021		1435		1			H				H		
SB-2021-026:1.5-01272021		1450		1			X				X		
SB-2021-026:3-01272021		1455		1			X				X		
SB-2021-026:5.5-01272021		1500		1			X				X		
SB-2021-026:7-01272021		1505		1			X				X		
SB-2021-026:10-01272021		1510		1			H				H		
SB-2021-026:11-01272021		1515		1			H				H		
SB-2021-025:1.5-01272021		1550		1			X				X		
SB-2021-025:2.5-01272021		1555		1			X				X		

Comments/Special Instructions

X = run analysis
H = hold analysis

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Printed Name: RYAN PETERSON	Printed Name: Jacob Laldt	Printed Name:	Printed Name:
Company: S&W	Company: ARI	Company:	Company:
Date & Time: 1/27/21 1705	Date & Time: 01/27/2021 1705	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: RBP, JXS

Page: 8	of 11		
Date: 1/27/21	Ice Present? Yes		
No. of Coolers: 6	Cooler Temps: See COF		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-Dx	Analysis Requested: PCB Aroclors	Notes/Comments
SB-2021-025:5.5-01272021	1/27/21	1600	Soil	1	X	X	
SB-2021-025:6.5-01272021		1605		1	X	X	
SB-2021-025:10-01272021		1610		1	H	H	
SB-2021-025:11-01272021		1615		1	H	H	
Area9Comp-01272021		1630		1	X	X	

Comments/Special Instructions

X = run analysis
H = hold analysis

	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Printed Name:	RYAN PETERSON	Jacob Shelton		
Company:	S&W	ARI		
Date & Time:	1/27/21 1705	01/27/2021 1705		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson, Inc.	Phone: 206-632-8020
Client Contact: Shoshana Howard	
Client Project Name: EMJ	
Client Project #: 21-1/2596	Samplers: CTC

Page: 9 of 11	
Date:	Ice Present? Yes
No. of Coolers: 6	Cooler Temps: See COF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	Full list SVOCs	PCB aroclors	metals	T.O.C.	Grain Size	NOTES	Hex. Chrome
					Analysis Requested									Notes/Comments		
MW-76:1.5-01262021	1/26	0850	S	2		X				X		X				
MW-76:5.0-01262021	1/26	0855	S	2		X				X		X				
MW-76:15.5-01262021	1/26	0905	S	2		⊗				⊗		⊗			⊗ Hold	
MW-76:20.5-01262021	1/26	0915	S	2		⊗				⊗		⊗			⊗ Hold	
MW-100:5.0-01262021	1/26	0858	S	2		X				X		X				
MW-67:0.5-01262021	1/26	1320	S	5		X		X		X		X				X
MW-67:5.5-01262021	1/26	1325	S	6		X		X		X		X	X	X		X
MW-67:9.0-01262021	1/26	1335	S	6		X		X		X		X	X	X		X
MW-67:16.0-01262021	1/26	1350	S	5		⊗		X		⊗		⊗			⊗ Hold	⊗
MW-67:20.5-01262021	1/26	1400	S	5		⊗		X		⊗		⊗			⊗ Hold	⊗

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
Please refer to EMJ analyte list.	(Signature)	(Signature)	(Signature)	(Signature)
	Printed Name: RYAN PETERSON	Printed Name: Jacob Lalk	Printed Name:	Printed Name:
	Company: S&W	Company: ARI	Company:	Company:
	Date & Time: 1/27/21 1705	Date & Time: 01/27/2021 1705	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard	Page: 10 of 11	
ARI Client Company: Shannon & Wilson	Phone: 206-632-8020	Date: 1/27/2021	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 6	Cooler Temps: See CRF
Client Project Name: LDW			
Client Project #: 21-1-12516	Samplers: MRH		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-Dx	BTEX	HVOC,	PAHs	Metals	Grainsize			Notes/Comments
MW-59: 1.5-01272021	1/27/2021	1005	Soil	5	X	X	X	X	X				H= hold
MW-59: 5.5-01272021		1015		6	X	X	X	X	X	X			
MW-59: 8.4-01272021		1025		5	X	X	X	X	X				
MW-59: 15-01272021		1035		6	*H	H*	*H	*H	*H	*H			hold
MW-59: 20-01272021		1045		5	*H	*H	*H	*H	*H				hold
MW-57: 5-01272021		1330		2	X			X	X				
MW-57: 6-01272021		1340		2	X			X	X				
MW-57: 10-01272021		1345		2	X			X	X				
MW-57: 15.3-01272021		1355		2	*H			*H	*H				hold
MW-57: 20-01272021		1405		2	*H			*H	*H				hold

Comments/Special Instructions: H= hold

Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)	(Signature)	(Signature)	(Signature)
Printed Name: RYAN PETERSON	Printed Name: Jacob Galt	Printed Name:	Printed Name:
Company: S&W	Company: ARI	Company:	Company:
Date & Time: 1/27/21 1705	Date & Time: 01/27/2021 1705	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21A0376	Turn-around Requested: Standard	Page: 11 of 11	
ARI Client Company: Shannon & Wilson	Phone: 206-632-8020	Date: 1/27/2021	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 6	Cooler Temps: See CRF
Client Project Name: LDW			
Client Project #: 21-1-12596	Samplers: MKH		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-Dx	PAHs	Metals	Hexavalent Chromium					Notes/Comments
MW-62:1-01272021	1/27/21	1535	Soil	2	X	X	X	X					H=hold
MW-62:5-01272021	"	1545	"	2	X	X	X	X					
MW-62:8.6-01272021	"	1555	"	2	X	X	X	X					
MW-62:15-01272021	"	1605	"	2	H	H	H	H					hold

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
H=hold	Printed Name: RYAN PETERSON	Printed Name: Jacob Walter	Printed Name:	Printed Name:
	Company: S&W	Company: ARI	Company:	Company:
	Date & Time: 1/27/21 1705	Date & Time: 01/27/2021 1705	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Materials Testing & Consulting, Inc.
Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project:	Lower Duwamish (21A0376)	**Date Received:**	February 3, 2021
Project #:	21S023-04	**Sampled By:**	Others
Client :	Analytical Resources, Inc.	**Date Reported:**	March 11, 2021
Source:	Multiple	**Tested By:**	B. Goble, S. Bennett
MTC Sample#:	Multiple		

CASE NARRATIVE

1. Three samples were submitted for grain size analysis according to Puget Sound Estuary Protocol (PSEP) methodology.
2. The samples were run in a single batch and one sample from this job was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. The data is provided in summary tables and plots.
4. There were no noted anomalies during this testing.

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: E Gabriel Goble

Draft for Public Comment

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: Lower Duwamish (21A0376)
Project #: 21S023-04
Date Received: February 3, 2021
Date Tested: March 9, 2021

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: B. Goble, S. Bennett

Apparent Grain Size Distribution Summary

Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.0	15.6	7.8	3.9	2.0	1.0
MW-67:5.5-01262021	100.0	100.0	100.0	99.9	99.5	98.5	93.7	80.0	64.7	43.2	29.9	20.4	13.8	5.7
	100.0	100.0	100.0	99.8	99.4	97.2	92.4	78.5	63.0	44.1	30.5	20.8	13.6	5.6
	100.0	100.0	99.8	99.6	99.4	98.7	94.8	81.2	68.3	48.9	34.2	23.5	15.4	7.5
MW-67:9.0-01262021	100.0	100.1	92.8	90.5	82.2	56.7	26.4	15.6	10.9	8.0	6.1	4.5	3.2	1.7
MW-58:5.5-01272021	100.0	98.1	97.5	96.6	96.4	71.3	36.6	17.7	15.7	11.8	8.6	6.5	4.4	3.1

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: EGabriel Goble

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980
Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6061 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974
Visit our website: www.mtc-inc.net

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: Lower Duwamish (21A0376)
Project #: 21S023-04
Date Received: February 3, 2021
Date Tested: March 9, 2021

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: B. Goble, S. Bennett

Apparent Grain Size Distribution Summary

Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	< -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	> 10	> 4
Sieve Size (microns)	> #10 (2000)	10-18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62.5-31.0	31.0-15.6	15.6-7.8	7.8-3.9	3.9-2.0	2.0-1.0	<1.0	<230 (<62)
MW-67:5.5-01262021	0.0	0.1	0.4	1.0	4.8	13.7	15.3	21.5	13.3	9.5	6.7	8.0	5.7	80.0
	0.0	0.2	0.5	2.1	4.9	13.8	15.6	18.9	13.6	9.7	7.3	7.9	5.6	78.5
	0.2	0.2	0.2	0.7	3.9	13.6	12.9	19.4	14.7	10.7	8.1	8.0	7.5	81.2
MW-67:9.0-01262021	7.2	2.3	8.3	25.5	30.3	10.8	4.7	2.8	1.9	1.6	1.3	1.4	1.7	15.6
MW-58:5.5-01272021	2.5	0.8	0.2	25.1	34.6	18.9	2.0	3.9	3.2	2.2	2.0	1.3	3.1	17.7

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: E Gabriel Goble

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980
Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6061 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974
Visit our website: www.mtc-inc.net

Draft for Public Comment

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: Lower Duwamish (21A0376)
Project #: 21S023-04
Date Received: February 3, 2021
Date Tested: March 9, 2021

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: B. Goble, S. Bennett

Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
MW-67:5.5-01262021	100.0	100.0	100.0	99.9	99.5	98.5	93.7	80.0	64.7	43.2	29.9	20.4	13.8	5.7
	100.0	100.0	100.0	99.8	99.4	97.2	92.4	78.5	63.0	44.1	30.5	20.8	13.6	5.6
	100.0	100.0	99.8	99.6	99.4	98.7	94.8	81.2	68.3	48.9	34.2	23.5	15.4	7.5
AVE	100.0	100.0	99.9	99.8	99.4	98.2	93.6	79.9	65.3	45.4	31.5	21.6	14.2	6.3
STDEV	0.0	0.0	0.1	0.1	0.1	0.6	1.0	1.1	2.2	2.5	1.9	1.4	0.8	0.8
%RSD	0.0	0.0	0.1	0.1	0.1	0.7	1.1	1.4	3.4	5.5	6.0	6.3	5.9	13.4

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)
MW-67:5.5-01262021	1/26/2021	3/1/2021	3/9/2021	101.1		17.2
	1/26/2021	3/1/2021	3/9/2021	101.6		15.8
	1/26/2021	3/1/2021	3/9/2021	103.6		17.5
MW-67:9.0-01262021	1/26/2021	3/1/2021	3/9/2021	102.9		20.5
MW-58:5.5-01272021	1/26/2021	3/1/2021	3/9/2021	98.5		20.6

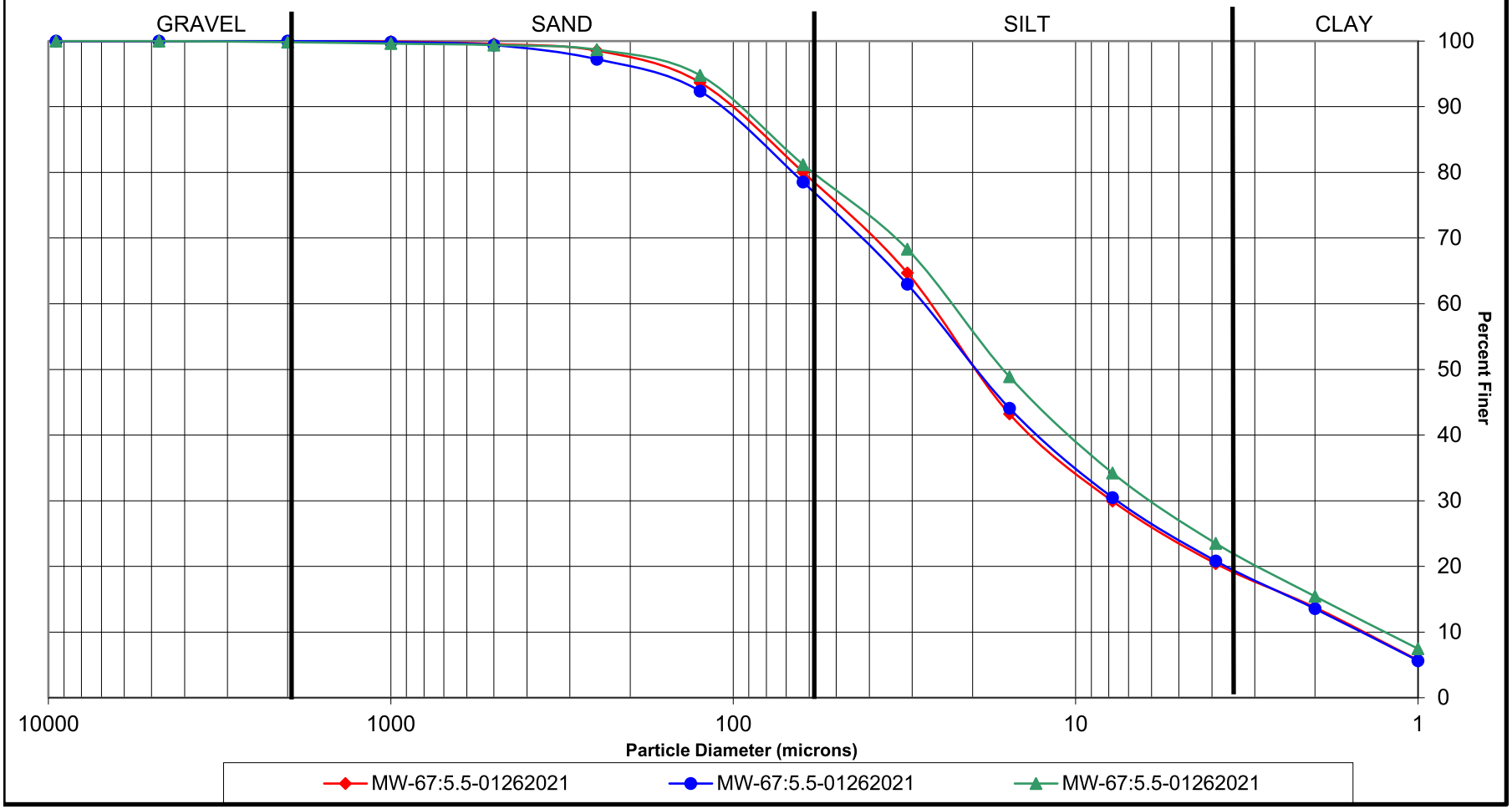
All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: E Gabriel Goble

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980
Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6061 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974
Visit our website: www.mtc-inc.net

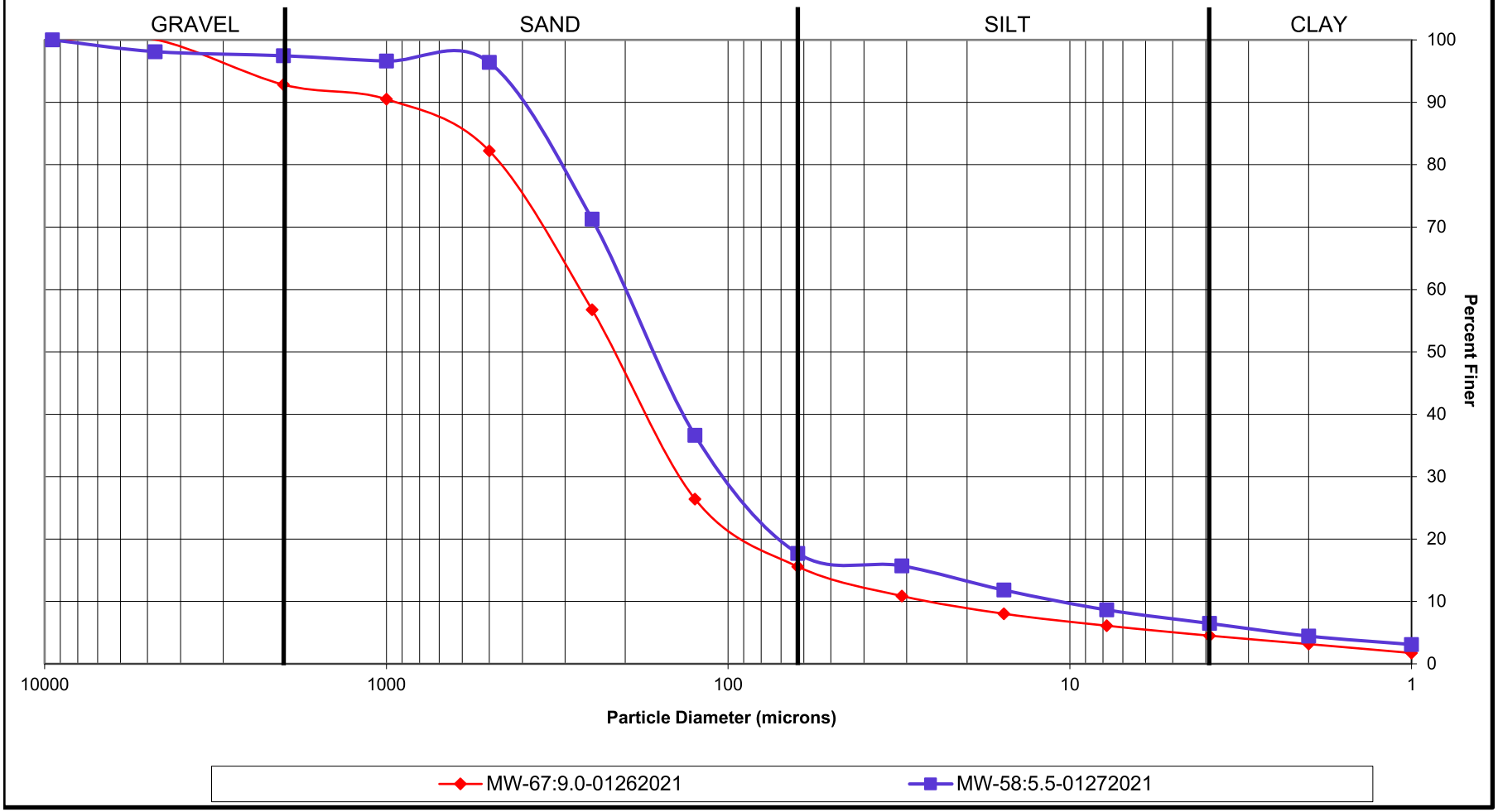
PSEP Grain Size Distribution

Triplicate Sample Plot



MATERIALS TESTING & CONSULTING, INC.

PSEP Grain Size Distribution



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-2-01262021	21A0376-01	Water	27-Jan-2021 16:30	27-Jan-2021 17:05
SB-2021-035:11-01262021	21A0376-02	Solid	26-Jan-2021 08:55	27-Jan-2021 17:05
SB-2021-035:13.8-01262021	21A0376-03	Solid	26-Jan-2021 09:00	27-Jan-2021 17:05
SB-2021-033:11-01262021	21A0376-04	Solid	26-Jan-2021 09:30	27-Jan-2021 17:05
SB-2021-033:15-01262021	21A0376-05	Solid	26-Jan-2021 09:35	27-Jan-2021 17:05
SB-2021-033:18-01262021	21A0376-06	Solid	26-Jan-2021 09:40	27-Jan-2021 17:05
Asphalt-004-01262021	21A0376-07	Solid	26-Jan-2021 10:20	27-Jan-2021 17:05
SB-2021-046:2-01262021	21A0376-08	Solid	26-Jan-2021 10:30	27-Jan-2021 17:05
SB-2021-046:5.6-01262021	21A0376-09	Solid	26-Jan-2021 10:33	27-Jan-2021 17:05
SB-2021-046:10.7-01262021	21A0376-10	Solid	26-Jan-2021 10:35	27-Jan-2021 17:05
SB-2021-046:13.9-01262021	21A0376-11	Solid	26-Jan-2021 10:40	27-Jan-2021 17:05
SB-2021-003:2-01262020	21A0376-12	Solid	26-Jan-2021 11:40	27-Jan-2021 17:05
SB-2021-003:10.3-01262020	21A0376-13	Solid	26-Jan-2021 11:45	27-Jan-2021 17:05
SB-2021-003:11.5-01262020	21A0376-14	Solid	26-Jan-2021 11:50	27-Jan-2021 17:05
SB-2021-003:13.1-01262020	21A0376-15	Solid	26-Jan-2021 11:55	27-Jan-2021 17:05
SB-2021-038:2-01262021	21A0376-16	Solid	26-Jan-2021 12:30	27-Jan-2021 17:05
SB-2021-038:6.9-01262021	21A0376-17	Solid	26-Jan-2021 12:35	27-Jan-2021 17:05
SB-2021-038:7.6-01262021	21A0376-18	Solid	26-Jan-2021 12:40	27-Jan-2021 17:05
SB-2021-038:12.9-01262021	21A0376-19	Solid	26-Jan-2021 12:45	27-Jan-2021 17:05
SB-2021-018:1.5-01272021	21A0376-20	Solid	27-Jan-2021 10:20	27-Jan-2021 17:05
SB-2021-018:2.5-01272021	21A0376-21	Solid	27-Jan-2021 10:25	27-Jan-2021 17:05
SB-2021-018:5.5-01272021	21A0376-22	Solid	27-Jan-2021 10:30	27-Jan-2021 17:05
SB-2021-018:7.2-01272021	21A0376-23	Solid	27-Jan-2021 10:35	27-Jan-2021 17:05
SB-2021-018:8.2-01272021	21A0376-24	Solid	27-Jan-2021 10:40	27-Jan-2021 17:05
SB-2021-018:11-01272021	21A0376-25	Solid	27-Jan-2021 10:45	27-Jan-2021 17:05
SB-2021-019:0.8-01272021	21A0376-26	Solid	27-Jan-2021 11:00	27-Jan-2021 17:05
SB-2021-019:2.5-01272021	21A0376-27	Solid	27-Jan-2021 11:05	27-Jan-2021 17:05
SB-2021-019:5-01272021	21A0376-28	Solid	27-Jan-2021 11:10	27-Jan-2021 17:05
SB-2021-019:7-01272021	21A0376-29	Solid	27-Jan-2021 11:15	27-Jan-2021 17:05
SB-2021-019:8.5-01272021	21A0376-30	Solid	27-Jan-2021 11:20	27-Jan-2021 17:05
SB-2021-019:12-01272021	21A0376-31	Solid	27-Jan-2021 11:25	27-Jan-2021 17:05
SB-2021-020:1.5-01272021	21A0376-32	Solid	27-Jan-2021 11:40	27-Jan-2021 17:05
SB-2021-020:2.2-01272021	21A0376-33	Solid	27-Jan-2021 11:45	27-Jan-2021 17:05
SB-2021-020:6-01272021	21A0376-34	Solid	27-Jan-2021 11:50	27-Jan-2021 17:05
SB-2021-020:7-01272021	21A0376-35	Solid	27-Jan-2021 11:55	27-Jan-2021 17:05
SB-2021-020:8.2-01272021	21A0376-36	Solid	27-Jan-2021 12:00	27-Jan-2021 17:05
SB-2021-020:11-01272021	21A0376-37	Solid	27-Jan-2021 12:05	27-Jan-2021 17:05
SB-2021-021:1.5-01272021	21A0376-38	Solid	27-Jan-2021 12:30	27-Jan-2021 17:05
SB-2021-021:2.5-01272021	21A0376-39	Solid	27-Jan-2021 12:35	27-Jan-2021 17:05

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-021:5.2-01272021	21A0376-40	Solid	27-Jan-2021 12:40	27-Jan-2021 17:05
SB-2021-021:7-01272021	21A0376-41	Solid	27-Jan-2021 12:45	27-Jan-2021 17:05
SB-2021-021:10-01272021	21A0376-42	Solid	27-Jan-2021 12:50	27-Jan-2021 17:05
SB-2021-021:11-01272021	21A0376-43	Solid	27-Jan-2021 12:55	27-Jan-2021 17:05
SB-2021-103:2.5-01272021	21A0376-44	Solid	27-Jan-2021 13:00	27-Jan-2021 17:05
SB-2021-022:1.5-01272021	21A0376-45	Solid	27-Jan-2021 13:05	27-Jan-2021 17:05
SB-2021-022:2.5-01272021	21A0376-46	Solid	27-Jan-2021 13:10	27-Jan-2021 17:05
SB-2021-022:5.5-01272021	21A0376-47	Solid	27-Jan-2021 13:15	27-Jan-2021 17:05
SB-2021-022:7-01272021	21A0376-48	Solid	27-Jan-2021 13:20	27-Jan-2021 17:05
SB-2021-022:10-01272021	21A0376-49	Solid	27-Jan-2021 13:25	27-Jan-2021 17:05
SB-2021-022:11-01272021	21A0376-50	Solid	27-Jan-2021 13:30	27-Jan-2021 17:05
SB-2021-023:1.5-01272021	21A0376-51	Solid	27-Jan-2021 13:40	27-Jan-2021 17:05
SB-2021-023:2.7-01272021	21A0376-52	Solid	27-Jan-2021 13:45	27-Jan-2021 17:05
SB-2021-023:5.5-01272021	21A0376-53	Solid	27-Jan-2021 13:50	27-Jan-2021 17:05
SB-2021-023:7-01272021	21A0376-54	Solid	27-Jan-2021 13:55	27-Jan-2021 17:05
SB-2021-023:10-01272021	21A0376-55	Solid	27-Jan-2021 14:00	27-Jan-2021 17:05
SB-2021-023:11-01272021	21A0376-56	Solid	27-Jan-2021 14:05	27-Jan-2021 17:05
SB-2021-024:0.5-01272021	21A0376-57	Solid	27-Jan-2021 14:10	27-Jan-2021 17:05
SB-2021-024:2.4-01272021	21A0376-58	Solid	27-Jan-2021 14:15	27-Jan-2021 17:05
SB-2021-024:5.6-01272021	21A0376-59	Solid	27-Jan-2021 14:20	27-Jan-2021 17:05
SB-2021-024:7-01272021	21A0376-60	Solid	27-Jan-2021 14:25	27-Jan-2021 17:05
SB-2021-024:8.4-01272021	21A0376-61	Solid	27-Jan-2021 14:30	27-Jan-2021 17:05
SB-2021-024:11-01272021	21A0376-62	Solid	27-Jan-2021 14:35	27-Jan-2021 17:05
SB-2021-026:1.5-01272021	21A0376-63	Solid	27-Jan-2021 14:50	27-Jan-2021 17:05
SB-2021-026:3-01272021	21A0376-64	Solid	27-Jan-2021 14:55	27-Jan-2021 17:05
SB-2021-026:5.5-01272021	21A0376-65	Solid	27-Jan-2021 15:00	27-Jan-2021 17:05
SB-2021-026:7-01272021	21A0376-66	Solid	27-Jan-2021 15:05	27-Jan-2021 17:05
SB-2021-026:10-01272021	21A0376-67	Solid	27-Jan-2021 15:10	27-Jan-2021 17:05
SB-2021-026:11-01272021	21A0376-68	Solid	27-Jan-2021 15:15	27-Jan-2021 17:05
SB-2021-025:1.5-01272021	21A0376-69	Solid	27-Jan-2021 15:50	27-Jan-2021 17:05
SB-2021-025:2.5-01272021	21A0376-70	Solid	27-Jan-2021 15:55	27-Jan-2021 17:05
SB-2021-025:5.5-01272021	21A0376-71	Solid	27-Jan-2021 16:00	27-Jan-2021 17:05
SB-2021-025:6.5-01272021	21A0376-72	Solid	27-Jan-2021 16:05	27-Jan-2021 17:05
SB-2021-025:10-01272021	21A0376-73	Solid	27-Jan-2021 16:10	27-Jan-2021 17:05
SB-2021-025:11-01272021	21A0376-74	Solid	27-Jan-2021 16:15	27-Jan-2021 17:05
Area9Comp-01272021	21A0376-75	Solid	27-Jan-2021 16:30	27-Jan-2021 17:05
MW-76:1.5-01262021	21A0376-76	Solid	26-Jan-2021 08:50	27-Jan-2021 17:05
MW-76:5.0-01262021	21A0376-77	Solid	26-Jan-2021 08:55	27-Jan-2021 17:05
MW-76:15.5-01262021	21A0376-78	Solid	26-Jan-2021 09:05	27-Jan-2021 17:05
MW-76:20.5-01262021	21A0376-79	Solid	26-Jan-2021 09:15	27-Jan-2021 17:05
MW-100:5.0-01262021	21A0376-80	Solid	26-Jan-2021 08:58	27-Jan-2021 17:05
MW-67:0.5-01262021	21A0376-81	Solid	26-Jan-2021 13:20	27-Jan-2021 17:05

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021	21A0376-82	Solid	26-Jan-2021 13:25	27-Jan-2021 17:05
MW-67:9.0-01262021	21A0376-83	Solid	26-Jan-2021 13:35	27-Jan-2021 17:05
MW-67:16.0-01262021	21A0376-84	Solid	26-Jan-2021 13:50	27-Jan-2021 17:05
MW-67:20.5-01262021	21A0376-85	Solid	26-Jan-2021 14:00	27-Jan-2021 17:05
MW-58:1.5-01272021	21A0376-86	Solid	27-Jan-2021 10:05	27-Jan-2021 17:05
MW-58:5.5-01272021	21A0376-87	Solid	27-Jan-2021 10:15	27-Jan-2021 17:05
MW-58:8.4-01272021	21A0376-88	Solid	27-Jan-2021 10:25	27-Jan-2021 17:05
MW-58:15-01272021	21A0376-89	Solid	27-Jan-2021 10:35	27-Jan-2021 17:05
MW-58:20-01272021	21A0376-90	Solid	27-Jan-2021 10:45	27-Jan-2021 17:05
MW-57:5-01272021	21A0376-91	Solid	27-Jan-2021 13:30	27-Jan-2021 17:05
MW-57:6-01272021	21A0376-92	Solid	27-Jan-2021 13:40	27-Jan-2021 17:05
MW-57:10-01272021	21A0376-93	Solid	27-Jan-2021 13:45	27-Jan-2021 17:05
MW-57:15.3-01272021	21A0376-94	Solid	27-Jan-2021 13:55	27-Jan-2021 17:05
MW-57:20-01272021	21A0376-95	Solid	27-Jan-2021 14:05	27-Jan-2021 17:05
MW-62:1-01272021	21A0376-96	Solid	27-Jan-2021 15:35	27-Jan-2021 17:05
MW-62:5-01272021	21A0376-97	Solid	27-Jan-2021 15:45	27-Jan-2021 17:05
MW-62:8.6-01272021	21A0376-98	Solid	27-Jan-2021 15:55	27-Jan-2021 17:05
MW-62:15-01272021	21A0376-99	Solid	27-Jan-2021 16:05	27-Jan-2021 17:05

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Work Order Case Narrative

Client: Shannon & Wilson, Inc
Project: Lower Duwamish
Work Order: 21A0376

Sample receipt

Samples as listed on the preceding page were received 27-Jan-2021 17:05 under ARI work order 21A0376. For details regarding sample receipt, please refer to the Cooler Receipt Form.

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements except as follows. Aroclor 1260 which was out of control low on column zb-5 in SJB0353-CCV in association with sample 21A0376-71; data reported from passing column.

Internal standard areas were within limits except as follows. Hexachlorobiphenyl which was out of control low on column zb-5 in SJC0141-ICV in association with sample 21A0376-07.

The surrogate percent recoveries were within control limits except as follows. Decachlorobiphenyl which was out of control high in sample 21A0376-71. Decachlorobiphenyl was out of control low in SJC0141-ICV in association with sample 21A0376-07. Tetrachlorometaxylene which was out of control high in SJB0422-CCV1, SJB0422-CCV3, SJB0423-ICV1, SJB0423-ICV2, SJB0423-CCV1 and SJB0423-CCV2 on column zb-35; data reported from passing column zb-5.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21A0376-32 in batch BJB0237, in association with sample 21A0376-47 and in association with sample 21A0376-57. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits except Aroclor 1260 in BJB0303-MS1 which has been flagged within the QC section of this report.

Gasoline by NWTPH-g (GC/MS)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Sample 21A0376-04 was analyzed at a 50X due to high hydrocarbon background.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits except 1,2-Dichloroethane-d4 which was out of control high in sample 21A0376-88.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Sample 21A0376-91 was analyzed at a 10X due to matrix interference when analyzed at 1X.

Initial and continuing calibrations were within method requirements except as follows. Dibenzofuran and Phenanthrene which were out of control low in sequence SJB0418. Phenanthrene which was out of control low in sequence SJC0072. Benzo(j)fluoranthene and Dibenzofuran which were out of control low in sequence SJC0052. Benzo(g,h,i)perylene which was out of control low in sequence SJC0019. All samples which contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21A0376-16 in batch BJB0235 and association with sample 21A0376-86. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

were within advisory control limits except as BJB0235-MS percent recovery which was out of control low and MS/MSD RPD which was out of control high. Deviations are flagged within the QC section of this report.

Total Metals - EPA Method 6020B

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21A0376-08 in batch BJB0282. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries, the MS/MSD relative percent difference (RPD) and the duplicate (DUP) RPD were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21A0376-81 in Hexavalent Chromium batch BJB0295. The duplicate (DUP) relative percent difference (RPD) were within advisory control limits. The matrix spike (MS) percent recovery was out of control low. A post-preparation spike (PS) was performed which also failed low. Deviations flagged within the QC section of this report.

Total Hg - EPA Method 7470/7471

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21A0376-08 in batch BJB0283. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries, the MS/MSD relative percent difference (RPD) and the duplicate (DUP) RPD were within advisory control limits. Sample specific QC was performed in association with sample 21A0376-93 in batch BJB0287.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries, the MS/ MSD relative percent difference (RPD) and the duplicate (DUP) RPD were within advisory control limits except the matrix spike which was out of control high. A post digestion spike (PS) was performed which also failed high. Deviations have been flagged.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21A0376-02 in batch BJB0187, in association with sample 21A0376-22 in batch BJB0238, in association with sample 21A0376-41 in batch BJB0239 and in association with sample 21A0376-65 in batch BJB0240. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and the relative percent difference (RPD) were within advisory control limits.

REVISED to correct VOC lists, Sample Types.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Shannon & Wilson Project Name: LDW

COC No(s): NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 21A0376 Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1705 0.6 1.4 0.1 0.7 1.6 ~~0.8~~

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: DOO ~~D06~~

Cooler Accepted by: JS Date: 01/27/2021 Time: 1705

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES SC	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: SC Date: 1/28/21 Time: 0920 Labels checked by: SC

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
MW-100:0858-01262021	MW-100:5.0-01262021		

Additional Notes, Discrepancies, & Resolutions:

By: SC Date: 1/28/21

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

TB-2-01262021

21A0376-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/27/2021 16:30

Instrument: NT2 Analyst: PKC — Analyzed: 01/29/2021 13:02

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21A0376-01 A

Preparation Batch: BJA0778 — Sample Size: 10 mL

Prepared: 01/29/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.08	0.20	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.08	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.07	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.08	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.05	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.07	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.05	0.20	0.41	ug/L	
Tetrachloroethene	127-18-4	1	0.09	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.05	0.20	0.06	ug/L	J
m,p-Xylene	179601-23-1	1	0.14	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.08	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.22	0.60	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4				*80-129 %*	*94.9*	*%*	
Surrogate: Toluene-d8				*80-120 %*	*94.2*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*91.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

TB-2-01262021

21A0376-01 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/27/2021 16:30
Instrument: NT2 Analyst: PKC — Analyzed: 01/29/2021 13:02

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21A0376-01 A
Preparation Batch: BJA0778 — Sample Size: 10 mL
Prepared: 01/29/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*94.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*91.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-035:11-01262021

21A0376-02 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 08:55

Instrument: NT5 Analyst: PB — Analyzed: 01/29/2021 22:52

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-02 F

Preparation Batch: BJA0796 — Sample Size: 4.75 g (wet) — Dry Weight:3.54 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 74.57

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.42	1.41	1.00	ug/kg	J
Toluene	108-88-3	1	0.21	1.41	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.29	1.41	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.55	2.82	ND	ug/kg	U
o-Xylene	95-47-6	1	0.32	1.41	ND	ug/kg	U
Surrogate: Toluene-d8				*77-120 %*	*98.5*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*97.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-035:11-01262021

21A0376-02 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/26/2021 08:55
Instrument: NT2 Analyst: PKC — Analyzed: 01/29/2021 13:22

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21A0376-02 C
Preparation Batch: BJA0779 — Sample Size: 4.435 g (wet) — Dry Weight:3.31 g
Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 74.57

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	9260	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*97.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-035:11-01262021

21A0376-02 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 08:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/15/2021 16:59

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-02 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.46 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 74.57

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.71	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.4	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*101*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-035:13.8-01262021

21A0376-03 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 09:00
Instrument: NT5 Analyst: PB — Analyzed: 01/29/2021 23:16

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-03 E
Preparation Batch: BJA0796 — Sample Size: 4.87 g (wet) — Dry Weight:3.75 g
Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 76.99

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.39	1.33	0.84	ug/kg	J
Toluene	108-88-3	1	0.20	1.33	0.31	ug/kg	J
Ethylbenzene	100-41-4	1	0.27	1.33	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.52	2.67	ND	ug/kg	U
o-Xylene	95-47-6	1	0.30	1.33	ND	ug/kg	U
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-035:13.8-01262021

21A0376-03 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/26/2021 09:00
Instrument: NT2 Analyst: PKC — Analyzed: 01/29/2021 13:42

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21A0376-03 B
Preparation Batch: BJA0779 — Sample Size: 5.06 g (wet) — Dry Weight:3.90 g
Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 76.99

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7910	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*96.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-035:13.8-01262021

21A0376-03 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 09:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/15/2021 18:02

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-03 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.70 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 76.99

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.49	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.0	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*97.5*	*%*	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-033:11-01262021

21A0376-04 (Solid)

Volatile Organic Compounds

Method: EPA 8260D MED — Sampled: 01/26/2021 09:30
Instrument: NT5 Analyst: PB — Analyzed: 01/29/2021 23:40

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21A0376-04 C
Preparation Batch: BJB0140 — Sample Size: 4.644 g (wet) — Dry Weight:3.56 g
Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 76.63

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	50	13.3	85.5	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	50	13.5	85.5	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.38	1.71	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	50	15.4	85.5	ND	ug/kg	U
Benzene	71-43-2	50	14.0	85.5	ND	ug/kg	U
Trichloroethene	79-01-6	50	15.4	85.5	ND	ug/kg	U
Toluene	108-88-3	50	14.7	85.5	ND	ug/kg	U
Tetrachloroethene	127-18-4	50	23.6	85.5	ND	ug/kg	U
Ethylbenzene	100-41-4	50	23.3	85.5	ND	ug/kg	U
m,p-Xylene	179601-23-1	50	47.7	171	ND	ug/kg	U
o-Xylene	95-47-6	50	19.5	85.5	ND	ug/kg	U
Xylenes, total	1330-20-7	50	66.2	171	ND	ug/kg	U
Surrogate: Dibromofluoromethane				*30-160 %*	*105*	*%*	
Surrogate: 1,2-Dichloroethane-d4				*80-124 %*	*105*	*%*	
Surrogate: Toluene-d8				*80-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-033:11-01262021

21A0376-04 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/26/2021 09:30
Instrument: NT2 Analyst: PKC — Analyzed: 01/29/2021 15:40

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21A0376-04 B
Preparation Batch: BJA0779 — Sample Size: 4.943 g (wet) — Dry Weight:3.79 g
Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 76.63

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	500	81200	1420000	ug/kg	D
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*98.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-033:11-01262021

21A0376-04 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 09:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/15/2021 18:23

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-04 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.66 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 76.63

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.52	8.80	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	13.0	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-033:15-01262021

21A0376-05 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 09:35

Instrument: NT5 Analyst: PB — Analyzed: 01/30/2021 00:04

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-05 E

Preparation Batch: BJA0796 — Sample Size: 4.68 g (wet) — Dry Weight:3.64 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 77.71

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.41	1.37	ND	ug/kg	U
Toluene	108-88-3	1	0.21	1.37	0.92	ug/kg	J
Ethylbenzene	100-41-4	1	0.28	1.37	0.49	ug/kg	J
m,p-Xylene	179601-23-1	1	0.54	2.75	0.95	ug/kg	J
o-Xylene	95-47-6	1	0.31	1.37	ND	ug/kg	U
Surrogate: Toluene-d8				*77-120 %*	*106*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*101*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-033:15-01262021

21A0376-05 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/26/2021 09:35
Instrument: NT2 Analyst: PKC — Analyzed: 01/29/2021 15:20

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21A0376-05 B
Preparation Batch: BJA0779 — Sample Size: 5.075 g (wet) — Dry Weight:3.94 g
Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 77.71

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7770	22600	ug/kg	
HC ID: GAS						
Surrogate: Toluene-d8			*80-120 %*	*98.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-033:15-01262021

21A0376-05 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 09:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/15/2021 18:44

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-05 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.77 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 77.71

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.43	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.9	40.0	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*97.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-033:18-01262021

21A0376-06 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 09:40

Instrument: NT5 Analyst: PB — Analyzed: 01/30/2021 00:28

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-06 E

Preparation Batch: BJA0796 — Sample Size: 5.16 g (wet) — Dry Weight:4.04 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 78.20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.37	1.24	ND	ug/kg	U
Toluene	108-88-3	1	0.19	1.24	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.25	1.24	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.49	2.48	ND	ug/kg	U
o-Xylene	95-47-6	1	0.28	1.24	ND	ug/kg	U
Surrogate: Toluene-d8				*77-120 %*	*99.9*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-033:18-01262021

21A0376-06 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/26/2021 09:40
Instrument: NT2 Analyst: PKC — Analyzed: 01/29/2021 14:45

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21A0376-06 B
Preparation Batch: BJA0779 — Sample Size: 5.42 g (wet) — Dry Weight:4.24 g
Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 78.20

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7290	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-033:18-01262021

21A0376-06 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 09:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/15/2021 19:05

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-06 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.82 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 78.20

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.39	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.8	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Asphalt-004-01262021

21A0376-07 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/26/2021 10:20
Instrument: ECD7 Analyst: JGR — Analyzed: 03/01/2021 20:10

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-07 A 03
	Preparation Batch: BJB0237	Sample Size: 13.01 g (wet)	Dry Weight:12.62 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 97.00
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-07 A 03
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-07 A 03
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-07 A 03
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	3.5	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	4.0	3.7	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*76.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*72.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*64.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:2-01262021

21A0376-08 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 10:30
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 12:57

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-08 A 02
	Preparation Batch: BJB0235	Sample Size: 11.19 g (wet)	Dry Weight:10.06 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 89.86
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-08 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-08 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	0.78	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.98	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	1.01	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	0.37	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	1.34	ug/kg	Q
Anthracene	120-12-7	1	0.07	0.50	0.10	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	0.88	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	1.09	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.40	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.77	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.30	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.24	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.26	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.32	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.23	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.36	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*64.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*76.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:2-01262021

21A0376-08 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 10:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/15/2021 19:26

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-08 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:8.99 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 89.86

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.56	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.1	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*88.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:2-01262021

21A0376-08 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 10:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 16:10

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-08 C 01
Preparation Batch: BJB0282 — Sample Size: 1.01 g (wet) — Dry Weight:0.94 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 92.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	24.5	mg/kg	
Chromium	7440-47-3	20	0.14	0.53	11.0	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	4.60	mg/kg	
Lead	7439-92-1	20	0.07	0.11	1.78	mg/kg	
Selenium	7782-49-2	20	0.47	2.13	0.71	mg/kg	J
Silver	7440-22-4	20	0.02	0.21	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	33.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:2-01262021

21A0376-08 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 10:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 16:10

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-08 C 01
Preparation Batch: BJB0282 — Sample Size: 1.01 g (wet) — Dry Weight:0.94 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 92.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	2.29	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.36	0.53	9.47	mg/kg	
Nickel	7440-02-0	20	0.05	0.53	9.01	mg/kg	
Zinc	7440-66-6	20	0.9	4.3	23.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:2-01262021

21A0376-08 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 10:30
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:26

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-08 C
Preparation Batch: BJB0283 — Sample Size: 0.253 g (wet) — Dry Weight:0.23 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 92.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00447	0.0213	0.00833	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:5.6-01262021

21A0376-09 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 10:33
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 13:29

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-09 A 02
	Preparation Batch: BJB0235	Sample Size: 11.97 g (wet)	Dry Weight:10.10 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 84.38
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-09 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-09 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	2.70	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.50	4.23	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	4.49	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.42	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	2.40	ug/kg	
Dibenzofuran	132-64-9	1	0.12	0.50	2.52	ug/kg	Q
Fluorene	86-73-7	1	0.07	0.50	2.77	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	14.1	ug/kg	Q
Anthracene	120-12-7	1	0.07	0.50	2.59	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	11.5	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	13.3	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	7.58	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	31.0	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	17.9	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	3.27	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	1.68	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	6.06	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	2.82	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	2.00	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	10.2	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*57.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*61.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*78.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:5.6-01262021

21A0376-09 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 10:33
Instrument: FID4 Analyst: CTO — Analyzed: 02/15/2021 19:47

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-09 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:8.44 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 84.38

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	5	29.6	31.5	mg/kg	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	5	59.3	210	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:5.6-01262021

21A0376-09 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 10:33
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 17:00

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-09 C 01
Preparation Batch: BJB0282 — Sample Size: 1.072 g (wet) — Dry Weight:0.95 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 89.04

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.52	21.4	mg/kg	
Chromium	7440-47-3	20	0.14	0.52	9.35	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	5.27	mg/kg	
Lead	7439-92-1	20	0.07	0.10	2.15	mg/kg	
Selenium	7782-49-2	20	0.46	2.10	0.88	mg/kg	J
Silver	7440-22-4	20	0.02	0.21	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	33.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:5.6-01262021

21A0376-09 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 10:33
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 17:00

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-09 C 01
Preparation Batch: BJB0282 — Sample Size: 1.072 g (wet) — Dry Weight:0.95 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 89.04

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	2.22	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	0.04	mg/kg	J
Copper	7440-50-8	20	0.36	0.52	8.15	mg/kg	
Nickel	7440-02-0	20	0.05	0.52	9.76	mg/kg	
Zinc	7440-66-6	20	0.9	4.2	25.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:5.6-01262021

21A0376-09 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 10:33
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:34

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-09 C
Preparation Batch: BJB0283 — Sample Size: 0.212 g (wet) — Dry Weight:0.19 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 89.04

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00556	0.0265	0.0106	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:10.7-01262021

21A0376-10 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 10:35
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 14:01

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-10 A 02
	Preparation Batch: BJB0235	Sample Size: 15.91 g (wet)	Dry Weight:10.10 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 63.51
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-10 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-10 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	21.1	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	31.9	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	30.0	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	1.84	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.49	7.90	ug/kg	
Dibenzofuran	132-64-9	1	0.12	0.49	13.1	ug/kg	Q
Fluorene	86-73-7	1	0.07	0.49	8.11	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.49	39.1	ug/kg	Q
Anthracene	120-12-7	1	0.07	0.49	10.5	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.49	22.5	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	21.9	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	7.93	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	17.6	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	9.38	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	2.77	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	2.69	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.49	7.09	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	3.46	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	1.27	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	5.61	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*54.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*68.9*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*74.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:10.7-01262021

21A0376-10 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 10:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/15/2021 20:08

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-10 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:6.35 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 63.51

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.87	26.1	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	15.7	105	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:10.7-01262021

21A0376-10 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 10:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:36

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-10 B 01
Preparation Batch: BJB0282 — Sample Size: 1.026 g (wet) — Dry Weight:0.72 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 70.13

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.69	40.1	mg/kg	
Chromium	7440-47-3	20	0.18	0.69	14.6	mg/kg	
Cobalt	7440-48-4	20	0.04	0.28	6.93	mg/kg	
Lead	7439-92-1	20	0.09	0.14	2.80	mg/kg	
Selenium	7782-49-2	20	0.61	2.78	1.60	mg/kg	J
Silver	7440-22-4	20	0.02	0.28	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.28	59.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:10.7-01262021

21A0376-10 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 10:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:36

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-10 B 01
Preparation Batch: BJB0282 — Sample Size: 1.026 g (wet) — Dry Weight:0.72 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 70.13

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.28	6.00	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.10	mg/kg	J
Copper	7440-50-8	20	0.47	0.69	16.9	mg/kg	
Nickel	7440-02-0	20	0.07	0.69	13.7	mg/kg	
Zinc	7440-66-6	20	1.1	5.6	30.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-046:10.7-01262021

21A0376-10 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 10:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:37

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-10 B
Preparation Batch: BJB0283 — Sample Size: 0.247 g (wet) — Dry Weight:0.17 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 70.13

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00606	0.0289	0.0324	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:2-01262020

21A0376-12 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 11:40

Instrument: NT5 Analyst: PB — Analyzed: 01/30/2021 00:53

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-12 D

Preparation Batch: BJA0796 — Sample Size: 4.86 g (wet) — Dry Weight:3.42 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 70.40

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.34	1.46	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.49	1.46	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.39	1.46	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.35	1.46	ND	ug/kg	U
Benzene	71-43-2	1	0.43	1.46	0.62	ug/kg	J
Trichloroethene	79-01-6	1	0.31	1.46	ND	ug/kg	U
Toluene	108-88-3	1	0.22	1.46	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.38	1.46	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.30	1.46	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.57	2.92	ND	ug/kg	U
o-Xylene	95-47-6	1	0.33	1.46	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.90	2.92	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*118*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*105*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:2-01262020

21A0376-12 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 11:40
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 14:34

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-12 A 02
	Preparation Batch: BJB0235	Sample Size: 14.25 g (wet)	Dry Weight:10.03 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 70.40
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-12 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-12 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	6.03	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	13.4	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	11.3	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.64	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	5.90	ug/kg	Q
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	30.4	ug/kg	Q
Anthracene	120-12-7	1	0.07	0.50	1.20	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	18.8	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	21.0	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	7.68	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	16.0	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	10.2	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	3.57	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	3.60	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	5.95	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	4.54	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	1.39	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	5.03	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*47.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*76.5*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*75.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:2-01262020

21A0376-12 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 11:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/15/2021 20:29

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-12 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.04 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 70.40

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.10	26.7	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	14.2	152	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*106*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:2-01262020

21A0376-12 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 11:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:41

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-12 B 01
Preparation Batch: BJB0282 — Sample Size: 1.061 g (wet) — Dry Weight:0.82 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 77.31

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.61	67.4	mg/kg	
Chromium	7440-47-3	20	0.16	0.61	17.3	mg/kg	
Cobalt	7440-48-4	20	0.04	0.24	9.76	mg/kg	
Lead	7439-92-1	20	0.08	0.12	6.11	mg/kg	
Selenium	7782-49-2	20	0.54	2.44	1.36	mg/kg	J
Silver	7440-22-4	20	0.02	0.24	0.11	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.24	55.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:2-01262020

21A0376-12 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 11:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:41

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-12 B 01
Preparation Batch: BJB0282 — Sample Size: 1.061 g (wet) — Dry Weight:0.82 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 77.31

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.24	7.19	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	0.14	mg/kg	
Copper	7440-50-8	20	0.41	0.61	25.3	mg/kg	
Nickel	7440-02-0	20	0.06	0.61	17.5	mg/kg	
Zinc	7440-66-6	20	1.0	4.9	47.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:2-01262020

21A0376-12 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 11:40
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:39

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-12 B
Preparation Batch: BJB0283 — Sample Size: 0.21 g (wet) — Dry Weight:0.16 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 77.31

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00647	0.0308	0.0691	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:10.3-01262020

21A0376-13 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 11:45
Instrument: NT5 Analyst: PB — Analyzed: 01/30/2021 01:16

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-13 D
Preparation Batch: BJA0796 — Sample Size: 4.45 g (wet) — Dry Weight:3.28 g
Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 73.74

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.36	1.52	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.51	1.52	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.41	1.52	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.37	1.52	ND	ug/kg	U
Benzene	71-43-2	1	0.45	1.52	1.05	ug/kg	J
Trichloroethene	79-01-6	1	0.32	1.52	ND	ug/kg	U
Toluene	108-88-3	1	0.23	1.52	0.78	ug/kg	J
Tetrachloroethene	127-18-4	1	0.39	1.52	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.31	1.52	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.60	3.05	ND	ug/kg	U
o-Xylene	95-47-6	1	0.34	1.52	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.94	3.05	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*112*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*95.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:10.3-01262020

21A0376-13 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 11:45
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 15:06

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-13 A 02
	Preparation Batch: BJB0235	Sample Size: 13.59 g (wet)	Dry Weight:10.02 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 73.74
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-13 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-13 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	2.56	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	3.37	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	3.56	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.11	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.41	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	1.43	ug/kg	Q
Fluorene	86-73-7	1	0.07	0.50	0.47	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	6.54	ug/kg	Q
Anthracene	120-12-7	1	0.07	0.50	0.54	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	2.45	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	2.83	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.98	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	2.34	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	1.44	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.37	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.42	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.86	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.62	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.18	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	1.17	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*47.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*82.9*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*78.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:10.3-01262020

21A0376-13 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 11:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/15/2021 20:50

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-13 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.37 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 73.74

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.78	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.6	14.0	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*101*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:10.3-01262020

21A0376-13 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 11:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 17:05

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-13 B 01
Preparation Batch: BJB0282 — Sample Size: 1.092 g (wet) — Dry Weight:0.80 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 72.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.63	75.6	mg/kg	
Chromium	7440-47-3	20	0.16	0.63	19.4	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	7.66	mg/kg	
Lead	7439-92-1	20	0.09	0.13	4.70	mg/kg	
Selenium	7782-49-2	20	0.55	2.51	1.30	mg/kg	J
Silver	7440-22-4	20	0.02	0.25	0.08	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	51.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:10.3-01262020

21A0376-13 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 11:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 17:05

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-13 B 01
Preparation Batch: BJB0282 — Sample Size: 1.092 g (wet) — Dry Weight:0.80 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 72.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	3.76	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.06	mg/kg	J
Copper	7440-50-8	20	0.43	0.63	24.4	mg/kg	
Nickel	7440-02-0	20	0.06	0.63	16.3	mg/kg	
Zinc	7440-66-6	20	1.0	5.0	37.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:10.3-01262020

21A0376-13 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 11:45
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:41

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-13 B
Preparation Batch: BJB0283 — Sample Size: 0.29 g (wet) — Dry Weight:0.21 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 72.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00497	0.0237	0.0605	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:11.5-01262020

21A0376-14 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 11:50
Instrument: NT5 Analyst: PB — Analyzed: 01/30/2021 01:40

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-14 D
Preparation Batch: BJA0796 — Sample Size: 5.56 g (wet) — Dry Weight:4.03 g
Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 72.54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.29	1.24	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.42	1.24	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.33	1.24	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.30	1.24	ND	ug/kg	U
Benzene	71-43-2	1	0.37	1.24	0.66	ug/kg	J
Trichloroethene	79-01-6	1	0.26	1.24	ND	ug/kg	U
Toluene	108-88-3	1	0.19	1.24	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.32	1.24	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.25	1.24	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.49	2.48	ND	ug/kg	U
o-Xylene	95-47-6	1	0.28	1.24	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.76	2.48	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*112*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*98.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:11.5-01262020

21A0376-14 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 11:50
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 15:38

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-14 A 02
	Preparation Batch: BJB0235	Sample Size: 13.97 g (wet)	Dry Weight:10.13 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 72.54
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-14 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-14 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	0.49	ug/kg	J
1-Methylnaphthalene	90-12-0	1	0.10	0.49	0.61	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	0.67	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.49	0.13	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.49	0.27	ug/kg	J
Fluorene	86-73-7	1	0.07	0.49	0.14	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	2.69	ug/kg	Q
Anthracene	120-12-7	1	0.07	0.49	0.13	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.49	0.52	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	0.77	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	0.25	ug/kg	J
Chrysene	218-01-9	1	0.07	0.49	0.85	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	0.46	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	0.09	0.49	0.12	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	0.53	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*46.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*81.6*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*77.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:11.5-01262020

21A0376-14 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 11:50
Instrument: FID4 Analyst: CTO — Analyzed: 02/17/2021 12:56

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-14 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.25 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 72.54

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.89	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.8	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*88.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:11.5-01262020

21A0376-14 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 11:50
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 17:09

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-14 B 01
Preparation Batch: BJB0282 — Sample Size: 1.046 g (wet) — Dry Weight:0.76 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 72.33

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.66	97.5	mg/kg	
Chromium	7440-47-3	20	0.17	0.66	20.4	mg/kg	
Cobalt	7440-48-4	20	0.04	0.26	10.4	mg/kg	
Lead	7439-92-1	20	0.09	0.13	4.78	mg/kg	
Selenium	7782-49-2	20	0.58	2.64	1.81	mg/kg	J
Silver	7440-22-4	20	0.02	0.26	0.13	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.26	55.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:11.5-01262020

21A0376-14 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 11:50
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 17:09

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-14 B 01
Preparation Batch: BJB0282 — Sample Size: 1.046 g (wet) — Dry Weight:0.76 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 72.33

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.26	5.45	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	ND	mg/kg	U
Copper	7440-50-8	20	0.45	0.66	32.7	mg/kg	
Nickel	7440-02-0	20	0.07	0.66	20.6	mg/kg	
Zinc	7440-66-6	20	1.1	5.3	37.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-003:11.5-01262020

21A0376-14 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 11:50
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:47

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-14 B
Preparation Batch: BJB0283 — Sample Size: 0.287 g (wet) — Dry Weight:0.21 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 72.33

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00506	0.0241	0.0716	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:2-01262021

21A0376-16 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 12:30
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 16:10

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-16 A 02
	Preparation Batch: BJB0235	Sample Size: 11.78 g (wet)	Dry Weight:10.11 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 85.79
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-16 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-16 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	1.47	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	1.99	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	2.01	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	0.23	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.49	0.25	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.49	1.14	ug/kg	Q
Fluorene	86-73-7	1	0.07	0.49	0.16	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	13.0	ug/kg	Q
Anthracene	120-12-7	1	0.07	0.49	0.46	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.49	6.48	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	7.25	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	2.60	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	7.19	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	5.95	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	2.52	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	2.26	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.49	1.88	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	3.23	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	0.94	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	3.03	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*46.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*79.4*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*81.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:2-01262021

21A0376-16 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 12:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/17/2021 13:17

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-16 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:8.58 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 85.79

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.83	7.37	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.7	25.0	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*109*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:2-01262021

21A0376-16 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/26/2021 12:30
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 01:11

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-16 A 03
	Preparation Batch: BJB0237	Sample Size: 14.64 g (wet)	Dry Weight:12.56 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 85.79
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-16 A 03
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-16 A 03
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-16 A 03
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*82.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*49.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*47.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:2-01262021

21A0376-16 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 12:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:28

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-16 B 01
Preparation Batch: BJB0282 — Sample Size: 1.083 g (wet) — Dry Weight:0.96 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 88.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.52	38.8	mg/kg	
Chromium	7440-47-3	20	0.14	0.52	12.0	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	5.02	mg/kg	
Lead	7439-92-1	20	0.07	0.10	3.74	mg/kg	
Selenium	7782-49-2	20	0.46	2.08	0.98	mg/kg	J
Silver	7440-22-4	20	0.02	0.21	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	36.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:2-01262021

21A0376-16 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 12:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:28

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-16 B 01
Preparation Batch: BJB0282 — Sample Size: 1.083 g (wet) — Dry Weight:0.96 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 88.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	3.58	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	0.05	mg/kg	J
Copper	7440-50-8	20	0.35	0.52	14.6	mg/kg	
Nickel	7440-02-0	20	0.05	0.52	10.5	mg/kg	
Zinc	7440-66-6	20	0.9	4.2	29.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:2-01262021

21A0376-16 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 12:30
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:49

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-16 B
Preparation Batch: BJB0283 — Sample Size: 0.28 g (wet) — Dry Weight:0.25 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 88.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00422	0.0201	0.0300	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:6.9-01262021

21A0376-17 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 12:35
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 17:47

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-17 A 02
	Preparation Batch: BJB0235	Sample Size: 12.53 g (wet)	Dry Weight:10.18 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 81.26
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-17 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-17 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	2.01	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	3.01	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	3.52	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	0.55	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.49	0.40	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.49	1.09	ug/kg	Q
Fluorene	86-73-7	1	0.07	0.49	0.21	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	3.90	ug/kg	Q
Anthracene	120-12-7	1	0.07	0.49	0.31	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.49	1.23	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	1.77	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	0.97	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	1.25	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.06	0.49	0.52	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	0.25	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	0.23	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.49	0.54	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	0.26	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	0.38	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*45.9*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*79.0*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*77.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:6.9-01262021

21A0376-17 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 12:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/17/2021 13:38

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-17 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:8.13 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 81.26

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.15	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.3	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*109*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:6.9-01262021

21A0376-17 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/26/2021 12:35
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 01:32

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-17 A 03
	Preparation Batch: BJB0237	Sample Size: 15.69 g (wet)	Dry Weight:12.75 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 81.26
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-17 A 03
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-17 A 03
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-17 A 03
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	3.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	3.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	3.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	3.9	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	3.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*101*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*90.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*81.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:6.9-01262021

21A0376-17 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 12:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:34

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-17 B 01
Preparation Batch: BJB0282 — Sample Size: 1.074 g (wet) — Dry Weight:0.95 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 88.05

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	30.0	mg/kg	
Chromium	7440-47-3	20	0.14	0.53	9.34	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	4.08	mg/kg	
Lead	7439-92-1	20	0.07	0.11	1.66	mg/kg	
Selenium	7782-49-2	20	0.47	2.11	0.85	mg/kg	J
Silver	7440-22-4	20	0.02	0.21	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	32.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:6.9-01262021

21A0376-17 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 12:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:34

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-17 B 01
Preparation Batch: BJB0282 — Sample Size: 1.074 g (wet) — Dry Weight:0.95 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 88.05

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	2.22	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.36	0.53	9.95	mg/kg	
Nickel	7440-02-0	20	0.05	0.53	7.84	mg/kg	
Zinc	7440-66-6	20	0.9	4.2	23.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:6.9-01262021

21A0376-17 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 12:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:52

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-17 B
Preparation Batch: BJB0283 — Sample Size: 0.231 g (wet) — Dry Weight:0.20 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 88.05

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00516	0.0246	0.0132	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:7.6-01262021

21A0376-18 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 12:40
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 18:19

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-18 A 02
	Preparation Batch: BJB0235	Sample Size: 12.61 g (wet)	Dry Weight:10.09 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 80.03
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-18 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-18 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.59	1.14	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	1.61	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	2.34	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.15	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.39	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.50	0.46	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.27	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	4.84	ug/kg	Q
Anthracene	120-12-7	1	0.07	0.50	0.96	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	8.01	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	9.67	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	4.45	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	5.75	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	4.76	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	2.46	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	2.53	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	5.42	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	3.61	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.89	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	3.93	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*48.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*80.5*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*82.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:7.6-01262021

21A0376-18 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 12:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/17/2021 13:58

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-18 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:8.00 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 80.03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.25	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.5	15.3	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*111*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:7.6-01262021

21A0376-18 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/26/2021 12:40
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 01:52

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-18 A 03
	Preparation Batch: BJB0237	Sample Size: 15.73 g (wet)	Dry Weight:12.59 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 80.03
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-18 A 03
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-18 A 03
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-18 A 03
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*91.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*81.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*91.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*77.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:7.6-01262021

21A0376-18 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 12:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 17:14

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-18 B 01
Preparation Batch: BJB0282 — Sample Size: 1.015 g (wet) — Dry Weight:0.80 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 78.72

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.63	39.5	mg/kg	
Chromium	7440-47-3	20	0.16	0.63	11.2	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	3.76	mg/kg	
Lead	7439-92-1	20	0.09	0.13	6.62	mg/kg	
Selenium	7782-49-2	20	0.55	2.50	0.65	mg/kg	J
Silver	7440-22-4	20	0.02	0.25	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	37.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:7.6-01262021

21A0376-18 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 12:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 17:14

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-18 B 01
Preparation Batch: BJB0282 — Sample Size: 1.015 g (wet) — Dry Weight:0.80 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 78.72

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	5.43	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	ND	mg/kg	U
Copper	7440-50-8	20	0.43	0.63	14.8	mg/kg	
Nickel	7440-02-0	20	0.06	0.63	9.38	mg/kg	
Zinc	7440-66-6	20	1.0	5.0	26.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-038:7.6-01262021

21A0376-18 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 12:40
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:54

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-18 B
Preparation Batch: BJB0283 — Sample Size: 0.258 g (wet) — Dry Weight:0.20 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 78.72

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00517	0.0246	0.0381	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-018:1.5-01272021

21A0376-20 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 10:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 18:06

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-20 A 02
Preparation Batch: BJB0238 — Sample Size: 10.07 g (wet) — Dry Weight:9.01 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 89.43

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.55	44.2	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.1	152	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*108*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-018:1.5-01272021

21A0376-20 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 10:20
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 02:13

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-20 A 01
	Preparation Batch: BJB0237	Sample Size: 14.08 g (wet)	Dry Weight:12.59 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 89.43
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-20 A 01
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-20 A 01
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-20 A 01
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.7	19.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.7	19.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.7	19.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.7	19.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.7	19.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.7	19.9	ND	ug/kg	U
Aroclor 1260	11096-82-5	5	2.9	19.9	129	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*116*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*53.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*111*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*57.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-018:2.5-01272021

21A0376-21 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 10:25
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 18:27

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-21 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:8.99 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 89.62

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.56	85.9	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.1	391	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*97.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-018:2.5-01272021

21A0376-21 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 10:25
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 02:33

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-21 A 01
	Preparation Batch: BJB0237	Sample Size: 14.12 g (wet)	Dry Weight:12.65 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 89.62
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-21 A 01
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-21 A 01
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-21 A 01
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.7	19.8	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.7	19.8	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.7	19.8	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.7	19.8	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.7	19.8	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.7	19.8	ND	ug/kg	U
Aroclor 1260	11096-82-5	5	2.9	19.8	185	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*125*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*106*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*77.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-018:5.5-01272021

21A0376-22 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 10:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 18:48

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-22 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:7.72 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 76.92

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.48	165	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	13.0	537	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-018:5.5-01272021

21A0376-22 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 10:30
Instrument: ECD7 Analyst: JGR — Analyzed: 02/23/2021 02:10

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-22 A 01
	Preparation Batch: BJB0237	Sample Size: 16.37 g (wet)	Dry Weight:12.59 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 76.92
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-22 A 01
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-22 A 01
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-22 A 01
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	25	38.7	99.3	ND	ug/kg	U
Aroclor 1221	11104-28-2	25	38.7	99.3	ND	ug/kg	U
Aroclor 1232	11141-16-5	25	38.7	99.3	ND	ug/kg	U
Aroclor 1242	53469-21-9	25	38.7	99.3	ND	ug/kg	U
Aroclor 1248	12672-29-6	25	38.7	99.3	ND	ug/kg	U
Aroclor 1254	11097-69-1	25	38.7	99.3	ND	ug/kg	U
Aroclor 1260	11096-82-5	25	14.6	99.3	1100	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*112*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*68.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*92.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-018:7.2-01272021

21A0376-23 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 10:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/13/2021 09:04

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-23 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:7.86 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 78.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	5	31.8	421	mg/kg	D
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	5	63.6	778	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*108*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-018:7.2-01272021

21A0376-23 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 10:35
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 03:15

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-23 A 01
	Preparation Batch: BJB0237	Sample Size: 16.03 g (wet)	Dry Weight:12.56 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 78.37
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-23 A 01
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-23 A 01
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-23 A 01
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	29.8	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*87.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*70.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*62.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-018:8.2-01272021

21A0376-24 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 10:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 20:11

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-24 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:6.97 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 69.52

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.17	350	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	14.3	649	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*111*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-018:11-01272021

21A0376-25 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 10:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 20:32

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-25 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:7.76 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 77.36

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.44	13.4	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.9	38.1	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*112*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-019:0.8-01272021

21A0376-26 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 11:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 20:53

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-26 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:9.11 g
Prepared: 02/09/2021 — Final Volume: 10 mL — % Solids: 90.84

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	54.9	59.5	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	110	177	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*96.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-019:0.8-01272021

21A0376-26 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 11:00
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 04:16

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-26 A 01
	Preparation Batch: BJB0237	Sample Size: 13.87 g (wet)	Dry Weight:12.60 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 90.84
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-26 A 01
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-26 A 01
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-26 A 01
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.5	39.7	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.5	39.7	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.5	39.7	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.5	39.7	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.5	39.7	ND	ug/kg	U
Aroclor 1254	11097-69-1	10	15.5	39.7	200	ug/kg	D
Aroclor 1260	11096-82-5	10	5.8	39.7	402	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*136*	*%*	*
Surrogate: Tetrachlorometaxylene				*44-120 %*	*47.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*97.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*52.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-019:2.5-01272021

21A0376-27 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 11:05
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 21:13

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-27 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:8.64 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 86.16

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.79	51.6	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	11.6	238	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-019:2.5-01272021

21A0376-27 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 11:05
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 04:37

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-27 A 01
	Preparation Batch: BJB0237	Sample Size: 14.67 g (wet)	Dry Weight:12.64 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 86.16
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-27 A 01
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-27 A 01
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-27 A 01
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.7	19.8	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.7	19.8	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.7	19.8	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.7	19.8	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.7	19.8	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.7	19.8	ND	ug/kg	U
Aroclor 1260	11096-82-5	5	2.9	19.8	184	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*105*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*85.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*81.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-019:5-01272021

21A0376-28 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 11:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 22:16

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-28 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:8.16 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 81.40

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.12	22.7	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	12.2	98.5	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*98.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-019:5-01272021

21A0376-28 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 11:10
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 04:57

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-28 A 01
	Preparation Batch: BJB0237	Sample Size: 15.53 g (wet)	Dry Weight:12.64 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 81.40
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-28 A 01
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-28 A 01
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-28 A 01
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	60.1	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*80.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*66.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*74.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*69.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-019:7-01272021

21A0376-29 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 11:15
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 22:37

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-29 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:7.39 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 73.65

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.77	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.5	25.9	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-019:7-01272021

21A0376-29 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 11:15
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 05:18

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-29 A 01
	Preparation Batch: BJB0237	Sample Size: 13.82 g (wet)	Dry Weight:10.18 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 73.65
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-29 A 01
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-29 A 01
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-29 A 01
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.9	4.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.9	4.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.9	4.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.9	4.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.9	4.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.9	4.9	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.7	4.9	16.6	ug/kg	P1
Surrogate: Decachlorobiphenyl				*40-126 %*	*95.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*70.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*81.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*74.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-020:1.5-01272021

21A0376-32 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 11:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 22:58

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-32 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:9.12 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 90.96

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.48	12.4	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.0	48.7	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*106*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-020:1.5-01272021

21A0376-32 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 11:40
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 05:38

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-32 A 01
	Preparation Batch: BJB0237	Sample Size: 13.83 g (wet)	Dry Weight:12.58 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 90.96
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-32 A 01
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-32 A 01
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-32 A 01
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	31.4	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*85.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*72.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*87.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*71.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-020:2.2-01272021

21A0376-33 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 11:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/13/2021 09:25

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-33 A 02
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:7.24 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 72.18

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	10	69.1	1930	mg/kg	D
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	10	138	3060	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*108*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-020:2.2-01272021

21A0376-33 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 11:45
Instrument: ECD7 Analyst: JGR — Analyzed: 02/23/2021 02:31

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-33 A 01
	Preparation Batch: BJB0237	Sample Size: 17.41 g (wet)	Dry Weight:12.57 g
	Prepared: 02/08/2021	Final Volume: 2.5 mL	% Solids: 72.18
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-33 A 01
	Cleanup Batch: CJB0118	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-33 A 01
	Cleanup Batch: CJB0116	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-33 A 01
	Cleanup Batch: CJB0117	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5000	7760	19900	ND	ug/kg	U
Aroclor 1221	11104-28-2	5000	7760	19900	ND	ug/kg	U
Aroclor 1232	11141-16-5	5000	7760	19900	ND	ug/kg	U
Aroclor 1242	53469-21-9	5000	7760	19900	ND	ug/kg	U
Aroclor 1248	12672-29-6	5000	7760	19900	ND	ug/kg	U
Aroclor 1254	11097-69-1	5000	7760	19900	ND	ug/kg	U
Aroclor 1260	11096-82-5	5000	2930	19900	144000	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*		*D1*	D1, P1
Surrogate: Tetrachlorometaxylene				*44-120 %*		*D1*	D1
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*		*D1*	D1, P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*		*D1*	D1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-020:6-01272021

21A0376-34 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 11:50
Instrument: FID4 Analyst: CTO — Analyzed: 02/11/2021 23:39

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-34 A 01
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:7.58 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 75.54

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.60	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.2	22.1	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-020:6-01272021

21A0376-34 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 11:50
Instrument: ECD7 Analyst: JGR — Analyzed: 02/17/2021 13:21

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-34 A 02
	Preparation Batch: BJB0302	Sample Size: 16.63 g (wet)	Dry Weight:12.56 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 75.54
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-34 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-34 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-34 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	40.3	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*93.1*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*80.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*81.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*79.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-020:7-01272021

21A0376-35 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 11:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 00:00

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-35 A 01
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:7.40 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 73.76

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.76	6.96	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.5	38.4	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-020:7-01272021

21A0376-35 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 11:55
Instrument: ECD7 Analyst: JGR — Analyzed: 02/17/2021 13:42

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-35 A 02
	Preparation Batch: BJB0302	Sample Size: 17.01 g (wet)	Dry Weight:12.55 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 73.76
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-35 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-35 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-35 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	9.3	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*112*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*76.6*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*99.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*79.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-021:1.5-01272021

21A0376-38 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 12:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 00:21

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-38 A 01
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:8.92 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 88.98

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.60	37.3	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.2	168	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-021:1.5-01272021

21A0376-38 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 12:30
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 16:04

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-38 A 02
	Preparation Batch: BJB0302	Sample Size: 14.2 g (wet)	Dry Weight:12.64 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 88.98
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-38 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-38 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-38 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.7	19.8	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.7	19.8	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.7	19.8	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.7	19.8	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.7	19.8	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.7	19.8	ND	ug/kg	U
Aroclor 1260	11096-82-5	5	2.9	19.8	64.9	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*78.8*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*66.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*70.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*81.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-021:2.5-01272021

21A0376-39 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 12:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 00:42

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-39 A 01
Preparation Batch: BJB0238 — Sample Size: 10.03 g (wet) — Dry Weight:7.55 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 75.30

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.62	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.2	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*93.7*	*%*	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-021:2.5-01272021

21A0376-39 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 12:35
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 16:24

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-39 A 02
	Preparation Batch: BJB0302	Sample Size: 16.74 g (wet)	Dry Weight:12.61 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 75.30
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-39 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-39 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-39 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	2.1	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*82.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*76.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*89.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*77.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-021:5.2-01272021

21A0376-40 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 12:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 01:44

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-40 A 01
Preparation Batch: BJB0239 — Sample Size: 10.08 g (wet) — Dry Weight:8.72 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 86.50

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.73	23.1	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.5	97.2	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-021:5.2-01272021

21A0376-40 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 12:40
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 16:45

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-40 A 02
	Preparation Batch: BJB0302	Sample Size: 14.63 g (wet)	Dry Weight:12.65 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 86.50
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-40 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-40 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-40 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	10	15.4	39.5	ND	ug/kg	U
Aroclor 1221	11104-28-2	10	15.4	39.5	ND	ug/kg	U
Aroclor 1232	11141-16-5	10	15.4	39.5	ND	ug/kg	U
Aroclor 1242	53469-21-9	10	15.4	39.5	ND	ug/kg	U
Aroclor 1248	12672-29-6	10	15.4	39.5	ND	ug/kg	U
Aroclor 1254	11097-69-1	10	15.4	39.5	ND	ug/kg	U
Aroclor 1260	11096-82-5	10	5.8	39.5	267	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*92.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*57.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*73.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*71.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-021:7-01272021

21A0376-41 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 12:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 02:05

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-41 A 01
Preparation Batch: BJB0239 — Sample Size: 10.2 g (wet) — Dry Weight:9.15 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 89.75

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.46	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.9	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-021:7-01272021

21A0376-41 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 12:45
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 17:06

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-41 A 02
	Preparation Batch: BJB0302	Sample Size: 14.16 g (wet)	Dry Weight:12.71 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 89.75
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-41 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-41 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-41 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	3.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	3.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	3.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	3.9	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	3.9	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*82.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*83.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*94.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*82.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-103:2.5-01272021

21A0376-44 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 03:49

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-44 A 01
Preparation Batch: BJB0239 — Sample Size: 10.09 g (wet) — Dry Weight:7.85 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 77.79

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.37	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.7	13.7	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*79.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-103:2.5-01272021

21A0376-44 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 13:00
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 17:26

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-44 A 02
	Preparation Batch: BJB0302	Sample Size: 16.15 g (wet)	Dry Weight:12.56 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 77.79
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-44 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-44 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-44 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	1.2	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*78.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*72.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*87.7*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*79.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-022:1.5-01272021

21A0376-45 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:05
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 04:10

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-45 A 01
Preparation Batch: BJB0239 — Sample Size: 10.1 g (wet) — Dry Weight:8.80 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 87.15

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.68	14.1	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.4	59.2	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*98.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-022:1.5-01272021

21A0376-45 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 13:05
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 17:47

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-45 A 02
	Preparation Batch: BJB0302	Sample Size: 14.54 g (wet)	Dry Weight:12.67 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 87.15
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-45 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-45 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-45 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	3.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	3.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	3.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	3.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	3.9	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	3.9	23.2	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*79.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*68.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*81.7*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*68.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-022:2.5-01272021

21A0376-46 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 04:31

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-46 A 01
Preparation Batch: BJB0239 — Sample Size: 10.05 g (wet) — Dry Weight:7.41 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 73.69

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.75	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.5	27.2	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*75.7*	*%*	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-022:2.5-01272021

21A0376-46 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 13:10
Instrument: ECD7 Analyst: JGR — Analyzed: 02/17/2021 14:02

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-46 A 02
	Preparation Batch: BJB0302	Sample Size: 17.11 g (wet)	Dry Weight:12.61 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 73.69
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-46 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-46 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-46 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	9.4	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*95.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*68.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*84.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*75.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-022:5.5-01272021

21A0376-47 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:15
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 04:52

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-47 A 01
Preparation Batch: BJB0239 — Sample Size: 10.22 g (wet) — Dry Weight:9.59 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 93.87

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.21	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.4	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*110*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-022:5.5-01272021

21A0376-47 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 13:15
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 19:09

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-47 A 02
	Preparation Batch: BJB0302	Sample Size: 13.41 g (wet)	Dry Weight:12.59 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 93.87
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-47 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-47 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-47 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*79.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*69.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*88.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*74.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-022:7-01272021

21A0376-48 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 05:13

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-48 A 01
Preparation Batch: BJB0239 — Sample Size: 10.07 g (wet) — Dry Weight:9.24 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 91.76

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.41	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.8	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*98.0*	*%*	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-022:7-01272021

21A0376-48 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 13:20
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 20:11

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-48 A 02
	Preparation Batch: BJB0302	Sample Size: 13.75 g (wet)	Dry Weight:12.62 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 91.76
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-48 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-48 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-48 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*76.8*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*89.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*72.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-023:1.5-01272021

21A0376-51 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 05:33

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-51 A 01
Preparation Batch: BJB0239 — Sample Size: 10.21 g (wet) — Dry Weight:8.87 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 86.85

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.64	7.33	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.3	17.7	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*89.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-023:1.5-01272021

21A0376-51 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 13:40
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 20:31

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-51 A 02
	Preparation Batch: BJB0302	Sample Size: 14.55 g (wet)	Dry Weight:12.64 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 86.85
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-51 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-51 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-51 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	1.9	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*78.6*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*78.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*74.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-023:2.7-01272021

21A0376-52 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 05:54

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-52 A 01
Preparation Batch: BJB0239 — Sample Size: 10.06 g (wet) — Dry Weight:6.70 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 66.60

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.46	30.1	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	14.9	117	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*73.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-023:2.7-01272021

21A0376-52 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 13:45
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 20:52

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-52 A 02
	Preparation Batch: BJB0302	Sample Size: 18.81 g (wet)	Dry Weight:12.53 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 66.60
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-52 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-52 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-52 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	1.8	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*85.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*82.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*78.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-023:5.5-01272021

21A0376-53 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:50
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 06:15

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-53 A 01
Preparation Batch: BJB0239 — Sample Size: 10.16 g (wet) — Dry Weight:7.74 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 76.19

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.46	7.66	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.9	42.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*91.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-023:5.5-01272021

21A0376-53 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 13:50
Instrument: ECD7 Analyst: JGR — Analyzed: 02/13/2021 21:12

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-53 A 02
	Preparation Batch: BJB0302	Sample Size: 16.5 g (wet)	Dry Weight:12.57 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 76.19
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-53 A 02
	Cleanup Batch: CJB0091	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-53 A 02
	Cleanup Batch: CJB0089	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-53 A 02
	Cleanup Batch: CJB0090	Initial Volume: 2.5 mL	
	Cleaned: 12-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	9.5	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	17.7	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*82.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*76.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*84.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*77.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-023:7-01272021

21A0376-54 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 06:36

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-54 A 01
Preparation Batch: BJB0239 — Sample Size: 10.24 g (wet) — Dry Weight:7.90 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 77.14

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.33	8.08	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.7	52.2	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*74.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-023:7-01272021

21A0376-54 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 13:55
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 08:44

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-54 A 03
	Preparation Batch: BJB0303	Sample Size: 16.26 g (wet)	Dry Weight:12.54 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 77.14
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-54 A 03
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-54 A 03
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-54 A 03
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	1.2	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*90.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*75.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*89.5*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*77.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-024:0.5-01272021

21A0376-57 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 14:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 06:57

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-57 A 01
Preparation Batch: BJB0239 — Sample Size: 10.14 g (wet) — Dry Weight:9.65 g
Prepared: 02/09/2021 — Final Volume: 10 mL — % Solids: 95.19

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	51.8	83.7	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	104	237	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*99.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-024:0.5-01272021

21A0376-57 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 14:10
Instrument: ECD7 Analyst: JGR — Analyzed: 02/23/2021 02:51

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-57 A 03
	Preparation Batch: BJB0303	Sample Size: 13.26 g (wet)	Dry Weight:12.62 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 95.19
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-57 A 03
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-57 A 03
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-57 A 03
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.7	19.8	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.7	19.8	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.7	19.8	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.7	19.8	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.7	19.8	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.7	19.8	38.8	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	19.8	75.0	ug/kg	P1, D
Surrogate: Decachlorobiphenyl				*40-126 %*	*92.6*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*74.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*100*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*72.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-024:2.4-01272021

21A0376-58 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 14:15
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 07:59

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-58 A 01
Preparation Batch: BJB0239 — Sample Size: 10.13 g (wet) — Dry Weight:7.30 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 72.04

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.85	22.7	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.7	85.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*116*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-024:2.4-01272021

21A0376-58 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 14:15
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 10:06

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-58 A 03
	Preparation Batch: BJB0303	Sample Size: 17.43 g (wet)	Dry Weight:12.56 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 72.04
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-58 A 03
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-58 A 03
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-58 A 03
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	1.6	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*86.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*72.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*80.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*72.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-024:5.6-01272021

21A0376-59 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 14:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 08:20

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-59 A 01
Preparation Batch: BJB0239 — Sample Size: 10.15 g (wet) — Dry Weight:7.50 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 73.87

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.67	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.3	18.0	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*80.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-024:5.6-01272021

21A0376-59 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 14:20
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 10:27

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-59 A 03
	Preparation Batch: BJB0303	Sample Size: 17.08 g (wet)	Dry Weight:12.62 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 73.87
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-59 A 03
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-59 A 03
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-59 A 03
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	0.7	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*94.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*73.6*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*96.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*77.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-024:7-01272021

21A0376-60 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 14:25
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 08:41

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-60 A 01
Preparation Batch: BJB0239 — Sample Size: 10.15 g (wet) — Dry Weight:7.43 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 73.20

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.73	15.9	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.5	121	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*88.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-024:7-01272021

21A0376-60 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 14:25
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 10:47

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-60 A 03
	Preparation Batch: BJB0303	Sample Size: 17.11 g (wet)	Dry Weight:12.52 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 73.20
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-60 A 03
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-60 A 03
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-60 A 03
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	3.3	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*86.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*74.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*85.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*74.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-026:1.5-01272021

21A0376-63 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 14:50
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 09:02

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-63 A 01
Preparation Batch: BJB0239 — Sample Size: 10.23 g (wet) — Dry Weight:9.43 g
Prepared: 02/09/2021 — Final Volume: 1 mL — % Solids: 92.20

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.30	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.6	15.7	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*99.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-026:1.5-01272021

21A0376-63 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 14:50
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 11:08

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-63 A 03
	Preparation Batch: BJB0303	Sample Size: 13.6 g (wet)	Dry Weight:12.54 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 92.20
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-63 A 03
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-63 A 03
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-63 A 03
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	12.8	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*99.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*93.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*96.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*89.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-026:3-01272021

21A0376-64 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 14:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 17:07

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-64 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:8.00 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 79.98

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.25	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.5	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*114*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-026:3-01272021

21A0376-64 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 14:55
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 12:10

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-64 A 01
	Preparation Batch: BJB0303	Sample Size: 15.67 g (wet)	Dry Weight:12.53 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 79.98
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-64 A 01
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-64 A 01
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-64 A 01
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	1.4	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*98.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*86.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*106*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*89.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-026:5.5-01272021

21A0376-65 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 15:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 17:28

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-65 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:9.26 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 92.57

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.40	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.8	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*105*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-026:5.5-01272021

21A0376-65 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 15:00
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 12:30

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-65 A 01
	Preparation Batch: BJB0303	Sample Size: 13.57 g (wet)	Dry Weight:12.56 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 92.57
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-65 A 01
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-65 A 01
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-65 A 01
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	0.8	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*86.1*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*73.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*94.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*75.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-026:7-01272021

21A0376-66 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 15:05
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 18:31

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-66 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:8.84 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 88.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.66	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.3	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*115*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-026:7-01272021

21A0376-66 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 15:05
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 12:51

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-66 A 01
	Preparation Batch: BJB0303	Sample Size: 14.18 g (wet)	Dry Weight:12.53 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 88.37
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-66 A 01
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-66 A 01
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-66 A 01
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*91.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*83.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*102*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*85.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-025:1.5-01272021

21A0376-69 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 15:50
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 18:51

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-69 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:8.45 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 84.48

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.92	17.0	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	11.8	58.2	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*117*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-025:1.5-01272021

21A0376-69 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 15:50
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 13:11

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-69 A 01
	Preparation Batch: BJB0303	Sample Size: 14.87 g (wet)	Dry Weight:12.56 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 84.48
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-69 A 01
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-69 A 01
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-69 A 01
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	2.4	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	4.0	7.4	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*87.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*70.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*84.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*77.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-025:2.5-01272021

21A0376-70 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 15:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 19:12

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-70 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:8.17 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 81.67

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.12	7.71	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	12.2	17.4	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*106*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-025:2.5-01272021

21A0376-70 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 15:55
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 13:32

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-70 A 01
	Preparation Batch: BJB0303	Sample Size: 15.39 g (wet)	Dry Weight:12.57 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 81.67
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-70 A 01
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-70 A 01
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-70 A 01
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	69.5	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*94.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*66.6*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*97.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*84.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-025:5.5-01272021

21A0376-71 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 16:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 19:33

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-71 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:8.14 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 81.36

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.15	10.8	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	12.3	23.8	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*107*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-025:5.5-01272021

21A0376-71 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 16:00
Instrument: ECD7 Analyst: JGR — Analyzed: 02/23/2021 03:53

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-71 A 01
	Preparation Batch: BJB0303	Sample Size: 15.4 g (wet)	Dry Weight:12.53 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 81.36
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-71 A 01
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-71 A 01
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-71 A 01
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.8	20.0	167	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	440	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*105*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*79.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*102*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*79.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-025:6.5-01272021

21A0376-72 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 16:05
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 19:54

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-72 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:6.98 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 69.82

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.16	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	14.3	25.5	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SB-2021-025:6.5-01272021

21A0376-72 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 16:05
Instrument: ECD7 Analyst: JGR — Analyzed: 02/21/2021 14:13

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-72 A 01
	Preparation Batch: BJB0303	Sample Size: 17.91 g (wet)	Dry Weight:12.50 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 69.82
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-72 A 01
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-72 A 01
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-72 A 01
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	70.2	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*106*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*72.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*107*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*74.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Area9Comp-01272021

21A0376-75 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 16:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 20:15

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-75 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:9.13 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 91.25

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.48	25.8	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.0	110	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*124*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Area9Comp-01272021

21A0376-75 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/27/2021 16:30
Instrument: ECD7 Analyst: JGR — Analyzed: 02/23/2021 04:13

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21A0376-75 A 01
	Preparation Batch: BJB0303	Sample Size: 13.75 g (wet)	Dry Weight:12.55 g
	Prepared: 02/10/2021	Final Volume: 2.5 mL	% Solids: 91.25
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-75 A 01
	Cleanup Batch: CJB0121	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21A0376-75 A 01
	Cleanup Batch: CJB0119	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-75 A 01
	Cleanup Batch: CJB0120	Initial Volume: 2.5 mL	
	Cleaned: 19-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	19.9	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	19.9	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	19.9	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	19.9	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	19.9	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.8	19.9	46.4	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	19.9	60.2	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*101*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*80.6*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*94.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*77.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:1.5-01262021

21A0376-76 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 08:50
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 18:51

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-76 A 02
	Preparation Batch: BJB0235	Sample Size: 11.89 g (wet)	Dry Weight:10.09 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 84.85
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-76 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-76 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.59	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.35	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.36	ug/kg	J
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	0.20	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.50	0.14	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.13	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	1.03	ug/kg	Q
Anthracene	120-12-7	1	0.07	0.50	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.08	0.50	0.32	ug/kg	J
Pyrene	129-00-0	1	0.09	0.50	0.43	ug/kg	J
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.21	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.41	ug/kg	J
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.28	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.13	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.14	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.23	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*47.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*78.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*77.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:1.5-01262021

21A0376-76 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 08:50
Instrument: FID4 Analyst: CTO — Analyzed: 02/17/2021 14:19

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-76 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:8.48 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 84.85

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.89	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.8	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*110*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:1.5-01262021

21A0376-76 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 08:50

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:08

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-76 B 01

Preparation Batch: BJB0282 — Sample Size: 1.047 g (wet) — Dry Weight:0.89 g

Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 85.14

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.56	35.0	mg/kg	
Chromium	7440-47-3	20	0.15	0.56	13.4	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	5.09	mg/kg	
Lead	7439-92-1	20	0.08	0.11	2.73	mg/kg	
Selenium	7782-49-2	20	0.49	2.24	0.69	mg/kg	J
Silver	7440-22-4	20	0.02	0.22	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	38.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:1.5-01262021

21A0376-76 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 08:50
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:08

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-76 B 01
Preparation Batch: BJB0282 — Sample Size: 1.047 g (wet) — Dry Weight:0.89 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 85.14

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	2.50	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.38	0.56	10.6	mg/kg	
Nickel	7440-02-0	20	0.06	0.56	10.7	mg/kg	
Zinc	7440-66-6	20	0.9	4.5	28.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:1.5-01262021

21A0376-76 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 08:50

Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:56

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-76 B

Preparation Batch: BJB0283 — Sample Size: 0.281 g (wet) — Dry Weight:0.24 g

Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 85.14

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00439	0.0209	0.0185	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:5.0-01262021

21A0376-77 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 08:55
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 19:23

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-77 A 02
	Preparation Batch: BJB0235	Sample Size: 13.68 g (wet)	Dry Weight:10.11 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 73.89
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-77 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-77 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	7.94	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	8.72	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	8.43	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	1.66	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.49	59.8	ug/kg	E
Dibenzofuran	132-64-9	1	0.12	0.49	16.0	ug/kg	Q
Fluorene	86-73-7	1	0.07	0.49	69.7	ug/kg	E
Phenanthrene	85-01-8	1	0.11	0.49	144	ug/kg	Q, E
Anthracene	120-12-7	1	0.07	0.49	38.5	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.49	80.2	ug/kg	E
Pyrene	129-00-0	1	0.09	0.49	53.8	ug/kg	E
Benzo(a)anthracene	56-55-3	1	0.07	0.49	7.89	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	13.1	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	9.13	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	3.45	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	3.72	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.49	6.34	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	4.63	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	1.24	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	6.09	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*52.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*79.6*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*80.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:5.0-01262021

21A0376-77 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 08:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/17/2021 14:40

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-77 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.39 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 73.89

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.77	12.0	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.5	40.5	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*122*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:5.0-01262021

21A0376-77 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 08:55
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:39

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-77 B 01
Preparation Batch: BJB0282 — Sample Size: 1.042 g (wet) — Dry Weight:0.70 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 67.28

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.71	61.0	mg/kg	
Chromium	7440-47-3	20	0.19	0.71	16.7	mg/kg	
Cobalt	7440-48-4	20	0.04	0.29	10.5	mg/kg	
Lead	7439-92-1	20	0.10	0.14	4.17	mg/kg	
Selenium	7782-49-2	20	0.63	2.85	1.26	mg/kg	J
Silver	7440-22-4	20	0.02	0.29	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.29	45.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:5.0-01262021

21A0376-77 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 08:55
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:39

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-77 B 01
Preparation Batch: BJB0282 — Sample Size: 1.042 g (wet) — Dry Weight:0.70 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 67.28

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.29	4.61	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.07	mg/kg	J
Copper	7440-50-8	20	0.48	0.71	20.1	mg/kg	
Nickel	7440-02-0	20	0.07	0.71	14.7	mg/kg	
Zinc	7440-66-6	20	1.2	5.7	38.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:5.0-01262021

21A0376-77 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 08:55

Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 09:58

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-77 B

Preparation Batch: BJB0283 — Sample Size: 0.264 g (wet) — Dry Weight:0.18 g

Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 67.28

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00591	0.0282	0.0676	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-76:5.0-01262021

21A0376-77RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 08:55

Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 11:25

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-77RE1 A

Preparation Batch: BJB0235 — Sample Size: 13.68 g (wet) — Dry Weight:10.11 g

Prepared: 02/08/2021 — Final Volume: 0.5 mL — % Solids: 73.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	10	4.34	5.94	6.74	ug/kg	D
1-Methylnaphthalene	90-12-0	10	1.05	4.95	6.74	ug/kg	D
2-Methylnaphthalene	91-57-6	10	1.27	4.95	6.91	ug/kg	D
Acenaphthylene	208-96-8	10	0.63	4.95	ND	ug/kg	U
Acenaphthene	83-32-9	10	0.88	4.95	59.6	ug/kg	D
Dibenzofuran	132-64-9	10	1.25	4.95	12.1	ug/kg	D
Fluorene	86-73-7	10	0.67	4.95	68.0	ug/kg	D
Phenanthrene	85-01-8	10	1.13	4.95	331	ug/kg	D
Anthracene	120-12-7	10	0.73	4.95	67.3	ug/kg	D
Fluoranthene	206-44-0	10	0.80	4.95	101	ug/kg	D
Pyrene	129-00-0	10	0.88	4.95	61.8	ug/kg	D
Benzo(a)anthracene	56-55-3	10	0.71	4.95	7.40	ug/kg	D
Chrysene	218-01-9	10	0.69	4.95	11.6	ug/kg	D
Benzo(b)fluoranthene	205-99-2	10	0.65	4.95	5.66	ug/kg	D
Benzo(k)fluoranthene	207-08-9	10	1.00	4.95	3.18	ug/kg	J, D
Benzo(j)fluoranthene	205-82-3	10	0.96	4.95	4.12	ug/kg	J, D
Benzo(a)pyrene	50-32-8	10	0.86	4.95	4.40	ug/kg	J, D
Indeno(1,2,3-cd)pyrene	193-39-5	10	0.87	4.95	2.88	ug/kg	J, D
Dibenzo(a,h)anthracene	53-70-3	10	1.04	4.95	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	10	0.84	4.95	3.98	ug/kg	Q, J, D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*42.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*39.1*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*68.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-100:5.0-01262021

21A0376-80 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 08:58
Instrument: NT11 Analyst: VTS — Analyzed: 02/27/2021 19:56

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-80 A 02
	Preparation Batch: BJB0235	Sample Size: 14.1 g (wet)	Dry Weight:10.14 g
	Prepared: 02/08/2021	Final Volume: 0.5 mL	% Solids: 71.90
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-80 A 02
	Cleanup Batch: CJB0183	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-80 A 02
	Cleanup Batch: CJB0182	Initial Volume: 0.5 mL	
	Cleaned: 26-Feb-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	12.3	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	11.1	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	11.5	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	1.69	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.49	31.4	ug/kg	
Dibenzofuran	132-64-9	1	0.12	0.49	18.1	ug/kg	Q
Fluorene	86-73-7	1	0.07	0.49	35.7	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.49	69.2	ug/kg	Q, E
Anthracene	120-12-7	1	0.07	0.49	24.7	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.49	67.7	ug/kg	E
Pyrene	129-00-0	1	0.09	0.49	54.3	ug/kg	E
Benzo(a)anthracene	56-55-3	1	0.07	0.49	15.2	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	21.3	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	13.1	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	5.28	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	5.41	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.49	10.2	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	7.71	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	2.06	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	9.22	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*46.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*81.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*74.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-100:5.0-01262021

21A0376-80 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 08:58
Instrument: FID4 Analyst: CTO — Analyzed: 02/17/2021 15:01

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-80 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.19 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 71.90

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.95	29.2	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.9	63.3	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*114*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-100:5.0-01262021

21A0376-80 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 08:58
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:50

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-80 B 01
Preparation Batch: BJB0282 — Sample Size: 1.087 g (wet) — Dry Weight:0.65 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 59.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.09	0.77	107	mg/kg	
Chromium	7440-47-3	20	0.20	0.77	25.9	mg/kg	
Cobalt	7440-48-4	20	0.04	0.31	12.5	mg/kg	
Lead	7439-92-1	20	0.10	0.15	11.6	mg/kg	
Selenium	7782-49-2	20	0.68	3.08	2.76	mg/kg	J
Silver	7440-22-4	20	0.03	0.31	0.20	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.31	70.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-100:5.0-01262021

21A0376-80 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 08:58
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:50

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-80 B 01
Preparation Batch: BJB0282 — Sample Size: 1.087 g (wet) — Dry Weight:0.65 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 59.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.31	8.20	mg/kg	
Cadmium	7440-43-9	20	0.05	0.15	0.24	mg/kg	
Copper	7440-50-8	20	0.52	0.77	45.6	mg/kg	
Nickel	7440-02-0	20	0.08	0.77	25.8	mg/kg	
Zinc	7440-66-6	20	1.3	6.2	68.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-100:5.0-01262021

21A0376-80 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 08:58

Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:00

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-80 B

Preparation Batch: BJB0283 — Sample Size: 0.266 g (wet) — Dry Weight:0.16 g

Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 59.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00662	0.0315	0.153	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-100:5.0-01262021

21A0376-80RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 08:58

Instrument: NT11 Analyst: VTS — Analyzed: 03/01/2021 16:04

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-80RE1 A 01

Preparation Batch: BJB0235 — Sample Size: 14.1 g (wet) — Dry Weight:10.14 g

Prepared: 02/08/2021 — Final Volume: 0.5 mL — % Solids: 71.90

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	3	1.30	1.78	11.0	ug/kg	D
1-Methylnaphthalene	90-12-0	3	0.31	1.48	10.3	ug/kg	D
2-Methylnaphthalene	91-57-6	3	0.38	1.48	10.1	ug/kg	D
Acenaphthylene	208-96-8	3	0.19	1.48	1.69	ug/kg	D
Acenaphthene	83-32-9	3	0.26	1.48	30.1	ug/kg	D
Dibenzofuran	132-64-9	3	0.37	1.48	16.4	ug/kg	D
Fluorene	86-73-7	3	0.20	1.48	33.5	ug/kg	D
Phenanthrene	85-01-8	3	0.34	1.48	85.0	ug/kg	D
Anthracene	120-12-7	3	0.22	1.48	20.4	ug/kg	D
Fluoranthene	206-44-0	3	0.24	1.48	80.7	ug/kg	D
Pyrene	129-00-0	3	0.26	1.48	60.5	ug/kg	D
Benzo(a)anthracene	56-55-3	3	0.21	1.48	16.1	ug/kg	D
Chrysene	218-01-9	3	0.21	1.48	19.9	ug/kg	D
Benzo(b)fluoranthene	205-99-2	3	0.20	1.48	11.5	ug/kg	D
Benzo(k)fluoranthene	207-08-9	3	0.30	1.48	5.20	ug/kg	D
Benzo(j)fluoranthene	205-82-3	3	0.29	1.48	5.31	ug/kg	D
Benzo(a)pyrene	50-32-8	3	0.26	1.48	8.81	ug/kg	D
Indeno(1,2,3-cd)pyrene	193-39-5	3	0.26	1.48	6.37	ug/kg	D
Dibenzo(a,h)anthracene	53-70-3	3	0.31	1.48	1.34	ug/kg	J, D
Benzo(g,h,i)perylene	191-24-2	3	0.25	1.48	7.54	ug/kg	Q, D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*42.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*56.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*70.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:0.5-01262021

21A0376-81 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 13:20

Instrument: NT5 Analyst: PB — Analyzed: 01/30/2021 02:05

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-81 D

Preparation Batch: BJA0796 — Sample Size: 5.71 g (wet) — Dry Weight:5.21 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 91.30

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.23	0.96	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.32	0.96	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.26	0.96	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.23	0.96	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.20	0.96	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.25	0.96	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*117*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*94.3*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*85.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*97.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:0.5-01262021

21A0376-81 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 13:20

Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 16:52

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-81 A 02

Preparation Batch: BJB0236 — Sample Size: 10.08 g (wet) — Dry Weight:10.03 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 99.51

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	2.16	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	3.35	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	2.95	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.40	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	2.15	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.47	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	11.0	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	2.25	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	12.3	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	12.4	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	12.0	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	13.4	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	11.2	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	6.58	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	6.24	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	11.6	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	9.77	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	3.04	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	12.0	ug/kg	Q
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*49.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*50.6*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*49.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:0.5-01262021

21A0376-81 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 13:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/17/2021 15:22

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-81 A 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:9.95 g
Prepared: 02/06/2021 — Final Volume: 10 mL — % Solids: 99.51

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	50.2	336	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	100	1730	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:0.5-01262021

21A0376-81 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 13:20

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:44

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-81 B 01

Preparation Batch: BJB0282 — Sample Size: 1.062 g (wet) — Dry Weight:0.96 g

Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 90.76

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.52	34.6	mg/kg	
Chromium	7440-47-3	20	0.13	0.52	25.0	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	5.13	mg/kg	
Lead	7439-92-1	20	0.07	0.10	25.1	mg/kg	
Selenium	7782-49-2	20	0.46	2.07	0.61	mg/kg	J
Silver	7440-22-4	20	0.02	0.21	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	33.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:0.5-01262021

21A0376-81 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 13:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:44

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-81 B 01
Preparation Batch: BJB0282 — Sample Size: 1.062 g (wet) — Dry Weight:0.96 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 90.76

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	3.75	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	0.29	mg/kg	
Copper	7440-50-8	20	0.35	0.52	39.3	mg/kg	
Nickel	7440-02-0	20	0.05	0.52	18.2	mg/kg	
Zinc	7440-66-6	20	1.0	4.1	62.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:0.5-01262021

21A0376-81 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 13:20

Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:02

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-81 B

Preparation Batch: BJB0283 — Sample Size: 0.217 g (wet) — Dry Weight:0.20 g

Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 90.76

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00533	0.0254	0.0800	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:0.5-01262021

21A0376-81 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 01/26/2021 13:20

Instrument: BAL2 Analyst: KLE — Analyzed: 02/01/2021 05:16

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-81

Preparation Batch: BJB0003 — Sample Size: 5 g (wet) — Dry Weight:4.57 g

Prepared: 02/01/2021 — Final Volume: 5 g — % Solids: 91.30

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	91.30	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:0.5-01262021

21A0376-81 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 01/26/2021 13:20

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 17:56

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-81 B

Preparation Batch: BJB0295 — Sample Size: 2.6937 g (wet) — Dry Weight:2.46 g

Prepared: 02/09/2021 — Final Volume: 100 g — % Solids: 91.30

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.508	0.508	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:0.5-01262021

21A0376-81RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 13:20

Instrument: NT11 Analyst: VTS — Analyzed: 03/04/2021 11:19

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-81RE1 A 02

Preparation Batch: BJB0236 — Sample Size: 10.08 g (wet) — Dry Weight:10.03 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 99.51

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	3	1.31	1.79	2.26	ug/kg	D
1-Methylnaphthalene	90-12-0	3	0.32	1.50	5.57	ug/kg	D
2-Methylnaphthalene	91-57-6	3	0.38	1.50	3.21	ug/kg	D
Acenaphthylene	208-96-8	3	0.19	1.50	ND	ug/kg	U
Acenaphthene	83-32-9	3	0.27	1.50	ND	ug/kg	U
Dibenzofuran	132-64-9	3	0.38	1.50	2.01	ug/kg	Q, D
Fluorene	86-73-7	3	0.20	1.50	ND	ug/kg	U
Phenanthrene	85-01-8	3	0.34	1.50	11.6	ug/kg	D
Anthracene	120-12-7	3	0.22	1.50	3.16	ug/kg	D
Fluoranthene	206-44-0	3	0.24	1.50	16.9	ug/kg	D
Pyrene	129-00-0	3	0.27	1.50	18.6	ug/kg	D
Benzo(a)anthracene	56-55-3	3	0.22	1.50	11.9	ug/kg	D
Chrysene	218-01-9	3	0.21	1.50	13.8	ug/kg	D
Benzo(b)fluoranthene	205-99-2	3	0.20	1.50	12.7	ug/kg	D
Benzo(k)fluoranthene	207-08-9	3	0.30	1.50	6.97	ug/kg	D
Benzo(j)fluoranthene	205-82-3	3	0.29	1.50	6.69	ug/kg	Q, D
Benzo(a)pyrene	50-32-8	3	0.26	1.50	13.1	ug/kg	D
Indeno(1,2,3-cd)pyrene	193-39-5	3	0.26	1.50	13.9	ug/kg	D
Dibenzo(a,h)anthracene	53-70-3	3	0.31	1.50	4.38	ug/kg	D
Benzo(g,h,i)perylene	191-24-2	3	0.25	1.50	17.2	ug/kg	D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*53.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*72.7*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*57.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021

21A0376-82 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 13:25

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 14:04

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-82 E

Preparation Batch: BJB0028 — Sample Size: 6.34 g (wet) — Dry Weight:4.89 g

Prepared: 02/01/2021 — Final Volume: 5 mL — % Solids: 77.10

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.24	1.02	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.34	1.02	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.27	1.02	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.25	1.02	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.22	1.02	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.26	1.02	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*108*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*94.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021

21A0376-82 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 13:25
Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 17:24

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-82 B 02
	Preparation Batch: BJB0236	Sample Size: 11.11 g (wet)	Dry Weight:10.10 g
	Prepared: 02/09/2021	Final Volume: 0.5 mL	% Solids: 90.89
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-82 B 02
	Cleanup Batch: CJC0017	Initial Volume: 0.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-82 B 02
	Cleanup Batch: CJC0016	Initial Volume: 0.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	4.95	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.50	5.97	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	7.02	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.44	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	2.31	ug/kg	
Dibenzofuran	132-64-9	1	0.12	0.50	2.33	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	2.27	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	47.9	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	12.5	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	55.2	ug/kg	E
Pyrene	129-00-0	1	0.09	0.50	60.7	ug/kg	E
Benzo(a)anthracene	56-55-3	1	0.07	0.50	32.3	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	33.5	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	27.1	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	13.1	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	13.0	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	30.9	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	22.2	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	5.94	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	25.5	ug/kg	Q
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*44.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*57.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*58.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021

21A0376-82 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 13:25
Instrument: FID4 Analyst: CTO — Analyzed: 02/17/2021 15:42

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-82 B 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:9.09 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 90.89

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.50	49.2	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.0	230	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021

21A0376-82 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 13:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/11/2021 14:31

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-82 C 01
Preparation Batch: BJB0282 — Sample Size: 1.074 g (wet) — Dry Weight:0.87 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 80.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.58	38.8	mg/kg	
Chromium	7440-47-3	20	0.15	0.58	11.9	mg/kg	
Cobalt	7440-48-4	20	0.03	0.23	5.24	mg/kg	
Lead	7439-92-1	20	0.08	0.12	3.27	mg/kg	
Selenium	7782-49-2	20	0.51	2.30	1.15	mg/kg	J
Silver	7440-22-4	20	0.02	0.23	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.23	34.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021

21A0376-82 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 13:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:21

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-82 C 01
Preparation Batch: BJB0282 — Sample Size: 1.074 g (wet) — Dry Weight:0.87 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 80.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.23	4.63	mg/kg	
Cadmium	7440-43-9	20	0.03	0.12	0.05	mg/kg	J
Copper	7440-50-8	20	0.39	0.58	15.3	mg/kg	
Nickel	7440-02-0	20	0.06	0.58	10.1	mg/kg	
Zinc	7440-66-6	20	0.9	4.6	26.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021

21A0376-82 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 13:25

Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:04

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-82 C

Preparation Batch: BJB0283 — Sample Size: 0.263 g (wet) — Dry Weight:0.21 g

Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 80.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00493	0.0235	0.0446	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021

21A0376-82 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 01/26/2021 13:25

Instrument: TOC Cube Analyst: BF — Analyzed: 02/06/2021 22:00

Sample Preparation: Preparation Method: PSEP 1986 (modified) — Extract ID: 21A0376-82 C

Preparation Batch: BJB0199 — Sample Size: 0.5082 g (wet) — Dry Weight:0.39 g

Prepared: 02/05/2021 — Final Volume: 0.5082 mL — % Solids: 77.10

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	2.31	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021

21A0376-82 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 01/26/2021 13:25

Instrument: BAL2 Analyst: KLE — Analyzed: 02/01/2021 05:16

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-82

Preparation Batch: BJB0003 — Sample Size: 5 g (wet) — Dry Weight:3.85 g

Prepared: 02/01/2021 — Final Volume: 5 g — % Solids: 77.10

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	77.10	%	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021

21A0376-82 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 01/26/2021 13:25

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 17:58

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-82 C

Preparation Batch: BJB0295 — Sample Size: 2.5346 g (wet) — Dry Weight:1.95 g

Prepared: 02/09/2021 — Final Volume: 100 g — % Solids: 77.10

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.640	0.640	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:5.5-01262021

21A0376-82RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 13:25

Instrument: NT11 Analyst: VTS — Analyzed: 03/04/2021 11:51

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-82RE1 B 01

Preparation Batch: BJB0236 — Sample Size: 11.11 g (wet) — Dry Weight:10.10 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 90.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	3	1.30	1.78	5.22	ug/kg	D
1-Methylnaphthalene	90-12-0	3	0.31	1.49	8.24	ug/kg	D
2-Methylnaphthalene	91-57-6	3	0.38	1.49	7.41	ug/kg	D
Acenaphthylene	208-96-8	3	0.19	1.49	ND	ug/kg	U
Acenaphthene	83-32-9	3	0.26	1.49	2.46	ug/kg	D
Dibenzofuran	132-64-9	3	0.37	1.49	2.47	ug/kg	Q, D
Fluorene	86-73-7	3	0.20	1.49	2.23	ug/kg	D
Phenanthrene	85-01-8	3	0.34	1.49	47.7	ug/kg	D
Anthracene	120-12-7	3	0.22	1.49	14.4	ug/kg	D
Fluoranthene	206-44-0	3	0.24	1.49	60.4	ug/kg	D
Pyrene	129-00-0	3	0.26	1.49	68.1	ug/kg	D
Benzo(a)anthracene	56-55-3	3	0.21	1.49	34.1	ug/kg	D
Chrysene	218-01-9	3	0.21	1.49	35.8	ug/kg	D
Benzo(b)fluoranthene	205-99-2	3	0.20	1.49	28.3	ug/kg	D
Benzo(k)fluoranthene	207-08-9	3	0.30	1.49	15.6	ug/kg	D
Benzo(j)fluoranthene	205-82-3	3	0.29	1.49	14.8	ug/kg	Q, D
Benzo(a)pyrene	50-32-8	3	0.26	1.49	33.9	ug/kg	D
Indeno(1,2,3-cd)pyrene	193-39-5	3	0.26	1.49	26.9	ug/kg	D
Dibenzo(a,h)anthracene	53-70-3	3	0.31	1.49	7.25	ug/kg	D
Benzo(g,h,i)perylene	191-24-2	3	0.25	1.49	32.9	ug/kg	D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*46.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*70.1*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*58.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:9.0-01262021

21A0376-83 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 13:35

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 14:29

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-83 E

Preparation Batch: BJB0028 — Sample Size: 7.67 g (wet) — Dry Weight:5.54 g

Prepared: 02/01/2021 — Final Volume: 5 mL — % Solids: 72.18

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.21	0.90	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.30	0.90	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.24	0.90	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.22	0.90	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.19	0.90	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.23	0.90	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*117*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:9.0-01262021

21A0376-83 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/26/2021 13:35
Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 17:57

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-83 B 02
	Preparation Batch: BJB0236	Sample Size: 13.99 g (wet)	Dry Weight:10.00 g
	Prepared: 02/09/2021	Final Volume: 0.5 mL	% Solids: 71.46
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-83 B 02
	Cleanup Batch: CJC0017	Initial Volume: 0.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-83 B 02
	Cleanup Batch: CJC0016	Initial Volume: 0.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	12.1	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	2.43	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	2.79	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.72	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	0.38	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	1.07	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.45	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	6.20	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.83	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	2.81	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	3.28	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.92	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	2.31	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	1.68	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.51	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.57	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.94	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.11	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.09	0.50	1.59	ug/kg	Q
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*41.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*58.5*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*65.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:9.0-01262021

21A0376-83 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 13:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/17/2021 16:03

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-83 B 01
Preparation Batch: BJB0187 — Sample Size: 10 g (wet) — Dry Weight:7.15 g
Prepared: 02/06/2021 — Final Volume: 1 mL — % Solids: 71.46

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.00	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	14.0	26.5	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*116*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:9.0-01262021

21A0376-83 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 13:35

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:26

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-83 C 01

Preparation Batch: BJB0282 — Sample Size: 1.026 g (wet) — Dry Weight:0.73 g

Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 71.51

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.68	80.7	mg/kg	
Chromium	7440-47-3	20	0.18	0.68	17.8	mg/kg	
Cobalt	7440-48-4	20	0.04	0.27	6.30	mg/kg	
Lead	7439-92-1	20	0.09	0.14	9.84	mg/kg	
Selenium	7782-49-2	20	0.60	2.73	1.51	mg/kg	J
Silver	7440-22-4	20	0.02	0.27	0.08	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.27	45.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:9.0-01262021

21A0376-83 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 13:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:26

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-83 C 01
Preparation Batch: BJB0282 — Sample Size: 1.026 g (wet) — Dry Weight:0.73 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 71.51

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.27	8.53	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.10	mg/kg	J
Copper	7440-50-8	20	0.46	0.68	22.5	mg/kg	
Nickel	7440-02-0	20	0.07	0.68	13.7	mg/kg	
Zinc	7440-66-6	20	1.1	5.5	48.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:9.0-01262021

21A0376-83 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 13:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:07

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-83 C
Preparation Batch: BJB0283 — Sample Size: 0.247 g (wet) — Dry Weight:0.18 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 71.51

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00594	0.0283	0.0757	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:9.0-01262021

21A0376-83 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 01/26/2021 13:35

Instrument: TOC Cube Analyst: BF — Analyzed: 02/06/2021 22:31

Sample Preparation: Preparation Method: PSEP 1986 (modified) — Extract ID: 21A0376-83 C

Preparation Batch: BJB0199 — Sample Size: 0.577 g (wet) — Dry Weight:0.42 g

Prepared: 02/05/2021 — Final Volume: 0.577 mL — % Solids: 72.18

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	1.03	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:9.0-01262021

21A0376-83 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 01/26/2021 13:35

Instrument: BAL2 Analyst: KLE — Analyzed: 02/01/2021 05:16

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-83

Preparation Batch: BJB0003 — Sample Size: 5 g (wet) — Dry Weight:3.61 g

Prepared: 02/01/2021 — Final Volume: 5 g — % Solids: 72.18

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	72.18	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:9.0-01262021

21A0376-83 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 01/26/2021 13:35

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 17:58

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-83 C

Preparation Batch: BJB0295 — Sample Size: 2.5807 g (wet) — Dry Weight:1.86 g

Prepared: 02/09/2021 — Final Volume: 100 g — % Solids: 72.18

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.671	0.671	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:16.0-01262021

21A0376-84 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 13:50

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 14:53

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-84 D

Preparation Batch: BJB0028 — Sample Size: 7.44 g (wet) — Dry Weight:5.60 g

Prepared: 02/01/2021 — Final Volume: 5 mL — % Solids: 75.23

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.21	0.89	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.30	0.89	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.24	0.89	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.21	0.89	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.19	0.89	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.23	0.89	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*116*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-67:20.5-01262021

21A0376-85 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 14:00

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 15:17

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-85 D

Preparation Batch: BJB0028 — Sample Size: 7.21 g (wet) — Dry Weight:5.56 g

Prepared: 02/01/2021 — Final Volume: 5 mL — % Solids: 77.10

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.21	0.90	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.30	0.90	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.24	0.90	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.22	0.90	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.19	0.90	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.23	0.90	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*102*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*99.9*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*96.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:1.5-01272021

21A0376-86 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/27/2021 10:05

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 15:41

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-86 D

Preparation Batch: BJB0028 — Sample Size: 4.11 g (wet) — Dry Weight:3.65 g

Prepared: 02/01/2021 — Final Volume: 5 mL — % Solids: 88.81

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.32	1.37	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.46	1.37	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.36	1.37	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.33	1.37	ND	ug/kg	U
Benzene	71-43-2	1	0.41	1.37	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.29	1.37	ND	ug/kg	U
Toluene	108-88-3	1	0.21	1.37	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.35	1.37	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.28	1.37	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.54	2.74	ND	ug/kg	U
o-Xylene	95-47-6	1	0.31	1.37	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.84	2.74	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*118*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*98.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:1.5-01272021

21A0376-86 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 10:05

Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 18:29

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-86 A 02

Preparation Batch: BJB0236 — Sample Size: 11.3 g (wet) — Dry Weight:10.04 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 88.81

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.29	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	1.99	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	2.23	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	1.01	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	5.04	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.79	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	4.28	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	5.15	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	2.34	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	4.04	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	2.63	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.03	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.98	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	1.69	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	1.31	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.42	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	3.00	ug/kg	Q
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*46.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*62.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*71.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:1.5-01272021

21A0376-86 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 10:05
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 20:35

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-86 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:8.88 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 88.81

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.63	9.54	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.3	24.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*109*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:1.5-01272021

21A0376-86 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/27/2021 10:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:31

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-86 B 01
Preparation Batch: BJB0282 — Sample Size: 1.065 g (wet) — Dry Weight:0.84 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 78.90

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.60	38.9	mg/kg	
Chromium	7440-47-3	20	0.15	0.60	12.1	mg/kg	
Cobalt	7440-48-4	20	0.03	0.24	5.47	mg/kg	
Lead	7439-92-1	20	0.08	0.12	2.99	mg/kg	
Selenium	7782-49-2	20	0.52	2.38	1.20	mg/kg	J
Silver	7440-22-4	20	0.02	0.24	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.24	35.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:1.5-01272021

21A0376-86 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/27/2021 10:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:31

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-86 B 01
Preparation Batch: BJB0282 — Sample Size: 1.065 g (wet) — Dry Weight:0.84 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 78.90

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.24	3.26	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	0.06	mg/kg	J
Copper	7440-50-8	20	0.40	0.60	14.5	mg/kg	
Nickel	7440-02-0	20	0.06	0.60	12.1	mg/kg	
Zinc	7440-66-6	20	1.0	4.8	29.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:1.5-01272021

21A0376-86 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/27/2021 10:05
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:13

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-86 B
Preparation Batch: BJB0283 — Sample Size: 0.267 g (wet) — Dry Weight:0.21 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 78.90

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00498	0.0237	0.0177	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:5.5-01272021

21A0376-87 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/27/2021 10:15

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 16:05

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-87 E

Preparation Batch: BJB0028 — Sample Size: 3.74 g (wet) — Dry Weight:3.46 g

Prepared: 02/01/2021 — Final Volume: 5 mL — % Solids: 92.45

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.34	1.45	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.49	1.45	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.38	1.45	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.35	1.45	ND	ug/kg	U
Benzene	71-43-2	1	0.43	1.45	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.31	1.45	ND	ug/kg	U
Toluene	108-88-3	1	0.22	1.45	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.37	1.45	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.29	1.45	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.57	2.89	ND	ug/kg	U
o-Xylene	95-47-6	1	0.32	1.45	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.89	2.89	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*120*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*98.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*105*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:5.5-01272021

21A0376-87 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 10:15

Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 20:06

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-87 B 02

Preparation Batch: BJB0236 — Sample Size: 10.86 g (wet) — Dry Weight:10.04 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 92.45

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	5.58	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	2.21	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	3.10	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	0.37	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	2.75	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.45	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	0.92	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	1.02	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.41	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.75	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.43	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.23	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.29	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.28	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.23	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.28	ug/kg	Q, J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*49.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*51.6*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*68.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:5.5-01272021

21A0376-87 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 10:15
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 20:56

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-87 B 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:9.24 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 92.45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.41	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.8	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*126*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:5.5-01272021

21A0376-87 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/27/2021 10:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:13

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-87 C 01

Preparation Batch: BJB0282 — Sample Size: 1.02 g (wet) — Dry Weight:0.94 g

Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 92.20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	21.3	mg/kg	
Chromium	7440-47-3	20	0.14	0.53	10.8	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	3.35	mg/kg	
Lead	7439-92-1	20	0.07	0.11	1.81	mg/kg	
Selenium	7782-49-2	20	0.47	2.13	0.97	mg/kg	J
Silver	7440-22-4	20	0.02	0.21	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	28.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:5.5-01272021

21A0376-87 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/27/2021 10:15
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:13

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-87 C 01
Preparation Batch: BJB0282 — Sample Size: 1.02 g (wet) — Dry Weight:0.94 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 92.20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	1.93	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.36	0.53	7.41	mg/kg	
Nickel	7440-02-0	20	0.05	0.53	8.22	mg/kg	
Zinc	7440-66-6	20	0.9	4.3	20.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:5.5-01272021

21A0376-87 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/27/2021 10:15

Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:15

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-87 C

Preparation Batch: BJB0283 — Sample Size: 0.222 g (wet) — Dry Weight:0.20 g

Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 92.20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00513	0.0244	0.00921	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:8.4-01272021

21A0376-88 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/27/2021 10:25

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 16:29

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21A0376-88 D

Preparation Batch: BJB0028 — Sample Size: 4.19 g (wet) — Dry Weight:2.95 g

Prepared: 02/01/2021 — Final Volume: 5 mL — % Solids: 70.38

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.40	1.70	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.57	1.70	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.45	1.70	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.41	1.70	ND	ug/kg	U
Benzene	71-43-2	1	0.50	1.70	617	ug/kg	E
Trichloroethene	79-01-6	1	0.36	1.70	ND	ug/kg	U
Toluene	108-88-3	1	0.26	1.70	27.3	ug/kg	
Tetrachloroethene	127-18-4	1	0.44	1.70	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.34	1.70	114	ug/kg	
m,p-Xylene	179601-23-1	1	0.66	3.39	228	ug/kg	
o-Xylene	95-47-6	1	0.38	1.70	19.0	ug/kg	
Xylenes, total	1330-20-7	1	1.04	3.39	247	ug/kg	
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*123*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*105*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*87.6*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*101*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:8.4-01272021

21A0376-88 (Solid)

Volatile Organic Compounds

Method: EPA 8260D MED — Sampled: 01/27/2021 10:25

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 15:51

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21A0376-88 C

Preparation Batch: BJB0420 — Sample Size: 3.944 g (wet) — Dry Weight:2.78 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 70.38

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	50	17.3	111	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	50	17.6	111	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.50	2.22	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	50	20.0	111	ND	ug/kg	U
Benzene	71-43-2	50	18.2	111	921	ug/kg	
Trichloroethene	79-01-6	50	20.0	111	ND	ug/kg	U
Toluene	108-88-3	50	19.1	111	5010	ug/kg	
Tetrachloroethene	127-18-4	50	30.7	111	ND	ug/kg	U
Ethylbenzene	100-41-4	50	30.2	111	4510	ug/kg	
m,p-Xylene	179601-23-1	50	62.0	222	10500	ug/kg	
o-Xylene	95-47-6	50	25.3	111	1770	ug/kg	
Xylenes, total	1330-20-7	50	86.0	222	12200	ug/kg	
Surrogate: Dibromofluoromethane				*30-160 %*	*89.2*	*%*	
Surrogate: 1,2-Dichloroethane-d4				*80-124 %*	*126*	*%*	*
Surrogate: Toluene-d8				*80-120 %*	*106*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*95.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:8.4-01272021

21A0376-88 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 10:25

Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 20:39

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-88 A 02

Preparation Batch: BJB0236 — Sample Size: 14.26 g (wet) — Dry Weight:10.04 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 70.38

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	229	ug/kg	E
1-Methylnaphthalene	90-12-0	1	0.11	0.50	170	ug/kg	E
2-Methylnaphthalene	91-57-6	1	0.13	0.50	185	ug/kg	E
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	8.20	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	6.22	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	20.2	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	39.0	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	7.55	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	10.3	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	14.9	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	3.70	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	5.19	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	1.61	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.79	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.75	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	2.25	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.79	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.36	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	1.67	ug/kg	Q
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*59.9*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*67.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:8.4-01272021

21A0376-88 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 10:25
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 21:59

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-88 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:7.04 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 70.38

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.10	99.6	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	14.2	95.8	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*107*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:8.4-01272021

21A0376-88 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/27/2021 10:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:46

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-88 B 01
Preparation Batch: BJB0282 — Sample Size: 1.018 g (wet) — Dry Weight:0.72 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 70.26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.70	54.7	mg/kg	
Chromium	7440-47-3	20	0.18	0.70	13.3	mg/kg	
Cobalt	7440-48-4	20	0.04	0.28	11.0	mg/kg	
Lead	7439-92-1	20	0.10	0.14	5.74	mg/kg	
Selenium	7782-49-2	20	0.62	2.80	0.90	mg/kg	J
Silver	7440-22-4	20	0.02	0.28	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.28	42.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:8.4-01272021

21A0376-88 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/27/2021 10:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:46

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-88 B 01
Preparation Batch: BJB0282 — Sample Size: 1.018 g (wet) — Dry Weight:0.72 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 70.26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.28	8.10	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.28	mg/kg	
Copper	7440-50-8	20	0.48	0.70	20.3	mg/kg	
Nickel	7440-02-0	20	0.07	0.70	17.9	mg/kg	
Zinc	7440-66-6	20	1.1	5.6	43.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:8.4-01272021

21A0376-88 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/27/2021 10:25
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:17

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-88 B
Preparation Batch: BJB0283 — Sample Size: 0.237 g (wet) — Dry Weight:0.17 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 70.26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00631	0.0300	0.0573	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-58:8.4-01272021

21A0376-88RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 10:25

Instrument: NT11 Analyst: VTS — Analyzed: 03/04/2021 12:24

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-88RE1 A 02

Preparation Batch: BJB0236 — Sample Size: 14.26 g (wet) — Dry Weight:10.04 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 70.38

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	10	4.37	5.98	524	ug/kg	D, E
1-Methylnaphthalene	90-12-0	10	1.06	4.98	282	ug/kg	D
2-Methylnaphthalene	91-57-6	10	1.28	4.98	361	ug/kg	D
Acenaphthylene	208-96-8	10	0.64	4.98	ND	ug/kg	U
Acenaphthene	83-32-9	10	0.89	4.98	8.34	ug/kg	D
Dibenzofuran	132-64-9	10	1.26	4.98	5.77	ug/kg	Q, D
Fluorene	86-73-7	10	0.68	4.98	18.6	ug/kg	D
Phenanthrene	85-01-8	10	1.14	4.98	39.0	ug/kg	D
Anthracene	120-12-7	10	0.74	4.98	7.50	ug/kg	D
Fluoranthene	206-44-0	10	0.81	4.98	9.75	ug/kg	D
Pyrene	129-00-0	10	0.89	4.98	15.6	ug/kg	D
Benzo(a)anthracene	56-55-3	10	0.72	4.98	3.92	ug/kg	J, D
Chrysene	218-01-9	10	0.70	4.98	5.08	ug/kg	D
Benzo(b)fluoranthene	205-99-2	10	0.66	4.98	ND	ug/kg	U
Benzo(k)fluoranthene	207-08-9	10	1.01	4.98	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	10	0.97	4.98	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	10	0.87	4.98	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	10	0.88	4.98	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	1.05	4.98	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	10	0.85	4.98	2.39	ug/kg	J, D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*41.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*67.0*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*61.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:5-01272021

21A0376-91 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 13:30
Instrument: NT11 Analyst: VTS — Analyzed: 03/04/2021 12:56

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-91 A 01
	Preparation Batch: BJB0236	Sample Size: 13.61 g (wet)	Dry Weight:10.01 g
	Prepared: 02/09/2021	Final Volume: 0.5 mL	% Solids: 73.58
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-91 A 01
	Cleanup Batch: CJC0017	Initial Volume: 0.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-91 A 01
	Cleanup Batch: CJC0016	Initial Volume: 0.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	10	4.38	5.99	254	ug/kg	D
1-Methylnaphthalene	90-12-0	10	1.06	4.99	817	ug/kg	D, E
2-Methylnaphthalene	91-57-6	10	1.28	4.99	878	ug/kg	D, E
Acenaphthylene	208-96-8	10	0.64	4.99	ND	ug/kg	U
Acenaphthene	83-32-9	10	0.89	4.99	ND	ug/kg	U
Dibenzofuran	132-64-9	10	1.26	4.99	94.9	ug/kg	Q, D
Fluorene	86-73-7	10	0.68	4.99	125	ug/kg	D
Phenanthrene	85-01-8	10	1.14	4.99	72.5	ug/kg	D
Anthracene	120-12-7	10	0.74	4.99	ND	ug/kg	U
Fluoranthene	206-44-0	10	0.81	4.99	33.0	ug/kg	D
Pyrene	129-00-0	10	0.89	4.99	28.7	ug/kg	D
Benzo(a)anthracene	56-55-3	10	0.72	4.99	10.1	ug/kg	D
Chrysene	218-01-9	10	0.70	4.99	17.7	ug/kg	D
Benzo(b)fluoranthene	205-99-2	10	0.66	4.99	9.56	ug/kg	D
Benzo(k)fluoranthene	207-08-9	10	1.01	4.99	3.88	ug/kg	J, D
Benzo(j)fluoranthene	205-82-3	10	0.97	4.99	3.86	ug/kg	Q, J, D
Benzo(a)pyrene	50-32-8	10	0.87	4.99	6.23	ug/kg	D
Indeno(1,2,3-cd)pyrene	193-39-5	10	0.88	4.99	5.15	ug/kg	D
Dibenzo(a,h)anthracene	53-70-3	10	1.05	4.99	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	10	0.85	4.99	8.08	ug/kg	D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*		*%*	*, U
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*87.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*78.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:5-01272021

21A0376-91 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/18/2021 02:04

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-91 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:7.36 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 73.58

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	20	136	4420	mg/kg	D
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	20	272	1460	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*117*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:5-01272021

21A0376-91 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/27/2021 13:30

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:50

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-91 B 01

Preparation Batch: BJB0282 — Sample Size: 1.076 g (wet) — Dry Weight:0.73 g

Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 67.38

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.69	97.3	mg/kg	
Chromium	7440-47-3	20	0.18	0.69	21.7	mg/kg	
Cobalt	7440-48-4	20	0.04	0.28	8.72	mg/kg	
Lead	7439-92-1	20	0.09	0.14	9.77	mg/kg	
Selenium	7782-49-2	20	0.61	2.76	2.53	mg/kg	J
Silver	7440-22-4	20	0.02	0.28	0.17	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.28	60.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:5-01272021

21A0376-91 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/27/2021 13:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:50

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-91 B 01
Preparation Batch: BJB0282 — Sample Size: 1.076 g (wet) — Dry Weight:0.73 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 67.38

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.28	8.50	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.09	mg/kg	J
Copper	7440-50-8	20	0.47	0.69	42.1	mg/kg	
Nickel	7440-02-0	20	0.07	0.69	19.7	mg/kg	
Zinc	7440-66-6	20	1.1	5.5	59.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:5-01272021

21A0376-91 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/27/2021 13:30

Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:20

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-91 B

Preparation Batch: BJB0283 — Sample Size: 0.258 g (wet) — Dry Weight:0.17 g

Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 67.38

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00604	0.0288	0.121	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:5-01272021

21A0376-91RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 13:30
Instrument: NT11 Analyst: VTS — Analyzed: 03/05/2021 20:43

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21A0376-91RE1 A 01
	Preparation Batch: BJB0236	Sample Size: 13.61 g (wet)	Dry Weight:10.01 g
	Prepared: 02/09/2021	Final Volume: 0.5 mL	% Solids: 73.58
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21A0376-91RE1 A 01
	Cleanup Batch: CJC0017	Initial Volume: 0.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21A0376-91RE1 A 01
	Cleanup Batch: CJC0016	Initial Volume: 0.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	100	43.8	59.9	414	ug/kg	D
1-Methylnaphthalene	90-12-0	100	10.6	49.9	1790	ug/kg	D
2-Methylnaphthalene	91-57-6	100	12.8	49.9	2180	ug/kg	D
Acenaphthylene	208-96-8	100	6.39	49.9	40.5	ug/kg	J, D
Acenaphthene	83-32-9	100	8.89	49.9	11.6	ug/kg	J, D
Dibenzofuran	132-64-9	100	12.6	49.9	119	ug/kg	D
Fluorene	86-73-7	100	6.79	49.9	173	ug/kg	D
Phenanthrene	85-01-8	100	11.4	49.9	99.5	ug/kg	Q, D
Anthracene	120-12-7	100	7.39	49.9	ND	ug/kg	U
Fluoranthene	206-44-0	100	8.09	49.9	47.8	ug/kg	J, D
Pyrene	129-00-0	100	8.89	49.9	44.6	ug/kg	J, D
Benzo(a)anthracene	56-55-3	100	7.19	49.9	10.7	ug/kg	J, D
Chrysene	218-01-9	100	6.99	49.9	19.2	ug/kg	J, D
Benzo(b)fluoranthene	205-99-2	100	6.59	49.9	10.0	ug/kg	J, D
Benzo(k)fluoranthene	207-08-9	100	10.1	49.9	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	100	9.69	49.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	100	8.69	49.9	11.0	ug/kg	J, D
Indeno(1,2,3-cd)pyrene	193-39-5	100	8.79	49.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	100	10.5	49.9	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	100	8.49	49.9	ND	ug/kg	U
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*		*D1*	D1
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*		*D1*	D1
Surrogate: Fluoranthene-d10				*30-160 %*		*D1*	D1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:6-01272021

21A0376-92 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 13:40

Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 21:44

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-92 A 02

Preparation Batch: BJB0236 — Sample Size: 10.78 g (wet) — Dry Weight:10.06 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 93.28

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.71	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	2.40	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	3.26	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.08	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	0.28	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.30	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	0.70	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.08	0.50	0.50	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	0.50	ug/kg	J
Benzo(a)anthracene	56-55-3	1	0.07	0.50	ND	ug/kg	U
Chrysene	218-01-9	1	0.07	0.50	0.29	ug/kg	J
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	ND	ug/kg	U
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	0.09	0.50	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	ND	ug/kg	Q, U
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*40.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*62.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*66.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:6-01272021

21A0376-92 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:40

Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 22:40

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-92 A 02

Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:9.33 g

Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 93.28

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.36	8.20	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	10.7	12.9	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*106*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:6-01272021

21A0376-92 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/27/2021 13:40

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:18

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-92 B 01

Preparation Batch: BJB0282 — Sample Size: 1.089 g (wet) — Dry Weight:1.02 g

Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 93.54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.05	0.49	16.0	mg/kg	
Chromium	7440-47-3	20	0.13	0.49	9.03	mg/kg	
Cobalt	7440-48-4	20	0.03	0.20	3.56	mg/kg	
Lead	7439-92-1	20	0.07	0.10	1.44	mg/kg	
Selenium	7782-49-2	20	0.43	1.96	0.62	mg/kg	J
Silver	7440-22-4	20	0.02	0.20	0.02	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	29.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:6-01272021

21A0376-92 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/27/2021 13:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:18

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-92 B 01
Preparation Batch: BJB0282 — Sample Size: 1.089 g (wet) — Dry Weight:1.02 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 93.54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	2.16	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	ND	mg/kg	U
Copper	7440-50-8	20	0.33	0.49	7.25	mg/kg	
Nickel	7440-02-0	20	0.05	0.49	7.19	mg/kg	
Zinc	7440-66-6	20	0.8	3.9	20.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:6-01272021

21A0376-92 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/27/2021 13:40
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:22

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-92 B
Preparation Batch: BJB0283 — Sample Size: 0.258 g (wet) — Dry Weight:0.24 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 93.54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00435	0.0207	0.0158	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:10-01272021

21A0376-93 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 13:45

Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 22:16

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-93 A 02

Preparation Batch: BJB0236 — Sample Size: 13.29 g (wet) — Dry Weight:10.01 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 75.30

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	11.0	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	16.5	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	19.7	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	1.14	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	1.96	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	3.30	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	3.00	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	18.6	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	6.28	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	24.3	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	28.6	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	12.3	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	14.8	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	10.9	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	5.39	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	5.53	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	15.1	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	7.54	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	2.04	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	8.54	ug/kg	Q
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*50.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*61.0*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*64.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:10-01272021

21A0376-93 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 13:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 23:01

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-93 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:7.53 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 75.30

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.64	23.7	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.3	34.0	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*107*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:10-01272021

21A0376-93 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/27/2021 13:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 17:21

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-93 B 01
Preparation Batch: BJB0285 — Sample Size: 1.016 g (wet) — Dry Weight:0.75 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 74.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.66	83.4	mg/kg	
Chromium	7440-47-3	20	0.17	0.66	21.2	mg/kg	
Cobalt	7440-48-4	20	0.04	0.26	7.07	mg/kg	
Lead	7439-92-1	20	0.09	0.13	4.79	mg/kg	
Selenium	7782-49-2	20	0.58	2.65	1.16	mg/kg	J
Silver	7440-22-4	20	0.02	0.26	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.26	47.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:10-01272021

21A0376-93 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/27/2021 13:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 17:21

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-93 B 01
Preparation Batch: BJB0285 — Sample Size: 1.016 g (wet) — Dry Weight:0.75 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 74.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.26	4.57	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.06	mg/kg	J
Copper	7440-50-8	20	0.45	0.66	18.4	mg/kg	
Nickel	7440-02-0	20	0.07	0.66	18.7	mg/kg	
Zinc	7440-66-6	20	1.1	5.3	45.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-57:10-01272021

21A0376-93 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/27/2021 13:45
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:28

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-93 B
Preparation Batch: BJB0287 — Sample Size: 0.273 g (wet) — Dry Weight:0.20 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 74.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00518	0.0247	0.0428	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:1-01272021

21A0376-96 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 15:35

Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 22:48

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-96 A 02

Preparation Batch: BJB0236 — Sample Size: 11.73 g (wet) — Dry Weight:10.04 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 85.57

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.24	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	2.56	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	2.49	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	0.95	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	5.05	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.67	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	2.19	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	2.53	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.21	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	1.93	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	1.26	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.41	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.41	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.70	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.47	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.63	ug/kg	Q
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*42.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*60.7*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*65.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:1-01272021

21A0376-96 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 15:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 23:22

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-96 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:8.56 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 85.57

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.84	29.3	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.7	39.3	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*111*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:1-01272021

21A0376-96 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/27/2021 15:35

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 18:23

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-96 B 01

Preparation Batch: BJB0285 — Sample Size: 1.018 g (wet) — Dry Weight:0.85 g

Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 83.36

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.59	43.9	mg/kg	
Chromium	7440-47-3	20	0.15	0.59	12.6	mg/kg	
Cobalt	7440-48-4	20	0.03	0.24	5.63	mg/kg	
Lead	7439-92-1	20	0.08	0.12	3.23	mg/kg	
Selenium	7782-49-2	20	0.52	2.36	1.04	mg/kg	J
Silver	7440-22-4	20	0.02	0.24	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.24	37.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:1-01272021

21A0376-96 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/27/2021 15:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/11/2021 14:36

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-96 B 01
Preparation Batch: BJB0285 — Sample Size: 1.018 g (wet) — Dry Weight:0.85 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 83.36

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.24	3.25	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	ND	mg/kg	U
Copper	7440-50-8	20	0.40	0.59	12.3	mg/kg	
Nickel	7440-02-0	20	0.06	0.59	11.1	mg/kg	
Zinc	7440-66-6	20	1.0	4.7	31.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:1-01272021

21A0376-96 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/27/2021 15:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:50

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-96 B
Preparation Batch: BJB0287 — Sample Size: 0.228 g (wet) — Dry Weight:0.19 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 83.36

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00552	0.0263	0.0203	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:1-01272021

21A0376-96 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 01/27/2021 15:35

Instrument: BAL2 Analyst: KLE — Analyzed: 02/01/2021 05:16

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-96

Preparation Batch: BJB0003 — Sample Size: 5 g (wet) — Dry Weight:4.28 g

Prepared: 02/01/2021 — Final Volume: 5 g — % Solids: 85.63

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	85.63	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:1-01272021

21A0376-96RE1 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 01/27/2021 15:35

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 18:18

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-96RE1 B

Preparation Batch: BJB0295 — Sample Size: 2.9552 g (wet) — Dry Weight:2.53 g

Prepared: 02/09/2021 — Final Volume: 100 g — % Solids: 85.63

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.494	0.494	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:5-01272021

21A0376-97 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 15:45

Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 23:21

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-97 A 02

Preparation Batch: BJB0236 — Sample Size: 10.78 g (wet) — Dry Weight:10.04 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 93.10

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	0.52	ug/kg	J
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.65	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.71	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	0.31	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.07	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	1.23	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.19	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	0.57	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	0.64	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.28	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.48	ug/kg	J
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.33	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.11	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.10	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.40	ug/kg	Q, J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*45.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*59.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*67.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:5-01272021

21A0376-97 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 15:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/12/2021 23:42

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-97 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:9.31 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 93.10

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.37	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.7	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*110*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:5-01272021

21A0376-97 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/27/2021 15:45

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:56

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-97 B 01

Preparation Batch: BJB0285 — Sample Size: 1.026 g (wet) — Dry Weight:0.79 g

Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 76.82

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.63	66.5	mg/kg	
Chromium	7440-47-3	20	0.16	0.63	17.0	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	7.81	mg/kg	
Lead	7439-92-1	20	0.09	0.13	7.71	mg/kg	
Selenium	7782-49-2	20	0.56	2.54	1.69	mg/kg	J
Silver	7440-22-4	20	0.02	0.25	0.12	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	50.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:5-01272021

21A0376-97 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/27/2021 15:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 20:56

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-97 B 01
Preparation Batch: BJB0285 — Sample Size: 1.026 g (wet) — Dry Weight:0.79 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 76.82

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	6.63	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.08	mg/kg	J
Copper	7440-50-8	20	0.43	0.63	25.7	mg/kg	
Nickel	7440-02-0	20	0.06	0.63	16.4	mg/kg	
Zinc	7440-66-6	20	1.0	5.1	45.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:5-01272021

21A0376-97 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/27/2021 15:45
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:52

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-97 B
Preparation Batch: BJB0287 — Sample Size: 0.205 g (wet) — Dry Weight:0.16 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 76.82

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00667	0.0317	0.0455	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:5-01272021

21A0376-97 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 01/27/2021 15:45

Instrument: BAL2 Analyst: KLE — Analyzed: 02/01/2021 05:16

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-97

Preparation Batch: BJB0003 — Sample Size: 5 g (wet) — Dry Weight:4.62 g

Prepared: 02/01/2021 — Final Volume: 5 g — % Solids: 92.40

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	92.40	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:5-01272021

21A0376-97 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 01/27/2021 15:45

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 18:18

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-97 B

Preparation Batch: BJB0295 — Sample Size: 2.9818 g (wet) — Dry Weight:2.76 g

Prepared: 02/09/2021 — Final Volume: 100 g — % Solids: 92.40

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.454	0.454	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:8.6-01272021

21A0376-98 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/27/2021 15:55

Instrument: NT11 Analyst: VTS — Analyzed: 03/02/2021 23:53

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Low Level — Extract ID: 21A0376-98 A 02

Preparation Batch: BJB0236 — Sample Size: 12.88 g (wet) — Dry Weight:10.01 g

Prepared: 02/09/2021 — Final Volume: 0.5 mL — % Solids: 77.71

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	12.7	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	4.49	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	5.45	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	1.45	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	2.32	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	2.80	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	2.63	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	23.4	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	6.88	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	29.2	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	34.0	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	11.7	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	16.4	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	13.2	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	6.23	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	6.64	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	16.4	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	9.04	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	2.28	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	10.8	ug/kg	Q
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*39.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*60.0*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*69.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:8.6-01272021

21A0376-98 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/27/2021 15:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/13/2021 00:03

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21A0376-98 A 02
Preparation Batch: BJB0240 — Sample Size: 10 g (wet) — Dry Weight:7.77 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 77.71

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.43	8.56	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.9	36.3	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:8.6-01272021

21A0376-98 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/27/2021 15:55

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 21:02

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-98 B 01

Preparation Batch: BJB0285 — Sample Size: 1.034 g (wet) — Dry Weight:0.75 g

Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 72.61

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.67	62.5	mg/kg	
Chromium	7440-47-3	20	0.17	0.67	16.7	mg/kg	
Cobalt	7440-48-4	20	0.04	0.27	7.48	mg/kg	
Lead	7439-92-1	20	0.09	0.13	5.79	mg/kg	
Selenium	7782-49-2	20	0.59	2.66	1.57	mg/kg	J
Silver	7440-22-4	20	0.02	0.27	0.09	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.27	47.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:8.6-01272021

21A0376-98 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/27/2021 15:55
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 21:02

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21A0376-98 B 01
Preparation Batch: BJB0285 — Sample Size: 1.034 g (wet) — Dry Weight:0.75 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 72.61

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.27	5.25	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.09	mg/kg	J
Copper	7440-50-8	20	0.45	0.67	20.8	mg/kg	
Nickel	7440-02-0	20	0.07	0.67	14.6	mg/kg	
Zinc	7440-66-6	20	1.1	5.3	40.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:8.6-01272021

21A0376-98 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/27/2021 15:55
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:54

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21A0376-98 B
Preparation Batch: BJB0287 — Sample Size: 0.215 g (wet) — Dry Weight:0.16 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 72.61

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00673	0.0320	0.0495	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:8.6-01272021

21A0376-98 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 01/27/2021 15:55

Instrument: BAL2 Analyst: KLE — Analyzed: 02/01/2021 05:16

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-98

Preparation Batch: BJB0003 — Sample Size: 5 g (wet) — Dry Weight:3.88 g

Prepared: 02/01/2021 — Final Volume: 5 g — % Solids: 77.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	77.52	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

MW-62:8.6-01272021

21A0376-98 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 01/27/2021 15:55

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 18:20

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21A0376-98 B

Preparation Batch: BJB0295 — Sample Size: 3.2462 g (wet) — Dry Weight:2.52 g

Prepared: 02/09/2021 — Final Volume: 100 g — % Solids: 77.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.497	0.497	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJA0778 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0778-BLK1)				Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 11:35							
Gasoline Range Organics (Tol-Nap)	ND		100	ug/L							U
Surrogate: Toluene-d8	4.62			ug/L	*5.00*		*92.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.41			ug/L	*5.00*		*88.3*	*80-120*			
Blank (BJA0778-BLK2)				Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 11:35							
Vinyl Chloride	ND	0.08	0.20	ug/L							U
1,1-Dichloroethene	ND	0.08	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.07	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.08	0.20	ug/L							U
Benzene	ND	0.05	0.20	ug/L							U
Trichloroethene	ND	0.07	0.20	ug/L							U
Toluene	ND	0.05	0.20	ug/L							U
Tetrachloroethene	ND	0.09	0.20	ug/L							U
Ethylbenzene	ND	0.05	0.20	ug/L							U
m,p-Xylene	ND	0.14	0.40	ug/L							U
o-Xylene	ND	0.08	0.20	ug/L							U
Xylenes, total	ND	0.22	0.60	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.60			ug/L	*5.00*		*92.0*	*80-129*			
Surrogate: Toluene-d8	4.62			ug/L	*5.00*		*92.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.41			ug/L	*5.00*		*88.3*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.05			ug/L	*5.00*		*101*	*80-120*			
LCS (BJA0778-BS1)				Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 09:48							
Gasoline Range Organics (Tol-Nap)	1050		100	ug/L	1000		105	72-128			
Surrogate: Toluene-d8	4.91			ug/L	*5.00*		*98.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.93			ug/L	*5.00*		*98.6*	*80-120*			
LCS (BJA0778-BS2)				Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 10:30							
Vinyl Chloride	9.12	0.08	0.20	ug/L	10.0		91.2	66-133			
1,1-Dichloroethene	9.43	0.08	0.20	ug/L	10.0		94.3	69-135			
trans-1,2-Dichloroethene	10.7	0.07	0.20	ug/L	10.0		107	78-128			
cis-1,2-Dichloroethene	9.78	0.08	0.20	ug/L	10.0		97.8	80-121			
Benzene	10.3	0.05	0.20	ug/L	10.0		103	80-120			
Trichloroethene	10.8	0.07	0.20	ug/L	10.0		108	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJA0778 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJA0778-BS2)					Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 10:30						
Toluene	10.2	0.05	0.20	ug/L	10.0		102	80-120			
Tetrachloroethene	11.4	0.09	0.20	ug/L	10.0		114	80-120			
Ethylbenzene	10.3	0.05	0.20	ug/L	10.0		103	80-120			
m,p-Xylene	19.6	0.14	0.40	ug/L	20.0		97.8	80-121			
o-Xylene	10.1	0.08	0.20	ug/L	10.0		101	80-121			
Xylenes, total	29.7	0.22	0.60	ug/L	30.0		98.9	76-127			
Surrogate: 1,2-Dichloroethane-d4	4.40			ug/L	*5.00*		*87.9*	*80-129*			
Surrogate: Toluene-d8	4.87			ug/L	*5.00*		*97.4*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.04			ug/L	*5.00*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.96			ug/L	*5.00*		*99.1*	*80-120*			
LCS Dup (BJA0778-BSD1)					Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 10:09						
Gasoline Range Organics (Tol-Nap)	1040		100	ug/L	1000		104	72-128	0.45	30	
Surrogate: Toluene-d8	4.92			ug/L	*5.00*		*98.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.89			ug/L	*5.00*		*97.9*	*80-120*			
LCS Dup (BJA0778-BSD2)					Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 10:50						
Vinyl Chloride	9.57	0.08	0.20	ug/L	10.0		95.7	66-133	4.85	30	
1,1-Dichloroethene	9.80	0.08	0.20	ug/L	10.0		98.0	69-135	3.86	30	
trans-1,2-Dichloroethene	11.1	0.07	0.20	ug/L	10.0		111	78-128	4.09	30	
cis-1,2-Dichloroethene	10.1	0.08	0.20	ug/L	10.0		101	80-121	3.49	30	
Benzene	10.7	0.05	0.20	ug/L	10.0		107	80-120	3.56	30	
Trichloroethene	11.2	0.07	0.20	ug/L	10.0		112	80-120	4.11	30	
Toluene	10.6	0.05	0.20	ug/L	10.0		106	80-120	4.02	30	
Tetrachloroethene	11.9	0.09	0.20	ug/L	10.0		119	80-120	3.95	30	
Ethylbenzene	10.8	0.05	0.20	ug/L	10.0		108	80-120	4.44	30	
m,p-Xylene	20.4	0.14	0.40	ug/L	20.0		102	80-121	4.33	30	
o-Xylene	10.5	0.08	0.20	ug/L	10.0		105	80-121	3.75	30	
Xylenes, total	30.9	0.22	0.60	ug/L	30.0		103	76-127	4.13	30	
Surrogate: 1,2-Dichloroethane-d4	4.39			ug/L	*5.00*		*87.8*	*80-129*			
Surrogate: Toluene-d8	4.88			ug/L	*5.00*		*97.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.05			ug/L	*5.00*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.02			ug/L	*5.00*		*100*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJA0779 - EPA 5035 (Methanol Extraction)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0779-BLK1)				Prepared: 29-Jan-2021	Analyzed: 29-Jan-2021 11:35					
Gasoline Range Organics (Tol-Nap)	ND	5000	ug/kg							U
Surrogate: Toluene-d8	4.62		ug/kg	*5.00*		*92.5*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.41		ug/kg	*5.00*		*88.3*	*78-123*			
LCS (BJA0779-BS1)				Prepared: 29-Jan-2021	Analyzed: 29-Jan-2021 09:48					
Gasoline Range Organics (Tol-Nap)	52300	5000	ug/kg	50000		105	70-121			
Surrogate: Toluene-d8	4.91		ug/kg	*5.00*		*98.2*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.93		ug/kg	*5.00*		*98.6*	*78-123*			
LCS Dup (BJA0779-BSD1)				Prepared: 29-Jan-2021	Analyzed: 29-Jan-2021 10:09					
Gasoline Range Organics (Tol-Nap)	52100	5000	ug/kg	50000		104	70-121	0.45	30	
Surrogate: Toluene-d8	4.92		ug/kg	*5.00*		*98.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.89		ug/kg	*5.00*		*97.9*	*78-123*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJA0796 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJA0796-BLK1)				Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 17:13							
Vinyl Chloride	ND	0.24	1.00	ug/kg							U
1,1-Dichloroethene	ND	0.34	1.00	ug/kg							U
trans-1,2-Dichloroethene	ND	0.27	1.00	ug/kg							U
cis-1,2-Dichloroethene	ND	0.24	1.00	ug/kg							U
Benzene	ND	0.30	1.00	ug/kg							U
Trichloroethene	ND	0.21	1.00	ug/kg							U
Toluene	ND	0.15	1.00	ug/kg							U
Tetrachloroethene	ND	0.26	1.00	ug/kg							U
Ethylbenzene	ND	0.20	1.00	ug/kg							U
m,p-Xylene	ND	0.39	2.00	ug/kg							U
o-Xylene	ND	0.22	1.00	ug/kg							U
Xylenes, total	ND	0.62	2.00	ug/kg							U
Surrogate: 1,2-Dichloroethane-d4	51.5			ug/kg	*50.0*		*103*	*80-149*			
Surrogate: Toluene-d8	49.7			ug/kg	*50.0*		*99.3*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.3			ug/kg	*50.0*		*98.6*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.8			ug/kg	*50.0*		*102*	*80-120*			
LCS (BJA0796-BS1)				Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 16:25							
Vinyl Chloride	49.1			ug/kg	50.0		98.1	74-135			
1,1-Dichloroethene	46.5			ug/kg	50.0		93.1	77-134			
trans-1,2-Dichloroethene	46.8			ug/kg	50.0		93.6	79-130			
cis-1,2-Dichloroethene	47.7			ug/kg	50.0		95.4	80-125			
Benzene	47.7			ug/kg	50.0		95.4	80-120			
Trichloroethene	47.9			ug/kg	50.0		95.8	80-120			
Toluene	48.5			ug/kg	50.0		97.0	75-120			
Tetrachloroethene	48.7			ug/kg	50.0		97.4	74-124			
Ethylbenzene	48.8			ug/kg	50.0		97.5	80-125			
m,p-Xylene	97.7			ug/kg	100		97.7	76-121			
o-Xylene	49.3			ug/kg	50.0		98.5	67-132			
Xylenes, total	147			ug/kg	150		98.0	67-132			
Surrogate: 1,2-Dichloroethane-d4	50.2			ug/kg	*50.0*		*100*	*80-149*			
Surrogate: Toluene-d8	50.0			ug/kg	*50.0*		*100*	*77-120*			
Surrogate: 4-Bromofluorobenzene	50.1			ug/kg	*50.0*		*100*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	49.3			ug/kg	*50.0*		*98.5*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJA0796 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJA0796-BSD1)					Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 16:49						
Vinyl Chloride	47.8			ug/kg	50.0		95.6	74-135	2.59	30	
1,1-Dichloroethene	46.4			ug/kg	50.0		92.7	77-134	0.41	30	
trans-1,2-Dichloroethene	47.6			ug/kg	50.0		95.1	79-130	1.65	30	
cis-1,2-Dichloroethene	46.8			ug/kg	50.0		93.7	80-125	1.85	30	
Benzene	47.6			ug/kg	50.0		95.2	80-120	0.21	30	
Trichloroethene	48.5			ug/kg	50.0		96.9	80-120	1.15	30	
Toluene	48.8			ug/kg	50.0		97.7	75-120	0.66	30	
Tetrachloroethene	48.0			ug/kg	50.0		95.9	74-124	1.50	30	
Ethylbenzene	48.1			ug/kg	50.0		96.3	80-125	1.30	30	
m,p-Xylene	96.4			ug/kg	100		96.4	76-121	1.29	30	
o-Xylene	48.5			ug/kg	50.0		97.1	67-132	1.46	30	
Xylenes, total	145			ug/kg	150		96.7	67-132	1.34	30	
Surrogate: 1,2-Dichloroethane-d4	50.6			ug/kg	*50.0*		*101*	*80-149*			
Surrogate: Toluene-d8	50.1			ug/kg	*50.0*		*100*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.8			ug/kg	*50.0*		*99.6*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.2			ug/kg	*50.0*		*100*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJB0028 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0028-BLK1)				Prepared: 01-Feb-2021 Analyzed: 01-Feb-2021 11:56							
Vinyl Chloride	ND	0.24	1.00	ug/kg							U
1,1-Dichloroethene	ND	0.34	1.00	ug/kg							U
trans-1,2-Dichloroethene	ND	0.27	1.00	ug/kg							U
cis-1,2-Dichloroethene	ND	0.24	1.00	ug/kg							U
Benzene	ND	0.30	1.00	ug/kg							U
Trichloroethene	ND	0.21	1.00	ug/kg							U
Toluene	ND	0.15	1.00	ug/kg							U
Tetrachloroethene	ND	0.26	1.00	ug/kg							U
Ethylbenzene	ND	0.20	1.00	ug/kg							U
m,p-Xylene	ND	0.39	2.00	ug/kg							U
o-Xylene	ND	0.22	1.00	ug/kg							U
Xylenes, total	ND	0.62	2.00	ug/kg							U
Surrogate: 1,2-Dichloroethane-d4	51.9			ug/kg	*50.0*		*104*	*80-149*			
Surrogate: Toluene-d8	49.6			ug/kg	*50.0*		*99.2*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.3			ug/kg	*50.0*		*98.6*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.7			ug/kg	*50.0*		*101*	*80-120*			
LCS (BJB0028-BS1)				Prepared: 01-Feb-2021 Analyzed: 01-Feb-2021 11:06							
Vinyl Chloride	51.9			ug/kg	50.0		104	74-135			
1,1-Dichloroethene	48.1			ug/kg	50.0		96.2	77-134			
trans-1,2-Dichloroethene	48.7			ug/kg	50.0		97.3	79-130			
cis-1,2-Dichloroethene	46.3			ug/kg	50.0		92.6	80-125			
Benzene	48.5			ug/kg	50.0		97.1	80-120			
Trichloroethene	49.0			ug/kg	50.0		97.9	80-120			
Toluene	49.4			ug/kg	50.0		98.8	75-120			
Tetrachloroethene	48.4			ug/kg	50.0		96.7	74-124			
Ethylbenzene	48.3			ug/kg	50.0		96.7	80-125			
m,p-Xylene	96.9			ug/kg	100		96.9	76-121			
o-Xylene	48.3			ug/kg	50.0		96.6	67-132			
Xylenes, total	145			ug/kg	150		96.8	67-132			
Surrogate: 1,2-Dichloroethane-d4	51.3			ug/kg	*50.0*		*103*	*80-149*			
Surrogate: Toluene-d8	50.6			ug/kg	*50.0*		*101*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.4			ug/kg	*50.0*		*98.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	51.0			ug/kg	*50.0*		*102*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJB0028 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJB0028-BSD1)					Prepared: 01-Feb-2021 Analyzed: 01-Feb-2021 11:29						
Vinyl Chloride	47.9			ug/kg	50.0		95.7	74-135	8.11	30	
1,1-Dichloroethene	44.8			ug/kg	50.0		89.5	77-134	7.21	30	
trans-1,2-Dichloroethene	44.3			ug/kg	50.0		88.7	79-130	9.30	30	
cis-1,2-Dichloroethene	44.4			ug/kg	50.0		88.9	80-125	4.12	30	
Benzene	46.2			ug/kg	50.0		92.3	80-120	4.99	30	
Trichloroethene	46.0			ug/kg	50.0		92.0	80-120	6.26	30	
Toluene	46.5			ug/kg	50.0		93.0	75-120	6.12	30	
Tetrachloroethene	47.7			ug/kg	50.0		95.4	74-124	1.43	30	
Ethylbenzene	46.6			ug/kg	50.0		93.2	80-125	3.65	30	
m,p-Xylene	93.7			ug/kg	100		93.7	76-121	3.39	30	
o-Xylene	46.9			ug/kg	50.0		93.8	67-132	2.86	30	
Xylenes, total	141			ug/kg	150		93.7	67-132	3.22	30	
Surrogate: 1,2-Dichloroethane-d4	50.0			ug/kg	*50.0*		*100*	*80-149*			
Surrogate: Toluene-d8	50.6			ug/kg	*50.0*		*101*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.7			ug/kg	*50.0*		*99.3*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.3			ug/kg	*50.0*		*101*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJB0140 - EPA 5035 (Methanol Extraction)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0140-BLK1)				Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 17:13							
Vinyl Chloride	ND	7.80	50.0	ug/kg							U
1,1-Dichloroethene	ND	7.90	50.0	ug/kg							U
trans-1,2-Dichloroethene	ND	11.2	50.0	ug/kg							U
cis-1,2-Dichloroethene	ND	9.00	50.0	ug/kg							U
Benzene	ND	8.20	50.0	ug/kg							U
Trichloroethene	ND	9.00	50.0	ug/kg							U
Toluene	ND	8.60	50.0	ug/kg							U
Tetrachloroethene	ND	13.8	50.0	ug/kg							U
Ethylbenzene	ND	13.6	50.0	ug/kg							U
m,p-Xylene	ND	27.9	100	ug/kg							U
o-Xylene	ND	11.4	50.0	ug/kg							U
Xylenes, total	ND	38.7	100	ug/kg							U
Surrogate: Dibromofluoromethane	50.4			ug/kg	*50.0*		*101*	*30-160*			
Surrogate: 1,2-Dichloroethane-d4	51.5			ug/kg	*50.0*		*103*	*80-124*			
Surrogate: Toluene-d8	49.7			ug/kg	*50.0*		*99.3*	*80-120*			
Surrogate: 4-Bromofluorobenzene	49.3			ug/kg	*50.0*		*98.6*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.8			ug/kg	*50.0*		*102*	*80-120*			
LCS (BJB0140-BS1)				Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 16:25							
Vinyl Chloride	2450			ug/kg	2500		98.1	74-133			
1,1-Dichloroethene	2330			ug/kg	2500		93.1	67-132			
trans-1,2-Dichloroethene	2340			ug/kg	2500		93.6	71-136			
cis-1,2-Dichloroethene	2390			ug/kg	2500		95.4	77-121			
Benzene	2380			ug/kg	2500		95.4	80-120			
Trichloroethene	2400			ug/kg	2500		95.8	77-120			
Toluene	2430			ug/kg	2500		97.0	77-120			
Tetrachloroethene	2430			ug/kg	2500		97.4	76-120			
Ethylbenzene	2440			ug/kg	2500		97.5	79-122			
m,p-Xylene	4880			ug/kg	5000		97.7	81-122			
o-Xylene	2460			ug/kg	2500		98.5	79-120			
Xylenes, total	7350			ug/kg	7500		98.0	80-120			
Surrogate: Dibromofluoromethane	49.0			ug/kg	*50.0*		*98.0*	*30-160*			
Surrogate: 1,2-Dichloroethane-d4	50.2			ug/kg	*50.0*		*100*	*80-124*			
Surrogate: Toluene-d8	50.0			ug/kg	*50.0*		*100*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJB0140 - EPA 5035 (Methanol Extraction)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0140-BS1)					Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 16:25						
Surrogate: 4-Bromofluorobenzene	50.1			ug/kg	*50.0*		*100*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	49.3			ug/kg	*50.0*		*98.5*	*80-120*			
LCS Dup (BJB0140-BSD1)					Prepared: 29-Jan-2021 Analyzed: 29-Jan-2021 16:49						
Vinyl Chloride	2390			ug/kg	2500		95.6	74-133	2.59	30	
1,1-Dichloroethene	2320			ug/kg	2500		92.7	67-132	0.41	30	
trans-1,2-Dichloroethene	2380			ug/kg	2500		95.1	71-136	1.65	30	
cis-1,2-Dichloroethene	2340			ug/kg	2500		93.7	77-121	1.85	30	
Benzene	2380			ug/kg	2500		95.2	80-120	0.21	30	
Trichloroethene	2420			ug/kg	2500		96.9	77-120	1.15	30	
Toluene	2440			ug/kg	2500		97.7	77-120	0.66	30	
Tetrachloroethene	2400			ug/kg	2500		95.9	76-120	1.50	30	
Ethylbenzene	2410			ug/kg	2500		96.3	79-122	1.30	30	
m,p-Xylene	4820			ug/kg	5000		96.4	81-122	1.29	30	
o-Xylene	2430			ug/kg	2500		97.1	79-120	1.46	30	
Xylenes, total	7250			ug/kg	7500		96.7	80-120	1.34	30	
Surrogate: Dibromofluoromethane	50.4			ug/kg	*50.0*		*101*	*30-160*			
Surrogate: 1,2-Dichloroethane-d4	50.6			ug/kg	*50.0*		*101*	*80-124*			
Surrogate: Toluene-d8	50.1			ug/kg	*50.0*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	49.8			ug/kg	*50.0*		*99.6*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.2			ug/kg	*50.0*		*100*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJB0420 - EPA 5035 (Methanol Extraction)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0420-BLK1)				Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 13:16							
Vinyl Chloride	ND	7.80	50.0	ug/kg							U
1,1-Dichloroethene	ND	7.90	50.0	ug/kg							U
trans-1,2-Dichloroethene	ND	11.2	50.0	ug/kg							U
cis-1,2-Dichloroethene	ND	9.00	50.0	ug/kg							U
Benzene	ND	8.20	50.0	ug/kg							U
Trichloroethene	ND	9.00	50.0	ug/kg							U
Toluene	ND	8.60	50.0	ug/kg							U
Tetrachloroethene	ND	13.8	50.0	ug/kg							U
Ethylbenzene	ND	13.6	50.0	ug/kg							U
m,p-Xylene	ND	27.9	100	ug/kg							U
o-Xylene	ND	11.4	50.0	ug/kg							U
Xylenes, total	ND	38.7	100	ug/kg							U
Surrogate: Dibromofluoromethane	4.83			ug/kg	*5.00*		*96.6*	*30-160*			
Surrogate: 1,2-Dichloroethane-d4	4.48			ug/kg	*5.00*		*89.6*	*80-124*			
Surrogate: Toluene-d8	4.84			ug/kg	*5.00*		*96.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.72			ug/kg	*5.00*		*94.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.91			ug/kg	*5.00*		*98.1*	*80-120*			
LCS (BJB0420-BS1)				Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 10:40							
Vinyl Chloride	511	7.80	50.0	ug/kg	500		102	74-133			
1,1-Dichloroethene	433	7.90	50.0	ug/kg	500		86.6	67-132			
trans-1,2-Dichloroethene	482	11.2	50.0	ug/kg	500		96.4	71-136			
cis-1,2-Dichloroethene	468	9.00	50.0	ug/kg	500		93.6	77-121			
Benzene	480	8.20	50.0	ug/kg	500		96.1	80-120			
Trichloroethene	484	9.00	50.0	ug/kg	500		96.8	77-120			
Toluene	481	8.60	50.0	ug/kg	500		96.2	77-120			
Tetrachloroethene	491	13.8	50.0	ug/kg	500		98.2	76-120			
Ethylbenzene	488	13.6	50.0	ug/kg	500		97.6	79-122			
m,p-Xylene	1020	27.9	100	ug/kg	1000		102	81-122			
o-Xylene	496	11.4	50.0	ug/kg	500		99.2	79-120			
Xylenes, total	1520	38.7	100	ug/kg	1500		101	80-120			
Surrogate: Dibromofluoromethane	4.81			ug/kg	*5.00*		*96.1*	*30-160*			
Surrogate: 1,2-Dichloroethane-d4	4.54			ug/kg	*5.00*		*90.8*	*80-124*			
Surrogate: Toluene-d8	5.02			ug/kg	*5.00*		*100*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Volatile Organic Compounds - Quality Control

Batch BJB0420 - EPA 5035 (Methanol Extraction)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0420-BS1)					Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 10:40						
Surrogate: 4-Bromofluorobenzene	4.90			ug/kg	*5.00*		*97.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.98			ug/kg	*5.00*		*99.6*	*80-120*			
LCS Dup (BJB0420-BSD1)					Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 11:06						
Vinyl Chloride	474	7.80	50.0	ug/kg	500		94.8	74-133	7.52	30	
1,1-Dichloroethene	392	7.90	50.0	ug/kg	500		78.4	67-132	9.91	30	
trans-1,2-Dichloroethene	466	11.2	50.0	ug/kg	500		93.2	71-136	3.37	30	
cis-1,2-Dichloroethene	433	9.00	50.0	ug/kg	500		86.6	77-121	7.75	30	
Benzene	453	8.20	50.0	ug/kg	500		90.6	80-120	5.84	30	
Trichloroethene	450	9.00	50.0	ug/kg	500		89.9	77-120	7.36	30	
Toluene	443	8.60	50.0	ug/kg	500		88.6	77-120	8.22	30	
Tetrachloroethene	462	13.8	50.0	ug/kg	500		92.5	76-120	6.03	30	
Ethylbenzene	465	13.6	50.0	ug/kg	500		93.1	79-122	4.77	30	
m,p-Xylene	960	27.9	100	ug/kg	1000		96.0	81-122	6.28	30	
o-Xylene	472	11.4	50.0	ug/kg	500		94.3	79-120	4.99	30	
Xylenes, total	1430	38.7	100	ug/kg	1500		95.4	80-120	5.85	30	
Surrogate: Dibromofluoromethane	4.83			ug/kg	*5.00*		*96.6*	*30-160*			
Surrogate: 1,2-Dichloroethane-d4	4.70			ug/kg	*5.00*		*94.1*	*80-124*			
Surrogate: Toluene-d8	4.90			ug/kg	*5.00*		*98.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.94			ug/kg	*5.00*		*98.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.94			ug/kg	*5.00*		*98.7*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0235 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0235-BLK1)				Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 11:52							
Naphthalene	ND	0.44	0.60	ug/kg							U
1-Methylnaphthalene	ND	0.11	0.50	ug/kg							U
2-Methylnaphthalene	ND	0.13	0.50	ug/kg							U
Acenaphthylene	ND	0.06	0.50	ug/kg							U
Acenaphthene	ND	0.09	0.50	ug/kg							U
Dibenzofuran	ND	0.13	0.50	ug/kg							U
Fluorene	ND	0.07	0.50	ug/kg							U
Phenanthrene	ND	0.11	0.50	ug/kg							U
Anthracene	ND	0.07	0.50	ug/kg							U
Fluoranthene	ND	0.08	0.50	ug/kg							U
Pyrene	ND	0.09	0.50	ug/kg							U
Benzo(a)anthracene	ND	0.07	0.50	ug/kg							U
Chrysene	ND	0.07	0.50	ug/kg							U
Benzo(b)fluoranthene	ND	0.07	0.50	ug/kg							U
Benzo(k)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(j)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(a)pyrene	ND	0.09	0.50	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	0.09	0.50	ug/kg							U
Dibenzo(a,h)anthracene	ND	0.11	0.50	ug/kg							U
Benzo(g,h,i)perylene	ND	0.09	0.50	ug/kg							U
Surrogate: 2-Methylnaphthalene-d10	6.05			ug/kg	*15.0*		*40.3*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	8.95			ug/kg	*15.0*		*59.7*	*30-160*			
Surrogate: Fluoranthene-d10	11.3			ug/kg	*15.0*		*75.5*	*30-160*			
LCS (BJB0235-BS1)				Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 12:24							
Naphthalene	6.96	0.44	0.60	ug/kg	15.0		46.4	30-160			
1-Methylnaphthalene	7.20	0.11	0.50	ug/kg	15.0		48.0	30-160			
2-Methylnaphthalene	6.88	0.13	0.50	ug/kg	15.0		45.9	30-160			
Acenaphthylene	6.12	0.06	0.50	ug/kg	15.0		40.8	30-160			
Acenaphthene	6.88	0.09	0.50	ug/kg	15.0		45.9	30-160			
Dibenzofuran	6.43	0.13	0.50	ug/kg	15.0		42.9	30-160			Q
Fluorene	7.67	0.07	0.50	ug/kg	15.0		51.1	30-160			
Phenanthrene	7.58	0.11	0.50	ug/kg	15.0		50.5	30-160			Q
Anthracene	7.93	0.07	0.50	ug/kg	15.0		52.8	30-160			
Fluoranthene	10.2	0.08	0.50	ug/kg	15.0		67.9	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0235 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0235-BS1)					Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 12:24						
Pyrene	10.4	0.09	0.50	ug/kg	15.0		69.4	30-160			
Benzo(a)anthracene	9.77	0.07	0.50	ug/kg	15.0		65.1	30-160			
Chrysene	10.3	0.07	0.50	ug/kg	15.0		68.7	30-160			
Benzo(b)fluoranthene	8.74	0.07	0.50	ug/kg	15.0		58.2	30-160			
Benzo(k)fluoranthene	10.2	0.10	0.50	ug/kg	15.0		67.7	30-160			
Benzo(j)fluoranthene	11.4	0.10	0.50	ug/kg	15.0		76.1	30-160			
Benzo(a)pyrene	8.75	0.09	0.50	ug/kg	15.0		58.3	30-160			
Indeno(1,2,3-cd)pyrene	9.74	0.09	0.50	ug/kg	15.0		65.0	30-160			
Dibenzo(a,h)anthracene	9.43	0.11	0.50	ug/kg	15.0		62.8	30-160			
Benzo(g,h,i)perylene	9.90	0.09	0.50	ug/kg	15.0		66.0	30-160			
Surrogate: 2-Methylnaphthalene-d10	7.55			ug/kg	*15.0*		*50.3*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	10.2			ug/kg	*15.0*		*68.3*	*30-160*			
Surrogate: Fluoranthene-d10	11.7			ug/kg	*15.0*		*78.3*	*30-160*			
Matrix Spike (BJB0235-MS1)	**Source: 21A0376-16**				Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 16:43						
Naphthalene	6.29	0.43	0.59	ug/kg	14.7	1.47	32.7	30-160			
1-Methylnaphthalene	7.32	0.10	0.49	ug/kg	14.7	1.99	36.1	30-160			
2-Methylnaphthalene	7.00	0.13	0.49	ug/kg	14.7	2.01	33.8	30-160			
Acenaphthylene	4.82	0.06	0.49	ug/kg	14.7	0.23	31.1	30-160			
Acenaphthene	5.42	0.09	0.49	ug/kg	14.7	0.25	35.1	30-160			
Dibenzofuran	5.66	0.12	0.49	ug/kg	14.7	1.14	30.6	30-160			Q
Fluorene	5.19	0.07	0.49	ug/kg	14.7	0.16	34.1	30-160			
Phenanthrene	10.1	0.11	0.49	ug/kg	14.7	13.0	-19.6	30-160			*, Q
Anthracene	5.40	0.07	0.49	ug/kg	14.7	0.46	33.5	30-160			
Fluoranthene	10.1	0.08	0.49	ug/kg	14.7	6.48	24.8	30-160			*
Pyrene	11.3	0.09	0.49	ug/kg	14.7	7.25	27.4	30-160			*
Benzo(a)anthracene	5.81	0.07	0.49	ug/kg	14.7	2.60	21.7	30-160			*
Chrysene	7.96	0.07	0.49	ug/kg	14.7	7.19	5.24	30-160			*
Benzo(b)fluoranthene	7.30	0.06	0.49	ug/kg	14.7	5.95	9.20	30-160			*
Benzo(k)fluoranthene	4.96	0.10	0.49	ug/kg	14.7	2.52	16.6	30-160			*
Benzo(j)fluoranthene	4.68	0.10	0.49	ug/kg	14.7	2.26	16.4	30-160			*
Benzo(a)pyrene	2.50	0.09	0.49	ug/kg	14.7	1.88	4.21	30-160			*
Indeno(1,2,3-cd)pyrene	4.43	0.09	0.49	ug/kg	14.7	3.23	8.17	30-160			*
Dibenzo(a,h)anthracene	3.44	0.10	0.49	ug/kg	14.7	0.94	17.0	30-160			*
Benzo(g,h,i)perylene	4.14	0.08	0.49	ug/kg	14.7	3.03	7.54	30-160			*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0235 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0235-MS1)	**Source: 21A0376-16**			Prepared: 08-Feb-2021	Analyzed: 27-Feb-2021 16:43						
Surrogate: 2-Methylnaphthalene-d10	5.73			ug/kg	*14.7*	*6.92*	*38.8*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	3.80			ug/kg	*14.7*	*11.8*	*25.8*	*30-160*			*
Surrogate: Fluoranthene-d10	7.88			ug/kg	*14.7*	*12.1*	*53.4*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0235-MSD1)	**Source: 21A0376-16**			Prepared: 08-Feb-2021	Analyzed: 27-Feb-2021 17:15						
Naphthalene	6.50	0.43	0.59	ug/kg	14.8	1.47	33.9	30-160	3.14	30	
1-Methylnaphthalene	8.04	0.10	0.49	ug/kg	14.8	1.99	40.8	30-160	9.37	30	
2-Methylnaphthalene	7.65	0.13	0.49	ug/kg	14.8	2.01	38.1	30-160	8.93	30	
Acenaphthylene	6.26	0.06	0.49	ug/kg	14.8	0.23	40.7	30-160	26.10	30	
Acenaphthene	6.62	0.09	0.49	ug/kg	14.8	0.25	43.0	30-160	20.00	30	
Dibenzofuran	7.17	0.12	0.49	ug/kg	14.8	1.14	40.7	30-160	23.50	30	Q
Fluorene	7.32	0.07	0.49	ug/kg	14.8	0.16	48.3	30-160	34.00	30	*
Phenanthrene	14.7	0.11	0.49	ug/kg	14.8	13.0	11.5	30-160	37.00	30	*, Q
Anthracene	8.97	0.07	0.49	ug/kg	14.8	0.46	57.5	30-160	49.70	30	*
Fluoranthene	15.3	0.08	0.49	ug/kg	14.8	6.48	59.8	30-160	40.90	30	*
Pyrene	16.4	0.09	0.49	ug/kg	14.8	7.25	61.9	30-160	37.00	30	*
Benzo(a)anthracene	11.9	0.07	0.49	ug/kg	14.8	2.60	62.7	30-160	68.80	30	*
Chrysene	15.2	0.07	0.49	ug/kg	14.8	7.19	53.9	30-160	62.40	30	*
Benzo(b)fluoranthene	16.6	0.07	0.49	ug/kg	14.8	5.95	71.7	30-160	77.60	30	*
Benzo(k)fluoranthene	11.8	0.10	0.49	ug/kg	14.8	2.52	62.4	30-160	81.30	30	*
Benzo(j)fluoranthene	10.9	0.10	0.49	ug/kg	14.8	2.26	58.1	30-160	79.70	30	*
Benzo(a)pyrene	11.5	0.09	0.49	ug/kg	14.8	1.88	64.7	30-160	128.00	30	*
Indeno(1,2,3-cd)pyrene	13.4	0.09	0.49	ug/kg	14.8	3.23	68.6	30-160	101.00	30	*
Dibenzo(a,h)anthracene	11.3	0.10	0.49	ug/kg	14.8	0.94	70.1	30-160	107.00	30	*
Benzo(g,h,i)perylene	11.5	0.08	0.49	ug/kg	14.8	3.03	57.2	30-160	94.20	30	*
Surrogate: 2-Methylnaphthalene-d10	6.48			ug/kg	*14.8*	*6.92*	*43.8*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	11.7			ug/kg	*14.8*	*11.8*	*78.8*	*30-160*			
Surrogate: Fluoranthene-d10	11.8			ug/kg	*14.8*	*12.1*	*79.4*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0236 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0236-BLK1)				Prepared: 09-Feb-2021 Analyzed: 02-Mar-2021 15:47							
Naphthalene	ND	0.44	0.60	ug/kg							U
1-Methylnaphthalene	ND	0.11	0.50	ug/kg							U
2-Methylnaphthalene	ND	0.13	0.50	ug/kg							U
Acenaphthylene	ND	0.06	0.50	ug/kg							U
Acenaphthene	ND	0.09	0.50	ug/kg							U
Dibenzofuran	ND	0.13	0.50	ug/kg							U
Fluorene	ND	0.07	0.50	ug/kg							U
Phenanthrene	ND	0.11	0.50	ug/kg							U
Anthracene	ND	0.07	0.50	ug/kg							U
Fluoranthene	ND	0.08	0.50	ug/kg							U
Pyrene	ND	0.09	0.50	ug/kg							U
Benzo(a)anthracene	ND	0.07	0.50	ug/kg							U
Chrysene	ND	0.07	0.50	ug/kg							U
Benzo(b)fluoranthene	ND	0.07	0.50	ug/kg							U
Benzo(k)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(j)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(a)pyrene	ND	0.09	0.50	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	0.09	0.50	ug/kg							U
Dibenzo(a,h)anthracene	ND	0.11	0.50	ug/kg							U
Benzo(g,h,i)perylene	ND	0.09	0.50	ug/kg							U
Surrogate: 2-Methylnaphthalene-d10	8.13			ug/kg	*15.0*		*54.2*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	6.35			ug/kg	*15.0*		*42.3*	*30-160*			
Surrogate: Fluoranthene-d10	11.1			ug/kg	*15.0*		*73.8*	*30-160*			
LCS (BJB0236-BS1)				Prepared: 09-Feb-2021 Analyzed: 02-Mar-2021 16:20							
Naphthalene	7.63	0.44	0.60	ug/kg	15.0		50.8	30-160			
1-Methylnaphthalene	7.86	0.11	0.50	ug/kg	15.0		52.4	30-160			
2-Methylnaphthalene	7.49	0.13	0.50	ug/kg	15.0		49.9	30-160			
Acenaphthylene	5.97	0.06	0.50	ug/kg	15.0		39.8	30-160			
Acenaphthene	7.29	0.09	0.50	ug/kg	15.0		48.6	30-160			
Dibenzofuran	7.15	0.13	0.50	ug/kg	15.0		47.7	30-160			
Fluorene	8.16	0.07	0.50	ug/kg	15.0		54.4	30-160			
Phenanthrene	7.66	0.11	0.50	ug/kg	15.0		51.1	30-160			
Anthracene	7.74	0.07	0.50	ug/kg	15.0		51.6	30-160			
Fluoranthene	9.28	0.08	0.50	ug/kg	15.0		61.8	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0236 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0236-BS1)				Prepared: 09-Feb-2021 Analyzed: 02-Mar-2021 16:20							
Pyrene	9.40	0.09	0.50	ug/kg	15.0		62.7	30-160			
Benzo(a)anthracene	9.01	0.07	0.50	ug/kg	15.0		60.1	30-160			
Chrysene	9.59	0.07	0.50	ug/kg	15.0		64.0	30-160			
Benzo(b)fluoranthene	9.16	0.07	0.50	ug/kg	15.0		61.1	30-160			
Benzo(k)fluoranthene	9.09	0.10	0.50	ug/kg	15.0		60.6	30-160			
Benzo(j)fluoranthene	12.1	0.10	0.50	ug/kg	15.0		80.7	30-160			
Benzo(a)pyrene	7.65	0.09	0.50	ug/kg	15.0		51.0	30-160			
Indeno(1,2,3-cd)pyrene	6.34	0.09	0.50	ug/kg	15.0		42.3	30-160			
Dibenzo(a,h)anthracene	5.83	0.11	0.50	ug/kg	15.0		38.8	30-160			
Benzo(g,h,i)perylene	6.23	0.09	0.50	ug/kg	15.0		41.6	30-160			Q
Surrogate: 2-Methylnaphthalene-d10	7.87			ug/kg	*15.0*		*52.5*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	5.91			ug/kg	*15.0*		*39.4*	*30-160*			
Surrogate: Fluoranthene-d10	10.3			ug/kg	*15.0*		*68.4*	*30-160*			
Matrix Spike (BJB0236-MS1)		**Source: 21A0376-86**		Prepared: 09-Feb-2021 Analyzed: 02-Mar-2021 19:02							
Naphthalene	7.31	0.44	0.60	ug/kg	15.0	1.29	40.1	30-160			
1-Methylnaphthalene	8.61	0.11	0.50	ug/kg	15.0	1.99	44.1	30-160			
2-Methylnaphthalene	8.50	0.13	0.50	ug/kg	15.0	2.23	41.8	30-160			
Acenaphthylene	6.20	0.06	0.50	ug/kg	15.0	ND	41.3	30-160			
Acenaphthene	7.10	0.09	0.50	ug/kg	15.0	ND	47.3	30-160			
Dibenzofuran	7.10	0.13	0.50	ug/kg	15.0	1.01	40.6	30-160			
Fluorene	7.75	0.07	0.50	ug/kg	15.0	ND	51.6	30-160			
Phenanthrene	17.5	0.11	0.50	ug/kg	15.0	5.04	82.9	30-160			
Anthracene	9.61	0.07	0.50	ug/kg	15.0	0.79	58.8	30-160			
Fluoranthene	16.3	0.08	0.50	ug/kg	15.0	4.28	79.9	30-160			
Pyrene	18.2	0.09	0.50	ug/kg	15.0	5.15	86.7	30-160			
Benzo(a)anthracene	11.7	0.07	0.50	ug/kg	15.0	2.34	62.3	30-160			
Chrysene	14.8	0.07	0.50	ug/kg	15.0	4.04	71.8	30-160			
Benzo(b)fluoranthene	12.7	0.07	0.50	ug/kg	15.0	2.63	67.3	30-160			
Benzo(k)fluoranthene	9.39	0.10	0.50	ug/kg	15.0	1.03	55.7	30-160			
Benzo(j)fluoranthene	9.25	0.10	0.50	ug/kg	15.0	0.98	55.1	30-160			
Benzo(a)pyrene	12.5	0.09	0.50	ug/kg	15.0	1.69	72.2	30-160			
Indeno(1,2,3-cd)pyrene	10.6	0.09	0.50	ug/kg	15.0	1.31	61.9	30-160			
Dibenzo(a,h)anthracene	7.79	0.10	0.50	ug/kg	15.0	0.42	49.1	30-160			
Benzo(g,h,i)perylene	15.4	0.08	0.50	ug/kg	15.0	3.00	82.9	30-160			Q

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0236 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0236-MS1)	**Source: 21A0376-86**			Prepared: 09-Feb-2021	Analyzed: 02-Mar-2021 19:02						
Surrogate: 2-Methylnaphthalene-d10	6.56			ug/kg	*15.0*	*6.88*	*43.7*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	7.58			ug/kg	*15.0*	*9.38*	*50.6*	*30-160*			
Surrogate: Fluoranthene-d10	8.95			ug/kg	*15.0*	*10.6*	*59.7*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0236-MSD1)	**Source: 21A0376-86**			Prepared: 09-Feb-2021	Analyzed: 02-Mar-2021 19:34						
Naphthalene	7.20	0.44	0.60	ug/kg	15.0	1.29	39.4	30-160	1.44	30	
1-Methylnaphthalene	8.33	0.11	0.50	ug/kg	15.0	1.99	42.3	30-160	3.30	30	
2-Methylnaphthalene	8.52	0.13	0.50	ug/kg	15.0	2.23	42.0	30-160	0.23	30	
Acenaphthylene	6.18	0.06	0.50	ug/kg	15.0	ND	41.2	30-160	0.20	30	
Acenaphthene	6.42	0.09	0.50	ug/kg	15.0	ND	42.8	30-160	10.00	30	
Dibenzofuran	7.05	0.13	0.50	ug/kg	15.0	1.01	40.3	30-160	0.64	30	
Fluorene	7.25	0.07	0.50	ug/kg	15.0	ND	48.3	30-160	6.65	30	
Phenanthrene	11.8	0.11	0.50	ug/kg	15.0	5.04	45.3	30-160	38.50	30	*
Anthracene	8.98	0.07	0.50	ug/kg	15.0	0.79	54.5	30-160	6.85	30	
Fluoranthene	12.1	0.08	0.50	ug/kg	15.0	4.28	52.1	30-160	29.40	30	
Pyrene	13.0	0.09	0.50	ug/kg	15.0	5.15	52.6	30-160	32.80	30	*
Benzo(a)anthracene	10.9	0.07	0.50	ug/kg	15.0	2.34	57.1	30-160	6.87	30	
Chrysene	15.5	0.07	0.50	ug/kg	15.0	4.04	76.7	30-160	4.84	30	
Benzo(b)fluoranthene	15.4	0.07	0.50	ug/kg	15.0	2.63	85.4	30-160	19.30	30	
Benzo(k)fluoranthene	10.4	0.10	0.50	ug/kg	15.0	1.03	62.5	30-160	10.20	30	
Benzo(j)fluoranthene	9.89	0.10	0.50	ug/kg	15.0	0.98	59.4	30-160	6.68	30	
Benzo(a)pyrene	17.1	0.09	0.50	ug/kg	15.0	1.69	102	30-160	30.70	30	*
Indeno(1,2,3-cd)pyrene	19.8	0.09	0.50	ug/kg	15.0	1.31	123	30-160	60.60	30	*
Dibenzo(a,h)anthracene	10.7	0.10	0.50	ug/kg	15.0	0.42	68.3	30-160	31.20	30	*
Benzo(g,h,i)perylene	21.6	0.08	0.50	ug/kg	15.0	3.00	124	30-160	33.50	30	*, Q
Surrogate: 2-Methylnaphthalene-d10	6.21			ug/kg	*15.0*	*6.88*	*41.4*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	8.59			ug/kg	*15.0*	*9.38*	*57.3*	*30-160*			
Surrogate: Fluoranthene-d10	9.88			ug/kg	*15.0*	*10.6*	*65.9*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Petroleum Hydrocarbons - Quality Control

Batch BJB0187 - EPA 3546 (Microwave)

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0187-BLK1)				Prepared: 06-Feb-2021	Analyzed: 15-Feb-2021 15:56					
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: o-Terphenyl	11.7		mg/kg	*11.3*		*104*	*50-150*			
LCS (BJB0187-BS1)				Prepared: 06-Feb-2021	Analyzed: 15-Feb-2021 16:17					
Diesel Range Organics (C12-C24)	130	5.00	mg/kg	150		86.5	63-120			
Surrogate: o-Terphenyl	11.8		mg/kg	*11.3*		*105*	*50-150*			
LCS Dup (BJB0187-BSD1)				Prepared: 06-Feb-2021	Analyzed: 15-Feb-2021 16:38					
Diesel Range Organics (C12-C24)	139	5.00	mg/kg	150		92.6	63-120	6.77	30	
Surrogate: o-Terphenyl	12.5		mg/kg	*11.3*		*111*	*50-150*			
Matrix Spike (BJB0187-MS1)	**Source: 21A0376-02**			Prepared: 06-Feb-2021	Analyzed: 15-Feb-2021 17:20					
Diesel Range Organics (C12-C24)	170	6.71	mg/kg	201	ND	82.9	63-120			
Surrogate: o-Terphenyl	14.6		mg/kg	*15.1*	*15.2*	*97.0*	*50-150*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0187-MSD1)	**Source: 21A0376-02**			Prepared: 06-Feb-2021	Analyzed: 15-Feb-2021 17:41					
Diesel Range Organics (C12-C24)	178	6.71	mg/kg	201	ND	86.7	63-120	4.40	30	
Surrogate: o-Terphenyl	15.7		mg/kg	*15.1*	*15.2*	*104*	*50-150*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Petroleum Hydrocarbons - Quality Control

Batch BJB0238 - EPA 3546 (Microwave)

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0238-BLK1)				Prepared: 09-Feb-2021	Analyzed: 11-Feb-2021 17:24					
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: o-Terphenyl	12.6		mg/kg	*11.3*		*112*	*50-150*			
LCS (BJB0238-BS1)				Prepared: 09-Feb-2021	Analyzed: 11-Feb-2021 17:45					
Diesel Range Organics (C12-C24)	141	5.00	mg/kg	150		93.8	63-120			
Surrogate: o-Terphenyl	12.6		mg/kg	*11.3*		*112*	*50-150*			
Matrix Spike (BJB0238-MS1)	**Source: 21A0376-22**			Prepared: 09-Feb-2021	Analyzed: 11-Feb-2021 19:08					
Diesel Range Organics (C12-C24)	337	6.48	mg/kg	194	165	88.6	63-120			E
Surrogate: o-Terphenyl	14.9		mg/kg	*14.6*	*14.6*	*102*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJB0238-MSD1)	**Source: 21A0376-22**			Prepared: 09-Feb-2021	Analyzed: 11-Feb-2021 19:29					
Diesel Range Organics (C12-C24)	305	6.48	mg/kg	194	165	72.2	63-120	9.93	30	
Surrogate: o-Terphenyl	14.6		mg/kg	*14.6*	*14.6*	*100*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Petroleum Hydrocarbons - Quality Control

Batch BJB0239 - EPA 3546 (Microwave)

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0239-BLK1)				Prepared: 09-Feb-2021	Analyzed: 12-Feb-2021 01:03					
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: o-Terphenyl	11.5		mg/kg	*11.3*		*102*	*50-150*			
LCS (BJB0239-BS1)				Prepared: 09-Feb-2021	Analyzed: 12-Feb-2021 01:24					
Diesel Range Organics (C12-C24)	128	5.00	mg/kg	150		85.6	63-120			
Surrogate: o-Terphenyl	10.9		mg/kg	*11.3*		*97.0*	*50-150*			
Matrix Spike (BJB0239-MS1)	**Source: 21A0376-41**			Prepared: 09-Feb-2021	Analyzed: 12-Feb-2021 02:26					
Diesel Range Organics (C12-C24)	152	5.54	mg/kg	166	ND	91.5	63-120			
Surrogate: o-Terphenyl	13.1		mg/kg	*12.5*	*12.6*	*105*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJB0239-MSD1)	**Source: 21A0376-41**			Prepared: 09-Feb-2021	Analyzed: 12-Feb-2021 02:47					
Diesel Range Organics (C12-C24)	134	5.51	mg/kg	165	ND	80.8	63-120	12.80	30	
Surrogate: o-Terphenyl	11.4		mg/kg	*12.4*	*12.6*	*91.6*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Petroleum Hydrocarbons - Quality Control

Batch BJB0240 - EPA 3546 (Microwave)

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0240-BLK1)				Prepared: 10-Feb-2021	Analyzed: 12-Feb-2021 16:26					
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: o-Terphenyl	11.9		mg/kg	*11.3*		*106*	*50-150*			
LCS (BJB0240-BS1)				Prepared: 10-Feb-2021	Analyzed: 12-Feb-2021 16:46					
Diesel Range Organics (C12-C24)	140	5.00	mg/kg	150		93.3	63-120			
Surrogate: o-Terphenyl	12.3		mg/kg	*11.3*		*110*	*50-150*			
Matrix Spike (BJB0240-MS1)	**Source: 21A0376-65**			Prepared: 10-Feb-2021	Analyzed: 12-Feb-2021 17:49					
Diesel Range Organics (C12-C24)	152	5.40	mg/kg	162	ND	92.2	63-120			
Surrogate: o-Terphenyl	13.6		mg/kg	*12.2*	*12.8*	*112*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJB0240-MSD1)	**Source: 21A0376-65**			Prepared: 10-Feb-2021	Analyzed: 12-Feb-2021 18:10					
Diesel Range Organics (C12-C24)	155	5.40	mg/kg	162	ND	93.7	63-120	1.55	30	
Surrogate: o-Terphenyl	13.7		mg/kg	*12.2*	*12.8*	*113*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Aroclor PCB - Quality Control

Batch BJB0237 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0237-BLK1)				Prepared: 08-Feb-2021 Analyzed: 21-Feb-2021 00:09							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	7.52			ug/kg	*8.00*		*94.0*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.16			ug/kg	*8.00*		*77.0*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.04			ug/kg	*8.00*		*87.9*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.32			ug/kg	*8.00*		*79.1*	*44-120*			
LCS (BJB0237-BS1)				Prepared: 08-Feb-2021 Analyzed: 21-Feb-2021 00:30							
Aroclor 1016 [2C]	94.7	1.6	4.0	ug/kg	101		93.9	56-120			
Aroclor 1260	114	0.6	4.0	ug/kg	101		113	58-120			
Surrogate: Decachlorobiphenyl	8.10			ug/kg	*8.00*		*101*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.84			ug/kg	*8.00*		*85.5*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.04			ug/kg	*8.00*		*88.0*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.97			ug/kg	*8.00*		*87.2*	*44-120*			
Matrix Spike (BJB0237-MS1)		**Source: 21A0376-32**		Prepared: 08-Feb-2021 Analyzed: 21-Feb-2021 05:59							
Aroclor 1016	70.0	1.6	4.0	ug/kg	100	ND	69.9	56-120			
Aroclor 1260 [2C]	119	0.6	4.0	ug/kg	100	31.4	87.5	58-120			
Surrogate: Decachlorobiphenyl	6.86			ug/kg	*7.95*		*86.3*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.21			ug/kg	*7.95*		*78.2*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.02			ug/kg	*7.95*		*88.3*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.79			ug/kg	*7.95*		*72.9*	*44-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0237-MSD1)		**Source: 21A0376-32**		Prepared: 08-Feb-2021 Analyzed: 21-Feb-2021 06:20							
Aroclor 1016	67.4	1.5	4.0	ug/kg	100	ND	67.3	56-120	3.86	30	
Aroclor 1260 [2C]	130	0.6	4.0	ug/kg	100	31.4	98.9	58-120	9.13	30	
Surrogate: Decachlorobiphenyl	6.82			ug/kg	*7.94*		*85.9*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.22			ug/kg	*7.94*		*78.3*	*44-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Aroclor PCB - Quality Control

Batch BJB0237 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0237-MSD1)	**Source: 21A0376-32**			Prepared: 08-Feb-2021	Analyzed: 21-Feb-2021 06:20						
Surrogate: Decachlorobiphenyl [2C]	7.15			ug/kg	*7.94*		*90.0*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.88			ug/kg	*7.94*		*74.0*	*44-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Aroclor PCB - Quality Control

Batch BJB0302 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0302-BLK1)				Prepared: 09-Feb-2021 Analyzed: 13-Feb-2021 14:42							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	6.53			ug/kg	*8.00*		*81.6*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.80			ug/kg	*8.00*		*72.6*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.40			ug/kg	*8.00*		*92.5*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.12			ug/kg	*8.00*		*76.5*	*44-120*			
LCS (BJB0302-BS1)				Prepared: 09-Feb-2021 Analyzed: 13-Feb-2021 15:02							
Aroclor 1016 [2C]	92.2	1.6	4.0	ug/kg	101		91.5	56-120			
Aroclor 1260 [2C]	91.3	0.6	4.0	ug/kg	101		90.6	58-120			
Surrogate: Decachlorobiphenyl	6.84			ug/kg	*8.00*		*85.4*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.57			ug/kg	*8.00*		*82.1*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.64			ug/kg	*8.00*		*95.5*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.40			ug/kg	*8.00*		*80.0*	*44-120*			
Matrix Spike (BJB0302-MS1)		**Source: 21A0376-47**		Prepared: 09-Feb-2021 Analyzed: 13-Feb-2021 19:30							
Aroclor 1016	67.5	1.5	4.0	ug/kg	99.9	ND	67.6	56-120			
Aroclor 1260	81.9	0.6	4.0	ug/kg	99.9	ND	82.0	58-120			
Surrogate: Decachlorobiphenyl	6.27			ug/kg	*7.93*		*79.1*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.72			ug/kg	*7.93*		*72.1*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.95			ug/kg	*7.93*		*87.7*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.97			ug/kg	*7.93*		*75.4*	*44-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0302-MSD1)		**Source: 21A0376-47**		Prepared: 09-Feb-2021 Analyzed: 13-Feb-2021 19:50							
Aroclor 1016	70.2	1.5	3.9	ug/kg	99.5	ND	70.6	56-120	3.89	30	
Aroclor 1260	83.7	0.6	3.9	ug/kg	99.5	ND	84.1	58-120	2.16	30	
Surrogate: Decachlorobiphenyl	6.41			ug/kg	*7.90*		*81.1*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.95			ug/kg	*7.90*		*75.3*	*44-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Aroclor PCB - Quality Control

Batch BJB0302 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0302-MSD1)	**Source: 21A0376-47**			Prepared: 09-Feb-2021	Analyzed: 13-Feb-2021 19:50						
Surrogate: Decachlorobiphenyl [2C]	7.22			ug/kg	*7.90*		*91.4*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.18			ug/kg	*7.90*		*78.3*	*44-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Aroclor PCB - Quality Control

Batch BJB0303 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0303-BLK1)				Prepared: 10-Feb-2021 Analyzed: 21-Feb-2021 08:03							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	9.19			ug/kg	*8.00*		*115*	*40-126*			
Surrogate: Tetrachlorometaxylene	7.24			ug/kg	*8.00*		*90.6*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	9.92			ug/kg	*8.00*		*124*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	7.60			ug/kg	*8.00*		*95.0*	*44-120*			
LCS (BJB0303-BS1)				Prepared: 10-Feb-2021 Analyzed: 21-Feb-2021 08:23							
Aroclor 1016 [2C]	81.4	1.6	4.0	ug/kg	101		80.7	56-120			
Aroclor 1260 [2C]	90.1	0.6	4.0	ug/kg	101		89.4	58-120			
Surrogate: Decachlorobiphenyl	7.02			ug/kg	*8.00*		*87.7*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.04			ug/kg	*8.00*		*75.5*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.85			ug/kg	*8.00*		*98.1*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.17			ug/kg	*8.00*		*77.2*	*44-120*			
Matrix Spike (BJB0303-MS1)		**Source: 21A0376-57**		Prepared: 10-Feb-2021 Analyzed: 23-Feb-2021 03:12							
Aroclor 1016	77.2	7.7	19.8	ug/kg	99.7	ND	77.4	56-120			P1, D
Aroclor 1260 [2C]	280	2.9	19.8	ug/kg	99.7	75.0	206	58-120			*, D
Surrogate: Decachlorobiphenyl	7.60			ug/kg	*7.92*		*96.0*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.76			ug/kg	*7.92*		*72.8*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.04			ug/kg	*7.92*		*88.9*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.20			ug/kg	*7.92*		*65.7*	*44-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0303-MSD1)		**Source: 21A0376-57**		Prepared: 10-Feb-2021 Analyzed: 23-Feb-2021 03:32							
Aroclor 1016	82.8	7.7	19.8	ug/kg	99.9	ND	82.9	56-120	6.97	30	D
Aroclor 1260 [2C]	192	2.9	19.8	ug/kg	99.9	75.0	118	58-120	37.00	30	*, D
Surrogate: Decachlorobiphenyl	8.22			ug/kg	*7.93*		*104*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.46			ug/kg	*7.93*		*81.5*	*44-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Aroclor PCB - Quality Control

Batch BJB0303 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0303-MSD1)	**Source: 21A0376-57**			Prepared: 10-Feb-2021	Analyzed: 23-Feb-2021 03:32						
Surrogate: Decachlorobiphenyl [2C]	7.29			ug/kg	*7.93*		*91.9*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.78			ug/kg	*7.93*		*72.9*	*44-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Metals and Metallic Compounds - Quality Control

Batch BJB0282 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0282-BLK1)					Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 15:49							
Barium	135	ND	0.06	0.50	mg/kg							U
Barium	137	ND	0.05	0.50	mg/kg							U
Chromium	52	ND	0.13	0.50	mg/kg							U
Chromium	53	ND	0.07	0.50	mg/kg							U
Cobalt	59	ND	0.03	0.20	mg/kg							U
Lead	208	ND	0.07	0.10	mg/kg							U
Selenium	78	ND	0.44	2.00	mg/kg							U
Silver	107	ND	0.02	0.20	mg/kg							U
Vanadium	51a	ND	0.04	0.20	mg/kg							U
Vanadium	51b	ND	0.02	0.20	mg/kg							U
Arsenic	75a	ND	0.02	0.20	mg/kg							U
Cadmium	111	ND	0.03	0.10	mg/kg							U
Cadmium	114	ND	0.04	0.10	mg/kg							U
Copper	63	ND	0.34	0.50	mg/kg							U
Copper	65	ND	0.35	0.50	mg/kg							U
Nickel	60	ND	0.05	0.50	mg/kg							U
Nickel	62	ND	0.22	0.50	mg/kg							U
Zinc	66	ND	0.8	4.0	mg/kg							U
Zinc	67	ND	0.9	4.0	mg/kg							U
LCS (BJB0282-BS1)					Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 15:54							
Barium	135	24.3	0.06	0.50	mg/kg	25.0		97.1	80-120			
Barium	137	24.8	0.05	0.50	mg/kg	25.0		99.0	80-120			
Chromium	52	25.6	0.13	0.50	mg/kg	25.0		102	80-120			
Chromium	53	26.3	0.07	0.50	mg/kg	25.0		105	80-120			
Cobalt	59	25.6	0.03	0.20	mg/kg	25.0		103	80-120			
Lead	208	26.3	0.07	0.10	mg/kg	25.0		105	80-120			
Selenium	78	77.5	0.44	2.00	mg/kg	80.0		96.8	80-120			
Silver	107	26.4	0.02	0.20	mg/kg	25.0		105	80-120			
Vanadium	51a	24.6	0.04	0.20	mg/kg	25.0		98.5	80-120			
Vanadium	51b	24.8	0.02	0.20	mg/kg	25.0		99.3	80-120			
Arsenic	75a	24.6	0.02	0.20	mg/kg	25.0		98.2	80-120			
Cadmium	111	25.1	0.03	0.10	mg/kg	25.0		101	80-120			
Cadmium	114	25.1	0.04	0.10	mg/kg	25.0		100	80-120			
Copper	63	26.4	0.34	0.50	mg/kg	25.0		106	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Metals and Metallic Compounds - Quality Control

Batch BJB0282 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0282-BS1)						Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 15:54						
Copper	65	26.7	0.35	0.50	mg/kg	25.0		107	80-120			
Nickel	60	26.1	0.05	0.50	mg/kg	25.0		104	80-120			
Nickel	62	25.9	0.22	0.50	mg/kg	25.0		103	80-120			
Zinc	66	82.3	0.8	4.0	mg/kg	80.0		103	80-120			
Zinc	67	75.4	0.9	4.0	mg/kg	80.0		94.3	80-120			
Duplicate (BJB0282-DUP1)			**Source: 21A0376-08**			Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 16:17						
Barium	135	20.4	0.06	0.53	mg/kg		24.5			18.30	20	
Chromium	52	9.19	0.14	0.53	mg/kg		11.0			18.00	20	
Cobalt	59	4.51	0.03	0.21	mg/kg		4.60			1.98	20	
Lead	208	1.77	0.07	0.11	mg/kg		1.78			0.65	20	
Selenium	78	0.98	0.47	2.14	mg/kg		0.71			31.90	20	L, J
Silver	107	0.02	0.02	0.21	mg/kg		0.03			20.20	20	L, J
Vanadium	51a	30.0	0.04	0.21	mg/kg		33.8			11.80	20	
Arsenic	75a	2.24	0.02	0.21	mg/kg		2.29			2.58	20	
Cadmium	111	ND	0.03	0.11	mg/kg		ND					U
Copper	63	8.96	0.36	0.53	mg/kg		9.47			5.46	20	
Nickel	60	7.97	0.05	0.53	mg/kg		9.01			12.30	20	
Zinc	66	22.9	0.9	4.3	mg/kg		23.3			2.03	20	
Matrix Spike (BJB0282-MS1)			**Source: 21A0376-08**			Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 16:22						
Barium	135	49.7	0.06	0.54	mg/kg	26.8	24.5	94.3	75-125			
Chromium	52	35.8	0.14	0.54	mg/kg	26.8	11.0	92.7	75-125			
Cobalt	59	32.5	0.03	0.21	mg/kg	26.8	4.60	104	75-125			
Lead	208	29.2	0.07	0.11	mg/kg	26.8	1.78	102	75-125			
Selenium	78	80.4	0.47	2.14	mg/kg	85.6	0.71	93.1	75-125			
Silver	107	27.6	0.02	0.21	mg/kg	26.8	0.03	103	75-125			
Vanadium	51a	57.9	0.04	0.21	mg/kg	26.8	33.8	90.3	75-125			
Arsenic	75a	27.2	0.02	0.21	mg/kg	26.8	2.29	93.2	75-125			
Cadmium	111	27.2	0.03	0.11	mg/kg	26.8	ND	102	75-125			
Copper	63	37.9	0.36	0.54	mg/kg	26.8	9.47	106	75-125			
Nickel	60	36.7	0.05	0.54	mg/kg	26.8	9.01	104	75-125			
Zinc	66	110	0.9	4.3	mg/kg	85.6	23.3	101	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Metals and Metallic Compounds - Quality Control

Batch BJB0282 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0282-MSD1)			**Source: 21A0376-08**			Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 16:27						
Barium	135	52.9	0.06	0.54	mg/kg	26.8	24.5	106	75-125	6.29	20	
Chromium	52	34.4	0.14	0.54	mg/kg	26.8	11.0	87.3	75-125	4.00	20	
Cobalt	59	32.3	0.03	0.21	mg/kg	26.8	4.60	104	75-125	0.38	20	
Lead	208	28.8	0.07	0.11	mg/kg	26.8	1.78	101	75-125	1.09	20	
Selenium	78	79.7	0.47	2.14	mg/kg	85.7	0.71	92.2	75-125	0.84	20	
Silver	107	27.6	0.02	0.21	mg/kg	26.8	0.03	103	75-125	0.02	20	
Vanadium	51a	55.6	0.04	0.21	mg/kg	26.8	33.8	81.7	75-125	4.01	20	
Arsenic	75a	27.4	0.02	0.21	mg/kg	26.8	2.29	93.8	75-125	0.67	20	
Cadmium	111	26.3	0.03	0.11	mg/kg	26.8	ND	98.3	75-125	3.14	20	
Copper	63	37.4	0.36	0.54	mg/kg	26.8	9.47	104	75-125	1.24	20	
Nickel	60	35.9	0.05	0.54	mg/kg	26.8	9.01	100	75-125	2.25	20	
Zinc	66	107	0.9	4.3	mg/kg	85.7	23.3	98.1	75-125	2.34	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Metals and Metallic Compounds - Quality Control

Batch BJB0283 - SMM EPA 7471B

Instrument: HYDRA Analyst: BLC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0283-BLK1)				Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 09:22							
Mercury	ND	0.00525	0.0250	mg/kg							U
LCS (BJB0283-BS1)				Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 09:24							
Mercury	0.495	0.00525	0.0250	mg/kg	0.500		99.1	80-120			
Duplicate (BJB0283-DUP1)		**Source: 21A0376-08**		Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 09:28							
Mercury	0.00857	0.00451	0.0215	mg/kg		0.00833			2.82	20	J
Matrix Spike (BJB0283-MS1)		**Source: 21A0376-08**		Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 09:30							
Mercury	0.221	0.00444	0.0211	mg/kg	0.211	0.00833	101	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0283-MSD1)		**Source: 21A0376-08**		Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 09:32							
Mercury	0.231	0.00449	0.0214	mg/kg	0.214	0.00833	104	75-125	4.02	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Metals and Metallic Compounds - Quality Control

Batch BJB0285 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0285-BLK1)					Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 15:59							
Barium	135	ND	0.06	0.50	mg/kg							U
Barium	137	ND	0.05	0.50	mg/kg							U
Chromium	52	ND	0.13	0.50	mg/kg							U
Chromium	53	ND	0.07	0.50	mg/kg							U
Cobalt	59	ND	0.03	0.20	mg/kg							U
Lead	208	ND	0.07	0.10	mg/kg							U
Selenium	78	ND	0.44	2.00	mg/kg							U
Silver	107	ND	0.02	0.20	mg/kg							U
Vanadium	51a	ND	0.04	0.20	mg/kg							U
Vanadium	51b	ND	0.02	0.20	mg/kg							U
Arsenic	75a	ND	0.02	0.20	mg/kg							U
Cadmium	111	ND	0.03	0.10	mg/kg							U
Cadmium	114	ND	0.04	0.10	mg/kg							U
Copper	63	ND	0.34	0.50	mg/kg							U
Copper	65	ND	0.35	0.50	mg/kg							U
Nickel	60	ND	0.05	0.50	mg/kg							U
Nickel	62	ND	0.22	0.50	mg/kg							U
Zinc	66	ND	0.8	4.0	mg/kg							U
Zinc	67	ND	0.9	4.0	mg/kg							U
LCS (BJB0285-BS1)					Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 16:04							
Barium	135	24.6	0.06	0.50	mg/kg	25.0		98.3	80-120			
Barium	137	24.5	0.05	0.50	mg/kg	25.0		98.1	80-120			
Chromium	52	25.8	0.13	0.50	mg/kg	25.0		103	80-120			
Chromium	53	26.4	0.07	0.50	mg/kg	25.0		105	80-120			
Cobalt	59	26.4	0.03	0.20	mg/kg	25.0		106	80-120			
Lead	208	26.1	0.07	0.10	mg/kg	25.0		104	80-120			
Selenium	78	76.5	0.44	2.00	mg/kg	80.0		95.6	80-120			
Silver	107	27.0	0.02	0.20	mg/kg	25.0		108	80-120			
Vanadium	51a	25.0	0.04	0.20	mg/kg	25.0		100	80-120			
Vanadium	51b	25.2	0.02	0.20	mg/kg	25.0		101	80-120			
Arsenic	75a	24.6	0.02	0.20	mg/kg	25.0		98.5	80-120			
Cadmium	111	25.0	0.03	0.10	mg/kg	25.0		99.8	80-120			
Cadmium	114	24.8	0.04	0.10	mg/kg	25.0		99.1	80-120			
Copper	63	27.0	0.34	0.50	mg/kg	25.0		108	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Metals and Metallic Compounds - Quality Control

Batch BJB0285 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0285-BS1)					Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 16:04							
Copper	65	26.7	0.35	0.50	mg/kg	25.0		107	80-120			
Nickel	60	26.8	0.05	0.50	mg/kg	25.0		107	80-120			
Nickel	62	25.9	0.22	0.50	mg/kg	25.0		103	80-120			
Zinc	66	81.4	0.8	4.0	mg/kg	80.0		102	80-120			
Zinc	67	74.6	0.9	4.0	mg/kg	80.0		93.2	80-120			
Duplicate (BJB0285-DUP1)			**Source: 21A0376-93**		Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 17:27							
Barium	135	81.6	0.07	0.66	mg/kg		83.4			2.27	20	
Chromium	52	19.8	0.17	0.66	mg/kg		21.2			7.07	20	
Cobalt	59	7.00	0.04	0.27	mg/kg		7.07			0.95	20	
Lead	208	4.78	0.09	0.13	mg/kg		4.79			0.20	20	
Selenium	78	1.43	0.58	2.66	mg/kg		1.16			20.70	20	J
Silver	107	0.06	0.02	0.27	mg/kg		0.07			5.77	20	J
Vanadium	51a	44.8	0.05	0.27	mg/kg		47.0			4.85	20	
Arsenic	75a	4.57	0.03	0.27	mg/kg		4.57			0.02	20	
Cadmium	111	ND	0.04	0.13	mg/kg		0.06					U
Copper	63	18.3	0.45	0.66	mg/kg		18.4			0.76	20	
Nickel	60	17.7	0.07	0.66	mg/kg		18.7			5.58	20	
Zinc	66	45.8	1.1	5.3	mg/kg		45.3			1.17	20	
Matrix Spike (BJB0285-MS1)			**Source: 21A0376-93**		Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 17:31							
Barium	135	113	0.07	0.66	mg/kg	33.2	83.4	90.1	75-125			
Chromium	52	49.4	0.17	0.66	mg/kg	33.2	21.2	84.8	75-125			
Cobalt	59	40.4	0.04	0.27	mg/kg	33.2	7.07	100	75-125			
Lead	208	37.6	0.09	0.13	mg/kg	33.2	4.79	98.8	75-125			
Selenium	78	96.2	0.58	2.65	mg/kg	106	1.16	89.5	75-125			
Silver	107	32.0	0.02	0.27	mg/kg	33.2	0.07	96.1	75-125			
Vanadium	51a	78.9	0.05	0.27	mg/kg	33.2	47.0	96.2	75-125			
Arsenic	75a	34.6	0.03	0.27	mg/kg	33.2	4.57	90.6	75-125			
Cadmium	111	32.4	0.04	0.13	mg/kg	33.2	0.06	97.3	75-125			
Copper	63	52.2	0.45	0.66	mg/kg	33.2	18.4	102	75-125			
Nickel	60	50.7	0.07	0.66	mg/kg	33.2	18.7	96.2	75-125			
Zinc	66	144	1.1	5.3	mg/kg	106	45.3	93.0	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Metals and Metallic Compounds - Quality Control

Batch BJB0285 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0285-MSD1)			**Source: 21A0376-93**		Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 17:37							
Barium	135	113	0.07	0.66	mg/kg	33.1	83.4	89.5	75-125	0.26	20	
Chromium	52	49.3	0.17	0.66	mg/kg	33.1	21.2	84.9	75-125	0.12	20	
Cobalt	59	40.6	0.04	0.26	mg/kg	33.1	7.07	101	75-125	0.46	20	
Lead	208	37.0	0.09	0.13	mg/kg	33.1	4.79	97.4	75-125	1.47	20	
Selenium	78	95.4	0.58	2.65	mg/kg	106	1.16	89.0	75-125	0.88	20	
Silver	107	32.0	0.02	0.26	mg/kg	33.1	0.07	96.5	75-125	0.16	20	
Vanadium	51a	72.4	0.05	0.26	mg/kg	33.1	47.0	76.8	75-125	8.60	20	
Arsenic	75a	34.7	0.03	0.26	mg/kg	33.1	4.57	91.0	75-125	0.11	20	
Cadmium	111	32.3	0.04	0.13	mg/kg	33.1	0.06	97.4	75-125	0.19	20	
Copper	63	51.7	0.45	0.66	mg/kg	33.1	18.4	101	75-125	0.97	20	
Nickel	60	51.2	0.07	0.66	mg/kg	33.1	18.7	98.1	75-125	1.05	20	
Zinc	66	145	1.1	5.3	mg/kg	106	45.3	94.3	75-125	0.73	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Metals and Metallic Compounds - Quality Control

Batch BJB0287 - SMM EPA 7471B

Instrument: HYDRA Analyst: BLC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0287-BLK1)				Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 10:24							
Mercury	ND	0.00525	0.0250	mg/kg							U
LCS (BJB0287-BS1)				Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 10:26							
Mercury	0.464	0.00525	0.0250	mg/kg	0.500		92.8	80-120			
Duplicate (BJB0287-DUP1)		**Source: 21A0376-93**		Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 10:30							
Mercury	0.0522	0.00518	0.0247	mg/kg		0.0428			19.70	20	
Matrix Spike (BJB0287-MS1)		**Source: 21A0376-93**		Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 10:33							
Mercury	0.352	0.00512	0.0244	mg/kg	0.244	0.0428	127	75-125			*
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0287-MSD1)		**Source: 21A0376-93**		Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 10:39							
Mercury	0.331	0.00518	0.0247	mg/kg	0.247	0.0428	117	75-125	6.15	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Post Spike (BJB0287-PS1)		**Source: 21A0376-93**		Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 12:16							
Mercury	0.00134			mg/kg	0.00100	0.0428	117	0-200			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Wet Chemistry - Quality Control

Batch BJB0003 - No Prep Wet Chem

Instrument: BAL2 Analyst: KLE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0003-BLK1)				Prepared: 01-Feb-2021 Analyzed: 01-Feb-2021 05:16							
Total Solids	ND	0.04	0.04	%							U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Wet Chemistry - Quality Control

Batch BJB0199 - PSEP 1986 (modified)

Instrument: TOC Cube Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0199-BLK1)				Prepared: 05-Feb-2021	Analyzed: 06-Feb-2021 19:59						
Total Organic Carbon	ND	0.02	0.02	%							U
LCS (BJB0199-BS1)				Prepared: 05-Feb-2021	Analyzed: 06-Feb-2021 20:29						
Total Organic Carbon	44.6	0.02	0.02	%	44.4		100	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Wet Chemistry - Quality Control

Batch BJB0295 - No Prep Wet Chem

Instrument: UV1800-1 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0295-BLK1)				Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:46							
Hexavalent Chromium	ND	0.489	0.489	mg/kg							U
LCS (BJB0295-BS1)				Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:54							
Hexavalent Chromium	17.0	0.492	0.492	mg/kg	19.7		86.4	80-120			D
LCS (BJB0295-BS2)				Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:55							
Hexavalent Chromium	606	9.96	9.96	mg/kg	654		92.6	80-120			D
Duplicate (BJB0295-DUP1)		**Source: 21A0376-81**		Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:56							
Hexavalent Chromium	ND	0.524	0.524	mg/kg		ND					U
Matrix Spike (BJB0295-MS1)		**Source: 21A0376-81**		Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:57							
Hexavalent Chromium	ND	0.537	0.537	mg/kg	21.5	ND		75-125			*, K, U
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike (BJB0295-MS2)		**Source: 21A0376-81**		Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:57							
Hexavalent Chromium	538	9.88	9.88	mg/kg	636	ND	84.7	75-125			D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Post Spike (BJB0295-PS1)		**Source: 21A0376-81**		Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 19:27							
Hexavalent Chromium	0.719			mg/kg	1.00	ND	55.3	85-115			*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Certified Analyses included in this Report

Analyte	Certifications
EPA 6020A in Solid	
Silver-107	NELAP,DoD-ELAP,WADOE
Barium-135	NELAP,DoD-ELAP,WADOE,ADEC
Barium-137	NELAP,DoD-ELAP,WADOE,ADEC
Cobalt-59	NELAP,DoD-ELAP,WADOE
Chromium-52	NELAP,DoD-ELAP,WADOE,ADEC
Chromium-53	NELAP,DoD-ELAP,WADOE,ADEC
Lead-208	NELAP,DoD-ELAP,WADOE,ADEC
Selenium-82	NELAP,DoD-ELAP,WADOE
Selenium-78	NELAP,DoD-ELAP,WADOE
Vanadium-51a	NELAP,DoD-ELAP,WADOE,ADEC
Vanadium-51b	DoD-ELAP,WADOE,ADEC
EPA 6020A UCT-KED in Solid	
Arsenic-75a	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-111	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-114	NELAP,DoD-ELAP,WADOE,ADEC
Copper-63	NELAP,DoD-ELAP,WADOE
Copper-65	NELAP,DoD-ELAP,WADOE
Nickel-60	NELAP,DoD-ELAP,WADOE,ADEC
Nickel-62	NELAP,DoD-ELAP,WADOE,ADEC
Zinc-66	NELAP,DoD-ELAP,WADOE
Zinc-67	NELAP,DoD-ELAP,WADOE
EPA 7471B in Solid	
Mercury	WADOE,NELAP,DoD-ELAP
EPA 8082A in Solid	
Aroclor 1016	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,ADEC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Aroclor 1254	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1262	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1262 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1268	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1268 [2C]	WADOE,DoD-ELAP,NELAP,ADEC

EPA 8260D in Solid

Chloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Vinyl Chloride	WADOE,DoD-ELAP,NELAP,ADEC
Bromomethane	WADOE,DoD-ELAP,NELAP,ADEC
Chloroethane	WADOE,DoD-ELAP,NELAP,ADEC
Trichlorofluoromethane	WADOE,DoD-ELAP,NELAP,ADEC
Acrolein	WADOE,DoD-ELAP,NELAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	WADOE,DoD-ELAP,NELAP,ADEC
Acetone	WADOE,DoD-ELAP,NELAP
1,1-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Iodomethane	WADOE,DoD-ELAP,NELAP,ADEC
Methylene Chloride	WADOE,DoD-ELAP,NELAP,ADEC
Acrylonitrile	WADOE,DoD-ELAP,NELAP
Carbon Disulfide	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,2-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Vinyl Acetate	WADOE,DoD-ELAP,NELAP
1,1-Dichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
2-Butanone	WADOE,DoD-ELAP,NELAP
2,2-Dichloropropane	WADOE,DoD-ELAP,NELAP
cis-1,2-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Chloroform	WADOE,DoD-ELAP,NELAP,ADEC
Bromochloromethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1-Trichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
Carbon tetrachloride	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
Benzene	WADOE,DoD-ELAP,NELAP,ADEC
Trichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
Bromodichloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Dibromomethane	WADOE,DoD-ELAP,NELAP,ADEC

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

2-Chloroethyl vinyl ether	WADOE,DoD-ELAP,NELAP
4-Methyl-2-Pentanone	WADOE,DoD-ELAP,NELAP
cis-1,3-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
Toluene	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,3-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
2-Hexanone	WADOE,DoD-ELAP,NELAP
1,1,2-Trichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,3-Dichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
Tetrachloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Dibromochloromethane	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dibromoethane	WADOE,DoD-ELAP,NELAP,ADEC
Chlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Ethylbenzene	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1,2-Tetrachloroethane	WADOE,DoD-ELAP,NELAP,ADEC
m,p-Xylene	WADOE,DoD-ELAP,NELAP,ADEC
o-Xylene	WADOE,DoD-ELAP,NELAP,ADEC
Xylenes, total	WADOE
Styrene	WADOE,DoD-ELAP,NELAP,ADEC
Bromoform	WADOE,DoD-ELAP,NELAP,ADEC
1,1,2,2-Tetrachloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,2,3-Trichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,4-Dichloro 2-Butene	WADOE,DoD-ELAP,NELAP
n-Propylbenzene	WADOE,DoD-ELAP,NELAP
Bromobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Isopropyl Benzene	WADOE,DoD-ELAP,NELAP,ADEC
2-Chlorotoluene	WADOE,DoD-ELAP,NELAP
4-Chlorotoluene	WADOE,DoD-ELAP,NELAP
t-Butylbenzene	WADOE,DoD-ELAP,NELAP
1,3,5-Trimethylbenzene	WADOE,DoD-ELAP,NELAP
1,2,4-Trimethylbenzene	WADOE,DoD-ELAP,NELAP
s-Butylbenzene	WADOE,DoD-ELAP,NELAP
4-Isopropyl Toluene	WADOE,DoD-ELAP,NELAP
1,3-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,4-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
n-Butylbenzene	WADOE,DoD-ELAP,NELAP
1,2-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,2-Dibromo-3-chloropropane	WADOE,DoD-ELAP,NELAP,ADEC
1,2,4-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Hexachloro-1,3-Butadiene	WADOE,DoD-ELAP,NELAP,ADEC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Naphthalene	WADOE,DoD-ELAP,NELAP
1,2,3-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Dichlorodifluoromethane	WADOE,DoD-ELAP,NELAP,ADEC
Methyl tert-butyl Ether	WADOE,DoD-ELAP,NELAP
n-Hexane	WADOE
2-Pentanone	WADOE
Dibromofluoromethane	WADOE
4-Bromofluorobenzene	WADOE

EPA 8260D in Water

Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

EPA 8260D MED in Solid

Chloromethane	DoD-ELAP,WADOE,NELAP,ADEC
Vinyl Chloride	DoD-ELAP,WADOE,NELAP,ADEC
Bromomethane	DoD-ELAP,WADOE,NELAP,ADEC
Chloroethane	DoD-ELAP,WADOE,NELAP,ADEC
Trichlorofluoromethane	DoD-ELAP,WADOE,NELAP,ADEC
Acrolein	DoD-ELAP,WADOE,NELAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,WADOE,NELAP,ADEC
Acetone	DoD-ELAP,WADOE,NELAP
1,1-Dichloroethene	DoD-ELAP,WADOE,NELAP,ADEC
Iodomethane	DoD-ELAP,WADOE,NELAP,ADEC
Methylene Chloride	DoD-ELAP,WADOE,NELAP,ADEC
Acrylonitrile	DoD-ELAP,WADOE,NELAP
Carbon Disulfide	DoD-ELAP,WADOE,NELAP,ADEC
trans-1,2-Dichloroethene	DoD-ELAP,WADOE,NELAP,ADEC
Vinyl Acetate	DoD-ELAP,WADOE,NELAP
1,1-Dichloroethane	DoD-ELAP,WADOE,NELAP,ADEC
2-Butanone	DoD-ELAP,WADOE,NELAP
2,2-Dichloropropane	DoD-ELAP,WADOE,NELAP
cis-1,2-Dichloroethene	DoD-ELAP,WADOE,NELAP,ADEC
Chloroform	DoD-ELAP,WADOE,NELAP,ADEC
Bromochloromethane	DoD-ELAP,WADOE,NELAP,ADEC
1,1,1-Trichloroethane	DoD-ELAP,WADOE,NELAP,ADEC
1,1-Dichloropropene	DoD-ELAP,WADOE,NELAP,ADEC
Carbon tetrachloride	DoD-ELAP,WADOE,NELAP,ADEC
1,2-Dichloroethane	DoD-ELAP,WADOE,NELAP,ADEC
Benzene	DoD-ELAP,WADOE,NELAP,ADEC
Trichloroethene	DoD-ELAP,WADOE,NELAP,ADEC
1,2-Dichloropropane	DoD-ELAP,WADOE,NELAP,ADEC
Bromodichloromethane	DoD-ELAP,WADOE,NELAP,ADEC
Dibromomethane	DoD-ELAP,WADOE,NELAP,ADEC
2-Chloroethyl vinyl ether	DoD-ELAP
4-Methyl-2-Pentanone	DoD-ELAP,WADOE,NELAP
cis-1,3-Dichloropropene	DoD-ELAP,WADOE,NELAP,ADEC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Toluene	DoD-ELAP,WADOE,NELAP,ADEC
trans-1,3-Dichloropropene	DoD-ELAP,WADOE,NELAP,ADEC
2-Hexanone	DoD-ELAP,WADOE,NELAP
1,1,2-Trichloroethane	DoD-ELAP,WADOE,NELAP,ADEC
1,3-Dichloropropane	DoD-ELAP,WADOE,NELAP,ADEC
Tetrachloroethene	DoD-ELAP,WADOE,NELAP,ADEC
Dibromochloromethane	DoD-ELAP,WADOE,NELAP,ADEC
1,2-Dibromoethane	DoD-ELAP,WADOE,NELAP,ADEC
Chlorobenzene	DoD-ELAP,WADOE,NELAP,ADEC
Ethylbenzene	DoD-ELAP,WADOE,NELAP,ADEC
1,1,1,2-Tetrachloroethane	DoD-ELAP,WADOE,NELAP,ADEC
m,p-Xylene	DoD-ELAP,WADOE,NELAP,ADEC
o-Xylene	DoD-ELAP,WADOE,NELAP,ADEC
Styrene	DoD-ELAP,WADOE,NELAP,ADEC
Bromoform	DoD-ELAP,WADOE,NELAP,ADEC
1,1,2,2-Tetrachloroethane	DoD-ELAP,WADOE,NELAP,ADEC
1,2,3-Trichloropropane	DoD-ELAP,WADOE,NELAP,ADEC
trans-1,4-Dichloro 2-Butene	DoD-ELAP,WADOE
n-Propylbenzene	DoD-ELAP,WADOE,NELAP
Bromobenzene	DoD-ELAP,WADOE,NELAP,ADEC
Isopropyl Benzene	DoD-ELAP,WADOE,NELAP,ADEC
2-Chlorotoluene	DoD-ELAP,WADOE,NELAP
4-Chlorotoluene	DoD-ELAP,WADOE,NELAP
t-Butylbenzene	DoD-ELAP,WADOE,NELAP
1,3,5-Trimethylbenzene	DoD-ELAP,WADOE,NELAP
1,2,4-Trimethylbenzene	DoD-ELAP,WADOE,NELAP
s-Butylbenzene	DoD-ELAP,WADOE,NELAP
4-Isopropyl Toluene	DoD-ELAP,WADOE,NELAP
1,3-Dichlorobenzene	DoD-ELAP,WADOE,NELAP
1,4-Dichlorobenzene	DoD-ELAP,WADOE,NELAP
n-Butylbenzene	DoD-ELAP,WADOE,NELAP
1,2-Dichlorobenzene	DoD-ELAP,WADOE,NELAP
1,2-Dibromo-3-Chloropropane	DoD-ELAP,WADOE,NELAP,ADEC
1,2,4-Trichlorobenzene	DoD-ELAP,WADOE,NELAP,ADEC
Hexachloro-1,3-Butadiene	DoD-ELAP,WADOE,NELAP,ADEC
Naphthalene	DoD-ELAP,WADOE,NELAP
1,2,3-Trichlorobenzene	DoD-ELAP,WADOE,NELAP,ADEC
Dichlorodifluoromethane	DoD-ELAP,WADOE,NELAP,ADEC
Methyl tert-butyl Ether	DoD-ELAP,WADOE,NELAP

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

n-Hexane	WADOE
EPA 9060A m in Solid	
Total Organic Carbon	WADOE
NWTPH-Dx in Solid	
Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C12-C22)	DoD-ELAP
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP,WADOE
Residual Range Organics (C23-C32)	DoD-ELAP
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP,WADOE
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE
NWTPHg in Solid	
Gasoline Range Organics (Tol-Nap)	DoD-ELAP
Gasoline Range Organics (2MP-TMB)	DoD-ELAP
Gasoline Range Organics (Tol-C12)	DoD-ELAP
Gasoline Range Organics (C6-C10)	DoD-ELAP
Gasoline Range Organics (C5-C12)	DoD-ELAP
4-Bromofluorobenzene (field spiked)	DoD-ELAP
NWTPHg in Water	
Gasoline Range Organics (Tol-Nap)	WADOE,DoD-ELAP
Gasoline Range Organics (2MP-TMB)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	WADOE,DoD-ELAP
Gasoline Range Organics (C6-C10)	WADOE,ADEC,DoD-ELAP
Gasoline Range Organics (C5-C12)	WADOE,DoD-ELAP

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

SM 3500-Cr B-09 in Solid

Hexavalent Chromium DoD-ELAP,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2022
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2022
WADOE	WA Dept of Ecology	C558	06/30/2022
WA-DW	Ecology - Drinking Water	C558	06/30/2022

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	04-Aug-2021 11:06

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
D1	Surrogate was not detected due to sample extract dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
H	Hold time violation - Hold time was exceeded.
J	Estimated concentration value detected below the reporting limit.
K	Hexavalent Chromium post spike performed on a pH adjusted sample to verify matrix interference.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
NRS	This surrogate not reported due to chromatographic interference
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

03 August 2021

Meg Strong
Shannon & Wilson, Inc
400 N 34th St., Suite 100
Seattle, WA 98103-8636

RE: Lower Duwamish

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
21B0005	N/A

Susan Dunnihoo

Digitally signed by Susan Dunnihoo
Date: 2021.08.03 12:15:12 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0005	Turn-around Requested: Standard	Page: 1 of 7	
ARI Client Company: Shannon & Wilson	Phone:	Date: 1/28/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 5	Cooler Temps: See COC
Client Project Name: LDW			
Client Project #: 21-1-12596	Samplers: RBP		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-Dx			PAHs		PCB Aroclor	Metals	Notes/Comments
SB-2021-040:2-01282021	1/28/21	0905	Soil	2	X			X			X	
SB-2021-040:5-01282021		0910		2	X			X			X	
SB-2021-040:10.4-01282021		0915		2	X			X			X	
SB-2021-040:13.7-01282021		0920		2	H			H			H	
SB-2021-010:1.5-01282021		0930		2	X			X			X	
SB-2021-010:6-01282021		0935		2	X			X			X	
SB-2021-010:11-01282021		0940		2	X			X			X	
SB-2021-010:12.7-01282021		0945		2	H			H			H	
SB-2021-109:6-01282021		1000		2	X			X			X	
SB-2021-002:3-01282021		1100		2	X			X		X	X	

Comments/Special Instructions

X = run analysis
H = hold analysis

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Printed Name: RYAN PETERSON	Printed Name: Jacob Haltz	Printed Name:	Printed Name:
Company: S&W	Company: ARI	Company:	Company:
Date & Time: 1/29/21 1653	Date & Time: 01/29/2021 1653	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0005	Turn-around Requested: Standard	Page: 2 of 7	
ARI Client Company: Shannon & Wilson	Phone:	Date: 1/28/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 5	Cooler Temps: See CRF
Client Project Name: LDW			
Client Project #: 21-1-12546	Samplers: MRH, RBP		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-Gx	TPH-Dx	BTEX	HVOCs	PAHs		PCB Aroclors	Metals	Notes/Comments
SB-2021-002:6-01282021	1/28/21	1110	Soil	2		X			X		X	X	
SB-2021-105:6-01282021		1200		2		X			X		X	X	
SB-2021-041:2-01282021		1230		7	X	X	X	X	X		X	X	
SB-2021-041:6-01282021		1245		7	X	X	X	X	X		X	X	
SB-2021-041:10.5-01282021		1300		7	X	X	X	X	X		X	X	
SB-2021-041:13.3-01282021		1305		7	X	H	X	X	H		H	H	
SB-2021-041:19-01282021		1310		7	X	H	X	X	H		H	H	
SB-2021-041:23-01282021		1315		7	X	H	X	X	H		H	H	
SB-2021-106:2-01282021		1330		7	X	X	X	X	X		X	X	
SB-2021-027:2.2-01282021		1355				X			X			X	

Comments/Special Instructions
X = run analysis
H = hold analysis

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Printed Name: RYAN PETERSON	Printed Name: Jacob Haltv	Printed Name:	Printed Name:
Company: S&W	Company: ARI	Company:	Company:
Date & Time: 1/29/21 1653	Date & Time: 01/29/2021 1653	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 210005	Turn-around Requested: Standard	Page: 3 of 7	
ARI Client Company: Shannon & Wilson	Phone:	Date: 1/28/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 5	Cooler Temps: See COC
Client Project Name: LDW			
Client Project #: 21-1-12596	Samplers: NBP, MRH		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-Gx	TPH-Dx	BTEX	HVOCs	PAHs		PCB Aroclors	Metals	Notes/Comments
SB-2021-027:5.3-01282021	1/28/21	1400	Soil	2		X			X			X	
SB-2021-027:10-01282021		1405		2		X			X			X	
SB-2021-027:15-01282021		1410		2		H			H			H	
TB-3-01282021		—	Water	1	X		X	X			VOCs		
Stain-003-01282021		1455	Asphalt	1							X		
Stain-002-01292021	1/29/21	0930		1							X		
Stain-001-01292021		0940		1							X		
Asphalt-005-01292021		1000		1							X		
AugerWater-01292021		1100	Water	2									Total + Dissolved Metals; waters have different metals list than soil. Lab to filter. X
ProbeWater-01292021		1110	Water	2									X

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
X = run analysis H = hold analysis	(Signature)	(Signature)	(Signature)	(Signature)
	Printed Name: RYAN PETERSON	Printed Name: Jacob Laltz	Printed Name:	Printed Name:
	Company: S&W	Company: ARI	Company:	Company:
	Date & Time: 1/29/21 1653	Date & Time: 01/29/2021 1653	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0005	Turn-around Requested: Standard	Page: 4 of 7	
ARI Client Company: Shannon & Wilson	Phone:	Date: 1/29/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 5	Cooler Temps: See COC
Client Project Name: LDW			
Client Project #: 21-1-12596	Samplers: RSP		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: ~~TPH-Dx~~	TPH-Dx			PAHs		PCB Aroclor		Notes/Comments
SB-2021-042:11-01292021	1/29/21	~~1410~~ 1410	Soil	1		X			X		X		
SB-2021-106:11-01292021		1510	Soil	1		X			X		X		
SB-2021-043:9.5-01292021		1540	Soil	1		X			X		X		
TSA-2021-007:0.8-01292021		1600	Soil	1							X		
TSA-2021-007:1.3-01292021		1605	Soil	1							H		
TSA-2021-007:3-01292021		1610	Soil	1							H		
TSA-2021-007:6-01292021		1615	Soil	1							H		

Comments/Special Instructions
X = run analysis
H = hold analysis

Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)	(Signature)	(Signature)	(Signature)
Printed Name: RYAN PETERSON	Printed Name: Jacob Laltz	Printed Name:	Printed Name:
Company: S&W	Company: ARI	Company:	Company:
Date & Time: 1/29/21 1653	Date & Time: 01/29/2021 1653	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0005	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson, Inc.	Phone: 206-632-8020
Client Contact: Shoshana Howard	
Client Project Name: EMJ	
Client Project #: 21-1-12596	Samplers: CTC

Page: 5	of 7
Date: 1/26/21	Ice Present? Yes
No. of Coolers: 5	Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	SVOCs (full list)	PCB Aroclors	Metals	Hex. Chrome	T.O.C.	Grain Size	Notes/Comments
SB-2021-068:1.0-01262021	1/26	1120	Soil	5		X	X	X		X	X	X				⊗ = hold
SB-2021-068:5.5-01262021	1/26	1135	Soil	5		X	X	X		X	X	X				
MW-62:20-01282021	1/28	0925	Soil	2		⊗			⊗			⊗	⊗			
MW-64:1.5-01282021	1/28	1250	Soil	2		⊗			⊗			⊗	⊗			
MW-64:5.2-01282021	1/28	1305	Soil	2		X			X			X	X			
MW-64:9.0-01282021	1/28	1310	Soil	2		X			X			X	X			
MW-64:14.0-01282021	1/28	1330	Soil	2		X			X			X	X			
MW-64:20.5-01282021	1/28	1335	Soil	2		⊗			⊗			⊗	⊗			
MW-64:35.5-01282021	1/28	1415	Soil	2		⊗			⊗			⊗	⊗			
MW-64:45.5-01282021	1/28	1455	Soil	2		⊗			⊗			⊗	⊗			

Comments/Special Instructions
- Refer to EMJ analyte list

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	RYAN PETERSON	Jacob Leahy		
Company:	S&W	ARI		
Date & Time:	1/29/21 1653	01/29/2021 1653		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0005	Turn-around Requested: Standard	Page: 6 of 7	
ARI Client Company: Shannon & Wilson, Inc.	Phone: 206-632-8020	Date: 1/29/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 5	Cooler Temps: See COF
Client Project Name: ENJ			
Client Project #: 21-1-21596	Samplers: GTC		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	SVOCs (Full List)	PCB Aroclors	Metals	Hex. Chrome	T.O.C.	Grain Size	Notes/Comments
MW-64: 55.0-01292021	1/29	1115	Soil	2		⊗			⊗			⊗	⊗			
MW-75: 1.5-01282021	1/28	1040	Soil	5		X	X	X				X				
MW-75: 6.0-01282021	1/28	1055	Soil	5		X	X	X				X				
MW-75: 8.5-01282021	1/28	1100	Soil	5		X	X	X				X				
MW-75: 16.0-01282021	1/28	1105	Soil	5		⊗	X	⊗				⊗				
MW-75: 21.0-01282021	1/28	1115	Soil	5		⊗	X	⊗				⊗				

Analysis Requested — Notes/Comments: ⊗ = Hold

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: RYAN PETERSON	Printed Name: Jacob Laite	Printed Name:	Printed Name:
	Company: S&W	Company: ARI	Company:	Company:
	Date & Time: 1/29/21 1653	Date & Time: 01/29/2021 1653	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0005	Turn-around Requested: Standard	Page: 7 of 7	
ARI Client Company: Shannon & Wilson	Phone: 206-695-6811	Date: 1/29/2021	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 5	Cooler Temps: See COF
Client Project Name: LDW			
Client Project #: 21-1-12596	Samplers: MRH		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-Gx	TPH-Dx	PAHs	Metals	VOC BTEX*				Notes/Comments
SB-2021-006: 1.5 -01292021	1/29/21	1420	Soil	2		X	X	X					⊗ = hold
SB-2021-006: 6 -01292021		1430		2		X	X	X					
SB-2021-006: 10 -01292021		1440		7	X Run	X	X	X	⊗				
SB-2021-006: 20 -01292021		1450		7	X Run	X	⊗	⊗	⊗				

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: RYAN PETERSON	Printed Name: Jacob Haltz	Printed Name:	Printed Name:
	Company: S&W	Company: ARI	Company:	Company:
	Date & Time: 1/29/21 1653	Date & Time: 01/29/2021 1653	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-2021-040:2-01282021	21B0005-01	Solid	28-Jan-2021 09:05	29-Jan-2021 16:53
SB-2021-040:5-01282021	21B0005-02	Solid	28-Jan-2021 09:10	29-Jan-2021 16:53
SB-2021-040:10.4-01282021	21B0005-03	Solid	28-Jan-2021 09:15	29-Jan-2021 16:53
SB-2021-040:13.7-01282021	21B0005-04	Solid	28-Jan-2021 09:20	29-Jan-2021 16:53
SB-2021-010:1.5-01282021	21B0005-05	Solid	28-Jan-2021 09:30	29-Jan-2021 16:53
SB-2021-010:6-01282021	21B0005-06	Solid	28-Jan-2021 09:35	29-Jan-2021 16:53
SB-2021-010:11-01282021	21B0005-07	Solid	28-Jan-2021 09:40	29-Jan-2021 16:53
SB-2021-010:12.7-01282021	21B0005-08	Solid	28-Jan-2021 09:45	29-Jan-2021 16:53
SB-2021-104:6-01282021	21B0005-09	Solid	28-Jan-2021 10:00	29-Jan-2021 16:53
SB-2021-002:3-01282021	21B0005-10	Solid	28-Jan-2021 11:00	29-Jan-2021 16:53
SB-2021-002:6-01282021	21B0005-11	Solid	28-Jan-2021 11:10	29-Jan-2021 16:53
SB-2021-105:6-01282021	21B0005-12	Solid	28-Jan-2021 12:00	29-Jan-2021 16:53
SB-2021-041:2-01282021	21B0005-13	Solid	28-Jan-2021 12:30	29-Jan-2021 16:53
SB-2021-041:6-01282021	21B0005-14	Solid	28-Jan-2021 12:45	29-Jan-2021 16:53
SB-2021-041:10.5-01282021	21B0005-15	Solid	28-Jan-2021 13:00	29-Jan-2021 16:53
SB-2021-041:13.3-01282021	21B0005-16	Solid	28-Jan-2021 13:05	29-Jan-2021 16:53
SB-2021-041:19-01282021	21B0005-17	Solid	28-Jan-2021 13:10	29-Jan-2021 16:53
SB-2021-041:23-01282021	21B0005-18	Solid	28-Jan-2021 13:15	29-Jan-2021 16:53
SB-2021-106:2-01282021	21B0005-19	Solid	28-Jan-2021 13:30	29-Jan-2021 16:53
SB-2021-027:2.2-01282021	21B0005-20	Solid	28-Jan-2021 13:55	29-Jan-2021 16:53
SB-2021-027:5.3-01282021	21B0005-21	Solid	28-Jan-2021 14:00	29-Jan-2021 16:53
SB-2021-027:10-01282021	21B0005-22	Solid	28-Jan-2021 14:05	29-Jan-2021 16:53
SB-2021-027:15-01282021	21B0005-23	Solid	28-Jan-2021 14:10	29-Jan-2021 16:53
TB-3-01282021	21B0005-24	Water	28-Jan-2021 09:05	29-Jan-2021 16:53
Stain-003-01282021	21B0005-25	Solid	28-Jan-2021 14:55	29-Jan-2021 16:53
Stain-002-01292021	21B0005-26	Solid	29-Jan-2021 09:30	29-Jan-2021 16:53
Stain-001-01292021	21B0005-27	Solid	29-Jan-2021 09:40	29-Jan-2021 16:53
Asphalt-005-01292021	21B0005-28	Solid	29-Jan-2021 10:00	29-Jan-2021 16:53
AugerWater-01292021	21B0005-29	Water	29-Jan-2021 11:00	29-Jan-2021 16:53
AugerWater-01292021	21B0005-30	Water	29-Jan-2021 11:00	29-Jan-2021 16:53
ProbeWater-01292021	21B0005-31	Water	29-Jan-2021 11:10	29-Jan-2021 16:53
ProbeWater-01292021	21B0005-32	Water	29-Jan-2021 11:10	29-Jan-2021 16:53
SB-2021-042:11-01292021	21B0005-33	Solid	29-Jan-2021 14:10	29-Jan-2021 16:53
SB-2021-106:11-01292021	21B0005-34	Solid	29-Jan-2021 15:10	29-Jan-2021 16:53
SB-2021-043:9.5-01292021	21B0005-35	Solid	29-Jan-2021 15:40	29-Jan-2021 16:53
TSA-2021-007:0.8-01292021	21B0005-36	Solid	29-Jan-2021 16:00	29-Jan-2021 16:53
TSA-2021-007:1.3-01292021	21B0005-37	Solid	29-Jan-2021 16:05	29-Jan-2021 16:53
TSA-2021-007:3-01292021	21B0005-38	Solid	29-Jan-2021 16:10	29-Jan-2021 16:53
TSA-2021-007:6-01292021	21B0005-39	Solid	29-Jan-2021 16:15	29-Jan-2021 16:53

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021	21B0005-40	Solid	26-Jan-2021 11:20	29-Jan-2021 16:53
SB-2021-068:5.5-01262021	21B0005-41	Solid	26-Jan-2021 11:35	29-Jan-2021 16:53
MW-62:20-01282021	21B0005-42	Solid	28-Jan-2021 09:25	29-Jan-2021 16:53
MW-64:1.5-01282021	21B0005-43	Solid	28-Jan-2021 12:50	29-Jan-2021 16:53
MW-64:5.2-01282021	21B0005-44	Solid	28-Jan-2021 13:05	29-Jan-2021 16:53
MW-64:9.0-01282021	21B0005-45	Solid	28-Jan-2021 13:10	29-Jan-2021 16:53
MW-64:14.0-01282021	21B0005-46	Solid	28-Jan-2021 13:30	29-Jan-2021 16:53
MW-64:20.5-01282021	21B0005-47	Solid	28-Jan-2021 13:35	29-Jan-2021 16:53
MW-64:35.5-01282021	21B0005-48	Solid	28-Jan-2021 14:15	29-Jan-2021 16:53
MW-64:45.5-01282021	21B0005-49	Solid	28-Jan-2021 14:55	29-Jan-2021 16:53
MW-64:55.0-01282021	21B0005-50	Solid	29-Jan-2021 11:15	29-Jan-2021 16:53
MW-75:1.5-01282021	21B0005-51	Solid	28-Jan-2021 10:40	29-Jan-2021 16:53
MW-75:6.0-01282021	21B0005-52	Solid	28-Jan-2021 10:55	29-Jan-2021 16:53
MW-75:8.5-01282021	21B0005-53	Solid	28-Jan-2021 11:00	29-Jan-2021 16:53
MW-75:16.0-01282021	21B0005-54	Solid	28-Jan-2021 11:05	29-Jan-2021 16:53
MW-75:21.0-01282021	21B0005-55	Solid	28-Jan-2021 11:15	29-Jan-2021 16:53
SB-2021-006:1.5-01292021	21B0005-56	Solid	29-Jan-2021 14:20	29-Jan-2021 16:53
SB-2021-006:6-01292021	21B0005-57	Solid	29-Jan-2021 14:30	29-Jan-2021 16:53
SB-2021-006:10-01292021	21B0005-58	Solid	28-Jan-2021 14:40	29-Jan-2021 16:53
SB-2021-006:20-01292021	21B0005-59	Solid	28-Jan-2021 14:50	29-Jan-2021 16:53

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Work Order Case Narrative

Client: Shannon & Wilson, Inc
Project: Lower Duwamish
Work Order: 21B0005

Sample receipt

Samples as listed on the preceding page were received 29-Jan-2021 16:53 under ARI work order 21B0005. For details regarding sample receipt, please refer to the Cooler Receipt Form.

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0005-19 in batch BJB0243 and in association with sample 21B0005-27 in batch BJB0247. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits except Aroclor 1016 percent recovery which was out of control low in BJB0247-MS1 and BJB0247-MSD1. Deviations have been flagged.

Gasoline by NWTPH-g (GC/MS)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Semivolatiles - EPA Method SW8270E

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements except 4-Nitrophenol and 4-Chlorophenyl phenyl ether which were out of control low and 4,6-Dinitro-2-Methylphenol. All samples which contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits except as flagged.

The method blank(s) were clean at the reporting limits except Diethylphthalate. All samples which contain analyte have been flagged with a "B" qualifier.

The blank spike (BS/LCS) percent recoveries were within control limits except N-Nitroso-diphenylamine which was out of control low and has been flagged within the QC section of this report.

Sample specific QC was performed in association with sample 21B0005-40 in batch BJB0248.The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits except as flagged within the QC section of this report.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations (ICV/CCV) were within method requirements except Benzo(b)fluoranthene, Benzo(j)fluoranthene and surrogate Dibenzo(a,h)anthracene d-14 which were out of control low. All samples which contain

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits except Dibenzo(a,h)anthracene d-14 which were out of control low in the ICV.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0005-12 in batch BJB0330 and in association with sample 21B0005-57 in batch BJB0335. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits except Naphthalene, 1-Methylnaphthalene and 2-Methylnaphthalene which were out of control low in MS and MSD percent recoveries in batch BJB0335. Deviations have been flagged.

Total Metals - EPA Method 6020A

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0005-01 in batch BJB0285, in association with sample 21B0005-11 in batch BJB0380 and in association with sample 21B0005-29 in batch BJB438. The duplicate (DUP) relative percent difference (RPD) were within advisory control limits except Arsenic in BJB0285-DUP1, Zinc in BJB0380-DUP1 and Lead in BJB0438-DUP1. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits. Deviations have been flagged.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Total Hg - EPA Method 7470/7471

The sample(s) were digested and analyzed within the recommended holding times.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0005-01 in batch BJB0287, in association with sample 21B0005-31 in batch BJB0092 and in association with sample 21B0005-11 in batch BJB0381. The duplicate (DUP) relative percent difference (RPD) were within advisory control limits. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits except o-Terphenyl which was out of control low in sample 21B0005-58. Deviation has been flagged.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0005-40 in batch BJB0250. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries were out of control low and the MS/MSD relative percent difference (RPD) were within advisory control limits. Sample specific QC was performed in association with sample 21B0005-14 in batch BJB0329. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and the MS/MSD relative percent difference (RPD) were within advisory control limits except MSD percent recovery which was out of control high. All deviations have been flagged.

Dissolved Hg - EPA Method 7470/7471

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0005-32 in batch BJB0297. The duplicate (DUP) relative percent difference (RPD) were within advisory control limits. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Dissolved Metals - EPA Method 6020B

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0005-30 in batch BJB0246. The duplicate (DUP) relative percent difference (RPD) were within advisory control limits. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

REVISED to add trans-1,2-dichloroethene to VOC list.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 02/01/2021 14:20:24

WORK ORDER

21B0005

Client: Shannon & Wilson, Inc	**Project Manager:** Amanda Volgardsen Johnson
Project: Lower Duwamish	**Project Number:** Lower Duwamish

Preservation Confirmation

Container ID	Container Type	pH
21B0005-01 A	Glass WM, Clear, 16 oz	
21B0005-01 B	Glass WM, Clear, 4 oz	
21B0005-02 A	Glass WM, Clear, 16 oz	
21B0005-02 B	Glass WM, Clear, 4 oz	
21B0005-03 A	Glass WM, Clear, 16 oz	
21B0005-03 B	Glass WM, Clear, 4 oz	
21B0005-04 A	Glass WM, Clear, 16 oz	
21B0005-04 B	Glass WM, Clear, 4 oz	
21B0005-05 A	Glass WM, Clear, 16 oz	
21B0005-05 B	Glass WM, Clear, 4 oz	
21B0005-06 A	Glass WM, Clear, 16 oz	
21B0005-06 B	Glass WM, Clear, 4 oz	
21B0005-07 A	Glass WM, Clear, 16 oz	
21B0005-07 B	Glass WM, Clear, 4 oz	
21B0005-08 A	Glass WM, Clear, 16 oz	
21B0005-08 B	Glass WM, Clear, 4 oz	
21B0005-09 A	Glass WM, Clear, 16 oz	
21B0005-09 B	Glass WM, Clear, 4 oz	
21B0005-10 A	Glass WM, Clear, 16 oz	
21B0005-10 B	Glass WM, Clear, 4 oz	
21B0005-11 A	Glass WM, Clear, 16 oz	
21B0005-11 B	Glass WM, Clear, 4 oz	
21B0005-12 A	Glass WM, Clear, 16 oz	
21B0005-12 B	Glass WM, Clear, 4 oz	
21B0005-13 A	Glass WM, Clear, 16 oz	
21B0005-13 B	Glass WM, Clear, 4 oz	
21B0005-13 C	VOA Vial, Clear, 40 mL, NaHSO4	
21B0005-13 D	VOA Vial, Clear, 40 mL, NaHSO4	
21B0005-13 E	VOA Vial, Clear, 40 mL, MeOH	
21B0005-13 F	VOA Vial, Clear, 40 mL, MeOH	
21B0005-13 G	VOA Vial, Clear, 40 mL, MeOH	
21B0005-14 A	Glass WM, Clear, 16 oz	
21B0005-14 B	Glass WM, Clear, 4 oz	
21B0005-14 C	VOA Vial, Clear, 40 mL, NaHSO4	
21B0005-14 D	VOA Vial, Clear, 40 mL, NaHSO4	

Reviewed By

Date

Draft for Public Comment

WORK ORDER

21B0005

Client: Shannon & Wilson, Inc | **Project Manager:** Amanda Volgardsen Johnson

Project: Lower Duwamish | **Project Number:** Lower Duwamish

21B0005-14 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-14 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-14 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-15 A	Glass WM, Clear, 16 oz
21B0005-15 B	Glass WM, Clear, 4 oz
21B0005-15 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-15 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-15 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-15 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-15 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-16 A	Glass WM, Clear, 16 oz
21B0005-16 B	Glass WM, Clear, 4 oz
21B0005-16 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-16 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-16 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-16 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-16 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-17 A	Glass WM, Clear, 16 oz
21B0005-17 B	Glass WM, Clear, 4 oz
21B0005-17 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-17 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-17 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-17 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-17 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-18 A	Glass WM, Clear, 16 oz
21B0005-18 B	Glass WM, Clear, 4 oz
21B0005-18 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-18 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-18 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-18 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-18 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-19 A	Glass WM, Clear, 16 oz
21B0005-19 B	Glass WM, Clear, 4 oz
21B0005-19 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-19 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-19 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-19 F	VOA Vial, Clear, 40 mL, MeOH

Reviewed By _____ Date _____

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 02/01/2021 14:20:24

WORK ORDER

21B0005

Client: Shannon & Wilson, Inc | **Project Manager:** Amanda Volgardsen Johnson

Project: Lower Duwamish | **Project Number:** Lower Duwamish

21B0005-19 G	VOA Vial, Clear, 40 mL, MeOH		
21B0005-20 A	Glass WM, Clear, 16 oz		
21B0005-20 B	Glass WM, Clear, 4 oz		
21B0005-21 A	Glass WM, Clear, 16 oz		
21B0005-21 B	Glass WM, Clear, 4 oz		
21B0005-22 A	Glass WM, Clear, 16 oz		
21B0005-22 B	Glass WM, Clear, 4 oz		
21B0005-23 A	Glass WM, Clear, 16 oz		
21B0005-23 B	Glass WM, Clear, 4 oz		
21B0005-24 A	VOA Vial, Clear, 40 mL, HCL	Bubble	
21B0005-25 A	Glass WM, Clear, 16 oz		
21B0005-26 A	Glass WM, Clear, 16 oz		
21B0005-27 A	Glass WM, Clear, 16 oz		
21B0005-28 A	Glass WM, Clear, 16 oz		
21B0005-29 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21B0005-30 A	HDPE NM, 500 mL	>2	Fail
21B0005-31 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass
21B0005-32 A	HDPE NM, 500 mL	>2	Fail
21B0005-33 A	Glass WM, Clear, 16 oz		
21B0005-34 A	Glass WM, Clear, 16 oz		
21B0005-35 A	Glass WM, Clear, 16 oz		
21B0005-36 A	Glass WM, Clear, 16 oz		
21B0005-37 A	Glass WM, Clear, 16 oz		
21B0005-38 A	Glass WM, Clear, 16 oz		
21B0005-39 A	Glass WM, Clear, 16 oz		
21B0005-40 A	Glass WM, Clear, 16 oz		
21B0005-40 B	Glass WM, Clear, 4 oz		
21B0005-40 C	VOA Vial, Clear, 40 mL, NaHSO4		
21B0005-40 D	VOA Vial, Clear, 40 mL, NaHSO4		
21B0005-40 E	VOA Vial, Clear, 40 mL, MeOH		
21B0005-41 A	Glass WM, Clear, 16 oz		
21B0005-41 B	Glass WM, Clear, 4 oz		
21B0005-41 C	VOA Vial, Clear, 40 mL, NaHSO4		
21B0005-41 D	VOA Vial, Clear, 40 mL, NaHSO4		
21B0005-41 E	VOA Vial, Clear, 40 mL, MeOH		
21B0005-42 A	Glass WM, Clear, 16 oz		
21B0005-42 B	Glass WM, Clear, 4 oz		

Reviewed By _____ Date _____

Draft for Public Comment

WORK ORDER

21B0005

Client: Shannon & Wilson, Inc	**Project Manager: Amanda Volgardsen Johnson**
Project: Lower Duwamish	**Project Number: Lower Duwamish**

21B0005-43 A	Glass WM, Clear, 16 oz
21B0005-43 B	Glass WM, Clear, 4 oz
21B0005-44 A	Glass WM, Clear, 16 oz
21B0005-44 B	Glass WM, Clear, 4 oz
21B0005-45 A	Glass WM, Clear, 16 oz
21B0005-45 B	Glass WM, Clear, 4 oz
21B0005-46 A	Glass WM, Clear, 16 oz
21B0005-46 B	Glass WM, Clear, 4 oz
21B0005-47 A	Glass WM, Clear, 16 oz
21B0005-47 B	Glass WM, Clear, 4 oz
21B0005-48 A	Glass WM, Clear, 16 oz
21B0005-48 B	Glass WM, Clear, 4 oz
21B0005-49 A	Glass WM, Clear, 16 oz
21B0005-49 B	Glass WM, Clear, 4 oz
21B0005-50 A	Glass WM, Clear, 16 oz
21B0005-50 B	Glass WM, Clear, 4 oz
21B0005-51 A	Glass WM, Clear, 16 oz
21B0005-51 B	Glass WM, Clear, 4 oz
21B0005-51 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-51 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-51 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-52 A	Glass WM, Clear, 16 oz
21B0005-52 B	Glass WM, Clear, 4 oz
21B0005-52 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-52 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-52 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-53 A	Glass WM, Clear, 16 oz
21B0005-53 B	Glass WM, Clear, 4 oz
21B0005-53 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-53 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-53 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-54 A	Glass WM, Clear, 16 oz
21B0005-54 B	Glass WM, Clear, 4 oz
21B0005-54 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-54 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-54 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-55 A	Glass WM, Clear, 16 oz

Reviewed By

Date

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 02/01/2021 14:20:24

WORK ORDER

21B0005

Client: Shannon & Wilson, Inc | **Project Manager:** Amanda Volgardsen Johnson

Project: Lower Duwamish | **Project Number:** Lower Duwamish

21B0005-55 B	Glass WM, Clear, 4 oz
21B0005-55 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-55 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-55 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-56 A	Glass WM, Clear, 16 oz
21B0005-56 B	Glass WM, Clear, 4 oz
21B0005-57 A	Glass WM, Clear, 16 oz
21B0005-57 B	Glass WM, Clear, 4 oz
21B0005-58 A	Glass WM, Clear, 16 oz
21B0005-58 B	Glass WM, Clear, 4 oz
21B0005-58 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-58 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-58 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-58 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-58 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-59 A	Glass WM, Clear, 16 oz
21B0005-59 B	Glass WM, Clear, 4 oz
21B0005-59 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-59 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-59 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-59 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-59 G	VOA Vial, Clear, 40 mL, MeOH

Preservation Confirmed By

02/01/2021
Date

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Shannon & Wilson Project Name: LDH

COC No(s): ~~NA~~ Delivered by: Fed-Ex UPS Courier ~~Hand Delivered~~ Other: _____

Assigned ARI Job No: 21B0005 Tracking No: _____ ~~NA~~

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	~~NO~~
Were custody papers included with the cooler?	~~YES~~	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1653 2.8 2.9 3.8 1.4 1.2 ____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00 ~~5006~~

Cooler Accepted by: JSW Date: 01/29/2021 Time: 1653

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	~~NO~~
What kind of packing material was used?	Bubble Wrap ~~Wet Ice~~ Gel Packs ~~Baggies~~ Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	~~YES~~	NO
How were bottles sealed in plastic bags?	Individually	~~Grouped~~	Not
Did all bottles arrive in good condition (unbroken)?		~~YES~~	NO
Were all bottle labels complete and legible?		~~YES~~	NO
Did the number of containers listed on COC match with the number of containers received?		~~YES~~	NO
Did all bottle labels and tags agree with custody papers?		~~YES~~	NO
Were all bottles used correct for the requested analyses?		~~YES~~	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	~~YES~~	NO
Were all VOC vials free of air bubbles?	NA	YES	~~NO~~
Was sufficient amount of sample sent in each bottle?		~~YES~~	NO
Date VOC Trip Blank was made at ARI	NA	10/26/2020	

Were the sample(s) split by ARI? ~~NA~~ YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JSW Date: 02/01/2021 Time: 1027 Labels checked by: JSW

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

vials w/ air bubbles marked on preservation sheet, lab to determine size.

By: JSW Date: ~~01~~ 02/01/2021 JSW

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 02/01/2021 14:20:24

WORK ORDER

21B0005

Client: Shannon & Wilson, Inc
Project Manager: Amanda Volgardsen Johnson
Project: Lower Duwamish
Project Number: Lower Duwamish

Preservation Confirmation

Container ID	Container Type	pH
21B0005-01 A	Glass WM, Clear, 16 oz	
21B0005-01 B	Glass WM, Clear, 4 oz	
21B0005-02 A	Glass WM, Clear, 16 oz	
21B0005-02 B	Glass WM, Clear, 4 oz	
21B0005-03 A	Glass WM, Clear, 16 oz	
21B0005-03 B	Glass WM, Clear, 4 oz	
21B0005-04 A	Glass WM, Clear, 16 oz	
21B0005-04 B	Glass WM, Clear, 4 oz	
21B0005-05 A	Glass WM, Clear, 16 oz	
21B0005-05 B	Glass WM, Clear, 4 oz	
21B0005-06 A	Glass WM, Clear, 16 oz	
21B0005-06 B	Glass WM, Clear, 4 oz	
21B0005-07 A	Glass WM, Clear, 16 oz	
21B0005-07 B	Glass WM, Clear, 4 oz	
21B0005-08 A	Glass WM, Clear, 16 oz	
21B0005-08 B	Glass WM, Clear, 4 oz	
21B0005-09 A	Glass WM, Clear, 16 oz	
21B0005-09 B	Glass WM, Clear, 4 oz	
21B0005-10 A	Glass WM, Clear, 16 oz	
21B0005-10 B	Glass WM, Clear, 4 oz	
21B0005-11 A	Glass WM, Clear, 16 oz	
21B0005-11 B	Glass WM, Clear, 4 oz	
21B0005-12 A	Glass WM, Clear, 16 oz	
21B0005-12 B	Glass WM, Clear, 4 oz	
21B0005-13 A	Glass WM, Clear, 16 oz	
21B0005-13 B	Glass WM, Clear, 4 oz	
21B0005-13 C	VOA Vial, Clear, 40 mL, NaHSO4	
21B0005-13 D	VOA Vial, Clear, 40 mL, NaHSO4	
21B0005-13 E	VOA Vial, Clear, 40 mL, MeOH	
21B0005-13 F	VOA Vial, Clear, 40 mL, MeOH	
21B0005-13 G	VOA Vial, Clear, 40 mL, MeOH	
21B0005-14 A	Glass WM, Clear, 16 oz	
21B0005-14 B	Glass WM, Clear, 4 oz	
21B0005-14 C	VOA Vial, Clear, 40 mL, NaHSO4	
21B0005-14 D	VOA Vial, Clear, 40 mL, NaHSO4	

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 02/01/2021 14:20:24

WORK ORDER

21B0005

Client: Shannon & Wilson, Inc
Project Manager: Amanda Volgardsen Johnson
Project: Lower Duwamish
Project Number: Lower Duwamish

21B0005-14 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-14 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-14 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-15 A	Glass WM, Clear, 16 oz
21B0005-15 B	Glass WM, Clear, 4 oz
21B0005-15 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-15 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-15 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-15 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-15 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-16 A	Glass WM, Clear, 16 oz
21B0005-16 B	Glass WM, Clear, 4 oz
21B0005-16 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-16 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-16 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-16 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-16 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-17 A	Glass WM, Clear, 16 oz
21B0005-17 B	Glass WM, Clear, 4 oz
21B0005-17 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-17 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-17 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-17 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-17 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-18 A	Glass WM, Clear, 16 oz
21B0005-18 B	Glass WM, Clear, 4 oz
21B0005-18 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-18 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-18 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-18 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-18 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-19 A	Glass WM, Clear, 16 oz
21B0005-19 B	Glass WM, Clear, 4 oz
21B0005-19 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-19 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-19 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-19 F	VOA Vial, Clear, 40 mL, MeOH

Reviewed By

Date

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 02/01/2021 14:20:24

WORK ORDER

21B0005

Client: Shannon & Wilson, Inc	**Project Manager: Amanda Volgardsen Johnson**
Project: Lower Duwamish	**Project Number: Lower Duwamish**

21B0005-19 G	VOA Vial, Clear, 40 mL, MeOH			
21B0005-20 A	Glass WM, Clear, 16 oz			
21B0005-20 B	Glass WM, Clear, 4 oz			
21B0005-21 A	Glass WM, Clear, 16 oz			
21B0005-21 B	Glass WM, Clear, 4 oz			
21B0005-22 A	Glass WM, Clear, 16 oz			
21B0005-22 B	Glass WM, Clear, 4 oz			
21B0005-23 A	Glass WM, Clear, 16 oz			
21B0005-23 B	Glass WM, Clear, 4 oz			
21B0005-24 A	VOA Vial, Clear, 40 mL, HCL	Bubble		
21B0005-25 A	Glass WM, Clear, 16 oz			
21B0005-26 A	Glass WM, Clear, 16 oz			
21B0005-27 A	Glass WM, Clear, 16 oz			
21B0005-28 A	Glass WM, Clear, 16 oz			
21B0005-29 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass	
21B0005-30 A	HDPE NM, 500 mL	>2	Fail	(1)
21B0005-31 A	HDPE NM, 500 mL, 1:1 HNO3	<2	Pass	
21B0005-32 A	HDPE NM, 500 mL	>2	Fail	(1)
21B0005-33 A	Glass WM, Clear, 16 oz			
21B0005-34 A	Glass WM, Clear, 16 oz			
21B0005-35 A	Glass WM, Clear, 16 oz			
21B0005-36 A	Glass WM, Clear, 16 oz			
21B0005-37 A	Glass WM, Clear, 16 oz			
21B0005-38 A	Glass WM, Clear, 16 oz			
21B0005-39 A	Glass WM, Clear, 16 oz			
21B0005-40 A	Glass WM, Clear, 16 oz			
21B0005-40 B	Glass WM, Clear, 4 oz			
21B0005-40 C	VOA Vial, Clear, 40 mL, NaHSO4			
21B0005-40 D	VOA Vial, Clear, 40 mL, NaHSO4			
21B0005-40 E	VOA Vial, Clear, 40 mL, MeOH			
21B0005-41 A	Glass WM, Clear, 16 oz			
21B0005-41 B	Glass WM, Clear, 4 oz			
21B0005-41 C	VOA Vial, Clear, 40 mL, NaHSO4			
21B0005-41 D	VOA Vial, Clear, 40 mL, NaHSO4			
21B0005-41 E	VOA Vial, Clear, 40 mL, MeOH			
21B0005-42 A	Glass WM, Clear, 16 oz			
21B0005-42 B	Glass WM, Clear, 4 oz			

Reviewed By

Date

Draft for Public Comment

WORK ORDER

21B0005

Client: Shannon & Wilson, Inc | Project Manager: Amanda Volgardsen Johnson

Project: Lower Duwamish | Project Number: Lower Duwamish

21B0005-43 A	Glass WM, Clear, 16 oz
21B0005-43 B	Glass WM, Clear, 4 oz
21B0005-44 A	Glass WM, Clear, 16 oz
21B0005-44 B	Glass WM, Clear, 4 oz
21B0005-45 A	Glass WM, Clear, 16 oz
21B0005-45 B	Glass WM, Clear, 4 oz
21B0005-46 A	Glass WM, Clear, 16 oz
21B0005-46 B	Glass WM, Clear, 4 oz
21B0005-47 A	Glass WM, Clear, 16 oz
21B0005-47 B	Glass WM, Clear, 4 oz
21B0005-48 A	Glass WM, Clear, 16 oz
21B0005-48 B	Glass WM, Clear, 4 oz
21B0005-49 A	Glass WM, Clear, 16 oz
21B0005-49 B	Glass WM, Clear, 4 oz
21B0005-50 A	Glass WM, Clear, 16 oz
21B0005-50 B	Glass WM, Clear, 4 oz
21B0005-51 A	Glass WM, Clear, 16 oz
21B0005-51 B	Glass WM, Clear, 4 oz
21B0005-51 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-51 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-51 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-52 A	Glass WM, Clear, 16 oz
21B0005-52 B	Glass WM, Clear, 4 oz
21B0005-52 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-52 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-52 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-53 A	Glass WM, Clear, 16 oz
21B0005-53 B	Glass WM, Clear, 4 oz
21B0005-53 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-53 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-53 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-54 A	Glass WM, Clear, 16 oz
21B0005-54 B	Glass WM, Clear, 4 oz
21B0005-54 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-54 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-54 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-55 A	Glass WM, Clear, 16 oz

Reviewed By

Date

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 02/01/2021 14:20:24

WORK ORDER

21B0005

Client: Shannon & Wilson, Inc
Project Manager: Amanda Volgardsen Johnson
Project: Lower Duwamish
Project Number: Lower Duwamish

21B0005-55 B	Glass WM, Clear, 4 oz
21B0005-55 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-55 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-55 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-56 A	Glass WM, Clear, 16 oz
21B0005-56 B	Glass WM, Clear, 4 oz
21B0005-57 A	Glass WM, Clear, 16 oz
21B0005-57 B	Glass WM, Clear, 4 oz
21B0005-58 A	Glass WM, Clear, 16 oz
21B0005-58 B	Glass WM, Clear, 4 oz
21B0005-58 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-58 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-58 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-58 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-58 G	VOA Vial, Clear, 40 mL, MeOH
21B0005-59 A	Glass WM, Clear, 16 oz
21B0005-59 B	Glass WM, Clear, 4 oz
21B0005-59 C	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-59 D	VOA Vial, Clear, 40 mL, NaHSO4
21B0005-59 E	VOA Vial, Clear, 40 mL, MeOH
21B0005-59 F	VOA Vial, Clear, 40 mL, MeOH
21B0005-59 G	VOA Vial, Clear, 40 mL, MeOH

Preservation Confirmed By

02/01/2021
Date

①Filtered at 0.45µm and preserved to pH<2.0 with ~~0.4~~ SD 2/2/21 0.75mL conc. HNO_3 (I10976).
SD 2/2/21

Reviewed By

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:2-01282021

21B0005-01 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 09:05
Instrument: NT11 Analyst: VTS — Analyzed: 03/10/2021 14:55

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-01 A 03
	Preparation Batch: BJB0330	Sample Size: 10.8 g (wet)	Dry Weight:10.24 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 94.83
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-01 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-01 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	0.51	ug/kg	J
1-Methylnaphthalene	90-12-0	1	0.10	0.49	0.46	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.12	0.49	0.48	ug/kg	J
Acenaphthylene	208-96-8	1	0.06	0.49	0.12	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.49	0.26	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.49	0.27	ug/kg	J
Fluorene	86-73-7	1	0.07	0.49	0.30	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	5.90	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	1.44	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.49	9.32	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	10.1	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	5.59	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	6.76	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.06	0.49	4.30	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	2.52	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.09	0.49	2.13	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.08	0.49	5.08	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	3.25	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	1.07	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	3.47	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*47.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*79.2*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*71.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:2-01282021

21B0005-01 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 09:05
Instrument: FID4 Analyst: CTO — Analyzed: 02/09/2021 22:46

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-01 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:9.48 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 94.83

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.27	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.5	14.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:2-01282021

21B0005-01 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 09:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 19:34

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-01 B 01
Preparation Batch: BJB0285 — Sample Size: 1.013 g (wet) — Dry Weight:0.94 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 92.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	20.5	mg/kg	
Chromium	7440-47-3	20	0.14	0.53	10.9	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	3.77	mg/kg	
Lead	7439-92-1	20	0.07	0.11	3.10	mg/kg	
Selenium	7782-49-2	20	0.47	2.12	0.57	mg/kg	J
Silver	7440-22-4	20	0.02	0.21	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	29.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:2-01282021

21B0005-01 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 09:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 19:34

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-01 B 01
Preparation Batch: BJB0285 — Sample Size: 1.013 g (wet) — Dry Weight:0.94 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 92.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	2.21	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.06	mg/kg	J
Copper	7440-50-8	20	0.36	0.53	9.20	mg/kg	
Nickel	7440-02-0	20	0.05	0.53	9.08	mg/kg	
Zinc	7440-66-6	20	0.9	4.2	22.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:2-01282021

21B0005-01 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 09:05
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:41

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-01 B
Preparation Batch: BJB0287 — Sample Size: 0.222 g (wet) — Dry Weight:0.21 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 92.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00509	0.0242	0.00918	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:5-01282021

21B0005-02 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 09:10
Instrument: NT11 Analyst: VTS — Analyzed: 03/10/2021 15:28

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-02 A 03
	Preparation Batch: BJB0330	Sample Size: 11.48 g (wet)	Dry Weight:10.14 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 88.34
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-02 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-02 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	3.44	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	5.95	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	5.73	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	0.20	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.49	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.12	0.49	2.48	ug/kg	
Fluorene	86-73-7	1	0.07	0.49	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.49	11.8	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	1.09	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.49	4.47	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	5.22	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	2.56	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	5.06	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	2.78	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	0.87	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	0.85	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.49	1.90	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	2.06	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	0.67	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	2.76	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*50.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*86.7*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*72.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:5-01282021

21B0005-02 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 09:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/09/2021 23:06

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-02 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:8.83 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 88.34

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.66	9.61	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.3	21.4	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:5-01282021

21B0005-02 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 09:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 22:21

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-02 B 01
Preparation Batch: BJB0285 — Sample Size: 1.052 g (wet) — Dry Weight:0.92 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 87.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.54	39.4	mg/kg	
Chromium	7440-47-3	20	0.14	0.54	11.5	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	5.67	mg/kg	
Lead	7439-92-1	20	0.07	0.11	2.67	mg/kg	
Selenium	7782-49-2	20	0.48	2.17	0.94	mg/kg	J
Silver	7440-22-4	20	0.02	0.22	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	33.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:5-01282021

21B0005-02 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 09:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 22:21

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-02 B 01
Preparation Batch: BJB0285 — Sample Size: 1.052 g (wet) — Dry Weight:0.92 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 87.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	3.26	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.05	mg/kg	J
Copper	7440-50-8	20	0.37	0.54	13.2	mg/kg	
Nickel	7440-02-0	20	0.05	0.54	11.1	mg/kg	
Zinc	7440-66-6	20	0.9	4.3	28.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:5-01282021

21B0005-02 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 09:10
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:56

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-02 B
Preparation Batch: BJB0287 — Sample Size: 0.234 g (wet) — Dry Weight:0.20 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 87.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00513	0.0244	0.0209	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:10.4-01282021

21B0005-03 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 09:15
Instrument: NT11 Analyst: VTS — Analyzed: 03/10/2021 16:00

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-03 A 03
	Preparation Batch: BJB0330	Sample Size: 13.3 g (wet)	Dry Weight:10.08 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 75.78
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-03 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-03 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	28.5	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	11.8	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	12.4	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	3.66	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	3.04	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	6.77	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	3.02	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	27.0	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	2.84	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	16.7	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	17.3	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	3.72	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	7.65	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	5.49	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.73	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	1.90	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	3.71	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	4.53	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.79	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	6.91	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*49.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*79.5*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*69.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:10.4-01282021

21B0005-03 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 09:15
Instrument: FID4 Analyst: CTO — Analyzed: 02/09/2021 23:27

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-03 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:7.58 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 75.78

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.60	14.6	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.2	41.8	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*110*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:10.4-01282021

21B0005-03 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 09:15
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 22:26

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-03 B 01
Preparation Batch: BJB0285 — Sample Size: 1.028 g (wet) — Dry Weight:0.76 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 73.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.66	44.2	mg/kg	
Chromium	7440-47-3	20	0.17	0.66	13.8	mg/kg	
Cobalt	7440-48-4	20	0.04	0.26	5.37	mg/kg	
Lead	7439-92-1	20	0.09	0.13	5.31	mg/kg	
Selenium	7782-49-2	20	0.58	2.65	0.97	mg/kg	J
Silver	7440-22-4	20	0.02	0.26	0.10	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.26	42.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:10.4-01282021

21B0005-03 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 09:15
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 22:26

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-03 B 01
Preparation Batch: BJB0285 — Sample Size: 1.028 g (wet) — Dry Weight:0.76 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 73.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.26	6.51	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.06	mg/kg	J
Copper	7440-50-8	20	0.45	0.66	20.4	mg/kg	
Nickel	7440-02-0	20	0.07	0.66	11.4	mg/kg	
Zinc	7440-66-6	20	1.1	5.3	31.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-040:10.4-01282021

21B0005-03 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 09:15
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 10:58

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-03 B
Preparation Batch: BJB0287 — Sample Size: 0.21 g (wet) — Dry Weight:0.15 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 73.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00680	0.0324	0.338	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:1.5-01282021

21B0005-05 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 09:30
Instrument: NT11 Analyst: VTS — Analyzed: 03/10/2021 16:33

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-05 A 03
	Preparation Batch: BJB0330	Sample Size: 10.63 g (wet)	Dry Weight:10.09 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 94.93
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-05 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-05 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.59	0.55	ug/kg	J
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.49	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.54	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.14	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.20	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.50	0.22	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.13	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	3.69	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.21	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	2.38	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	2.91	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.55	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	2.11	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	1.78	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.84	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.65	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	1.59	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	1.32	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.33	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	1.63	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*48.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*85.2*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*74.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:1.5-01282021

21B0005-05 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 09:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/09/2021 23:48

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-05 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:9.49 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 94.93

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.27	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.5	11.1	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*109*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:1.5-01282021

21B0005-05 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 09:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 19:15

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-05 B 01
Preparation Batch: BJB0285 — Sample Size: 1.058 g (wet) — Dry Weight:1.00 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 94.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.50	31.2	mg/kg	
Chromium	7440-47-3	20	0.13	0.50	10.5	mg/kg	
Cobalt	7440-48-4	20	0.03	0.20	4.24	mg/kg	
Lead	7439-92-1	20	0.07	0.10	3.27	mg/kg	
Selenium	7782-49-2	20	0.44	2.00	0.88	mg/kg	J
Silver	7440-22-4	20	0.02	0.20	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	31.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:1.5-01282021

21B0005-05 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 09:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 19:15

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-05 B 01
Preparation Batch: BJB0285 — Sample Size: 1.058 g (wet) — Dry Weight:1.00 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 94.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	2.30	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	0.06	mg/kg	J
Copper	7440-50-8	20	0.34	0.50	10.6	mg/kg	
Nickel	7440-02-0	20	0.05	0.50	9.87	mg/kg	
Zinc	7440-66-6	20	0.8	4.0	24.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:1.5-01282021

21B0005-05 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 09:30
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 11:05

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-05 B
Preparation Batch: BJB0287 — Sample Size: 0.259 g (wet) — Dry Weight:0.24 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 94.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00429	0.0204	0.0141	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:6-01282021

21B0005-06 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 09:35
Instrument: NT11 Analyst: VTS — Analyzed: 03/10/2021 17:05

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-06 A 03
	Preparation Batch: BJB0330	Sample Size: 11.1 g (wet)	Dry Weight:10.03 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 90.33
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-06 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-06 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	0.73	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	1.06	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	1.02	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.14	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.11	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.55	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.09	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	2.72	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.15	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	1.59	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	1.75	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.98	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	2.35	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	3.14	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.94	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.80	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.93	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	2.08	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.63	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	3.26	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*49.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*84.4*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*73.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:6-01282021

21B0005-06 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 09:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 00:50

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-06 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:9.03 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 90.33

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.54	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.1	17.4	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*99.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:6-01282021

21B0005-06 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 09:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 19:20

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-06 B 01
Preparation Batch: BJB0285 — Sample Size: 1.079 g (wet) — Dry Weight:1.02 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 94.14

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.49	25.7	mg/kg	
Chromium	7440-47-3	20	0.13	0.49	10.0	mg/kg	
Cobalt	7440-48-4	20	0.03	0.20	4.33	mg/kg	
Lead	7439-92-1	20	0.07	0.10	5.78	mg/kg	
Selenium	7782-49-2	20	0.43	1.97	0.85	mg/kg	J
Silver	7440-22-4	20	0.02	0.20	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	31.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:6-01282021

21B0005-06 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 09:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 19:20

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-06 B 01
Preparation Batch: BJB0285 — Sample Size: 1.079 g (wet) — Dry Weight:1.02 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 94.14

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	2.44	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	ND	mg/kg	U
Copper	7440-50-8	20	0.33	0.49	10.9	mg/kg	
Nickel	7440-02-0	20	0.05	0.49	10.0	mg/kg	
Zinc	7440-66-6	20	0.8	3.9	25.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:6-01282021

21B0005-06 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 09:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 11:07

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-06 B
Preparation Batch: BJB0287 — Sample Size: 0.202 g (wet) — Dry Weight:0.19 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 94.14

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00552	0.0263	0.0189	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:11-01282021

21B0005-07 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 09:40
Instrument: NT11 Analyst: VTS — Analyzed: 03/10/2021 17:38

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-07 A 03
	Preparation Batch: BJB0330	Sample Size: 12.59 g (wet)	Dry Weight:10.14 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 80.51
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-07 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-07 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.10	0.49	0.39	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.13	0.49	0.50	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	0.06	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.49	0.13	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.49	0.17	ug/kg	J
Fluorene	86-73-7	1	0.07	0.49	0.07	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	2.06	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	0.23	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.49	0.37	ug/kg	J
Pyrene	129-00-0	1	0.09	0.49	0.63	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	0.23	ug/kg	J
Chrysene	218-01-9	1	0.07	0.49	0.69	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	0.39	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	0.14	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	0.12	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.49	0.20	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	0.27	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	0.47	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*45.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*76.1*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*70.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:11-01282021

21B0005-07 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 09:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 01:11

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-07 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:8.05 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 80.51

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.21	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.4	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*96.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:11-01282021

21B0005-07 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 09:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 19:25

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-07 B 01
Preparation Batch: BJB0285 — Sample Size: 1.03 g (wet) — Dry Weight:0.82 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 79.37

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.61	39.1	mg/kg	
Chromium	7440-47-3	20	0.16	0.61	10.4	mg/kg	
Cobalt	7440-48-4	20	0.04	0.24	4.86	mg/kg	
Lead	7439-92-1	20	0.08	0.12	1.88	mg/kg	
Selenium	7782-49-2	20	0.54	2.45	1.19	mg/kg	J
Silver	7440-22-4	20	0.02	0.24	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.24	37.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:11-01282021

21B0005-07 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 09:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/11/2021 14:42

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-07 B 01
Preparation Batch: BJB0285 — Sample Size: 1.03 g (wet) — Dry Weight:0.82 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 79.37

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.24	4.11	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	ND	mg/kg	U
Copper	7440-50-8	20	0.42	0.61	14.0	mg/kg	
Nickel	7440-02-0	20	0.06	0.61	8.71	mg/kg	
Zinc	7440-66-6	20	1.0	4.9	21.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-010:11-01282021

21B0005-07 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 09:40
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 11:09

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-07 B
Preparation Batch: BJB0287 — Sample Size: 0.253 g (wet) — Dry Weight:0.20 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 79.37

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00523	0.0249	0.0128	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-104:6-01282021

21B0005-09 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 10:00
Instrument: NT11 Analyst: VTS — Analyzed: 03/10/2021 18:10

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-09 A 03
	Preparation Batch: BJB0330	Sample Size: 11.12 g (wet)	Dry Weight:10.02 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 90.11
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-09 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-09 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	0.62	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.83	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.76	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.15	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	0.42	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.08	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	2.34	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.15	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	1.48	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	1.69	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.87	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	1.98	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	2.41	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.85	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.74	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.85	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	1.75	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.47	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	2.20	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*49.9*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*77.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*72.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-104:6-01282021

21B0005-09 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 10:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 01:31

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-09 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:9.01 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 90.11

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.55	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.1	13.7	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-104:6-01282021

21B0005-09 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 10:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 19:29

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-09 B 01
Preparation Batch: BJB0285 — Sample Size: 1.088 g (wet) — Dry Weight:1.00 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 91.65

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.50	28.4	mg/kg	
Chromium	7440-47-3	20	0.13	0.50	9.92	mg/kg	
Cobalt	7440-48-4	20	0.03	0.20	4.22	mg/kg	
Lead	7439-92-1	20	0.07	0.10	2.44	mg/kg	
Selenium	7782-49-2	20	0.44	2.01	0.94	mg/kg	J
Silver	7440-22-4	20	0.02	0.20	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	30.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-104:6-01282021

21B0005-09 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 10:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 19:29

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-09 B 01
Preparation Batch: BJB0285 — Sample Size: 1.088 g (wet) — Dry Weight:1.00 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 91.65

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	3.15	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	ND	mg/kg	U
Copper	7440-50-8	20	0.34	0.50	12.4	mg/kg	
Nickel	7440-02-0	20	0.05	0.50	8.57	mg/kg	
Zinc	7440-66-6	20	0.8	4.0	23.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-104:6-01282021

21B0005-09 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 10:00
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 11:11

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-09 B
Preparation Batch: BJB0287 — Sample Size: 0.2 g (wet) — Dry Weight:0.18 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 91.65

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00573	0.0273	0.0176	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:3-01282021

21B0005-10 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 11:00
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 13:26

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-10 A 03
	Preparation Batch: BJB0330	Sample Size: 13.87 g (wet)	Dry Weight:10.16 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 73.23
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-10 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-10 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	20.8	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	9.99	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	11.1	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	3.33	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.49	3.81	ug/kg	
Dibenzofuran	132-64-9	1	0.12	0.49	8.16	ug/kg	
Fluorene	86-73-7	1	0.07	0.49	6.83	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.49	39.4	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	7.20	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.49	47.5	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	43.8	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	8.81	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	16.5	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.06	0.49	11.2	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	4.55	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	5.15	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.49	7.91	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	8.92	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	1.61	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	12.9	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*40.9*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*78.6*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*72.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:3-01282021

21B0005-10 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 11:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 01:52

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-10 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:7.32 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 73.23

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.83	21.4	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.7	33.9	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*95.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:3-01282021

21B0005-10 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/28/2021 11:00
Instrument: ECD7 Analyst: JGR — Analyzed: 02/25/2021 19:28

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-10 A 02
	Preparation Batch: BJB0243	Sample Size: 17.07 g (wet)	Dry Weight:12.50 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 73.23
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-10 A 02
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-10 A 02
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-10 A 02
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	1.1	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*72.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*74.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*64.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:3-01282021

21B0005-10 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 11:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 22:31

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-10 B 01
Preparation Batch: BJB0285 — Sample Size: 1.075 g (wet) — Dry Weight:0.71 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 65.77

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.71	95.2	mg/kg	
Chromium	7440-47-3	20	0.18	0.71	21.9	mg/kg	
Cobalt	7440-48-4	20	0.04	0.28	11.6	mg/kg	
Lead	7439-92-1	20	0.10	0.14	13.0	mg/kg	
Selenium	7782-49-2	20	0.62	2.83	2.12	mg/kg	J
Silver	7440-22-4	20	0.02	0.28	0.21	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.28	60.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:3-01282021

21B0005-10 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 11:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 22:31

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-10 B 01
Preparation Batch: BJB0285 — Sample Size: 1.075 g (wet) — Dry Weight:0.71 g
Prepared: 02/10/2021 — Final Volume: 50 mL — % Solids: 65.77

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.28	11.2	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.25	mg/kg	
Copper	7440-50-8	20	0.48	0.71	41.7	mg/kg	
Nickel	7440-02-0	20	0.07	0.71	23.3	mg/kg	
Zinc	7440-66-6	20	1.2	5.7	68.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:3-01282021

21B0005-10 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 11:00
Instrument: HYDRA Analyst: BLC — Analyzed: 02/11/2021 11:13

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-10 B
Preparation Batch: BJB0287 — Sample Size: 0.208 g (wet) — Dry Weight:0.14 g
Prepared: 02/09/2021 — Final Volume: 50 mL — % Solids: 65.77

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00768	0.0365	0.169	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:6-01282021

21B0005-11 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 11:10
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 13:58

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-11 A 03
	Preparation Batch: BJB0330	Sample Size: 11.49 g (wet)	Dry Weight:10.23 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 89.00
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-11 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-11 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	0.50	ug/kg	J
1-Methylnaphthalene	90-12-0	1	0.10	0.49	0.46	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.13	0.49	0.54	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.49	0.10	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.49	0.42	ug/kg	J
Fluorene	86-73-7	1	0.07	0.49	0.12	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	1.19	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	0.07	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.49	0.56	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	0.69	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	0.18	ug/kg	J
Chrysene	218-01-9	1	0.07	0.49	0.39	ug/kg	J
Benzo(b)fluoranthene	205-99-2	1	0.06	0.49	0.23	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.09	0.49	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	0.09	0.49	0.10	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	0.18	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*47.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*82.9*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*71.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:6-01282021

21B0005-11 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 11:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 02:13

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-11 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:8.90 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 89.00

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.62	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.2	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:6-01282021

21B0005-11 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/28/2021 11:10
Instrument: ECD7 Analyst: JGR — Analyzed: 02/25/2021 19:49

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-11 A 02
	Preparation Batch: BJB0243	Sample Size: 14.07 g (wet)	Dry Weight:12.52 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 89.00
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-11 A 02
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-11 A 02
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-11 A 02
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*76.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*87.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*84.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*70.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:6-01282021

21B0005-11 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 11:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:53

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-11 B 01
Preparation Batch: BJB0380 — Sample Size: 1.024 g (wet) — Dry Weight:0.88 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 85.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.57	21.5	mg/kg	
Chromium	7440-47-3	20	0.15	0.57	10.8	mg/kg	
Cobalt	7440-48-4	20	0.03	0.23	4.59	mg/kg	
Lead	7439-92-1	20	0.08	0.11	1.55	mg/kg	
Selenium	7782-49-2	20	0.50	2.27	1.17	mg/kg	J
Silver	7440-22-4	20	0.02	0.23	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.23	30.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:6-01282021

21B0005-11 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 11:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:53

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-11 B 01
Preparation Batch: BJB0380 — Sample Size: 1.024 g (wet) — Dry Weight:0.88 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 85.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.23	2.20	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.39	0.57	9.87	mg/kg	
Nickel	7440-02-0	20	0.06	0.57	8.81	mg/kg	
Zinc	7440-66-6	20	0.9	4.5	23.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-002:6-01282021

21B0005-11 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 11:10

Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 10:41

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-11 B

Preparation Batch: BJB0381 — Sample Size: 0.283 g (wet) — Dry Weight:0.24 g

Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 85.94

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00432	0.0206	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-105:6-01282021

21B0005-12 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 12:00
Instrument: NT11 Analyst: VTS — Analyzed: 03/10/2021 19:47

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-12 A 03
	Preparation Batch: BJB0330	Sample Size: 10.69 g (wet)	Dry Weight:10.11 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 94.56
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-12 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-12 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	0.57	ug/kg	J
1-Methylnaphthalene	90-12-0	1	0.10	0.49	0.52	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	0.56	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.49	0.15	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.49	0.34	ug/kg	J
Fluorene	86-73-7	1	0.07	0.49	0.21	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	1.60	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	0.15	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.49	1.38	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	1.60	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	0.40	ug/kg	J
Chrysene	218-01-9	1	0.07	0.49	0.72	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	0.47	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	0.15	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	0.17	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.49	0.19	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	0.24	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	0.37	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*45.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*76.5*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*70.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-105:6-01282021

21B0005-12 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 12:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 02:34

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-12 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:9.46 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 94.56

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.29	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.6	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-105:6-01282021

21B0005-12 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/28/2021 12:00
Instrument: ECD7 Analyst: JGR — Analyzed: 02/25/2021 20:09

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-12 A 02
	Preparation Batch: BJB0243	Sample Size: 13.23 g (wet)	Dry Weight:12.51 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 94.56
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-12 A 02
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-12 A 02
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-12 A 02
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*74.6*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*87.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*81.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*69.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-105:6-01282021

21B0005-12 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 12:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:24

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-12 B 01
Preparation Batch: BJB0380 — Sample Size: 1.069 g (wet) — Dry Weight:0.90 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 84.24

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.56	19.0	mg/kg	
Chromium	7440-47-3	20	0.14	0.56	9.70	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	4.22	mg/kg	
Lead	7439-92-1	20	0.08	0.11	1.60	mg/kg	
Selenium	7782-49-2	20	0.49	2.22	0.61	mg/kg	J
Silver	7440-22-4	20	0.02	0.22	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	31.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-105:6-01282021

21B0005-12 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 12:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:24

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-12 B 01
Preparation Batch: BJB0380 — Sample Size: 1.069 g (wet) — Dry Weight:0.90 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 84.24

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	2.03	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.38	0.56	9.40	mg/kg	
Nickel	7440-02-0	20	0.06	0.56	8.84	mg/kg	
Zinc	7440-66-6	20	0.9	4.4	23.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-105:6-01282021

21B0005-12 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 12:00
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 10:50

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-12 B
Preparation Batch: BJB0381 — Sample Size: 0.275 g (wet) — Dry Weight:0.23 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 84.24

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00453	0.0216	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:2-01282021

21B0005-13 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 12:30

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 16:54

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-13 C

Preparation Batch: BJB0028 — Sample Size: 4.03 g (wet) — Dry Weight:3.74 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 92.84

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.31	1.34	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.45	1.34	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.36	1.34	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.32	1.34	ND	ug/kg	U
Benzene	71-43-2	1	0.40	1.34	0.50	ug/kg	J
Trichloroethene	79-01-6	1	0.28	1.34	1.63	ug/kg	
Toluene	108-88-3	1	0.20	1.34	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.34	1.34	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.27	1.34	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.52	2.67	ND	ug/kg	U
o-Xylene	95-47-6	1	0.30	1.34	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.82	2.67	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*115*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*99.6*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:2-01282021

21B0005-13 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/28/2021 12:30
Instrument: NT2 Analyst: PKC — Analyzed: 02/03/2021 18:28

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0005-13 F
Preparation Batch: BJB0119 — Sample Size: 3.625 g (wet) — Dry Weight:3.37 g
Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 92.84

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7810	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*98.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*92.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:2-01282021

21B0005-13 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 12:30
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 15:03

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-13 A 03
	Preparation Batch: BJB0330	Sample Size: 10.82 g (wet)	Dry Weight:10.05 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 92.84
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-13 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-13 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.24	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.28	ug/kg	J
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	ND	ug/kg	U
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	0.54	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.08	0.50	0.23	ug/kg	J
Pyrene	129-00-0	1	0.09	0.50	0.25	ug/kg	J
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.10	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.27	ug/kg	J
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.15	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	0.09	0.50	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	ND	ug/kg	U
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*51.6*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*57.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:2-01282021

21B0005-13 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 12:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 03:36

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-13 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:9.28 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 92.84

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.39	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.8	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*98.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:2-01282021

21B0005-13 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/28/2021 12:30
Instrument: ECD7 Analyst: JGR — Analyzed: 02/25/2021 20:30

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-13 A 02
	Preparation Batch: BJB0243	Sample Size: 13.47 g (wet)	Dry Weight:12.51 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 92.84
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-13 A 02
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-13 A 02
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-13 A 02
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*76.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*82.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*82.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*69.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:2-01282021

21B0005-13 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 12:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:29

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-13 B 01
Preparation Batch: BJB0380 — Sample Size: 1.051 g (wet) — Dry Weight:0.98 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 93.57

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.51	19.7	mg/kg	
Chromium	7440-47-3	20	0.13	0.51	9.14	mg/kg	
Lead	7439-92-1	20	0.07	0.10	1.73	mg/kg	
Silver	7440-22-4	20	0.02	0.20	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	27.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:2-01282021

21B0005-13 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 12:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:29

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-13 B 01
Preparation Batch: BJB0380 — Sample Size: 1.051 g (wet) — Dry Weight:0.98 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 93.57

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Cadmium	7440-43-9	20	0.03	0.10	0.07	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:2-01282021

21B0005-13 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 12:30
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 10:56

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-13 B
Preparation Batch: BJB0381 — Sample Size: 0.249 g (wet) — Dry Weight:0.23 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 93.57

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00451	0.0215	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:2-01282021

21B0005-13RE1 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 12:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 20:14

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-13RE1 B 01
Preparation Batch: BJB0380 — Sample Size: 1.051 g (wet) — Dry Weight:0.98 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 93.57

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Cobalt	7440-48-4	20	0.03	0.20	4.30	mg/kg	
Selenium	7782-49-2	20	0.45	2.03	0.66	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:2-01282021

21B0005-13RE1 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 12:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 20:14

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-13RE1 B 01
Preparation Batch: BJB0380 — Sample Size: 1.051 g (wet) — Dry Weight:0.98 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 93.57

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	2.18	mg/kg	
Copper	7440-50-8	20	0.35	0.51	10.2	mg/kg	
Nickel	7440-02-0	20	0.05	0.51	8.76	mg/kg	
Zinc	7440-66-6	20	1.0	4.1	87.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:6-01282021

21B0005-14 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 12:45

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 17:18

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-14 C

Preparation Batch: BJB0028 — Sample Size: 8.2 g (wet) — Dry Weight:7.67 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 93.50

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.15	0.65	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.22	0.65	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.17	0.65	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.16	0.65	ND	ug/kg	U
Benzene	71-43-2	1	0.19	0.65	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.14	0.65	2.01	ug/kg	
Toluene	108-88-3	1	0.10	0.65	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.17	0.65	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.13	0.65	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.26	1.30	ND	ug/kg	U
o-Xylene	95-47-6	1	0.15	0.65	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.40	1.30	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*122*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.7*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*106*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:6-01282021

21B0005-14 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/28/2021 12:45
Instrument: NT2 Analyst: PKC — Analyzed: 02/03/2021 18:49

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0005-14 E
Preparation Batch: BJB0119 — Sample Size: 4.773 g (wet) — Dry Weight:4.46 g
Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 93.50

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	5950	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*96.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*91.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:6-01282021

21B0005-14 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 12:45
Instrument: NT11 Analyst: VTS — Analyzed: 03/10/2021 21:56

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-14 A 03
	Preparation Batch: BJB0330	Sample Size: 10.83 g (wet)	Dry Weight:10.13 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 93.50
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-14 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-14 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.10	0.49	0.46	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.13	0.49	0.55	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.49	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.12	0.49	0.24	ug/kg	J
Fluorene	86-73-7	1	0.07	0.49	0.08	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	1.32	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	0.09	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.49	0.91	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	1.04	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	0.34	ug/kg	J
Chrysene	218-01-9	1	0.07	0.49	0.60	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	0.37	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	0.19	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	0.23	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.49	0.29	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	0.18	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	0.30	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*51.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*69.1*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*74.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:6-01282021

21B0005-14 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 12:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 03:57

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-14 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:9.35 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 93.50

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.35	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.7	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*95.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:6-01282021

21B0005-14 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/28/2021 12:45
Instrument: ECD7 Analyst: JGR — Analyzed: 02/25/2021 20:50

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-14 A 02
	Preparation Batch: BJB0243	Sample Size: 13.39 g (wet)	Dry Weight:12.52 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 93.50
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-14 A 02
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-14 A 02
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-14 A 02
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	0.6	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*72.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*81.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*79.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*68.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:6-01282021

21B0005-14 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 12:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:33

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-14 B 01
Preparation Batch: BJB0380 — Sample Size: 1.024 g (wet) — Dry Weight:0.89 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 86.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.56	32.8	mg/kg	
Chromium	7440-47-3	20	0.15	0.56	9.11	mg/kg	
Cobalt	7440-48-4	20	0.03	0.23	2.93	mg/kg	
Lead	7439-92-1	20	0.08	0.11	1.64	mg/kg	
Selenium	7782-49-2	20	0.50	2.26	0.67	mg/kg	J
Silver	7440-22-4	20	0.02	0.23	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.23	28.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:6-01282021

21B0005-14 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 12:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:33

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-14 B 01
Preparation Batch: BJB0380 — Sample Size: 1.024 g (wet) — Dry Weight:0.89 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 86.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.23	2.01	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.38	0.56	9.63	mg/kg	
Nickel	7440-02-0	20	0.06	0.56	7.88	mg/kg	
Zinc	7440-66-6	20	0.9	4.5	21.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:6-01282021

21B0005-14 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 12:45
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 10:58

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-14 B
Preparation Batch: BJB0381 — Sample Size: 0.271 g (wet) — Dry Weight:0.23 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 86.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00448	0.0213	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:10.5-01282021

21B0005-15 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 13:00
Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 17:42

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-15 C
Preparation Batch: BJB0028 — Sample Size: 5.13 g (wet) — Dry Weight:3.55 g
Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 69.23

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.33	1.41	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.47	1.41	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.37	1.41	0.70	ug/kg	J
cis-1,2-Dichloroethene	156-59-2	1	0.34	1.41	14.2	ug/kg	
Benzene	71-43-2	1	0.42	1.41	0.98	ug/kg	J
Trichloroethene	79-01-6	1	0.30	1.41	1.29	ug/kg	J
Toluene	108-88-3	1	0.21	1.41	0.79	ug/kg	J
Tetrachloroethene	127-18-4	1	0.36	1.41	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.28	1.41	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.55	2.82	ND	ug/kg	U
o-Xylene	95-47-6	1	0.32	1.41	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.87	2.82	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*113*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*96.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:10.5-01282021

21B0005-15 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/28/2021 13:00
Instrument: NT2 Analyst: PKC — Analyzed: 02/03/2021 19:10

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0005-15 F
Preparation Batch: BJB0119 — Sample Size: 4.132 g (wet) — Dry Weight:2.86 g
Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 69.23

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	11000	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*93.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:10.5-01282021

21B0005-15 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 13:00
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 16:08

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-15 A 03
	Preparation Batch: BJB0330	Sample Size: 14.51 g (wet)	Dry Weight:10.05 g
	Prepared: 02/10/2021	Final Volume: 0.5 mL	% Solids: 69.23
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-15 A 03
	Cleanup Batch: CJC0032	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-15 A 03
	Cleanup Batch: CJC0031	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.65	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	1.65	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	1.78	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.14	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.40	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.91	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.66	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	5.36	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.24	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	2.46	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	2.54	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.50	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	3.23	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	2.38	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.62	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.71	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.31	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.96	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.21	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	1.27	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*47.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*82.4*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*75.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:10.5-01282021

21B0005-15 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 13:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 04:18

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-15 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:6.92 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 69.23

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.22	8.81	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	14.4	81.2	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*108*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:10.5-01282021

21B0005-15 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/28/2021 13:00
Instrument: ECD7 Analyst: JGR — Analyzed: 02/25/2021 21:11

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-15 A 02
	Preparation Batch: BJB0243	Sample Size: 18.07 g (wet)	Dry Weight:12.51 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 69.23
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-15 A 02
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-15 A 02
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-15 A 02
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	2.3	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*66.0*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*78.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*69.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*64.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:10.5-01282021

21B0005-15 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 13:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:38

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-15 B 01
Preparation Batch: BJB0380 — Sample Size: 1.069 g (wet) — Dry Weight:0.76 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 71.50

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.65	40.5	mg/kg	
Chromium	7440-47-3	20	0.17	0.65	13.5	mg/kg	
Cobalt	7440-48-4	20	0.04	0.26	4.22	mg/kg	
Lead	7439-92-1	20	0.09	0.13	2.91	mg/kg	
Selenium	7782-49-2	20	0.58	2.62	0.87	mg/kg	J
Silver	7440-22-4	20	0.02	0.26	0.06	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.26	39.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:10.5-01282021

21B0005-15 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 13:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:38

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-15 B 01
Preparation Batch: BJB0380 — Sample Size: 1.069 g (wet) — Dry Weight:0.76 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 71.50

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.26	2.44	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	ND	mg/kg	U
Copper	7440-50-8	20	0.44	0.65	16.0	mg/kg	
Nickel	7440-02-0	20	0.07	0.65	9.72	mg/kg	
Zinc	7440-66-6	20	1.1	5.2	25.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:10.5-01282021

21B0005-15 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 13:00
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:00

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-15 B
Preparation Batch: BJB0381 — Sample Size: 0.242 g (wet) — Dry Weight:0.17 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 71.50

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00607	0.0289	0.0129	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:13.3-01282021

21B0005-16 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 13:05

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 18:06

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-16 C

Preparation Batch: BJB0028 — Sample Size: 4.44 g (wet) — Dry Weight:3.38 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 76.19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.35	1.48	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.50	1.48	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.39	1.48	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.35	1.48	ND	ug/kg	U
Benzene	71-43-2	1	0.44	1.48	0.83	ug/kg	J
Trichloroethene	79-01-6	1	0.31	1.48	0.64	ug/kg	J
Toluene	108-88-3	1	0.22	1.48	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.38	1.48	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.30	1.48	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.58	2.96	ND	ug/kg	U
o-Xylene	95-47-6	1	0.33	1.48	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.91	2.96	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*116*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:13.3-01282021

21B0005-16 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/28/2021 13:05
Instrument: NT2 Analyst: PKC — Analyzed: 02/03/2021 19:31

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0005-16 E
Preparation Batch: BJB0119 — Sample Size: 4.392 g (wet) — Dry Weight:3.35 g
Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 76.19

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	9030	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*98.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*93.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:19-01282021

21B0005-17 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 13:10

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 18:30

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-17 C

Preparation Batch: BJB0028 — Sample Size: 5.17 g (wet) — Dry Weight:3.86 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 74.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.30	1.30	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.44	1.30	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.34	1.30	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.31	1.30	ND	ug/kg	U
Benzene	71-43-2	1	0.38	1.30	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.27	1.30	ND	ug/kg	U
Toluene	108-88-3	1	0.20	1.30	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.33	1.30	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.26	1.30	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.51	2.59	ND	ug/kg	U
o-Xylene	95-47-6	1	0.29	1.30	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.80	2.59	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*118*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*103*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*105*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:19-01282021

21B0005-17 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/28/2021 13:10

Instrument: NT2 Analyst: PKC — Analyzed: 02/03/2021 19:52

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0005-17 E

Preparation Batch: BJB0119 — Sample Size: 4.507 g (wet) — Dry Weight:3.37 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 74.68

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	9120	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*90.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:23-01282021

21B0005-18 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 13:15

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 18:54

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-18 C

Preparation Batch: BJB0028 — Sample Size: 5.31 g (wet) — Dry Weight:4.04 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 76.02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.29	1.24	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.42	1.24	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.33	1.24	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.30	1.24	ND	ug/kg	U
Benzene	71-43-2	1	0.37	1.24	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.26	1.24	ND	ug/kg	U
Toluene	108-88-3	1	0.19	1.24	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.32	1.24	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.25	1.24	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.49	2.48	ND	ug/kg	U
o-Xylene	95-47-6	1	0.28	1.24	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.76	2.48	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*118*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-041:23-01282021

21B0005-18 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/28/2021 13:15
Instrument: NT2 Analyst: PKC — Analyzed: 02/03/2021 20:12

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0005-18 E
Preparation Batch: BJB0119 — Sample Size: 5.118 g (wet) — Dry Weight:3.89 g
Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 76.02

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	8000	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*89.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:2-01282021

21B0005-19 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 13:30

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 19:18

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-19 C

Preparation Batch: BJB0028 — Sample Size: 3.4 g (wet) — Dry Weight:3.18 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 93.67

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.37	1.57	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.53	1.57	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.42	1.57	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.38	1.57	ND	ug/kg	U
Benzene	71-43-2	1	0.46	1.57	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.33	1.57	3.05	ug/kg	
Toluene	108-88-3	1	0.24	1.57	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.40	1.57	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.32	1.57	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.62	3.14	ND	ug/kg	U
o-Xylene	95-47-6	1	0.35	1.57	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.97	3.14	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*119*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:2-01282021

21B0005-19 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/28/2021 13:30

Instrument: NT2 Analyst: PKC — Analyzed: 02/03/2021 20:33

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0005-19 E

Preparation Batch: BJB0119 — Sample Size: 4.002 g (wet) — Dry Weight:3.75 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 93.67

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7010	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*96.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*90.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:2-01282021

21B0005-19 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 13:30
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 19:56

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-19 A 03
	Preparation Batch: BJB0335	Sample Size: 10.11 g (wet)	Dry Weight:9.47 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 93.67
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-19 A 03
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-19 A 03
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.46	0.63	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.11	0.53	0.34	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.14	0.53	0.39	ug/kg	J
Acenaphthylene	208-96-8	1	0.07	0.53	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.53	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.53	0.14	ug/kg	J
Fluorene	86-73-7	1	0.07	0.53	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.12	0.53	0.71	ug/kg	
Anthracene	120-12-7	1	0.08	0.53	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.09	0.53	0.38	ug/kg	J
Pyrene	129-00-0	1	0.09	0.53	0.48	ug/kg	J
Benzo(a)anthracene	56-55-3	1	0.08	0.53	0.12	ug/kg	J
Chrysene	218-01-9	1	0.07	0.53	0.36	ug/kg	J
Benzo(b)fluoranthene	205-99-2	1	0.07	0.53	0.10	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.11	0.53	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.53	0.10	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.53	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.53	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.11	0.53	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.09	0.53	ND	ug/kg	U
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*46.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*39.6*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*71.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:2-01282021

21B0005-19 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 13:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 04:38

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-19 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:9.37 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 93.67

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.34	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.7	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:2-01282021

21B0005-19 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/28/2021 13:30
Instrument: ECD7 Analyst: JGR — Analyzed: 02/25/2021 21:31

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-19 A 02
	Preparation Batch: BJB0243	Sample Size: 13.38 g (wet)	Dry Weight:12.53 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 93.67
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-19 A 02
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-19 A 02
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-19 A 02
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*75.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*86.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*82.5*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*70.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:2-01282021

21B0005-19 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 13:30

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:43

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-19 B 01

Preparation Batch: BJB0380 — Sample Size: 1.019 g (wet) — Dry Weight:0.94 g

Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 92.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	16.8	mg/kg	
Chromium	7440-47-3	20	0.14	0.53	9.16	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	4.37	mg/kg	
Lead	7439-92-1	20	0.07	0.11	1.68	mg/kg	
Selenium	7782-49-2	20	0.47	2.12	0.66	mg/kg	J
Silver	7440-22-4	20	0.02	0.21	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	28.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:2-01282021

21B0005-19 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 13:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:43

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-19 B 01
Preparation Batch: BJB0380 — Sample Size: 1.019 g (wet) — Dry Weight:0.94 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 92.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	2.48	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.04	mg/kg	J
Copper	7440-50-8	20	0.36	0.53	10.3	mg/kg	
Nickel	7440-02-0	20	0.05	0.53	9.76	mg/kg	
Zinc	7440-66-6	20	0.9	4.2	40.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:2-01282021

21B0005-19 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 13:30
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:03

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-19 B
Preparation Batch: BJB0381 — Sample Size: 0.289 g (wet) — Dry Weight:0.27 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 92.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00392	0.0187	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:2.2-01282021

21B0005-20 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 13:55
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 20:28

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-20 A 03
	Preparation Batch: BJB0335	Sample Size: 14.14 g (wet)	Dry Weight:10.04 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 70.97
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-20 A 03
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-20 A 03
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	4.79	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	11.6	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	10.4	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.36	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	1.61	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	4.89	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	1.89	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	20.1	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	2.66	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	9.37	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	9.57	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	3.10	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	5.62	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	2.22	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.93	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	1.03	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	1.73	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	1.17	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.27	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	1.95	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*48.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*80.7*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*77.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:2.2-01282021

21B0005-20 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 13:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 04:59

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-20 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:7.10 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 70.97

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.05	19.9	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	14.1	51.1	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:2.2-01282021

21B0005-20 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 13:55
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:48

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-20 B 01
Preparation Batch: BJB0380 — Sample Size: 1.035 g (wet) — Dry Weight:0.71 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 68.86

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.70	93.0	mg/kg	
Chromium	7440-47-3	20	0.18	0.70	23.6	mg/kg	
Cobalt	7440-48-4	20	0.04	0.28	12.0	mg/kg	
Lead	7439-92-1	20	0.10	0.14	26.3	mg/kg	
Selenium	7782-49-2	20	0.62	2.81	2.66	mg/kg	J
Silver	7440-22-4	20	0.02	0.28	0.21	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.28	65.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:2.2-01282021

21B0005-20 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 13:55
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:48

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-20 B 01
Preparation Batch: BJB0380 — Sample Size: 1.035 g (wet) — Dry Weight:0.71 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 68.86

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.28	17.2	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.32	mg/kg	
Copper	7440-50-8	20	0.48	0.70	43.9	mg/kg	
Nickel	7440-02-0	20	0.07	0.70	22.9	mg/kg	
Zinc	7440-66-6	20	1.2	5.6	77.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:2.2-01282021

21B0005-20 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 13:55
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:05

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-20 B
Preparation Batch: BJB0381 — Sample Size: 0.278 g (wet) — Dry Weight:0.19 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 68.86

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00549	0.0261	0.0704	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:5.3-01282021

21B0005-21 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 14:00
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 21:00

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-21 A 03
	Preparation Batch: BJB0335	Sample Size: 12.38 g (wet)	Dry Weight:10.02 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 80.95
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-21 A 03
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-21 A 03
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	2.83	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	12.6	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	7.09	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.21	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	1.11	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	3.02	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.79	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	12.6	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	1.72	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	3.05	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	3.62	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.60	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	2.50	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.98	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.36	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.42	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.78	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.59	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.12	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	1.02	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*50.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*82.0*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*75.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:5.3-01282021

21B0005-21 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 14:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 05:20

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-21 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:8.09 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 80.95

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.18	9.23	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.4	23.2	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:5.3-01282021

21B0005-21 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 14:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:33

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-21 B 01
Preparation Batch: BJB0380 — Sample Size: 1.047 g (wet) — Dry Weight:0.72 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 68.69

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.70	87.4	mg/kg	
Chromium	7440-47-3	20	0.10	0.70	21.2	mg/kg	
Cobalt	7440-48-4	20	0.04	0.28	7.71	mg/kg	
Lead	7439-92-1	20	0.09	0.14	9.43	mg/kg	
Selenium	7782-49-2	20	0.61	2.78	2.23	mg/kg	J
Silver	7440-22-4	20	0.02	0.28	0.17	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.28	66.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:5.3-01282021

21B0005-21 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 14:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:33

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-21 B 01
Preparation Batch: BJB0380 — Sample Size: 1.047 g (wet) — Dry Weight:0.72 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 68.69

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.28	10.7	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.12	mg/kg	J
Copper	7440-50-8	20	0.47	0.70	38.3	mg/kg	
Nickel	7440-02-0	20	0.07	0.70	19.4	mg/kg	
Zinc	7440-66-6	20	1.1	5.6	50.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:5.3-01282021

21B0005-21 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 14:00
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:07

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-21 B
Preparation Batch: BJB0381 — Sample Size: 0.276 g (wet) — Dry Weight:0.19 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 68.69

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00554	0.0264	0.0606	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:10-01282021

21B0005-22 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 14:05
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 21:33

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-22 A 03
	Preparation Batch: BJB0335	Sample Size: 12.16 g (wet)	Dry Weight:10.02 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 82.42
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-22 A 03
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-22 A 03
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	12.5	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	5.11	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	4.95	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.13	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	5.30	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	2.33	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	1.21	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	8.46	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	1.09	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	3.43	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	3.58	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.13	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	2.08	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.96	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.33	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.36	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.60	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.36	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.14	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.69	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*57.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*89.7*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*86.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:10-01282021

21B0005-22 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 14:05
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 05:41

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-22 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:8.24 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 82.42

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.07	7.47	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.1	19.2	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*112*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:10-01282021

21B0005-22 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 14:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:38

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-22 B 01
Preparation Batch: BJB0380 — Sample Size: 1.062 g (wet) — Dry Weight:0.75 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 70.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.67	81.2	mg/kg	
Chromium	7440-47-3	20	0.09	0.67	21.2	mg/kg	
Cobalt	7440-48-4	20	0.04	0.27	8.37	mg/kg	
Lead	7439-92-1	20	0.09	0.13	8.24	mg/kg	
Selenium	7782-49-2	20	0.59	2.67	2.03	mg/kg	J
Silver	7440-22-4	20	0.02	0.27	0.16	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.27	60.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:10-01282021

21B0005-22 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 14:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:38

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-22 B 01
Preparation Batch: BJB0380 — Sample Size: 1.062 g (wet) — Dry Weight:0.75 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 70.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.27	9.23	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.16	mg/kg	
Copper	7440-50-8	20	0.45	0.67	37.0	mg/kg	
Nickel	7440-02-0	20	0.07	0.67	19.9	mg/kg	
Zinc	7440-66-6	20	1.1	5.3	50.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-027:10-01282021

21B0005-22 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 14:05
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:09

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-22 B
Preparation Batch: BJB0381 — Sample Size: 0.266 g (wet) — Dry Weight:0.19 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 70.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00560	0.0267	0.0965	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

TB-3-01282021

21B0005-24 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 09:05

Instrument: NT2 Analyst: PKC — Analyzed: 02/03/2021 15:23

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21B0005-24 A

Preparation Batch: BJB0112 — Sample Size: 10 mL

Prepared: 02/03/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.08	0.20	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.08	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.07	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.08	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.05	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.07	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.05	0.20	0.38	ug/L	
Tetrachloroethene	127-18-4	1	0.09	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.05	0.20	0.06	ug/L	J
m,p-Xylene	179601-23-1	1	0.14	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.08	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.22	0.60	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4				*80-129 %*	*103*	*%*	
Surrogate: Toluene-d8				*80-120 %*	*96.5*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*90.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

TB-3-01282021

21B0005-24 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/28/2021 09:05

Instrument: NT2 Analyst: PKC — Analyzed: 02/03/2021 15:23

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21B0005-24 A

Preparation Batch: BJB0112 — Sample Size: 10 mL

Prepared: 02/03/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*96.5*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*90.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Stain-003-01282021

21B0005-25 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/28/2021 14:55
Instrument: ECD7 Analyst: JGR — Analyzed: 02/26/2021 11:34

Sample Preparation:	Preparation Method: EPA 3550C (Ultrasonic)		Extract ID: 21B0005-25 A 02
	Preparation Batch: BJB0247	Sample Size: 5.03 g (wet)	Dry Weight:4.97 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 98.81
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-25 A 02
	Cleanup Batch: CJB0161	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-25 A 02
	Cleanup Batch: CJB0159	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-25 A 02
	Cleanup Batch: CJB0160	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	19.6	50.3	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	19.6	50.3	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	19.6	50.3	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	19.6	50.3	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	19.6	50.3	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	19.6	50.3	ND	ug/kg	U
Aroclor 1260	11096-82-5	5	7.4	50.3	50.1	ug/kg	J, D
Surrogate: Decachlorobiphenyl				*40-126 %*	*84.0*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*67.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*71.7*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*71.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Stain-002-01292021

21B0005-26 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/29/2021 09:30
Instrument: ECD7 Analyst: JGR — Analyzed: 02/28/2021 02:46

Sample Preparation:	Preparation Method: EPA 3550C (Ultrasonic)		Extract ID: 21B0005-26 A 02
	Preparation Batch: BJB0247	Sample Size: 5 g (wet)	Dry Weight:4.97 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 99.42
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-26 A 02
	Cleanup Batch: CJB0161	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-26 A 02
	Cleanup Batch: CJB0159	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-26 A 02
	Cleanup Batch: CJB0160	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	3.9	10.1	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	3.9	10.1	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	3.9	10.1	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	3.9	10.1	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	3.9	10.1	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	3.9	10.1	8.8	ug/kg	J
Aroclor 1260	11096-82-5	1	1.5	10.1	9.8	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*68.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*66.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*62.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Stain-001-01292021

21B0005-27 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/29/2021 09:40
Instrument: ECD7 Analyst: JGR — Analyzed: 02/26/2021 12:15

Sample Preparation:	Preparation Method: EPA 3550C (Ultrasonic)		Extract ID: 21B0005-27 A 02
	Preparation Batch: BJB0247	Sample Size: 12.67 g (wet)	Dry Weight:12.50 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 98.68
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-27 A 02
	Cleanup Batch: CJB0161	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-27 A 02
	Cleanup Batch: CJB0159	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-27 A 02
	Cleanup Batch: CJB0160	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.8	20.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	5	2.9	20.0	7.5	ug/kg	J, D
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*55.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*57.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*54.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Asphalt-005-01292021

21B0005-28 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/29/2021 10:00
Instrument: ECD7 Analyst: JGR — Analyzed: 02/25/2021 23:14

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-28 A 02
	Preparation Batch: BJB0243	Sample Size: 12.63 g (wet)	Dry Weight:12.53 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 99.21
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-28 A 02
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-28 A 02
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-28 A 02
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.8	20.0	12.8	ug/kg	J, D
Aroclor 1260	11096-82-5	5	2.9	20.0	20.6	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*80.8*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*65.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*63.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

AugerWater-01292021

21B0005-29 (Water)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/29/2021 11:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 16:31

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21B0005-29 A 01
Preparation Batch: BJB0438 — Sample Size: 25 mL
Prepared: 02/15/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	1	0.0560	0.500	7.60	ug/L	
Chromium	7440-47-3	1	0.130	0.500	1.41	ug/L	
Cobalt	7440-48-4	1	0.0290	0.200	0.298	ug/L	
Lead	7439-92-1	1	0.0680	0.100	0.612	ug/L	
Manganese	7439-96-5	1	0.0850	0.500	9.61	ug/L	
Selenium	7782-49-2	1	0.440	2.00	ND	ug/L	U
Silver	7440-22-4	1	0.0170	0.200	ND	ug/L	U
Vanadium	7440-62-2	1	0.0400	0.200	3.20	ug/L	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

AugerWater-01292021

21B0005-29 (Water)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/29/2021 11:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 16:31

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21B0005-29 A 01
Preparation Batch: BJB0438 — Sample Size: 25 mL
Prepared: 02/15/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	1.42	ug/L	
Cadmium	7440-43-9	1	0.0300	0.100	0.0540	ug/L	J
Copper	7440-50-8	1	0.340	0.500	1.83	ug/L	
Nickel	7440-02-0	1	0.0500	0.500	1.44	ug/L	
Zinc	7440-66-6	1	0.820	4.00	34.0	ug/L	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

AugerWater-01292021

21B0005-29 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 01/29/2021 11:00

Instrument: HYDRA Analyst: BLC — Analyzed: 02/03/2021 15:13

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21B0005-29 A

Preparation Batch: BJB0092 — Sample Size: 20 mL

Prepared: 02/03/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.000013	0.000100	ND	mg/L	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

AugerWater-01292021

21B0005-30 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020A — Sampled: 01/29/2021 11:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 14:47

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21B0005-30 A 02
Preparation Batch: BJB0246 — Sample Size: 25 mL — Filtration Batch: BJB0069
Prepared: 02/08/2021 — Final Volume: 25 mL — Filtration Date: 02/02/2021 10:26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony, Dissolved	7440-36-0	1	0.0180	0.200	0.0250	ug/L	J
Chromium, Dissolved	7440-47-3	1	0.130	0.500	0.630	ug/L	
Iron, Dissolved	7439-89-6	1	6.27	20.0	ND	ug/L	U
Lead, Dissolved	7439-92-1	1	0.0680	0.100	ND	ug/L	U
Magnesium, Dissolved	7439-95-4	1	0.307	20.0	8000	ug/L	
Silver, Dissolved	7440-22-4	1	0.0170	0.200	ND	ug/L	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

AugerWater-01292021

21B0005-30 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020A UCT-KED — Sampled: 01/29/2021 11:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/08/2021 22:13

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21B0005-30 A 02
Preparation Batch: BJB0246 — Sample Size: 25 mL — Filtration Batch: BJB0069
Prepared: 02/08/2021 — Final Volume: 25 mL — Filtration Date: 02/02/2021 10:26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	1.25	ug/L	
Cadmium, Dissolved	7440-43-9	1	0.0300	0.100	ND	ug/L	U
Cobalt, Dissolved	7440-48-4	1	0.0290	0.200	ND	ug/L	U
Copper, Dissolved	7440-50-8	1	0.340	0.500	ND	ug/L	U
Nickel, Dissolved	7440-02-0	1	0.0500	0.500	0.0580	ug/L	J
Selenium, Dissolved	7782-49-2	1	0.440	0.500	ND	ug/L	U
Zinc, Dissolved	7440-66-6	1	0.820	4.00	12.5	ug/L	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

AugerWater-01292021

21B0005-30 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 7470A — Sampled: 01/29/2021 11:00
Instrument: HYDRA Analyst: BLC — Analyzed: 02/10/2021 12:50

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21B0005-30 A 01
Preparation Batch: BJB0297 — Sample Size: 20 mL — Filtration Batch: BJB0069
Prepared: 02/09/2021 — Final Volume: 20 mL — Filtration Date: 02/02/2021 10:26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury, Dissolved	7439-97-6	1	0.000013	0.000100	0.000015	mg/L	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

ProbeWater-01292021

21B0005-31 (Water)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/29/2021 11:10

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 16:21

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21B0005-31 A 01

Preparation Batch: BJB0438 — Sample Size: 25 mL

Prepared: 02/15/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	1	0.0560	0.500	4.49	ug/L	
Chromium	7440-47-3	1	0.130	0.500	0.575	ug/L	
Cobalt	7440-48-4	1	0.0290	0.200	0.0630	ug/L	J
Lead	7439-92-1	1	0.0680	0.100	0.103	ug/L	
Manganese	7439-96-5	1	0.0850	0.500	3.09	ug/L	
Selenium	7782-49-2	1	0.440	2.00	ND	ug/L	U
Silver	7440-22-4	1	0.0170	0.200	ND	ug/L	U
Vanadium	7440-62-2	1	0.0400	0.200	2.74	ug/L	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

ProbeWater-01292021

21B0005-31 (Water)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/29/2021 11:10

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 16:21

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21B0005-31 A 01

Preparation Batch: BJB0438 — Sample Size: 25 mL

Prepared: 02/15/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	1	0.0220	0.200	1.19	ug/L	
Cadmium	7440-43-9	1	0.0300	0.100	ND	ug/L	U
Copper	7440-50-8	1	0.340	0.500	2.11	ug/L	
Nickel	7440-02-0	1	0.0500	0.500	0.281	ug/L	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

ProbeWater-01292021

21B0005-31 (Water)

Metals and Metallic Compounds

Method: EPA 7470A — Sampled: 01/29/2021 11:10

Instrument: HYDRA Analyst: BLC — Analyzed: 02/03/2021 14:51

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21B0005-31 A

Preparation Batch: BJB0092 — Sample Size: 20 mL

Prepared: 02/03/2021 — Final Volume: 20 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.000013	0.000100	ND	mg/L	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

ProbeWater-01292021

21B0005-31RE1 (Water)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/29/2021 11:10

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 17:01

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21B0005-31RE1 A 01

Preparation Batch: BJB0438 — Sample Size: 25 mL

Prepared: 02/15/2021 — Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Zinc	7440-66-6	20	18.8	80.0	2710	ug/L	D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

ProbeWater-01292021

21B0005-32 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020A — Sampled: 01/29/2021 11:10

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/10/2021 14:40

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21B0005-32 A 02

Preparation Batch: BJB0246 — Sample Size: 25 mL — Filtration Batch: BJB0069

Prepared: 02/08/2021 — Final Volume: 25 mL — Filtration Date: 02/02/2021 10:26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony, Dissolved	7440-36-0	1	0.0180	0.200	0.0970	ug/L	J
Chromium, Dissolved	7440-47-3	1	0.130	0.500	0.480	ug/L	J
Iron, Dissolved	7439-89-6	1	6.27	20.0	8.13	ug/L	J
Lead, Dissolved	7439-92-1	1	0.0680	0.100	ND	ug/L	U
Magnesium, Dissolved	7439-95-4	1	0.307	20.0	8290	ug/L	
Silver, Dissolved	7440-22-4	1	0.0170	0.200	ND	ug/L	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

ProbeWater-01292021

21B0005-32 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6020A UCT-KED — Sampled: 01/29/2021 11:10
Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/09/2021 15:36

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21B0005-32 A 02
Preparation Batch: BJB0246 — Sample Size: 25 mL — Filtration Batch: BJB0069
Prepared: 02/08/2021 — Final Volume: 25 mL — Filtration Date: 02/02/2021 10:26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Zinc, Dissolved	7440-66-6	10	9.40	40.0	1980	ug/L	D

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/08/2021 22:09

Sample Preparation: Preparation Method: REN EPA 600/4-79-020 4.1.4 HNO3 matrix — Extract ID: 21B0005-32 A 02
Preparation Batch: BJB0246 — Sample Size: 25 mL — Filtration Batch: BJB0069
Prepared: 02/08/2021 — Final Volume: 25 mL — Filtration Date: 02/02/2021 10:26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic, Dissolved	7440-38-2	1	0.0220	0.200	1.08	ug/L	
Cadmium, Dissolved	7440-43-9	1	0.0300	0.100	ND	ug/L	U
Cobalt, Dissolved	7440-48-4	1	0.0290	0.200	0.0520	ug/L	J
Copper, Dissolved	7440-50-8	1	0.340	0.500	0.751	ug/L	
Nickel, Dissolved	7440-02-0	1	0.0500	0.500	0.219	ug/L	J
Selenium, Dissolved	7782-49-2	1	0.440	0.500	ND	ug/L	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

ProbeWater-01292021

21B0005-32 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 7470A — Sampled: 01/29/2021 11:10
Instrument: HYDRA Analyst: BLC — Analyzed: 02/10/2021 12:37

Sample Preparation: Preparation Method: TWM EPA 7470A — Extract ID: 21B0005-32 A 01
Preparation Batch: BJB0297 — Sample Size: 20 mL — Filtration Batch: BJB0069
Prepared: 02/09/2021 — Final Volume: 20 mL — Filtration Date: 02/02/2021 10:26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury, Dissolved	7439-97-6	1	0.000013	0.000100	0.000014	mg/L	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-042:11-01292021

21B0005-33 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/29/2021 14:10
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 22:05

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-33 A 03
	Preparation Batch: BJB0335	Sample Size: 12.39 g (wet)	Dry Weight:10.12 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 81.68
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-33 A 03
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-33 A 03
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	1.15	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	1.38	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	1.85	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	0.12	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.49	0.18	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.49	0.75	ug/kg	
Fluorene	86-73-7	1	0.07	0.49	0.12	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	2.43	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	0.21	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.49	1.89	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	2.00	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	0.83	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	1.93	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	1.60	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	0.87	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	0.73	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.49	0.95	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	0.89	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	0.24	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	1.30	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*50.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*74.4*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*74.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-042:11-01292021

21B0005-33 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/29/2021 14:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/10/2021 06:01

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-33 A 01
Preparation Batch: BJB0188 — Sample Size: 10 g (wet) — Dry Weight:8.17 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 81.68

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.12	6.35	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.2	14.9	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*119*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-042:11-01292021

21B0005-33 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/29/2021 14:10
Instrument: ECD7 Analyst: JGR — Analyzed: 02/25/2021 23:35

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-33 A 02
	Preparation Batch: BJB0243	Sample Size: 15.3 g (wet)	Dry Weight:12.50 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 81.68
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-33 A 02
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-33 A 02
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-33 A 02
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	9.2	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	3.3	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*81.1*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*83.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*70.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*65.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:11-01292021

21B0005-34 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/29/2021 15:10
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 22:37

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-34 A 03
	Preparation Batch: BJB0335	Sample Size: 12.29 g (wet)	Dry Weight:10.00 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 81.36
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-34 A 03
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-34 A 03
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	0.56	ug/kg	J
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.62	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.69	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.16	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.15	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.39	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.11	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	2.19	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.27	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	2.04	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	2.21	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.14	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	2.50	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	3.09	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.59	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	1.29	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	1.42	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	1.26	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.11	0.50	0.31	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.09	0.50	1.62	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*44.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*77.9*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*72.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:11-01292021

21B0005-34 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/29/2021 15:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 17:57

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-34 A 02
Preparation Batch: BJB0329 — Sample Size: 10.03 g (wet) — Dry Weight:8.16 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 81.36

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.13	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.3	14.9	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*134*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-106:11-01292021

21B0005-34 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/29/2021 15:10
Instrument: ECD7 Analyst: JGR — Analyzed: 02/25/2021 23:55

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-34 A 01
	Preparation Batch: BJB0243	Sample Size: 15.39 g (wet)	Dry Weight:12.52 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 81.36
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-34 A 01
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-34 A 01
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-34 A 01
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	10.3	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	4.2	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*81.6*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*86.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*76.3*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-043:9.5-01292021

21B0005-35 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/29/2021 15:40
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 23:09

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-35 A 03
	Preparation Batch: BJB0335	Sample Size: 12.33 g (wet)	Dry Weight:10.03 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 81.38
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-35 A 03
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-35 A 03
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	3.41	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	11.4	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	10.9	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.13	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.48	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.56	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.49	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	2.28	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.13	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	1.01	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	1.13	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.41	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.79	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.51	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.26	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.29	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.37	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.30	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.47	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*47.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*76.6*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*74.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-043:9.5-01292021

21B0005-35 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/29/2021 15:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 18:18

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-35 A 02
Preparation Batch: BJB0329 — Sample Size: 10.05 g (wet) — Dry Weight:8.18 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 81.38

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.11	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.2	12.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*131*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-043:9.5-01292021

21B0005-35 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/29/2021 15:40
Instrument: ECD7 Analyst: JGR — Analyzed: 02/26/2021 00:16

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-35 A 01
	Preparation Batch: BJB0243	Sample Size: 15.36 g (wet)	Dry Weight:12.50 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 81.38
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-35 A 01
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-35 A 01
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-35 A 01
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	49.7	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	11.2	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*77.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*79.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*76.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*64.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

TSA-2021-007:0.8-01292021

21B0005-36 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/29/2021 16:00
Instrument: ECD7 Analyst: JGR — Analyzed: 02/26/2021 00:36

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0005-36 A 01
	Preparation Batch: BJB0243	Sample Size: 15.38 g (wet)	Dry Weight:12.54 g
	Prepared: 02/11/2021	Final Volume: 2.5 mL	% Solids: 81.52
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-36 A 01
	Cleanup Batch: CJB0171	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-36 A 01
	Cleanup Batch: CJB0169	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-36 A 01
	Cleanup Batch: CJB0170	Initial Volume: 2.5 mL	
	Cleaned: 25-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	9.2	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	18.8	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*71.0*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*65.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*62.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*61.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 11:20

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 19:42

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-40 C

Preparation Batch: BJB0028 — Sample Size: 7.23 g (wet) — Dry Weight:5.74 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 79.38

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.87	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.29	0.87	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.23	0.87	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.21	0.87	ND	ug/kg	U
Benzene	71-43-2	1	0.26	0.87	0.81	ug/kg	J
Trichloroethene	79-01-6	1	0.18	0.87	ND	ug/kg	U
Toluene	108-88-3	1	0.13	0.87	0.41	ug/kg	J
Tetrachloroethene	127-18-4	1	0.22	0.87	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.18	0.87	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.34	1.74	ND	ug/kg	U
o-Xylene	95-47-6	1	0.20	0.87	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.54	1.74	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*122*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*98.8*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*97.9*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*105*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 01/26/2021 11:20

Instrument: NT10 Analyst: VTS — Analyzed: 02/27/2021 15:52

Sample Preparation: Preparation Method: EPA 3550C (Ultrasonic) — Extract ID: 21B0005-40 A 03

Preparation Batch: BJB0248 — Sample Size: 11.34 g (wet) — Dry Weight:10.03 g

Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 88.44

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	10	82.1	199	ND	ug/kg	U
bis(2-chloroethyl) ether	111-44-4	10	67.6	199	ND	ug/kg	U
2-Chlorophenol	95-57-8	10	64.5	199	ND	ug/kg	U
1,3-Dichlorobenzene	541-73-1	10	50.6	199	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	10	43.8	199	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	10	46.5	199	ND	ug/kg	U
Benzyl Alcohol	100-51-6	10	149	199	ND	ug/kg	U
2,2'-Oxybis(1-chloropropane)	108-60-1	10	56.5	199	ND	ug/kg	U
2-Methylphenol	95-48-7	10	78.2	199	ND	ug/kg	U
Hexachloroethane	67-72-1	10	56.3	199	ND	ug/kg	U
N-Nitroso-di-n-Propylamine	621-64-7	10	108	199	ND	ug/kg	U
4-Methylphenol	106-44-5	10	147	199	ND	ug/kg	U
Nitrobenzene	98-95-3	10	79.3	199	ND	ug/kg	U
Isophorone	78-59-1	10	77.3	199	ND	ug/kg	U
2-Nitrophenol	88-75-5	10	69.0	199	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	10	267	997	ND	ug/kg	U
Bis(2-Chloroethoxy)methane	111-91-1	10	63.2	199	ND	ug/kg	U
2,4-Dichlorophenol	120-83-2	10	319	997	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	10	59.4	199	ND	ug/kg	U
Naphthalene	91-20-3	10	52.3	199	ND	ug/kg	U
Benzoic acid	65-85-0	10	589	1990	ND	ug/kg	U
4-Chloroaniline	106-47-8	10	336	997	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	10	50.0	199	ND	ug/kg	U
4-Chloro-3-Methylphenol	59-50-7	10	288	997	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	10	56.5	199	ND	ug/kg	U
Hexachlorocyclopentadiene	77-47-4	10	412	997	ND	ug/kg	U
2,4,6-Trichlorophenol	88-06-2	10	253	997	ND	ug/kg	U
2,4,5-Trichlorophenol	95-95-4	10	268	997	ND	ug/kg	U
2-Chloronaphthalene	91-58-7	10	44.3	199	ND	ug/kg	U
2-Nitroaniline	88-74-4	10	301	997	ND	ug/kg	U
Acenaphthylene	208-96-8	10	47.6	199	ND	ug/kg	U
Dimethylphthalate	131-11-3	10	64.2	199	ND	ug/kg	U
2,6-Dinitrotoluene	606-20-2	10	266	997	ND	ug/kg	U
Acenaphthene	83-32-9	10	51.2	199	ND	ug/kg	U
3-Nitroaniline	99-09-2	10	376	997	ND	ug/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 01/26/2021 11:20

Instrument: NT10 Analyst: VTS — Analyzed: 02/27/2021 15:52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2,4-Dinitrophenol	51-28-5	10	412	1990	ND	ug/kg	U
Dibenzofuran	132-64-9	10	46.0	199	ND	ug/kg	U
4-Nitrophenol	100-02-7	10	443	997	ND	ug/kg	U
2,4-Dinitrotoluene	121-14-2	10	228	997	ND	ug/kg	U
Fluorene	86-73-7	10	49.4	199	ND	ug/kg	U
4-Chlorophenylphenyl ether	7005-72-3	10	69.4	199	ND	ug/kg	U
Diethyl phthalate	84-66-2	10	176	199	ND	ug/kg	U
4-Nitroaniline	100-01-6	10	348	997	ND	ug/kg	U
4,6-Dinitro-2-methylphenol	534-52-1	10	504	1990	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	10	95.4	199	ND	ug/kg	U
4-Bromophenyl phenyl ether	101-55-3	10	60.5	199	ND	ug/kg	U
Hexachlorobenzene	118-74-1	10	47.3	199	ND	ug/kg	U
Pentachlorophenol	87-86-5	10	312	997	ND	ug/kg	U
Phenanthrene	85-01-8	10	46.8	199	164	ug/kg	J, D
Anthracene	120-12-7	10	59.1	199	ND	ug/kg	U
Carbazole	86-74-8	10	73.5	199	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	10	52.9	199	ND	ug/kg	U
Fluoranthene	206-44-0	10	45.1	199	202	ug/kg	D
Pyrene	129-00-0	10	55.3	199	183	ug/kg	J, D
Butylbenzylphthalate	85-68-7	10	80.3	199	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	10	51.6	199	ND	ug/kg	U
3,3'-Dichlorobenzidine	91-94-1	10	311	997	ND	ug/kg	U
Chrysene	218-01-9	10	52.0	199	143	ug/kg	J, D
bis(2-Ethylhexyl)phthalate	117-81-7	10	287	499	413	ug/kg	J, D
Di-n-Octylphthalate	117-84-0	10	86.9	199	ND	ug/kg	U
Benzofluoranthenes, Total		10	102	399	102	ug/kg	J, D
Benzo(a)pyrene	50-32-8	10	64.6	199	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	10	59.7	199	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	61.4	199	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	10	58.0	199	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	10	59.3	199	ND	ug/kg	U
Surrogate: 2-Fluorophenol				*27-120 %*	*16.7*	*%*	*
Surrogate: Phenol-d5				*29-120 %*	*34.9*	*%*	
Surrogate: 2-Chlorophenol-d4				*31-120 %*	*19.1*	*%*	*
Surrogate: 1,2-Dichlorobenzene-d4				*32-120 %*	*58.9*	*%*	
Surrogate: Nitrobenzene-d5				*30-120 %*	*59.7*	*%*	
Surrogate: 2-Fluorobiphenyl				*35-120 %*	*78.7*	*%*	
Surrogate: 2,4,6-Tribromophenol				*24-134 %*	*0.437*	*%*	*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 01/26/2021 11:20

Instrument: NT10 Analyst: VTS — Analyzed: 02/27/2021 15:52

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: p-Terphenyl-d14		*37-120 %*	*78.4*	*%*	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 11:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 09:43

Sample Preparation: Preparation Method: EPA 3550C (Ultrasonic) — Extract ID: 21B0005-40 A 01
Preparation Batch: BJB0250 — Sample Size: 10 g (wet) — Dry Weight:8.84 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 88.44

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	5	28.3	3620	mg/kg	D, E
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	5	56.5	3480	mg/kg	D, E
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/26/2021 11:20
Instrument: ECD7 Analyst: JGR — Analyzed: 02/28/2021 03:47

Sample Preparation:	Preparation Method: EPA 3550C (Ultrasonic)		Extract ID: 21B0005-40 A 02
	Preparation Batch: BJB0247	Sample Size: 14.18 g (wet)	Dry Weight:12.54 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 88.44
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-40 A 02
	Cleanup Batch: CJB0161	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-40 A 02
	Cleanup Batch: CJB0159	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-40 A 02
	Cleanup Batch: CJB0160	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	25	38.9	99.7	ND	ug/kg	U
Aroclor 1221	11104-28-2	25	38.9	99.7	ND	ug/kg	U
Aroclor 1232	11141-16-5	25	38.9	99.7	ND	ug/kg	U
Aroclor 1242	53469-21-9	25	38.9	99.7	ND	ug/kg	U
Aroclor 1248	12672-29-6	25	38.9	99.7	ND	ug/kg	U
Aroclor 1254	11097-69-1	25	38.9	99.7	ND	ug/kg	U
Aroclor 1260	11096-82-5	25	14.7	99.7	1400	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*110*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*108*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*110*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*95.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 11:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:43

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-40 B 01
Preparation Batch: BJB0380 — Sample Size: 1.046 g (wet) — Dry Weight:0.85 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 80.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.59	234	mg/kg	
Cobalt	7440-48-4	20	0.03	0.24	5.02	mg/kg	
Lead	7439-92-1	20	0.08	0.12	309	mg/kg	
Selenium	7782-49-2	20	0.52	2.36	1.53	mg/kg	J
Silver	7440-22-4	20	0.02	0.24	0.59	mg/kg	
Vanadium	7440-62-2	20	0.05	0.24	185	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 11:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:43

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-40 B 01
Preparation Batch: BJB0380 — Sample Size: 1.046 g (wet) — Dry Weight:0.85 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 80.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.24	13.5	mg/kg	
Cadmium	7440-43-9	20	0.05	0.12	5.09	mg/kg	
Copper	7440-50-8	20	0.40	0.59	158	mg/kg	
Nickel	7440-02-0	20	0.06	0.59	104	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 11:20
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:11

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-40 B
Preparation Batch: BJB0381 — Sample Size: 0.267 g (wet) — Dry Weight:0.22 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 80.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00486	0.0232	0.00813	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40RE1 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 11:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/25/2021 18:03

Sample Preparation: Preparation Method: EPA 3550C (Ultrasonic) — Extract ID: 21B0005-40RE1 A 01
Preparation Batch: BJB0250 — Sample Size: 10 g (wet) — Dry Weight:8.84 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 88.44

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	50	283	3680	mg/kg	D
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	50	565	4800	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*120*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40RE1 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 11:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 20:19

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-40RE1 B 01
Preparation Batch: BJB0380 — Sample Size: 1.046 g (wet) — Dry Weight:0.85 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 80.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chromium	7440-47-3	200	0.83	5.91	1660	mg/kg	D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:1.0-01262021

21B0005-40RE1 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 11:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 20:19

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-40RE1 B 01
Preparation Batch: BJB0380 — Sample Size: 1.046 g (wet) — Dry Weight:0.85 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 80.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Zinc	7440-66-6	200	11.1	47.3	927	mg/kg	D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/26/2021 11:35

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 20:06

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-41 C

Preparation Batch: BJB0028 — Sample Size: 5.57 g (wet) — Dry Weight:4.19 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 75.15

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.28	1.19	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.40	1.19	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.32	1.19	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.29	1.19	ND	ug/kg	U
Benzene	71-43-2	1	0.35	1.19	0.51	ug/kg	J
Trichloroethene	79-01-6	1	0.25	1.19	3.05	ug/kg	
Toluene	108-88-3	1	0.18	1.19	1.03	ug/kg	J
Tetrachloroethene	127-18-4	1	0.31	1.19	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.24	1.19	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.47	2.39	0.76	ug/kg	J
o-Xylene	95-47-6	1	0.27	1.19	0.47	ug/kg	J
Xylenes, total	1330-20-7	1	0.74	2.39	1.24	ug/kg	J
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*115*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*99.4*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*90.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*98.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 01/26/2021 11:35

Instrument: NT10 Analyst: VTS — Analyzed: 02/27/2021 17:43

Sample Preparation: Preparation Method: EPA 3550C (Ultrasonic) — Extract ID: 21B0005-41 A 03

Preparation Batch: BJB0248 — Sample Size: 12.48 g (wet) — Dry Weight:10.01 g

Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 80.20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	10	82.2	200	ND	ug/kg	U
bis(2-chloroethyl) ether	111-44-4	10	67.7	200	ND	ug/kg	U
2-Chlorophenol	95-57-8	10	64.6	200	ND	ug/kg	U
1,3-Dichlorobenzene	541-73-1	10	50.7	200	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	10	43.9	200	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	10	46.6	200	ND	ug/kg	U
Benzyl Alcohol	100-51-6	10	149	200	ND	ug/kg	U
2,2'-Oxybis(1-chloropropane)	108-60-1	10	56.6	200	ND	ug/kg	U
2-Methylphenol	95-48-7	10	78.3	200	ND	ug/kg	U
Hexachloroethane	67-72-1	10	56.4	200	ND	ug/kg	U
N-Nitroso-di-n-Propylamine	621-64-7	10	108	200	ND	ug/kg	U
4-Methylphenol	106-44-5	10	147	200	ND	ug/kg	U
Nitrobenzene	98-95-3	10	79.4	200	ND	ug/kg	U
Isophorone	78-59-1	10	77.4	200	ND	ug/kg	U
2-Nitrophenol	88-75-5	10	69.1	200	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	10	268	999	ND	ug/kg	U
Bis(2-Chloroethoxy)methane	111-91-1	10	63.3	200	ND	ug/kg	U
2,4-Dichlorophenol	120-83-2	10	320	999	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	10	59.5	200	ND	ug/kg	U
Naphthalene	91-20-3	10	52.5	200	164	ug/kg	J, D
Benzoic acid	65-85-0	10	590	2000	ND	ug/kg	U
4-Chloroaniline	106-47-8	10	337	999	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	10	50.1	200	ND	ug/kg	U
4-Chloro-3-Methylphenol	59-50-7	10	289	999	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	10	56.6	200	237	ug/kg	D
Hexachlorocyclopentadiene	77-47-4	10	413	999	ND	ug/kg	U
2,4,6-Trichlorophenol	88-06-2	10	254	999	ND	ug/kg	U
2,4,5-Trichlorophenol	95-95-4	10	269	999	ND	ug/kg	U
2-Chloronaphthalene	91-58-7	10	44.4	200	ND	ug/kg	U
2-Nitroaniline	88-74-4	10	302	999	ND	ug/kg	U
Acenaphthylene	208-96-8	10	47.7	200	ND	ug/kg	U
Dimethylphthalate	131-11-3	10	64.3	200	ND	ug/kg	U
2,6-Dinitrotoluene	606-20-2	10	267	999	ND	ug/kg	U
Acenaphthene	83-32-9	10	51.3	200	ND	ug/kg	U
3-Nitroaniline	99-09-2	10	377	999	ND	ug/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 01/26/2021 11:35

Instrument: NT10 Analyst: VTS — Analyzed: 02/27/2021 17:43

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2,4-Dinitrophenol	51-28-5	10	413	2000	ND	ug/kg	U
Dibenzofuran	132-64-9	10	46.1	200	ND	ug/kg	U
4-Nitrophenol	100-02-7	10	444	999	ND	ug/kg	U
2,4-Dinitrotoluene	121-14-2	10	229	999	ND	ug/kg	U
Fluorene	86-73-7	10	49.5	200	ND	ug/kg	U
4-Chlorophenylphenyl ether	7005-72-3	10	69.5	200	ND	ug/kg	U
Diethyl phthalate	84-66-2	10	177	200	ND	ug/kg	U
4-Nitroaniline	100-01-6	10	349	999	ND	ug/kg	U
4,6-Dinitro-2-methylphenol	534-52-1	10	505	2000	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	10	95.6	200	ND	ug/kg	U
4-Bromophenyl phenyl ether	101-55-3	10	60.6	200	ND	ug/kg	U
Hexachlorobenzene	118-74-1	10	47.4	200	ND	ug/kg	U
Pentachlorophenol	87-86-5	10	313	999	ND	ug/kg	U
Phenanthrene	85-01-8	10	46.9	200	195	ug/kg	J, D
Anthracene	120-12-7	10	59.2	200	ND	ug/kg	U
Carbazole	86-74-8	10	73.6	200	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	10	53.1	200	ND	ug/kg	U
Fluoranthene	206-44-0	10	45.2	200	208	ug/kg	D
Pyrene	129-00-0	10	55.5	200	156	ug/kg	J, D
Butylbenzylphthalate	85-68-7	10	80.4	200	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	10	51.8	200	61.4	ug/kg	J, D
3,3'-Dichlorobenzidine	91-94-1	10	312	999	ND	ug/kg	U
Chrysene	218-01-9	10	52.2	200	109	ug/kg	J, D
bis(2-Ethylhexyl)phthalate	117-81-7	10	288	500	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	10	87.1	200	ND	ug/kg	U
Benzofluoranthenes, Total		10	102	400	112	ug/kg	J, D
Benzo(a)pyrene	50-32-8	10	64.7	200	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	10	59.8	200	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	61.5	200	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	10	58.1	200	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	10	59.4	200	186	ug/kg	J, D
Surrogate: 2-Fluorophenol				*27-120 %*	*16.9*	*%*	*
Surrogate: Phenol-d5				*29-120 %*	*40.1*	*%*	
Surrogate: 2-Chlorophenol-d4				*31-120 %*	*20.5*	*%*	*
Surrogate: 1,2-Dichlorobenzene-d4				*32-120 %*	*70.0*	*%*	
Surrogate: Nitrobenzene-d5				*30-120 %*	*74.1*	*%*	
Surrogate: 2-Fluorobiphenyl				*35-120 %*	*82.7*	*%*	
Surrogate: 2,4,6-Tribromophenol				*24-134 %*	*6.56*	*%*	*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 01/26/2021 11:35

Instrument: NT10 Analyst: VTS — Analyzed: 02/27/2021 17:43

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: p-Terphenyl-d14		*37-120 %*	*91.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 11:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 10:45

Sample Preparation: Preparation Method: EPA 3550C (Ultrasonic) — Extract ID: 21B0005-41 A 01
Preparation Batch: BJB0250 — Sample Size: 10 g (wet) — Dry Weight:8.02 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 80.20

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	5	31.2	1660	mg/kg	D, E
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	5	62.3	2450	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*90.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 01/26/2021 11:35
Instrument: ECD7 Analyst: JGR — Analyzed: 02/26/2021 13:37

Sample Preparation:	Preparation Method: EPA 3550C (Ultrasonic)		Extract ID: 21B0005-41 A 02
	Preparation Batch: BJB0247	Sample Size: 15.59 g (wet)	Dry Weight:12.50 g
	Prepared: 02/09/2021	Final Volume: 2.5 mL	% Solids: 80.20
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-41 A 02
	Cleanup Batch: CJB0161	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0005-41 A 02
	Cleanup Batch: CJB0159	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-41 A 02
	Cleanup Batch: CJB0160	Initial Volume: 2.5 mL	
	Cleaned: 24-Feb-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	205	205	ND	ug/kg	U
Aroclor 1260	11096-82-5	5	2.9	20.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*NRS*	NRS
Surrogate: Tetrachlorometaxylene				*44-120 %*	*68.3*	*%*	P1
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*69.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*110*	*%*	P1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 11:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:48

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-41 B 01
Preparation Batch: BJB0380 — Sample Size: 1.029 g (wet) — Dry Weight:0.90 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 87.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.55	249	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	5.34	mg/kg	
Lead	7439-92-1	20	0.08	0.11	38.3	mg/kg	
Selenium	7782-49-2	20	0.49	2.21	1.34	mg/kg	J
Silver	7440-22-4	20	0.02	0.22	0.19	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	238	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/26/2021 11:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:48

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-41 B 01
Preparation Batch: BJB0380 — Sample Size: 1.029 g (wet) — Dry Weight:0.90 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 87.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	5.06	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.09	mg/kg	J
Copper	7440-50-8	20	0.38	0.55	44.9	mg/kg	
Nickel	7440-02-0	20	0.06	0.55	18.5	mg/kg	
Zinc	7440-66-6	20	0.9	4.4	43.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/26/2021 11:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:13

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-41 B
Preparation Batch: BJB0381 — Sample Size: 0.286 g (wet) — Dry Weight:0.25 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 87.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00418	0.0199	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41RE1 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/26/2021 11:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/25/2021 18:24

Sample Preparation: Preparation Method: EPA 3550C (Ultrasonic) — Extract ID: 21B0005-41RE1 A 01
Preparation Batch: BJB0250 — Sample Size: 10 g (wet) — Dry Weight:8.02 g
Prepared: 02/08/2021 — Final Volume: 1 mL — % Solids: 80.20

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	10	62.3	1640	mg/kg	D
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	10	125	3030	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*107*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-068:5.5-01262021

21B0005-41RE1 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/26/2021 11:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 20:24

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-41RE1 B 01
Preparation Batch: BJB0380 — Sample Size: 1.029 g (wet) — Dry Weight:0.90 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 87.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Chromium	7440-47-3	200	0.77	5.54	1600	mg/kg	D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:5.2-01282021

21B0005-44 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 13:05
Instrument: NT11 Analyst: VTS — Analyzed: 03/11/2021 23:42

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-44 A 02
	Preparation Batch: BJB0335	Sample Size: 11.19 g (wet)	Dry Weight:10.03 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 89.64
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-44 A 02
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-44 A 02
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.91	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	6.31	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	5.95	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.12	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	0.72	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.31	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	6.08	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.19	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	3.63	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	3.34	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.40	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	2.96	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	1.64	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.80	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.91	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	1.28	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.75	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.20	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	1.13	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*44.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*74.3*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*75.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:5.2-01282021

21B0005-44 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 13:05
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 18:39

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-44 A 01
Preparation Batch: BJB0329 — Sample Size: 10.02 g (wet) — Dry Weight:8.98 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 89.64

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.57	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.1	22.5	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*118*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:5.2-01282021

21B0005-44 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 13:05

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:54

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-44 B 01

Preparation Batch: BJB0380 — Sample Size: 1.02 g (wet) — Dry Weight:0.89 g

Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 87.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.56	30.6	mg/kg	
Chromium	7440-47-3	20	0.15	0.56	11.0	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	5.43	mg/kg	
Lead	7439-92-1	20	0.08	0.11	2.96	mg/kg	
Selenium	7782-49-2	20	0.49	2.24	0.91	mg/kg	J
Silver	7440-22-4	20	0.02	0.22	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	34.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:5.2-01282021

21B0005-44 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 13:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:54

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-44 B 01
Preparation Batch: BJB0380 — Sample Size: 1.02 g (wet) — Dry Weight:0.89 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 87.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	2.79	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.04	mg/kg	J
Copper	7440-50-8	20	0.38	0.56	11.2	mg/kg	
Nickel	7440-02-0	20	0.06	0.56	10.0	mg/kg	
Zinc	7440-66-6	20	0.9	4.5	30.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:5.2-01282021

21B0005-44 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 13:05
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:16

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-44 B
Preparation Batch: BJB0381 — Sample Size: 0.267 g (wet) — Dry Weight:0.23 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 87.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00449	0.0214	0.0124	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:5.2-01282021

21B0005-44 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 01/28/2021 13:05

Instrument: BAL2 Analyst: KLE — Analyzed: 02/07/2021 08:39

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0005-44

Preparation Batch: BJB0217 — Sample Size: 5 g (wet) — Dry Weight:4.53 g

Prepared: 02/07/2021 — Final Volume: 5 g — % Solids: 90.60

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	90.60	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:5.2-01282021

21B0005-44 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 01/28/2021 13:05

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 18:20

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0005-44 B

Preparation Batch: BJB0295 — Sample Size: 2.6065 g (wet) — Dry Weight:2.36 g

Prepared: 02/09/2021 — Final Volume: 100 g — % Solids: 90.60

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.529	0.529	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:9.0-01282021

21B0005-45 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 13:10
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 00:14

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-45 A 02
	Preparation Batch: BJB0335	Sample Size: 11.6 g (wet)	Dry Weight:10.00 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 86.21
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-45 A 02
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-45 A 02
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.52	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	5.18	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	4.95	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.08	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.23	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.38	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.24	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	2.31	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.08	0.50	0.38	ug/kg	J
Pyrene	129-00-0	1	0.09	0.50	0.39	ug/kg	J
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.14	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.35	ug/kg	J
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.11	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	0.09	0.50	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	ND	ug/kg	U
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*51.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*64.7*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*74.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:9.0-01282021

21B0005-45 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 13:10

Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 19:00

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-45 A 01

Preparation Batch: BJB0329 — Sample Size: 10.01 g (wet) — Dry Weight:8.63 g

Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 86.21

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.79	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.6	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*127*	*%*	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:9.0-01282021

21B0005-45 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 13:10

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:59

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-45 B 01

Preparation Batch: BJB0380 — Sample Size: 1.071 g (wet) — Dry Weight:0.85 g

Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 79.19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.59	16.3	mg/kg	
Chromium	7440-47-3	20	0.15	0.59	9.25	mg/kg	
Cobalt	7440-48-4	20	0.03	0.24	3.24	mg/kg	
Lead	7439-92-1	20	0.08	0.12	1.38	mg/kg	
Selenium	7782-49-2	20	0.52	2.36	0.57	mg/kg	J
Silver	7440-22-4	20	0.02	0.24	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.24	29.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:9.0-01282021

21B0005-45 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 13:10

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 18:59

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-45 B 01

Preparation Batch: BJB0380 — Sample Size: 1.071 g (wet) — Dry Weight:0.85 g

Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 79.19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.24	4.13	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	ND	mg/kg	U
Copper	7440-50-8	20	0.40	0.59	7.82	mg/kg	
Nickel	7440-02-0	20	0.06	0.59	6.85	mg/kg	
Zinc	7440-66-6	20	1.0	4.7	18.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:9.0-01282021

21B0005-45 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 13:10
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:22

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-45 B
Preparation Batch: BJB0381 — Sample Size: 0.256 g (wet) — Dry Weight:0.20 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 79.19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00518	0.0247	0.00718	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:9.0-01282021

21B0005-45 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 01/28/2021 13:10

Instrument: BAL2 Analyst: KLE — Analyzed: 02/07/2021 08:39

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0005-45

Preparation Batch: BJB0217 — Sample Size: 5 g (wet) — Dry Weight:3.97 g

Prepared: 02/07/2021 — Final Volume: 5 g — % Solids: 79.33

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	79.33	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:9.0-01282021

21B0005-45 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 01/28/2021 13:10

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 18:21

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0005-45 B

Preparation Batch: BJB0295 — Sample Size: 2.6124 g (wet) — Dry Weight:2.07 g

Prepared: 02/09/2021 — Final Volume: 100 g — % Solids: 79.33

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.603	0.603	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:14.0-01282021

21B0005-46 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 13:30
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 00:46

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-46 A 02
	Preparation Batch: BJB0335	Sample Size: 12.94 g (wet)	Dry Weight:10.02 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 77.41
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-46 A 02
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-46 A 02
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	2.21	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	7.55	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	7.12	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.09	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.45	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.39	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.56	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	1.73	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.14	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	0.42	ug/kg	J
Pyrene	129-00-0	1	0.09	0.50	0.83	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.20	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.57	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.24	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	0.09	0.50	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.17	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*48.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*65.9*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*69.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:14.0-01282021

21B0005-46 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 13:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 19:21

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-46 A 01
Preparation Batch: BJB0329 — Sample Size: 10.03 g (wet) — Dry Weight:7.76 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 77.41

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.44	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.9	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*126*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:14.0-01282021

21B0005-46 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 13:30

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 19:03

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-46 B 01

Preparation Batch: BJB0380 — Sample Size: 1.031 g (wet) — Dry Weight:0.80 g

Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 77.74

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.62	23.2	mg/kg	
Chromium	7440-47-3	20	0.16	0.62	9.15	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	3.16	mg/kg	
Lead	7439-92-1	20	0.08	0.12	1.36	mg/kg	
Selenium	7782-49-2	20	0.55	2.50	0.82	mg/kg	J
Silver	7440-22-4	20	0.02	0.25	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	36.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:14.0-01282021

21B0005-46 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 13:30

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 19:03

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-46 B 01

Preparation Batch: BJB0380 — Sample Size: 1.031 g (wet) — Dry Weight:0.80 g

Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 77.74

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	2.26	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	0.04	mg/kg	J
Copper	7440-50-8	20	0.42	0.62	10.1	mg/kg	
Nickel	7440-02-0	20	0.06	0.62	6.99	mg/kg	
Zinc	7440-66-6	20	1.0	5.0	19.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:14.0-01282021

21B0005-46 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 13:30
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:24

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-46 B
Preparation Batch: BJB0381 — Sample Size: 0.232 g (wet) — Dry Weight:0.18 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 77.74

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00582	0.0277	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:14.0-01282021

21B0005-46 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 01/28/2021 13:30

Instrument: BAL2 Analyst: KLE — Analyzed: 02/07/2021 08:39

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0005-46

Preparation Batch: BJB0217 — Sample Size: 5 g (wet) — Dry Weight:3.90 g

Prepared: 02/07/2021 — Final Volume: 5 g — % Solids: 77.98

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	77.98	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-64:14.0-01282021

21B0005-46 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 01/28/2021 13:30

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 18:22

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0005-46 B

Preparation Batch: BJB0295 — Sample Size: 2.7466 g (wet) — Dry Weight:2.14 g

Prepared: 02/09/2021 — Final Volume: 100 g — % Solids: 77.98

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.584	0.584	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:1.5-01282021

21B0005-51 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 10:40

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 20:30

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-51 C

Preparation Batch: BJB0028 — Sample Size: 7.1 g (wet) — Dry Weight:6.19 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 87.17

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.19	0.81	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.27	0.81	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.21	0.81	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.19	0.81	ND	ug/kg	U
Benzene	71-43-2	1	0.24	0.81	0.30	ug/kg	J
Trichloroethene	79-01-6	1	0.17	0.81	ND	ug/kg	U
Toluene	108-88-3	1	0.12	0.81	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.21	0.81	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.16	0.81	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.32	1.62	ND	ug/kg	U
o-Xylene	95-47-6	1	0.18	0.81	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.50	1.62	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*115*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:1.5-01282021

21B0005-51 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 10:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 19:41

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-51 A 01
Preparation Batch: BJB0329 — Sample Size: 10.01 g (wet) — Dry Weight:8.51 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 84.97

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.88	10.5	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.8	26.0	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*118*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:1.5-01282021

21B0005-51 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 10:40

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 19:09

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-51 B 01

Preparation Batch: BJB0380 — Sample Size: 1.05 g (wet) — Dry Weight:0.92 g

Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 87.82

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.54	36.1	mg/kg	
Chromium	7440-47-3	20	0.14	0.54	12.0	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	5.01	mg/kg	
Lead	7439-92-1	20	0.07	0.11	3.33	mg/kg	
Selenium	7782-49-2	20	0.48	2.17	0.80	mg/kg	J
Silver	7440-22-4	20	0.02	0.22	0.06	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	32.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:1.5-01282021

21B0005-51 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 10:40

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 19:09

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-51 B 01

Preparation Batch: BJB0380 — Sample Size: 1.05 g (wet) — Dry Weight:0.92 g

Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 87.82

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	3.11	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.37	0.54	13.4	mg/kg	
Nickel	7440-02-0	20	0.05	0.54	10.5	mg/kg	
Zinc	7440-66-6	20	0.9	4.3	29.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:1.5-01282021

21B0005-51 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 10:40

Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:26

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-51 B

Preparation Batch: BJB0381 — Sample Size: 0.231 g (wet) — Dry Weight:0.20 g

Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 87.82

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00518	0.0246	0.0137	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:6.0-01282021

21B0005-52 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 10:55

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 20:54

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-52 C

Preparation Batch: BJB0028 — Sample Size: 6.4 g (wet) — Dry Weight:5.85 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 91.38

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.20	0.85	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.29	0.85	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.23	0.85	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.21	0.85	ND	ug/kg	U
Benzene	71-43-2	1	0.25	0.85	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.18	0.85	ND	ug/kg	U
Toluene	108-88-3	1	0.13	0.85	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.22	0.85	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.17	0.85	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.34	1.71	ND	ug/kg	U
o-Xylene	95-47-6	1	0.19	0.85	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.53	1.71	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*118*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*100*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*105*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:6.0-01282021

21B0005-52 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 10:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 20:02

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-52 A 01
Preparation Batch: BJB0329 — Sample Size: 10.01 g (wet) — Dry Weight:9.28 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 92.67

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.39	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.8	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*131*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:6.0-01282021

21B0005-52 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 10:55
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 19:14

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-52 B 01
Preparation Batch: BJB0380 — Sample Size: 1.039 g (wet) — Dry Weight:0.95 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 91.19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	25.9	mg/kg	
Chromium	7440-47-3	20	0.14	0.53	9.88	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	4.01	mg/kg	
Lead	7439-92-1	20	0.07	0.11	2.26	mg/kg	
Selenium	7782-49-2	20	0.46	2.11	0.83	mg/kg	J
Silver	7440-22-4	20	0.02	0.21	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	29.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:6.0-01282021

21B0005-52 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 10:55
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 19:14

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-52 B 01
Preparation Batch: BJB0380 — Sample Size: 1.039 g (wet) — Dry Weight:0.95 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 91.19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	1.75	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.36	0.53	9.27	mg/kg	
Nickel	7440-02-0	20	0.05	0.53	7.64	mg/kg	
Zinc	7440-66-6	20	0.9	4.2	35.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:6.0-01282021

21B0005-52 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 10:55
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:28

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-52 B
Preparation Batch: BJB0381 — Sample Size: 0.276 g (wet) — Dry Weight:0.25 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 91.19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00417	0.0199	0.00703	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:8.5-01282021

21B0005-53 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 11:00

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 21:18

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-53 C

Preparation Batch: BJB0028 — Sample Size: 6.3 g (wet) — Dry Weight:4.77 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 75.79

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.25	1.05	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.35	1.05	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.28	1.05	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.25	1.05	ND	ug/kg	U
Benzene	71-43-2	1	0.31	1.05	1.19	ug/kg	
Trichloroethene	79-01-6	1	0.22	1.05	ND	ug/kg	U
Toluene	108-88-3	1	0.16	1.05	0.59	ug/kg	J
Tetrachloroethene	127-18-4	1	0.27	1.05	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.21	1.05	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.41	2.09	ND	ug/kg	U
o-Xylene	95-47-6	1	0.23	1.05	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.65	2.09	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*112*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*99.6*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*98.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:8.5-01282021

21B0005-53 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 11:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 20:23

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-53 A 01
Preparation Batch: BJB0329 — Sample Size: 10.03 g (wet) — Dry Weight:7.32 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 72.96

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.83	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.7	32.5	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*123*	*%*	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:8.5-01282021

21B0005-53 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 11:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 19:20

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-53 B 01
Preparation Batch: BJB0380 — Sample Size: 1.072 g (wet) — Dry Weight:0.80 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 75.08

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.62	73.1	mg/kg	
Chromium	7440-47-3	20	0.16	0.62	16.6	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	5.93	mg/kg	
Lead	7439-92-1	20	0.08	0.12	9.13	mg/kg	
Selenium	7782-49-2	20	0.55	2.48	1.31	mg/kg	J
Silver	7440-22-4	20	0.02	0.25	0.08	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	40.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:8.5-01282021

21B0005-53 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 11:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 19:20

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-53 B 01
Preparation Batch: BJB0380 — Sample Size: 1.072 g (wet) — Dry Weight:0.80 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 75.08

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	4.25	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	0.16	mg/kg	
Copper	7440-50-8	20	0.42	0.62	24.5	mg/kg	
Nickel	7440-02-0	20	0.06	0.62	14.9	mg/kg	
Zinc	7440-66-6	20	1.0	5.0	48.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:8.5-01282021

21B0005-53 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 11:00
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:31

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-53 B
Preparation Batch: BJB0381 — Sample Size: 0.293 g (wet) — Dry Weight:0.22 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 75.08

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00477	0.0227	0.0605	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:16.0-01282021

21B0005-54 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 11:05

Instrument: NT5 Analyst: PB — Analyzed: 02/01/2021 21:42

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-54 C

Preparation Batch: BJB0028 — Sample Size: 7.74 g (wet) — Dry Weight:5.75 g

Prepared: 01/29/2021 — Final Volume: 5 mL — % Solids: 74.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.26	0.87	0.44	ug/kg	J
Toluene	108-88-3	1	0.13	0.87	9.82	ug/kg	
Ethylbenzene	100-41-4	1	0.18	0.87	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.34	1.74	ND	ug/kg	U
o-Xylene	95-47-6	1	0.19	0.87	ND	ug/kg	U
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

MW-75:21.0-01282021

21B0005-55 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 01/28/2021 11:15

Instrument: NT5 Analyst: PB — Analyzed: 02/02/2021 13:37

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0005-55 C

Preparation Batch: BJB0072 — Sample Size: 7.9 g (wet) — Dry Weight:5.96 g

Prepared: 02/02/2021 — Final Volume: 5 mL — % Solids: 75.49

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.25	0.84	0.27	ug/kg	J
Toluene	108-88-3	1	0.13	0.84	2.50	ug/kg	
Ethylbenzene	100-41-4	1	0.17	0.84	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.33	1.68	ND	ug/kg	U
o-Xylene	95-47-6	1	0.19	0.84	ND	ug/kg	U
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:1.5-01292021

21B0005-56 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/29/2021 14:20
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 01:18

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-56 A 02
	Preparation Batch: BJB0335	Sample Size: 10.94 g (wet)	Dry Weight:10.02 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 91.56
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-56 A 02
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-56 A 02
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	3.04	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	10.6	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	9.90	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.24	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.69	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	1.16	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.61	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	9.07	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.52	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	11.7	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	14.6	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	6.23	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	10.3	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	7.33	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	4.31	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	3.95	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	7.98	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	5.28	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	1.58	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	6.89	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*44.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*75.6*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*71.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:1.5-01292021

21B0005-56 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/29/2021 14:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 20:44

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-56 A 01
Preparation Batch: BJB0329 — Sample Size: 10.04 g (wet) — Dry Weight:9.19 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 91.56

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.44	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.9	16.4	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*119*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:1.5-01292021

21B0005-56 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/29/2021 14:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 19:59

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-56 B 01
Preparation Batch: BJB0380 — Sample Size: 1.068 g (wet) — Dry Weight:1.00 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 93.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.50	36.1	mg/kg	
Chromium	7440-47-3	20	0.07	0.50	28.6	mg/kg	
Cobalt	7440-48-4	20	0.03	0.20	8.61	mg/kg	
Lead	7439-92-1	20	0.07	0.10	168	mg/kg	
Selenium	7782-49-2	20	0.44	2.00	0.74	mg/kg	J
Silver	7440-22-4	20	0.02	0.20	0.09	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	34.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:1.5-01292021

21B0005-56 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/29/2021 14:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 19:59

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-56 B 01
Preparation Batch: BJB0380 — Sample Size: 1.068 g (wet) — Dry Weight:1.00 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 93.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	20.0	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	0.14	mg/kg	
Copper	7440-50-8	20	0.34	0.50	56.9	mg/kg	
Nickel	7440-02-0	20	0.05	0.50	52.8	mg/kg	
Zinc	7440-66-6	20	0.9	4.0	139	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:1.5-01292021

21B0005-56 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/29/2021 14:20
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:33

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-56 B
Preparation Batch: BJB0381 — Sample Size: 0.211 g (wet) — Dry Weight:0.20 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 93.75

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00531	0.0253	0.00907	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:6-01292021

21B0005-57 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/29/2021 14:30
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 01:50

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-57 A 02
	Preparation Batch: BJB0335	Sample Size: 10.47 g (wet)	Dry Weight:10.06 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 96.08
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-57 A 02
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-57 A 02
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	5.86	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	21.5	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	20.1	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.26	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	1.12	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	1.00	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	1.29	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	4.93	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.22	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	1.31	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	1.31	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.55	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	0.93	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.34	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.23	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.23	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.28	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.16	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.22	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*49.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*62.3*	*%*	Q
Surrogate: Fluoranthene-d10				*30-160 %*	*73.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:6-01292021

21B0005-57 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/29/2021 14:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 21:05

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-57 A 01
Preparation Batch: BJB0329 — Sample Size: 10.02 g (wet) — Dry Weight:9.63 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 96.08

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.19	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.4	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*135*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:6-01292021

21B0005-57 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/29/2021 14:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 20:04

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-57 B 01
Preparation Batch: BJB0380 — Sample Size: 1.046 g (wet) — Dry Weight:1.00 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 95.36

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.50	22.7	mg/kg	
Chromium	7440-47-3	20	0.13	0.50	9.89	mg/kg	
Cobalt	7440-48-4	20	0.03	0.20	4.19	mg/kg	
Lead	7439-92-1	20	0.07	0.10	1.90	mg/kg	
Selenium	7782-49-2	20	0.44	2.01	0.63	mg/kg	J
Silver	7440-22-4	20	0.02	0.20	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	29.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:6-01292021

21B0005-57 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/29/2021 14:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 20:04

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-57 B 01
Preparation Batch: BJB0380 — Sample Size: 1.046 g (wet) — Dry Weight:1.00 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 95.36

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	2.10	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	ND	mg/kg	U
Copper	7440-50-8	20	0.34	0.50	9.96	mg/kg	
Nickel	7440-02-0	20	0.05	0.50	8.79	mg/kg	
Zinc	7440-66-6	20	0.8	4.0	22.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:6-01292021

21B0005-57 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/29/2021 14:30
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:35

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-57 B
Preparation Batch: BJB0381 — Sample Size: 0.254 g (wet) — Dry Weight:0.24 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 95.36

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00434	0.0206	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:10-01292021

21B0005-58 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/28/2021 14:40
Instrument: NT2 Analyst: PKC — Analyzed: 02/04/2021 19:08

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0005-58 E
Preparation Batch: BJB0162 — Sample Size: 4.845 g (wet) — Dry Weight:3.71 g
Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 76.51

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	2000	331000	3480000	ug/kg	D
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*97.2*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:10-01292021

21B0005-58 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 14:40
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 03:26

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-58 A 02
	Preparation Batch: BJB0335	Sample Size: 13.12 g (wet)	Dry Weight:10.04 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 76.51
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-58 A 02
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-58 A 02
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	50	21.9	29.9	3540	ug/kg	D, E
1-Methylnaphthalene	90-12-0	50	5.28	24.9	15900	ug/kg	D, E
2-Methylnaphthalene	91-57-6	50	6.38	24.9	14800	ug/kg	D, E
Acenaphthylene	208-96-8	50	3.19	24.9	520	ug/kg	D
Acenaphthene	83-32-9	50	4.43	24.9	2510	ug/kg	D, E
Dibenzofuran	132-64-9	50	6.28	24.9	882	ug/kg	D
Fluorene	86-73-7	50	3.39	24.9	3190	ug/kg	D, E
Phenanthrene	85-01-8	50	5.68	24.9	5510	ug/kg	D, E
Anthracene	120-12-7	50	3.69	24.9	629	ug/kg	D
Fluoranthene	206-44-0	50	4.03	24.9	472	ug/kg	D
Pyrene	129-00-0	50	4.43	24.9	1400	ug/kg	D
Benzo(a)anthracene	56-55-3	50	3.59	24.9	133	ug/kg	D
Chrysene	218-01-9	50	3.49	24.9	231	ug/kg	D
Benzo(b)fluoranthene	205-99-2	50	3.29	24.9	35.4	ug/kg	Q, D
Benzo(k)fluoranthene	207-08-9	50	5.03	24.9	20.1	ug/kg	J, D
Benzo(j)fluoranthene	205-82-3	50	4.83	24.9	28.8	ug/kg	D
Benzo(a)pyrene	50-32-8	50	4.33	24.9	73.0	ug/kg	D
Indeno(1,2,3-cd)pyrene	193-39-5	50	4.38	24.9	13.9	ug/kg	J, D
Dibenzo(a,h)anthracene	53-70-3	50	5.23	24.9	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	50	4.23	24.9	21.8	ug/kg	J, D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*		*D1*	D1
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*		*D1*	D1
Surrogate: Fluoranthene-d10				*30-160 %*		*D1*	D1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:10-01292021

21B0005-58 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 14:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 22:07

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-58 A 01
Preparation Batch: BJB0329 — Sample Size: 10.03 g (wet) — Dry Weight:7.67 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 76.51

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.52	24200	mg/kg	E
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.0	328	mg/kg	
HC ID: RRO						
Surrogate: o-Terphenyl			*50-150 %*	*32.7*	*%*	*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:10-01292021

21B0005-58 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A — Sampled: 01/28/2021 14:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 20:09

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-58 B 01
Preparation Batch: BJB0380 — Sample Size: 1.048 g (wet) — Dry Weight:0.79 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 75.82

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.63	43.8	mg/kg	
Chromium	7440-47-3	20	0.16	0.63	22.3	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	5.59	mg/kg	
Lead	7439-92-1	20	0.09	0.13	15.3	mg/kg	
Selenium	7782-49-2	20	0.55	2.52	1.21	mg/kg	J
Silver	7440-22-4	20	0.02	0.25	0.06	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	38.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:10-01292021

21B0005-58 (Solid)

Metals and Metallic Compounds

Method: EPA 6020A UCT-KED — Sampled: 01/28/2021 14:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/15/2021 20:09

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0005-58 B 01
Preparation Batch: BJB0380 — Sample Size: 1.048 g (wet) — Dry Weight:0.79 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 75.82

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	3.13	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.07	mg/kg	J
Copper	7440-50-8	20	0.43	0.63	24.7	mg/kg	
Nickel	7440-02-0	20	0.06	0.63	21.1	mg/kg	
Zinc	7440-66-6	20	1.0	5.0	32.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:10-01292021

21B0005-58 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 01/28/2021 14:40
Instrument: HYDRA Analyst: BLC — Analyzed: 02/15/2021 11:37

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0005-58 B
Preparation Batch: BJB0381 — Sample Size: 0.212 g (wet) — Dry Weight:0.16 g
Prepared: 02/11/2021 — Final Volume: 50 mL — % Solids: 75.82

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00653	0.0311	0.0131	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:10-01292021

21B0005-58RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 01/28/2021 14:40
Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 15:04

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0005-58RE1 A 02
	Preparation Batch: BJB0335	Sample Size: 13.12 g (wet)	Dry Weight:10.04 g
	Prepared: 02/11/2021	Final Volume: 0.5 mL	% Solids: 76.51
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0005-58RE1 A 02
	Cleanup Batch: CJC0030	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0005-58RE1 A 02
	Cleanup Batch: CJC0029	Initial Volume: 0.5 mL	
	Cleaned: 04-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1000	437	598	3870	ug/kg	D
1-Methylnaphthalene	90-12-0	1000	106	498	34300	ug/kg	D
2-Methylnaphthalene	91-57-6	1000	128	498	29100	ug/kg	D
Acenaphthylene	208-96-8	1000	63.8	498	ND	ug/kg	U
Acenaphthene	83-32-9	1000	88.7	498	4230	ug/kg	D
Dibenzofuran	132-64-9	1000	126	498	1280	ug/kg	D
Fluorene	86-73-7	1000	67.7	498	6110	ug/kg	D
Phenanthrene	85-01-8	1000	114	498	13400	ug/kg	D
Anthracene	120-12-7	1000	73.7	498	ND	ug/kg	U
Fluoranthene	206-44-0	1000	80.7	498	542	ug/kg	D
Pyrene	129-00-0	1000	88.7	498	1340	ug/kg	D
Benzo(a)anthracene	56-55-3	1000	71.7	498	123	ug/kg	J, D
Chrysene	218-01-9	1000	69.7	498	200	ug/kg	J, D
Benzo(b)fluoranthene	205-99-2	1000	65.7	498	ND	ug/kg	U
Benzo(k)fluoranthene	207-08-9	1000	101	498	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1000	96.6	498	ND	ug/kg	Q, U
Benzo(a)pyrene	50-32-8	1000	86.7	498	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1000	87.7	498	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1000	105	498	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1000	84.7	498	ND	ug/kg	U
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*		*D1*	D1
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*		*D1*	D1
Surrogate: Fluoranthene-d10				*30-160 %*		*D1*	D1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:10-01292021

21B0005-58RE1 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 14:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 12:27

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-58RE1 A 01
Preparation Batch: BJB0329 — Sample Size: 10.03 g (wet) — Dry Weight:7.67 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 76.51

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	100	652	23400	mg/kg	D
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	100	1300	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*80.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:20-01292021

21B0005-59 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 01/28/2021 14:50

Instrument: NT2 Analyst: PKC — Analyzed: 02/03/2021 21:15

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0005-59 E

Preparation Batch: BJB0119 — Sample Size: 4.633 g (wet) — Dry Weight:3.68 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 79.41

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	8090	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.6*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

SB-2021-006:20-01292021

21B0005-59 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 01/28/2021 14:50
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 22:28

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0005-59 A 01
Preparation Batch: BJB0329 — Sample Size: 10.02 g (wet) — Dry Weight:7.96 g
Prepared: 02/10/2021 — Final Volume: 1 mL — % Solids: 79.41

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.28	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.6	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*129*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Volatile Organic Compounds - Quality Control

Batch BJB0028 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0028-BLK1)				Prepared: 01-Feb-2021 Analyzed: 01-Feb-2021 11:56							
Vinyl Chloride	ND	0.24	1.00	ug/kg							U
1,1-Dichloroethene	ND	0.34	1.00	ug/kg							U
trans-1,2-Dichloroethene	ND	0.27	1.00	ug/kg							U
cis-1,2-Dichloroethene	ND	0.24	1.00	ug/kg							U
Benzene	ND	0.30	1.00	ug/kg							U
Trichloroethene	ND	0.21	1.00	ug/kg							U
Toluene	ND	0.15	1.00	ug/kg							U
Tetrachloroethene	ND	0.26	1.00	ug/kg							U
Ethylbenzene	ND	0.20	1.00	ug/kg							U
m,p-Xylene	ND	0.39	2.00	ug/kg							U
o-Xylene	ND	0.22	1.00	ug/kg							U
Xylenes, total	ND	0.62	2.00	ug/kg							U
Surrogate: 1,2-Dichloroethane-d4	51.9			ug/kg	*50.0*		*104*	*80-149*			
Surrogate: Toluene-d8	49.6			ug/kg	*50.0*		*99.2*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.3			ug/kg	*50.0*		*98.6*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.7			ug/kg	*50.0*		*101*	*80-120*			
LCS (BJB0028-BS1)				Prepared: 01-Feb-2021 Analyzed: 01-Feb-2021 11:06							
Vinyl Chloride	51.9			ug/kg	50.0		104	74-135			
1,1-Dichloroethene	48.1			ug/kg	50.0		96.2	77-134			
trans-1,2-Dichloroethene	48.7			ug/kg	50.0		97.3	79-130			
cis-1,2-Dichloroethene	46.3			ug/kg	50.0		92.6	80-125			
Benzene	48.5			ug/kg	50.0		97.1	80-120			
Trichloroethene	49.0			ug/kg	50.0		97.9	80-120			
Toluene	49.4			ug/kg	50.0		98.8	75-120			
Tetrachloroethene	48.4			ug/kg	50.0		96.7	74-124			
Ethylbenzene	48.3			ug/kg	50.0		96.7	80-125			
m,p-Xylene	96.9			ug/kg	100		96.9	76-121			
o-Xylene	48.3			ug/kg	50.0		96.6	67-132			
Xylenes, total	145			ug/kg	150		96.8	67-132			
Surrogate: 1,2-Dichloroethane-d4	51.3			ug/kg	*50.0*		*103*	*80-149*			
Surrogate: Toluene-d8	50.6			ug/kg	*50.0*		*101*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.4			ug/kg	*50.0*		*98.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	51.0			ug/kg	*50.0*		*102*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Volatile Organic Compounds - Quality Control

Batch BJB0028 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJB0028-BSD1)					Prepared: 01-Feb-2021 Analyzed: 01-Feb-2021 11:29						
Vinyl Chloride	47.9			ug/kg	50.0		95.7	74-135	8.11	30	
1,1-Dichloroethene	44.8			ug/kg	50.0		89.5	77-134	7.21	30	
trans-1,2-Dichloroethene	44.3			ug/kg	50.0		88.7	79-130	9.30	30	
cis-1,2-Dichloroethene	44.4			ug/kg	50.0		88.9	80-125	4.12	30	
Benzene	46.2			ug/kg	50.0		92.3	80-120	4.99	30	
Trichloroethene	46.0			ug/kg	50.0		92.0	80-120	6.26	30	
Toluene	46.5			ug/kg	50.0		93.0	75-120	6.12	30	
Tetrachloroethene	47.7			ug/kg	50.0		95.4	74-124	1.43	30	
Ethylbenzene	46.6			ug/kg	50.0		93.2	80-125	3.65	30	
m,p-Xylene	93.7			ug/kg	100		93.7	76-121	3.39	30	
o-Xylene	46.9			ug/kg	50.0		93.8	67-132	2.86	30	
Xylenes, total	141			ug/kg	150		93.7	67-132	3.22	30	
Surrogate: 1,2-Dichloroethane-d4	50.0			ug/kg	*50.0*		*100*	*80-149*			
Surrogate: Toluene-d8	50.6			ug/kg	*50.0*		*101*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.7			ug/kg	*50.0*		*99.3*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.3			ug/kg	*50.0*		*101*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Volatile Organic Compounds - Quality Control

Batch BJB0072 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0072-BLK1)				Prepared: 02-Feb-2021 Analyzed: 02-Feb-2021 11:47							
Benzene	ND	0.30	1.00	ug/kg							U
Toluene	ND	0.15	1.00	ug/kg							U
Ethylbenzene	ND	0.20	1.00	ug/kg							U
m,p-Xylene	ND	0.39	2.00	ug/kg							U
o-Xylene	ND	0.22	1.00	ug/kg							U
Xylenes, total	ND	0.62	2.00	ug/kg							U
Surrogate: Toluene-d8	50.0			ug/kg	*50.0*		*100*	*77-120*			
Surrogate: 4-Bromofluorobenzene	48.2			ug/kg	*50.0*		*96.4*	*80-120*			
LCS (BJB0072-BS1)				Prepared: 02-Feb-2021 Analyzed: 02-Feb-2021 10:38							
Benzene	42.5			ug/kg	50.0		85.1	80-120			
Toluene	43.2			ug/kg	50.0		86.5	75-120			
Ethylbenzene	42.4			ug/kg	50.0		84.7	80-125			
m,p-Xylene	84.3			ug/kg	100		84.3	76-121			
o-Xylene	42.0			ug/kg	50.0		84.0	67-132			
Xylenes, total	126			ug/kg	150		84.2	67-132			
Surrogate: Toluene-d8	51.1			ug/kg	*50.0*		*102*	*77-120*			
Surrogate: 4-Bromofluorobenzene	50.0			ug/kg	*50.0*		*100*	*80-120*			
LCS Dup (BJB0072-BSD1)				Prepared: 02-Feb-2021 Analyzed: 02-Feb-2021 11:23							
Benzene	50.7			ug/kg	50.0		101	80-120	17.40	30	
Toluene	51.7			ug/kg	50.0		103	75-120	17.80	30	
Ethylbenzene	50.6			ug/kg	50.0		101	80-125	17.80	30	
m,p-Xylene	99.6			ug/kg	100		99.6	76-121	16.70	30	
o-Xylene	49.9			ug/kg	50.0		99.8	67-132	17.20	30	
Xylenes, total	150			ug/kg	150		99.7	67-132	16.90	30	
Surrogate: Toluene-d8	50.6			ug/kg	*50.0*		*101*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.5			ug/kg	*50.0*		*99.0*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Volatile Organic Compounds - Quality Control

Batch BJB0112 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0112-BLK1)				Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 14:42							
Gasoline Range Organics (Tol-Nap)	ND		100	ug/L							U
Surrogate: Toluene-d8	4.80			ug/L	*5.00*		*96.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.51			ug/L	*5.00*		*90.2*	*80-120*			
Blank (BJB0112-BLK2)				Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 14:42							
Vinyl Chloride	ND	0.08	0.20	ug/L							U
1,1-Dichloroethene	ND	0.08	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.07	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.08	0.20	ug/L							U
Benzene	ND	0.05	0.20	ug/L							U
Trichloroethene	ND	0.07	0.20	ug/L							U
Toluene	ND	0.05	0.20	ug/L							U
Tetrachloroethene	ND	0.09	0.20	ug/L							U
Ethylbenzene	ND	0.05	0.20	ug/L							U
m,p-Xylene	ND	0.14	0.40	ug/L							U
o-Xylene	ND	0.08	0.20	ug/L							U
Xylenes, total	ND	0.22	0.60	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.95			ug/L	*5.00*		*99.1*	*80-129*			
Surrogate: Toluene-d8	4.80			ug/L	*5.00*		*96.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.51			ug/L	*5.00*		*90.2*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.13			ug/L	*5.00*		*103*	*80-120*			
LCS (BJB0112-BS1)				Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 12:40							
Gasoline Range Organics (Tol-Nap)	1160		100	ug/L	1000		116	72-128			
Surrogate: Toluene-d8	5.07			ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.10			ug/L	*5.00*		*102*	*80-120*			
LCS (BJB0112-BS2)				Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 13:21							
Vinyl Chloride	8.85	0.08	0.20	ug/L	10.0		88.5	66-133			
1,1-Dichloroethene	8.80	0.08	0.20	ug/L	10.0		88.0	69-135			
trans-1,2-Dichloroethene	8.59	0.07	0.20	ug/L	10.0		85.9	78-128			
cis-1,2-Dichloroethene	9.69	0.08	0.20	ug/L	10.0		96.9	80-121			
Benzene	10.2	0.05	0.20	ug/L	10.0		102	80-120			
Trichloroethene	9.81	0.07	0.20	ug/L	10.0		98.1	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Volatile Organic Compounds - Quality Control

Batch BJB0112 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0112-BS2)					Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 13:21						
Toluene	9.63	0.05	0.20	ug/L	10.0		96.3	80-120			
Tetrachloroethene	9.74	0.09	0.20	ug/L	10.0		97.4	80-120			
Ethylbenzene	9.86	0.05	0.20	ug/L	10.0		98.6	80-120			
m,p-Xylene	21.4	0.14	0.40	ug/L	20.0		107	80-121			
o-Xylene	10.3	0.08	0.20	ug/L	10.0		103	80-121			
Xylenes, total	31.6	0.22	0.60	ug/L	30.0		105	76-127			
Surrogate: 1,2-Dichloroethane-d4	4.58			ug/L	*5.00*		*91.6*	*80-129*			
Surrogate: Toluene-d8	5.11			ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.25			ug/L	*5.00*		*105*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.03			ug/L	*5.00*		*101*	*80-120*			
LCS Dup (BJB0112-BSD1)					Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 13:00						
Gasoline Range Organics (Tol-Nap)	1210		100	ug/L	1000		121	72-128	3.91	30	
Surrogate: Toluene-d8	5.09			ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.03			ug/L	*5.00*		*101*	*80-120*			
LCS Dup (BJB0112-BSD2)					Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 13:42						
Vinyl Chloride	9.15	0.08	0.20	ug/L	10.0		91.5	66-133	3.30	30	
1,1-Dichloroethene	9.09	0.08	0.20	ug/L	10.0		90.9	69-135	3.22	30	
trans-1,2-Dichloroethene	9.06	0.07	0.20	ug/L	10.0		90.6	78-128	5.30	30	
cis-1,2-Dichloroethene	10.1	0.08	0.20	ug/L	10.0		101	80-121	4.40	30	
Benzene	10.6	0.05	0.20	ug/L	10.0		106	80-120	4.41	30	
Trichloroethene	10.2	0.07	0.20	ug/L	10.0		102	80-120	3.79	30	
Toluene	10.0	0.05	0.20	ug/L	10.0		100	80-120	4.30	30	
Tetrachloroethene	10.2	0.09	0.20	ug/L	10.0		102	80-120	4.25	30	
Ethylbenzene	10.2	0.05	0.20	ug/L	10.0		102	80-120	3.49	30	
m,p-Xylene	22.3	0.14	0.40	ug/L	20.0		111	80-121	4.14	30	
o-Xylene	10.6	0.08	0.20	ug/L	10.0		106	80-121	3.27	30	
Xylenes, total	32.9	0.22	0.60	ug/L	30.0		110	76-127	3.86	30	
Surrogate: 1,2-Dichloroethane-d4	4.60			ug/L	*5.00*		*92.1*	*80-129*			
Surrogate: Toluene-d8	5.04			ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.18			ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.01			ug/L	*5.00*		*100*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Volatile Organic Compounds - Quality Control

Batch BJB0119 - EPA 5035 (Methanol Extraction)

Instrument: NT2 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0119-BLK1)				Prepared: 03-Feb-2021		Analyzed: 03-Feb-2021 14:42				
Gasoline Range Organics (Tol-Nap)	ND	5000	ug/kg							U
Surrogate: Toluene-d8	4.80		ug/kg	*5.00*		*96.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.51		ug/kg	*5.00*		*90.2*	*78-123*			
LCS (BJB0119-BS1)				Prepared: 03-Feb-2021		Analyzed: 03-Feb-2021 12:40				
Gasoline Range Organics (Tol-Nap)	58200		ug/kg	50000		116	70-121			
Surrogate: Toluene-d8	5.07		ug/kg	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.10		ug/kg	*5.00*		*102*	*78-123*			
LCS Dup (BJB0119-BSD1)				Prepared: 03-Feb-2021		Analyzed: 03-Feb-2021 13:00				
Gasoline Range Organics (Tol-Nap)	60500		ug/kg	50000		121	70-121	3.91	30	
Surrogate: Toluene-d8	5.09		ug/kg	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.03		ug/kg	*5.00*		*101*	*78-123*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Volatile Organic Compounds - Quality Control

Batch BJB0162 - EPA 5035 (Methanol Extraction)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0162-BLK1)				Prepared: 04-Feb-2021	Analyzed: 04-Feb-2021 13:39					
Gasoline Range Organics (Tol-Nap)	ND	5000	ug/kg							U
Surrogate: Toluene-d8	4.74		ug/kg	*5.00*		*94.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.59		ug/kg	*5.00*		*91.9*	*78-123*			
LCS (BJB0162-BS1)				Prepared: 04-Feb-2021	Analyzed: 04-Feb-2021 11:15					
Gasoline Range Organics (Tol-Nap)	54000	5000	ug/kg	50000		108	70-121			
Surrogate: Toluene-d8	5.06		ug/kg	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.08		ug/kg	*5.00*		*102*	*78-123*			
LCS Dup (BJB0162-BSD1)				Prepared: 04-Feb-2021	Analyzed: 04-Feb-2021 11:55					
Gasoline Range Organics (Tol-Nap)	51200	5000	ug/kg	50000		102	70-121	5.33	30	
Surrogate: Toluene-d8	5.11		ug/kg	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.15		ug/kg	*5.00*		*103*	*78-123*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - Quality Control

Batch BJB0248 - EPA 3550C (Ultrasonic)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0248-BLK1)	Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 12:56										
Phenol	ND	8.2	20.0	ug/kg							U
bis(2-chloroethyl) ether	ND	6.8	20.0	ug/kg							U
2-Chlorophenol	ND	6.5	20.0	ug/kg							U
1,3-Dichlorobenzene	ND	5.1	20.0	ug/kg							U
1,4-Dichlorobenzene	ND	4.4	20.0	ug/kg							U
1,2-Dichlorobenzene	ND	4.7	20.0	ug/kg							U
Benzyl Alcohol	ND	14.9	20.0	ug/kg							U
2,2'-Oxybis(1-chloropropane)	ND	5.7	20.0	ug/kg							U
2-Methylphenol	ND	7.8	20.0	ug/kg							U
Hexachloroethane	ND	5.7	20.0	ug/kg							U
N-Nitroso-di-n-Propylamine	ND	10.8	20.0	ug/kg							U
4-Methylphenol	ND	14.7	20.0	ug/kg							U
Nitrobenzene	ND	8.0	20.0	ug/kg							U
Isophorone	ND	7.8	20.0	ug/kg							U
2-Nitrophenol	ND	6.9	20.0	ug/kg							U
2,4-Dimethylphenol	ND	26.8	100	ug/kg							U
Bis(2-Chloroethoxy)methane	ND	6.3	20.0	ug/kg							U
2,4-Dichlorophenol	ND	32.0	100	ug/kg							U
1,2,4-Trichlorobenzene	6.8	6.0	20.0	ug/kg							J
Naphthalene	ND	5.3	20.0	ug/kg							U
Benzoic acid	ND	59.1	200	ug/kg							U
4-Chloroaniline	ND	33.7	100	ug/kg							U
Hexachlorobutadiene	ND	5.0	20.0	ug/kg							U
4-Chloro-3-Methylphenol	ND	28.9	100	ug/kg							U
2-Methylnaphthalene	ND	5.7	20.0	ug/kg							U
Hexachlorocyclopentadiene	ND	41.3	100	ug/kg							U
2,4,6-Trichlorophenol	ND	25.4	100	ug/kg							U
2,4,5-Trichlorophenol	ND	26.9	100	ug/kg							U
2-Chloronaphthalene	ND	4.4	20.0	ug/kg							U
2-Nitroaniline	ND	30.2	100	ug/kg							U
Acenaphthylene	ND	4.8	20.0	ug/kg							U
Dimethylphthalate	ND	6.4	20.0	ug/kg							U
2,6-Dinitrotoluene	ND	26.7	100	ug/kg							U
Acenaphthene	ND	5.1	20.0	ug/kg							U
3-Nitroaniline	ND	37.7	100	ug/kg							U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - Quality Control

Batch BJB0248 - EPA 3550C (Ultrasonic)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0248-BLK1)				Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 12:56							
2,4-Dinitrophenol	ND	41.3	200	ug/kg							U
Dibenzofuran	ND	4.6	20.0	ug/kg							U
4-Nitrophenol	ND	44.4	100	ug/kg							U
2,4-Dinitrotoluene	ND	22.9	100	ug/kg							U
Fluorene	ND	5.0	20.0	ug/kg							U
4-Chlorophenylphenyl ether	ND	7.0	20.0	ug/kg							U
Diethyl phthalate	174	17.7	20.0	ug/kg							
4-Nitroaniline	ND	34.9	100	ug/kg							U
4,6-Dinitro-2-methylphenol	ND	50.5	200	ug/kg							U
N-Nitrosodiphenylamine	ND	9.6	20.0	ug/kg							U
4-Bromophenyl phenyl ether	ND	6.1	20.0	ug/kg							U
Hexachlorobenzene	ND	4.7	20.0	ug/kg							U
Pentachlorophenol	ND	31.3	100	ug/kg							U
Phenanthrene	ND	4.7	20.0	ug/kg							U
Anthracene	ND	5.9	20.0	ug/kg							U
Carbazole	ND	7.4	20.0	ug/kg							U
Di-n-Butylphthalate	11.1	5.3	20.0	ug/kg							J
Fluoranthene	ND	4.5	20.0	ug/kg							U
Pyrene	ND	5.6	20.0	ug/kg							U
Butylbenzylphthalate	ND	8.1	20.0	ug/kg							U
Benzo(a)anthracene	ND	5.2	20.0	ug/kg							U
3,3'-Dichlorobenzidine	ND	31.2	100	ug/kg							U
Chrysene	ND	5.2	20.0	ug/kg							U
bis(2-Ethylhexyl)phthalate	ND	28.8	50.0	ug/kg							U
Di-n-Octylphthalate	ND	8.7	20.0	ug/kg							U
Benzofluoranthenes, Total	ND	10.2	40.0	ug/kg							U
Benzo(a)pyrene	ND	6.5	20.0	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	6.0	20.0	ug/kg							U
Dibenzo(a,h)anthracene	ND	6.2	20.0	ug/kg							U
Benzo(g,h,i)perylene	ND	5.8	20.0	ug/kg							U
1-Methylnaphthalene	ND	6.0	20.0	ug/kg							U
Surrogate: 2-Fluorophenol	358			ug/kg	*750*		*47.7*	*27-120*			
Surrogate: Phenol-d5	363			ug/kg	*750*		*48.4*	*29-120*			
Surrogate: 2-Chlorophenol-d4	465			ug/kg	*750*		*62.0*	*31-120*			
Surrogate: 1,2-Dichlorobenzene-d4	288			ug/kg	*500*		*57.7*	*32-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - Quality Control

Batch BJB0248 - EPA 3550C (Ultrasonic)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0248-BLK1)				Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 12:56							
Surrogate: Nitrobenzene-d5	284			ug/kg	*500*		*56.9*	*30-120*			
Surrogate: 2-Fluorobiphenyl	342			ug/kg	*500*		*68.4*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	495			ug/kg	*750*		*65.9*	*24-134*			
Surrogate: p-Terphenyl-d14	344			ug/kg	*500*		*68.7*	*37-120*			
LCS (BJB0248-BS1)				Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 15:15							
Phenol	408	8.2	20.0	ug/kg	500		81.5	34-120			
bis(2-chloroethyl) ether	356	6.8	20.0	ug/kg	500		71.2	36-120			
2-Chlorophenol	315	6.5	20.0	ug/kg	500		63.0	39-120			
1,3-Dichlorobenzene	339	5.1	20.0	ug/kg	500		67.8	40-120			
1,4-Dichlorobenzene	344	4.4	20.0	ug/kg	500		68.8	39-120			
1,2-Dichlorobenzene	342	4.7	20.0	ug/kg	500		68.5	40-120			
Benzyl Alcohol	212	14.9	20.0	ug/kg	500		42.3	19-120			
2,2'-Oxybis(1-chloropropane)	328	5.7	20.0	ug/kg	500		65.7	32-120			
2-Methylphenol	294	7.8	20.0	ug/kg	500		58.8	28-120			
Hexachloroethane	347	5.7	20.0	ug/kg	500		69.4	38-120			
N-Nitroso-di-n-Propylamine	321	10.8	20.0	ug/kg	500		64.2	34-120			
4-Methylphenol	322	14.7	20.0	ug/kg	500		64.4	29-120			
Nitrobenzene	343	8.0	20.0	ug/kg	500		68.6	36-120			
Isophorone	389	7.8	20.0	ug/kg	500		77.8	37-120			
2-Nitrophenol	339	6.9	20.0	ug/kg	500		67.9	30-120			
2,4-Dimethylphenol	487	26.8	100	ug/kg	1300		37.5	10-120			
Bis(2-Chloroethoxy)methane	321	6.3	20.0	ug/kg	500		64.3	39-120			
2,4-Dichlorophenol	1040	32.0	100	ug/kg	1300		80.0	28-120			
1,2,4-Trichlorobenzene	350	6.0	20.0	ug/kg	500		70.0	35-120			
Naphthalene	332	5.3	20.0	ug/kg	500		66.3	43-120			
Benzoic acid	1660	59.1	200	ug/kg	2300		72.2	10-120			
4-Chloroaniline	148	33.7	100	ug/kg	1300		11.4	11-120			
Hexachlorobutadiene	366	5.0	20.0	ug/kg	500		73.2	37-120			
4-Chloro-3-Methylphenol	1070	28.9	100	ug/kg	1300		82.3	32-120			
2-Methylnaphthalene	346	5.7	20.0	ug/kg	500		69.2	43-120			
Hexachlorocyclopentadiene	889	41.3	100	ug/kg	1300		68.4	10-120			
2,4,6-Trichlorophenol	1140	25.4	100	ug/kg	1300		87.4	44.6-132			
2,4,5-Trichlorophenol	1160	26.9	100	ug/kg	1300		89.1	51.5-129			
2-Chloronaphthalene	416	4.4	20.0	ug/kg	500		83.2	40-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - Quality Control

Batch BJB0248 - EPA 3550C (Ultrasonic)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0248-BS1)					Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 15:15						
2-Nitroaniline	1180	30.2	100	ug/kg	1300		91.0	40-152			
Acenaphthylene	341	4.8	20.0	ug/kg	500		68.3	42-120			
Dimethylphthalate	400	6.4	20.0	ug/kg	500		80.0	43-120			
2,6-Dinitrotoluene	1240	26.7	100	ug/kg	1300		95.2	31-156			
Acenaphthene	366	5.1	20.0	ug/kg	500		73.3	45-120			
3-Nitroaniline	728	37.7	100	ug/kg	1300		56.0	22-120			
2,4-Dinitrophenol	1790	41.3	200	ug/kg	2300		77.7	10-120			
Dibenzofuran	371	4.6	20.0	ug/kg	500		74.2	43-120			
4-Nitrophenol	753	44.4	100	ug/kg	1300		57.9	15-138			Q
2,4-Dinitrotoluene	1390	22.9	100	ug/kg	1300		107	44-150			
Fluorene	313	5.0	20.0	ug/kg	500		62.7	45-120			
4-Chlorophenylphenyl ether	302	7.0	20.0	ug/kg	500		60.5	36-141			Q
Diethyl phthalate	387	17.7	20.0	ug/kg	500		77.3	50-120			B
4-Nitroaniline	980	34.9	100	ug/kg	1300		75.4	24-168			
4,6-Dinitro-2-methylphenol	2130	50.5	200	ug/kg	2300		92.6	33-144			Q
N-Nitrosodiphenylamine	340	9.6	20.0	ug/kg	500		68.1	70-154			*
4-Bromophenyl phenyl ether	428	6.1	20.0	ug/kg	500		85.5	39-120			
Hexachlorobenzene	409	4.7	20.0	ug/kg	500		81.8	33-120			
Pentachlorophenol	853	31.3	100	ug/kg	1300		65.6	16-120			
Phenanthrene	406	4.7	20.0	ug/kg	500		81.2	49-120			
Anthracene	359	5.9	20.0	ug/kg	500		71.8	45-120			
Carbazole	434	7.4	20.0	ug/kg	500		86.9	43-135			
Di-n-Butylphthalate	447	5.3	20.0	ug/kg	500		89.5	48-126			
Fluoranthene	432	4.5	20.0	ug/kg	500		86.5	53-145			
Pyrene	428	5.6	20.0	ug/kg	500		85.6	52-134			
Butylbenzylphthalate	402	8.1	20.0	ug/kg	500		80.4	45-132			
Benzo(a)anthracene	401	5.2	20.0	ug/kg	500		80.3	49-120			
3,3'-Dichlorobenzidine	254	31.2	100	ug/kg	1300		19.5	10-120			
Chrysene	410	5.2	20.0	ug/kg	500		82.0	47-120			
bis(2-Ethylhexyl)phthalate	440	28.8	50.0	ug/kg	500		88.0	34-130			
Di-n-Octylphthalate	406	8.7	20.0	ug/kg	500		81.3	28-124			
Benzofluoranthenes, Total	910	10.2	40.0	ug/kg	1000		91.0	30-160			
Benzo(a)pyrene	374	6.5	20.0	ug/kg	500		74.9	42-120			
Indeno(1,2,3-cd)pyrene	423	6.0	20.0	ug/kg	500		84.5	42-163			
Dibenzo(a,h)anthracene	445	6.2	20.0	ug/kg	500		89.1	30-133			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - Quality Control

Batch BJB0248 - EPA 3550C (Ultrasonic)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0248-BS1)					Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 15:15						
Benzo(g,h,i)perylene	469	5.8	20.0	ug/kg	500		93.8	46-148			
1-Methylnaphthalene	355	6.0	20.0	ug/kg	500		71.1	42-120			
Surrogate: 2-Fluorophenol	477			ug/kg	*750*		*63.6*	*27-120*			
Surrogate: Phenol-d5	508			ug/kg	*750*		*67.8*	*29-120*			
Surrogate: 2-Chlorophenol-d4	558			ug/kg	*750*		*74.4*	*31-120*			
Surrogate: 1,2-Dichlorobenzene-d4	320			ug/kg	*500*		*63.9*	*32-120*			
Surrogate: Nitrobenzene-d5	326			ug/kg	*500*		*65.3*	*30-120*			
Surrogate: 2-Fluorobiphenyl	389			ug/kg	*500*		*77.7*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	658			ug/kg	*750*		*87.7*	*24-134*			
Surrogate: p-Terphenyl-d14	401			ug/kg	*500*		*80.1*	*37-120*			
Matrix Spike (BJB0248-MS1)		**Source: 21B0005-40**			Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 16:29						
Phenol	271	82.3	200	ug/kg	500	ND	54.1	34-120			D
bis(2-chloroethyl) ether	396	67.8	200	ug/kg	500	ND	79.3	36-120			D
2-Chlorophenol	117	64.7	200	ug/kg	500	ND	23.3	39-120			*, J, D
1,3-Dichlorobenzene	377	50.7	200	ug/kg	500	ND	75.4	40-120			D
1,4-Dichlorobenzene	357	43.9	200	ug/kg	500	ND	71.4	39-120			D
1,2-Dichlorobenzene	386	46.6	200	ug/kg	500	ND	77.3	40-120			D
Benzyl Alcohol	211	149	200	ug/kg	500	ND	42.3	19-120			D
2,2'-Oxybis(1-chloropropane)	374	56.7	200	ug/kg	500	ND	74.9	32-120			D
2-Methylphenol	257	78.4	200	ug/kg	500	ND	51.4	28-120			D
Hexachloroethane	356	56.5	200	ug/kg	500	ND	71.1	38-120			D
N-Nitroso-di-n-Propylamine	433	108	200	ug/kg	500	ND	86.5	34-120			D
4-Methylphenol	241	147	200	ug/kg	500	ND	48.2	29-120			D
Nitrobenzene	348	79.5	200	ug/kg	500	ND	69.6	36-120			D
Isophorone	362	77.5	200	ug/kg	500	ND	72.4	37-120			D
2-Nitrophenol	ND	69.2	200	ug/kg	500	ND		30-120			*, U
2,4-Dimethylphenol	938	268	1000	ug/kg	1300	ND	72.2	10-120			J, D
Bis(2-Chloroethoxy)methane	456	63.4	200	ug/kg	500	ND	91.2	39-120			D
2,4-Dichlorophenol	ND	320	1000	ug/kg	1300	ND		28-120			*, U
1,2,4-Trichlorobenzene	429	59.6	200	ug/kg	500	ND	85.7	35-120			D
Naphthalene	377	52.5	200	ug/kg	500	ND	75.5	43-120			D
Benzoic acid	ND	591	2000	ug/kg	2300	ND		10-120			*, U
4-Chloroaniline	558	337	1000	ug/kg	1300	ND	42.9	11-120			J, D
Hexachlorobutadiene	405	50.1	200	ug/kg	500	ND	81.0	37-120			D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - Quality Control

Batch BJB0248 - EPA 3550C (Ultrasonic)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0248-MS1)	**Source: 21B0005-40**			Prepared: 08-Feb-2021	Analyzed: 27-Feb-2021 16:29						
4-Chloro-3-Methylphenol	607	289	1000	ug/kg	1300	ND	46.7	32-120			J, D
2-Methylnaphthalene	363	56.7	200	ug/kg	500	ND	72.6	43-120			D
Hexachlorocyclopentadiene	ND	413	1000	ug/kg	1300	ND		10-120			*, U
2,4,6-Trichlorophenol	ND	254	1000	ug/kg	1300	ND		44.6-132			*, U
2,4,5-Trichlorophenol	ND	269	1000	ug/kg	1300	ND		51.5-129			*, U
2-Chloronaphthalene	502	44.4	200	ug/kg	500	ND	100	40-120			D
2-Nitroaniline	1200	302	1000	ug/kg	1300	ND	92.5	40-152			D
Acenaphthylene	478	47.7	200	ug/kg	500	ND	95.7	42-120			D
Dimethylphthalate	516	64.4	200	ug/kg	500	ND	103	43-120			D
2,6-Dinitrotoluene	1330	267	1000	ug/kg	1300	ND	102	31-156			D
Acenaphthene	431	51.3	200	ug/kg	500	ND	86.2	45-120			D
3-Nitroaniline	985	377	1000	ug/kg	1300	ND	75.8	22-120			J, D
2,4-Dinitrophenol	ND	413	2000	ug/kg	2300	ND		10-120			*, U
Dibenzofuran	421	46.1	200	ug/kg	500	ND	84.3	43-120			D
4-Nitrophenol	ND	444	1000	ug/kg	1300	ND		15-138			*, Q, U
2,4-Dinitrotoluene	1390	229	1000	ug/kg	1300	ND	107	44-150			D
Fluorene	333	49.5	200	ug/kg	500	ND	66.7	45-120			D
4-Chlorophenylphenyl ether	450	69.6	200	ug/kg	500	ND	89.9	36-141			Q, D
Diethyl phthalate	444	177	200	ug/kg	500	ND	88.8	50-120			D, B
4-Nitroaniline	1450	349	1000	ug/kg	1300	ND	112	24-168			D
4,6-Dinitro-2-methylphenol	ND	505	2000	ug/kg	2300	ND		33-144			*, Q, U
N-Nitrosodiphenylamine	600	95.7	200	ug/kg	500	ND	120	70-154			D
4-Bromophenyl phenyl ether	445	60.7	200	ug/kg	500	ND	89.1	39-120			D
Hexachlorobenzene	477	47.4	200	ug/kg	500	ND	95.4	33-120			D
Pentachlorophenol	ND	313	1000	ug/kg	1300	ND		16-120			*, U
Phenanthrene	634	46.9	200	ug/kg	500	164	94.0	49-120			*, D
Anthracene	453	59.3	200	ug/kg	500	ND	90.7	45-120			D
Carbazole	363	73.7	200	ug/kg	500	ND	72.7	43-135			D
Di-n-Butylphthalate	361	53.1	200	ug/kg	500	ND	72.3	48-126			D
Fluoranthene	608	45.2	200	ug/kg	500	202	81.2	53-145			D
Pyrene	575	55.5	200	ug/kg	500	183	78.4	52-134			D
Butylbenzylphthalate	488	80.5	200	ug/kg	500	ND	97.6	45-132			D
Benzo(a)anthracene	475	51.8	200	ug/kg	500	ND	95.1	49-120			D
3,3'-Dichlorobenzidine	691	312	1000	ug/kg	1300	ND	53.2	10-120			J, D
Chrysene	622	52.2	200	ug/kg	500	143	95.7	47-120			*, D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - Quality Control

Batch BJB0248 - EPA 3550C (Ultrasonic)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0248-MS1)	**Source: 21B0005-40**			Prepared: 08-Feb-2021	Analyzed: 27-Feb-2021 16:29						
bis(2-Ethylhexyl)phthalate	1030	288	500	ug/kg	500	413	123	34-130			*, D
Di-n-Octylphthalate	538	87.2	200	ug/kg	500	ND	108	28-124			D
Benzofluoranthenes, Total	902	102	400	ug/kg	1000	102	80.0	30-160			D
Benzo(a)pyrene	414	64.8	200	ug/kg	500	ND	82.8	42-120			D
Indeno(1,2,3-cd)pyrene	494	59.9	200	ug/kg	500	ND	98.7	42-163			D
Dibenzo(a,h)anthracene	500	61.6	200	ug/kg	500	ND	100	30-133			D
Benzo(g,h,i)perylene	524	58.2	200	ug/kg	500	ND	105	46-148			D
1-Methylnaphthalene	386	59.5	200	ug/kg	500	ND	77.3	42-120			D
Surrogate: 2-Fluorophenol	119			ug/kg	*750*	*125*	*15.9*	*27-120*			*
Surrogate: Phenol-d5	320			ug/kg	*750*	*261*	*42.7*	*29-120*			
Surrogate: 2-Chlorophenol-d4	145			ug/kg	*750*	*143*	*19.3*	*31-120*			*
Surrogate: 1,2-Dichlorobenzene-d4	322			ug/kg	*500*	*294*	*64.5*	*32-120*			
Surrogate: Nitrobenzene-d5	331			ug/kg	*500*	*297*	*66.2*	*30-120*			
Surrogate: 2-Fluorobiphenyl	441			ug/kg	*500*	*393*	*88.2*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	7.85			ug/kg	*750*	*3.27*	*1.05*	*24-134*			*
Surrogate: p-Terphenyl-d14	408			ug/kg	*500*	*391*	*81.5*	*37-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0248-MSD1)	**Source: 21B0005-40**			Prepared: 08-Feb-2021	Analyzed: 27-Feb-2021 17:06						
Phenol	322	82.3	200	ug/kg	500	ND	64.4	34-120	17.40	30	D
bis(2-chloroethyl) ether	412	67.8	200	ug/kg	500	ND	82.4	36-120	3.83	30	D
2-Chlorophenol	139	64.7	200	ug/kg	500	ND	27.7	39-120	17.30	30	*, J, D
1,3-Dichlorobenzene	379	50.7	200	ug/kg	500	ND	75.9	40-120	0.67	30	D
1,4-Dichlorobenzene	366	43.9	200	ug/kg	500	ND	73.2	39-120	2.46	30	D
1,2-Dichlorobenzene	391	46.6	200	ug/kg	500	ND	78.2	40-120	1.11	30	D
Benzyl Alcohol	219	149	200	ug/kg	500	ND	43.8	19-120	3.56	30	D
2,2'-Oxybis(1-chloropropane)	392	56.7	200	ug/kg	500	ND	78.4	32-120	4.65	30	D
2-Methylphenol	331	78.4	200	ug/kg	500	ND	66.2	28-120	25.10	30	D
Hexachloroethane	391	56.5	200	ug/kg	500	ND	78.3	38-120	9.52	30	D
N-Nitroso-di-n-Propylamine	471	108	200	ug/kg	500	ND	94.2	34-120	8.52	30	D
4-Methylphenol	332	147	200	ug/kg	500	ND	66.4	29-120	31.70	30	*, D
Nitrobenzene	380	79.5	200	ug/kg	500	ND	76.1	36-120	8.93	30	D
Isophorone	381	77.5	200	ug/kg	500	ND	76.2	37-120	5.00	30	D
2-Nitrophenol	ND	69.2	200	ug/kg	500	ND		30-120			*, U
2,4-Dimethylphenol	1050	268	1000	ug/kg	1300	ND	80.4	10-120	10.80	30	D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - Quality Control

Batch BJB0248 - EPA 3550C (Ultrasonic)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0248-MSD1)	**Source: 21B0005-40**			Prepared: 08-Feb-2021	Analyzed: 27-Feb-2021 17:06						
Bis(2-Chloroethoxy)methane	478	63.4	200	ug/kg	500	ND	95.6	39-120	4.69	30	D
2,4-Dichlorophenol	ND	320	1000	ug/kg	1300	ND		28-120			*, U
1,2,4-Trichlorobenzene	469	59.6	200	ug/kg	500	ND	93.8	35-120	8.95	30	D
Naphthalene	385	52.5	200	ug/kg	500	ND	77.1	43-120	2.12	30	D
Benzoic acid	ND	591	2000	ug/kg	2300	ND		10-120			*, U
4-Chloroaniline	581	337	1000	ug/kg	1300	ND	44.7	11-120	4.10	30	J, D
Hexachlorobutadiene	455	50.1	200	ug/kg	500	ND	90.9	37-120	11.50	30	D
4-Chloro-3-Methylphenol	679	289	1000	ug/kg	1300	ND	52.2	32-120	11.20	30	J, D
2-Methylnaphthalene	392	56.7	200	ug/kg	500	ND	78.4	43-120	7.72	30	D
Hexachlorocyclopentadiene	ND	413	1000	ug/kg	1300	ND		10-120			*, U
2,4,6-Trichlorophenol	ND	254	1000	ug/kg	1300	ND		44.6-132			*, U
2,4,5-Trichlorophenol	ND	269	1000	ug/kg	1300	ND		51.5-129			*, U
2-Chloronaphthalene	535	44.4	200	ug/kg	500	ND	107	40-120	6.32	30	D
2-Nitroaniline	1340	302	1000	ug/kg	1300	ND	103	40-152	11.10	30	D
Acenaphthylene	511	47.7	200	ug/kg	500	ND	102	42-120	6.57	30	D
Dimethylphthalate	562	64.4	200	ug/kg	500	ND	112	43-120	8.50	30	D
2,6-Dinitrotoluene	1460	267	1000	ug/kg	1300	ND	113	31-156	9.31	30	D
Acenaphthene	434	51.3	200	ug/kg	500	ND	86.9	45-120	0.88	30	D
3-Nitroaniline	954	377	1000	ug/kg	1300	ND	73.4	22-120	3.21	30	J, D
2,4-Dinitrophenol	ND	413	2000	ug/kg	2300	ND		10-120			*, U
Dibenzofuran	459	46.1	200	ug/kg	500	ND	91.9	43-120	8.62	30	D
4-Nitrophenol	ND	444	1000	ug/kg	1300	ND		15-138			*, Q, U
2,4-Dinitrotoluene	1490	229	1000	ug/kg	1300	ND	115	44-150	6.82	30	D
Fluorene	335	49.5	200	ug/kg	500	ND	67.1	45-120	0.59	30	D
4-Chlorophenylphenyl ether	427	69.6	200	ug/kg	500	ND	85.5	36-141	5.05	30	Q, D
Diethyl phthalate	457	177	200	ug/kg	500	ND	91.4	50-120	2.94	30	D, B
4-Nitroaniline	1700	349	1000	ug/kg	1300	ND	131	24-168	15.70	30	D
4,6-Dinitro-2-methylphenol	ND	505	2000	ug/kg	2300	ND		33-144			*, Q, U
N-Nitrosodiphenylamine	623	95.7	200	ug/kg	500	ND	125	70-154	3.76	30	D
4-Bromophenyl phenyl ether	470	60.7	200	ug/kg	500	ND	94.0	39-120	5.43	30	D
Hexachlorobenzene	514	47.4	200	ug/kg	500	ND	103	33-120	7.58	30	D
Pentachlorophenol	ND	313	1000	ug/kg	1300	ND		16-120			*, U
Phenanthrene	621	46.9	200	ug/kg	500	164	91.4	49-120	2.13	30	*, D
Anthracene	463	59.3	200	ug/kg	500	ND	92.5	45-120	2.00	30	D
Carbazole	362	73.7	200	ug/kg	500	ND	72.5	43-135	0.27	30	D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - Quality Control

Batch BJB0248 - EPA 3550C (Ultrasonic)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0248-MSD1)	**Source: 21B0005-40**			Prepared: 08-Feb-2021 Analyzed: 27-Feb-2021 17:06							
Di-n-Butylphthalate	379	53.1	200	ug/kg	500	ND	75.8	48-126	4.77	30	D
Fluoranthene	578	45.2	200	ug/kg	500	202	75.2	53-145	5.05	30	D
Pyrene	542	55.5	200	ug/kg	500	183	71.9	52-134	5.82	30	D
Butylbenzylphthalate	488	80.5	200	ug/kg	500	ND	97.7	45-132	0.08	30	D
Benzo(a)anthracene	467	51.8	200	ug/kg	500	ND	93.4	49-120	1.81	30	D
3,3'-Dichlorobenzidine	648	312	1000	ug/kg	1300	ND	49.9	10-120	6.47	30	J, D
Chrysene	640	52.2	200	ug/kg	500	143	99.2	47-120	2.83	30	*, D
bis(2-Ethylhexyl)phthalate	1030	288	500	ug/kg	500	413	123	34-130	0.02	30	*, D
Di-n-Octylphthalate	576	87.2	200	ug/kg	500	ND	115	28-124	6.65	30	D
Benzofluoranthenes, Total	932	102	400	ug/kg	1000	102	83.0	30-160	3.24	30	D
Benzo(a)pyrene	458	64.8	200	ug/kg	500	ND	91.6	42-120	10.10	30	D
Indeno(1,2,3-cd)pyrene	505	59.9	200	ug/kg	500	ND	101	42-163	2.28	30	D
Dibenzo(a,h)anthracene	502	61.6	200	ug/kg	500	ND	101	30-133	0.52	30	D
Benzo(g,h,i)perylene	521	58.2	200	ug/kg	500	ND	104	46-148	0.62	30	D
1-Methylnaphthalene	398	59.5	200	ug/kg	500	ND	79.6	42-120	3.04	30	D
Surrogate: 2-Fluorophenol	154			ug/kg	*750*	*125*	*20.5*	*27-120*			*
Surrogate: Phenol-d5	404			ug/kg	*750*	*261*	*53.9*	*29-120*			
Surrogate: 2-Chlorophenol-d4	230			ug/kg	*750*	*143*	*30.6*	*31-120*			*
Surrogate: 1,2-Dichlorobenzene-d4	332			ug/kg	*500*	*294*	*66.5*	*32-120*			
Surrogate: Nitrobenzene-d5	359			ug/kg	*500*	*297*	*71.7*	*30-120*			
Surrogate: 2-Fluorobiphenyl	477			ug/kg	*500*	*393*	*95.5*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	17.1			ug/kg	*750*	*3.27*	*2.28*	*24-134*			*
Surrogate: p-Terphenyl-d14	408			ug/kg	*500*	*391*	*81.6*	*37-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0330 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0330-BLK1)				Prepared: 10-Feb-2021 Analyzed: 10-Mar-2021 13:50							
Naphthalene	ND	0.44	0.60	ug/kg							U
1-Methylnaphthalene	ND	0.11	0.50	ug/kg							U
2-Methylnaphthalene	0.14	0.13	0.50	ug/kg							J
Acenaphthylene	ND	0.06	0.50	ug/kg							U
Acenaphthene	ND	0.09	0.50	ug/kg							U
Dibenzofuran	ND	0.13	0.50	ug/kg							U
Fluorene	ND	0.07	0.50	ug/kg							U
Phenanthrene	ND	0.11	0.50	ug/kg							U
Anthracene	ND	0.07	0.50	ug/kg							U
Fluoranthene	ND	0.08	0.50	ug/kg							U
Pyrene	ND	0.09	0.50	ug/kg							U
Benzo(a)anthracene	ND	0.07	0.50	ug/kg							U
Chrysene	ND	0.07	0.50	ug/kg							U
Benzo(b)fluoranthene	ND	0.07	0.50	ug/kg							U
Benzo(k)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(j)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(a)pyrene	ND	0.09	0.50	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	0.09	0.50	ug/kg							U
Dibenzo(a,h)anthracene	ND	0.11	0.50	ug/kg							U
Benzo(g,h,i)perylene	ND	0.09	0.50	ug/kg							U
Surrogate: 2-Methylnaphthalene-d10	7.46			ug/kg	*15.0*		*49.8*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	13.3			ug/kg	*15.0*		*88.5*	*30-160*			
Surrogate: Fluoranthene-d10	11.2			ug/kg	*15.0*		*74.7*	*30-160*			
LCS (BJB0330-BS1)				Prepared: 10-Feb-2021 Analyzed: 10-Mar-2021 14:23							
Naphthalene	6.57	0.44	0.60	ug/kg	15.0		43.8	30-160			
1-Methylnaphthalene	6.98	0.11	0.50	ug/kg	15.0		46.5	30-160			
2-Methylnaphthalene	6.83	0.13	0.50	ug/kg	15.0		45.5	30-160			
Acenaphthylene	6.10	0.06	0.50	ug/kg	15.0		40.7	30-160			
Acenaphthene	6.95	0.09	0.50	ug/kg	15.0		46.4	30-160			
Dibenzofuran	7.41	0.13	0.50	ug/kg	15.0		49.4	30-160			
Fluorene	8.53	0.07	0.50	ug/kg	15.0		56.9	30-160			
Phenanthrene	9.39	0.11	0.50	ug/kg	15.0		62.6	30-160			
Anthracene	8.06	0.07	0.50	ug/kg	15.0		53.8	30-160			
Fluoranthene	10.9	0.08	0.50	ug/kg	15.0		72.9	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0330 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0330-BS1)					Prepared: 10-Feb-2021 Analyzed: 10-Mar-2021 14:23						
Pyrene	11.1	0.09	0.50	ug/kg	15.0		74.3	30-160			
Benzo(a)anthracene	11.3	0.07	0.50	ug/kg	15.0		75.5	30-160			
Chrysene	10.7	0.07	0.50	ug/kg	15.0		71.3	30-160			
Benzo(b)fluoranthene	13.3	0.07	0.50	ug/kg	15.0		88.6	30-160			
Benzo(k)fluoranthene	11.0	0.10	0.50	ug/kg	15.0		73.4	30-160			
Benzo(j)fluoranthene	9.18	0.10	0.50	ug/kg	15.0		61.2	30-160			Q
Benzo(a)pyrene	9.03	0.09	0.50	ug/kg	15.0		60.2	30-160			
Indeno(1,2,3-cd)pyrene	13.2	0.09	0.50	ug/kg	15.0		87.7	30-160			
Dibenzo(a,h)anthracene	13.2	0.11	0.50	ug/kg	15.0		87.7	30-160			
Benzo(g,h,i)perylene	12.3	0.09	0.50	ug/kg	15.0		82.0	30-160			
Surrogate: 2-Methylnaphthalene-d10	6.85			ug/kg	*15.0*		*45.7*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	12.9			ug/kg	*15.0*		*85.9*	*30-160*			
Surrogate: Fluoranthene-d10	11.0			ug/kg	*15.0*		*73.2*	*30-160*			
Matrix Spike (BJB0330-MS1)		**Source: 21B0005-12**			Prepared: 10-Feb-2021 Analyzed: 10-Mar-2021 20:20						
Naphthalene	7.73	0.44	0.60	ug/kg	14.9	0.57	48.0	30-160			
1-Methylnaphthalene	8.35	0.11	0.50	ug/kg	14.9	0.52	52.4	30-160			
2-Methylnaphthalene	8.25	0.13	0.50	ug/kg	14.9	0.56	51.5	30-160			
Acenaphthylene	7.02	0.06	0.50	ug/kg	14.9	ND	47.1	30-160			
Acenaphthene	7.89	0.09	0.50	ug/kg	14.9	0.15	51.8	30-160			
Dibenzofuran	8.42	0.13	0.50	ug/kg	14.9	0.34	54.1	30-160			
Fluorene	8.89	0.07	0.50	ug/kg	14.9	0.21	58.1	30-160			
Phenanthrene	11.2	0.11	0.50	ug/kg	14.9	1.60	64.1	30-160			
Anthracene	8.60	0.07	0.50	ug/kg	14.9	0.15	56.6	30-160			
Fluoranthene	11.9	0.08	0.50	ug/kg	14.9	1.38	70.2	30-160			
Pyrene	12.4	0.09	0.50	ug/kg	14.9	1.60	72.1	30-160			
Benzo(a)anthracene	11.0	0.07	0.50	ug/kg	14.9	0.40	71.3	30-160			
Chrysene	10.8	0.07	0.50	ug/kg	14.9	0.72	67.4	30-160			
Benzo(b)fluoranthene	12.4	0.07	0.50	ug/kg	14.9	0.47	80.1	30-160			
Benzo(k)fluoranthene	11.1	0.10	0.50	ug/kg	14.9	0.15	73.2	30-160			
Benzo(j)fluoranthene	9.75	0.10	0.50	ug/kg	14.9	0.17	64.2	30-160			Q
Benzo(a)pyrene	9.09	0.09	0.50	ug/kg	14.9	0.19	59.7	30-160			
Indeno(1,2,3-cd)pyrene	11.8	0.09	0.50	ug/kg	14.9	0.24	77.8	30-160			
Dibenzo(a,h)anthracene	11.9	0.10	0.50	ug/kg	14.9	ND	79.7	30-160			
Benzo(g,h,i)perylene	11.5	0.08	0.50	ug/kg	14.9	0.37	74.6	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0330 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0330-MS1)	**Source: 21B0005-12**			Prepared: 10-Feb-2021	Analyzed: 10-Mar-2021 20:20						
Surrogate: 2-Methylnaphthalene-d10	7.71			ug/kg	*14.9*	*6.70*	*51.6*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	11.7			ug/kg	*14.9*	*11.3*	*78.6*	*30-160*			
Surrogate: Fluoranthene-d10	10.8			ug/kg	*14.9*	*10.4*	*72.2*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0330-MSD1)	**Source: 21B0005-12**			Prepared: 10-Feb-2021	Analyzed: 10-Mar-2021 20:52						
Naphthalene	8.23	0.43	0.59	ug/kg	14.7	0.57	51.9	30-160	6.25	30	
1-Methylnaphthalene	8.98	0.10	0.49	ug/kg	14.7	0.52	57.3	30-160	7.27	30	
2-Methylnaphthalene	8.94	0.13	0.49	ug/kg	14.7	0.56	56.8	30-160	8.00	30	
Acenaphthylene	7.59	0.06	0.49	ug/kg	14.7	ND	51.5	30-160	7.72	30	
Acenaphthene	8.44	0.09	0.49	ug/kg	14.7	0.15	56.2	30-160	6.76	30	
Dibenzofuran	9.08	0.12	0.49	ug/kg	14.7	0.34	59.3	30-160	7.55	30	
Fluorene	9.64	0.07	0.49	ug/kg	14.7	0.21	64.0	30-160	8.13	30	
Phenanthrene	12.8	0.11	0.49	ug/kg	14.7	1.60	76.0	30-160	13.70	30	
Anthracene	9.87	0.07	0.49	ug/kg	14.7	0.15	66.0	30-160	13.80	30	
Fluoranthene	13.7	0.08	0.49	ug/kg	14.7	1.38	83.7	30-160	14.50	30	
Pyrene	14.1	0.09	0.49	ug/kg	14.7	1.60	84.6	30-160	12.90	30	
Benzo(a)anthracene	12.5	0.07	0.49	ug/kg	14.7	0.40	82.1	30-160	12.50	30	
Chrysene	12.2	0.07	0.49	ug/kg	14.7	0.72	78.0	30-160	12.50	30	
Benzo(b)fluoranthene	12.7	0.06	0.49	ug/kg	14.7	0.47	83.2	30-160	2.45	30	
Benzo(k)fluoranthene	11.7	0.10	0.49	ug/kg	14.7	0.15	78.3	30-160	5.47	30	
Benzo(j)fluoranthene	10.3	0.10	0.49	ug/kg	14.7	0.17	69.0	30-160	5.93	30	Q
Benzo(a)pyrene	11.3	0.09	0.49	ug/kg	14.7	0.19	75.7	30-160	22.00	30	
Indeno(1,2,3-cd)pyrene	13.3	0.09	0.49	ug/kg	14.7	0.24	88.6	30-160	11.50	30	
Dibenzo(a,h)anthracene	12.9	0.10	0.49	ug/kg	14.7	ND	87.3	30-160	7.80	30	
Benzo(g,h,i)perylene	12.4	0.08	0.49	ug/kg	14.7	0.37	81.5	30-160	7.38	30	
Surrogate: 2-Methylnaphthalene-d10	8.15			ug/kg	*14.7*	*6.70*	*55.3*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	12.7			ug/kg	*14.7*	*11.3*	*85.8*	*30-160*			
Surrogate: Fluoranthene-d10	11.5			ug/kg	*14.7*	*10.4*	*78.1*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0335 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0335-BLK1)				Prepared: 11-Feb-2021 Analyzed: 11-Mar-2021 18:51							
Naphthalene	ND	0.44	0.60	ug/kg							U
1-Methylnaphthalene	ND	0.11	0.50	ug/kg							U
2-Methylnaphthalene	ND	0.13	0.50	ug/kg							U
Acenaphthylene	ND	0.06	0.50	ug/kg							U
Acenaphthene	ND	0.09	0.50	ug/kg							U
Dibenzofuran	ND	0.13	0.50	ug/kg							U
Fluorene	ND	0.07	0.50	ug/kg							U
Phenanthrene	ND	0.11	0.50	ug/kg							U
Anthracene	ND	0.07	0.50	ug/kg							U
Fluoranthene	ND	0.08	0.50	ug/kg							U
Pyrene	ND	0.09	0.50	ug/kg							U
Benzo(a)anthracene	ND	0.07	0.50	ug/kg							U
Chrysene	ND	0.07	0.50	ug/kg							U
Benzo(b)fluoranthene	ND	0.07	0.50	ug/kg							U
Benzo(k)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(j)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(a)pyrene	ND	0.09	0.50	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	0.09	0.50	ug/kg							U
Dibenzo(a,h)anthracene	ND	0.11	0.50	ug/kg							U
Benzo(g,h,i)perylene	ND	0.09	0.50	ug/kg							U
Surrogate: 2-Methylnaphthalene-d10	8.08			ug/kg	*15.0*		*53.9*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	7.23			ug/kg	*15.0*		*48.2*	*30-160*			*Q*
Surrogate: Fluoranthene-d10	11.5			ug/kg	*15.0*		*76.9*	*30-160*			
LCS (BJB0335-BS1)				Prepared: 11-Feb-2021 Analyzed: 11-Mar-2021 19:23							
Naphthalene	7.66	0.44	0.60	ug/kg	15.0		51.1	30-160			
1-Methylnaphthalene	7.92	0.11	0.50	ug/kg	15.0		52.8	30-160			
2-Methylnaphthalene	7.93	0.13	0.50	ug/kg	15.0		52.8	30-160			
Acenaphthylene	6.87	0.06	0.50	ug/kg	15.0		45.8	30-160			
Acenaphthene	8.09	0.09	0.50	ug/kg	15.0		54.0	30-160			
Dibenzofuran	8.59	0.13	0.50	ug/kg	15.0		57.3	30-160			
Fluorene	9.23	0.07	0.50	ug/kg	15.0		61.5	30-160			
Phenanthrene	9.96	0.11	0.50	ug/kg	15.0		66.4	30-160			
Anthracene	8.06	0.07	0.50	ug/kg	15.0		53.8	30-160			
Fluoranthene	11.2	0.08	0.50	ug/kg	15.0		74.5	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0335 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0335-BS1)				Prepared: 11-Feb-2021 Analyzed: 11-Mar-2021 19:23							
Pyrene	11.1	0.09	0.50	ug/kg	15.0		73.7	30-160			
Benzo(a)anthracene	9.63	0.07	0.50	ug/kg	15.0		64.2	30-160			
Chrysene	11.1	0.07	0.50	ug/kg	15.0		73.8	30-160			
Benzo(b)fluoranthene	9.37	0.07	0.50	ug/kg	15.0		62.4	30-160			Q
Benzo(k)fluoranthene	12.1	0.10	0.50	ug/kg	15.0		80.8	30-160			
Benzo(j)fluoranthene	13.9	0.10	0.50	ug/kg	15.0		92.5	30-160			
Benzo(a)pyrene	9.09	0.09	0.50	ug/kg	15.0		60.6	30-160			
Indeno(1,2,3-cd)pyrene	9.43	0.09	0.50	ug/kg	15.0		62.9	30-160			
Dibenzo(a,h)anthracene	8.63	0.11	0.50	ug/kg	15.0		57.6	30-160			
Benzo(g,h,i)perylene	9.28	0.09	0.50	ug/kg	15.0		61.9	30-160			
Surrogate: 2-Methylnaphthalene-d10	8.14			ug/kg	*15.0*		*54.3*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	7.41			ug/kg	*15.0*		*49.4*	*30-160*			*Q*
Surrogate: Fluoranthene-d10	11.3			ug/kg	*15.0*		*75.5*	*30-160*			
Matrix Spike (BJB0335-MS1)		**Source: 21B0005-57**		Prepared: 11-Feb-2021 Analyzed: 12-Mar-2021 02:22							
Naphthalene	9.22	0.44	0.60	ug/kg	15.0	5.86	22.4	30-160			*
1-Methylnaphthalene	18.0	0.11	0.50	ug/kg	15.0	21.5	-23.3	30-160			*
2-Methylnaphthalene	17.2	0.13	0.50	ug/kg	15.0	20.1	-19.7	30-160			*
Acenaphthylene	6.47	0.06	0.50	ug/kg	15.0	0.26	41.4	30-160			
Acenaphthene	7.67	0.09	0.50	ug/kg	15.0	1.12	43.7	30-160			
Dibenzofuran	7.85	0.13	0.50	ug/kg	15.0	1.00	45.7	30-160			
Fluorene	8.98	0.07	0.50	ug/kg	15.0	1.29	51.3	30-160			
Phenanthrene	11.8	0.11	0.50	ug/kg	15.0	4.93	45.5	30-160			
Anthracene	8.37	0.07	0.50	ug/kg	15.0	0.22	54.3	30-160			
Fluoranthene	11.7	0.08	0.50	ug/kg	15.0	1.31	69.0	30-160			
Pyrene	11.9	0.09	0.50	ug/kg	15.0	1.31	70.3	30-160			
Benzo(a)anthracene	10.9	0.07	0.50	ug/kg	15.0	0.55	69.0	30-160			
Chrysene	11.1	0.07	0.50	ug/kg	15.0	0.93	68.0	30-160			
Benzo(b)fluoranthene	10.6	0.07	0.50	ug/kg	15.0	0.34	68.6	30-160			Q
Benzo(k)fluoranthene	9.98	0.10	0.50	ug/kg	15.0	0.23	65.0	30-160			
Benzo(j)fluoranthene	11.4	0.10	0.50	ug/kg	15.0	0.23	74.8	30-160			
Benzo(a)pyrene	9.99	0.09	0.50	ug/kg	15.0	0.28	64.7	30-160			
Indeno(1,2,3-cd)pyrene	10.2	0.09	0.50	ug/kg	15.0	0.16	66.9	30-160			
Dibenzo(a,h)anthracene	9.61	0.10	0.50	ug/kg	15.0	ND	64.1	30-160			
Benzo(g,h,i)perylene	9.81	0.08	0.50	ug/kg	15.0	0.22	63.9	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0335 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0335-MS1)	**Source: 21B0005-57**			Prepared: 11-Feb-2021	Analyzed: 12-Mar-2021 02:22						
Surrogate: 2-Methylnaphthalene-d10	6.75			ug/kg	*15.0*	*7.38*	*45.0*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	9.43			ug/kg	*15.0*	*9.29*	*62.8*	*30-160*			*Q*
Surrogate: Fluoranthene-d10	10.5			ug/kg	*15.0*	*10.9*	*69.7*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0335-MSD1)	**Source: 21B0005-57**			Prepared: 11-Feb-2021	Analyzed: 12-Mar-2021 02:54						
Naphthalene	8.15	0.44	0.60	ug/kg	15.0	5.86	15.3	30-160	12.30	30	*
1-Methylnaphthalene	10.6	0.11	0.50	ug/kg	15.0	21.5	-72.3	30-160	51.40	30	*
2-Methylnaphthalene	10.5	0.13	0.50	ug/kg	15.0	20.1	-64.6	30-160	48.70	30	*
Acenaphthylene	6.77	0.06	0.50	ug/kg	15.0	0.26	43.4	30-160	4.49	30	
Acenaphthene	7.98	0.09	0.50	ug/kg	15.0	1.12	45.8	30-160	4.05	30	
Dibenzofuran	8.34	0.13	0.50	ug/kg	15.0	1.00	48.9	30-160	6.09	30	
Fluorene	9.23	0.07	0.50	ug/kg	15.0	1.29	52.9	30-160	2.73	30	
Phenanthrene	11.8	0.11	0.50	ug/kg	15.0	4.93	45.7	30-160	0.25	30	
Anthracene	8.82	0.07	0.50	ug/kg	15.0	0.22	57.3	30-160	5.27	30	
Fluoranthene	12.3	0.08	0.50	ug/kg	15.0	1.31	73.1	30-160	5.09	30	
Pyrene	12.5	0.09	0.50	ug/kg	15.0	1.31	74.3	30-160	4.90	30	
Benzo(a)anthracene	11.4	0.07	0.50	ug/kg	15.0	0.55	72.6	30-160	4.83	30	
Chrysene	11.7	0.07	0.50	ug/kg	15.0	0.93	71.6	30-160	4.78	30	
Benzo(b)fluoranthene	10.8	0.07	0.50	ug/kg	15.0	0.34	69.7	30-160	1.60	30	Q
Benzo(k)fluoranthene	11.3	0.10	0.50	ug/kg	15.0	0.23	74.1	30-160	12.90	30	
Benzo(j)fluoranthene	11.8	0.10	0.50	ug/kg	15.0	0.23	77.3	30-160	3.25	30	
Benzo(a)pyrene	10.7	0.09	0.50	ug/kg	15.0	0.28	69.7	30-160	7.21	30	
Indeno(1,2,3-cd)pyrene	10.6	0.09	0.50	ug/kg	15.0	0.16	69.7	30-160	3.98	30	
Dibenzo(a,h)anthracene	9.98	0.10	0.50	ug/kg	15.0	ND	66.5	30-160	3.69	30	
Benzo(g,h,i)perylene	10.2	0.08	0.50	ug/kg	15.0	0.22	66.7	30-160	4.14	30	
Surrogate: 2-Methylnaphthalene-d10	7.47			ug/kg	*15.0*	*7.38*	*49.8*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	9.69			ug/kg	*15.0*	*9.29*	*64.6*	*30-160*			*Q*
Surrogate: Fluoranthene-d10	11.0			ug/kg	*15.0*	*10.9*	*73.3*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Petroleum Hydrocarbons - Quality Control

Batch BJB0188 - EPA 3546 (Microwave)

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0188-BLK1)				Prepared: 08-Feb-2021		Analyzed: 09-Feb-2021 21:43				
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: o-Terphenyl	13.1		mg/kg	*11.3*		*116*	*50-150*			
LCS (BJB0188-BS1)				Prepared: 08-Feb-2021		Analyzed: 09-Feb-2021 22:04				
Diesel Range Organics (C12-C24)	145	5.00	mg/kg	150		96.4	63-120			
Surrogate: o-Terphenyl	12.9		mg/kg	*11.3*		*114*	*50-150*			
LCS Dup (BJB0188-BSD1)				Prepared: 08-Feb-2021		Analyzed: 09-Feb-2021 22:25				
Diesel Range Organics (C12-C24)	143	5.00	mg/kg	150		95.1	63-120	1.39	30	
Surrogate: o-Terphenyl	12.4		mg/kg	*11.3*		*110*	*50-150*			
Matrix Spike (BJB0188-MS1)	**Source: 21B0005-05**			Prepared: 08-Feb-2021		Analyzed: 10-Feb-2021 00:09				
Diesel Range Organics (C12-C24)	154	5.27	mg/kg	158	ND	95.3	63-120			
Surrogate: o-Terphenyl	13.2		mg/kg	*11.9*	*13.0*	*111*	*50-150*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0188-MSD1)	**Source: 21B0005-05**			Prepared: 08-Feb-2021		Analyzed: 10-Feb-2021 00:29				
Diesel Range Organics (C12-C24)	148	5.27	mg/kg	158	ND	91.4	63-120	4.15	30	
Surrogate: o-Terphenyl	12.2		mg/kg	*11.9*	*13.0*	*103*	*50-150*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Petroleum Hydrocarbons - Quality Control

Batch BJB0250 - EPA 3550C (Ultrasonic)

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0250-BLK1)				Prepared: 08-Feb-2021		Analyzed: 24-Feb-2021 09:01				
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: o-Terphenyl	12.9		mg/kg	*11.3*		*114*	*50-150*			
LCS (BJB0250-BS1)				Prepared: 08-Feb-2021		Analyzed: 24-Feb-2021 09:22				
Diesel Range Organics (C12-C24)	142	5.00	mg/kg	150		94.9	63-120			
Surrogate: o-Terphenyl	12.7		mg/kg	*11.3*		*113*	*50-150*			
Matrix Spike (BJB0250-MS1)	**Source: 21B0005-40**			Prepared: 08-Feb-2021		Analyzed: 24-Feb-2021 10:04				
Diesel Range Organics (C12-C24)	3540	28.3	mg/kg	170	3620	-46.4	63-120			*, D, E
Surrogate: o-Terphenyl	10.6		mg/kg	*12.7*	*13.0*	*83.6*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJB0250-MSD1)	**Source: 21B0005-40**			Prepared: 08-Feb-2021		Analyzed: 24-Feb-2021 10:25				
Diesel Range Organics (C12-C24)	3340	28.3	mg/kg	170	3620	-164	63-120	5.80	30	*, D, E
Surrogate: o-Terphenyl	9.67		mg/kg	*12.7*	*13.0*	*76.0*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Petroleum Hydrocarbons - Quality Control

Batch BJB0329 - EPA 3546 (Microwave)

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0329-BLK1)				Prepared: 10-Feb-2021	Analyzed: 24-Feb-2021 16:34					
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: o-Terphenyl	14.0		mg/kg	*11.3*		*124*	*50-150*			
LCS (BJB0329-BS1)				Prepared: 10-Feb-2021	Analyzed: 24-Feb-2021 16:55					
Diesel Range Organics (C12-C24)	162	5.00	mg/kg	150		108	63-120			
Surrogate: o-Terphenyl	14.5		mg/kg	*11.3*		*129*	*50-150*			
Matrix Spike (BJB0329-MS1)	**Source: 21B0005-44**			Prepared: 10-Feb-2021	Analyzed: 24-Feb-2021 17:16					
Diesel Range Organics (C12-C24)	180	5.57	mg/kg	167	ND	105	63-120			
Surrogate: o-Terphenyl	15.8		mg/kg	*12.5*	*14.8*	*126*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJB0329-MSD1)	**Source: 21B0005-44**			Prepared: 10-Feb-2021	Analyzed: 24-Feb-2021 17:37					
Diesel Range Organics (C12-C24)	210	5.57	mg/kg	167	ND	123	63-120	15.00	30	*
Surrogate: o-Terphenyl	17.3		mg/kg	*12.5*	*14.8*	*138*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Aroclor PCB - Quality Control

Batch BJB0243 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0243-BLK1)				Prepared: 11-Feb-2021 Analyzed: 25-Feb-2021 18:47							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	6.47			ug/kg	*8.00*		*80.9*	*40-126*			
Surrogate: Tetrachlorometaxylene	7.56			ug/kg	*8.00*		*94.5*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.08			ug/kg	*8.00*		*88.4*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.19			ug/kg	*8.00*		*77.4*	*44-120*			
LCS (BJB0243-BS1)				Prepared: 11-Feb-2021 Analyzed: 25-Feb-2021 19:08							
Aroclor 1016	88.2	1.6	4.0	ug/kg	101		87.5	56-120			
Aroclor 1260 [2C]	80.7	0.6	4.0	ug/kg	101		80.1	58-120			
Surrogate: Decachlorobiphenyl	6.33			ug/kg	*8.00*		*79.1*	*40-126*			
Surrogate: Tetrachlorometaxylene	7.43			ug/kg	*8.00*		*92.9*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.97			ug/kg	*8.00*		*87.1*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	6.00			ug/kg	*8.00*		*75.0*	*44-120*			
Matrix Spike (BJB0243-MS1)		**Source: 21B0005-19**		Prepared: 11-Feb-2021 Analyzed: 25-Feb-2021 21:52							
Aroclor 1016	84.8	1.6	4.0	ug/kg	101	ND	84.3	56-120			
Aroclor 1260	74.9	0.6	4.0	ug/kg	101	ND	74.6	58-120			
Surrogate: Decachlorobiphenyl	5.99			ug/kg	*7.98*		*75.1*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.78			ug/kg	*7.98*		*85.0*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.66			ug/kg	*7.98*		*83.5*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.57			ug/kg	*7.98*		*69.8*	*44-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0243-MSD1)		**Source: 21B0005-19**		Prepared: 11-Feb-2021 Analyzed: 25-Feb-2021 22:12							
Aroclor 1016	83.0	1.6	4.0	ug/kg	101	ND	82.5	56-120	2.17	30	
Aroclor 1260	73.7	0.6	4.0	ug/kg	101	ND	73.3	58-120	1.65	30	
Surrogate: Decachlorobiphenyl	5.66			ug/kg	*7.98*		*70.9*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.46			ug/kg	*7.98*		*81.0*	*44-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Aroclor PCB - Quality Control

Batch BJB0243 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0243-MSD1)	**Source: 21B0005-19**			Prepared: 11-Feb-2021	Analyzed: 25-Feb-2021 22:12						
Surrogate: Decachlorobiphenyl [2C]	6.27			ug/kg	*7.98*		*78.6*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.33			ug/kg	*7.98*		*66.8*	*44-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Aroclor PCB - Quality Control

Batch BJB0247 - EPA 3550C (Ultrasonic)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0247-BLK1)				Prepared: 09-Feb-2021 Analyzed: 26-Feb-2021 10:53							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	5.98			ug/kg	*8.00*		*74.7*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.06			ug/kg	*8.00*		*75.7*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.36			ug/kg	*8.00*		*79.6*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.08			ug/kg	*8.00*		*63.5*	*44-120*			
LCS (BJB0247-BS1)				Prepared: 09-Feb-2021 Analyzed: 26-Feb-2021 11:13							
Aroclor 1016 [2C]	84.2	1.6	4.0	ug/kg	101		83.5	56-120			
Aroclor 1260 [2C]	88.0	0.6	4.0	ug/kg	101		87.3	58-120			
Surrogate: Decachlorobiphenyl	6.35			ug/kg	*8.00*		*79.4*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.51			ug/kg	*8.00*		*81.4*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.04			ug/kg	*8.00*		*88.0*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.43			ug/kg	*8.00*		*67.9*	*44-120*			
Matrix Spike (BJB0247-MS1)		**Source: 21B0005-27**		Prepared: 09-Feb-2021 Analyzed: 26-Feb-2021 12:36							
Aroclor 1016	51.7	7.8	20.0	ug/kg	101	ND	51.2	56-120			*, D
Aroclor 1260 [2C]	67.8	2.9	20.0	ug/kg	101	7.5	59.8	58-120			D
Surrogate: Decachlorobiphenyl	5.65			ug/kg	*8.00*		*70.6*	*40-126*			
Surrogate: Tetrachlorometaxylene	4.33			ug/kg	*8.00*		*54.2*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	4.48			ug/kg	*8.00*		*56.1*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	4.29			ug/kg	*8.00*		*53.7*	*44-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0247-MSD1)		**Source: 21B0005-27**		Prepared: 09-Feb-2021 Analyzed: 26-Feb-2021 12:56							
Aroclor 1016	47.9	7.8	20.0	ug/kg	101	ND	47.4	56-120	7.74	30	*, D
Aroclor 1260 [2C]	71.2	2.9	20.0	ug/kg	101	7.5	63.2	58-120	4.95	30	D
Surrogate: Decachlorobiphenyl	5.45			ug/kg	*8.00*		*68.1*	*40-126*			
Surrogate: Tetrachlorometaxylene	4.18			ug/kg	*8.00*		*52.2*	*44-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Aroclor PCB - Quality Control

Batch BJB0247 - EPA 3550C (Ultrasonic)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0247-MSD1)	**Source: 21B0005-27**			Prepared: 09-Feb-2021	Analyzed: 26-Feb-2021 12:56						
Surrogate: Decachlorobiphenyl [2C]	4.37			ug/kg	*8.00*		*54.6*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	4.02			ug/kg	*8.00*		*50.3*	*44-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0092 - TWM EPA 7470A

Instrument: HYDRA Analyst: BLC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0092-BLK1)				Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 14:47							
Mercury	ND	0.000013	0.000100	mg/L							U
LCS (BJB0092-BS1)				Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 14:49							
Mercury	0.00214	0.000013	0.000100	mg/L	0.00200		107	80-120			
Duplicate (BJB0092-DUP1)		**Source: 21B0005-31**		Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 14:53							
Mercury	ND	0.000013	0.000100	mg/L		ND					U
Matrix Spike (BJB0092-MS1)		**Source: 21B0005-31**		Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 14:55							
Mercury	0.00107	0.000013	0.000100	mg/L	0.00100	ND	107	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0092-MSD1)		**Source: 21B0005-31**		Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 14:57							
Mercury	0.00103	0.000013	0.000100	mg/L	0.00100	ND	103	75-125	3.49	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0285 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0285-BLK1)					Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 15:59							
Barium	135	ND	0.06	0.50	mg/kg							U
Barium	137	ND	0.05	0.50	mg/kg							U
Chromium	52	ND	0.13	0.50	mg/kg							U
Chromium	53	ND	0.07	0.50	mg/kg							U
Cobalt	59	ND	0.03	0.20	mg/kg							U
Lead	208	ND	0.07	0.10	mg/kg							U
Selenium	78	ND	0.44	2.00	mg/kg							U
Silver	107	ND	0.02	0.20	mg/kg							U
Vanadium	51a	ND	0.04	0.20	mg/kg							U
Vanadium	51b	ND	0.02	0.20	mg/kg							U
Arsenic	75a	ND	0.02	0.20	mg/kg							U
Cadmium	111	ND	0.03	0.10	mg/kg							U
Cadmium	114	ND	0.04	0.10	mg/kg							U
Copper	63	ND	0.34	0.50	mg/kg							U
Copper	65	ND	0.35	0.50	mg/kg							U
Nickel	60	ND	0.05	0.50	mg/kg							U
Nickel	62	ND	0.22	0.50	mg/kg							U
Zinc	66	ND	0.8	4.0	mg/kg							U
Zinc	67	ND	0.9	4.0	mg/kg							U
LCS (BJB0285-BS1)					Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 16:04							
Barium	135	24.6	0.06	0.50	mg/kg	25.0		98.3	80-120			
Barium	137	24.5	0.05	0.50	mg/kg	25.0		98.1	80-120			
Chromium	52	25.8	0.13	0.50	mg/kg	25.0		103	80-120			
Chromium	53	26.4	0.07	0.50	mg/kg	25.0		105	80-120			
Cobalt	59	26.4	0.03	0.20	mg/kg	25.0		106	80-120			
Lead	208	26.1	0.07	0.10	mg/kg	25.0		104	80-120			
Selenium	78	76.5	0.44	2.00	mg/kg	80.0		95.6	80-120			
Silver	107	27.0	0.02	0.20	mg/kg	25.0		108	80-120			
Vanadium	51a	25.0	0.04	0.20	mg/kg	25.0		100	80-120			
Vanadium	51b	25.2	0.02	0.20	mg/kg	25.0		101	80-120			
Arsenic	75a	24.6	0.02	0.20	mg/kg	25.0		98.5	80-120			
Cadmium	111	25.0	0.03	0.10	mg/kg	25.0		99.8	80-120			
Cadmium	114	24.8	0.04	0.10	mg/kg	25.0		99.1	80-120			
Copper	63	27.0	0.34	0.50	mg/kg	25.0		108	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0285 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0285-BS1)					Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 16:04							
Copper	65	26.7	0.35	0.50	mg/kg	25.0		107	80-120			
Nickel	60	26.8	0.05	0.50	mg/kg	25.0		107	80-120			
Nickel	62	25.9	0.22	0.50	mg/kg	25.0		103	80-120			
Zinc	66	81.4	0.8	4.0	mg/kg	80.0		102	80-120			
Zinc	67	74.6	0.9	4.0	mg/kg	80.0		93.2	80-120			
Duplicate (BJB0285-DUP2)			**Source: 21B0005-01**		Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 19:39							
Barium	135	22.4	0.06	0.53	mg/kg		20.5			9.07	20	
Chromium	52	9.60	0.14	0.53	mg/kg		10.9			12.60	20	
Cobalt	59	3.98	0.03	0.21	mg/kg		3.77			5.46	20	
Lead	208	2.99	0.07	0.11	mg/kg		3.10			3.66	20	
Selenium	78	0.56	0.47	2.12	mg/kg		0.57			2.92	20	J
Silver	107	0.05	0.02	0.21	mg/kg		0.03			53.10	20	L, J
Vanadium	51a	28.2	0.04	0.21	mg/kg		29.9			5.92	20	
Arsenic	75a	2.96	0.02	0.21	mg/kg		2.21			29.20	20	*
Cadmium	111	0.07	0.03	0.11	mg/kg		0.06			24.30	20	L, J
Copper	63	10.6	0.36	0.53	mg/kg		9.20			14.30	20	
Nickel	60	10.6	0.05	0.53	mg/kg		9.08			15.30	20	
Zinc	66	25.3	0.9	4.2	mg/kg		22.8			10.70	20	
Matrix Spike (BJB0285-MS2)			**Source: 21B0005-01**		Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 19:44							
Barium	135	48.9	0.06	0.53	mg/kg	26.6	20.5	107	75-125			
Chromium	52	34.0	0.14	0.53	mg/kg	26.6	10.9	86.9	75-125			
Cobalt	59	30.4	0.03	0.21	mg/kg	26.6	3.77	100	75-125			
Lead	208	28.3	0.07	0.11	mg/kg	26.6	3.10	94.7	75-125			
Selenium	78	79.4	0.47	2.13	mg/kg	85.1	0.57	92.7	75-125			
Silver	107	26.0	0.02	0.21	mg/kg	26.6	0.03	97.6	75-125			
Vanadium	51a	52.1	0.04	0.21	mg/kg	26.6	29.9	83.6	75-125			
Arsenic	75a	26.4	0.02	0.21	mg/kg	26.6	2.21	91.1	75-125			
Cadmium	111	26.3	0.03	0.11	mg/kg	26.6	0.06	98.7	75-125			
Copper	63	36.4	0.36	0.53	mg/kg	26.6	9.20	102	75-125			
Nickel	60	35.5	0.05	0.53	mg/kg	26.6	9.08	99.4	75-125			
Zinc	66	104	0.9	4.3	mg/kg	85.1	22.8	95.9	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0285 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0285-MSD2)			**Source: 21B0005-01**		Prepared: 10-Feb-2021 Analyzed: 10-Feb-2021 19:50							
Barium	135	49.3	0.06	0.53	mg/kg	26.5	20.5	109	75-125	0.76	20	
Chromium	52	35.9	0.14	0.53	mg/kg	26.5	10.9	94.2	75-125	5.44	20	
Cobalt	59	32.2	0.03	0.21	mg/kg	26.5	3.77	107	75-125	5.78	20	
Lead	208	28.9	0.07	0.11	mg/kg	26.5	3.10	97.3	75-125	2.33	20	
Selenium	78	78.5	0.47	2.12	mg/kg	84.9	0.57	91.8	75-125	1.12	20	
Silver	107	26.7	0.02	0.21	mg/kg	26.5	0.03	101	75-125	2.95	20	
Vanadium	51a	52.6	0.04	0.21	mg/kg	26.5	29.9	85.5	75-125	0.89	20	
Arsenic	75a	27.6	0.02	0.21	mg/kg	26.5	2.21	95.6	75-125	4.24	20	
Cadmium	111	26.3	0.03	0.11	mg/kg	26.5	0.06	98.9	75-125	0.07	20	
Copper	63	36.9	0.36	0.53	mg/kg	26.5	9.20	104	75-125	1.39	20	
Nickel	60	38.0	0.05	0.53	mg/kg	26.5	9.08	109	75-125	6.88	20	
Zinc	66	107	0.9	4.2	mg/kg	84.9	22.8	99.8	75-125	2.94	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0287 - SMM EPA 7471B

Instrument: HYDRA Analyst: BLC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0287-BLK1)				Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 10:24							
Mercury	ND	0.00525	0.0250	mg/kg							U
LCS (BJB0287-BS1)				Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 10:26							
Mercury	0.464	0.00525	0.0250	mg/kg	0.500		92.8	80-120			
Duplicate (BJB0287-DUP2)		**Source: 21B0005-01**		Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 10:43							
Mercury	0.0149	0.00511	0.0243	mg/kg		0.00918			47.60	20	L, J
Matrix Spike (BJB0287-MS2)		**Source: 21B0005-01**		Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 10:45							
Mercury	0.273	0.00509	0.0242	mg/kg	0.242	0.00918	109	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0287-MSD2)		**Source: 21B0005-01**		Prepared: 09-Feb-2021 Analyzed: 11-Feb-2021 10:48							
Mercury	0.262	0.00504	0.0240	mg/kg	0.240	0.00918	105	75-125	3.85	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0380 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0380-BLK1)					Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 16:05							
Barium	135	ND	0.06	0.50	mg/kg							U
Barium	137	ND	0.05	0.50	mg/kg							U
Chromium	52	ND	0.13	0.50	mg/kg							U
Chromium	53	ND	0.07	0.50	mg/kg							U
Cobalt	59	ND	0.03	0.20	mg/kg							U
Lead	208	ND	0.07	0.10	mg/kg							U
Selenium	78	ND	0.44	2.00	mg/kg							U
Silver	107	ND	0.02	0.20	mg/kg							U
Vanadium	51a	ND	0.04	0.20	mg/kg							U
Vanadium	51b	ND	0.02	0.20	mg/kg							U
Arsenic	75a	ND	0.02	0.20	mg/kg							U
Cadmium	111	ND	0.03	0.10	mg/kg							U
Cadmium	114	ND	0.04	0.10	mg/kg							U
Copper	63	ND	0.34	0.50	mg/kg							U
Copper	65	ND	0.35	0.50	mg/kg							U
Nickel	60	ND	0.05	0.50	mg/kg							U
Nickel	62	ND	0.22	0.50	mg/kg							U
Zinc	66	ND	0.8	4.0	mg/kg							U
Zinc	67	ND	0.9	4.0	mg/kg							U
LCS (BJB0380-BS1)					Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 16:10							
Barium	135	24.5	0.06	0.50	mg/kg	25.0		98.1	80-120			
Barium	137	24.7	0.05	0.50	mg/kg	25.0		98.8	80-120			
Chromium	52	26.7	0.13	0.50	mg/kg	25.0		107	80-120			
Chromium	53	25.3	0.07	0.50	mg/kg	25.0		101	80-120			
Cobalt	59	26.2	0.03	0.20	mg/kg	25.0		105	80-120			
Lead	208	27.6	0.07	0.10	mg/kg	25.0		110	80-120			
Selenium	78	79.6	0.44	2.00	mg/kg	80.0		99.5	80-120			
Silver	107	25.8	0.02	0.20	mg/kg	25.0		103	80-120			
Vanadium	51a	25.6	0.04	0.20	mg/kg	25.0		102	80-120			
Vanadium	51b	25.2	0.02	0.20	mg/kg	25.0		101	80-120			
Arsenic	75a	24.8	0.02	0.20	mg/kg	25.0		99.3	80-120			
Cadmium	111	25.1	0.03	0.10	mg/kg	25.0		100	80-120			
Cadmium	114	24.7	0.04	0.10	mg/kg	25.0		99.0	80-120			
Copper	63	26.7	0.34	0.50	mg/kg	25.0		107	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0380 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0380-BS1)						Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 16:10						
Copper	65	26.8	0.35	0.50	mg/kg	25.0		107	80-120			
Nickel	60	26.2	0.05	0.50	mg/kg	25.0		105	80-120			
Nickel	62	26.8	0.22	0.50	mg/kg	25.0		107	80-120			
Zinc	66	80.3	0.8	4.0	mg/kg	80.0		100	80-120			
Zinc	67	79.4	0.9	4.0	mg/kg	80.0		99.2	80-120			
Duplicate (BJB0380-DUP1)			**Source: 21B0005-11**			Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 17:58						
Barium	135	22.5	0.06	0.57	mg/kg		21.5			4.31	20	
Chromium	52	11.9	0.15	0.57	mg/kg		10.8			9.71	20	
Cobalt	59	4.41	0.03	0.23	mg/kg		4.59			4.06	20	
Lead	208	1.52	0.08	0.11	mg/kg		1.55			2.24	20	
Selenium	78	0.64	0.50	2.27	mg/kg		1.17			58.10	20	L, J
Silver	107	0.04	0.02	0.23	mg/kg		0.05			23.50	20	L, J
Vanadium	51a	31.6	0.05	0.23	mg/kg		30.1			4.87	20	
Arsenic	75a	2.02	0.02	0.23	mg/kg		2.20			8.39	20	
Cadmium	111	ND	0.03	0.11	mg/kg		ND					U
Copper	63	9.57	0.39	0.57	mg/kg		9.87			3.04	20	
Nickel	60	8.48	0.06	0.57	mg/kg		8.81			3.83	20	
Zinc	66	37.4	0.9	4.5	mg/kg		23.4			46.20	20	*
Matrix Spike (BJB0380-MS1)			**Source: 21B0005-11**			Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 18:03						
Barium	135	50.8	0.06	0.57	mg/kg	28.4	21.5	103	75-125			
Chromium	52	39.1	0.15	0.57	mg/kg	28.4	10.8	99.9	75-125			
Cobalt	59	34.8	0.03	0.23	mg/kg	28.4	4.59	107	75-125			
Lead	208	32.8	0.08	0.11	mg/kg	28.4	1.55	110	75-125			
Selenium	78	91.4	0.50	2.27	mg/kg	90.7	1.17	99.5	75-125			
Silver	107	28.6	0.02	0.23	mg/kg	28.4	0.05	101	75-125			
Vanadium	51a	59.2	0.05	0.23	mg/kg	28.4	30.1	102	75-125			
Arsenic	75a	31.0	0.02	0.23	mg/kg	28.4	2.20	102	75-125			
Cadmium	111	29.0	0.03	0.11	mg/kg	28.4	ND	102	75-125			
Copper	63	41.4	0.39	0.57	mg/kg	28.4	9.87	111	75-125			
Nickel	60	39.4	0.06	0.57	mg/kg	28.4	8.81	108	75-125			
Zinc	66	114	0.9	4.5	mg/kg	90.7	23.4	100	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0380 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0380-MSD1)			**Source: 21B0005-11**		Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 18:09							
Barium	135	49.1	0.06	0.57	mg/kg	28.4	21.5	97.4	75-125	3.31	20	
Chromium	52	37.8	0.15	0.57	mg/kg	28.4	10.8	95.1	75-125	3.50	20	
Cobalt	59	33.1	0.03	0.23	mg/kg	28.4	4.59	101	75-125	4.84	20	
Lead	208	31.8	0.08	0.11	mg/kg	28.4	1.55	106	75-125	3.22	20	
Selenium	78	86.0	0.50	2.27	mg/kg	90.8	1.17	93.4	75-125	6.13	20	
Silver	107	27.6	0.02	0.23	mg/kg	28.4	0.05	97.2	75-125	3.54	20	
Vanadium	51a	56.2	0.05	0.23	mg/kg	28.4	30.1	92.0	75-125	5.06	20	
Arsenic	75a	29.9	0.02	0.23	mg/kg	28.4	2.20	97.5	75-125	3.87	20	
Cadmium	111	29.9	0.03	0.11	mg/kg	28.4	ND	106	75-125	3.24	20	
Copper	63	38.2	0.39	0.57	mg/kg	28.4	9.87	99.8	75-125	8.10	20	
Nickel	60	37.1	0.06	0.57	mg/kg	28.4	8.81	99.5	75-125	6.12	20	
Zinc	66	109	0.9	4.5	mg/kg	90.8	23.4	94.8	75-125	4.49	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0381 - SMM EPA 7471B

Instrument: HYDRA Analyst: BLC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0381-BLK1)				Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 10:37							
Mercury	ND	0.00525	0.0250	mg/kg							U
LCS (BJB0381-BS1)				Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 10:39							
Mercury	0.476	0.00525	0.0250	mg/kg	0.500		95.3	80-120			
Duplicate (BJB0381-DUP1)		**Source: 21B0005-11**		Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 10:43							
Mercury	ND	0.00433	0.0206	mg/kg		ND					U
Matrix Spike (BJB0381-MS1)		**Source: 21B0005-11**		Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 10:45							
Mercury	0.226	0.00432	0.0206	mg/kg	0.206	ND	110	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0381-MSD1)		**Source: 21B0005-11**		Prepared: 11-Feb-2021 Analyzed: 15-Feb-2021 10:48							
Mercury	0.220	0.00429	0.0204	mg/kg	0.204	ND	108	75-125	2.77	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0438 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0438-BLK1)					Prepared: 15-Feb-2021 Analyzed: 15-Feb-2021 14:22							
Barium	135	ND	0.0560	0.500	ug/L							U
Barium	137	ND	0.0530	0.500	ug/L							U
Chromium	52	ND	0.130	0.500	ug/L							U
Chromium	53	0.218	0.0700	0.500	ug/L							J
Cobalt	59	ND	0.0290	0.200	ug/L							U
Lead	208	ND	0.0680	0.100	ug/L							U
Manganese	55	ND	0.0850	0.500	ug/L							U
Selenium	78	ND	0.440	2.00	ug/L							U
Silver	107	ND	0.0170	0.200	ug/L							U
Vanadium	51a	ND	0.0400	0.200	ug/L							U
Vanadium	51b	0.0560	0.0160	0.200	ug/L							J
Arsenic	75a	ND	0.0220	0.200	ug/L							U
Cadmium	111	ND	0.0300	0.100	ug/L							U
Cadmium	114	ND	0.0400	0.100	ug/L							U
Copper	63	ND	0.340	0.500	ug/L							U
Copper	65	ND	0.350	0.500	ug/L							U
Nickel	60	ND	0.0500	0.500	ug/L							U
Nickel	62	ND	0.220	0.500	ug/L							U
Zinc	66	ND	0.820	4.00	ug/L							U
Zinc	67	ND	0.940	4.00	ug/L							U
LCS (BJB0438-BS1)					Prepared: 15-Feb-2021 Analyzed: 15-Feb-2021 14:27							
Barium	135	25.1	0.0560	0.500	ug/L	25.0		100	80-120			
Barium	137	25.1	0.0530	0.500	ug/L	25.0		101	80-120			
Chromium	52	26.8	0.130	0.500	ug/L	25.0		107	80-120			
Chromium	53	26.1	0.0700	0.500	ug/L	25.0		105	80-120			
Cobalt	59	26.1	0.0290	0.200	ug/L	25.0		105	80-120			
Lead	208	27.9	0.0680	0.100	ug/L	25.0		111	80-120			
Manganese	55	25.4	0.0850	0.500	ug/L	25.0		102	80-120			
Selenium	78	83.7	0.440	2.00	ug/L	80.0		105	80-120			
Silver	107	26.7	0.0170	0.200	ug/L	25.0		107	80-120			
Vanadium	51a	25.8	0.0400	0.200	ug/L	25.0		103	80-120			
Vanadium	51b	25.6	0.0160	0.200	ug/L	25.0		103	80-120			
Arsenic	75a	26.0	0.0220	0.200	ug/L	25.0		104	80-120			
Cadmium	111	26.9	0.0300	0.100	ug/L	25.0		107	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0438 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0438-BS1)						Prepared: 15-Feb-2021 Analyzed: 15-Feb-2021 14:27						
Cadmium	114	27.0	0.0400	0.100	ug/L	25.0		108	80-120			
Copper	63	27.6	0.340	0.500	ug/L	25.0		110	80-120			
Copper	65	27.8	0.350	0.500	ug/L	25.0		111	80-120			
Nickel	60	27.0	0.0500	0.500	ug/L	25.0		108	80-120			
Nickel	62	27.1	0.220	0.500	ug/L	25.0		108	80-120			
Zinc	66	85.0	0.820	4.00	ug/L	80.0		106	80-120			
Zinc	67	80.1	0.940	4.00	ug/L	80.0		100	80-120			
Duplicate (BJB0438-DUP1)			**Source: 21B0005-29**			Prepared: 15-Feb-2021 Analyzed: 15-Feb-2021 16:36						
Barium	135	7.63	0.0560	0.500	ug/L		7.60			0.49	20	
Chromium	52	1.44	0.130	0.500	ug/L		1.41			2.25	20	
Cobalt	59	0.320	0.0290	0.200	ug/L		0.298			7.12	20	
Lead	208	0.440	0.0680	0.100	ug/L		0.612			32.70	20	*
Manganese	55	9.63	0.0850	0.500	ug/L		9.61			0.17	20	
Selenium	78	ND	0.440	2.00	ug/L		ND					U
Silver	107	ND	0.0170	0.200	ug/L		ND					U
Vanadium	51a	3.24	0.0400	0.200	ug/L		3.20			1.43	20	
Arsenic	75a	1.44	0.0220	0.200	ug/L		1.42			1.47	20	
Cadmium	111	0.0310	0.0300	0.100	ug/L		0.0540			54.10	20	L, J
Copper	63	1.90	0.340	0.500	ug/L		1.83			3.97	20	
Nickel	60	1.41	0.0500	0.500	ug/L		1.44			1.75	20	
Zinc	66	34.1	0.820	4.00	ug/L		34.0			0.29	20	
Matrix Spike (BJB0438-MS1)			**Source: 21B0005-29**			Prepared: 15-Feb-2021 Analyzed: 15-Feb-2021 16:41						
Barium	135	32.2	0.0560	0.500	ug/L	25.0	7.60	98.4	75-125			
Chromium	52	24.4	0.130	0.500	ug/L	25.0	1.41	92.1	75-125			
Cobalt	59	26.5	0.0290	0.200	ug/L	25.0	0.298	105	75-125			
Lead	208	27.9	0.0680	0.100	ug/L	25.0	0.612	109	75-125			
Manganese	55	31.5	0.0850	0.500	ug/L	25.0	9.61	87.7	75-125			
Selenium	78	79.6	0.440	2.00	ug/L	80.0	ND	99.5	75-125			
Silver	107	24.9	0.0170	0.200	ug/L	25.0	ND	99.8	75-125			
Vanadium	51a	25.4	0.0400	0.200	ug/L	25.0	3.20	88.9	75-125			
Arsenic	75a	27.1	0.0220	0.200	ug/L	25.0	1.42	103	75-125			
Cadmium	111	25.5	0.0300	0.100	ug/L	25.0	0.0540	102	75-125			
Copper	63	28.2	0.340	0.500	ug/L	25.0	1.83	106	75-125			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds - Quality Control

Batch BJB0438 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0438-MS1)			**Source: 21B0005-29**			Prepared: 15-Feb-2021	Analyzed: 15-Feb-2021 16:41					
Nickel	60	27.7	0.0500	0.500	ug/L	25.0	1.44	105	75-125			
Zinc	66	115	0.820	4.00	ug/L	80.0	34.0	102	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0438-MSD1)			**Source: 21B0005-29**			Prepared: 15-Feb-2021	Analyzed: 15-Feb-2021 16:46					
Barium	135	33.1	0.0560	0.500	ug/L	25.0	7.60	102	75-125	2.88	20	
Chromium	52	24.4	0.130	0.500	ug/L	25.0	1.41	91.8	75-125	0.30	20	
Cobalt	59	26.4	0.0290	0.200	ug/L	25.0	0.298	104	75-125	0.69	20	
Lead	208	28.2	0.0680	0.100	ug/L	25.0	0.612	110	75-125	0.80	20	
Manganese	55	31.2	0.0850	0.500	ug/L	25.0	9.61	86.5	75-125	0.89	20	
Selenium	78	80.9	0.440	2.00	ug/L	80.0	ND	101	75-125	1.65	20	
Silver	107	25.4	0.0170	0.200	ug/L	25.0	ND	102	75-125	1.90	20	
Vanadium	51a	25.7	0.0400	0.200	ug/L	25.0	3.20	89.9	75-125	1.05	20	
Arsenic	75a	26.7	0.0220	0.200	ug/L	25.0	1.42	101	75-125	1.44	20	
Cadmium	111	27.1	0.0300	0.100	ug/L	25.0	0.0540	108	75-125	6.00	20	
Copper	63	28.3	0.340	0.500	ug/L	25.0	1.83	106	75-125	0.38	20	
Nickel	60	27.6	0.0500	0.500	ug/L	25.0	1.44	105	75-125	0.45	20	
Zinc	66	113	0.820	4.00	ug/L	80.0	34.0	99.3	75-125	1.69	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BJB0246 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0246-BLK1)					Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 19:42							
Chromium, Dissolved	52	ND	0.130	0.500	ug/L							U
Chromium, Dissolved	53	ND	0.0700	0.500	ug/L							U
Lead, Dissolved	208	ND	0.0680	0.100	ug/L							U
Silver, Dissolved	107	ND	0.0170	0.200	ug/L							U
Cadmium, Dissolved	111	ND	0.0300	0.100	ug/L							U
Cadmium, Dissolved	114	ND	0.0400	0.100	ug/L							U
Blank (BJB0246-BLK2)					Prepared: 08-Feb-2021 Analyzed: 09-Feb-2021 16:12							
Iron, Dissolved	54	9.08	6.27	20.0	ug/L							J
Iron, Dissolved	57	ND	1.40	20.0	ug/L							U
Magnesium, Dissolved	24	0.410	0.307	20.0	ug/L							J
Blank (BJB0246-BLK3)					Prepared: 08-Feb-2021 Analyzed: 10-Feb-2021 14:28							
Antimony, Dissolved	121	ND	0.0180	0.200	ug/L							U
Antimony, Dissolved	123	ND	0.0280	0.200	ug/L							U
Arsenic, Dissolved	75a	ND	0.0220	0.200	ug/L							U
Cobalt, Dissolved	59	ND	0.0290	0.200	ug/L							U
Copper, Dissolved	63	ND	0.340	0.500	ug/L							U
Copper, Dissolved	65	ND	0.350	0.500	ug/L							U
Nickel, Dissolved	60	ND	0.0500	0.500	ug/L							U
Nickel, Dissolved	62	ND	0.220	0.500	ug/L							U
Selenium, Dissolved	78	ND	0.440	0.500	ug/L							U
Zinc, Dissolved	66	ND	0.820	4.00	ug/L							U
Zinc, Dissolved	67	ND	0.940	4.00	ug/L							U
LCS (BJB0246-BS1)					Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 19:46							
Chromium, Dissolved	52	25.8	0.130	0.500	ug/L	25.0		103	80-120			
Chromium, Dissolved	53	26.7	0.0700	0.500	ug/L	25.0		107	80-120			
Lead, Dissolved	208	24.5	0.0680	0.100	ug/L	25.0		97.9	80-120			
Silver, Dissolved	107	23.4	0.0170	0.200	ug/L	25.0		93.6	80-120			
Cadmium, Dissolved	111	25.2	0.0300	0.100	ug/L	25.0		101	80-120			
Cadmium, Dissolved	114	24.6	0.0400	0.100	ug/L	25.0		98.3	80-120			
LCS (BJB0246-BS2)					Prepared: 08-Feb-2021 Analyzed: 09-Feb-2021 16:14							
Iron, Dissolved	54	5040	6.27	20.0	ug/L	5000		101	80-120			
Iron, Dissolved	57	5160	1.40	20.0	ug/L	5000		103	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BJB0246 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0246-BS2)						Prepared: 08-Feb-2021 Analyzed: 09-Feb-2021 16:14						
Magnesium, Dissolved	24	5050	0.307	20.0	ug/L	5000		101	80-120			
LCS (BJB0246-BS3)						Prepared: 08-Feb-2021 Analyzed: 10-Feb-2021 14:33						
Antimony, Dissolved	121	25.7	0.0180	0.200	ug/L	25.0		103	80-120			
Antimony, Dissolved	123	25.8	0.0280	0.200	ug/L	25.0		103	80-120			
Arsenic, Dissolved	75a	25.1	0.0220	0.200	ug/L	25.0		100	80-120			
Cobalt, Dissolved	59	26.4	0.0290	0.200	ug/L	25.0		106	80-120			
Copper, Dissolved	63	26.4	0.340	0.500	ug/L	25.0		106	80-120			
Copper, Dissolved	65	26.7	0.350	0.500	ug/L	25.0		107	80-120			
Nickel, Dissolved	60	26.2	0.0500	0.500	ug/L	25.0		105	80-120			
Nickel, Dissolved	62	25.5	0.220	0.500	ug/L	25.0		102	80-120			
Selenium, Dissolved	78	79.4	0.440	0.500	ug/L	80.0		99.2	80-120			
Zinc, Dissolved	66	81.4	0.820	4.00	ug/L	80.0		102	80-120			
Zinc, Dissolved	67	75.0	0.940	4.00	ug/L	80.0		93.8	80-120			
Duplicate (BJB0246-DUP1)			**Source: 21B0005-30**			Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 22:18						
Chromium, Dissolved	52	0.643	0.130	0.500	ug/L		0.630			2.04	20	
Lead, Dissolved	208	ND	0.0680	0.100	ug/L		ND					U
Silver, Dissolved	107	ND	0.0170	0.200	ug/L		ND					U
Arsenic, Dissolved	75a	1.23	0.0220	0.200	ug/L		1.25			2.01	20	
Cadmium, Dissolved	111	ND	0.0300	0.100	ug/L		ND					U
Copper, Dissolved	63	ND	0.340	0.500	ug/L		ND					U
Nickel, Dissolved	60	0.114	0.0500	0.500	ug/L		0.0580			65.10	20	L, J
Zinc, Dissolved	66	12.9	0.820	4.00	ug/L		12.5			3.26	20	
Duplicate (BJB0246-DUP2)			**Source: 21B0005-30**			Prepared: 08-Feb-2021 Analyzed: 09-Feb-2021 16:23						
Iron, Dissolved	54	7.59	6.27	20.0	ug/L		ND					J
Magnesium, Dissolved	24	8540	0.307	20.0	ug/L		8000			6.57	20	
Duplicate (BJB0246-DUP3)			**Source: 21B0005-30**			Prepared: 08-Feb-2021 Analyzed: 10-Feb-2021 14:55						
Antimony, Dissolved	121	0.0270	0.0180	0.200	ug/L		0.0250			7.69	20	J
Cobalt, Dissolved	59	ND	0.0290	0.200	ug/L		ND					U
Selenium, Dissolved	78	ND	0.440	0.500	ug/L		ND					U
Matrix Spike (BJB0246-MS1)			**Source: 21B0005-30**			Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 22:23						
Chromium, Dissolved	52	23.2	0.130	0.500	ug/L	25.0	0.630	90.2	75-125			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BJB0246 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0246-MS1)			**Source: 21B0005-30**			Prepared: 08-Feb-2021		Analyzed: 08-Feb-2021 22:23				
Lead, Dissolved	208	24.3	0.0680	0.100	ug/L	25.0	ND	97.3	75-125			
Silver, Dissolved	107	23.0	0.0170	0.200	ug/L	25.0	ND	92.1	75-125			
Arsenic, Dissolved	75a	26.3	0.0220	0.200	ug/L	25.0	1.25	100	75-125			
Cadmium, Dissolved	111	24.9	0.0300	0.100	ug/L	25.0	ND	99.5	75-125			
Copper, Dissolved	63	25.3	0.340	0.500	ug/L	25.0	ND	101	75-125			
Nickel, Dissolved	60	24.6	0.0500	0.500	ug/L	25.0	0.0580	98.2	75-125			
Zinc, Dissolved	66	88.9	0.820	4.00	ug/L	80.0	12.5	95.5	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												
Matrix Spike (BJB0246-MS2)			**Source: 21B0005-30**			Prepared: 08-Feb-2021		Analyzed: 09-Feb-2021 16:26				
Iron, Dissolved	54	4530	6.27	20.0	ug/L	5000	ND	90.5	75-125			
Magnesium, Dissolved	24	13000	0.307	20.0	ug/L	5000	8000	99.4	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												
Matrix Spike (BJB0246-MS3)			**Source: 21B0005-30**			Prepared: 08-Feb-2021		Analyzed: 10-Feb-2021 15:01				
Antimony, Dissolved	121	24.8	0.0180	0.200	ug/L	25.0	0.0250	99.0	75-125			
Cobalt, Dissolved	59	26.9	0.0290	0.200	ug/L	25.0	ND	108	75-125			
Selenium, Dissolved	78	77.9	0.440	0.500	ug/L	80.0	ND	97.4	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												
Matrix Spike Dup (BJB0246-MSD1)			**Source: 21B0005-30**			Prepared: 08-Feb-2021		Analyzed: 08-Feb-2021 22:29				
Chromium, Dissolved	52	23.9	0.130	0.500	ug/L	25.0	0.630	93.1	75-125	3.09	20	
Lead, Dissolved	208	24.2	0.0680	0.100	ug/L	25.0	ND	97.0	75-125	0.31	20	
Silver, Dissolved	107	23.3	0.0170	0.200	ug/L	25.0	ND	93.4	75-125	1.34	20	
Arsenic, Dissolved	75a	26.8	0.0220	0.200	ug/L	25.0	1.25	102	75-125	2.11	20	
Cadmium, Dissolved	111	25.2	0.0300	0.100	ug/L	25.0	ND	101	75-125	1.26	20	
Copper, Dissolved	63	26.2	0.340	0.500	ug/L	25.0	ND	105	75-125	3.65	20	
Nickel, Dissolved	60	24.4	0.0500	0.500	ug/L	25.0	0.0580	97.5	75-125	0.67	20	
Zinc, Dissolved	66	88.0	0.820	4.00	ug/L	80.0	12.5	94.4	75-125	0.96	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												
Matrix Spike Dup (BJB0246-MSD2)			**Source: 21B0005-30**			Prepared: 08-Feb-2021		Analyzed: 09-Feb-2021 16:30				
Iron, Dissolved	54	4590	6.27	20.0	ug/L	5000	ND	91.8	75-125	1.34	20	
Magnesium, Dissolved	24	12400	0.307	20.0	ug/L	5000	8000	88.7	75-125	4.19	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BJB0246 - REN EPA 600/4-79-020 4.1.4 HNO3 matrix

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0246-MSD3)			**Source: 21B0005-30**			Prepared: 08-Feb-2021	Analyzed: 10-Feb-2021 15:08					
Antimony, Dissolved	121	25.3	0.0180	0.200	ug/L	25.0	0.0250	101	75-125	2.13	20	
Cobalt, Dissolved	59	27.8	0.0290	0.200	ug/L	25.0	ND	111	75-125	3.32	20	
Selenium, Dissolved	78	79.8	0.440	0.500	ug/L	80.0	ND	99.8	75-125	2.43	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BJB0297 - TWM EPA 7470A

Instrument: HYDRA Analyst: BLC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0297-BLK1)				Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 12:33							
Mercury, Dissolved	0.000027	0.000013	0.000100	mg/L							J
LCS (BJB0297-BS1)				Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 12:35							
Mercury, Dissolved	0.00195	0.000013	0.000100	mg/L	0.00200		97.4	80-120			
Duplicate (BJB0297-DUP1)		**Source: 21B0005-32**		Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 12:40							
Mercury, Dissolved	0.000026	0.000013	0.000100	mg/L		0.000014			61.20	20	L, J
Matrix Spike (BJB0297-MS1)		**Source: 21B0005-32**		Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 12:46							
Mercury, Dissolved	0.00110	0.000013	0.000100	mg/L	0.00100	0.000014	108	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0297-MSD1)		**Source: 21B0005-32**		Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 12:48							
Mercury, Dissolved	0.000853	0.000013	0.000100	mg/L	0.00100	0.000014	83.9	75-125	24.90	20	*
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Post Spike (BJB0297-PS1)		**Source: 21B0005-32**		Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 15:14							
Mercury, Dissolved	0.000797			mg/L	0.00100	0.000014	78.4	0-200			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Wet Chemistry - Quality Control

Batch BJB0217 - No Prep Wet Chem

Instrument: BAL2 Analyst: KLE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0217-BLK1)				Prepared: 07-Feb-2021 Analyzed: 07-Feb-2021 08:39							
Total Solids	ND	0.04	0.04	%							U

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Wet Chemistry - Quality Control

Batch BJB0295 - No Prep Wet Chem

Instrument: UV1800-1 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0295-BLK1)					Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:46						
Hexavalent Chromium	ND	0.489	0.489	mg/kg							U
LCS (BJB0295-BS1)					Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:54						
Hexavalent Chromium	17.0	0.492	0.492	mg/kg	19.7		86.4	80-120			D
LCS (BJB0295-BS2)					Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:55						
Hexavalent Chromium	606	9.96	9.96	mg/kg	654		92.6	80-120			D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Certified Analyses included in this Report

Analyte	Certifications
EPA 6020A in Solid	
Silver-107	NELAP,DoD-ELAP,WADOE
Barium-135	NELAP,DoD-ELAP,WADOE,ADEC
Barium-137	NELAP,DoD-ELAP,WADOE,ADEC
Cobalt-59	NELAP,DoD-ELAP,WADOE
Chromium-52	NELAP,DoD-ELAP,WADOE,ADEC
Chromium-53	NELAP,DoD-ELAP,WADOE,ADEC
Lead-208	NELAP,DoD-ELAP,WADOE,ADEC
Selenium-82	NELAP,DoD-ELAP,WADOE
Selenium-78	NELAP,DoD-ELAP,WADOE
Vanadium-51a	NELAP,DoD-ELAP,WADOE,ADEC
Vanadium-51b	DoD-ELAP,WADOE,ADEC
EPA 6020A in Water	
Silver-107	WADOE,WA-DW,DoD-ELAP,NELAP
Barium-135	NELAP,WADOE,DoD-ELAP,ADEC
Barium-137	NELAP,WADOE,DoD-ELAP,ADEC
Cobalt-59	DoD-ELAP,NELAP,WADOE
Chromium-52	NELAP,WADOE,DoD-ELAP,ADEC
Chromium-53	NELAP,WADOE,DoD-ELAP,ADEC
Manganese-55	NELAP,WADOE,DoD-ELAP
Lead-208	NELAP,WADOE,DoD-ELAP,ADEC
Selenium-82	NELAP,WADOE,DoD-ELAP
Selenium-78	NELAP,WADOE,DoD-ELAP
Vanadium-51a	NELAP,DoD-ELAP,WADOE,ADEC
Vanadium-51b	NELAP,DoD-ELAP,WADOE,ADEC
Silver-107	WA-DW,DoD-ELAP,NELAP
Chromium-52	NELAP,WADOE,DoD-ELAP,ADEC
Chromium-53	NELAP,WADOE,DoD-ELAP,ADEC
Iron-54	NELAP,WADOE,DoD-ELAP
Iron-57	NELAP,WADOE,DoD-ELAP
Magnesium-24	NELAP,DoD-ELAP,WADOE
Lead-208	NELAP,WADOE,DoD-ELAP,ADEC
Antimony-121	NELAP,WADOE,DoD-ELAP
Antimony-123	NELAP,WADOE,DoD-ELAP
EPA 6020A UCT-KED in Solid	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Arsenic-75a	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-111	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-114	NELAP,DoD-ELAP,WADOE,ADEC
Copper-63	NELAP,DoD-ELAP,WADOE
Copper-65	NELAP,DoD-ELAP,WADOE
Nickel-60	NELAP,DoD-ELAP,WADOE,ADEC
Nickel-62	NELAP,DoD-ELAP,WADOE,ADEC
Zinc-66	NELAP,DoD-ELAP,WADOE
Zinc-67	NELAP,DoD-ELAP,WADOE

EPA 6020A UCT-KED in Water

Arsenic-75a	WADOE,WA-DW,DoD-ELAP,ADEC,NELAP
Cadmium-111	NELAP,WADOE,DoD-ELAP,ADEC
Cadmium-114	NELAP,WADOE,DoD-ELAP,ADEC
Copper-63	NELAP,WADOE,DoD-ELAP
Copper-65	NELAP,WADOE,DoD-ELAP
Nickel-60	NELAP,WADOE,DoD-ELAP,ADEC
Nickel-62	NELAP,WADOE,DoD-ELAP,ADEC
Zinc-66	WADOE,WA-DW,DoD-ELAP
Zinc-67	WADOE,WA-DW,DoD-ELAP
Arsenic-75a	NELAP,WADOE,DoD-ELAP,ADEC
Cadmium-111	NELAP,WADOE,DoD-ELAP,ADEC
Cadmium-114	NELAP,WADOE,DoD-ELAP,ADEC
Cobalt-59	DoD-ELAP,NELAP,WADOE
Copper-63	NELAP,WADOE,DoD-ELAP
Copper-65	NELAP,WADOE,DoD-ELAP
Nickel-60	NELAP,WADOE,DoD-ELAP,ADEC
Nickel-62	NELAP,WADOE,DoD-ELAP,ADEC
Selenium-78	NELAP,WADOE,DoD-ELAP
Zinc-66	NELAP,WADOE,DoD-ELAP
Zinc-67	NELAP,WADOE,DoD-ELAP

EPA 7470A in Water

Mercury	WADOE,NELAP,DoD-ELAP
Mercury	WADOE,NELAP,DoD-ELAP

EPA 7471B in Solid

Mercury	WADOE,NELAP,DoD-ELAP

EPA 8082A in Solid

Aroclor 1016	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,ADEC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Aroclor 1221	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1262	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1262 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1268	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1268 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
EPA 8260D in Solid	
Chloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Vinyl Chloride	WADOE,DoD-ELAP,NELAP,ADEC
Bromomethane	WADOE,DoD-ELAP,NELAP,ADEC
Chloroethane	WADOE,DoD-ELAP,NELAP,ADEC
Trichlorofluoromethane	WADOE,DoD-ELAP,NELAP,ADEC
Acrolein	WADOE,DoD-ELAP,NELAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	WADOE,DoD-ELAP,NELAP,ADEC
Acetone	WADOE,DoD-ELAP,NELAP
1,1-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Iodomethane	WADOE,DoD-ELAP,NELAP,ADEC
Methylene Chloride	WADOE,DoD-ELAP,NELAP,ADEC
Acrylonitrile	WADOE,DoD-ELAP,NELAP
Carbon Disulfide	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,2-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Vinyl Acetate	WADOE,DoD-ELAP,NELAP
1,1-Dichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
2-Butanone	WADOE,DoD-ELAP,NELAP
2,2-Dichloropropane	WADOE,DoD-ELAP,NELAP
cis-1,2-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Chloroform	WADOE,DoD-ELAP,NELAP,ADEC
Bromochloromethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1-Trichloroethane	WADOE,DoD-ELAP,NELAP,ADEC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

1,1-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
Carbon tetrachloride	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
Benzene	WADOE,DoD-ELAP,NELAP,ADEC
Trichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
Bromodichloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Dibromomethane	WADOE,DoD-ELAP,NELAP,ADEC
2-Chloroethyl vinyl ether	WADOE,DoD-ELAP,NELAP
4-Methyl-2-Pentanone	WADOE,DoD-ELAP,NELAP
cis-1,3-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
Toluene	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,3-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
2-Hexanone	WADOE,DoD-ELAP,NELAP
1,1,2-Trichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,3-Dichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
Tetrachloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Dibromochloromethane	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dibromoethane	WADOE,DoD-ELAP,NELAP,ADEC
Chlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Ethylbenzene	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1,2-Tetrachloroethane	WADOE,DoD-ELAP,NELAP,ADEC
m,p-Xylene	WADOE,DoD-ELAP,NELAP,ADEC
o-Xylene	WADOE,DoD-ELAP,NELAP,ADEC
Xylenes, total	WADOE
Styrene	WADOE,DoD-ELAP,NELAP,ADEC
Bromoform	WADOE,DoD-ELAP,NELAP,ADEC
1,1,2,2-Tetrachloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,2,3-Trichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,4-Dichloro 2-Butene	WADOE,DoD-ELAP,NELAP
n-Propylbenzene	WADOE,DoD-ELAP,NELAP
Bromobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Isopropyl Benzene	WADOE,DoD-ELAP,NELAP,ADEC
2-Chlorotoluene	WADOE,DoD-ELAP,NELAP
4-Chlorotoluene	WADOE,DoD-ELAP,NELAP
t-Butylbenzene	WADOE,DoD-ELAP,NELAP
1,3,5-Trimethylbenzene	WADOE,DoD-ELAP,NELAP
1,2,4-Trimethylbenzene	WADOE,DoD-ELAP,NELAP
s-Butylbenzene	WADOE,DoD-ELAP,NELAP

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

4-Isopropyl Toluene	WADOE,DoD-ELAP,NELAP
1,3-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,4-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
n-Butylbenzene	WADOE,DoD-ELAP,NELAP
1,2-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,2-Dibromo-3-chloropropane	WADOE,DoD-ELAP,NELAP,ADEC
1,2,4-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Hexachloro-1,3-Butadiene	WADOE,DoD-ELAP,NELAP,ADEC
Naphthalene	WADOE,DoD-ELAP,NELAP
1,2,3-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Dichlorodifluoromethane	WADOE,DoD-ELAP,NELAP,ADEC
Methyl tert-butyl Ether	WADOE,DoD-ELAP,NELAP
n-Hexane	WADOE
2-Pentanone	WADOE
Dibromofluoromethane	WADOE
4-Bromofluorobenzene	WADOE

EPA 8260D in Water

Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

EPA 8270E in Solid

Phenol	DoD-ELAP,NELAP,WADOE
bis(2-chloroethyl) ether	DoD-ELAP,NELAP,WADOE
2-Chlorophenol	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,NELAP,WADOE
Benzyl Alcohol	DoD-ELAP,NELAP,WADOE
2,2'-Oxybis(1-chloropropane)	DoD-ELAP,NELAP
2-Methylphenol	DoD-ELAP,NELAP,WADOE
Hexachloroethane	DoD-ELAP,NELAP,WADOE
N-Nitroso-di-n-Propylamine	DoD-ELAP,NELAP,WADOE
4-Methylphenol	DoD-ELAP,NELAP,WADOE
Nitrobenzene	DoD-ELAP,NELAP,WADOE
Isophorone	DoD-ELAP,NELAP,WADOE
2-Nitrophenol	DoD-ELAP,NELAP,WADOE
2,4-Dimethylphenol	DoD-ELAP,NELAP,WADOE
Bis(2-Chloroethoxy)methane	DoD-ELAP,NELAP,WADOE
2,4-Dichlorophenol	DoD-ELAP,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,NELAP,WADOE
Naphthalene	DoD-ELAP,NELAP,WADOE,ADEC
Benzoic acid	DoD-ELAP,NELAP,WADOE
4-Chloroaniline	DoD-ELAP,NELAP,WADOE
Hexachlorobutadiene	DoD-ELAP,NELAP,WADOE
4-Chloro-3-Methylphenol	DoD-ELAP,NELAP,WADOE
2-Methylnaphthalene	DoD-ELAP,NELAP,WADOE,ADEC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Hexachlorocyclopentadiene	DoD-ELAP,NELAP,WADOE
2,4,6-Trichlorophenol	DoD-ELAP,NELAP,WADOE
2,4,5-Trichlorophenol	DoD-ELAP,NELAP,WADOE
2-Chloronaphthalene	DoD-ELAP,NELAP,WADOE
2-Nitroaniline	DoD-ELAP,NELAP,WADOE
Acenaphthylene	DoD-ELAP,NELAP,WADOE,ADEC
Dimethylphthalate	DoD-ELAP,NELAP,WADOE
2,6-Dinitrotoluene	DoD-ELAP,NELAP,WADOE
Acenaphthene	DoD-ELAP,NELAP,WADOE,ADEC
3-Nitroaniline	DoD-ELAP,NELAP,WADOE
2,4-Dinitrophenol	DoD-ELAP,NELAP,WADOE
Dibenzofuran	DoD-ELAP,NELAP,WADOE,ADEC
4-Nitrophenol	DoD-ELAP,NELAP,WADOE
2,4-Dinitrotoluene	DoD-ELAP,NELAP,WADOE
Fluorene	DoD-ELAP,NELAP,WADOE,ADEC
4-Chlorophenylphenyl ether	DoD-ELAP,NELAP
Diethyl phthalate	DoD-ELAP,NELAP,WADOE
4-Nitroaniline	DoD-ELAP,NELAP,WADOE
4,6-Dinitro-2-methylphenol	DoD-ELAP,NELAP,WADOE
N-Nitrosodiphenylamine	DoD-ELAP,NELAP,WADOE
4-Bromophenyl phenyl ether	DoD-ELAP,NELAP,WADOE
Hexachlorobenzene	DoD-ELAP,NELAP,WADOE
Pentachlorophenol	DoD-ELAP,NELAP,WADOE
Phenanthrene	DoD-ELAP,NELAP,WADOE,ADEC
Anthracene	DoD-ELAP,NELAP,WADOE,ADEC
Carbazole	DoD-ELAP,NELAP,WADOE,ADEC
Di-n-Butylphthalate	DoD-ELAP,NELAP,WADOE
Fluoranthene	DoD-ELAP,NELAP,WADOE,ADEC
Pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Butylbenzylphthalate	DoD-ELAP,NELAP,WADOE
Benzo(a)anthracene	DoD-ELAP,NELAP,WADOE,ADEC
3,3'-Dichlorobenzidine	DoD-ELAP,NELAP,WADOE
Chrysene	DoD-ELAP,NELAP,WADOE,ADEC
bis(2-Ethylhexyl)phthalate	DoD-ELAP,NELAP,WADOE
Di-n-Octylphthalate	DoD-ELAP,NELAP,WADOE
Benzo(b)fluoranthene	DoD-ELAP,NELAP,WADOE,ADEC
Benzo(k)fluoranthene	DoD-ELAP,NELAP,WADOE,ADEC
Benzofluoranthenes, Total	WADOE,ADEC
Benzo(a)pyrene	DoD-ELAP,NELAP,WADOE,ADEC

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Indeno(1,2,3-cd)pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Dibenzo(a,h)anthracene	DoD-ELAP,NELAP,WADOE,ADEC
Benzo(g,h,i)perylene	DoD-ELAP,NELAP,WADOE,ADEC
N-Nitrosodimethylamine	DoD-ELAP,NELAP,WADOE
Aniline	DoD-ELAP,NELAP,WADOE
Retene	DoD-ELAP,NELAP,WADOE
Pyridine	DoD-ELAP,NELAP,WADOE
1-Methylnaphthalene	DoD-ELAP,NELAP,WADOE,ADEC
Azobenzene (1,2-DP-Hydrazine)	NELAP,WADOE
2,3,4,6-Tetrachlorophenol	DoD-ELAP,WADOE
Benzidine	DoD-ELAP,NELAP
Tetrachloroguaiacol	DoD-ELAP,WADOE
3,4,5-Trichloroguaiacol	WADOE
3,4,6-Trichloroguaiacol	WADOE
4,5,6-Trichloroguaiacol	WADOE
Guaiacol	WADOE

NWTPH-Dx in Solid

Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C12-C22)	DoD-ELAP
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP,WADOE
Residual Range Organics (C23-C32)	DoD-ELAP
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP,WADOE
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE

NWTPHg in Solid

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Gasoline Range Organics (Tol-Nap)	DoD-ELAP
Gasoline Range Organics (2MP-TMB)	DoD-ELAP
Gasoline Range Organics (Tol-C12)	DoD-ELAP
Gasoline Range Organics (C6-C10)	DoD-ELAP
Gasoline Range Organics (C5-C12)	DoD-ELAP
4-Bromofluorobenzene (field spiked)	DoD-ELAP

NWTPHg in Water

Gasoline Range Organics (Tol-Nap)	WADOE,DoD-ELAP
Gasoline Range Organics (2MP-TMB)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	WADOE,DoD-ELAP
Gasoline Range Organics (C6-C10)	WADOE,ADEC,DoD-ELAP
Gasoline Range Organics (C5-C12)	WADOE,DoD-ELAP

SM 3500-Cr B-09 in Solid

Hexavalent Chromium	DoD-ELAP,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2022
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2022
WADOE	WA Dept of Ecology	C558	06/30/2022
WA-DW	Ecology - Drinking Water	C558	06/30/2022

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: Lower Duwamish	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 11:13

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
D1	Surrogate was not detected due to sample extract dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
NRS	This surrogate not reported due to chromatographic interference
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
Y1	Raised reporting limit due to interference
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

03 August 2021

Meg Strong
Shannon & Wilson, Inc
400 N 34th St., Suite 100
Seattle, WA 98103-8636

RE: Lower Duwamish

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
21B0081	N/A

Susan Dunnihoo

Digitally signed by Susan Dunnihoo
Date: 2021.08.03 14:38:50 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0081	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: RLP

Page: 1 of 6	
Date: 2/1/21	Ice Present? Yes
No. of Coolers: 4	Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	Full List SVOCs	PCB Aroclors	Metals	Notes/Comments: TOC	Grain Size Analysis
MW-60:1.5-02012021	2/1/21	1020	Soil	7	X	X	X	X	X		X	X		
MW-60:5-02012021		1208		8	X	X	X	X	X		X	X	X	X
MW-60:9-02012021		1226		8	X	X	X	X	X		X	X	X	X
MW-60:16-02012021		1240		7	H	H	H	H	H		H	H		
MW-60:21-02012021		1256	↓	7	H	H	H	H	H		H	H		
TB-4-02012021		—	Water	1	X		X	X						
MW-61:1.5-02012021		1425	Soil	4	X	X			X		X	X		
MW-61:6-02012021		1435	Soil	4	X	X			X		X	X	X	
MW-61:9-02012021		1445	Soil	1	~~X~~	~~X~~ MS								X
MW-61:11-02012021	↓	1455	↓	5	X	X			X		X	X	X	X

Comments/Special Instructions
H = hold analysis
X = run analysis

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	Ryan Peterson	Kenny Doug		
Company:	S&W	ARI		
Date & Time:	2/2/21 1655	2/2/21 1655		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0081	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDiv	
Client Project #: 21-1-12596	Samplers: RBP

Page: 2 of 6	
Date: 2/1/21	Ice Present? Yes
No. of Coolers: 4	Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	PAH Low SIMs	PCB Aroclors	Metals	Notes/Comments: TOC	Grain Size
MW-61:16-02012021	2/1/21	1505	Soil	4	H	H			H		H	H		
MW-61:21-02012021	2/1/21	1515	Soil	4	H	H			H		H	H		
~~MW-74:3-02022021~~ ~~MW-74:1.5-02022021~~	2/2/21	0910	Soil	2		X			X		X	X		
MW-74:6-02022021		0915		2		X			X		X	X		
MW-74:10.3-02022021		0920		2		X			X		X	X		
MW-74:15-02022021		0925		2		H			H		H	H		
MW-74:19.8-02022021		0930		2		H			H		H	H		
MW-101:10.3-02022021		1020		2		X			X		X	X		
RBP ~~MW-47:1.5-02022021~~		~~1010~~		~~7~~	X	X	X		X			X		
SB-2021-047:1.5-02022021		1000		7	X	X	X		X			X		

Comments/Special Instructions

X = run analysis
H = hold analysis

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	Rob Peterson	Kenny Dong		
Company:	S&W	ARI		
Date & Time:	2/2/21 1655	2/2/21 1655		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0081	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: RBP, MRH

Page: 3 of 6

Date: 2/2/21 Ice Present? Yes

No. of Coolers: 4 Cooler Temps: See COF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	PCB Aroclors	Metals	EPH + VPH	Notes/Comments: Full List SVOCs
~~SB-2021-047:7.1-02022021~~	2/2/21	1020	Soil	7	X	X	X		X		✓		
SB-2021-047:10.5-02022021		1030		7	H	H	H		H		H		
SB-2021-047:12.7-02022021		1035		7	H	H	H		H		H		
MW-73:3.2-02022021		1110		7	X	X	X	X	X	X	X		
MW-73:7-02022021		1125		7	X	X	X	X	X	X	X		
MW-73:11-02022021		1130		~~7~~ 9	X	X	X	X	X	X	X	X	strong gasoline odor
MW-73:15-02022021		1135		7	X	X	X	X	X	X	X		
MW-73:17.7-02022021		1140		7	X	X	X	X	X	X	X		
~~MW-72:2~~ MW-72:1-02022021		1240		2		X					X		X
MW-72:5-02022021		1245		2		X					X		X

Comments/Special Instructions

H= Hold analysis

X= Run analysis

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	Ryan Peterson	Kenny Dang		
Company:	S&W	ARI		
Date & Time:	2/2/21 1655	2/2/21 1655		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0081	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: RBP, MJH

Page: 4 of 6	
Date: 2/2/21	Ice Present? Yes
No. of Coolers: 4	Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	PCB Aroclors	Metals	Full List SVOCs	Notes/Comments: Hexan ext Chrome	PDC
MW-72:10.9-020221	2/2/21	1250	Soil	2		X					X	X		
MW-72:10.9-MS/MSD		1250		2		X					X	X		MS/MSD
MW-72:15-020221		1255		2		H					H	H		
MW-72:18.4-020221		1300		2		H					H	H		
MW-65:2-020221		1350		5		X	X	X	X	X	X		X	All Hold
MW-65:2-MS/MSD		1350		5		X	X	X	X	X	X		X	~~MS/MSD Hold~~ All Hold
MW-65:5-020221		1410		5		X	X	X	X	X	X		X	All Hold
MW-65:11.9-020221		1420		5		H	H	H	H	H	H			
MW-65:13-020221		1425		5		X	X	X	X	X	X		X	
MW-70:0-020221		1510		5	X	X	X	X	X		X			

Comments/Special Instructions
H = Hold analysis
X = run analysis

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Printed Name: Ryan Peterson	Printed Name: Kenny Dong	Printed Name:	Printed Name:
Company: S&W	Company: ARI	Company:	Company:
Date & Time: 2/2/21 1655	Date & Time: 2/2/21 1655	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, *unless* alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0081	Turn-around Requested: Standard	Page: 5 of 6	
ARI Client Company: Shannon & Wilson	Phone:	Date: 2/1/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 4	Cooler Temps: See COF
Client Project Name: LDW			
Client Project #: 21-1-12546	Samplers: MRH		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	cPAHs	PCB Aroclors	Metals		Notes/Comments
MW-70:4.3-020221	2/1/21	1515	Soil	5	X	X	X	X	X		X		
MW-70:8-020221		1525		5	X	X	X	X	X		X		
MW-70:15-020221		1545		5	H	H	H	H	H		H		
MW-70:20-020221		1615		5	H	H	H	H	H		H		

Comments/Special Instructions
H= hold analysis
X= run analysis

Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)	(Signature)	(Signature)	(Signature)
Printed Name: Ryan Peterson	Printed Name: Kenny Daug	Printed Name:	Printed Name:
Company: S&W	Company: ARI	Company:	Company:
Date & Time: 2/2/21 1655	Date & Time: 2/2/21 1655	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0081	Turn-around Requested: Standard
ARI Client Company: SWI	Phone: 206-632-8020
Client Contact: Shoshana Howard	
Client Project Name: EMJ	
Client Project #: 21-1-12596	Samplers: CTC

Page: 6 of 6	
Date: 2/2/21	Ice Present? Yes
No. of Coolers: 4	Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	SVOCs	PCB aroclors	Metals	Hex. Chrome	T.O.C.	Grain Size	Notes/Comments: Porosity	⊗ = Hold
MW-68:8.5-02022021	2/2	0935	Soil	5		X	X	X		X	X	X					
MW-68:15.5-02022021	2/2	0955	Soil	5		⊗	⊗	⊗		⊗	⊗	⊗					
MW-68:20.5-02022021	2/2	1010	Soil	5		⊗	⊗	⊗		⊗	⊗	⊗					
MW-56:1.0-02022021	2/2	1245	Soil	2		X			X			X					
MW-56:5.5-02022021	2/2	1250	Soil	2		X			X			X					
MW-56:8.0-02022021	2/2	1300	Soil	2		X			X			X					
MW-56:16.0-02022021	2/2	1320	Soil	2		⊗			⊗			⊗					
MW-56:20.5-02022021	2/2	1330	Soil	2		⊗			⊗			⊗					
MW-101:8.0-02022021	2/2	1305	Soil	2		X			X			X					

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: RYAN PETERSON	Printed Name: Kenny Dang	Printed Name:	Printed Name:
	Company: SEW	Company: ARI	Company:	Company:
	Date & Time: 2/2/21 1655	Date & Time: 2/2/21 1655	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

# of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

signed Number:	Turn-around Requested: Standard
Client Company: Shannon & Wilson	Phone:
ient Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: RBP

Page: 1 of 6	
Date: 2/1/21	Ice Present? Yes
No. of Coolers: 4	Cooler Temps: See CRF

Sample ID	Date	Time	Matrix	No. Containers	TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	Full List SVOCs	PCB Aroclors	Metals	Notes/Comments: TOC	Notes/Comments: Grain Size Analysis
MW-60:1.5-02012021	2/1/21	1020	Soil	7	X	X	X	X	X		X	X		
MW-60:5-02012021		1208		8	X	X	X	X	X		X	X	X	X
MW-60:9-02012021		1226		8	X	X	X	X	X		X	X	X	X
MW-60:16-02012021		1240		7	H	H	H	H	H		H	H		
MW-60:21-02012021		1256	↓	7	H	H	H	H	H		H	H		
TB-4-02012021		—	Water	1	X		X	X						
MW-61:1.5-02012021		1425	Soil	4	X	X			X		X	X		
MW-61:6-02012021		1435	Soil	4	X	X			X		X	X	X	
MW-61:9-02012021		1445	Soil	1	X	X								X
MW-61:11-02012021		1455	↓	5	X	X			X		X	X	X	X

Comments/Special Instructions
H = hold analysis
X = run analysis

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Printed Name: Ryan Peterson	Printed Name: Kenny Dang	Printed Name:	Printed Name:
Company: S&W	Company: ARI	Company:	Company:
Date & Time: 2/2/21 1655	Date & Time: 2/2/21 1655	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: RBP

Page: 2 of 6	
Date: 2/1/21	Ice Present? Yes
No. of Coolers: 4	Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	Full List SVOCs	PCB Aroclors	Metals	Notes/Comments: TOC	Grain Size
MW-61:16-02012021	2/1/21	1505	Soil	4	H	H			H		H	H		
MW-61:21-02012021	2/1/21	1515	Soil	4	H	H			H		H	H		
~~MW-74:3-02022021 MW-74:3.5-02022021~~	2/2/21	0910	Soil	2		X			X		X	X		
MW-74:6-02022021		0915		2		X			X		X	X		
MW-74:10.3-02022021		0920		2		X			X		X	X		
MW-74:15-02022021		0925		2		H			H		H	H		
MW-74:19.8-02022021		0930		2		H			H		H	H		
MW-101:10.3-02022021		1020		2		X			X		X	X		
~~MW-47:1.5-02022021~~		1010		7	X	X	X		X			X		
SB2021-047:1.5-02022021		1100		7	X	X	X		X			X		

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
X = run analysis H = hold analysis	Printed Name: Allan Peterson	Printed Name: Kenny Dong	Printed Name:	Printed Name:
	Company: S&W	Company: ARI	Company:	Company:
	Date & Time: 2/2/21 1655	Date & Time: 2/2/21 1655	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: RBP, MRH

Page: 3 of 6

Date: 2/2/21 Ice Present? Yes

No. of Coolers: 4 Cooler Temps: See COC

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	PCB Aroclors	Metals	EPH + VPH	Notes/Comments
~~SB-2021-047~~:7.1-02022021	2/2/21	1020	Soil	7	X	X	X		X		✓		Full list SVOCs
SB-2021-047:10.5-02022021	〃	1030	〃	7	H	H	H		H		H		
SB-2021-047:12.7-02022021	〃	1035	〃	7	H	H	H		H		H		
MW-73:3.2-02022021	〃	1110	〃	7	X	X	X	X	X	X	X		
MW-73:7-02022021	〃	1125	〃	7	X	X	X	X	X	X	X		
MW-73:11-02022021	〃	1130	〃	~~7~~ 9	X	X	X	X	X	X	X	X	strong gasoline odor
MW-73:15-02022021	〃	1135	〃	7	X	X	X	X	X	X	X		
MW-73:17.7-02022021	〃	1140	〃	7	X	X	X	X	X	X	X		
~~AA-W-72:1-02022021~~ MW-72:1-02022021	〃	1240	〃	2		X					X		X
MW-72:5-02022021	〃	1245	〃	2		X					X		X

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
H= Hold analysis X= Run analysis	Printed Name: RYAN PETERSON	Printed Name: Kenny Doig	Printed Name:	Printed Name:
	Company: S&W	Company: ARI	Company:	Company:
	Date & Time: 2/2/21 1655	Date & Time: 2/2/21 1655	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

ARI Assigned Number:	Turn-around Requested: Standard	Page: 4 of 6	
ARI Client Company: Shannon & Wilson	Phone:	Date: 2/2/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 4	Cooler Temps: See CRF
Client Project Name: LDW			
Client Project #: 21-1-12596	Samplers: RSP, MRH		

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-D	BTEX	HVOCs	PAHs	PCB Aroclors	Metals	Full List SVOCs	Notes/Comments: Hexane list change	TOC
MW-72:10.9-02022021	2/2/21	1250	Soil	2		X					X	X		
MW-72:10.9-MS/MSD		1250		2		X					X	X		MS/MSD
MW-72:15-02022021		1255		2		H					H	H		
MW-72:18.4-02022021		1300		2		H					H	H		
MW-65:2-02022021		1350		5		X	X	X	X	X	X		X	All Hold
MW-65:2-MS/MSD		1350		5		X	X	X	X	X	X		X	~~MS/MSD~~ Hold
MW-65:5-02022021		1410		5		X	X	X	X	X	X		X	All Hold
MW-65:11.9-02022021		1420		5		H	H	H	H	H	H			
MW-65:13-02022021		1425		5		X	X	X	X	X	X		X	
MW-70:0-02022021		1510		5	X	X	X	X	X		X			

All Hold

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
H= hold analysis X= run analysis	Printed Name: RYAN PETERSON	Printed Name: Kenny Dang	Printed Name:	Printed Name:
	Company: S&W	Company: ARI	Company:	Company:
	Date & Time: 2/2/21 1655	Date & Time: 2/2/21 1655	Date & Time:	

Change following sample names
(replacing MW-65 with SB-2021-065):

from MW-65:2-02022021 to SB-2021-065:2-02022021
from MW-65:2-MS/MSD to SB-2021-065:2-MS/MSD
from MW-65:5-02022021 to SB-2021-065:5-02022021
from MW-65:11.9-02022021 to SB-2021-065:11.9-02022021
from MW-65:13-02022021 to SB-2021-065:13-02022021
Thanks!
SKH

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operatin meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection w said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstan signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days a retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone:
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: MRH

Page: 5	of 6
Date: 2/1/21	Ice Present? Yes
No. of Coolers: 4	Cooler Temps: See COC

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-D	BTEX	HVOCs	cPAHs	PCB Aroclors	Metals		Notes/Comments
MW-70:4.3-02022021	2/1/21	1515	Soil	5	X	X	X	X	X		X		
MW-70:8-02022021		1525		5	X	X	X	X	X		X		
MW-70:15-02022021		1545		5	H	H	H	H	H		H		
MW-70:20-02022021		1615		5	H	H	H	H	H		H		

Comments/Special Instructions
H= hold analysis
X= run analysis

Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
Printed Name: Ryan Peterson	Printed Name: Kenby Dang	Printed Name:	Printed Name:
Company: S&W	Company: ARI	Company:	Company:
Date & Time: 2/2/21 1655	Date & Time: 2/2/21 1655	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Standard
ARI Client Company: SWI	Phone: 206-632-8020
Client Contact: Shoshana Howard	
Client Project Name: EMJ	
Client Project #: 21-1-12596	Samplers: CTC

Page: 6 of 6	
Date: 2/2/21	Ice Present? Yes
No. of Coolers: 4	Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	SVOCs	RB aroclors	Metals	Hex. Chrome	T.O.C.	Grain Size	Notes/Comments: Porosity	⊗ = Hold
MW-68:8.5-02022021	2/2	0935	Soil	5		X	X	X		X	X	X					
MW-68:15.5-02022021	2/2	0955	Soil	5		⊗	⊗	⊗		⊗	⊗	⊗					
MW-68:20.5-02022021	2/2	1010	Soil	5		⊗	⊗	⊗		⊗	⊗	⊗					
MW-56:1.0-02022021	2/2	1245	Soil	2		X			X			X					
MW-56:5.5-02022021	2/2	1250	Soil	2		X			X			X					
MW-56:8.0-02022021	2/2	1300	Soil	2		X			X			X					
MW-56:16.0-02022021	2/2	1320	Soil	2		⊗			⊗			⊗					
MW-56:20.5-02022021	2/2	1330	Soil	2		⊗			⊗			⊗					
MW-101:8.0-02022021	2/2	1305	Soil	2		X			X			X					

Comments/Special Instructions	Relinquished by: (Signature)	Printed Name:	Company:	Date & Time:	Received by: (Signature)	Printed Name:	Company:	Date & Time:	Relinquished by: (Signature)	Printed Name:	Company:	Date & Time:	Received by: (Signature)	Printed Name:	Company:	Date & Time:
		RYAN PETERSON	SEW	2/2/21 1655		Kenny Dang	ARI	2/2/21 1655								

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Materials Testing & Consulting, Inc.
Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project:	Lower Duwamish (21B0081)	**Date Received:**	February 5, 2021
Project #:	21S023-04	**Sampled By:**	Others
Client :	Analytical Resources, Inc.	**Date Reported:**	March 11, 2021
Source:	Multiple	**Tested By:**	B. Goble, S. Bennett
MTC Sample#:	Multiple		

CASE NARRATIVE

1. Four samples were submitted for grain size analysis according to Puget Sound Estuary Protocol (PSEP) methodology.
2. The samples were run in a single batch and one sample from another job was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. The data is provided in summary tables and plots.
4. There were no other noted anomalies in this project.

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: EGabriel Goble

Draft for Public Comment

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: Lower Duwamish (21B0081)
Project #: 21S023-04
Date Received: February 5, 2021
Date Tested: March 9, 2021

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: B. Goble, S. Bennett

Apparent Grain Size Distribution Summary

Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.0	15.6	7.8	3.9	2.0	1.0
MW-67:5.5-01262021	100.0	100.0	100.0	99.9	99.5	98.5	93.7	80.0	64.7	43.2	29.9	20.4	13.8	5.7
	100.0	100.0	100.0	99.8	99.4	97.2	92.4	78.5	63.0	44.1	30.5	20.8	13.6	5.6
	100.0	100.0	99.8	99.6	99.4	98.7	94.8	81.2	68.3	48.9	34.2	23.5	15.4	7.5
MW-60:5-02012021	100.0	100.0	99.9	98.2	82.4	34.8	8.7	4.0	2.1	1.4	1.0	0.7	0.5	0.4
MW-60:9-02012021	100.0	100.0	100.0	99.9	99.7	99.0	91.7	67.9	53.1	37.1	25.9	16.2	8.9	5.7
MW-61:9-02012021	100.0	100.0	99.6	96.7	81.2	45.2	14.4	4.0	2.4	1.6	1.2	0.9	0.6	0.5
MW-61:11-02012021	100.0	100.0	100.0	99.9	99.8	99.6	97.2	75.5	55.2	39.7	30.6	21.4	13.9	8.5

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: E Gabriel Goble

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980
Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6061 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974
Visit our website: www.mtc-inc.net

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: Lower Duwamish (21B0081)
Project #: 21S023-04
Date Received: February 5, 2021
Date Tested: March 9, 2021

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: B. Goble, S. Bennett

Apparent Grain Size Distribution Summary

Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	< -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	> 10	> 4
Sieve Size (microns)	> #10 (2000)	10-18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62.5-31.0	31.0-15.6	15.6-7.8	7.8-3.9	3.9-2.0	2.0-1.0	<1.0	<230 (<62)
MW-67:5.5-01262021	0.0	0.1	0.4	1.0	4.8	13.7	15.3	21.5	13.3	9.5	6.7	8.0	5.7	80.0
	0.0	0.2	0.5	2.1	4.9	13.8	15.6	18.9	13.6	9.7	7.3	7.9	5.6	78.5
	0.2	0.2	0.2	0.7	3.9	13.6	12.9	19.4	14.7	10.7	8.1	8.0	7.5	81.2
MW-60:5-02012021	0.1	1.7	15.8	47.6	26.1	4.7	2.0	0.6	0.4	0.3	0.2	0.1	0.4	4.0
MW-60:9-02012021	0.0	0.1	0.3	0.7	7.3	23.8	14.8	16.0	11.2	9.7	7.3	3.3	5.7	67.9
MW-61:9-02012021	0.4	2.9	15.5	35.9	30.8	10.4	1.6	0.8	0.4	0.4	0.3	0.1	0.5	4.0
MW-61:11-02012021	0.0	0.1	0.1	0.2	2.4	21.7	20.3	15.5	9.0	9.2	7.5	5.4	8.5	75.5

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: E Gabriel Goble

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980
Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6061 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974
Visit our website: www.mtc-inc.net

Draft for Public Comment

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: Lower Duwamish (21B0081)
Project #: 21S023-04
Date Received: February 5, 2021
Date Tested: March 9, 2021

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: B. Goble, S. Bennett

Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
MW-67:5.5-01262021	100.0	100.0	100.0	99.9	99.5	98.5	93.7	80.0	64.7	43.2	29.9	20.4	13.8	5.7
	100.0	100.0	100.0	99.8	99.4	97.2	92.4	78.5	63.0	44.1	30.5	20.8	13.6	5.6
	100.0	100.0	99.8	99.6	99.4	98.7	94.8	81.2	68.3	48.9	34.2	23.5	15.4	7.5
AVE	100.0	100.0	99.9	99.8	99.4	98.2	93.6	79.9	65.3	45.4	31.5	21.6	14.2	6.3
STDEV	0.0	0.0	0.1	0.1	0.1	0.6	1.0	1.1	2.2	2.5	1.9	1.4	0.8	0.8
%RSD	0.0	0.0	0.1	0.1	0.1	0.7	1.1	1.4	3.4	5.5	6.0	6.3	5.9	13.4

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)
MW-67:5.5-01262021	1/26/2021	3/1/2021	3/9/2021	101.1		17.2
	1/26/2021	3/1/2021	3/9/2021	101.6		15.8
	1/26/2021	3/1/2021	3/9/2021	103.6		17.5
MW-60:5-02012021	2/1/2021	3/1/2021	3/9/2021	101.3		5.8
MW-60:9-02012021	2/1/2021	3/1/2021	3/9/2021	103.5		19.2
MW-61:9-02012021	2/1/2021	3/1/2021	3/9/2021	100.9		5.0
MW-61:11-02012021	2/1/2021	3/1/2021	3/9/2021	104.2		18.9

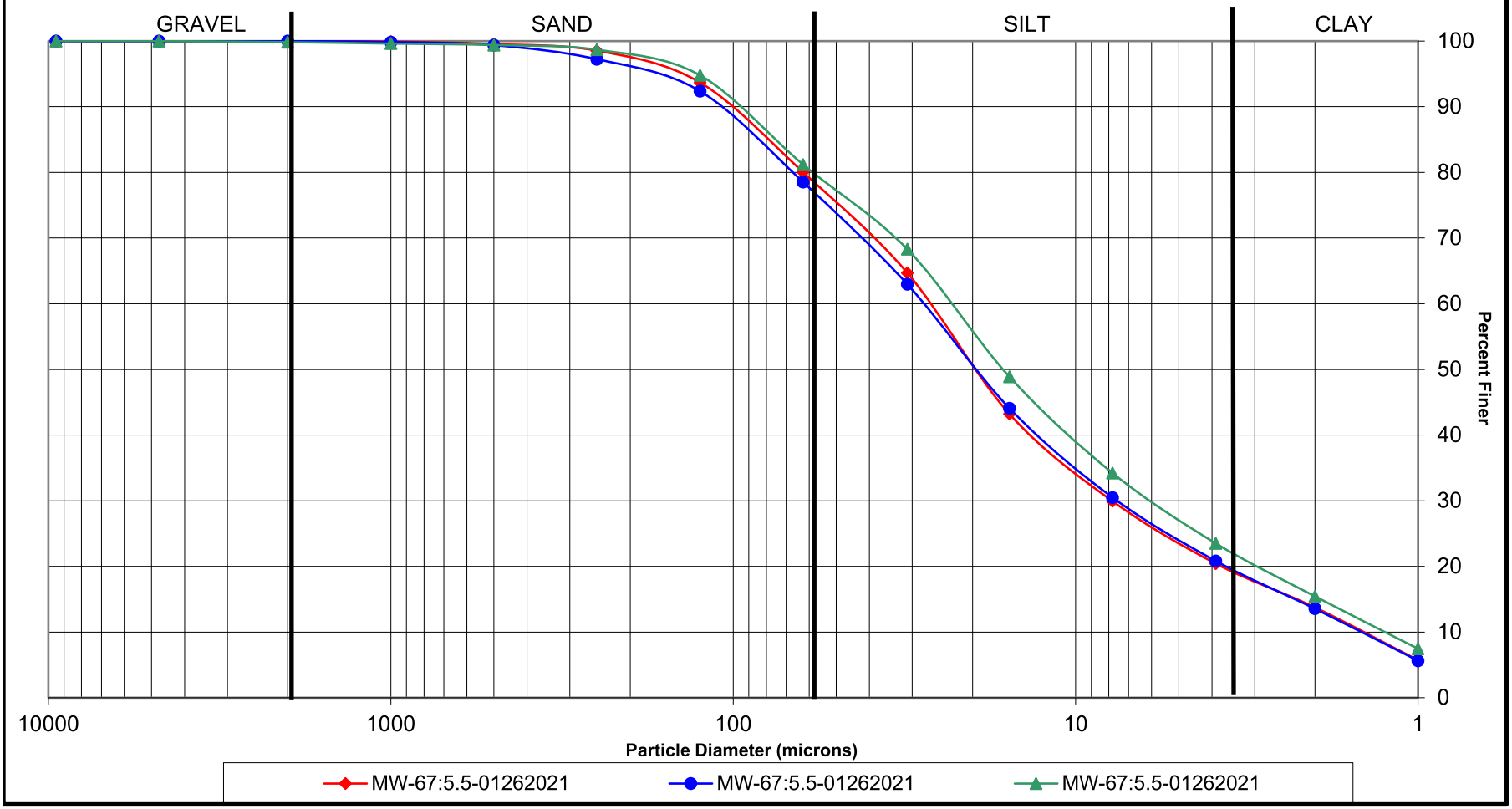
All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by:

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980
Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6061 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974
Visit our website: www.mtc-inc.net

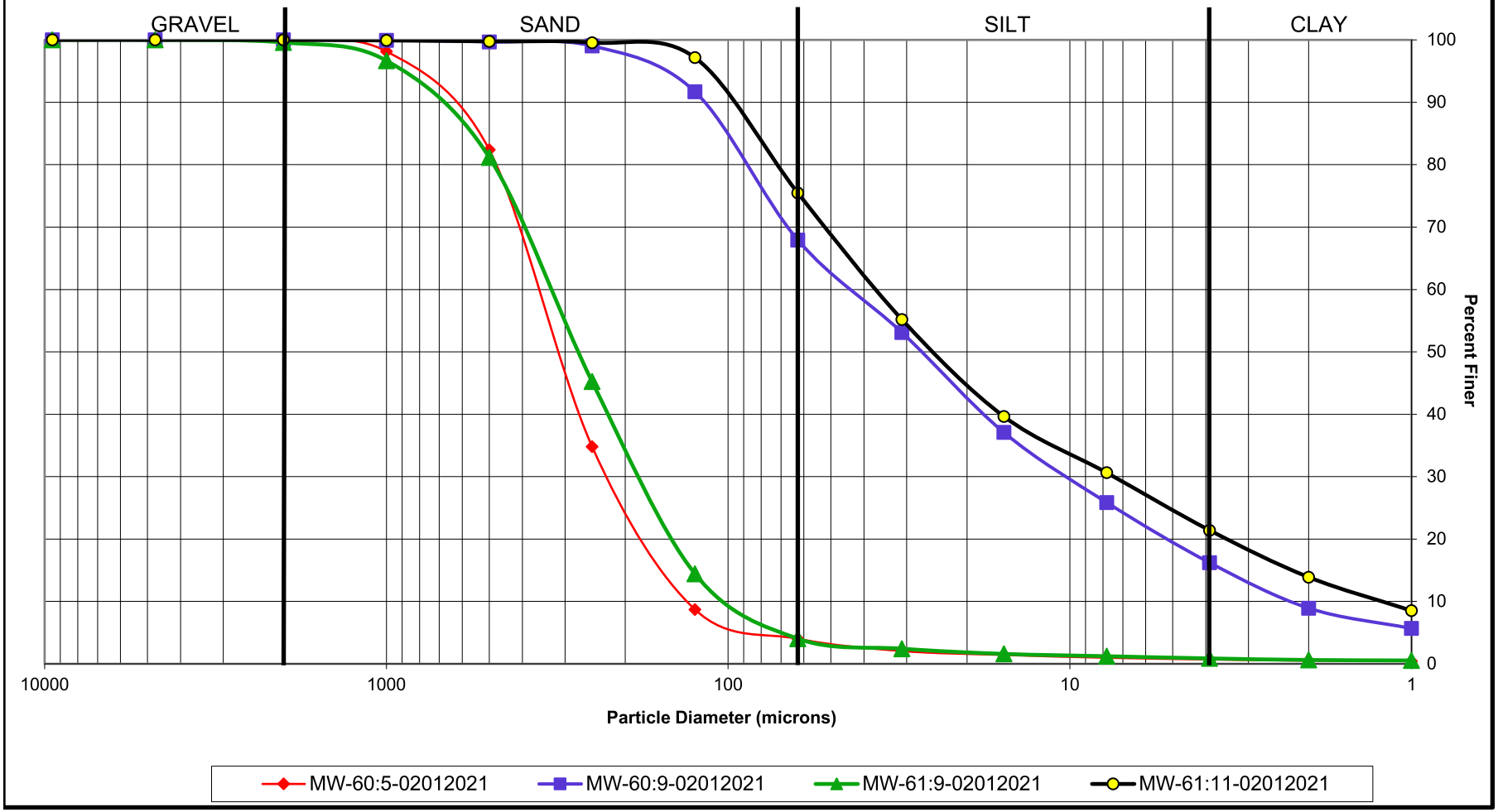
PSEP Grain Size Distribution

Triplicate Sample Plot



MATERIALS TESTING & CONSULTING, INC.

PSEP Grain Size Distribution



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-60:1.5-02012021	21B0081-01	Solid	01-Feb-2021 10:20	02-Feb-2021 16:55
MW-60:5-02012021	21B0081-02	Solid	01-Feb-2021 12:08	02-Feb-2021 16:55
MW-60:9-02012021	21B0081-03	Solid	01-Feb-2021 12:26	02-Feb-2021 16:55
MW-60:16-02012021	21B0081-04	Solid	01-Feb-2021 12:40	02-Feb-2021 16:55
MW-60:21-02012021	21B0081-05	Solid	01-Feb-2021 12:56	02-Feb-2021 16:55
TB-4-02012021	21B0081-06	Water	02-Feb-2021 15:10	02-Feb-2021 16:55
MW-61:1.5-02012021	21B0081-07	Solid	01-Feb-2021 14:25	02-Feb-2021 16:55
MW-61:6-02012021	21B0081-08	Solid	01-Feb-2021 14:35	02-Feb-2021 16:55
MW-61:9-02012021	21B0081-09	Solid	01-Feb-2021 14:45	02-Feb-2021 16:55
MW-61:11-02012021	21B0081-10	Solid	01-Feb-2021 14:55	02-Feb-2021 16:55
MW-61:16-02012021	21B0081-11	Solid	01-Feb-2021 15:05	02-Feb-2021 16:55
MW-61:21-02012021	21B0081-12	Solid	01-Feb-2021 15:15	02-Feb-2021 16:55
MW-74:3-02022021	21B0081-13	Solid	02-Feb-2021 09:10	02-Feb-2021 16:55
MW-74:6-02022021	21B0081-14	Solid	02-Feb-2021 09:15	02-Feb-2021 16:55
MW-74:10.3-02022021	21B0081-15	Solid	02-Feb-2021 09:20	02-Feb-2021 16:55
MW-74:15-02022021	21B0081-16	Solid	02-Feb-2021 09:25	02-Feb-2021 16:55
MW-74:19.8-02022021	21B0081-17	Solid	02-Feb-2021 09:30	02-Feb-2021 16:55
MW-101:10.3-02022021	21B0081-18	Solid	02-Feb-2021 10:20	02-Feb-2021 16:55
SB-2021-047:1.5-02022021	21B0081-19	Solid	02-Feb-2021 10:10	02-Feb-2021 16:55
SB-2021-047:7.1-02022021	21B0081-20	Solid	02-Feb-2021 10:20	02-Feb-2021 16:55
SB-2021-047:10.5-02022021	21B0081-21	Solid	02-Feb-2021 10:30	02-Feb-2021 16:55
SB-2021-047:12.7-02022021	21B0081-22	Solid	02-Feb-2021 10:35	02-Feb-2021 16:55
MW-73:3.2-02022021	21B0081-23	Solid	02-Feb-2021 11:10	02-Feb-2021 16:55
MW-73:7-02022021	21B0081-24	Solid	02-Feb-2021 11:25	02-Feb-2021 16:55
MW-73:11-02022021	21B0081-25	Solid	02-Feb-2021 11:30	02-Feb-2021 16:55
MW-73:15-02022021	21B0081-26	Solid	02-Feb-2021 11:35	02-Feb-2021 16:55
MW-73:17.7-02022021	21B0081-27	Solid	02-Feb-2021 11:40	02-Feb-2021 16:55
MW-72:1-022022021	21B0081-28	Solid	02-Feb-2021 12:40	02-Feb-2021 16:55
MW-72:5-022022021	21B0081-29	Solid	02-Feb-2021 12:45	02-Feb-2021 16:55
MW-72:10.9-022022021	21B0081-30	Solid	02-Feb-2021 12:50	02-Feb-2021 16:55
MW-72:15-022022021	21B0081-31	Solid	02-Feb-2021 12:55	02-Feb-2021 16:55
MW-72:18.4-022022021	21B0081-32	Solid	02-Feb-2021 13:00	02-Feb-2021 16:55
SB-2021-065:2-02022021	21B0081-33	Solid	02-Feb-2021 13:50	02-Feb-2021 16:55
SB-2021-065:5-02022021	21B0081-34	Solid	02-Feb-2021 14:10	02-Feb-2021 16:55
SB-2021-065:11.9-02022021	21B0081-35	Solid	02-Feb-2021 14:20	02-Feb-2021 16:55
SB-2021-065:13-02022021	21B0081-36	Solid	02-Feb-2021 14:25	02-Feb-2021 16:55
MW-70:0-02022021	21B0081-37	Solid	02-Feb-2021 15:10	02-Feb-2021 16:55
MW-70:4.3-02022021	21B0081-38	Solid	02-Feb-2021 15:15	02-Feb-2021 16:55
MW-70:8-02022021	21B0081-39	Solid	02-Feb-2021 15:25	02-Feb-2021 16:55

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:15-02022021	21B0081-40	Solid	02-Feb-2021 15:45	02-Feb-2021 16:55
MW-70:20-02022021	21B0081-41	Solid	02-Feb-2021 16:15	02-Feb-2021 16:55
MW-68:8.5-02022021	21B0081-42	Solid	02-Feb-2021 09:35	02-Feb-2021 16:55
MW-68:15.5-02022021	21B0081-43	Solid	02-Feb-2021 09:55	02-Feb-2021 16:55
MW-68:20.5-02022021	21B0081-44	Solid	02-Feb-2021 10:10	02-Feb-2021 16:55
MW-56:1.0-02022021	21B0081-45	Solid	02-Feb-2021 12:45	02-Feb-2021 16:55
MW-56:5.5-02022021	21B0081-46	Solid	02-Feb-2021 12:50	02-Feb-2021 16:55
MW-56:8.0-02022021	21B0081-47	Solid	02-Feb-2021 13:00	02-Feb-2021 16:55
MW-56:16.0-02022021	21B0081-48	Solid	02-Feb-2021 13:20	02-Feb-2021 16:55
MW-56:20.5-02022021	21B0081-49	Solid	02-Feb-2021 13:30	02-Feb-2021 16:55
MW-101:8.0-02022021	21B0081-50	Solid	02-Feb-2021 13:05	02-Feb-2021 16:55

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Work Order Case Narrative

Client: Shannon & Wilson, Inc
Project: Lower Duwamish
Work Order: 21B0081

Sample receipt

Samples as listed on the preceding page were received 02-Feb-2021 16:55 under ARI work order 21B0081. For details regarding sample receipt, please refer to the Cooler Receipt Form.

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0081-01 in batch BJB0519. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits except Aroclor 1260 which was out of control low in the MSD and has been flagged within the QC section of this report.

Gasoline by NWTPH-g (GC/MS)

The sample(s) were analyzed within the recommended holding times except 21B0081-25RE1. This sample on initial analysis was overdiluted. The reanalysis was out of hold due to this and a power outage that took the instrument out of service for a couple of days.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

were within control limits.

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Dichloromethane and Toluene were detected in the Trip Blank above the method reporting limits .

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits except 4-Bromofluorobenzene which was out of control low in sample 21B0081-24 and has been flagged.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Semivolatiles - EPA Method SW8270E

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements except Hexachlorocyclopentadiene, Fluorene and Pentachlorophenol which were out of control low and 4,6-Dinitro-2-Methylphenol which was out of control high. All samples which contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was perfromed in association with sample 21B0081-30 in batch BJB0657. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits except 3,3'Dichlorobenzidine which was out of control low in the MS and has been flagged within the QC section of this report.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times. Please note sample 21B0081-38 was missed in original extraction batch. The sample had been frozen prior to extraction in batch BJC0690 and was extracted and

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

analyzed in holding time for frozen samples.

Initial and continuing calibrations were within method requirements except Benzo(j)fluoranthene which was out of control low. All samples which contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits except 2-Methylnaphthalene-d10 which was out of control low in sample 21B0081-25.

The method blank(s) were clean at the reporting limits except 1-Methylnaphthalene and 2-Methylnaphthalene in batch BJB0656 and Phenanthrene, Fluoroanthene, Pyrene, Benzo(a)anthracene, Chrysene and Benzo(b)fluoranthene in batch BJC0690. All samples which contain analyte have been flagged with a "B" qualifier

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0081-08 in batch BJB0655. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits except as flagged within the QC section of this report.

Total Metals - EPA Method 6020B

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0081-01 in batch BJB0429 and in association with sample 21B0081-30 in batch BJB0430. The duplicate (DUP) relative percent difference (RPD) were within advisory control limits.
The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Sample specific QC was performed in association with sample 21B0081-38 in Total Organic Carbon batch BJB0400 and Total Solids batch BJB0492. The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Total Hg - EPA Method 7470/7471

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0081-01 in batch BJB0433 and in association with sample 21B0081-30 in batch BJB0434. The duplicate (DUP) relative percent difference (RPD) were within advisory control limits.
The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0081-01 in batch BJB0389 and in association with sample 21B0081-30 in batch BJB0391. The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Volatile Petroleum Hydrocarbons - WA-Ecology VPH

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

The method blank(s) were clean at the reporting limits except n-Decane. All samples which contain analyte have been flagged with a "B" qualifier.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Extractable Organic Hydrocarbons - WA-Ecology

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0081-25 in batch BJB0328. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Grainsize

The samples were submitted to Materials Testing & Consulting, Inc. (MTC) for grainsize analysis. The MTC report is included here in its entirety.

REVISED to add trans-1,2-dichloroethene and remove extra analyses reported for TOC.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Shannon & Wilson Project Name: LDW

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 21B0081 Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1655 3.6 1.1 2.5 0.1 ____ ____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: DOO 5206

Cooler Accepted by: KP Date: 2/2/21 Time: 1655

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap (Wet) Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
How were bottles sealed in plastic bags?	Individually	(Grouped)	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES) SC	(NO)
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	NA	10/23/20	

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: SC Date: 2/3/21 Time: 1423 Labels checked by: SC

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

- Vials on SB 2021-047: 10.5-02022021 ~~had blurred labels on vials.~~ SC
+ ~~SB~~ SC MW-68: 15.5-02022021 had blurred labels on vials. Because samples of vials were grouped according to sample ID, proper placement of blurred vials was able to be determined.

By: SC Date: 2/3/21

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:1.5-02012021

21B0081-01 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/01/2021 10:20

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 18:06

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-01 F

Preparation Batch: BJB0120 — Sample Size: 3.76 g (wet) — Dry Weight:3.40 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 90.46

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.35	1.47	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.49	1.47	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.39	1.47	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.35	1.47	ND	ug/kg	U
Benzene	71-43-2	1	0.44	1.47	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.31	1.47	ND	ug/kg	U
Toluene	108-88-3	1	0.22	1.47	0.30	ug/kg	J
Tetrachloroethene	127-18-4	1	0.38	1.47	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.30	1.47	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.58	2.94	ND	ug/kg	U
o-Xylene	95-47-6	1	0.33	1.47	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.91	2.94	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*112*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*99.6*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.8*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:1.5-02012021

21B0081-01 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/01/2021 10:20

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 23:12

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-01 C

Preparation Batch: BJB0262 — Sample Size: 3.54 g (wet) — Dry Weight:3.36 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 94.90

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7710	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*94.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*95.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:1.5-02012021

21B0081-01 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/01/2021 10:20

Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 10:31

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-01 A 02
	Preparation Batch: BJB0655	Sample Size: 10.56 g (wet)	Dry Weight:10.02 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 94.90
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-01 A 02
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-01 A 02
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.30	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	3.98	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	3.70	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.15	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	1.88	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	14.6	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.32	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	3.87	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	4.81	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.81	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	3.68	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	1.36	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.49	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.67	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	1.03	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.69	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.16	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	1.02	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*50.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*79.2*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*70.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:1.5-02012021

21B0081-01 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/01/2021 10:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/20/2021 04:16

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-01 A 01
Preparation Batch: BJB0389 — Sample Size: 10.1 g (wet) — Dry Weight:9.58 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 94.90

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.22	19.9	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	10.4	173	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*94.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:1.5-02012021

21B0081-01 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/01/2021 10:20
Instrument: ECD7 Analyst: JGR — Analyzed: 03/04/2021 03:37

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-01 A 04
	Preparation Batch: BJB0519	Sample Size: 13.18 g (wet)	Dry Weight:12.51 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 94.90
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-01 A 04
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-01 A 04
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-01 A 04
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*57.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*72.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*62.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*61.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:1.5-02012021

21B0081-01 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/01/2021 10:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 20:31

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-01 B 01
Preparation Batch: BJB0429 — Sample Size: 1.004 g (wet) — Dry Weight:0.95 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 94.32

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	26.9	mg/kg	
Chromium	7440-47-3	20	0.14	0.53	11.3	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	3.92	mg/kg	
Lead	7439-92-1	20	0.07	0.11	1.99	mg/kg	
Silver	7440-22-4	20	0.02	0.21	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	34.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:1.5-02012021

21B0081-01 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/01/2021 10:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 20:31

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-01 B 01
Preparation Batch: BJB0429 — Sample Size: 1.004 g (wet) — Dry Weight:0.95 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 94.32

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	2.22	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.36	0.53	9.68	mg/kg	
Nickel	7440-02-0	20	0.05	0.53	9.49	mg/kg	
Selenium	7782-49-2	20	0.46	0.53	0.63	mg/kg	
Zinc	7440-66-6	20	0.9	4.2	22.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:1.5-02012021

21B0081-01 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/01/2021 10:20

Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 13:38

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-01 B

Preparation Batch: BJB0433 — Sample Size: 0.267 g (wet) — Dry Weight:0.25 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 94.32

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00417	0.0199	0.0126	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:5-02012021

21B0081-02 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/01/2021 12:08

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 18:30

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-02 G

Preparation Batch: BJB0120 — Sample Size: 3.92 g (wet) — Dry Weight:3.30 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 84.22

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.36	1.51	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.51	1.51	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.40	1.51	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.36	1.51	ND	ug/kg	U
Benzene	71-43-2	1	0.45	1.51	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.32	1.51	ND	ug/kg	U
Toluene	108-88-3	1	0.23	1.51	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.39	1.51	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.31	1.51	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.59	3.03	ND	ug/kg	U
o-Xylene	95-47-6	1	0.34	1.51	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.93	3.03	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*109*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*101*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:5-02012021

21B0081-02 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/01/2021 12:08

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 16:43

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-02 E

Preparation Batch: BJB0262 — Sample Size: 3.22 g (wet) — Dry Weight:2.78 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 86.35

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	9780	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*95.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*94.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:5-02012021

21B0081-02 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/01/2021 12:08
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 11:03

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-02 B 03
	Preparation Batch: BJB0655	Sample Size: 11.62 g (wet)	Dry Weight:10.03 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 86.35
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-02 B 03
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-02 B 03
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	2.32	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	4.16	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	4.07	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.36	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	1.16	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	2.18	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	1.71	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	11.5	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	1.09	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	7.89	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	7.72	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.92	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	3.92	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	2.17	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.97	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	1.01	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	1.53	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	1.50	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.41	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	1.94	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*53.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*80.9*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*72.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:5-02012021

21B0081-02 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/01/2021 12:08
Instrument: FID4 Analyst: CTO — Analyzed: 02/20/2021 04:37

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-02 B 01
Preparation Batch: BJB0389 — Sample Size: 10.08 g (wet) — Dry Weight:8.70 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 86.35

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.74	12.1	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.5	51.9	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*78.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:5-02012021

21B0081-02 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/01/2021 12:08
Instrument: ECD7 Analyst: JGR — Analyzed: 03/04/2021 04:39

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-02 B 02
	Preparation Batch: BJB0519	Sample Size: 14.48 g (wet)	Dry Weight:12.50 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 86.35
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-02 B 02
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-02 B 02
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-02 B 02
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*56.2*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*75.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*64.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*59.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:5-02012021

21B0081-02 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/01/2021 12:08

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 20:26

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-02 C 01

Preparation Batch: BJB0429 — Sample Size: 1.081 g (wet) — Dry Weight:0.96 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 88.63

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.52	29.4	mg/kg	
Chromium	7440-47-3	20	0.14	0.52	11.2	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	4.50	mg/kg	
Lead	7439-92-1	20	0.07	0.10	2.00	mg/kg	
Silver	7440-22-4	20	0.02	0.21	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	34.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:5-02012021

21B0081-02 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/01/2021 12:08
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 20:26

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-02 C 01
Preparation Batch: BJB0429 — Sample Size: 1.081 g (wet) — Dry Weight:0.96 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 88.63

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	2.56	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	ND	mg/kg	U
Copper	7440-50-8	20	0.35	0.52	10.2	mg/kg	
Nickel	7440-02-0	20	0.05	0.52	11.4	mg/kg	
Selenium	7782-49-2	20	0.46	0.52	1.01	mg/kg	
Zinc	7440-66-6	20	0.9	4.2	23.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:5-02012021

21B0081-02 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/01/2021 12:08
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 13:47

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-02 C
Preparation Batch: BJB0433 — Sample Size: 0.285 g (wet) — Dry Weight:0.25 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 88.63

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00416	0.0198	0.0238	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:5-02012021

21B0081-02 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 02/01/2021 12:08

Instrument: TOC Cube Analyst: BF — Analyzed: 02/06/2021 23:01

Sample Preparation: Preparation Method: PSEP 1986 (modified) — Extract ID: 21B0081-02 C

Preparation Batch: BJB0199 — Sample Size: 0.5014 g (wet)

Prepared: 02/05/2021 — Final Volume: 0.5014 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.50	% wet	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:5-02012021

21B0081-02 (Solid)

Geotechnical Methods

Method: PSEP-PS — Sampled: 02/01/2021 12:08

Instrument: MT&C Analyst: — Analyzed: 03/09/2021 00:00

Analysis by: Materials Testing & Consulting, Inc. (Olympia)

Sample Preparation: Preparation Method: No Prep Geo — Extract ID: 21B0081-02

Preparation Batch: B030921

Prepared: 03/09/2021 Final Volume:

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phi Size <-1	GS_GRAVEL	1	0.1	0.1	%	
Phi Size -1 to 0	GS_VCS	1	0.1	1.7	%	
Phi Size 0 to 1	GS_CS	1	0.1	15.8	%	
Phi Size 1 to 2	GS_MS	1	0.1	47.6	%	
Phi Size 2 to 3	GS_FS	1	0.1	26.1	%	
Phi Size 3 to 4	GS_VFS	1	0.1	4.7	%	
Phi Size 4 to 5	GS_CSILT	1	0.1	2.0	%	
Phi Size 5 to 6	GS_MSILT	1	0.1	0.6	%	
Phi Size 6 to 7	GS_FSILT	1	0.1	0.4	%	
Phi Size 7 to 8	GS_VFSILT	1	0.1	0.3	%	
Phi Size 8 to 9	GS_CCLAY	1	0.1	0.2	%	
Phi Size 9 to 10	GS_MCLAY	1	0.1	0.1	%	
Phi Size >10	GS_FCLAY	1	0.1	0.4	%	
Total Fines	GS_TOTFINES	1	0.1	4.0	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:9-02012021

21B0081-03 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/01/2021 12:26

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 18:54

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-03 G

Preparation Batch: BJB0120 — Sample Size: 4.64 g (wet) — Dry Weight:3.48 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 75.10

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.34	1.43	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.48	1.43	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.38	1.43	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.34	1.43	ND	ug/kg	U
Benzene	71-43-2	1	0.42	1.43	1.01	ug/kg	J
Trichloroethene	79-01-6	1	0.30	1.43	ND	ug/kg	U
Toluene	108-88-3	1	0.22	1.43	0.36	ug/kg	J
Tetrachloroethene	127-18-4	1	0.37	1.43	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.29	1.43	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.56	2.87	ND	ug/kg	U
o-Xylene	95-47-6	1	0.32	1.43	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.88	2.87	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*107*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*97.3*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*88.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:9-02012021

21B0081-03 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/01/2021 12:26

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 17:09

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-03 E

Preparation Batch: BJB0262 — Sample Size: 4.918 g (wet) — Dry Weight:4.27 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 86.77

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	6620	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*95.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*99.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:9-02012021

21B0081-03 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/01/2021 12:26
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 11:36

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-03 B 03
	Preparation Batch: BJB0655	Sample Size: 11.58 g (wet)	Dry Weight:10.05 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 86.77
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-03 B 03
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-03 B 03
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	2.12	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	5.30	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	5.55	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.12	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	2.18	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	9.07	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.39	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	2.32	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	3.14	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.31	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	2.30	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.63	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.26	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.25	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.39	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.32	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.19	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.25	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*54.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*81.4*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*68.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:9-02012021

21B0081-03 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/01/2021 12:26
Instrument: FID4 Analyst: CTO — Analyzed: 02/20/2021 04:58

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-03 B 01
Preparation Batch: BJB0389 — Sample Size: 10.21 g (wet) — Dry Weight:8.86 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 86.77

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.64	7.37	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.3	21.4	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:9-02012021

21B0081-03 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/01/2021 12:26
Instrument: ECD7 Analyst: JGR — Analyzed: 03/04/2021 04:59

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-03 B 02
	Preparation Batch: BJB0519	Sample Size: 14.44 g (wet)	Dry Weight:12.53 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 86.77
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-03 B 02
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-03 B 02
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-03 B 02
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*60.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*82.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*73.5*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*64.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:9-02012021

21B0081-03 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/01/2021 12:26
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:16

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-03 C 01
Preparation Batch: BJB0429 — Sample Size: 1.053 g (wet) — Dry Weight:0.79 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 74.93

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.63	64.9	mg/kg	
Chromium	7440-47-3	20	0.16	0.63	18.2	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	6.74	mg/kg	
Lead	7439-92-1	20	0.09	0.13	4.33	mg/kg	
Silver	7440-22-4	20	0.02	0.25	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	48.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:9-02012021

21B0081-03 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/01/2021 12:26
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:16

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-03 C 01
Preparation Batch: BJB0429 — Sample Size: 1.053 g (wet) — Dry Weight:0.79 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 74.93

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	4.45	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.05	mg/kg	J
Copper	7440-50-8	20	0.43	0.63	20.7	mg/kg	
Nickel	7440-02-0	20	0.06	0.63	14.9	mg/kg	
Selenium	7782-49-2	20	0.56	0.63	1.50	mg/kg	
Zinc	7440-66-6	20	1.0	5.1	33.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:9-02012021

21B0081-03 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/01/2021 12:26
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 13:49

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-03 C
Preparation Batch: BJB0433 — Sample Size: 0.254 g (wet) — Dry Weight:0.19 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 74.93

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00552	0.0263	0.0356	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:9-02012021

21B0081-03 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 02/01/2021 12:26

Instrument: TOC Cube Analyst: BF — Analyzed: 02/06/2021 23:32

Sample Preparation: Preparation Method: PSEP 1986 (modified) — Extract ID: 21B0081-03 C

Preparation Batch: BJB0199 — Sample Size: 0.5547 g (wet)

Prepared: 02/05/2021 — Final Volume: 0.5547 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.38	% wet	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-60:9-02012021

21B0081-03 (Solid)

Geotechnical Methods

Method: PSEP-PS — Sampled: 02/01/2021 12:26

Instrument: MT&C Analyst: — Analyzed: 03/09/2021 00:00

Analysis by: Materials Testing & Consulting, Inc. (Olympia)

Sample Preparation: Preparation Method: No Prep Geo — Extract ID: 21B0081-03

Preparation Batch: B030921

Prepared: 03/09/2021 Final Volume:

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phi Size <-1	GS_GRAVEL	1	0.1	ND	%	
Phi Size -1 to 0	GS_VCS	1	0.1	0.1	%	
Phi Size 0 to 1	GS_CS	1	0.1	0.3	%	
Phi Size 1 to 2	GS_MS	1	0.1	0.7	%	
Phi Size 2 to 3	GS_FS	1	0.1	7.3	%	
Phi Size 3 to 4	GS_VFS	1	0.1	23.8	%	
Phi Size 4 to 5	GS_CSILT	1	0.1	14.8	%	
Phi Size 5 to 6	GS_MSILT	1	0.1	16.0	%	
Phi Size 6 to 7	GS_FSILT	1	0.1	11.2	%	
Phi Size 7 to 8	GS_VFSILT	1	0.1	9.7	%	
Phi Size 8 to 9	GS_CCLAY	1	0.1	7.3	%	
Phi Size 9 to 10	GS_MCLAY	1	0.1	3.3	%	
Phi Size >10	GS_FCLAY	1	0.1	5.7	%	
Total Fines	GS_TOTFINES	1	0.1	67.9	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

TB-4-02012021

21B0081-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 15:10

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 13:42

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21B0081-06 A

Preparation Batch: BJB0260 — Sample Size: 10 mL

Prepared: 02/08/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.08	0.20	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.08	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.07	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.08	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.05	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.07	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.05	0.20	0.40	ug/L	
Tetrachloroethene	127-18-4	1	0.09	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.05	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.14	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.08	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.22	0.60	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4				*80-129 %*	*94.8*	*%*	
Surrogate: Toluene-d8				*80-120 %*	*98.0*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*94.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*98.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

TB-4-02012021

21B0081-06 (Water)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 15:10

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 13:42

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21B0081-06 A

Preparation Batch: BJB0260 — Sample Size: 10 mL

Prepared: 02/08/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*98.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*94.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:1.5-02012021

21B0081-07 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/01/2021 14:25

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 17:35

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-07 C

Preparation Batch: BJB0262 — Sample Size: 4.227 g (wet) — Dry Weight:3.62 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 85.54

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7760	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*96.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:1.5-02012021

21B0081-07 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/01/2021 14:25
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 12:41

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-07 A 02
	Preparation Batch: BJB0655	Sample Size: 11.7 g (wet)	Dry Weight:10.01 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 85.54
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-07 A 02
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-07 A 02
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	4.96	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	8.24	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	9.80	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.18	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	1.05	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	3.31	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.56	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	10.6	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.42	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	5.43	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	5.51	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	2.37	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	4.04	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	2.97	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.15	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	1.27	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	2.06	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	2.38	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.71	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	4.88	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*52.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*78.4*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*63.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:1.5-02012021

21B0081-07 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/01/2021 14:25
Instrument: FID4 Analyst: CTO — Analyzed: 02/20/2021 05:19

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-07 A 01
Preparation Batch: BJB0389 — Sample Size: 10.07 g (wet) — Dry Weight:8.61 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 85.54

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.80	26.7	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.6	215	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*94.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:1.5-02012021

21B0081-07 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/01/2021 14:25
Instrument: ECD7 Analyst: JGR — Analyzed: 03/04/2021 05:20

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-07 A 04
	Preparation Batch: BJB0519	Sample Size: 14.63 g (wet)	Dry Weight:12.51 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 85.54
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-07 A 04
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-07 A 04
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-07 A 04
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	72.0	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	22.7	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*65.0*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*84.4*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*69.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*69.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:1.5-02012021

21B0081-07 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/01/2021 14:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:21

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-07 B 01
Preparation Batch: BJB0429 — Sample Size: 1.058 g (wet) — Dry Weight:0.98 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 92.31

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.51	33.9	mg/kg	
Chromium	7440-47-3	20	0.13	0.51	89.6	mg/kg	
Cobalt	7440-48-4	20	0.03	0.20	7.09	mg/kg	
Lead	7439-92-1	20	0.07	0.10	30.5	mg/kg	
Silver	7440-22-4	20	0.02	0.20	0.10	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	38.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:1.5-02012021

21B0081-07 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/01/2021 14:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:21

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-07 B 01
Preparation Batch: BJB0429 — Sample Size: 1.058 g (wet) — Dry Weight:0.98 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 92.31

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	8.71	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	0.11	mg/kg	
Copper	7440-50-8	20	0.35	0.51	64.7	mg/kg	
Nickel	7440-02-0	20	0.05	0.51	227	mg/kg	
Selenium	7782-49-2	20	0.45	0.51	0.83	mg/kg	
Zinc	7440-66-6	20	0.8	4.1	33.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:1.5-02012021

21B0081-07 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/01/2021 14:25
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 13:51

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-07 B
Preparation Batch: BJB0433 — Sample Size: 0.265 g (wet) — Dry Weight:0.24 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 92.31

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00429	0.0204	0.0205	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:6-02012021

21B0081-08 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/01/2021 14:35

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 18:01

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-08 C

Preparation Batch: BJB0262 — Sample Size: 4.49 g (wet) — Dry Weight:4.30 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 95.80

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	6030	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*95.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*92.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:6-02012021

21B0081-08 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/01/2021 14:35

Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 13:13

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-08 A 02
	Preparation Batch: BJB0655	Sample Size: 10.44 g (wet)	Dry Weight:10.00 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 95.80
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-08 A 02
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-08 A 02
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.20	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.27	ug/kg	J
Acenaphthylene	208-96-8	1	0.06	0.50	0.07	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	ND	ug/kg	U
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	0.57	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.08	0.50	0.28	ug/kg	J
Pyrene	129-00-0	1	0.09	0.50	0.35	ug/kg	J
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.19	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.44	ug/kg	J
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.39	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.19	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.18	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.32	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.61	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.12	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.67	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*59.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*81.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*68.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:6-02012021

21B0081-08 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/01/2021 14:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/20/2021 05:39

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-08 A 01
Preparation Batch: BJB0389 — Sample Size: 10.04 g (wet) — Dry Weight:9.62 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 95.80

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.20	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.4	28.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*99.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:6-02012021

21B0081-08 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/01/2021 14:35
Instrument: ECD7 Analyst: JGR — Analyzed: 03/04/2021 05:40

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-08 A 04
	Preparation Batch: BJB0519	Sample Size: 13.06 g (wet)	Dry Weight:12.51 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 95.80
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-08 A 04
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-08 A 04
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-08 A 04
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*64.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*83.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*81.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*63.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:6-02012021

21B0081-08 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/01/2021 14:35

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:26

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-08 B 01

Preparation Batch: BJB0429 — Sample Size: 1.09 g (wet) — Dry Weight:1.04 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 95.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.05	0.48	26.8	mg/kg	
Chromium	7440-47-3	20	0.12	0.48	9.34	mg/kg	
Cobalt	7440-48-4	20	0.03	0.19	5.15	mg/kg	
Lead	7439-92-1	20	0.07	0.10	2.84	mg/kg	
Silver	7440-22-4	20	0.02	0.19	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.19	30.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:6-02012021

21B0081-08 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/01/2021 14:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:26

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-08 B 01
Preparation Batch: BJB0429 — Sample Size: 1.09 g (wet) — Dry Weight:1.04 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 95.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.19	2.77	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	ND	mg/kg	U
Copper	7440-50-8	20	0.33	0.48	12.9	mg/kg	
Nickel	7440-02-0	20	0.05	0.48	8.33	mg/kg	
Selenium	7782-49-2	20	0.42	0.48	0.90	mg/kg	
Zinc	7440-66-6	20	0.8	3.8	23.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:6-02012021

21B0081-08 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/01/2021 14:35

Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 13:53

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-08 B

Preparation Batch: BJB0433 — Sample Size: 0.255 g (wet) — Dry Weight:0.24 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 95.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00430	0.0205	0.00915	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:6-02012021

21B0081-08 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 02/01/2021 14:35

Instrument: TOC Cube Analyst: BF — Analyzed: 02/07/2021 00:02

Sample Preparation: Preparation Method: PSEP 1986 (modified) — Extract ID: 21B0081-08 B

Preparation Batch: BJB0199 — Sample Size: 0.5034 g (wet)

Prepared: 02/05/2021 — Final Volume: 0.5034 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.06	% wet	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:9-02012021

21B0081-09 (Solid)

Geotechnical Methods

Method: PSEP-PS — Sampled: 02/01/2021 14:45

Instrument: MT&C Analyst: — Analyzed: 03/09/2021 00:00

Analysis by: Materials Testing & Consulting, Inc. (Olympia)

Sample Preparation: Preparation Method: No Prep Geo — Extract ID: 21B0081-09

Preparation Batch: B030921

Prepared: 03/09/2021 Final Volume:

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phi Size <-1	GS_GRAVEL	1	0.1	0.4	%	
Phi Size -1 to 0	GS_VCS	1	0.1	2.9	%	
Phi Size 0 to 1	GS_CS	1	0.1	15.5	%	
Phi Size 1 to 2	GS_MS	1	0.1	35.9	%	
Phi Size 2 to 3	GS_FS	1	0.1	30.8	%	
Phi Size 3 to 4	GS_VFS	1	0.1	10.4	%	
Phi Size 4 to 5	GS_CSILT	1	0.1	1.6	%	
Phi Size 5 to 6	GS_MSILT	1	0.1	0.8	%	
Phi Size 6 to 7	GS_FSILT	1	0.1	0.4	%	
Phi Size 7 to 8	GS_VFSILT	1	0.1	0.4	%	
Phi Size 8 to 9	GS_CCLAY	1	0.1	0.3	%	
Phi Size 9 to 10	GS_MCLAY	1	0.1	0.1	%	
Phi Size >10	GS_FCLAY	1	0.1	0.5	%	
Total Fines	GS_TOTFINES	1	0.1	4.0	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:11-02012021

21B0081-10 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/01/2021 14:55

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 18:27

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-10 D

Preparation Batch: BJB0262 — Sample Size: 5.135 g (wet) — Dry Weight:3.76 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 73.13

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	8490	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*98.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:11-02012021

21B0081-10 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/01/2021 14:55
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 14:51

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-10 B 03
	Preparation Batch: BJB0655	Sample Size: 13.7 g (wet)	Dry Weight:10.02 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 73.13
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-10 B 03
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-10 B 03
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	0.69	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.30	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.31	ug/kg	J
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	0.60	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	0.16	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.18	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	1.37	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.07	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	0.26	ug/kg	J
Pyrene	129-00-0	1	0.09	0.50	0.37	ug/kg	J
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.13	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.52	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.14	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	0.09	0.50	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	ND	ug/kg	U
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*45.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*51.0*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*59.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:11-02012021

21B0081-10 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/01/2021 14:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/20/2021 06:00

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-10 B 01
Preparation Batch: BJB0389 — Sample Size: 10.16 g (wet) — Dry Weight:7.43 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 73.13

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.73	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.5	19.3	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*109*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:11-02012021

21B0081-10 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/01/2021 14:55
Instrument: ECD7 Analyst: JGR — Analyzed: 03/04/2021 06:01

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-10 B 02
	Preparation Batch: BJB0519	Sample Size: 17.12 g (wet)	Dry Weight:12.52 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 73.13
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-10 B 02
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-10 B 02
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-10 B 02
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*54.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*71.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*71.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*57.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:11-02012021

21B0081-10 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/01/2021 14:55
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:31

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-10 C 01
Preparation Batch: BJB0429 — Sample Size: 1.023 g (wet) — Dry Weight:0.73 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 71.35

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.69	109	mg/kg	
Chromium	7440-47-3	20	0.18	0.69	22.3	mg/kg	
Cobalt	7440-48-4	20	0.04	0.27	9.99	mg/kg	
Lead	7439-92-1	20	0.09	0.14	5.42	mg/kg	
Silver	7440-22-4	20	0.02	0.27	0.15	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.27	60.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:11-02012021

21B0081-10 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/01/2021 14:55
Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/23/2021 11:47

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-10 C 01
Preparation Batch: BJB0429 — Sample Size: 1.023 g (wet) — Dry Weight:0.73 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 71.35

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Selenium	7782-49-2	20	0.60	0.69	ND	mg/kg	U

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 16:43

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-10 C 01
Preparation Batch: BJB0429 — Sample Size: 1.023 g (wet) — Dry Weight:0.73 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 71.35

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.27	4.75	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	ND	mg/kg	U
Copper	7440-50-8	20	0.47	0.69	33.2	mg/kg	
Nickel	7440-02-0	20	0.07	0.69	22.3	mg/kg	
Zinc	7440-66-6	20	1.1	5.5	37.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:11-02012021

21B0081-10 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/01/2021 14:55
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:00

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-10 C
Preparation Batch: BJB0433 — Sample Size: 0.262 g (wet) — Dry Weight:0.19 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 71.35

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00562	0.0267	0.0802	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:11-02012021

21B0081-10 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 02/01/2021 14:55

Instrument: TOC Cube Analyst: BF — Analyzed: 02/07/2021 01:33

Sample Preparation: Preparation Method: PSEP 1986 (modified) — Extract ID: 21B0081-10 C

Preparation Batch: BJB0199 — Sample Size: 0.5326 g (wet)

Prepared: 02/05/2021 — Final Volume: 0.5326 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.31	% wet	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-61:11-02012021

21B0081-10 (Solid)

Geotechnical Methods

Method: PSEP-PS — Sampled: 02/01/2021 14:55

Instrument: MT&C Analyst: — Analyzed: 03/09/2021 00:00

Analysis by: Materials Testing & Consulting, Inc. (Olympia)

Sample Preparation: Preparation Method: No Prep Geo — Extract ID: 21B0081-10

Preparation Batch: B030921

Prepared: 03/09/2021 Final Volume:

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Phi Size <-1	GS_GRAVEL	1	0.1	ND	%	
Phi Size -1 to 0	GS_VCS	1	0.1	0.1	%	
Phi Size 0 to 1	GS_CS	1	0.1	0.1	%	
Phi Size 1 to 2	GS_MS	1	0.1	0.2	%	
Phi Size 2 to 3	GS_FS	1	0.1	2.4	%	
Phi Size 3 to 4	GS_VFS	1	0.1	21.7	%	
Phi Size 4 to 5	GS_CSILT	1	0.1	20.3	%	
Phi Size 5 to 6	GS_MSILT	1	0.1	15.5	%	
Phi Size 6 to 7	GS_FSILT	1	0.1	9.0	%	
Phi Size 7 to 8	GS_VFSILT	1	0.1	9.2	%	
Phi Size 8 to 9	GS_CCLAY	1	0.1	7.5	%	
Phi Size 9 to 10	GS_MCLAY	1	0.1	5.4	%	
Phi Size >10	GS_FCLAY	1	0.1	8.5	%	
Total Fines	GS_TOTFINES	1	0.1	75.5	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:3-02022021

21B0081-13 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 09:10
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 15:23

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-13 A 02
	Preparation Batch: BJB0655	Sample Size: 11.65 g (wet)	Dry Weight:10.04 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 86.20
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-13 A 02
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-13 A 02
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	3.90	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	9.23	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	9.36	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.17	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	1.09	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	3.05	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	1.29	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	11.2	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	1.33	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	4.90	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	6.31	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.76	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	3.40	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.94	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.48	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.48	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.96	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.42	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.22	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.45	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*56.9*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*72.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*69.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:3-02022021

21B0081-13 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 09:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/20/2021 06:21

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-13 A 01
Preparation Batch: BJB0389 — Sample Size: 10.18 g (wet) — Dry Weight:8.78 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 86.20

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.70	14.4	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.4	29.1	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*99.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:3-02022021

21B0081-13 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 09:10
Instrument: ECD7 Analyst: JGR — Analyzed: 03/04/2021 06:22

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-13 A 04
	Preparation Batch: BJB0519	Sample Size: 14.52 g (wet)	Dry Weight:12.52 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 86.20
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-13 A 04
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-13 A 04
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-13 A 04
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*64.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*76.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*67.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*61.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:3-02022021

21B0081-13 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 09:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:36

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-13 B 01
Preparation Batch: BJB0429 — Sample Size: 1.03 g (wet) — Dry Weight:0.95 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 92.21

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	35.0	mg/kg	
Chromium	7440-47-3	20	0.14	0.53	9.74	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	4.51	mg/kg	
Lead	7439-92-1	20	0.07	0.11	2.05	mg/kg	
Silver	7440-22-4	20	0.02	0.21	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	33.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:3-02022021

21B0081-13 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 09:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:36

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-13 B 01
Preparation Batch: BJB0429 — Sample Size: 1.03 g (wet) — Dry Weight:0.95 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 92.21

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	2.71	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.36	0.53	10.5	mg/kg	
Nickel	7440-02-0	20	0.05	0.53	8.00	mg/kg	
Selenium	7782-49-2	20	0.46	0.53	0.82	mg/kg	
Zinc	7440-66-6	20	0.9	4.2	25.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:3-02022021

21B0081-13 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 09:10

Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:02

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-13 B

Preparation Batch: BJB0433 — Sample Size: 0.28 g (wet) — Dry Weight:0.26 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 92.21

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00407	0.0194	0.0153	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:6-02022021

21B0081-14 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 09:15
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 15:56

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-14 A 02
	Preparation Batch: BJB0655	Sample Size: 11.28 g (wet)	Dry Weight:10.01 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 88.71
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-14 A 02
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-14 A 02
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.57	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	3.02	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	3.39	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	1.51	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	5.74	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.24	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	1.13	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	1.42	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.71	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	1.32	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.30	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.16	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.17	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.18	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.33	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.12	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.12	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*50.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*72.0*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*68.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:6-02022021

21B0081-14 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 09:15
Instrument: FID4 Analyst: CTO — Analyzed: 02/20/2021 06:42

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-14 A 01
Preparation Batch: BJB0389 — Sample Size: 10.19 g (wet) — Dry Weight:9.04 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 88.71

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.53	6.29	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.1	19.9	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:6-02022021

21B0081-14 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 09:15
Instrument: ECD7 Analyst: JGR — Analyzed: 03/04/2021 06:42

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-14 A 04
	Preparation Batch: BJB0519	Sample Size: 14.11 g (wet)	Dry Weight:12.52 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 88.71
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-14 A 04
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-14 A 04
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-14 A 04
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*58.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*74.7*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*73.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*62.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:6-02022021

21B0081-14 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 09:15
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:41

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-14 B 01
Preparation Batch: BJB0429 — Sample Size: 1.082 g (wet) — Dry Weight:0.99 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 91.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.50	19.3	mg/kg	
Chromium	7440-47-3	20	0.13	0.50	10.5	mg/kg	
Cobalt	7440-48-4	20	0.03	0.20	3.73	mg/kg	
Lead	7439-92-1	20	0.07	0.10	1.57	mg/kg	
Silver	7440-22-4	20	0.02	0.20	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	33.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:6-02022021

21B0081-14 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 09:15
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:41

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-14 B 01
Preparation Batch: BJB0429 — Sample Size: 1.082 g (wet) — Dry Weight:0.99 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 91.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	2.26	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	ND	mg/kg	U
Copper	7440-50-8	20	0.34	0.50	7.47	mg/kg	
Nickel	7440-02-0	20	0.05	0.50	7.37	mg/kg	
Selenium	7782-49-2	20	0.44	0.50	0.69	mg/kg	
Zinc	7440-66-6	20	0.8	4.0	24.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:6-02022021

21B0081-14 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 09:15
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:04

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-14 B
Preparation Batch: BJB0433 — Sample Size: 0.218 g (wet) — Dry Weight:0.20 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 91.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00524	0.0250	0.0161	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:10.3-02022021

21B0081-15 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 09:20
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 16:29

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-15 A 02
	Preparation Batch: BJB0655	Sample Size: 13.18 g (wet)	Dry Weight:10.01 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 75.96
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-15 A 02
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-15 A 02
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	0.52	ug/kg	J
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.65	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.61	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.06	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.22	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.35	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.24	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	2.48	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.21	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	1.08	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	1.17	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.40	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.93	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.46	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.25	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.27	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.29	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.23	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.34	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*54.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*62.2*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*65.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:10.3-02022021

21B0081-15 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 09:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/20/2021 07:02

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-15 A 01
Preparation Batch: BJB0389 — Sample Size: 10.16 g (wet) — Dry Weight:7.72 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 75.96

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.48	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.0	20.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*106*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:10.3-02022021

21B0081-15 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 09:20
Instrument: ECD7 Analyst: JGR — Analyzed: 03/04/2021 07:03

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-15 A 04
	Preparation Batch: BJB0519	Sample Size: 16.46 g (wet)	Dry Weight:12.50 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 75.96
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-15 A 04
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-15 A 04
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-15 A 04
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*51.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*66.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*63.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*54.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:10.3-02022021

21B0081-15 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 09:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:46

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-15 B 01
Preparation Batch: BJB0429 — Sample Size: 1.094 g (wet) — Dry Weight:0.80 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 72.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.63	67.8	mg/kg	
Chromium	7440-47-3	20	0.16	0.63	17.4	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	6.42	mg/kg	
Lead	7439-92-1	20	0.09	0.13	3.85	mg/kg	
Silver	7440-22-4	20	0.02	0.25	0.11	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	52.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:10.3-02022021

21B0081-15 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 09:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:46

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-15 B 01
Preparation Batch: BJB0429 — Sample Size: 1.094 g (wet) — Dry Weight:0.80 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 72.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	3.27	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	ND	mg/kg	U
Copper	7440-50-8	20	0.43	0.63	22.8	mg/kg	
Nickel	7440-02-0	20	0.06	0.63	15.0	mg/kg	
Selenium	7782-49-2	20	0.55	0.63	1.46	mg/kg	
Zinc	7440-66-6	20	1.0	5.0	39.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-74:10.3-02022021

21B0081-15 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 09:20

Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:06

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-15 B

Preparation Batch: BJB0433 — Sample Size: 0.224 g (wet) — Dry Weight:0.16 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 72.68

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00645	0.0307	0.0365	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:10.3-02022021

21B0081-18 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 10:20
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 17:01

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-18 A 02
	Preparation Batch: BJB0655	Sample Size: 13.13 g (wet)	Dry Weight:10.00 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 76.18
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-18 A 02
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-18 A 02
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	2.73	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	1.65	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	2.23	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.17	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.69	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	1.02	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.65	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	4.27	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.48	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	2.68	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	2.63	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.82	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	1.70	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.81	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.44	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.54	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.69	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.52	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.13	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.94	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*55.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*57.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*63.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:10.3-02022021

21B0081-18 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 10:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/20/2021 07:23

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-18 A 01
Preparation Batch: BJB0389 — Sample Size: 10.13 g (wet) — Dry Weight:7.72 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 76.18

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.48	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.0	22.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*97.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:10.3-02022021

21B0081-18 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 10:20
Instrument: ECD7 Analyst: JGR — Analyzed: 03/10/2021 18:06

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-18 A 04
	Preparation Batch: BJB0519	Sample Size: 16.41 g (wet)	Dry Weight:12.50 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 76.18
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-18 A 04
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-18 A 04
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-18 A 04
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	2.9	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	4.0	1.9	ug/kg	J
Surrogate: Decachlorobiphenyl				*40-126 %*	*71.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*69.2*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*69.1*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*57.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:10.3-02022021

21B0081-18 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 10:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:51

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-18 B 01
Preparation Batch: BJB0429 — Sample Size: 1.061 g (wet) — Dry Weight:0.79 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 74.44

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.63	66.8	mg/kg	
Chromium	7440-47-3	20	0.16	0.63	17.6	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	6.25	mg/kg	
Lead	7439-92-1	20	0.09	0.13	3.61	mg/kg	
Silver	7440-22-4	20	0.02	0.25	0.08	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	52.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:10.3-02022021

21B0081-18 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 10:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:51

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-18 B 01
Preparation Batch: BJB0429 — Sample Size: 1.061 g (wet) — Dry Weight:0.79 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 74.44

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	3.00	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	ND	mg/kg	U
Copper	7440-50-8	20	0.43	0.63	18.9	mg/kg	
Nickel	7440-02-0	20	0.06	0.63	14.6	mg/kg	
Selenium	7782-49-2	20	0.56	0.63	1.22	mg/kg	
Zinc	7440-66-6	20	1.0	5.1	38.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:10.3-02022021

21B0081-18 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 10:20
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:08

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-18 B
Preparation Batch: BJB0433 — Sample Size: 0.248 g (wet) — Dry Weight:0.18 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 74.44

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00569	0.0271	0.0406	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:1.5-02022021

21B0081-19 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 10:10

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 19:18

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-19 G

Preparation Batch: BJB0120 — Sample Size: 5.41 g (wet) — Dry Weight:5.02 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 92.73

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.30	1.00	ND	ug/kg	U
Toluene	108-88-3	1	0.15	1.00	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.20	1.00	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.39	1.99	ND	ug/kg	U
o-Xylene	95-47-6	1	0.22	1.00	ND	ug/kg	U
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:1.5-02022021

21B0081-19 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 10:10
Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 18:53

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-19 C
Preparation Batch: BJB0262 — Sample Size: 4.755 g (wet) — Dry Weight:4.41 g
Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 92.69

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	6070	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*95.1*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*97.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:1.5-02022021

21B0081-19 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 10:10
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 17:34

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-19 A 02
	Preparation Batch: BJB0655	Sample Size: 10.82 g (wet)	Dry Weight:10.03 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 92.69
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-19 A 02
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-19 A 02
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.11	0.50	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	0.13	0.50	ND	ug/kg	U
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	ND	ug/kg	U
Fluorene	86-73-7	1	0.07	0.50	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.50	0.21	ug/kg	J
Anthracene	120-12-7	1	0.07	0.50	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.08	0.50	0.21	ug/kg	J
Pyrene	129-00-0	1	0.09	0.50	0.22	ug/kg	J
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.08	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.19	ug/kg	J
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.13	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.11	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.10	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.14	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*56.9*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*56.7*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*64.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:1.5-02022021

21B0081-19 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 10:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 07:17

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-19 A 01
Preparation Batch: BJB0389 — Sample Size: 10.13 g (wet) — Dry Weight:9.39 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 92.69

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.33	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.7	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*114*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:1.5-02022021

21B0081-19 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 10:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:56

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-19 B 01
Preparation Batch: BJB0429 — Sample Size: 1.01 g (wet) — Dry Weight:0.94 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 92.69

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	35.6	mg/kg	
Chromium	7440-47-3	20	0.07	0.53	28.3	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	7.06	mg/kg	
Lead	7439-92-1	20	0.07	0.11	3.66	mg/kg	
Silver	7440-22-4	20	0.02	0.21	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	33.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:1.5-02022021

21B0081-19 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 10:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 21:56

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-19 B 01
Preparation Batch: BJB0429 — Sample Size: 1.01 g (wet) — Dry Weight:0.94 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 92.69

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	2.26	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.07	mg/kg	J
Copper	7440-50-8	20	0.36	0.53	13.1	mg/kg	
Nickel	7440-02-0	20	0.05	0.53	37.5	mg/kg	
Selenium	7782-49-2	20	0.47	0.53	0.77	mg/kg	
Zinc	7440-66-6	20	0.9	4.3	31.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:1.5-02022021

21B0081-19 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 10:10
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:10

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-19 B
Preparation Batch: BJB0433 — Sample Size: 0.288 g (wet) — Dry Weight:0.27 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 92.69

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00393	0.0187	0.0199	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:7.1-02022021

21B0081-20 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 10:20

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 19:42

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-20 F

Preparation Batch: BJB0120 — Sample Size: 5.14 g (wet) — Dry Weight:4.07 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 79.09

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.36	1.23	0.54	ug/kg	J
Toluene	108-88-3	1	0.19	1.23	0.34	ug/kg	J
Ethylbenzene	100-41-4	1	0.25	1.23	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.48	2.46	ND	ug/kg	U
o-Xylene	95-47-6	1	0.28	1.23	ND	ug/kg	U
Surrogate: Toluene-d8				*77-120 %*	*97.2*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*93.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:7.1-02022021

21B0081-20 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 10:20
Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 19:19

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-20 C
Preparation Batch: BJB0262 — Sample Size: 4.321 g (wet) — Dry Weight:3.59 g
Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 83.17

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7970	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*98.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:7.1-02022021

21B0081-20 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 10:20
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 18:06

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-20 A 02
	Preparation Batch: BJB0655	Sample Size: 12.03 g (wet)	Dry Weight:10.01 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 83.17
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-20 A 02
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-20 A 02
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	5.77	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	6.73	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	6.76	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	1.90	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	1.51	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	4.17	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	2.09	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	16.0	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	2.10	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	13.8	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	13.5	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	3.36	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	5.79	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	3.28	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.79	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	2.02	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	2.84	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	2.51	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.60	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	3.47	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*50.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*69.0*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*63.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:7.1-02022021

21B0081-20 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 10:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 07:38

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-20 A 01
Preparation Batch: BJB0389 — Sample Size: 10.05 g (wet) — Dry Weight:8.36 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 83.17

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.98	14.9	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.0	36.9	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*97.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:7.1-02022021

21B0081-20 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 10:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:03

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-20 B 01
Preparation Batch: BJB0429 — Sample Size: 1.077 g (wet) — Dry Weight:0.88 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 81.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.57	56.8	mg/kg	
Chromium	7440-47-3	20	0.15	0.57	14.2	mg/kg	
Cobalt	7440-48-4	20	0.03	0.23	5.83	mg/kg	
Lead	7439-92-1	20	0.08	0.11	10.5	mg/kg	
Silver	7440-22-4	20	0.02	0.23	0.09	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.23	43.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:7.1-02022021

21B0081-20 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 10:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:03

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-20 B 01
Preparation Batch: BJB0429 — Sample Size: 1.077 g (wet) — Dry Weight:0.88 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 81.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.23	37.4	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.11	mg/kg	J
Copper	7440-50-8	20	0.39	0.57	20.9	mg/kg	
Nickel	7440-02-0	20	0.06	0.57	11.2	mg/kg	
Selenium	7782-49-2	20	0.50	0.57	1.21	mg/kg	
Zinc	7440-66-6	20	0.9	4.6	35.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-047:7.1-02022021

21B0081-20 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 10:20
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:13

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-20 B
Preparation Batch: BJB0433 — Sample Size: 0.217 g (wet) — Dry Weight:0.18 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 81.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00593	0.0283	0.0541	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:3.2-02022021

21B0081-23 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 11:10

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 20:07

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-23 F

Preparation Batch: BJB0120 — Sample Size: 4.08 g (wet) — Dry Weight:4.00 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 97.97

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.29	1.25	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.42	1.25	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.33	1.25	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.30	1.25	ND	ug/kg	U
Benzene	71-43-2	1	0.37	1.25	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.27	1.25	ND	ug/kg	U
Toluene	108-88-3	1	0.19	1.25	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.32	1.25	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.25	1.25	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.49	2.50	ND	ug/kg	U
o-Xylene	95-47-6	1	0.28	1.25	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.77	2.50	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*113*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*105*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:3.2-02022021

21B0081-23 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 11:10

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 19:45

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-23 C

Preparation Batch: BJB0262 — Sample Size: 3.868 g (wet) — Dry Weight:3.62 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 93.56

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7250	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*96.0*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*97.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:3.2-02022021

21B0081-23 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 11:10
Instrument: NT11 Analyst: VTS — Analyzed: 03/19/2021 18:38

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-23 A 02
	Preparation Batch: BJB0655	Sample Size: 10.72 g (wet)	Dry Weight:10.03 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 93.56
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-23 A 02
	Cleanup Batch: CJC0064	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-23 A 02
	Cleanup Batch: CJC0063	Initial Volume: 0.5 mL	
	Cleaned: 07-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.85	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	9.48	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	11.3	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.35	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	3.87	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	1.76	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	2.06	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	13.3	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.92	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	10.7	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	17.3	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	6.36	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	16.1	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	7.95	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	3.64	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	3.27	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	8.19	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	8.14	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	2.27	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	12.7	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*55.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*77.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*65.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:3.2-02022021

21B0081-23 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 11:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 07:59

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-23 A 01
Preparation Batch: BJB0389 — Sample Size: 10.09 g (wet) — Dry Weight:9.44 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 93.56

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.30	53.3	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	10.6	53.5	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:3.2-02022021

21B0081-23 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 11:10
Instrument: ECD7 Analyst: JGR — Analyzed: 03/10/2021 18:26

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-23 A 04
	Preparation Batch: BJB0519	Sample Size: 13.4 g (wet)	Dry Weight:12.54 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 93.56
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-23 A 04
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-23 A 04
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-23 A 04
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	3.4	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	4.0	4.4	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*75.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*70.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*69.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:3.2-02022021

21B0081-23 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 11:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:23

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-23 B 01
Preparation Batch: BJB0429 — Sample Size: 1.048 g (wet) — Dry Weight:1.02 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 97.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.05	0.49	19.1	mg/kg	
Chromium	7440-47-3	20	0.13	0.49	11.5	mg/kg	
Cobalt	7440-48-4	20	0.03	0.20	4.52	mg/kg	
Lead	7439-92-1	20	0.07	0.10	1.95	mg/kg	
Silver	7440-22-4	20	0.02	0.20	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	31.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:3.2-02022021

21B0081-23 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 11:10
Instrument: ICPMS1 Analyst: MCB — Analyzed: 02/23/2021 11:50

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-23 B 01
Preparation Batch: BJB0429 — Sample Size: 1.048 g (wet) — Dry Weight:1.02 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 97.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Selenium	7782-49-2	20	0.43	0.49	ND	mg/kg	U

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 16:48

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-23 B 01
Preparation Batch: BJB0429 — Sample Size: 1.048 g (wet) — Dry Weight:1.02 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 97.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	2.14	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	ND	mg/kg	U
Copper	7440-50-8	20	0.33	0.49	9.18	mg/kg	
Nickel	7440-02-0	20	0.05	0.49	9.34	mg/kg	
Zinc	7440-66-6	20	0.8	3.9	25.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:3.2-02022021

21B0081-23 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 11:10
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:15

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-23 B
Preparation Batch: BJB0433 — Sample Size: 0.286 g (wet) — Dry Weight:0.28 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 97.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00376	0.0179	0.00998	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 11:25

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 20:31

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-24 F

Preparation Batch: BJB0120 — Sample Size: 3.72 g (wet) — Dry Weight:3.11 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 83.50

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.38	1.61	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.54	1.61	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.43	1.61	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.39	1.61	ND	ug/kg	U
Benzene	71-43-2	1	0.48	1.61	0.74	ug/kg	J
Trichloroethene	79-01-6	1	0.34	1.61	ND	ug/kg	U
Toluene	108-88-3	1	0.24	1.61	0.56	ug/kg	J
Tetrachloroethene	127-18-4	1	0.41	1.61	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.33	1.61	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.63	3.22	1.30	ug/kg	J
o-Xylene	95-47-6	1	0.36	1.61	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.99	3.22	1.30	ug/kg	J
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*85.5*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*88.4*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*75.3*	*%*	*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24 (Solid)

Volatile Organic Compounds

Method: EPA 8260D MED — Sampled: 02/02/2021 11:25
Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 20:11

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-24 D
Preparation Batch: BJB0420 — Sample Size: 4.719 g (wet) — Dry Weight:3.89 g
Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 82.37

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	500	117	750	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	500	119	750	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.34	1.50	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	500	135	750	ND	ug/kg	U
Benzene	71-43-2	500	123	750	ND	ug/kg	U
Trichloroethene	79-01-6	500	135	750	ND	ug/kg	U
Toluene	108-88-3	500	129	750	ND	ug/kg	U
Tetrachloroethene	127-18-4	500	207	750	ND	ug/kg	U
Ethylbenzene	100-41-4	500	204	750	ND	ug/kg	U
m,p-Xylene	179601-23-1	500	419	1500	ND	ug/kg	U
o-Xylene	95-47-6	500	171	750	ND	ug/kg	U
Xylenes, total	1330-20-7	500	581	1500	ND	ug/kg	U
Surrogate: Dibromofluoromethane				*30-160 %*	*93.6*	*%*	
Surrogate: 1,2-Dichloroethane-d4				*80-124 %*	*90.3*	*%*	
Surrogate: Toluene-d8				*80-120 %*	*94.9*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*113*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 11:25

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 20:11

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-24 D

Preparation Batch: BJB0262 — Sample Size: 4.719 g (wet) — Dry Weight:3.89 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 82.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7500	107000	ug/kg	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*94.9*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*113*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 11:25
Instrument: NT11 Analyst: VTS — Analyzed: 03/23/2021 12:49

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-24 A 05
	Preparation Batch: BJB0656	Sample Size: 12.17 g (wet)	Dry Weight:10.02 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 82.37
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-24 A 05
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-24 A 05
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	10	4.38	5.99	93.0	ug/kg	D
1-Methylnaphthalene	90-12-0	10	1.06	4.99	2380	ug/kg	D, B, E
2-Methylnaphthalene	91-57-6	10	1.28	4.99	2660	ug/kg	D, B, E
Acenaphthylene	208-96-8	10	0.64	4.99	79.3	ug/kg	D
Acenaphthene	83-32-9	10	0.89	4.99	167	ug/kg	D
Dibenzofuran	132-64-9	10	1.26	4.99	239	ug/kg	D
Fluorene	86-73-7	10	0.68	4.99	551	ug/kg	D, E
Phenanthrene	85-01-8	10	1.14	4.99	946	ug/kg	D, E
Anthracene	120-12-7	10	0.74	4.99	48.7	ug/kg	D
Fluoranthene	206-44-0	10	0.81	4.99	145	ug/kg	D
Pyrene	129-00-0	10	0.89	4.99	377	ug/kg	D
Benzo(a)anthracene	56-55-3	10	0.72	4.99	7.29	ug/kg	D
Chrysene	218-01-9	10	0.70	4.99	40.8	ug/kg	D
Benzo(b)fluoranthene	205-99-2	10	0.66	4.99	1.51	ug/kg	J, D
Benzo(k)fluoranthene	207-08-9	10	1.01	4.99	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	10	0.97	4.99	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	10	0.87	4.99	1.43	ug/kg	J, D
Indeno(1,2,3-cd)pyrene	193-39-5	10	0.88	4.99	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	1.05	4.99	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	10	0.85	4.99	1.25	ug/kg	J, D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*		*NRS*	NRS
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*59.9*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*		*NRS*	NRS

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 11:25
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 08:20

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-24 A 01
Preparation Batch: BJB0389 — Sample Size: 10.02 g (wet) — Dry Weight:8.25 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 82.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	10	60.6	6220	mg/kg	D, E
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	10	121	224	mg/kg	D
HC ID: RRO						
Surrogate: o-Terphenyl			*50-150 %*	*97.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 11:25
Instrument: ECD7 Analyst: JGR — Analyzed: 03/10/2021 18:47

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-24 A 04
	Preparation Batch: BJB0519	Sample Size: 15.18 g (wet)	Dry Weight:12.50 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 82.37
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-24 A 04
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-24 A 04
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-24 A 04
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*60.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*56.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*52.5*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*52.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 11:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:28

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-24 B 01
Preparation Batch: BJB0429 — Sample Size: 1.078 g (wet) — Dry Weight:0.88 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 81.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.57	27.2	mg/kg	
Chromium	7440-47-3	20	0.15	0.57	10.4	mg/kg	
Cobalt	7440-48-4	20	0.03	0.23	4.14	mg/kg	
Lead	7439-92-1	20	0.08	0.11	1.77	mg/kg	
Silver	7440-22-4	20	0.02	0.23	0.06	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.23	33.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 11:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:28

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-24 B 01
Preparation Batch: BJB0429 — Sample Size: 1.078 g (wet) — Dry Weight:0.88 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 81.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.23	1.81	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.39	0.57	11.9	mg/kg	
Nickel	7440-02-0	20	0.06	0.57	8.06	mg/kg	
Selenium	7782-49-2	20	0.50	0.57	0.80	mg/kg	
Zinc	7440-66-6	20	0.9	4.5	21.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 11:25
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:17

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-24 B
Preparation Batch: BJB0433 — Sample Size: 0.247 g (wet) — Dry Weight:0.20 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 81.80

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00520	0.0247	0.0127	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 11:25
Instrument: NT11 Analyst: VTS — Analyzed: 03/23/2021 14:02

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-24RE1 A 05
	Preparation Batch: BJB0656	Sample Size: 12.17 g (wet)	Dry Weight:10.02 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 82.37
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-24RE1 A 05
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-24RE1 A 05
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	200	87.6	120	102	ug/kg	J, D
1-Methylnaphthalene	90-12-0	200	21.1	99.8	3880	ug/kg	D, B
2-Methylnaphthalene	91-57-6	200	25.5	99.8	4350	ug/kg	D, B
Acenaphthylene	208-96-8	200	12.8	99.8	196	ug/kg	D
Acenaphthene	83-32-9	200	17.8	99.8	225	ug/kg	D
Dibenzofuran	132-64-9	200	25.1	99.8	541	ug/kg	D
Fluorene	86-73-7	200	13.6	99.8	1040	ug/kg	D
Phenanthrene	85-01-8	200	22.7	99.8	2180	ug/kg	D
Anthracene	120-12-7	200	14.8	99.8	85.5	ug/kg	J, D
Fluoranthene	206-44-0	200	16.2	99.8	129	ug/kg	D
Pyrene	129-00-0	200	17.8	99.8	298	ug/kg	D
Benzo(a)anthracene	56-55-3	200	14.4	99.8	ND	ug/kg	U
Chrysene	218-01-9	200	14.0	99.8	56.1	ug/kg	J, D
Benzo(b)fluoranthene	205-99-2	200	13.2	99.8	ND	ug/kg	U
Benzo(k)fluoranthene	207-08-9	200	20.2	99.8	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	200	19.4	99.8	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	200	17.4	99.8	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	200	17.6	99.8	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	200	20.9	99.8	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	200	17.0	99.8	ND	ug/kg	U
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*		*D1*	D1
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*		*D1*	D1
Surrogate: Fluoranthene-d10				*30-160 %*		*D1*	D1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:7-02022021

21B0081-24RE1 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 11:25
Instrument: FID4 Analyst: CTO — Analyzed: 02/24/2021 08:41

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-24RE1 A 01
Preparation Batch: BJB0389 — Sample Size: 10.02 g (wet) — Dry Weight:8.25 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 82.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	50	303	6510	mg/kg	D
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	50	606	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*111*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 11:30

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 20:55

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-25 H

Preparation Batch: BJB0120 — Sample Size: 5.6 g (wet) — Dry Weight:4.15 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 74.11

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.28	1.20	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.40	1.20	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.32	1.20	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.29	1.20	ND	ug/kg	U
Benzene	71-43-2	1	0.36	1.20	0.60	ug/kg	J
Trichloroethene	79-01-6	1	0.26	1.20	ND	ug/kg	U
Toluene	108-88-3	1	0.18	1.20	0.53	ug/kg	J
Tetrachloroethene	127-18-4	1	0.31	1.20	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.24	1.20	2.19	ug/kg	
m,p-Xylene	179601-23-1	1	0.47	2.41	2.01	ug/kg	J
o-Xylene	95-47-6	1	0.27	1.20	1.08	ug/kg	J
Xylenes, total	1330-20-7	1	0.74	2.41	3.09	ug/kg	
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*101*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 11:30
Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 20:37

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-25 C
Preparation Batch: BJB0262 — Sample Size: 3.518 g (wet) — Dry Weight:2.64 g
Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 74.93

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1000	223000	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*96.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*101*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 11:30
Instrument: NT11 Analyst: VTS — Analyzed: 03/23/2021 13:22

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-25 A 05
	Preparation Batch: BJB0656	Sample Size: 13.36 g (wet)	Dry Weight:10.01 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 74.93
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-25 A 05
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-25 A 05
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	10	4.39	5.99	51.0	ug/kg	D
1-Methylnaphthalene	90-12-0	10	1.06	4.99	441	ug/kg	D, B
2-Methylnaphthalene	91-57-6	10	1.28	4.99	489	ug/kg	D, B
Acenaphthylene	208-96-8	10	0.64	4.99	14.9	ug/kg	D
Acenaphthene	83-32-9	10	0.89	4.99	28.2	ug/kg	D
Dibenzofuran	132-64-9	10	1.26	4.99	130	ug/kg	D
Fluorene	86-73-7	10	0.68	4.99	182	ug/kg	D
Phenanthrene	85-01-8	10	1.14	4.99	278	ug/kg	D
Anthracene	120-12-7	10	0.74	4.99	23.1	ug/kg	D
Fluoranthene	206-44-0	10	0.81	4.99	29.9	ug/kg	D
Pyrene	129-00-0	10	0.89	4.99	92.4	ug/kg	D
Benzo(a)anthracene	56-55-3	10	0.72	4.99	2.04	ug/kg	J, D
Chrysene	218-01-9	10	0.70	4.99	8.64	ug/kg	D
Benzo(b)fluoranthene	205-99-2	10	0.66	4.99	0.81	ug/kg	J, D
Benzo(k)fluoranthene	207-08-9	10	1.01	4.99	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	10	0.97	4.99	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	10	0.87	4.99	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	10	0.88	4.99	0.97	ug/kg	J, D
Dibenzo(a,h)anthracene	53-70-3	10	1.05	4.99	1.23	ug/kg	J, D
Benzo(g,h,i)perylene	191-24-2	10	0.85	4.99	0.94	ug/kg	J, D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*28.1*	*%*	*
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*41.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*78.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 11:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 02:25

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-25 A 03
Preparation Batch: BJB0391 — Sample Size: 10.12 g (wet) — Dry Weight:7.58 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 74.93

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.59	946	mg/kg	E
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.2	37.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*83.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25 (Solid)

Washington Department of Ecology Methods

Method: WA EPH — Sampled: 02/02/2021 11:30

Instrument: FID8 Analyst: JGR — Analyzed: 03/06/2021 22:46

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-25 A 01
	Preparation Batch: BJB0328	Sample Size: 10 g (wet)	Dry Weight:7.49 g
	Prepared: 02/10/2021	Final Volume: 1 mL	% Solids: 74.93
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-25 A 01
	Cleanup Batch: CJC0044	Initial Volume: 1 mL	
	Cleaned: 05-Mar-2021	Final Volume: 1 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
C8-C10 Aliphatics	ALI-C8-C10	1	2670	ND	ug/kg	U
Surrogate: 1-Chloro-octadecane			*30-160 %*	*76.8*	*%*	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
C8-C10 Aromatics	ARO-C8-C10	1	2670	ND	ug/kg	U
Surrogate: o-Terphenyl			*30-160 %*	*73.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25 (Solid)

Washington Department of Ecology Methods

Method: WA VPH — Sampled: 02/02/2021 11:30

Instrument: PID1 Analyst: PKC — Analyzed: 02/09/2021 09:42

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-25 F

Preparation Batch: BJB0274 — Sample Size: 5.248 g (wet) — Dry Weight:3.93 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 74.93

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
C5-C6 Aliphatics	ALI-C5-C6	180	14500	ND	ug/kg	U
C8-C10 Aromatics	ARO-C8-C10	180	14500	82200	ug/kg	
Methyl tert-butyl Ether	1634-04-4	180	1450	ND	ug/kg	U
Benzene	71-43-2	180	1450	ND	ug/kg	U
Toluene	108-88-3	180	1450	ND	ug/kg	U
Ethylbenzene	100-41-4	180	1450	ND	ug/kg	U
m,p-Xylene	179601-23-1	180	2890	ND	ug/kg	U
o-Xylene	95-47-6	180	1450	ND	ug/kg	U
1,2,3-Trimethylbenzene	526-73-8	180	1450	2600	ug/kg	
Naphthalene	91-20-3	180	1450	13000	ug/kg	
1-Methylnaphthalene	90-12-0	180	1450	41000	ug/kg	
n-Pentane	109-66-0	180	1450	ND	ug/kg	U
n-Hexane	110-54-3	180	1450	ND	ug/kg	U
n-Octane	111-65-9	180	1450	ND	ug/kg	U
n-Decane	124-18-5	180	1450	2400	ug/kg	B
n-Dodecane	112-40-3	180	1450	17700	ug/kg	
Surrogate: PID: 2,5-Dibromotoluene			*60-140 %*	*123*	*%*	
Surrogate: FID: 2,5-Dibromotoluene			*60-140 %*	*140*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 11:30
Instrument: ECD7 Analyst: JGR — Analyzed: 03/10/2021 19:08

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-25 A 04
	Preparation Batch: BJB0519	Sample Size: 16.72 g (wet)	Dry Weight:12.53 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 74.93
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-25 A 04
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-25 A 04
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-25 A 04
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*59.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*51.1*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*52.0*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*48.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 11:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:33

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-25 B 01
Preparation Batch: BJB0429 — Sample Size: 1.007 g (wet) — Dry Weight:0.77 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 76.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.65	45.0	mg/kg	
Chromium	7440-47-3	20	0.17	0.65	14.4	mg/kg	
Cobalt	7440-48-4	20	0.04	0.26	6.37	mg/kg	
Lead	7439-92-1	20	0.09	0.13	3.40	mg/kg	
Silver	7440-22-4	20	0.02	0.26	0.06	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.26	38.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 11:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:33

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-25 B 01
Preparation Batch: BJB0429 — Sample Size: 1.007 g (wet) — Dry Weight:0.77 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 76.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.26	4.79	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.09	mg/kg	J
Copper	7440-50-8	20	0.44	0.65	16.8	mg/kg	
Nickel	7440-02-0	20	0.06	0.65	11.5	mg/kg	
Selenium	7782-49-2	20	0.57	0.65	1.28	mg/kg	
Zinc	7440-66-6	20	1.1	5.2	41.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 11:30
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:19

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-25 B
Preparation Batch: BJB0433 — Sample Size: 0.23 g (wet) — Dry Weight:0.18 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 76.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00595	0.0283	0.0156	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25RE1 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 11:30
Instrument: NT2 Analyst: PKC — Analyzed: 02/19/2021 17:41

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-25RE1 F
Preparation Batch: BJB0462 — Sample Size: 5.248 g (wet) — Dry Weight:3.93 g
Prepared: 02/19/2021 — Final Volume: 5 mL — % Solids: 74.93

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	500	80300	2550000	ug/kg	H, D
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*99.6*	*%*	H
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*97.8*	*%*	H

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:11-02022021

21B0081-25RE1 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 11:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 20:50

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-25RE1 A 03
Preparation Batch: BJB0391 — Sample Size: 10.12 g (wet) — Dry Weight:7.58 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 74.93

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	10	65.9	977	mg/kg	D
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	10	132	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*84.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:15-02022021

21B0081-26 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 11:35

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 21:19

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-26 F

Preparation Batch: BJB0120 — Sample Size: 4.93 g (wet) — Dry Weight:3.92 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 79.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.30	1.27	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.43	1.27	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.34	1.27	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.31	1.27	ND	ug/kg	U
Benzene	71-43-2	1	0.38	1.27	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.27	1.27	ND	ug/kg	U
Toluene	108-88-3	1	0.19	1.27	0.26	ug/kg	J
Tetrachloroethene	127-18-4	1	0.33	1.27	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.26	1.27	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.50	2.55	ND	ug/kg	U
o-Xylene	95-47-6	1	0.29	1.27	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.79	2.55	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*104*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*98.6*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:15-02022021

21B0081-26 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 11:35

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 21:03

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-26 C

Preparation Batch: BJB0262 — Sample Size: 5.535 g (wet) — Dry Weight:4.53 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 81.91

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	6620	102000	ug/kg	
HC ID: GRO						
Surrogate: Toluene-d8			*80-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*98.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:15-02022021

21B0081-26 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 11:35
Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 23:44

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-26 A 02
	Preparation Batch: BJB0656	Sample Size: 12.23 g (wet)	Dry Weight:10.02 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 81.91
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-26 A 02
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-26 A 02
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	8.32	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	114	ug/kg	B, E
2-Methylnaphthalene	91-57-6	1	0.13	0.50	138	ug/kg	B, E
Acenaphthylene	208-96-8	1	0.06	0.50	6.18	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	16.7	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	20.7	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	41.8	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	94.6	ug/kg	E
Anthracene	120-12-7	1	0.07	0.50	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.08	0.50	14.7	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	42.8	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.87	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	3.73	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.30	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.10	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.10	ug/kg	Q, J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.19	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	ND	ug/kg	U
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*30.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*53.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*116*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:15-02022021

21B0081-26 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 11:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 02:46

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-26 A 01
Preparation Batch: BJB0391 — Sample Size: 10.14 g (wet) — Dry Weight:8.31 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 81.91

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.02	73.3	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.0	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*114*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:15-02022021

21B0081-26 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 11:35
Instrument: ECD7 Analyst: JGR — Analyzed: 03/10/2021 19:28

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-26 A 03
	Preparation Batch: BJB0519	Sample Size: 15.29 g (wet)	Dry Weight:12.52 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 81.91
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-26 A 03
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-26 A 03
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-26 A 03
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*68.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*56.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*67.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*55.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:15-02022021

21B0081-26 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 11:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:38

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-26 B 01
Preparation Batch: BJB0429 — Sample Size: 1.034 g (wet) — Dry Weight:0.80 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 77.74

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.62	30.2	mg/kg	
Chromium	7440-47-3	20	0.16	0.62	12.0	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	5.01	mg/kg	
Lead	7439-92-1	20	0.08	0.12	3.06	mg/kg	
Silver	7440-22-4	20	0.02	0.25	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	39.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:15-02022021

21B0081-26 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 11:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:38

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-26 B 01
Preparation Batch: BJB0429 — Sample Size: 1.034 g (wet) — Dry Weight:0.80 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 77.74

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	2.57	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	ND	mg/kg	U
Copper	7440-50-8	20	0.42	0.62	12.0	mg/kg	
Nickel	7440-02-0	20	0.06	0.62	9.67	mg/kg	
Selenium	7782-49-2	20	0.55	0.62	1.05	mg/kg	
Zinc	7440-66-6	20	1.0	5.0	25.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:15-02022021

21B0081-26 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 11:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:25

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-26 B
Preparation Batch: BJB0433 — Sample Size: 0.271 g (wet) — Dry Weight:0.21 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 77.74

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00498	0.0237	0.0204	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:17.7-02022021

21B0081-27 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 11:40

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 21:43

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-27 F

Preparation Batch: BJB0120 — Sample Size: 4.51 g (wet) — Dry Weight:3.50 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 77.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.34	1.43	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.48	1.43	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.38	1.43	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.34	1.43	ND	ug/kg	U
Benzene	71-43-2	1	0.42	1.43	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.30	1.43	ND	ug/kg	U
Toluene	108-88-3	1	0.22	1.43	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.37	1.43	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.29	1.43	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.56	2.86	ND	ug/kg	U
o-Xylene	95-47-6	1	0.32	1.43	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.88	2.86	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*92.5*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*98.7*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:17.7-02022021

21B0081-27 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 11:40

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 21:28

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-27 C

Preparation Batch: BJB0262 — Sample Size: 4.919 g (wet) — Dry Weight:3.90 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 79.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7700	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.1*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*94.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:17.7-02022021

21B0081-27 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 11:40
Instrument: NT11 Analyst: VTS — Analyzed: 03/14/2021 00:17

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-27 A 02
	Preparation Batch: BJB0656	Sample Size: 12.63 g (wet)	Dry Weight:10.02 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 79.37
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-27 A 02
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-27 A 02
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.11	0.50	1.51	ug/kg	B
2-Methylnaphthalene	91-57-6	1	0.13	0.50	1.62	ug/kg	B
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	0.22	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.36	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	0.98	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.08	0.50	ND	ug/kg	U
Pyrene	129-00-0	1	0.09	0.50	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	0.07	0.50	ND	ug/kg	U
Chrysene	218-01-9	1	0.07	0.50	ND	ug/kg	U
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	ND	ug/kg	U
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	ND	ug/kg	Q, U
Benzo(a)pyrene	50-32-8	1	0.09	0.50	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	ND	ug/kg	U
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*42.9*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*63.7*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*59.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:17.7-02022021

21B0081-27 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 11:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 03:07

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-27 A 01
Preparation Batch: BJB0391 — Sample Size: 10.37 g (wet) — Dry Weight:8.23 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 79.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.07	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.1	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*99.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:17.7-02022021

21B0081-27 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 11:40
Instrument: ECD7 Analyst: JGR — Analyzed: 03/10/2021 19:49

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-27 A 03
	Preparation Batch: BJB0519	Sample Size: 15.78 g (wet)	Dry Weight:12.52 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 79.37
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-27 A 03
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-27 A 03
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-27 A 03
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*69.3*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*68.9*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*69.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*58.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:17.7-02022021

21B0081-27 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 11:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:43

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-27 B 01
Preparation Batch: BJB0429 — Sample Size: 1.023 g (wet) — Dry Weight:0.80 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 78.20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.63	21.1	mg/kg	
Chromium	7440-47-3	20	0.16	0.63	8.67	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	4.99	mg/kg	
Lead	7439-92-1	20	0.09	0.13	1.22	mg/kg	
Silver	7440-22-4	20	0.02	0.25	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	35.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:17.7-02022021

21B0081-27 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 11:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:43

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-27 B 01
Preparation Batch: BJB0429 — Sample Size: 1.023 g (wet) — Dry Weight:0.80 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 78.20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	1.48	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	ND	mg/kg	U
Copper	7440-50-8	20	0.43	0.63	8.58	mg/kg	
Nickel	7440-02-0	20	0.06	0.63	7.31	mg/kg	
Selenium	7782-49-2	20	0.55	0.63	0.82	mg/kg	
Zinc	7440-66-6	20	1.0	5.0	18.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-73:17.7-02022021

21B0081-27 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 11:40
Instrument: HYDRA Analyst: BLC — Analyzed: 02/18/2021 14:28

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-27 B
Preparation Batch: BJB0433 — Sample Size: 0.227 g (wet) — Dry Weight:0.18 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 78.20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00592	0.0282	0.00631	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:1-022022021

21B0081-28 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 12:40
Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 15:14

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-28 A 02
	Preparation Batch: BJB0657	Sample Size: 11.77 g (wet)	Dry Weight:10.02 g
	Prepared: 02/23/2021	Final Volume: 1 mL	% Solids: 85.09
Sample Cleanup:	Cleanup Method: GPC		Extract ID:21B0081-28 A 02
	Cleanup Batch: CJC0103	Initial Volume: 1 uL	
	Cleaned: 09-Mar-2021	Final Volume: 1 uL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	8.2	20.0	ND	ug/kg	U
bis(2-chloroethyl) ether	111-44-4	1	6.8	20.0	ND	ug/kg	U
2-Chlorophenol	95-57-8	1	6.5	20.0	ND	ug/kg	U
1,3-Dichlorobenzene	541-73-1	1	5.1	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	4.4	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	4.7	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	14.9	20.0	ND	ug/kg	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	5.7	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	7.8	20.0	ND	ug/kg	U
Hexachloroethane	67-72-1	1	5.6	20.0	ND	ug/kg	U
N-Nitroso-di-n-Propylamine	621-64-7	1	10.8	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	14.7	20.0	ND	ug/kg	U
Nitrobenzene	98-95-3	1	7.9	20.0	ND	ug/kg	U
Isophorone	78-59-1	1	7.7	20.0	ND	ug/kg	U
2-Nitrophenol	88-75-5	1	6.9	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	26.8	99.8	ND	ug/kg	U
Bis(2-Chloroethoxy)methane	111-91-1	1	6.3	20.0	ND	ug/kg	U
2,4-Dichlorophenol	120-83-2	1	32.0	99.8	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	6.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	5.2	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	59.0	200	ND	ug/kg	U
4-Chloroaniline	106-47-8	1	33.6	99.8	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	5.0	20.0	ND	ug/kg	U
4-Chloro-3-Methylphenol	59-50-7	1	28.9	99.8	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	5.7	20.0	ND	ug/kg	U
Hexachlorocyclopentadiene	77-47-4	1	41.2	99.8	ND	ug/kg	U
2,4,6-Trichlorophenol	88-06-2	1	25.4	99.8	ND	ug/kg	U
2,4,5-Trichlorophenol	95-95-4	1	26.9	99.8	ND	ug/kg	U
2-Chloronaphthalene	91-58-7	1	4.4	20.0	ND	ug/kg	U
2-Nitroaniline	88-74-4	1	30.2	99.8	ND	ug/kg	U
Acenaphthylene	208-96-8	1	4.8	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	6.4	20.0	ND	ug/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:1-022022021

21B0081-28 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 12:40

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 15:14

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2,6-Dinitrotoluene	606-20-2	1	26.7	99.8	ND	ug/kg	U
Acenaphthene	83-32-9	1	5.1	20.0	ND	ug/kg	U
3-Nitroaniline	99-09-2	1	37.6	99.8	ND	ug/kg	U
2,4-Dinitrophenol	51-28-5	1	41.2	200	ND	ug/kg	U
Dibenzofuran	132-64-9	1	4.6	20.0	ND	ug/kg	U
4-Nitrophenol	100-02-7	1	44.3	99.8	ND	ug/kg	U
2,4-Dinitrotoluene	121-14-2	1	22.9	99.8	ND	ug/kg	U
Fluorene	86-73-7	1	4.9	20.0	ND	ug/kg	U
4-Chlorophenylphenyl ether	7005-72-3	1	6.9	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	17.7	20.0	ND	ug/kg	U
4-Nitroaniline	100-01-6	1	34.8	99.8	ND	ug/kg	U
4,6-Dinitro-2-methylphenol	534-52-1	1	50.4	200	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	9.6	20.0	ND	ug/kg	U
4-Bromophenyl phenyl ether	101-55-3	1	6.1	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	4.7	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	31.3	99.8	ND	ug/kg	U
Phenanthrene	85-01-8	1	4.7	20.0	5.0	ug/kg	J
Anthracene	120-12-7	1	5.9	20.0	ND	ug/kg	U
Carbazole	86-74-8	1	7.4	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	5.3	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	4.5	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	5.5	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	8.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	5.2	20.0	ND	ug/kg	U
3,3'-Dichlorobenzidine	91-94-1	1	31.2	99.8	ND	ug/kg	U
Chrysene	218-01-9	1	5.2	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	28.8	49.9	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	8.7	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	10.2	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	6.5	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	6.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	6.2	20.0	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	5.8	20.0	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	5.9	20.0	ND	ug/kg	U
Surrogate: 2-Fluorophenol				*27-120 %*	*70.6*	*%*	
Surrogate: Phenol-d5				*29-120 %*	*66.5*	*%*	
Surrogate: 2-Chlorophenol-d4				*31-120 %*	*90.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*32-120 %*	*70.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:1-022022021

21B0081-28 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 12:40

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 15:14

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Nitrobenzene-d5		*30-120 %*	*78.2*	*%*	
Surrogate: 2-Fluorobiphenyl		*35-120 %*	*76.9*	*%*	
Surrogate: 2,4,6-Tribromophenol		*24-134 %*	*86.6*	*%*	
Surrogate: p-Terphenyl-d14		*37-120 %*	*82.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:1-022022021

21B0081-28 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 12:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 03:28

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-28 A 01
Preparation Batch: BJB0391 — Sample Size: 10.07 g (wet) — Dry Weight:8.57 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 85.09

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.84	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.7	11.7	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:1-022022021

21B0081-28 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 12:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:33

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-28 B 01
Preparation Batch: BJB0430 — Sample Size: 1.071 g (wet) — Dry Weight:0.93 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 86.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.54	33.2	mg/kg	
Chromium	7440-47-3	20	0.14	0.54	10.0	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	4.89	mg/kg	
Lead	7439-92-1	20	0.07	0.11	2.74	mg/kg	
Silver	7440-22-4	20	0.02	0.22	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	33.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:1-022022021

21B0081-28 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 12:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:33

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-28 B 01
Preparation Batch: BJB0430 — Sample Size: 1.071 g (wet) — Dry Weight:0.93 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 86.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	2.67	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.37	0.54	12.0	mg/kg	
Nickel	7440-02-0	20	0.05	0.54	9.15	mg/kg	
Selenium	7782-49-2	20	0.47	0.54	0.92	mg/kg	
Zinc	7440-66-6	20	0.9	4.3	25.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:1-022022021

21B0081-28 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 12:40
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 09:36

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-28 B
Preparation Batch: BJB0434 — Sample Size: 0.286 g (wet) — Dry Weight:0.25 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 86.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00423	0.0201	0.0253	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:5-022022021

21B0081-29 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 12:45

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 15:51

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-29 A 02
	Preparation Batch: BJB0657	Sample Size: 10.84 g (wet)	Dry Weight:10.02 g
	Prepared: 02/23/2021	Final Volume: 1 mL	% Solids: 92.43
Sample Cleanup:	Cleanup Method: GPC		Extract ID:21B0081-29 A 02
	Cleanup Batch: CJC0103	Initial Volume: 1 uL	
	Cleaned: 09-Mar-2021	Final Volume: 1 uL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	8.2	20.0	ND	ug/kg	U
bis(2-chloroethyl) ether	111-44-4	1	6.8	20.0	ND	ug/kg	U
2-Chlorophenol	95-57-8	1	6.5	20.0	ND	ug/kg	U
1,3-Dichlorobenzene	541-73-1	1	5.1	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	4.4	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	4.7	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	14.9	20.0	ND	ug/kg	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	5.7	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	7.8	20.0	ND	ug/kg	U
Hexachloroethane	67-72-1	1	5.6	20.0	ND	ug/kg	U
N-Nitroso-di-n-Propylamine	621-64-7	1	10.8	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	14.7	20.0	ND	ug/kg	U
Nitrobenzene	98-95-3	1	7.9	20.0	ND	ug/kg	U
Isophorone	78-59-1	1	7.7	20.0	ND	ug/kg	U
2-Nitrophenol	88-75-5	1	6.9	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	26.7	99.8	ND	ug/kg	U
Bis(2-Chloroethoxy)methane	111-91-1	1	6.3	20.0	ND	ug/kg	U
2,4-Dichlorophenol	120-83-2	1	31.9	99.8	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.9	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	5.2	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	59.0	200	ND	ug/kg	U
4-Chloroaniline	106-47-8	1	33.6	99.8	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	5.0	20.0	ND	ug/kg	U
4-Chloro-3-Methylphenol	59-50-7	1	28.8	99.8	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	5.7	20.0	ND	ug/kg	U
Hexachlorocyclopentadiene	77-47-4	1	41.2	99.8	ND	ug/kg	U
2,4,6-Trichlorophenol	88-06-2	1	25.4	99.8	ND	ug/kg	U
2,4,5-Trichlorophenol	95-95-4	1	26.8	99.8	ND	ug/kg	U
2-Chloronaphthalene	91-58-7	1	4.4	20.0	ND	ug/kg	U
2-Nitroaniline	88-74-4	1	30.1	99.8	ND	ug/kg	U
Acenaphthylene	208-96-8	1	4.8	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	6.4	20.0	ND	ug/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:5-022022021

21B0081-29 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 12:45

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 15:51

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2,6-Dinitrotoluene	606-20-2	1	26.6	99.8	ND	ug/kg	U
Acenaphthene	83-32-9	1	5.1	20.0	ND	ug/kg	U
3-Nitroaniline	99-09-2	1	37.6	99.8	ND	ug/kg	U
2,4-Dinitrophenol	51-28-5	1	41.2	200	ND	ug/kg	U
Dibenzofuran	132-64-9	1	4.6	20.0	ND	ug/kg	U
4-Nitrophenol	100-02-7	1	44.3	99.8	ND	ug/kg	U
2,4-Dinitrotoluene	121-14-2	1	22.9	99.8	ND	ug/kg	U
Fluorene	86-73-7	1	4.9	20.0	ND	ug/kg	U
4-Chlorophenylphenyl ether	7005-72-3	1	6.9	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	17.7	20.0	ND	ug/kg	U
4-Nitroaniline	100-01-6	1	34.8	99.8	ND	ug/kg	U
4,6-Dinitro-2-methylphenol	534-52-1	1	50.4	200	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	9.6	20.0	ND	ug/kg	U
4-Bromophenyl phenyl ether	101-55-3	1	6.1	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	4.7	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	31.2	99.8	ND	ug/kg	U
Phenanthrene	85-01-8	1	4.7	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	5.9	20.0	ND	ug/kg	U
Carbazole	86-74-8	1	7.4	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	5.3	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	4.5	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	5.5	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	8.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	5.2	20.0	ND	ug/kg	U
3,3'-Dichlorobenzidine	91-94-1	1	31.1	99.8	ND	ug/kg	U
Chrysene	218-01-9	1	5.2	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	28.7	49.9	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	8.7	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	10.2	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	6.5	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	6.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	6.1	20.0	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	5.8	20.0	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	5.9	20.0	ND	ug/kg	U
Surrogate: 2-Fluorophenol				*27-120 %*	*70.1*	*%*	
Surrogate: Phenol-d5				*29-120 %*	*67.1*	*%*	
Surrogate: 2-Chlorophenol-d4				*31-120 %*	*82.1*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*32-120 %*	*71.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:5-022022021

21B0081-29 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 12:45

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 15:51

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Nitrobenzene-d5		*30-120 %*	*80.3*	*%*	
Surrogate: 2-Fluorobiphenyl		*35-120 %*	*78.4*	*%*	
Surrogate: 2,4,6-Tribromophenol		*24-134 %*	*84.9*	*%*	
Surrogate: p-Terphenyl-d14		*37-120 %*	*79.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:5-022022021

21B0081-29 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 12:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 03:49

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-29 A 01
Preparation Batch: BJB0391 — Sample Size: 10.14 g (wet) — Dry Weight:9.37 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 92.43

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.33	5.71	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	10.7	11.9	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*105*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:5-022022021

21B0081-29 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 12:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:38

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-29 B 01
Preparation Batch: BJB0430 — Sample Size: 1.04 g (wet) — Dry Weight:0.94 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.42

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	18.8	mg/kg	
Chromium	7440-47-3	20	0.14	0.53	12.3	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	4.10	mg/kg	
Lead	7439-92-1	20	0.07	0.11	1.52	mg/kg	
Silver	7440-22-4	20	0.02	0.21	0.03	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	32.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:5-022022021

21B0081-29 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 12:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:38

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-29 B 01
Preparation Batch: BJB0430 — Sample Size: 1.04 g (wet) — Dry Weight:0.94 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.42

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	2.16	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.36	0.53	8.94	mg/kg	
Nickel	7440-02-0	20	0.05	0.53	8.66	mg/kg	
Selenium	7782-49-2	20	0.47	0.53	0.69	mg/kg	
Zinc	7440-66-6	20	0.9	4.3	21.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:5-022022021

21B0081-29 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 12:45
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 09:38

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-29 B
Preparation Batch: BJB0434 — Sample Size: 0.219 g (wet) — Dry Weight:0.20 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.42

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00530	0.0253	0.00917	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:10.9-022022021

21B0081-30 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 12:50

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 16:28

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-30 A 02
	Preparation Batch: BJB0657	Sample Size: 12.6 g (wet)	Dry Weight:10.03 g
	Prepared: 02/23/2021	Final Volume: 1 mL	% Solids: 79.61
Sample Cleanup:	Cleanup Method: GPC		Extract ID:21B0081-30 A 02
	Cleanup Batch: CJC0103	Initial Volume: 1 uL	
	Cleaned: 09-Mar-2021	Final Volume: 1 uL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	8.2	19.9	ND	ug/kg	U
bis(2-chloroethyl) ether	111-44-4	1	6.8	19.9	ND	ug/kg	U
2-Chlorophenol	95-57-8	1	6.5	19.9	ND	ug/kg	U
1,3-Dichlorobenzene	541-73-1	1	5.1	19.9	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	4.4	19.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	4.6	19.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	14.9	19.9	ND	ug/kg	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	5.7	19.9	ND	ug/kg	U
2-Methylphenol	95-48-7	1	7.8	19.9	ND	ug/kg	U
Hexachloroethane	67-72-1	1	5.6	19.9	ND	ug/kg	U
N-Nitroso-di-n-Propylamine	621-64-7	1	10.8	19.9	ND	ug/kg	U
4-Methylphenol	106-44-5	1	14.7	19.9	ND	ug/kg	U
Nitrobenzene	98-95-3	1	7.9	19.9	ND	ug/kg	U
Isophorone	78-59-1	1	7.7	19.9	ND	ug/kg	U
2-Nitrophenol	88-75-5	1	6.9	19.9	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	26.7	99.7	ND	ug/kg	U
Bis(2-Chloroethoxy)methane	111-91-1	1	6.3	19.9	ND	ug/kg	U
2,4-Dichlorophenol	120-83-2	1	31.9	99.7	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.9	19.9	ND	ug/kg	U
Naphthalene	91-20-3	1	5.2	19.9	ND	ug/kg	U
Benzoic acid	65-85-0	1	58.9	199	ND	ug/kg	U
4-Chloroaniline	106-47-8	1	33.6	99.7	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	5.0	19.9	ND	ug/kg	U
4-Chloro-3-Methylphenol	59-50-7	1	28.8	99.7	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	5.7	19.9	ND	ug/kg	U
Hexachlorocyclopentadiene	77-47-4	1	41.2	99.7	ND	ug/kg	U
2,4,6-Trichlorophenol	88-06-2	1	25.3	99.7	ND	ug/kg	U
2,4,5-Trichlorophenol	95-95-4	1	26.8	99.7	ND	ug/kg	U
2-Chloronaphthalene	91-58-7	1	4.4	19.9	ND	ug/kg	U
2-Nitroaniline	88-74-4	1	30.1	99.7	ND	ug/kg	U
Acenaphthylene	208-96-8	1	4.8	19.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	6.4	19.9	ND	ug/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:10.9-022022021

21B0081-30 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 12:50

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 16:28

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2,6-Dinitrotoluene	606-20-2	1	26.6	99.7	ND	ug/kg	U
Acenaphthene	83-32-9	1	5.1	19.9	ND	ug/kg	U
3-Nitroaniline	99-09-2	1	37.6	99.7	ND	ug/kg	U
2,4-Dinitrophenol	51-28-5	1	41.2	199	ND	ug/kg	U
Dibenzofuran	132-64-9	1	4.6	19.9	ND	ug/kg	U
4-Nitrophenol	100-02-7	1	44.3	99.7	ND	ug/kg	U
2,4-Dinitrotoluene	121-14-2	1	22.8	99.7	ND	ug/kg	U
Fluorene	86-73-7	1	4.9	19.9	ND	ug/kg	U
4-Chlorophenylphenyl ether	7005-72-3	1	6.9	19.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	17.6	19.9	ND	ug/kg	U
4-Nitroaniline	100-01-6	1	34.8	99.7	ND	ug/kg	U
4,6-Dinitro-2-methylphenol	534-52-1	1	50.3	199	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	9.5	19.9	ND	ug/kg	U
4-Bromophenyl phenyl ether	101-55-3	1	6.1	19.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	4.7	19.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	31.2	99.7	ND	ug/kg	U
Phenanthrene	85-01-8	1	4.7	19.9	6.6	ug/kg	J
Anthracene	120-12-7	1	5.9	19.9	ND	ug/kg	U
Carbazole	86-74-8	1	7.3	19.9	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	5.3	19.9	ND	ug/kg	U
Fluoranthene	206-44-0	1	4.5	19.9	ND	ug/kg	U
Pyrene	129-00-0	1	5.5	19.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	8.0	19.9	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	5.2	19.9	ND	ug/kg	U
3,3'-Dichlorobenzidine	91-94-1	1	31.1	99.7	ND	ug/kg	U
Chrysene	218-01-9	1	5.2	19.9	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	28.7	49.8	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	8.7	19.9	ND	ug/kg	U
Benzofluoranthenes, Total		1	10.2	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	6.5	19.9	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	6.0	19.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	6.1	19.9	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	5.8	19.9	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	5.9	19.9	ND	ug/kg	U
Surrogate: 2-Fluorophenol				*27-120 %*	*65.5*	*%*	
Surrogate: Phenol-d5				*29-120 %*	*64.5*	*%*	
Surrogate: 2-Chlorophenol-d4				*31-120 %*	*78.3*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*32-120 %*	*66.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:10.9-022022021

21B0081-30 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 12:50

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 16:28

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: Nitrobenzene-d5		*30-120 %*	*74.1*	*%*	
Surrogate: 2-Fluorobiphenyl		*35-120 %*	*75.3*	*%*	
Surrogate: 2,4,6-Tribromophenol		*24-134 %*	*76.2*	*%*	
Surrogate: p-Terphenyl-d14		*37-120 %*	*70.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:10.9-022022021

21B0081-30 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 12:50
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 04:09

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-30 A 01
Preparation Batch: BJB0391 — Sample Size: 10.55 g (wet) — Dry Weight:8.40 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 79.61

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.95	6.43	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.9	41.0	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*99.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:10.9-022022021

21B0081-30 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 12:50
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:48

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-30 B 01
Preparation Batch: BJB0430 — Sample Size: 1.043 g (wet) — Dry Weight:0.80 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 76.41

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.63	64.1	mg/kg	
Chromium	7440-47-3	20	0.16	0.63	15.9	mg/kg	
Cobalt	7440-48-4	20	0.04	0.25	6.01	mg/kg	
Lead	7439-92-1	20	0.09	0.13	4.16	mg/kg	
Silver	7440-22-4	20	0.02	0.25	0.09	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.25	42.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:10.9-022022021

21B0081-30 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 12:50
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 22:48

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-30 B 01
Preparation Batch: BJB0430 — Sample Size: 1.043 g (wet) — Dry Weight:0.80 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 76.41

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.25	3.69	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	ND	mg/kg	U
Copper	7440-50-8	20	0.43	0.63	22.6	mg/kg	
Nickel	7440-02-0	20	0.06	0.63	13.3	mg/kg	
Selenium	7782-49-2	20	0.55	0.63	0.96	mg/kg	
Zinc	7440-66-6	20	1.0	5.0	29.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-72:10.9-022022021

21B0081-30 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 12:50
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 09:28

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-30 D
Preparation Batch: BJB0434 — Sample Size: 0.27 g (wet) — Dry Weight:0.21 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 76.41

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00509	0.0242	0.0420	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-065:13-02022021

21B0081-36 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 14:25
Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 22:07

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-36 D
Preparation Batch: BJB0120 — Sample Size: 5.64 g (wet) — Dry Weight:4.55 g
Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 80.76

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.26	1.10	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.37	1.10	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.29	1.10	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.26	1.10	ND	ug/kg	U
Benzene	71-43-2	1	0.32	1.10	0.49	ug/kg	J
Trichloroethene	79-01-6	1	0.23	1.10	ND	ug/kg	U
Toluene	108-88-3	1	0.17	1.10	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.28	1.10	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.22	1.10	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.43	2.20	ND	ug/kg	U
o-Xylene	95-47-6	1	0.25	1.10	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.68	2.20	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*104*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*98.8*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*97.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-065:13-02022021

21B0081-36 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 14:25
Instrument: NT11 Analyst: VTS — Analyzed: 03/14/2021 00:49

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-36 A 02
	Preparation Batch: BJB0656	Sample Size: 12.07 g (wet)	Dry Weight:10.03 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 83.14
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-36 A 02
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-36 A 02
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	5.35	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	8.59	ug/kg	B
2-Methylnaphthalene	91-57-6	1	0.13	0.50	9.45	ug/kg	B
Acenaphthylene	208-96-8	1	0.06	0.50	1.25	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	2.11	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	2.52	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	2.88	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	9.45	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	2.52	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	6.07	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	16.2	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	4.97	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	8.78	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	5.26	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	2.06	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	2.09	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	6.20	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	3.20	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	5.84	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.9*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*44.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*39.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-065:13-02022021

21B0081-36 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 14:25
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 21:11

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-36 A 01
Preparation Batch: BJB0391 — Sample Size: 10.32 g (wet) — Dry Weight:8.58 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 83.14

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	5	29.1	162	mg/kg	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	5	58.3	1450	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-065:13-02022021

21B0081-36 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 14:25
Instrument: ECD7 Analyst: JGR — Analyzed: 03/10/2021 20:09

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-36 A 03
	Preparation Batch: BJB0519	Sample Size: 15.06 g (wet)	Dry Weight:12.52 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 83.14
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-36 A 03
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-36 A 03
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-36 A 03
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*61.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*67.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*53.4*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*59.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-065:13-02022021

21B0081-36 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 14:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:43

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-36 B 01
Preparation Batch: BJB0430 — Sample Size: 1.066 g (wet) — Dry Weight:0.86 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 80.45

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.58	34.3	mg/kg	
Chromium	7440-47-3	20	0.15	0.58	16.6	mg/kg	
Cobalt	7440-48-4	20	0.03	0.23	5.47	mg/kg	
Lead	7439-92-1	20	0.08	0.12	7.30	mg/kg	
Silver	7440-22-4	20	0.02	0.23	0.06	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.23	34.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-065:13-02022021

21B0081-36 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 14:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:43

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-36 B 01
Preparation Batch: BJB0430 — Sample Size: 1.066 g (wet) — Dry Weight:0.86 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 80.45

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.23	3.37	mg/kg	
Cadmium	7440-43-9	20	0.03	0.12	ND	mg/kg	U
Copper	7440-50-8	20	0.40	0.58	25.0	mg/kg	
Nickel	7440-02-0	20	0.06	0.58	24.5	mg/kg	
Selenium	7782-49-2	20	0.51	0.58	0.85	mg/kg	
Zinc	7440-66-6	20	1.0	4.7	24.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-065:13-02022021

21B0081-36 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 14:25
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 09:41

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-36 B
Preparation Batch: BJB0434 — Sample Size: 0.217 g (wet) — Dry Weight:0.17 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 80.45

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00601	0.0286	0.0225	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

SB-2021-065:13-02022021

21B0081-36 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 02/02/2021 14:25

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 18:24

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0081-36 B

Preparation Batch: BJB0295 — Sample Size: 2.7749 g (wet)

Prepared: 02/09/2021 — Final Volume: 100 g

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.450	0.450	ND	mg/kg wet	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:0-02022021

21B0081-37 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 15:10

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 22:32

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-37 D

Preparation Batch: BJB0120 — Sample Size: 4.37 g (wet) — Dry Weight:4.08 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 93.44

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.29	1.22	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.41	1.22	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.33	1.22	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.29	1.22	ND	ug/kg	U
Benzene	71-43-2	1	0.36	1.22	0.39	ug/kg	J
Trichloroethene	79-01-6	1	0.26	1.22	2.36	ug/kg	
Toluene	108-88-3	1	0.18	1.22	0.60	ug/kg	J
Tetrachloroethene	127-18-4	1	0.31	1.22	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.25	1.22	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.48	2.45	ND	ug/kg	U
o-Xylene	95-47-6	1	0.27	1.22	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.75	2.45	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*102*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*99.2*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*99.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:0-02022021

21B0081-37 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 15:10

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 21:54

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-37 C

Preparation Batch: BJB0262 — Sample Size: 3.818 g (wet) — Dry Weight:3.59 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 93.93

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7290	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*97.8*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*96.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:0-02022021

21B0081-37 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 15:10
Instrument: NT11 Analyst: VTS — Analyzed: 03/14/2021 01:21

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-37 A 02
	Preparation Batch: BJB0656	Sample Size: 10.67 g (wet)	Dry Weight:10.02 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 93.93
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-37 A 02
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-37 A 02
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	18.1	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	20.8	ug/kg	B
2-Methylnaphthalene	91-57-6	1	0.13	0.50	27.7	ug/kg	B
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	1.21	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	6.87	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.96	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	13.1	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	1.73	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	13.0	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	17.6	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	11.5	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	21.9	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	19.2	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	5.84	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	5.13	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	9.37	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	7.04	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	2.09	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	8.89	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*64.1*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*61.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:0-02022021

21B0081-37 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 15:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 05:33

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-37 A 01
Preparation Batch: BJB0391 — Sample Size: 10.31 g (wet) — Dry Weight:9.68 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 93.93

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.16	15.1	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	10.3	41.7	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*111*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:0-02022021

21B0081-37 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 15:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:48

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-37 B 01
Preparation Batch: BJB0430 — Sample Size: 1.035 g (wet) — Dry Weight:0.94 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.64

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.53	48.1	mg/kg	
Chromium	7440-47-3	20	0.07	0.53	122	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	15.0	mg/kg	
Lead	7439-92-1	20	0.07	0.11	47.6	mg/kg	
Silver	7440-22-4	20	0.02	0.21	0.20	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	33.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:0-02022021

21B0081-37 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 15:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:48

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-37 B 01
Preparation Batch: BJB0430 — Sample Size: 1.035 g (wet) — Dry Weight:0.94 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.64

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	12.7	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.44	mg/kg	
Copper	7440-50-8	20	0.36	0.53	189	mg/kg	
Nickel	7440-02-0	100	0.27	2.66	662	mg/kg	D
Selenium	7782-49-2	20	0.47	0.53	0.64	mg/kg	
Zinc	7440-66-6	20	1.0	4.3	149	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:0-02022021

21B0081-37 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 15:10
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 09:43

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-37 B
Preparation Batch: BJB0434 — Sample Size: 0.279 g (wet) — Dry Weight:0.25 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.64

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00415	0.0198	0.0173	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:4.3-02022021

21B0081-38 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 15:15

Instrument: NT5 Analyst: PB — Analyzed: 02/03/2021 22:55

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-38 D

Preparation Batch: BJB0120 — Sample Size: 4.68 g (wet) — Dry Weight:4.03 g

Prepared: 02/03/2021 — Final Volume: 5 mL — % Solids: 86.02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.29	1.24	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.42	1.24	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.33	1.24	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.30	1.24	0.32	ug/kg	J
Benzene	71-43-2	1	0.37	1.24	0.72	ug/kg	J
Trichloroethene	79-01-6	1	0.26	1.24	42.7	ug/kg	
Toluene	108-88-3	1	0.19	1.24	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.32	1.24	3.07	ug/kg	
Ethylbenzene	100-41-4	1	0.25	1.24	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.49	2.48	ND	ug/kg	U
o-Xylene	95-47-6	1	0.28	1.24	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.77	2.48	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*85.0*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*96.5*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*95.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*99.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:4.3-02022021

21B0081-38 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 15:15
Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 22:20

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-38 C
Preparation Batch: BJB0262 — Sample Size: 4.359 g (wet) — Dry Weight:3.72 g
Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 85.30

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7590	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*96.7*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*97.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:4.3-02022021

21B0081-38 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 15:15
Instrument: NT11 Analyst: VTS — Analyzed: 03/26/2021 18:07

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-38 B 02
	Preparation Batch: BJC0690	Sample Size: 11.74 g (wet)	Dry Weight:10.01 g
	Prepared: 03/25/2021	Final Volume: 0.5 mL	% Solids: 85.30
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-38 B 02
	Cleanup Batch: CJC0261	Initial Volume: 0.5 mL	
	Cleaned: 25-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-38 B 02
	Cleanup Batch: CJC0260	Initial Volume: 0.5 mL	
	Cleaned: 25-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	13.1	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	8.99	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	13.6	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	1.34	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	10.0	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	13.0	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	15.5	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	50.9	ug/kg	B, E
Anthracene	120-12-7	1	0.07	0.50	12.8	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	32.6	ug/kg	B
Pyrene	129-00-0	1	0.09	0.50	24.4	ug/kg	B
Benzo(a)anthracene	56-55-3	1	0.07	0.50	8.00	ug/kg	B
Chrysene	218-01-9	1	0.07	0.50	10.9	ug/kg	B
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	7.72	ug/kg	B
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	3.45	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	3.37	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	7.11	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	6.09	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	1.77	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	10.5	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*46.3*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*78.1*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*65.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:4.3-02022021

21B0081-38 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 15:15
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 21:32

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-38 A 01
Preparation Batch: BJB0391 — Sample Size: 10.06 g (wet) — Dry Weight:8.58 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 85.30

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	5	29.1	243	mg/kg	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	5	58.3	673	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:4.3-02022021

21B0081-38 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 15:15
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:53

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-38 B 01
Preparation Batch: BJB0430 — Sample Size: 1.038 g (wet) — Dry Weight:0.92 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 88.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.54	31.0	mg/kg	
Chromium	7440-47-3	20	0.14	0.54	24.2	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	5.38	mg/kg	
Lead	7439-92-1	20	0.07	0.11	13.2	mg/kg	
Silver	7440-22-4	20	0.02	0.22	0.10	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	38.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:4.3-02022021

21B0081-38 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 15:15
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:53

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-38 B 01
Preparation Batch: BJB0430 — Sample Size: 1.038 g (wet) — Dry Weight:0.92 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 88.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	5.21	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.13	mg/kg	
Copper	7440-50-8	20	0.37	0.54	34.3	mg/kg	
Nickel	7440-02-0	20	0.05	0.54	112	mg/kg	
Selenium	7782-49-2	20	0.48	0.54	1.14	mg/kg	
Zinc	7440-66-6	20	0.9	4.3	44.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:4.3-02022021

21B0081-38 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 15:15
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 09:49

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-38 B
Preparation Batch: BJB0434 — Sample Size: 0.27 g (wet) — Dry Weight:0.24 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 88.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00437	0.0208	0.0347	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:4.3-02022021

21B0081-38 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 02/02/2021 15:15

Instrument: BAL2 Analyst: UW — Analyzed: 02/17/2021 12:17

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0081-38

Preparation Batch: BJB0492 — Sample Size: 5 g (wet) — Dry Weight:4.32 g

Prepared: 02/17/2021 — Final Volume: 5 g — % Solids: 86.32

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	86.32	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:4.3-02022021

21B0081-38RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 15:15

Instrument: NT11 Analyst: VTS — Analyzed: 03/27/2021 17:07

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-38RE1 B 02
	Preparation Batch: BJC0690	Sample Size: 11.74 g (wet)	Dry Weight:10.01 g
	Prepared: 03/25/2021	Final Volume: 0.5 mL	% Solids: 85.30
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-38RE1 B 02
	Cleanup Batch: CJC0261	Initial Volume: 0.5 mL	
	Cleaned: 25-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-38RE1 B 02
	Cleanup Batch: CJC0260	Initial Volume: 0.5 mL	
	Cleaned: 25-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	2	0.88	1.20	12.8	ug/kg	D
1-Methylnaphthalene	90-12-0	2	0.21	1.00	8.34	ug/kg	D
2-Methylnaphthalene	91-57-6	2	0.26	1.00	12.9	ug/kg	D
Acenaphthylene	208-96-8	2	0.13	1.00	1.29	ug/kg	D
Acenaphthene	83-32-9	2	0.18	1.00	9.50	ug/kg	D
Dibenzofuran	132-64-9	2	0.25	1.00	12.3	ug/kg	D
Fluorene	86-73-7	2	0.14	1.00	14.6	ug/kg	D
Phenanthrene	85-01-8	2	0.23	1.00	54.2	ug/kg	D, B
Anthracene	120-12-7	2	0.15	1.00	12.4	ug/kg	D
Fluoranthene	206-44-0	2	0.16	1.00	32.3	ug/kg	D, B
Pyrene	129-00-0	2	0.18	1.00	24.3	ug/kg	D, B
Benzo(a)anthracene	56-55-3	2	0.14	1.00	6.89	ug/kg	D, B
Chrysene	218-01-9	2	0.14	1.00	9.60	ug/kg	D, B
Benzo(b)fluoranthene	205-99-2	2	0.13	1.00	6.85	ug/kg	D, B
Benzo(k)fluoranthene	207-08-9	2	0.20	1.00	3.26	ug/kg	D
Benzo(j)fluoranthene	205-82-3	2	0.19	1.00	3.48	ug/kg	D
Benzo(a)pyrene	50-32-8	2	0.17	1.00	6.47	ug/kg	D
Indeno(1,2,3-cd)pyrene	193-39-5	2	0.18	1.00	4.94	ug/kg	D
Dibenzo(a,h)anthracene	53-70-3	2	0.21	1.00	1.30	ug/kg	D
Benzo(g,h,i)perylene	191-24-2	2	0.17	1.00	8.67	ug/kg	D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*61.9*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*61.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:8-02022021

21B0081-39 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 15:25

Instrument: NT5 Analyst: PB — Analyzed: 02/04/2021 16:12

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-39 E

Preparation Batch: BJB0166 — Sample Size: 3.83 g (wet) — Dry Weight:3.15 g

Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 82.16

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.37	1.59	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.53	1.59	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.42	1.59	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.38	1.59	2.69	ug/kg	
Benzene	71-43-2	1	0.47	1.59	1.02	ug/kg	J
Trichloroethene	79-01-6	1	0.34	1.59	29.7	ug/kg	
Toluene	108-88-3	1	0.24	1.59	0.27	ug/kg	J
Tetrachloroethene	127-18-4	1	0.41	1.59	5.15	ug/kg	
Ethylbenzene	100-41-4	1	0.32	1.59	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.62	3.18	ND	ug/kg	U
o-Xylene	95-47-6	1	0.36	1.59	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.98	3.18	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*101*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*97.8*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:8-02022021

21B0081-39 (Solid)

Volatile Organic Compounds

Method: NWTPHg — Sampled: 02/02/2021 15:25

Instrument: NT3 Analyst: PKC — Analyzed: 02/08/2021 22:46

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) — Extract ID: 21B0081-39 C

Preparation Batch: BJB0262 — Sample Size: 4.344 g (wet) — Dry Weight:3.57 g

Prepared: 02/08/2021 — Final Volume: 5 mL — % Solids: 82.16

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	8090	ND	ug/kg	U
Surrogate: Toluene-d8			*80-120 %*	*95.3*	*%*	
Surrogate: 4-Bromofluorobenzene			*78-123 %*	*100*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:8-02022021

21B0081-39 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 15:25
Instrument: NT11 Analyst: VTS — Analyzed: 03/14/2021 03:58

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-39 A 02
	Preparation Batch: BJB0656	Sample Size: 12.21 g (wet)	Dry Weight:10.03 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 82.16
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-39 A 02
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-39 A 02
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	20.2	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	6.12	ug/kg	B
2-Methylnaphthalene	91-57-6	1	0.13	0.50	11.0	ug/kg	B
Acenaphthylene	208-96-8	1	0.06	0.50	0.52	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	6.95	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	6.36	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	8.76	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	26.0	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	6.05	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	14.5	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	9.79	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	2.93	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	3.35	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	2.35	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.81	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.81	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	1.67	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	1.27	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.37	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	1.73	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*42.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*65.9*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*62.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:8-02022021

21B0081-39 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 15:25
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 06:15

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-39 A 01
Preparation Batch: BJB0391 — Sample Size: 10.34 g (wet) — Dry Weight:8.50 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 82.16

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.89	22.3	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.8	77.1	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*112*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:8-02022021

21B0081-39 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 15:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:58

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-39 B 01
Preparation Batch: BJB0430 — Sample Size: 1.039 g (wet) — Dry Weight:0.83 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 79.46

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.61	53.1	mg/kg	
Chromium	7440-47-3	20	0.16	0.61	15.8	mg/kg	
Cobalt	7440-48-4	20	0.04	0.24	6.87	mg/kg	
Lead	7439-92-1	20	0.08	0.12	7.63	mg/kg	
Silver	7440-22-4	20	0.02	0.24	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.24	45.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:8-02022021

21B0081-39 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 15:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/18/2021 23:58

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-39 B 01
Preparation Batch: BJB0430 — Sample Size: 1.039 g (wet) — Dry Weight:0.83 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 79.46

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.24	5.53	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	0.11	mg/kg	J
Copper	7440-50-8	20	0.41	0.61	21.7	mg/kg	
Nickel	7440-02-0	20	0.06	0.61	33.7	mg/kg	
Selenium	7782-49-2	20	0.53	0.61	1.00	mg/kg	
Zinc	7440-66-6	20	1.0	4.8	35.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:8-02022021

21B0081-39 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 15:25
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 09:51

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-39 B
Preparation Batch: BJB0434 — Sample Size: 0.288 g (wet) — Dry Weight:0.23 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 79.46

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00459	0.0218	0.0324	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-70:15-02022021

21B0081-40 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 02/02/2021 15:45

Instrument: BAL2 Analyst: UW — Analyzed: 02/17/2021 12:17

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0081-40

Preparation Batch: BJB0492 — Sample Size: 5 g (wet) — Dry Weight:3.73 g

Prepared: 02/17/2021 — Final Volume: 5 g — % Solids: 74.63

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	74.63	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-68:8.5-02022021

21B0081-42 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/02/2021 09:35

Instrument: NT5 Analyst: PB — Analyzed: 02/04/2021 16:36

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0081-42 D

Preparation Batch: BJB0166 — Sample Size: 6.3 g (wet) — Dry Weight:5.04 g

Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 80.05

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.23	0.99	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.33	0.99	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.26	0.99	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.24	0.99	ND	ug/kg	U
Benzene	71-43-2	1	0.29	0.99	0.95	ug/kg	J
Trichloroethene	79-01-6	1	0.21	0.99	14.2	ug/kg	
Toluene	108-88-3	1	0.15	0.99	0.57	ug/kg	J
Tetrachloroethene	127-18-4	1	0.25	0.99	0.40	ug/kg	J
Ethylbenzene	100-41-4	1	0.20	0.99	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.39	1.98	ND	ug/kg	U
o-Xylene	95-47-6	1	0.22	0.99	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.61	1.98	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*101*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*97.4*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*92.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*99.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-68:8.5-02022021

21B0081-42 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 09:35

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 18:21

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-42 A 03

Preparation Batch: BJB0657 — Sample Size: 12.51 g (wet) — Dry Weight:10.01 g

Prepared: 02/23/2021 — Final Volume: 1 mL — % Solids: 80.05

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	8.2	20.0	ND	ug/kg	U
bis(2-chloroethyl) ether	111-44-4	1	6.8	20.0	ND	ug/kg	U
2-Chlorophenol	95-57-8	1	6.5	20.0	ND	ug/kg	U
1,3-Dichlorobenzene	541-73-1	1	5.1	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	4.4	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	4.7	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	14.9	20.0	ND	ug/kg	U
2,2'-Oxybis(1-chloropropane)	108-60-1	1	5.7	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	7.8	20.0	ND	ug/kg	U
Hexachloroethane	67-72-1	1	5.6	20.0	ND	ug/kg	U
N-Nitroso-di-n-Propylamine	621-64-7	1	10.8	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	14.7	20.0	ND	ug/kg	U
Nitrobenzene	98-95-3	1	7.9	20.0	ND	ug/kg	U
Isophorone	78-59-1	1	7.7	20.0	ND	ug/kg	U
2-Nitrophenol	88-75-5	1	6.9	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	26.8	99.9	ND	ug/kg	U
Bis(2-Chloroethoxy)methane	111-91-1	1	6.3	20.0	ND	ug/kg	U
2,4-Dichlorophenol	120-83-2	1	32.0	99.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	6.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	5.2	20.0	36.0	ug/kg	
Benzoic acid	65-85-0	1	59.0	200	ND	ug/kg	U
4-Chloroaniline	106-47-8	1	33.7	99.9	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	5.0	20.0	ND	ug/kg	U
4-Chloro-3-Methylphenol	59-50-7	1	28.9	99.9	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	5.7	20.0	45.0	ug/kg	
Hexachlorocyclopentadiene	77-47-4	1	41.2	99.9	ND	ug/kg	U
2,4,6-Trichlorophenol	88-06-2	1	25.4	99.9	ND	ug/kg	U
2,4,5-Trichlorophenol	95-95-4	1	26.9	99.9	ND	ug/kg	U
2-Chloronaphthalene	91-58-7	1	4.4	20.0	ND	ug/kg	U
2-Nitroaniline	88-74-4	1	30.2	99.9	ND	ug/kg	U
Acenaphthylene	208-96-8	1	4.8	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	6.4	20.0	ND	ug/kg	U
2,6-Dinitrotoluene	606-20-2	1	26.7	99.9	ND	ug/kg	U
Acenaphthene	83-32-9	1	5.1	20.0	ND	ug/kg	U
3-Nitroaniline	99-09-2	1	37.6	99.9	ND	ug/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-68:8.5-02022021

21B0081-42 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 09:35

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 18:21

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
2,4-Dinitrophenol	51-28-5	1	41.2	200	ND	ug/kg	U
Dibenzofuran	132-64-9	1	4.6	20.0	10.3	ug/kg	J
4-Nitrophenol	100-02-7	1	44.3	99.9	ND	ug/kg	U
2,4-Dinitrotoluene	121-14-2	1	22.9	99.9	ND	ug/kg	U
Fluorene	86-73-7	1	4.9	20.0	ND	ug/kg	U
4-Chlorophenylphenyl ether	7005-72-3	1	7.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	17.7	20.0	ND	ug/kg	U
4-Nitroaniline	100-01-6	1	34.9	99.9	ND	ug/kg	U
4,6-Dinitro-2-methylphenol	534-52-1	1	50.4	200	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	9.6	20.0	ND	ug/kg	U
4-Bromophenyl phenyl ether	101-55-3	1	6.1	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	4.7	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	31.3	99.9	ND	ug/kg	U
Phenanthrene	85-01-8	1	4.7	20.0	21.8	ug/kg	
Anthracene	120-12-7	1	5.9	20.0	ND	ug/kg	U
Carbazole	86-74-8	1	7.4	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	5.3	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	4.5	20.0	5.9	ug/kg	J
Pyrene	129-00-0	1	5.5	20.0	7.9	ug/kg	J
Butylbenzylphthalate	85-68-7	1	8.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	5.2	20.0	6.9	ug/kg	J
3,3'-Dichlorobenzidine	91-94-1	1	31.2	99.9	ND	ug/kg	U
Chrysene	218-01-9	1	5.2	20.0	6.4	ug/kg	J
bis(2-Ethylhexyl)phthalate	117-81-7	1	28.8	49.9	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	8.7	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	10.2	39.9	14.5	ug/kg	J
Benzo(a)pyrene	50-32-8	1	6.5	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	6.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	6.2	20.0	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	5.8	20.0	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	5.9	20.0	35.2	ug/kg	
Surrogate: 2-Fluorophenol				*27-120 %*	*63.6*	*%*	
Surrogate: Phenol-d5				*29-120 %*	*62.5*	*%*	
Surrogate: 2-Chlorophenol-d4				*31-120 %*	*86.0*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*32-120 %*	*64.6*	*%*	
Surrogate: Nitrobenzene-d5				*30-120 %*	*75.4*	*%*	
Surrogate: 2-Fluorobiphenyl				*35-120 %*	*73.9*	*%*	
Surrogate: 2,4,6-Tribromophenol				*24-134 %*	*76.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-68:8.5-02022021

21B0081-42 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/02/2021 09:35

Instrument: NT10 Analyst: VTS — Analyzed: 03/16/2021 18:21

Analyte	CAS Number	Recovery Limits	Recovery	Units	Notes
Surrogate: p-Terphenyl-d14		*37-120 %*	*78.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-68:8.5-02022021

21B0081-42 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 09:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 06:36

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-42 A 01
Preparation Batch: BJB0391 — Sample Size: 10.29 g (wet) — Dry Weight:8.24 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 80.05

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.07	14.0	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.1	43.4	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-68:8.5-02022021

21B0081-42 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/02/2021 09:35
Instrument: ECD7 Analyst: JGR — Analyzed: 03/10/2021 20:30

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0081-42 A 03
	Preparation Batch: BJB0519	Sample Size: 15.64 g (wet)	Dry Weight:12.52 g
	Prepared: 02/18/2021	Final Volume: 2.5 mL	% Solids: 80.05
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-42 A 03
	Cleanup Batch: CJC0015	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0081-42 A 03
	Cleanup Batch: CJC0013	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-42 A 03
	Cleanup Batch: CJC0014	Initial Volume: 2.5 mL	
	Cleaned: 02-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*62.1*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*61.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*54.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*53.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-68:8.5-02022021

21B0081-42 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 09:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 01:42

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-42 B 01
Preparation Batch: BJB0430 — Sample Size: 1.079 g (wet) — Dry Weight:0.85 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 78.93

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.59	210	mg/kg	
Chromium	7440-47-3	20	0.08	0.59	70.1	mg/kg	
Cobalt	7440-48-4	20	0.03	0.23	9.21	mg/kg	
Lead	7439-92-1	20	0.08	0.12	34.6	mg/kg	
Silver	7440-22-4	20	0.02	0.23	0.19	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.23	39.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-68:8.5-02022021

21B0081-42 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 09:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 01:42

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-42 B 01
Preparation Batch: BJB0430 — Sample Size: 1.079 g (wet) — Dry Weight:0.85 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 78.93

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.23	9.43	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	0.31	mg/kg	
Copper	7440-50-8	20	0.40	0.59	82.3	mg/kg	
Nickel	7440-02-0	20	0.06	0.59	44.4	mg/kg	
Selenium	7782-49-2	20	0.52	0.59	1.46	mg/kg	
Zinc	7440-66-6	20	1.0	4.7	57.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-68:8.5-02022021

21B0081-42 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 09:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 09:54

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-42 B
Preparation Batch: BJB0434 — Sample Size: 0.243 g (wet) — Dry Weight:0.19 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 78.93

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00547	0.0261	0.0284	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:1.0-02022021

21B0081-45 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 12:45
Instrument: NT11 Analyst: VTS — Analyzed: 03/14/2021 04:30

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-45 A 02
	Preparation Batch: BJB0656	Sample Size: 11.5 g (wet)	Dry Weight:10.03 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 87.22
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-45 A 02
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-45 A 02
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.73	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	1.95	ug/kg	B
2-Methylnaphthalene	91-57-6	1	0.13	0.50	2.82	ug/kg	B
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	0.85	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.27	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	5.26	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.58	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	3.76	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	4.84	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	2.21	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	3.59	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	3.28	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.11	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	1.11	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	2.48	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	1.77	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.56	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	2.48	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*41.7*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*64.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*64.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:1.0-02022021

21B0081-45 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 12:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 06:56

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-45 A 01
Preparation Batch: BJB0391 — Sample Size: 10.5 g (wet) — Dry Weight:9.16 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 87.22

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.46	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.9	15.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*95.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:1.0-02022021

21B0081-45 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 12:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 17:39

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-45 B 01
Preparation Batch: BJB0430 — Sample Size: 1.05 g (wet) — Dry Weight:0.92 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 87.98

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.54	45.1	mg/kg	
Chromium	7440-47-3	20	0.14	0.54	15.8	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	4.79	mg/kg	
Lead	7439-92-1	20	0.07	0.11	48.9	mg/kg	
Silver	7440-22-4	20	0.02	0.22	0.11	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	40.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:1.0-02022021

21B0081-45 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 12:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 00:02

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-45 B 01
Preparation Batch: BJB0430 — Sample Size: 1.05 g (wet) — Dry Weight:0.92 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 87.98

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	4.55	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.52	mg/kg	
Copper	7440-50-8	20	0.37	0.54	20.1	mg/kg	
Nickel	7440-02-0	20	0.05	0.54	13.9	mg/kg	
Selenium	7782-49-2	20	0.48	0.54	0.90	mg/kg	
Zinc	7440-66-6	20	0.9	4.3	80.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:1.0-02022021

21B0081-45 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 12:45
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 09:56

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-45 B
Preparation Batch: BJB0434 — Sample Size: 0.277 g (wet) — Dry Weight:0.24 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 87.98

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00431	0.0205	0.0350	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:5.5-02022021

21B0081-46 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 12:50
Instrument: NT11 Analyst: VTS — Analyzed: 03/14/2021 05:03

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-46 A 02
	Preparation Batch: BJB0656	Sample Size: 14.52 g (wet)	Dry Weight:10.01 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 68.91
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-46 A 02
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-46 A 02
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	8.26	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	11.2	ug/kg	B
2-Methylnaphthalene	91-57-6	1	0.13	0.50	10.9	ug/kg	B
Acenaphthylene	208-96-8	1	0.06	0.50	1.75	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	4.60	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	6.57	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	6.75	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	27.4	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	5.99	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	20.9	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	17.6	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	5.21	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	9.58	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	5.51	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.81	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	2.07	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	3.89	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	3.08	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.76	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	4.15	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*59.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*60.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:5.5-02022021

21B0081-46 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 12:50
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 07:17

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-46 A 01
Preparation Batch: BJB0391 — Sample Size: 10.67 g (wet) — Dry Weight:7.35 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 68.91

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.80	53.6	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.6	168	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*133*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:5.5-02022021

21B0081-46 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 12:50
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 00:08

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-46 B 01
Preparation Batch: BJB0430 — Sample Size: 1.06 g (wet) — Dry Weight:0.70 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 65.97

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.72	92.6	mg/kg	
Chromium	7440-47-3	20	0.19	0.72	22.3	mg/kg	
Cobalt	7440-48-4	20	0.04	0.29	10.3	mg/kg	
Lead	7439-92-1	20	0.10	0.14	9.16	mg/kg	
Silver	7440-22-4	20	0.02	0.29	0.18	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.29	62.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:5.5-02022021

21B0081-46 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 12:50
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 00:08

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-46 B 01
Preparation Batch: BJB0430 — Sample Size: 1.06 g (wet) — Dry Weight:0.70 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 65.97

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.29	7.84	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.16	mg/kg	
Copper	7440-50-8	20	0.49	0.72	37.6	mg/kg	
Nickel	7440-02-0	20	0.07	0.72	21.8	mg/kg	
Selenium	7782-49-2	20	0.63	0.72	2.02	mg/kg	
Zinc	7440-66-6	20	1.2	5.7	59.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:5.5-02022021

21B0081-46 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 12:50
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 09:58

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-46 B
Preparation Batch: BJB0434 — Sample Size: 0.281 g (wet) — Dry Weight:0.19 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 65.97

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00566	0.0270	0.137	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:8.0-02022021

21B0081-47 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 13:00
Instrument: NT11 Analyst: VTS — Analyzed: 03/14/2021 05:35

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-47 A 02
	Preparation Batch: BJB0656	Sample Size: 13.98 g (wet)	Dry Weight:10.01 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 71.60
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-47 A 02
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-47 A 02
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	0.84	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.65	ug/kg	B
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.73	ug/kg	B
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	0.43	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.28	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.38	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	2.04	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.28	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	0.74	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	0.83	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.32	ug/kg	J
Chrysene	218-01-9	1	0.07	0.50	0.77	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.44	ug/kg	J
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	ND	ug/kg	U
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	ND	ug/kg	Q, U
Benzo(a)pyrene	50-32-8	1	0.09	0.50	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.28	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*42.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*64.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*61.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:8.0-02022021

21B0081-47 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 13:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 07:38

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-47 A 01
Preparation Batch: BJB0391 — Sample Size: 10.45 g (wet) — Dry Weight:7.48 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 71.60

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.68	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.4	50.1	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*92.2*	*%*	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:8.0-02022021

21B0081-47 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 13:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 00:13

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-47 B 01
Preparation Batch: BJB0430 — Sample Size: 1.027 g (wet) — Dry Weight:0.76 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 73.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.66	27.1	mg/kg	
Chromium	7440-47-3	20	0.17	0.66	9.83	mg/kg	
Cobalt	7440-48-4	20	0.04	0.26	4.49	mg/kg	
Lead	7439-92-1	20	0.09	0.13	2.80	mg/kg	
Silver	7440-22-4	20	0.02	0.26	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.26	32.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:8.0-02022021

21B0081-47 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 13:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 00:13

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-47 B 01
Preparation Batch: BJB0430 — Sample Size: 1.027 g (wet) — Dry Weight:0.76 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 73.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.26	2.14	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	ND	mg/kg	U
Copper	7440-50-8	20	0.45	0.66	10.4	mg/kg	
Nickel	7440-02-0	20	0.07	0.66	8.46	mg/kg	
Selenium	7782-49-2	20	0.58	0.66	1.02	mg/kg	
Zinc	7440-66-6	20	1.1	5.3	25.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-56:8.0-02022021

21B0081-47 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 13:00
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 10:00

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-47 B
Preparation Batch: BJB0434 — Sample Size: 0.213 g (wet) — Dry Weight:0.16 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 73.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00670	0.0319	0.0170	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:8.0-02022021

21B0081-50 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/02/2021 13:05
Instrument: NT11 Analyst: VTS — Analyzed: 03/14/2021 06:07

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0081-50 A 02
	Preparation Batch: BJB0656	Sample Size: 14.33 g (wet)	Dry Weight:10.02 g
	Prepared: 02/23/2021	Final Volume: 0.5 mL	% Solids: 69.92
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0081-50 A 02
	Cleanup Batch: CJC0055	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0081-50 A 02
	Cleanup Batch: CJC0054	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	48.6	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	8.04	ug/kg	B
2-Methylnaphthalene	91-57-6	1	0.13	0.50	12.2	ug/kg	B
Acenaphthylene	208-96-8	1	0.06	0.50	8.10	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	10.9	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	7.99	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	12.3	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	35.2	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	6.69	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	35.5	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	32.8	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	4.46	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	8.42	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	6.06	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	2.31	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	2.53	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	4.69	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	4.25	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.70	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	6.32	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*45.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*57.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*60.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:8.0-02022021

21B0081-50 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/02/2021 13:05
Instrument: FID4 Analyst: CTO — Analyzed: 02/26/2021 07:59

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0081-50 A 01
Preparation Batch: BJB0391 — Sample Size: 10.02 g (wet) — Dry Weight:7.01 g
Prepared: 02/12/2021 — Final Volume: 1 mL — % Solids: 69.92

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.14	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	14.3	111	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*99.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:8.0-02022021

21B0081-50 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/02/2021 13:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 00:19

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-50 B 01
Preparation Batch: BJB0430 — Sample Size: 1.018 g (wet) — Dry Weight:0.77 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 75.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.65	27.6	mg/kg	
Chromium	7440-47-3	20	0.17	0.65	9.15	mg/kg	
Cobalt	7440-48-4	20	0.04	0.26	4.48	mg/kg	
Lead	7439-92-1	20	0.09	0.13	2.28	mg/kg	
Silver	7440-22-4	20	0.02	0.26	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.26	33.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:8.0-02022021

21B0081-50 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/02/2021 13:05
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 00:19

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0081-50 B 01
Preparation Batch: BJB0430 — Sample Size: 1.018 g (wet) — Dry Weight:0.77 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 75.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.26	2.78	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	ND	mg/kg	U
Copper	7440-50-8	20	0.44	0.65	18.7	mg/kg	
Nickel	7440-02-0	20	0.07	0.65	7.95	mg/kg	
Selenium	7782-49-2	20	0.57	0.65	1.18	mg/kg	
Zinc	7440-66-6	20	1.1	5.2	23.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

MW-101:8.0-02022021

21B0081-50 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/02/2021 13:05
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 10:02

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0081-50 B
Preparation Batch: BJB0434 — Sample Size: 0.27 g (wet) — Dry Weight:0.20 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 75.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00515	0.0245	0.0139	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Volatile Organic Compounds - Quality Control

Batch BJB0120 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0120-BLK1)				Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 12:36							
Vinyl Chloride	ND	0.24	1.00	ug/kg							U
1,1-Dichloroethene	ND	0.34	1.00	ug/kg							U
trans-1,2-Dichloroethene	ND	0.27	1.00	ug/kg							U
cis-1,2-Dichloroethene	ND	0.24	1.00	ug/kg							U
Benzene	ND	0.30	1.00	ug/kg							U
Trichloroethene	ND	0.21	1.00	ug/kg							U
Toluene	ND	0.15	1.00	ug/kg							U
Tetrachloroethene	ND	0.26	1.00	ug/kg							U
Ethylbenzene	ND	0.20	1.00	ug/kg							U
m,p-Xylene	ND	0.39	2.00	ug/kg							U
o-Xylene	ND	0.22	1.00	ug/kg							U
Xylenes, total	ND	0.62	2.00	ug/kg							U
Surrogate: 1,2-Dichloroethane-d4	47.5			ug/kg	*50.0*		*94.9*	*80-149*			
Surrogate: Toluene-d8	49.2			ug/kg	*50.0*		*98.5*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.4			ug/kg	*50.0*		*98.8*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	49.7			ug/kg	*50.0*		*99.4*	*80-120*			
LCS (BJB0120-BS1)				Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 11:26							
Vinyl Chloride	49.5			ug/kg	50.0		99.0	74-135			
1,1-Dichloroethene	47.9			ug/kg	50.0		95.8	77-134			
trans-1,2-Dichloroethene	48.2			ug/kg	50.0		96.4	79-130			
cis-1,2-Dichloroethene	47.3			ug/kg	50.0		94.5	80-125			
Benzene	49.0			ug/kg	50.0		98.0	80-120			
Trichloroethene	50.4			ug/kg	50.0		101	80-120			
Toluene	49.6			ug/kg	50.0		99.2	75-120			
Tetrachloroethene	52.2			ug/kg	50.0		104	74-124			
Ethylbenzene	50.7			ug/kg	50.0		101	80-125			
m,p-Xylene	102			ug/kg	100		102	76-121			
o-Xylene	50.2			ug/kg	50.0		100	67-132			
Xylenes, total	152			ug/kg	150		101	67-132			
Surrogate: 1,2-Dichloroethane-d4	46.2			ug/kg	*50.0*		*92.4*	*80-149*			
Surrogate: Toluene-d8	49.7			ug/kg	*50.0*		*99.4*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.6			ug/kg	*50.0*		*99.2*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.4			ug/kg	*50.0*		*101*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Volatile Organic Compounds - Quality Control

Batch BJB0120 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJB0120-BSD1)					Prepared: 03-Feb-2021 Analyzed: 03-Feb-2021 12:12						
Vinyl Chloride	51.5			ug/kg	50.0		103	74-135	4.06	30	
1,1-Dichloroethene	49.5			ug/kg	50.0		99.0	77-134	3.24	30	
trans-1,2-Dichloroethene	49.3			ug/kg	50.0		98.5	79-130	2.23	30	
cis-1,2-Dichloroethene	46.2			ug/kg	50.0		92.4	80-125	2.26	30	
Benzene	49.9			ug/kg	50.0		99.7	80-120	1.75	30	
Trichloroethene	51.6			ug/kg	50.0		103	80-120	2.26	30	
Toluene	50.8			ug/kg	50.0		102	75-120	2.40	30	
Tetrachloroethene	54.1			ug/kg	50.0		108	74-124	3.55	30	
Ethylbenzene	51.6			ug/kg	50.0		103	80-125	1.85	30	
m,p-Xylene	103			ug/kg	100		103	76-121	0.92	30	
o-Xylene	51.1			ug/kg	50.0		102	67-132	1.68	30	
Xylenes, total	154			ug/kg	150		103	67-132	1.17	30	
Surrogate: 1,2-Dichloroethane-d4	45.5			ug/kg	*50.0*		*91.1*	*80-149*			
Surrogate: Toluene-d8	49.4			ug/kg	*50.0*		*98.8*	*77-120*			
Surrogate: 4-Bromofluorobenzene	49.9			ug/kg	*50.0*		*99.8*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	49.1			ug/kg	*50.0*		*98.3*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Volatile Organic Compounds - Quality Control

Batch BJB0166 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0166-BLK1)				Prepared: 04-Feb-2021 Analyzed: 04-Feb-2021 13:20							
Vinyl Chloride	ND	0.24	1.00	ug/kg							U
1,1-Dichloroethene	ND	0.34	1.00	ug/kg							U
trans-1,2-Dichloroethene	ND	0.27	1.00	ug/kg							U
cis-1,2-Dichloroethene	ND	0.24	1.00	ug/kg							U
Benzene	ND	0.30	1.00	ug/kg							U
Trichloroethene	ND	0.21	1.00	ug/kg							U
Toluene	ND	0.15	1.00	ug/kg							U
Tetrachloroethene	ND	0.26	1.00	ug/kg							U
Ethylbenzene	ND	0.20	1.00	ug/kg							U
m,p-Xylene	ND	0.39	2.00	ug/kg							U
o-Xylene	ND	0.22	1.00	ug/kg							U
Xylenes, total	ND	0.62	2.00	ug/kg							U
Surrogate: 1,2-Dichloroethane-d4	47.0			ug/kg	*50.0*		*94.0*	*80-149*			
Surrogate: Toluene-d8	48.6			ug/kg	*50.0*		*97.2*	*77-120*			
Surrogate: 4-Bromofluorobenzene	50.3			ug/kg	*50.0*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	49.9			ug/kg	*50.0*		*99.7*	*80-120*			
LCS (BJB0166-BS1)				Prepared: 04-Feb-2021 Analyzed: 04-Feb-2021 12:00							
Vinyl Chloride	43.9			ug/kg	50.0		87.7	74-135			
1,1-Dichloroethene	42.9			ug/kg	50.0		85.8	77-134			
trans-1,2-Dichloroethene	43.5			ug/kg	50.0		87.0	79-130			
cis-1,2-Dichloroethene	42.8			ug/kg	50.0		85.6	80-125			
Benzene	44.4			ug/kg	50.0		88.7	80-120			
Trichloroethene	45.2			ug/kg	50.0		90.4	80-120			
Toluene	45.2			ug/kg	50.0		90.4	75-120			
Tetrachloroethene	46.0			ug/kg	50.0		91.9	74-124			
Ethylbenzene	44.8			ug/kg	50.0		89.6	80-125			
m,p-Xylene	90.5			ug/kg	100		90.5	76-121			
o-Xylene	45.2			ug/kg	50.0		90.5	67-132			
Xylenes, total	136			ug/kg	150		90.5	67-132			
Surrogate: 1,2-Dichloroethane-d4	46.6			ug/kg	*50.0*		*93.2*	*80-149*			
Surrogate: Toluene-d8	49.4			ug/kg	*50.0*		*98.8*	*77-120*			
Surrogate: 4-Bromofluorobenzene	50.3			ug/kg	*50.0*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.6			ug/kg	*50.0*		*101*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Volatile Organic Compounds - Quality Control

Batch BJB0166 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJB0166-BSD1)					Prepared: 04-Feb-2021 Analyzed: 04-Feb-2021 12:56						
Vinyl Chloride	46.2			ug/kg	50.0		92.4	74-135	5.18	30	
1,1-Dichloroethene	46.6			ug/kg	50.0		93.2	77-134	8.20	30	
trans-1,2-Dichloroethene	46.3			ug/kg	50.0		92.6	79-130	6.27	30	
cis-1,2-Dichloroethene	45.3			ug/kg	50.0		90.6	80-125	5.63	30	
Benzene	46.5			ug/kg	50.0		93.0	80-120	4.66	30	
Trichloroethene	47.6			ug/kg	50.0		95.2	80-120	5.12	30	
Toluene	47.5			ug/kg	50.0		95.0	75-120	4.96	30	
Tetrachloroethene	48.5			ug/kg	50.0		97.0	74-124	5.35	30	
Ethylbenzene	46.6			ug/kg	50.0		93.1	80-125	3.83	30	
m,p-Xylene	94.5			ug/kg	100		94.5	76-121	4.38	30	
o-Xylene	47.5			ug/kg	50.0		95.0	67-132	4.86	30	
Xylenes, total	142			ug/kg	150		94.7	67-132	4.54	30	
Surrogate: 1,2-Dichloroethane-d4	46.6			ug/kg	*50.0*		*93.2*	*80-149*			
Surrogate: Toluene-d8	49.6			ug/kg	*50.0*		*99.3*	*77-120*			
Surrogate: 4-Bromofluorobenzene	50.4			ug/kg	*50.0*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.2			ug/kg	*50.0*		*100*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Volatile Organic Compounds - Quality Control

Batch BJB0260 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0260-BLK1)				Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 13:16							
Vinyl Chloride	ND	0.08	0.20	ug/L							U
1,1-Dichloroethene	ND	0.08	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.07	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.08	0.20	ug/L							U
Benzene	ND	0.05	0.20	ug/L							U
Trichloroethene	ND	0.07	0.20	ug/L							U
Toluene	ND	0.05	0.20	ug/L							U
Tetrachloroethene	ND	0.09	0.20	ug/L							U
Ethylbenzene	ND	0.05	0.20	ug/L							U
m,p-Xylene	ND	0.14	0.40	ug/L							U
o-Xylene	ND	0.08	0.20	ug/L							U
Xylenes, total	ND	0.22	0.60	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.48			ug/L	*5.00*		*89.6*	*80-129*			
Surrogate: Toluene-d8	4.84			ug/L	*5.00*		*96.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.72			ug/L	*5.00*		*94.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.91			ug/L	*5.00*		*98.1*	*80-120*			
Blank (BJB0260-BLK2)				Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 13:16							
Gasoline Range Organics (Tol-Nap)	ND		100	ug/L							U
Surrogate: Toluene-d8	4.84			ug/L	*5.00*		*96.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.72			ug/L	*5.00*		*94.4*	*80-120*			
LCS (BJB0260-BS1)				Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 10:40							
Vinyl Chloride	10.2	0.08	0.20	ug/L	10.0		102	66-133			
1,1-Dichloroethene	8.66	0.08	0.20	ug/L	10.0		86.6	69-135			
trans-1,2-Dichloroethene	9.64	0.07	0.20	ug/L	10.0		96.4	78-128			
cis-1,2-Dichloroethene	9.36	0.08	0.20	ug/L	10.0		93.6	80-121			
Benzene	9.61	0.05	0.20	ug/L	10.0		96.1	80-120			
Trichloroethene	9.68	0.07	0.20	ug/L	10.0		96.8	80-120			
Toluene	9.62	0.05	0.20	ug/L	10.0		96.2	80-120			
Tetrachloroethene	9.82	0.09	0.20	ug/L	10.0		98.2	80-120			
Ethylbenzene	9.76	0.05	0.20	ug/L	10.0		97.6	80-120			
m,p-Xylene	20.4	0.14	0.40	ug/L	20.0		102	80-121			
o-Xylene	9.92	0.08	0.20	ug/L	10.0		99.2	80-121			
Xylenes, total	30.4	0.22	0.60	ug/L	30.0		101	76-127			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Volatile Organic Compounds - Quality Control

Batch BJB0260 - EPA 5030C (Purge and Trap)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0260-BS1)					Prepared: 08-Feb-2021		Analyzed: 08-Feb-2021 10:40				
Surrogate: 1,2-Dichloroethane-d4	4.54			ug/L	*5.00*		*90.8*	*80-129*			
Surrogate: Toluene-d8	5.02			ug/L	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.90			ug/L	*5.00*		*97.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.98			ug/L	*5.00*		*99.6*	*80-120*			
LCS (BJB0260-BS2)					Prepared: 08-Feb-2021		Analyzed: 08-Feb-2021 11:32				
Gasoline Range Organics (Tol-Nap)	935		100	ug/L	1000		93.5	72-128			
Surrogate: Toluene-d8	5.04			ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.81			ug/L	*5.00*		*96.2*	*80-120*			
LCS Dup (BJB0260-BSD1)					Prepared: 08-Feb-2021		Analyzed: 08-Feb-2021 11:06				
Vinyl Chloride	9.48	0.08	0.20	ug/L	10.0		94.8	66-133	7.52	30	
1,1-Dichloroethene	7.84	0.08	0.20	ug/L	10.0		78.4	69-135	9.91	30	
trans-1,2-Dichloroethene	9.32	0.07	0.20	ug/L	10.0		93.2	78-128	3.37	30	
cis-1,2-Dichloroethene	8.66	0.08	0.20	ug/L	10.0		86.6	80-121	7.75	30	
Benzene	9.06	0.05	0.20	ug/L	10.0		90.6	80-120	5.84	30	
Trichloroethene	8.99	0.07	0.20	ug/L	10.0		89.9	80-120	7.36	30	
Toluene	8.86	0.05	0.20	ug/L	10.0		88.6	80-120	8.22	30	
Tetrachloroethene	9.25	0.09	0.20	ug/L	10.0		92.5	80-120	6.03	30	
Ethylbenzene	9.31	0.05	0.20	ug/L	10.0		93.1	80-120	4.77	30	
m,p-Xylene	19.2	0.14	0.40	ug/L	20.0		96.0	80-121	6.28	30	
o-Xylene	9.43	0.08	0.20	ug/L	10.0		94.3	80-121	4.99	30	
Xylenes, total	28.6	0.22	0.60	ug/L	30.0		95.4	76-127	5.85	30	
Surrogate: 1,2-Dichloroethane-d4	4.70			ug/L	*5.00*		*94.1*	*80-129*			
Surrogate: Toluene-d8	4.90			ug/L	*5.00*		*98.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.94			ug/L	*5.00*		*98.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.94			ug/L	*5.00*		*98.7*	*80-120*			
LCS Dup (BJB0260-BSD2)					Prepared: 08-Feb-2021		Analyzed: 08-Feb-2021 11:58				
Gasoline Range Organics (Tol-Nap)	978		100	ug/L	1000		97.8	72-128	4.59	30	
Surrogate: Toluene-d8	4.99			ug/L	*5.00*		*99.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.64			ug/L	*5.00*		*92.9*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Volatile Organic Compounds - Quality Control

Batch BJB0262 - EPA 5035 (Methanol Extraction)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0262-BLK1)				Prepared: 08-Feb-2021		Analyzed: 08-Feb-2021 13:16				
Gasoline Range Organics (Tol-Nap)	ND	5000	ug/kg							U
Surrogate: Toluene-d8	4.84		ug/kg	*5.00*		*96.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.72		ug/kg	*5.00*		*94.4*	*78-123*			
LCS (BJB0262-BS1)				Prepared: 08-Feb-2021		Analyzed: 08-Feb-2021 11:32				
Gasoline Range Organics (Tol-Nap)	46700	5000	ug/kg	50000		93.5	70-121			
Surrogate: Toluene-d8	5.04		ug/kg	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.81		ug/kg	*5.00*		*96.2*	*78-123*			
LCS Dup (BJB0262-BSD1)				Prepared: 08-Feb-2021		Analyzed: 08-Feb-2021 11:58				
Gasoline Range Organics (Tol-Nap)	48900	5000	ug/kg	50000		97.8	70-121	4.59	30	
Surrogate: Toluene-d8	4.99		ug/kg	*5.00*		*99.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.64		ug/kg	*5.00*		*92.9*	*78-123*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Volatile Organic Compounds - Quality Control

Batch BJB0420 - EPA 5035 (Methanol Extraction)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0420-BLK1)				Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 13:16							
Vinyl Chloride	ND	7.80	50.0	ug/kg							U
1,1-Dichloroethene	ND	7.90	50.0	ug/kg							U
trans-1,2-Dichloroethene	ND	11.2	50.0	ug/kg							U
cis-1,2-Dichloroethene	ND	9.00	50.0	ug/kg							U
Benzene	ND	8.20	50.0	ug/kg							U
Trichloroethene	ND	9.00	50.0	ug/kg							U
Toluene	ND	8.60	50.0	ug/kg							U
Tetrachloroethene	ND	13.8	50.0	ug/kg							U
Ethylbenzene	ND	13.6	50.0	ug/kg							U
m,p-Xylene	ND	27.9	100	ug/kg							U
o-Xylene	ND	11.4	50.0	ug/kg							U
Xylenes, total	ND	38.7	100	ug/kg							U
Surrogate: Dibromofluoromethane	4.83			ug/kg	*5.00*		*96.6*	*30-160*			
Surrogate: 1,2-Dichloroethane-d4	4.48			ug/kg	*5.00*		*89.6*	*80-124*			
Surrogate: Toluene-d8	4.84			ug/kg	*5.00*		*96.7*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.72			ug/kg	*5.00*		*94.4*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.91			ug/kg	*5.00*		*98.1*	*80-120*			
LCS (BJB0420-BS1)				Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 10:40							
Vinyl Chloride	511	7.80	50.0	ug/kg	500		102	74-133			
1,1-Dichloroethene	433	7.90	50.0	ug/kg	500		86.6	67-132			
trans-1,2-Dichloroethene	482	11.2	50.0	ug/kg	500		96.4	71-136			
cis-1,2-Dichloroethene	468	9.00	50.0	ug/kg	500		93.6	77-121			
Benzene	480	8.20	50.0	ug/kg	500		96.1	80-120			
Trichloroethene	484	9.00	50.0	ug/kg	500		96.8	77-120			
Toluene	481	8.60	50.0	ug/kg	500		96.2	77-120			
Tetrachloroethene	491	13.8	50.0	ug/kg	500		98.2	76-120			
Ethylbenzene	488	13.6	50.0	ug/kg	500		97.6	79-122			
m,p-Xylene	1020	27.9	100	ug/kg	1000		102	81-122			
o-Xylene	496	11.4	50.0	ug/kg	500		99.2	79-120			
Xylenes, total	1520	38.7	100	ug/kg	1500		101	80-120			
Surrogate: Dibromofluoromethane	4.81			ug/kg	*5.00*		*96.1*	*30-160*			
Surrogate: 1,2-Dichloroethane-d4	4.54			ug/kg	*5.00*		*90.8*	*80-124*			
Surrogate: Toluene-d8	5.02			ug/kg	*5.00*		*100*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Volatile Organic Compounds - Quality Control

Batch BJB0420 - EPA 5035 (Methanol Extraction)

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0420-BS1)					Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 10:40						
Surrogate: 4-Bromofluorobenzene	4.90			ug/kg	*5.00*		*97.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.98			ug/kg	*5.00*		*99.6*	*80-120*			
LCS Dup (BJB0420-BSD1)					Prepared: 08-Feb-2021 Analyzed: 08-Feb-2021 11:06						
Vinyl Chloride	474	7.80	50.0	ug/kg	500		94.8	74-133	7.52	30	
1,1-Dichloroethene	392	7.90	50.0	ug/kg	500		78.4	67-132	9.91	30	
trans-1,2-Dichloroethene	466	11.2	50.0	ug/kg	500		93.2	71-136	3.37	30	
cis-1,2-Dichloroethene	433	9.00	50.0	ug/kg	500		86.6	77-121	7.75	30	
Benzene	453	8.20	50.0	ug/kg	500		90.6	80-120	5.84	30	
Trichloroethene	450	9.00	50.0	ug/kg	500		89.9	77-120	7.36	30	
Toluene	443	8.60	50.0	ug/kg	500		88.6	77-120	8.22	30	
Tetrachloroethene	462	13.8	50.0	ug/kg	500		92.5	76-120	6.03	30	
Ethylbenzene	465	13.6	50.0	ug/kg	500		93.1	79-122	4.77	30	
m,p-Xylene	960	27.9	100	ug/kg	1000		96.0	81-122	6.28	30	
o-Xylene	472	11.4	50.0	ug/kg	500		94.3	79-120	4.99	30	
Xylenes, total	1430	38.7	100	ug/kg	1500		95.4	80-120	5.85	30	
Surrogate: Dibromofluoromethane	4.83			ug/kg	*5.00*		*96.6*	*30-160*			
Surrogate: 1,2-Dichloroethane-d4	4.70			ug/kg	*5.00*		*94.1*	*80-124*			
Surrogate: Toluene-d8	4.90			ug/kg	*5.00*		*98.0*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.94			ug/kg	*5.00*		*98.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	4.94			ug/kg	*5.00*		*98.7*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Volatile Organic Compounds - Quality Control

Batch BJB0462 - EPA 5035 (Methanol Extraction)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0462-BLK1)				Prepared: 19-Feb-2021	Analyzed: 19-Feb-2021 12:08					
Gasoline Range Organics (Tol-Nap)	ND	5000	ug/kg							U
Surrogate: Toluene-d8	5.00		ug/kg	*5.00*		*100*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.82		ug/kg	*5.00*		*96.4*	*78-123*			
LCS (BJB0462-BS1)				Prepared: 19-Feb-2021	Analyzed: 19-Feb-2021 10:05					
Gasoline Range Organics (Tol-Nap)	52400	5000	ug/kg	50000		105	70-121			
Surrogate: Toluene-d8	5.05		ug/kg	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.96		ug/kg	*5.00*		*99.3*	*78-123*			
LCS Dup (BJB0462-BSD1)				Prepared: 19-Feb-2021	Analyzed: 19-Feb-2021 10:25					
Gasoline Range Organics (Tol-Nap)	54700	5000	ug/kg	50000		109	70-121	4.18	30	
Surrogate: Toluene-d8	5.08		ug/kg	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.87		ug/kg	*5.00*		*97.3*	*78-123*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - Quality Control

Batch BJB0657 - EPA 3546 (Microwave)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0657-BLK1)				Prepared: 23-Feb-2021 Analyzed: 16-Mar-2021 13:47							
Phenol	ND	8.2	20.0	ug/kg							U
bis(2-chloroethyl) ether	ND	6.8	20.0	ug/kg							U
2-Chlorophenol	ND	6.5	20.0	ug/kg							U
1,3-Dichlorobenzene	ND	5.1	20.0	ug/kg							U
1,4-Dichlorobenzene	ND	4.4	20.0	ug/kg							U
1,2-Dichlorobenzene	ND	4.7	20.0	ug/kg							U
Benzyl Alcohol	ND	14.9	20.0	ug/kg							U
2,2'-Oxybis(1-chloropropane)	ND	5.7	20.0	ug/kg							U
2-Methylphenol	ND	7.8	20.0	ug/kg							U
Hexachloroethane	ND	5.7	20.0	ug/kg							U
N-Nitroso-di-n-Propylamine	ND	10.8	20.0	ug/kg							U
4-Methylphenol	ND	14.7	20.0	ug/kg							U
Nitrobenzene	ND	8.0	20.0	ug/kg							U
Isophorone	ND	7.8	20.0	ug/kg							U
2-Nitrophenol	ND	6.9	20.0	ug/kg							U
2,4-Dimethylphenol	ND	26.8	100	ug/kg							U
Bis(2-Chloroethoxy)methane	ND	6.3	20.0	ug/kg							U
2,4-Dichlorophenol	ND	32.0	100	ug/kg							U
1,2,4-Trichlorobenzene	ND	6.0	20.0	ug/kg							U
Naphthalene	ND	5.3	20.0	ug/kg							U
Benzoic acid	ND	59.1	200	ug/kg							U
4-Chloroaniline	ND	33.7	100	ug/kg							U
Hexachlorobutadiene	ND	5.0	20.0	ug/kg							U
4-Chloro-3-Methylphenol	ND	28.9	100	ug/kg							U
2-Methylnaphthalene	ND	5.7	20.0	ug/kg							U
Hexachlorocyclopentadiene	ND	41.3	100	ug/kg							U
2,4,6-Trichlorophenol	ND	25.4	100	ug/kg							U
2,4,5-Trichlorophenol	ND	26.9	100	ug/kg							U
2-Chloronaphthalene	ND	4.4	20.0	ug/kg							U
2-Nitroaniline	ND	30.2	100	ug/kg							U
Acenaphthylene	ND	4.8	20.0	ug/kg							U
Dimethylphthalate	ND	6.4	20.0	ug/kg							U
2,6-Dinitrotoluene	ND	26.7	100	ug/kg							U
Acenaphthene	ND	5.1	20.0	ug/kg							U
3-Nitroaniline	ND	37.7	100	ug/kg							U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - Quality Control

Batch BJB0657 - EPA 3546 (Microwave)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0657-BLK1)				Prepared: 23-Feb-2021 Analyzed: 16-Mar-2021 13:47							
2,4-Dinitrophenol	ND	41.3	200	ug/kg							U
Dibenzofuran	ND	4.6	20.0	ug/kg							U
4-Nitrophenol	ND	44.4	100	ug/kg							U
2,4-Dinitrotoluene	ND	22.9	100	ug/kg							U
Fluorene	ND	5.0	20.0	ug/kg							U
4-Chlorophenylphenyl ether	ND	7.0	20.0	ug/kg							U
Diethyl phthalate	ND	17.7	20.0	ug/kg							U
4-Nitroaniline	ND	34.9	100	ug/kg							U
4,6-Dinitro-2-methylphenol	ND	50.5	200	ug/kg							U
N-Nitrosodiphenylamine	ND	9.6	20.0	ug/kg							U
4-Bromophenyl phenyl ether	ND	6.1	20.0	ug/kg							U
Hexachlorobenzene	ND	4.7	20.0	ug/kg							U
Pentachlorophenol	ND	31.3	100	ug/kg							U
Phenanthrene	ND	4.7	20.0	ug/kg							U
Anthracene	ND	5.9	20.0	ug/kg							U
Carbazole	ND	7.4	20.0	ug/kg							U
Di-n-Butylphthalate	ND	5.3	20.0	ug/kg							U
Fluoranthene	ND	4.5	20.0	ug/kg							U
Pyrene	ND	5.6	20.0	ug/kg							U
Butylbenzylphthalate	ND	8.1	20.0	ug/kg							U
Benzo(a)anthracene	ND	5.2	20.0	ug/kg							U
3,3'-Dichlorobenzidine	ND	31.2	100	ug/kg							U
Chrysene	ND	5.2	20.0	ug/kg							U
bis(2-Ethylhexyl)phthalate	ND	28.8	50.0	ug/kg							U
Di-n-Octylphthalate	ND	8.7	20.0	ug/kg							U
Benzofluoranthenes, Total	ND	10.2	40.0	ug/kg							U
Benzo(a)pyrene	ND	6.5	20.0	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	6.0	20.0	ug/kg							U
Dibenzo(a,h)anthracene	ND	6.2	20.0	ug/kg							U
Benzo(g,h,i)perylene	ND	5.8	20.0	ug/kg							U
1-Methylnaphthalene	ND	6.0	20.0	ug/kg							U
Surrogate: 2-Fluorophenol	502			ug/kg	*750*		*66.9*	*27-120*			
Surrogate: Phenol-d5	479			ug/kg	*750*		*63.9*	*29-120*			
Surrogate: 2-Chlorophenol-d4	582			ug/kg	*750*		*77.6*	*31-120*			
Surrogate: 1,2-Dichlorobenzene-d4	328			ug/kg	*500*		*65.7*	*32-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - Quality Control

Batch BJB0657 - EPA 3546 (Microwave)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0657-BLK1)				Prepared: 23-Feb-2021 Analyzed: 16-Mar-2021 13:47							
Surrogate: Nitrobenzene-d5	376			ug/kg	*500*		*75.2*	*30-120*			
Surrogate: 2-Fluorobiphenyl	376			ug/kg	*500*		*75.2*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	579			ug/kg	*750*		*77.2*	*24-134*			
Surrogate: p-Terphenyl-d14	397			ug/kg	*500*		*79.5*	*37-120*			
LCS (BJB0657-BS1)				Prepared: 23-Feb-2021 Analyzed: 16-Mar-2021 14:24							
Phenol	345	8.2	20.0	ug/kg	500		69.0	34-120			
bis(2-chloroethyl) ether	402	6.8	20.0	ug/kg	500		80.4	36-120			
2-Chlorophenol	370	6.5	20.0	ug/kg	500		74.0	39-120			
1,3-Dichlorobenzene	382	5.1	20.0	ug/kg	500		76.4	40-120			
1,4-Dichlorobenzene	389	4.4	20.0	ug/kg	500		77.8	39-120			
1,2-Dichlorobenzene	379	4.7	20.0	ug/kg	500		75.9	40-120			
Benzyl Alcohol	371	14.9	20.0	ug/kg	500		74.3	19-120			
2,2'-Oxybis(1-chloropropane)	369	5.7	20.0	ug/kg	500		73.8	32-120			
2-Methylphenol	339	7.8	20.0	ug/kg	500		67.8	28-120			
Hexachloroethane	410	5.7	20.0	ug/kg	500		82.0	38-120			
N-Nitroso-di-n-Propylamine	407	10.8	20.0	ug/kg	500		81.4	34-120			
4-Methylphenol	354	14.7	20.0	ug/kg	500		70.7	29-120			
Nitrobenzene	419	8.0	20.0	ug/kg	500		83.7	36-120			
Isophorone	443	7.8	20.0	ug/kg	500		88.7	37-120			
2-Nitrophenol	374	6.9	20.0	ug/kg	500		74.8	30-120			
2,4-Dimethylphenol	924	26.8	100	ug/kg	1300		71.0	10-120			
Bis(2-Chloroethoxy)methane	377	6.3	20.0	ug/kg	500		75.3	39-120			
2,4-Dichlorophenol	1180	32.0	100	ug/kg	1300		90.5	28-120			
1,2,4-Trichlorobenzene	374	6.0	20.0	ug/kg	500		74.8	35-120			
Naphthalene	380	5.3	20.0	ug/kg	500		76.0	43-120			
Benzoic acid	1820	59.1	200	ug/kg	2300		79.3	10-120			
4-Chloroaniline	841	33.7	100	ug/kg	1300		64.7	11-120			
Hexachlorobutadiene	385	5.0	20.0	ug/kg	500		77.0	37-120			
4-Chloro-3-Methylphenol	1280	28.9	100	ug/kg	1300		98.7	32-120			
2-Methylnaphthalene	365	5.7	20.0	ug/kg	500		73.1	43-120			
Hexachlorocyclopentadiene	823	41.3	100	ug/kg	1300		63.3	10-120			Q
2,4,6-Trichlorophenol	1150	25.4	100	ug/kg	1300		88.8	44.6-132			
2,4,5-Trichlorophenol	1180	26.9	100	ug/kg	1300		91.2	51.5-129			
2-Chloronaphthalene	405	4.4	20.0	ug/kg	500		81.0	40-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - Quality Control

Batch BJB0657 - EPA 3546 (Microwave)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0657-BS1)					Prepared: 23-Feb-2021 Analyzed: 16-Mar-2021 14:24						
2-Nitroaniline	1420	30.2	100	ug/kg	1300		109	40-152			
Acenaphthylene	334	4.8	20.0	ug/kg	500		66.9	42-120			
Dimethylphthalate	395	6.4	20.0	ug/kg	500		79.0	43-120			
2,6-Dinitrotoluene	1300	26.7	100	ug/kg	1300		99.7	31-156			
Acenaphthene	371	5.1	20.0	ug/kg	500		74.1	45-120			
3-Nitroaniline	914	37.7	100	ug/kg	1300		70.3	22-120			
2,4-Dinitrophenol	1860	41.3	200	ug/kg	2300		80.8	10-120			
Dibenzofuran	357	4.6	20.0	ug/kg	500		71.4	43-120			
4-Nitrophenol	1300	44.4	100	ug/kg	1300		100	15-138			
2,4-Dinitrotoluene	1420	22.9	100	ug/kg	1300		109	44-150			
Fluorene	317	5.0	20.0	ug/kg	500		63.3	45-120			Q
4-Chlorophenylphenyl ether	327	7.0	20.0	ug/kg	500		65.3	36-141			
Diethyl phthalate	406	17.7	20.0	ug/kg	500		81.3	50-120			
4-Nitroaniline	1160	34.9	100	ug/kg	1300		89.4	24-168			
4,6-Dinitro-2-methylphenol	2610	50.5	200	ug/kg	2300		114	33-144			Q
N-Nitrosodiphenylamine	408	9.6	20.0	ug/kg	500		81.6	70-154			
4-Bromophenyl phenyl ether	431	6.1	20.0	ug/kg	500		86.2	39-120			
Hexachlorobenzene	487	4.7	20.0	ug/kg	500		97.4	33-120			
Pentachlorophenol	995	31.3	100	ug/kg	1300		76.5	16-120			Q
Phenanthrene	441	4.7	20.0	ug/kg	500		88.2	49-120			
Anthracene	419	5.9	20.0	ug/kg	500		83.8	45-120			
Carbazole	443	7.4	20.0	ug/kg	500		88.5	43-135			
Di-n-Butylphthalate	511	5.3	20.0	ug/kg	500		102	48-126			
Fluoranthene	472	4.5	20.0	ug/kg	500		94.4	53-145			
Pyrene	466	5.6	20.0	ug/kg	500		93.2	52-134			
Butylbenzylphthalate	485	8.1	20.0	ug/kg	500		96.9	45-132			
Benzo(a)anthracene	438	5.2	20.0	ug/kg	500		87.7	49-120			
3,3'-Dichlorobenzidine	556	31.2	100	ug/kg	800		69.5	10-120			
Chrysene	451	5.2	20.0	ug/kg	500		90.3	47-120			
bis(2-Ethylhexyl)phthalate	465	28.8	50.0	ug/kg	500		92.9	34-130			
Di-n-Octylphthalate	467	8.7	20.0	ug/kg	500		93.4	28-124			
Benzofluoranthenes, Total	1010	10.2	40.0	ug/kg	1000		101	30-160			
Benzo(a)pyrene	482	6.5	20.0	ug/kg	500		96.4	42-120			
Indeno(1,2,3-cd)pyrene	475	6.0	20.0	ug/kg	500		95.0	42-163			
Dibenzo(a,h)anthracene	479	6.2	20.0	ug/kg	500		95.9	30-133			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - Quality Control

Batch BJB0657 - EPA 3546 (Microwave)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0657-BS1)					Prepared: 23-Feb-2021 Analyzed: 16-Mar-2021 14:24						
Benzo(g,h,i)perylene	491	5.8	20.0	ug/kg	500		98.2	46-148			
1-Methylnaphthalene	376	6.0	20.0	ug/kg	500		75.3	42-120			
Surrogate: 2-Fluorophenol	627			ug/kg	*750*		*83.6*	*27-120*			
Surrogate: Phenol-d5	626			ug/kg	*750*		*83.5*	*29-120*			
Surrogate: 2-Chlorophenol-d4	645			ug/kg	*750*		*85.9*	*31-120*			
Surrogate: 1,2-Dichlorobenzene-d4	370			ug/kg	*500*		*73.9*	*32-120*			
Surrogate: Nitrobenzene-d5	426			ug/kg	*500*		*85.2*	*30-120*			
Surrogate: 2-Fluorobiphenyl	393			ug/kg	*500*		*78.6*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	626			ug/kg	*750*		*83.5*	*24-134*			
Surrogate: p-Terphenyl-d14	464			ug/kg	*500*		*92.7*	*37-120*			
Matrix Spike (BJB0657-MS1)		**Source: 21B0081-30**			Prepared: 23-Feb-2021 Analyzed: 16-Mar-2021 17:06						
Phenol	325	8.2	19.9	ug/kg	498	ND	65.1	34-120			
bis(2-chloroethyl) ether	419	6.8	19.9	ug/kg	498	ND	84.0	36-120			
2-Chlorophenol	325	6.5	19.9	ug/kg	498	ND	65.3	39-120			
1,3-Dichlorobenzene	361	5.1	19.9	ug/kg	498	ND	72.5	40-120			
1,4-Dichlorobenzene	365	4.4	19.9	ug/kg	498	ND	73.1	39-120			
1,2-Dichlorobenzene	351	4.6	19.9	ug/kg	498	ND	70.4	40-120			
Benzyl Alcohol	352	14.9	19.9	ug/kg	498	ND	70.5	19-120			
2,2'-Oxybis(1-chloropropane)	347	5.7	19.9	ug/kg	498	ND	69.7	32-120			
2-Methylphenol	323	7.8	19.9	ug/kg	498	ND	64.8	28-120			
Hexachloroethane	382	5.6	19.9	ug/kg	498	ND	76.6	38-120			
N-Nitroso-di-n-Propylamine	378	10.8	19.9	ug/kg	498	ND	75.9	34-120			
4-Methylphenol	341	14.7	19.9	ug/kg	498	ND	68.3	29-120			
Nitrobenzene	409	7.9	19.9	ug/kg	498	ND	82.0	36-120			
Isophorone	483	7.7	19.9	ug/kg	498	ND	97.0	37-120			
2-Nitrophenol	354	6.9	19.9	ug/kg	498	ND	70.9	30-120			
2,4-Dimethylphenol	1020	26.7	99.7	ug/kg	1300	ND	78.5	10-120			
Bis(2-Chloroethoxy)methane	367	6.3	19.9	ug/kg	498	ND	73.7	39-120			
2,4-Dichlorophenol	1050	31.9	99.7	ug/kg	1300	ND	80.8	28-120			
1,2,4-Trichlorobenzene	366	5.9	19.9	ug/kg	498	ND	73.4	35-120			
Naphthalene	368	5.2	19.9	ug/kg	498	ND	73.8	43-120			
Benzoic acid	1990	58.9	199	ug/kg	2290	ND	86.6	10-120			
4-Chloroaniline	252	33.6	99.7	ug/kg	1300	ND	19.5	11-120			
Hexachlorobutadiene	379	5.0	19.9	ug/kg	498	ND	76.1	37-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - Quality Control

Batch BJB0657 - EPA 3546 (Microwave)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0657-MS1)	**Source: 21B0081-30**			Prepared: 23-Feb-2021	Analyzed: 16-Mar-2021 17:06						
4-Chloro-3-Methylphenol	1250	28.8	99.7	ug/kg	1300	ND	96.8	32-120			
2-Methylnaphthalene	358	5.7	19.9	ug/kg	498	ND	71.7	43-120			
Hexachlorocyclopentadiene	542	41.2	99.7	ug/kg	1300	ND	41.9	10-120			Q
2,4,6-Trichlorophenol	1150	25.3	99.7	ug/kg	1300	ND	88.6	44.6-132			
2,4,5-Trichlorophenol	1210	26.8	99.7	ug/kg	1300	ND	93.1	51.5-129			
2-Chloronaphthalene	403	4.4	19.9	ug/kg	498	ND	80.9	40-120			
2-Nitroaniline	1380	30.1	99.7	ug/kg	1300	ND	106	40-152			
Acenaphthylene	321	4.8	19.9	ug/kg	498	ND	64.4	42-120			
Dimethylphthalate	386	6.4	19.9	ug/kg	498	ND	77.4	43-120			
2,6-Dinitrotoluene	1250	26.6	99.7	ug/kg	1300	ND	96.4	31-156			
Acenaphthene	357	5.1	19.9	ug/kg	498	ND	71.6	45-120			
3-Nitroaniline	372	37.6	99.7	ug/kg	1300	ND	28.7	22-120			
2,4-Dinitrophenol	815	41.2	199	ug/kg	2290	ND	35.6	10-120			
Dibenzofuran	351	4.6	19.9	ug/kg	498	ND	70.3	43-120			
4-Nitrophenol	1310	44.3	99.7	ug/kg	1300	ND	101	15-138			
2,4-Dinitrotoluene	1390	22.8	99.7	ug/kg	1300	ND	107	44-150			
Fluorene	294	4.9	19.9	ug/kg	498	ND	59.0	45-120			Q
4-Chlorophenylphenyl ether	304	6.9	19.9	ug/kg	498	ND	61.0	36-141			
Diethyl phthalate	401	17.6	19.9	ug/kg	498	ND	80.5	50-120			
4-Nitroaniline	636	34.8	99.7	ug/kg	1300	ND	49.1	24-168			
4,6-Dinitro-2-methylphenol	2380	50.3	199	ug/kg	2290	ND	104	33-144			Q
N-Nitrosodiphenylamine	434	9.5	19.9	ug/kg	498	ND	87.1	70-154			
4-Bromophenyl phenyl ether	411	6.1	19.9	ug/kg	498	ND	82.4	39-120			
Hexachlorobenzene	479	4.7	19.9	ug/kg	498	ND	96.0	33-120			
Pentachlorophenol	1080	31.2	99.7	ug/kg	1300	ND	83.6	16-120			Q
Phenanthrene	447	4.7	19.9	ug/kg	498	6.6	88.4	49-120			
Anthracene	400	5.9	19.9	ug/kg	498	ND	80.2	45-120			
Carbazole	357	7.3	19.9	ug/kg	498	ND	71.6	43-135			
Di-n-Butylphthalate	292	5.3	19.9	ug/kg	498	ND	58.5	48-126			
Fluoranthene	307	4.5	19.9	ug/kg	498	ND	61.6	53-145			
Pyrene	348	5.5	19.9	ug/kg	498	ND	69.8	52-134			
Butylbenzylphthalate	441	8.0	19.9	ug/kg	498	ND	88.5	45-132			
Benzo(a)anthracene	421	5.2	19.9	ug/kg	498	ND	84.4	49-120			
3,3'-Dichlorobenzidine	54.8	31.1	99.7	ug/kg	798	ND	6.87	10-120			*, J
Chrysene	420	5.2	19.9	ug/kg	498	ND	84.3	47-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - Quality Control

Batch BJB0657 - EPA 3546 (Microwave)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0657-MS1)	**Source: 21B0081-30**			Prepared: 23-Feb-2021	Analyzed: 16-Mar-2021 17:06						
bis(2-Ethylhexyl)phthalate	458	28.7	49.8	ug/kg	498	ND	91.8	34-130			
Di-n-Octylphthalate	435	8.7	19.9	ug/kg	498	ND	87.2	28-124			
Benzofluoranthenes, Total	869	10.2	39.9	ug/kg	997	ND	87.2	30-160			
Benzo(a)pyrene	427	6.5	19.9	ug/kg	498	ND	85.7	42-120			
Indeno(1,2,3-cd)pyrene	428	6.0	19.9	ug/kg	498	ND	85.9	42-163			
Dibenzo(a,h)anthracene	433	6.1	19.9	ug/kg	498	ND	86.8	30-133			
Benzo(g,h,i)perylene	435	5.8	19.9	ug/kg	498	ND	87.2	46-148			
1-Methylnaphthalene	367	5.9	19.9	ug/kg	498	ND	73.6	42-120			
Surrogate: 2-Fluorophenol	566			ug/kg	*748*	*490*	*75.7*	*27-120*			
Surrogate: Phenol-d5	581			ug/kg	*748*	*482*	*77.7*	*29-120*			
Surrogate: 2-Chlorophenol-d4	604			ug/kg	*748*	*585*	*80.8*	*31-120*			
Surrogate: 1,2-Dichlorobenzene-d4	336			ug/kg	*498*	*331*	*67.4*	*32-120*			
Surrogate: Nitrobenzene-d5	413			ug/kg	*498*	*369*	*82.9*	*30-120*			
Surrogate: 2-Fluorobiphenyl	380			ug/kg	*498*	*375*	*76.2*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	582			ug/kg	*748*	*570*	*77.9*	*24-134*			
Surrogate: p-Terphenyl-d14	376			ug/kg	*498*	*351*	*75.5*	*37-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0657-MSD1)	**Source: 21B0081-30**			Prepared: 23-Feb-2021	Analyzed: 16-Mar-2021 17:44						
Phenol	308	8.2	19.9	ug/kg	498	ND	61.8	34-120	5.18	30	
bis(2-chloroethyl) ether	413	6.8	19.9	ug/kg	498	ND	82.9	36-120	1.35	30	
2-Chlorophenol	307	6.5	19.9	ug/kg	498	ND	61.6	39-120	5.76	30	
1,3-Dichlorobenzene	342	5.1	19.9	ug/kg	498	ND	68.6	40-120	5.54	30	
1,4-Dichlorobenzene	349	4.4	19.9	ug/kg	498	ND	70.1	39-120	4.28	30	
1,2-Dichlorobenzene	339	4.6	19.9	ug/kg	498	ND	67.9	40-120	3.61	30	
Benzyl Alcohol	325	14.9	19.9	ug/kg	498	ND	65.2	19-120	7.93	30	
2,2'-Oxybis(1-chloropropane)	339	5.7	19.9	ug/kg	498	ND	68.1	32-120	2.31	30	
2-Methylphenol	312	7.8	19.9	ug/kg	498	ND	62.6	28-120	3.55	30	
Hexachloroethane	361	5.6	19.9	ug/kg	498	ND	72.5	38-120	5.59	30	
N-Nitroso-di-n-Propylamine	372	10.8	19.9	ug/kg	498	ND	74.6	34-120	1.80	30	
4-Methylphenol	327	14.7	19.9	ug/kg	498	ND	65.5	29-120	4.21	30	
Nitrobenzene	385	7.9	19.9	ug/kg	498	ND	77.1	36-120	6.07	30	
Isophorone	401	7.7	19.9	ug/kg	498	ND	80.5	37-120	18.60	30	
2-Nitrophenol	331	6.9	19.9	ug/kg	498	ND	66.4	30-120	6.55	30	
2,4-Dimethylphenol	971	26.7	99.7	ug/kg	1300	ND	74.9	10-120	4.67	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - Quality Control

Batch BJB0657 - EPA 3546 (Microwave)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0657-MSD1)	**Source: 21B0081-30**			Prepared: 23-Feb-2021	Analyzed: 16-Mar-2021 17:44						
Bis(2-Chloroethoxy)methane	346	6.3	19.9	ug/kg	498	ND	69.4	39-120	5.95	30	
2,4-Dichlorophenol	1120	31.9	99.7	ug/kg	1300	ND	86.3	28-120	6.59	30	
1,2,4-Trichlorobenzene	347	5.9	19.9	ug/kg	498	ND	69.6	35-120	5.25	30	
Naphthalene	351	5.2	19.9	ug/kg	498	ND	70.4	43-120	4.69	30	
Benzoic acid	1790	58.9	199	ug/kg	2290	ND	78.2	10-120	10.20	30	
4-Chloroaniline	288	33.6	99.7	ug/kg	1300	ND	22.2	11-120	13.10	30	
Hexachlorobutadiene	362	5.0	19.9	ug/kg	498	ND	72.6	37-120	4.73	30	
4-Chloro-3-Methylphenol	1190	28.8	99.7	ug/kg	1300	ND	92.1	32-120	4.95	30	
2-Methylnaphthalene	335	5.7	19.9	ug/kg	498	ND	67.1	43-120	6.64	30	
Hexachlorocyclopentadiene	405	41.2	99.7	ug/kg	1300	ND	31.2	10-120	29.00	30	Q
2,4,6-Trichlorophenol	1080	25.3	99.7	ug/kg	1300	ND	83.3	44.6-132	6.18	30	
2,4,5-Trichlorophenol	1130	26.8	99.7	ug/kg	1300	ND	87.2	51.5-129	6.55	30	
2-Chloronaphthalene	385	4.4	19.9	ug/kg	498	ND	77.3	40-120	4.62	30	
2-Nitroaniline	1290	30.1	99.7	ug/kg	1300	ND	99.8	40-152	6.09	30	
Acenaphthylene	311	4.8	19.9	ug/kg	498	ND	62.3	42-120	3.37	30	
Dimethylphthalate	369	6.4	19.9	ug/kg	498	ND	74.0	43-120	4.60	30	
2,6-Dinitrotoluene	1180	26.6	99.7	ug/kg	1300	ND	90.8	31-156	5.93	30	
Acenaphthene	339	5.1	19.9	ug/kg	498	ND	68.0	45-120	5.15	30	
3-Nitroaniline	401	37.6	99.7	ug/kg	1300	ND	30.9	22-120	7.59	30	
2,4-Dinitrophenol	615	41.2	199	ug/kg	2290	ND	26.8	10-120	28.00	30	
Dibenzofuran	330	4.6	19.9	ug/kg	498	ND	66.1	43-120	6.19	30	
4-Nitrophenol	1180	44.3	99.7	ug/kg	1300	ND	91.0	15-138	10.30	30	
2,4-Dinitrotoluene	1300	22.8	99.7	ug/kg	1300	ND	100	44-150	6.36	30	
Fluorene	290	4.9	19.9	ug/kg	498	ND	58.1	45-120	1.61	30	Q
4-Chlorophenylphenyl ether	290	6.9	19.9	ug/kg	498	ND	58.1	36-141	4.81	30	
Diethyl phthalate	371	17.6	19.9	ug/kg	498	ND	74.4	50-120	7.86	30	
4-Nitroaniline	646	34.8	99.7	ug/kg	1300	ND	49.9	24-168	1.60	30	
4,6-Dinitro-2-methylphenol	2180	50.3	199	ug/kg	2290	ND	95.1	33-144	8.79	30	Q
N-Nitrosodiphenylamine	423	9.5	19.9	ug/kg	498	ND	84.8	70-154	2.65	30	
4-Bromophenyl phenyl ether	401	6.1	19.9	ug/kg	498	ND	80.5	39-120	2.39	30	
Hexachlorobenzene	468	4.7	19.9	ug/kg	498	ND	93.9	33-120	2.26	30	
Pentachlorophenol	1010	31.2	99.7	ug/kg	1300	ND	78.1	16-120	6.80	30	Q
Phenanthrene	424	4.7	19.9	ug/kg	498	6.6	83.8	49-120	5.32	30	
Anthracene	387	5.9	19.9	ug/kg	498	ND	77.6	45-120	3.30	30	
Carbazole	335	7.3	19.9	ug/kg	498	ND	67.3	43-135	6.18	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - Quality Control

Batch BJB0657 - EPA 3546 (Microwave)

Instrument: NT10 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0657-MSD1)	**Source: 21B0081-30**			Prepared: 23-Feb-2021	Analyzed: 16-Mar-2021 17:44						
Di-n-Butylphthalate	279	5.3	19.9	ug/kg	498	ND	56.0	48-126	4.51	30	
Fluoranthene	297	4.5	19.9	ug/kg	498	ND	59.6	53-145	3.31	30	
Pyrene	333	5.5	19.9	ug/kg	498	ND	66.9	52-134	4.17	30	
Butylbenzylphthalate	419	8.0	19.9	ug/kg	498	ND	84.1	45-132	5.09	30	
Benzo(a)anthracene	395	5.2	19.9	ug/kg	498	ND	79.3	49-120	6.26	30	
3,3'-Dichlorobenzidine	82.7	31.1	99.7	ug/kg	798	ND	10.4	10-120	40.60	30	*, J
Chrysene	394	5.2	19.9	ug/kg	498	ND	79.0	47-120	6.48	30	
bis(2-Ethylhexyl)phthalate	439	28.7	49.8	ug/kg	498	ND	88.1	34-130	4.16	30	
Di-n-Octylphthalate	412	8.7	19.9	ug/kg	498	ND	82.7	28-124	5.29	30	
Benzofluoranthenes, Total	832	10.2	39.9	ug/kg	997	ND	83.4	30-160	4.42	30	
Benzo(a)pyrene	410	6.5	19.9	ug/kg	498	ND	82.4	42-120	3.99	30	
Indeno(1,2,3-cd)pyrene	407	6.0	19.9	ug/kg	498	ND	81.7	42-163	5.00	30	
Dibenzo(a,h)anthracene	418	6.1	19.9	ug/kg	498	ND	83.9	30-133	3.39	30	
Benzo(g,h,i)perylene	411	5.8	19.9	ug/kg	498	ND	82.5	46-148	5.51	30	
1-Methylnaphthalene	347	5.9	19.9	ug/kg	498	ND	69.5	42-120	5.64	30	
Surrogate: 2-Fluorophenol	544			ug/kg	*748*	*490*	*72.7*	*27-120*			
Surrogate: Phenol-d5	544			ug/kg	*748*	*482*	*72.8*	*29-120*			
Surrogate: 2-Chlorophenol-d4	572			ug/kg	*748*	*585*	*76.6*	*31-120*			
Surrogate: 1,2-Dichlorobenzene-d4	320			ug/kg	*498*	*331*	*64.2*	*32-120*			
Surrogate: Nitrobenzene-d5	390			ug/kg	*498*	*369*	*78.2*	*30-120*			
Surrogate: 2-Fluorobiphenyl	365			ug/kg	*498*	*375*	*73.3*	*35-120*			
Surrogate: 2,4,6-Tribromophenol	552			ug/kg	*748*	*570*	*73.9*	*24-134*			
Surrogate: p-Terphenyl-d14	365			ug/kg	*498*	*351*	*73.3*	*37-120*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0655 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0655-BLK1)				Prepared: 23-Feb-2021 Analyzed: 19-Mar-2021 09:26							
Naphthalene	ND	0.44	0.60	ug/kg							U
1-Methylnaphthalene	ND	0.11	0.50	ug/kg							U
2-Methylnaphthalene	ND	0.13	0.50	ug/kg							U
Acenaphthylene	ND	0.06	0.50	ug/kg							U
Acenaphthene	ND	0.09	0.50	ug/kg							U
Dibenzofuran	ND	0.13	0.50	ug/kg							U
Fluorene	ND	0.07	0.50	ug/kg							U
Phenanthrene	ND	0.11	0.50	ug/kg							U
Anthracene	ND	0.07	0.50	ug/kg							U
Fluoranthene	ND	0.08	0.50	ug/kg							U
Pyrene	ND	0.09	0.50	ug/kg							U
Benzo(a)anthracene	ND	0.07	0.50	ug/kg							U
Chrysene	ND	0.07	0.50	ug/kg							U
Benzo(b)fluoranthene	ND	0.07	0.50	ug/kg							U
Benzo(k)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(j)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(a)pyrene	ND	0.09	0.50	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	0.09	0.50	ug/kg							U
Dibenzo(a,h)anthracene	ND	0.11	0.50	ug/kg							U
Benzo(g,h,i)perylene	ND	0.09	0.50	ug/kg							U
Surrogate: 2-Methylnaphthalene-d10	9.56			ug/kg	*15.0*		*63.7*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	9.17			ug/kg	*15.0*		*61.1*	*30-160*			
Surrogate: Fluoranthene-d10	10.1			ug/kg	*15.0*		*67.5*	*30-160*			
LCS (BJB0655-BS1)				Prepared: 23-Feb-2021 Analyzed: 19-Mar-2021 09:59							
Naphthalene	6.63	0.44	0.60	ug/kg	15.0		44.2	30-160			
1-Methylnaphthalene	7.63	0.11	0.50	ug/kg	15.0		50.9	30-160			
2-Methylnaphthalene	7.35	0.13	0.50	ug/kg	15.0		49.0	30-160			
Acenaphthylene	5.71	0.06	0.50	ug/kg	15.0		38.1	30-160			
Acenaphthene	6.24	0.09	0.50	ug/kg	15.0		41.6	30-160			
Dibenzofuran	6.45	0.13	0.50	ug/kg	15.0		43.0	30-160			
Fluorene	7.13	0.07	0.50	ug/kg	15.0		47.5	30-160			
Phenanthrene	8.48	0.11	0.50	ug/kg	15.0		56.5	30-160			
Anthracene	7.80	0.07	0.50	ug/kg	15.0		52.0	30-160			
Fluoranthene	10.2	0.08	0.50	ug/kg	15.0		68.1	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0655 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0655-BS1)					Prepared: 23-Feb-2021 Analyzed: 19-Mar-2021 09:59						
Pyrene	10.2	0.09	0.50	ug/kg	15.0		68.1	30-160			
Benzo(a)anthracene	9.55	0.07	0.50	ug/kg	15.0		63.7	30-160			
Chrysene	10.7	0.07	0.50	ug/kg	15.0		71.4	30-160			
Benzo(b)fluoranthene	10.1	0.07	0.50	ug/kg	15.0		67.7	30-160			
Benzo(k)fluoranthene	10.1	0.10	0.50	ug/kg	15.0		67.6	30-160			
Benzo(j)fluoranthene	13.3	0.10	0.50	ug/kg	15.0		88.9	30-160			
Benzo(a)pyrene	9.67	0.09	0.50	ug/kg	15.0		64.4	30-160			
Indeno(1,2,3-cd)pyrene	10.6	0.09	0.50	ug/kg	15.0		70.8	30-160			
Dibenzo(a,h)anthracene	9.84	0.11	0.50	ug/kg	15.0		65.6	30-160			
Benzo(g,h,i)perylene	10.7	0.09	0.50	ug/kg	15.0		71.5	30-160			
Surrogate: 2-Methylnaphthalene-d10	7.80			ug/kg	*15.0*		*52.0*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	9.37			ug/kg	*15.0*		*62.5*	*30-160*			
Surrogate: Fluoranthene-d10	10.2			ug/kg	*15.0*		*67.9*	*30-160*			
Matrix Spike (BJB0655-MS1)		**Source: 21B0081-08**			Prepared: 23-Feb-2021 Analyzed: 19-Mar-2021 13:46						
Naphthalene	7.16	0.44	0.60	ug/kg	15.0	ND	47.7	30-160			
1-Methylnaphthalene	8.38	0.11	0.50	ug/kg	15.0	0.20	54.5	30-160			
2-Methylnaphthalene	8.22	0.13	0.50	ug/kg	15.0	0.27	53.0	30-160			
Acenaphthylene	6.04	0.06	0.50	ug/kg	15.0	0.07	39.8	30-160			
Acenaphthene	6.86	0.09	0.50	ug/kg	15.0	ND	45.7	30-160			
Dibenzofuran	7.13	0.13	0.50	ug/kg	15.0	ND	47.5	30-160			
Fluorene	7.65	0.07	0.50	ug/kg	15.0	ND	51.0	30-160			
Phenanthrene	9.65	0.11	0.50	ug/kg	15.0	0.57	60.6	30-160			
Anthracene	8.62	0.07	0.50	ug/kg	15.0	ND	57.5	30-160			
Fluoranthene	10.6	0.08	0.50	ug/kg	15.0	0.28	68.6	30-160			
Pyrene	10.9	0.09	0.50	ug/kg	15.0	0.35	70.2	30-160			
Benzo(a)anthracene	10.0	0.07	0.50	ug/kg	15.0	0.19	65.7	30-160			
Chrysene	10.3	0.07	0.50	ug/kg	15.0	0.44	65.9	30-160			
Benzo(b)fluoranthene	9.50	0.07	0.50	ug/kg	15.0	0.39	60.7	30-160			
Benzo(k)fluoranthene	10.7	0.10	0.50	ug/kg	15.0	0.19	70.3	30-160			
Benzo(j)fluoranthene	10.6	0.10	0.50	ug/kg	15.0	0.18	69.8	30-160			
Benzo(a)pyrene	10.0	0.09	0.50	ug/kg	15.0	0.32	64.6	30-160			
Indeno(1,2,3-cd)pyrene	11.3	0.09	0.50	ug/kg	15.0	0.61	71.3	30-160			
Dibenzo(a,h)anthracene	11.0	0.10	0.50	ug/kg	15.0	0.12	72.8	30-160			
Benzo(g,h,i)perylene	10.7	0.08	0.50	ug/kg	15.0	0.67	66.8	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0655 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0655-MS1)	**Source: 21B0081-08**			Prepared: 23-Feb-2021	Analyzed: 19-Mar-2021 13:46						
Surrogate: 2-Methylnaphthalene-d10	8.63			ug/kg	*15.0*	*8.87*	*57.6*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	11.4			ug/kg	*15.0*	*12.3*	*76.3*	*30-160*			
Surrogate: Fluoranthene-d10	10.5			ug/kg	*15.0*	*10.2*	*70.2*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0655-MSD1)	**Source: 21B0081-08**			Prepared: 23-Feb-2021	Analyzed: 19-Mar-2021 14:18						
Naphthalene	7.23	0.44	0.60	ug/kg	15.0	ND	48.2	30-160	1.00	30	
1-Methylnaphthalene	8.45	0.11	0.50	ug/kg	15.0	0.20	55.0	30-160	0.91	30	
2-Methylnaphthalene	8.18	0.13	0.50	ug/kg	15.0	0.27	52.8	30-160	0.48	30	
Acenaphthylene	6.28	0.06	0.50	ug/kg	15.0	0.07	41.4	30-160	3.96	30	
Acenaphthene	7.05	0.09	0.50	ug/kg	15.0	ND	47.0	30-160	2.74	30	
Dibenzofuran	7.33	0.13	0.50	ug/kg	15.0	ND	48.9	30-160	2.75	30	
Fluorene	7.87	0.07	0.50	ug/kg	15.0	ND	52.5	30-160	2.83	30	
Phenanthrene	10.2	0.11	0.50	ug/kg	15.0	0.57	64.3	30-160	5.72	30	
Anthracene	8.93	0.07	0.50	ug/kg	15.0	ND	59.5	30-160	3.49	30	
Fluoranthene	10.7	0.08	0.50	ug/kg	15.0	0.28	69.5	30-160	1.18	30	
Pyrene	11.1	0.09	0.50	ug/kg	15.0	0.35	71.6	30-160	1.92	30	
Benzo(a)anthracene	10.1	0.07	0.50	ug/kg	15.0	0.19	65.8	30-160	0.14	30	
Chrysene	10.5	0.07	0.50	ug/kg	15.0	0.44	66.9	30-160	1.37	30	
Benzo(b)fluoranthene	10.5	0.07	0.50	ug/kg	15.0	0.39	67.5	30-160	10.10	30	
Benzo(k)fluoranthene	9.60	0.10	0.50	ug/kg	15.0	0.19	62.7	30-160	11.20	30	
Benzo(j)fluoranthene	11.5	0.10	0.50	ug/kg	15.0	0.18	75.4	30-160	7.67	30	
Benzo(a)pyrene	10.2	0.09	0.50	ug/kg	15.0	0.32	65.7	30-160	1.63	30	
Indeno(1,2,3-cd)pyrene	10.8	0.09	0.50	ug/kg	15.0	0.61	68.1	30-160	4.30	30	
Dibenzo(a,h)anthracene	10.5	0.10	0.50	ug/kg	15.0	0.12	69.1	30-160	5.03	30	
Benzo(g,h,i)perylene	10.4	0.08	0.50	ug/kg	15.0	0.67	64.9	30-160	2.69	30	
Surrogate: 2-Methylnaphthalene-d10	8.30			ug/kg	*15.0*	*8.87*	*55.3*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	10.3			ug/kg	*15.0*	*12.3*	*68.4*	*30-160*			
Surrogate: Fluoranthene-d10	10.2			ug/kg	*15.0*	*10.2*	*68.1*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0656 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0656-BLK1)				Prepared: 23-Feb-2021 Analyzed: 13-Mar-2021 21:34							
Naphthalene	ND	0.44	0.60	ug/kg							U
1-Methylnaphthalene	0.58	0.11	0.50	ug/kg							
2-Methylnaphthalene	0.72	0.13	0.50	ug/kg							
Acenaphthylene	ND	0.06	0.50	ug/kg							U
Acenaphthene	ND	0.09	0.50	ug/kg							U
Dibenzofuran	ND	0.13	0.50	ug/kg							U
Fluorene	ND	0.07	0.50	ug/kg							U
Phenanthrene	ND	0.11	0.50	ug/kg							U
Anthracene	ND	0.07	0.50	ug/kg							U
Fluoranthene	ND	0.08	0.50	ug/kg							U
Pyrene	ND	0.09	0.50	ug/kg							U
Benzo(a)anthracene	ND	0.07	0.50	ug/kg							U
Chrysene	ND	0.07	0.50	ug/kg							U
Benzo(b)fluoranthene	ND	0.07	0.50	ug/kg							U
Benzo(k)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(j)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(a)pyrene	ND	0.09	0.50	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	0.09	0.50	ug/kg							U
Dibenzo(a,h)anthracene	ND	0.11	0.50	ug/kg							U
Benzo(g,h,i)perylene	ND	0.09	0.50	ug/kg							U
Surrogate: 2-Methylnaphthalene-d10	6.35			ug/kg	*15.0*		*42.4*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	10.4			ug/kg	*15.0*		*69.4*	*30-160*			
Surrogate: Fluoranthene-d10	9.62			ug/kg	*15.0*		*64.1*	*30-160*			
LCS (BJB0656-BS1)				Prepared: 23-Feb-2021 Analyzed: 13-Mar-2021 22:07							
Naphthalene	6.29	0.44	0.60	ug/kg	15.0		41.9	30-160			
1-Methylnaphthalene	8.99	0.11	0.50	ug/kg	15.0		59.9	30-160			B
2-Methylnaphthalene	9.47	0.13	0.50	ug/kg	15.0		63.2	30-160			B
Acenaphthylene	5.70	0.06	0.50	ug/kg	15.0		38.0	30-160			
Acenaphthene	6.37	0.09	0.50	ug/kg	15.0		42.5	30-160			
Dibenzofuran	6.42	0.13	0.50	ug/kg	15.0		42.8	30-160			
Fluorene	7.22	0.07	0.50	ug/kg	15.0		48.1	30-160			
Phenanthrene	7.63	0.11	0.50	ug/kg	15.0		50.8	30-160			
Anthracene	7.12	0.07	0.50	ug/kg	15.0		47.4	30-160			
Fluoranthene	8.93	0.08	0.50	ug/kg	15.0		59.6	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0656 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0656-BS1)					Prepared: 23-Feb-2021 Analyzed: 13-Mar-2021 22:07						
Pyrene	9.02	0.09	0.50	ug/kg	15.0		60.2	30-160			
Benzo(a)anthracene	8.84	0.07	0.50	ug/kg	15.0		58.9	30-160			
Chrysene	8.71	0.07	0.50	ug/kg	15.0		58.1	30-160			
Benzo(b)fluoranthene	8.37	0.07	0.50	ug/kg	15.0		55.8	30-160			
Benzo(k)fluoranthene	8.67	0.10	0.50	ug/kg	15.0		57.8	30-160			
Benzo(j)fluoranthene	8.28	0.10	0.50	ug/kg	15.0		55.2	30-160			Q
Benzo(a)pyrene	7.77	0.09	0.50	ug/kg	15.0		51.8	30-160			
Indeno(1,2,3-cd)pyrene	8.92	0.09	0.50	ug/kg	15.0		59.5	30-160			
Dibenzo(a,h)anthracene	8.78	0.11	0.50	ug/kg	15.0		58.5	30-160			
Benzo(g,h,i)perylene	8.45	0.09	0.50	ug/kg	15.0		56.4	30-160			
Surrogate: 2-Methylnaphthalene-d10	6.81			ug/kg	*15.0*		*45.4*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	9.02			ug/kg	*15.0*		*60.1*	*30-160*			
Surrogate: Fluoranthene-d10	9.03			ug/kg	*15.0*		*60.2*	*30-160*			
Matrix Spike (BJB0656-MS1)	**Source: 21B0081-37**				Prepared: 23-Feb-2021 Analyzed: 14-Mar-2021 01:54						
Naphthalene	15.0	0.44	0.60	ug/kg	15.0	18.1	-20.8	30-160			*
1-Methylnaphthalene	18.3	0.11	0.50	ug/kg	15.0	20.8	-16.5	30-160			*, B
2-Methylnaphthalene	20.9	0.13	0.50	ug/kg	15.0	27.7	-45.2	30-160			*, B
Acenaphthylene	6.76	0.06	0.50	ug/kg	15.0	ND	45.2	30-160			
Acenaphthene	8.61	0.09	0.50	ug/kg	15.0	1.21	49.5	30-160			
Dibenzofuran	10.5	0.13	0.50	ug/kg	15.0	6.87	24.2	30-160			*
Fluorene	9.22	0.07	0.50	ug/kg	15.0	0.96	55.2	30-160			
Phenanthrene	18.5	0.11	0.50	ug/kg	15.0	13.1	35.7	30-160			
Anthracene	10.9	0.07	0.50	ug/kg	15.0	1.73	61.3	30-160			
Fluoranthene	21.8	0.08	0.50	ug/kg	15.0	13.0	58.7	30-160			
Pyrene	23.5	0.09	0.50	ug/kg	15.0	17.6	39.4	30-160			
Benzo(a)anthracene	16.5	0.07	0.50	ug/kg	15.0	11.5	33.3	30-160			
Chrysene	21.9	0.07	0.50	ug/kg	15.0	21.9	-0.00268	30-160			*
Benzo(b)fluoranthene	24.8	0.07	0.50	ug/kg	15.0	19.2	36.8	30-160			
Benzo(k)fluoranthene	12.6	0.10	0.50	ug/kg	15.0	5.84	45.4	30-160			
Benzo(j)fluoranthene	11.1	0.10	0.50	ug/kg	15.0	5.13	39.8	30-160			Q
Benzo(a)pyrene	17.2	0.09	0.50	ug/kg	15.0	9.37	52.6	30-160			
Indeno(1,2,3-cd)pyrene	16.0	0.09	0.50	ug/kg	15.0	7.04	60.2	30-160			
Dibenzo(a,h)anthracene	11.4	0.10	0.50	ug/kg	15.0	2.09	62.2	30-160			
Benzo(g,h,i)perylene	15.4	0.08	0.50	ug/kg	15.0	8.89	43.8	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0656 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0656-MS1)	**Source: 21B0081-37**			Prepared: 23-Feb-2021	Analyzed: 14-Mar-2021 01:54						
Surrogate: 2-Methylnaphthalene-d10	6.51			ug/kg	*15.0*	*6.50*	*43.5*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	9.46			ug/kg	*15.0*	*9.59*	*63.2*	*30-160*			
Surrogate: Fluoranthene-d10	9.25			ug/kg	*15.0*	*9.22*	*61.8*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0656-MSD1)	**Source: 21B0081-37**			Prepared: 23-Feb-2021	Analyzed: 14-Mar-2021 03:26						
Naphthalene	14.3	0.44	0.60	ug/kg	15.0	18.1	-25.5	30-160	4.80	30	*
1-Methylnaphthalene	19.4	0.11	0.50	ug/kg	15.0	20.8	-9.13	30-160	5.82	30	*, B
2-Methylnaphthalene	21.9	0.13	0.50	ug/kg	15.0	27.7	-38.9	30-160	4.42	30	*, B
Acenaphthylene	6.69	0.06	0.50	ug/kg	15.0	ND	44.7	30-160	1.07	30	
Acenaphthene	8.31	0.09	0.50	ug/kg	15.0	1.21	47.5	30-160	3.54	30	
Dibenzofuran	11.2	0.13	0.50	ug/kg	15.0	6.87	29.1	30-160	6.75	30	*
Fluorene	9.29	0.07	0.50	ug/kg	15.0	0.96	55.7	30-160	0.79	30	
Phenanthrene	19.4	0.11	0.50	ug/kg	15.0	13.1	41.8	30-160	4.83	30	
Anthracene	11.0	0.07	0.50	ug/kg	15.0	1.73	61.9	30-160	0.85	30	
Fluoranthene	22.6	0.08	0.50	ug/kg	15.0	13.0	64.4	30-160	3.83	30	
Pyrene	25.1	0.09	0.50	ug/kg	15.0	17.6	50.4	30-160	6.78	30	
Benzo(a)anthracene	18.2	0.07	0.50	ug/kg	15.0	11.5	45.1	30-160	10.20	30	
Chrysene	25.5	0.07	0.50	ug/kg	15.0	21.9	24.5	30-160	15.40	30	*
Benzo(b)fluoranthene	27.3	0.07	0.50	ug/kg	15.0	19.2	54.2	30-160	9.95	30	
Benzo(k)fluoranthene	13.2	0.10	0.50	ug/kg	15.0	5.84	49.0	30-160	4.13	30	
Benzo(j)fluoranthene	11.6	0.10	0.50	ug/kg	15.0	5.13	43.2	30-160	4.59	30	Q
Benzo(a)pyrene	17.8	0.09	0.50	ug/kg	15.0	9.37	56.6	30-160	3.44	30	
Indeno(1,2,3-cd)pyrene	15.7	0.09	0.50	ug/kg	15.0	7.04	58.0	30-160	2.04	30	
Dibenzo(a,h)anthracene	11.2	0.10	0.50	ug/kg	15.0	2.09	60.9	30-160	1.73	30	
Benzo(g,h,i)perylene	15.4	0.08	0.50	ug/kg	15.0	8.89	43.8	30-160	0.04	30	
Surrogate: 2-Methylnaphthalene-d10	5.94			ug/kg	*15.0*	*6.50*	*39.7*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	9.33			ug/kg	*15.0*	*9.59*	*62.3*	*30-160*			
Surrogate: Fluoranthene-d10	9.40			ug/kg	*15.0*	*9.22*	*62.8*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJC0690 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJC0690-BLK1)				Prepared: 25-Mar-2021 Analyzed: 26-Mar-2021 17:02							
Naphthalene	ND	0.44	0.60	ug/kg							U
1-Methylnaphthalene	ND	0.11	0.50	ug/kg							U
2-Methylnaphthalene	ND	0.13	0.50	ug/kg							U
Acenaphthylene	ND	0.06	0.50	ug/kg							U
Acenaphthene	ND	0.09	0.50	ug/kg							U
Dibenzofuran	ND	0.13	0.50	ug/kg							U
Fluorene	0.10	0.07	0.50	ug/kg							J
Phenanthrene	0.75	0.11	0.50	ug/kg							
Anthracene	0.12	0.07	0.50	ug/kg							J
Fluoranthene	1.28	0.08	0.50	ug/kg							
Pyrene	1.22	0.09	0.50	ug/kg							
Benzo(a)anthracene	0.70	0.07	0.50	ug/kg							
Chrysene	0.98	0.07	0.50	ug/kg							
Benzo(b)fluoranthene	0.56	0.07	0.50	ug/kg							
Benzo(k)fluoranthene	0.47	0.10	0.50	ug/kg							J
Benzo(j)fluoranthene	0.49	0.10	0.50	ug/kg							J
Benzo(a)pyrene	0.45	0.09	0.50	ug/kg							J
Indeno(1,2,3-cd)pyrene	0.29	0.09	0.50	ug/kg							J
Dibenzo(a,h)anthracene	ND	0.11	0.50	ug/kg							U
Benzo(g,h,i)perylene	0.36	0.09	0.50	ug/kg							J
Surrogate: 2-Methylnaphthalene-d10	6.77			ug/kg	*15.0*		*45.1*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	9.46			ug/kg	*15.0*		*63.1*	*30-160*			
Surrogate: Fluoranthene-d10	9.66			ug/kg	*15.0*		*64.4*	*30-160*			
LCS (BJC0690-BS1)				Prepared: 25-Mar-2021 Analyzed: 26-Mar-2021 17:35							
Naphthalene	6.84	0.44	0.60	ug/kg	15.0		45.6	30-160			
1-Methylnaphthalene	7.25	0.11	0.50	ug/kg	15.0		48.4	30-160			
2-Methylnaphthalene	6.93	0.13	0.50	ug/kg	15.0		46.2	30-160			
Acenaphthylene	6.00	0.06	0.50	ug/kg	15.0		40.0	30-160			
Acenaphthene	6.34	0.09	0.50	ug/kg	15.0		42.3	30-160			
Dibenzofuran	6.55	0.13	0.50	ug/kg	15.0		43.6	30-160			
Fluorene	7.09	0.07	0.50	ug/kg	15.0		47.3	30-160			
Phenanthrene	8.28	0.11	0.50	ug/kg	15.0		55.2	30-160			B
Anthracene	8.25	0.07	0.50	ug/kg	15.0		55.0	30-160			
Fluoranthene	9.61	0.08	0.50	ug/kg	15.0		64.0	30-160			B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJC0690 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJC0690-BS1)				Prepared: 25-Mar-2021 Analyzed: 26-Mar-2021 17:35							
Pyrene	9.72	0.09	0.50	ug/kg	15.0		64.8	30-160			B
Benzo(a)anthracene	9.42	0.07	0.50	ug/kg	15.0		62.8	30-160			B
Chrysene	9.41	0.07	0.50	ug/kg	15.0		62.7	30-160			B
Benzo(b)fluoranthene	9.53	0.07	0.50	ug/kg	15.0		63.5	30-160			B
Benzo(k)fluoranthene	9.24	0.10	0.50	ug/kg	15.0		61.6	30-160			
Benzo(j)fluoranthene	10.8	0.10	0.50	ug/kg	15.0		71.8	30-160			
Benzo(a)pyrene	9.62	0.09	0.50	ug/kg	15.0		64.1	30-160			
Indeno(1,2,3-cd)pyrene	9.86	0.09	0.50	ug/kg	15.0		65.7	30-160			
Dibenzo(a,h)anthracene	9.54	0.11	0.50	ug/kg	15.0		63.6	30-160			
Benzo(g,h,i)perylene	9.99	0.09	0.50	ug/kg	15.0		66.6	30-160			
Surrogate: 2-Methylnaphthalene-d10	7.38			ug/kg	*15.0*		*49.2*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	9.84			ug/kg	*15.0*		*65.6*	*30-160*			
Surrogate: Fluoranthene-d10	9.82			ug/kg	*15.0*		*65.5*	*30-160*			
Matrix Spike (BJC0690-MS1)		**Source: 21B0081-38**		Prepared: 25-Mar-2021 Analyzed: 26-Mar-2021 18:39							
Naphthalene	23.5	0.44	0.60	ug/kg	15.0	13.1	69.1	30-160			
1-Methylnaphthalene	19.3	0.11	0.50	ug/kg	15.0	8.99	69.1	30-160			
2-Methylnaphthalene	26.0	0.13	0.50	ug/kg	15.0	13.6	83.2	30-160			
Acenaphthylene	8.60	0.06	0.50	ug/kg	15.0	1.34	48.5	30-160			
Acenaphthene	22.7	0.09	0.50	ug/kg	15.0	10.0	84.9	30-160			
Dibenzofuran	23.7	0.13	0.50	ug/kg	15.0	13.0	71.4	30-160			
Fluorene	29.0	0.07	0.50	ug/kg	15.0	15.5	90.2	30-160			
Phenanthrene	68.1	0.11	0.50	ug/kg	15.0	50.9	115	30-160			B, E
Anthracene	24.7	0.07	0.50	ug/kg	15.0	12.8	79.3	30-160			
Fluoranthene	46.9	0.08	0.50	ug/kg	15.0	32.6	95.0	30-160			B
Pyrene	38.7	0.09	0.50	ug/kg	15.0	24.4	95.3	30-160			B
Benzo(a)anthracene	18.5	0.07	0.50	ug/kg	15.0	8.00	70.3	30-160			B
Chrysene	21.4	0.07	0.50	ug/kg	15.0	10.9	70.3	30-160			B
Benzo(b)fluoranthene	19.9	0.07	0.50	ug/kg	15.0	7.72	81.2	30-160			B
Benzo(k)fluoranthene	11.1	0.10	0.50	ug/kg	15.0	3.45	51.1	30-160			
Benzo(j)fluoranthene	10.1	0.10	0.50	ug/kg	15.0	3.37	44.8	30-160			
Benzo(a)pyrene	17.4	0.09	0.50	ug/kg	15.0	7.11	68.7	30-160			
Indeno(1,2,3-cd)pyrene	18.0	0.09	0.50	ug/kg	15.0	6.09	79.6	30-160			
Dibenzo(a,h)anthracene	13.0	0.10	0.50	ug/kg	15.0	1.77	74.7	30-160			
Benzo(g,h,i)perylene	24.3	0.08	0.50	ug/kg	15.0	10.5	91.9	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJC0690 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJC0690-MS1)	**Source: 21B0081-38**			Prepared: 25-Mar-2021	Analyzed: 26-Mar-2021 18:39						
Surrogate: 2-Methylnaphthalene-d10	7.43			ug/kg	*15.0*	*6.93*	*49.6*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	10.8			ug/kg	*15.0*	*11.7*	*71.9*	*30-160*			
Surrogate: Fluoranthene-d10	8.82			ug/kg	*15.0*	*9.79*	*58.9*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJC0690-MSD1)	**Source: 21B0081-38**			Prepared: 25-Mar-2021	Analyzed: 26-Mar-2021 19:12						
Naphthalene	26.6	0.44	0.60	ug/kg	15.0	13.1	90.0	30-160	12.50	30	
1-Methylnaphthalene	23.5	0.11	0.50	ug/kg	15.0	8.99	97.2	30-160	19.60	30	
2-Methylnaphthalene	30.9	0.13	0.50	ug/kg	15.0	13.6	116	30-160	17.10	30	
Acenaphthylene	9.83	0.06	0.50	ug/kg	15.0	1.34	56.7	30-160	13.30	30	
Acenaphthene	19.8	0.09	0.50	ug/kg	15.0	10.0	65.2	30-160	13.90	30	
Dibenzofuran	23.8	0.13	0.50	ug/kg	15.0	13.0	72.1	30-160	0.48	30	
Fluorene	26.5	0.07	0.50	ug/kg	15.0	15.5	73.4	30-160	9.03	30	
Phenanthrene	62.9	0.11	0.50	ug/kg	15.0	50.9	80.7	30-160	7.80	30	B, E
Anthracene	25.5	0.07	0.50	ug/kg	15.0	12.8	84.3	30-160	2.98	30	
Fluoranthene	49.5	0.08	0.50	ug/kg	15.0	32.6	112	30-160	5.40	30	B
Pyrene	40.1	0.09	0.50	ug/kg	15.0	24.4	104	30-160	3.50	30	B
Benzo(a)anthracene	19.2	0.07	0.50	ug/kg	15.0	8.00	74.8	30-160	3.54	30	B
Chrysene	21.5	0.07	0.50	ug/kg	15.0	10.9	70.6	30-160	0.26	30	B
Benzo(b)fluoranthene	19.0	0.07	0.50	ug/kg	15.0	7.72	75.1	30-160	4.75	30	B
Benzo(k)fluoranthene	12.4	0.10	0.50	ug/kg	15.0	3.45	59.6	30-160	10.80	30	
Benzo(j)fluoranthene	10.8	0.10	0.50	ug/kg	15.0	3.37	49.4	30-160	6.58	30	
Benzo(a)pyrene	16.6	0.09	0.50	ug/kg	15.0	7.11	63.2	30-160	4.84	30	
Indeno(1,2,3-cd)pyrene	17.4	0.09	0.50	ug/kg	15.0	6.09	75.6	30-160	3.45	30	
Dibenzo(a,h)anthracene	13.1	0.10	0.50	ug/kg	15.0	1.77	75.5	30-160	0.91	30	
Benzo(g,h,i)perylene	21.0	0.08	0.50	ug/kg	15.0	10.5	69.9	30-160	14.60	30	
Surrogate: 2-Methylnaphthalene-d10	7.98			ug/kg	*15.0*	*6.93*	*53.2*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	11.5			ug/kg	*15.0*	*11.7*	*76.8*	*30-160*			
Surrogate: Fluoranthene-d10	9.68			ug/kg	*15.0*	*9.79*	*64.6*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Petroleum Hydrocarbons - Quality Control

Batch BJB0389 - EPA 3546 (Microwave)

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0389-BLK1)				Prepared: 12-Feb-2021	Analyzed: 20-Feb-2021 02:53					
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: o-Terphenyl	11.0		mg/kg	*11.3*		*97.4*	*50-150*			
LCS (BJB0389-BS1)				Prepared: 12-Feb-2021	Analyzed: 20-Feb-2021 03:14					
Diesel Range Organics (C12-C24)	143	5.00	mg/kg	150		95.1	63-120			
Surrogate: o-Terphenyl	11.3		mg/kg	*11.3*		*100*	*50-150*			
Matrix Spike (BJB0389-MS1)	**Source: 21B0081-01**			Prepared: 12-Feb-2021	Analyzed: 20-Feb-2021 03:35					
Diesel Range Organics (C12-C24)	186	5.25	mg/kg	157	19.9	105	63-120			
Surrogate: o-Terphenyl	11.2		mg/kg	*11.8*	*11.1*	*94.8*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJB0389-MSD1)	**Source: 21B0081-01**			Prepared: 12-Feb-2021	Analyzed: 20-Feb-2021 03:55					
Diesel Range Organics (C12-C24)	168	5.24	mg/kg	157	19.9	94.4	63-120	9.78	30	
Surrogate: o-Terphenyl	10.7		mg/kg	*11.8*	*11.1*	*91.1*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Petroleum Hydrocarbons - Quality Control

Batch BJB0391 - EPA 3546 (Microwave)

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0391-BLK1)				Prepared: 12-Feb-2021	Analyzed: 26-Feb-2021 01:02					
Diesel Range Organics (C12-C24)	ND	4.99	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	9.97	mg/kg							U
Surrogate: o-Terphenyl	12.2		mg/kg	*11.2*		*109*	*50-150*			
LCS (BJB0391-BS1)				Prepared: 12-Feb-2021	Analyzed: 26-Feb-2021 01:23					
Diesel Range Organics (C12-C24)	161	5.00	mg/kg	150		107	63-120			
Surrogate: o-Terphenyl	12.4		mg/kg	*11.2*		*111*	*50-150*			
Matrix Spike (BJB0391-MS1)	**Source: 21B0081-30**			Prepared: 12-Feb-2021	Analyzed: 26-Feb-2021 01:43					
Diesel Range Organics (C12-C24)	170	6.22	mg/kg	187	6.43	87.7	63-120			
Surrogate: o-Terphenyl	13.0		mg/kg	*14.0*	*13.4*	*92.6*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJB0391-MSD1)	**Source: 21B0081-30**			Prepared: 12-Feb-2021	Analyzed: 26-Feb-2021 02:04					
Diesel Range Organics (C12-C24)	184	6.26	mg/kg	188	6.43	94.4	63-120	7.67	30	
Surrogate: o-Terphenyl	13.8		mg/kg	*14.1*	*13.4*	*98.4*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Washington Department of Ecology Methods - Quality Control

Batch BJB0274 - EPA 5035 (Methanol Extraction)

Instrument: PID1 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0274-BLK1)				Prepared: 08-Feb-2021	Analyzed: 08-Feb-2021 17:54					
C5-C6 Aliphatics	ND	9000	ug/kg							U
C8-C10 Aromatics	ND	9000	ug/kg							U
1,2,3-Trimethylbenzene	ND	900	ug/kg							U
n-Pentane	ND	900	ug/kg							U
n-Hexane	ND	900	ug/kg							U
n-Octane	ND	900	ug/kg							U
n-Decane	990	900	ug/kg							
n-Dodecane	ND	900	ug/kg							U
Surrogate: PID: 2,5-Dibromotoluene	63.3		ug/kg	*100*		*63.3*	*60-140*			
Surrogate: FID: 2,5-Dibromotoluene	64.9		ug/kg	*100*		*64.9*	*60-140*			
LCS (BJB0274-BS1)				Prepared: 08-Feb-2021	Analyzed: 08-Feb-2021 16:24					
1,2,3-Trimethylbenzene	9310	900	ug/kg	9000		103	70-130			
n-Pentane	9090	900	ug/kg	9000		101	54-131			
n-Hexane	9090	900	ug/kg	9000		101	70-130			
n-Octane	7240	900	ug/kg	9000		80.4	52-120			
n-Decane	6680	900	ug/kg	9000		74.2	52-120			B
n-Dodecane	8140	900	ug/kg	9000		90.4	62-138			
Surrogate: PID: 2,5-Dibromotoluene	101		ug/kg	*100*		*101*	*60-140*			
Surrogate: FID: 2,5-Dibromotoluene	99.1		ug/kg	*100*		*99.1*	*60-140*			
LCS Dup (BJB0274-BSD1)				Prepared: 08-Feb-2021	Analyzed: 08-Feb-2021 17:23					
1,2,3-Trimethylbenzene	9020	900	ug/kg	9000		100	70-130	3.14	30	
n-Pentane	8680	900	ug/kg	9000		96.4	54-131	4.66	30	
n-Hexane	8570	900	ug/kg	9000		95.2	70-130	5.91	30	
n-Octane	6710	900	ug/kg	9000		74.6	52-120	7.48	30	
n-Decane	6750	900	ug/kg	9000		75.0	52-120	1.07	30	B
n-Dodecane	8530	900	ug/kg	9000		94.8	62-138	4.75	30	
Surrogate: PID: 2,5-Dibromotoluene	100		ug/kg	*100*		*100*	*60-140*			
Surrogate: FID: 2,5-Dibromotoluene	99.4		ug/kg	*100*		*99.4*	*60-140*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Washington Department of Ecology Methods - Quality Control

Batch BJB0328 - EPA 3546 (Microwave)

Instrument: FID8 Analyst: JGR

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0328-BLK1)				Prepared: 10-Feb-2021		Analyzed: 06-Mar-2021 21:08				
C8-C10 Aliphatics	ND	2000	ug/kg							U
Surrogate: 1-Chloro-octadecane	9200		ug/kg	*15000*		*61.3*	*30-160*			
Blank (BJB0328-BLK2)				Prepared: 10-Feb-2021		Analyzed: 06-Mar-2021 18:14				
C8-C10 Aromatics	ND	2000	ug/kg							U
Surrogate: o-Terphenyl	10700		ug/kg	*15000*		*71.5*	*30-160*			
LCS (BJB0328-BS1)				Prepared: 10-Feb-2021		Analyzed: 06-Mar-2021 21:32				
C8-C10 Aliphatics	6850	2000	ug/kg	15000		45.7	25-130			
Surrogate: 1-Chloro-octadecane	8980		ug/kg	*15000*		*59.9*	*30-160*			
Matrix Spike (BJB0328-MS1)	**Source: 21B0081-25**			Prepared: 10-Feb-2021		Analyzed: 06-Mar-2021 23:11				
C8-C10 Aliphatics	8940	2670	ug/kg	20000	ND	44.7	25-130			
Surrogate: 1-Chloro-octadecane	11100		ug/kg	*20000*	*15400*	*55.3*	*30-160*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0328-MSD1)	**Source: 21B0081-25**			Prepared: 10-Feb-2021		Analyzed: 12-Mar-2021 10:20				
C8-C10 Aliphatics	ND	2670	ug/kg	20000	ND		25-130			*, U
Surrogate: 1-Chloro-octadecane	12500		ug/kg	*20000*	*15400*	*62.6*	*30-160*			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Aroclor PCB - Quality Control

Batch BJB0519 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0519-BLK1)				Prepared: 18-Feb-2021 Analyzed: 04-Mar-2021 02:36							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	5.15			ug/kg	*8.00*		*64.4*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.70			ug/kg	*8.00*		*83.7*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.34			ug/kg	*8.00*		*79.3*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.44			ug/kg	*8.00*		*68.0*	*44-120*			
LCS (BJB0519-BS1)				Prepared: 18-Feb-2021 Analyzed: 04-Mar-2021 02:56							
Aroclor 1016 [2C]	84.9	1.6	4.0	ug/kg	101		84.2	56-120			
Aroclor 1260 [2C]	77.2	0.6	4.0	ug/kg	101		76.6	58-120			
Surrogate: Decachlorobiphenyl	5.42			ug/kg	*8.00*		*67.8*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.65			ug/kg	*8.00*		*83.2*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.86			ug/kg	*8.00*		*85.7*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.49			ug/kg	*8.00*		*68.7*	*44-120*			
LCS Dup (BJB0519-BSD1)				Prepared: 18-Feb-2021 Analyzed: 04-Mar-2021 03:17							
Aroclor 1016 [2C]	83.8	1.6	4.0	ug/kg	101		83.1	56-120	1.34	30	
Aroclor 1260 [2C]	76.0	0.6	4.0	ug/kg	101		75.4	58-120	1.58	30	
Surrogate: Decachlorobiphenyl	5.33			ug/kg	*8.00*		*66.6*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.40			ug/kg	*8.00*		*80.0*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	6.75			ug/kg	*8.00*		*84.4*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.36			ug/kg	*8.00*		*67.0*	*44-120*			
Matrix Spike (BJB0519-MS1)	**Source: 21B0081-01**			Prepared: 18-Feb-2021 Analyzed: 04-Mar-2021 03:58							
Aroclor 1016	64.6	1.6	4.0	ug/kg	101	ND	64.2	56-120			
Aroclor 1260	58.5	0.6	4.0	ug/kg	101	ND	57.9	58-120			
Surrogate: Decachlorobiphenyl	4.59			ug/kg	*7.99*		*57.4*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.49			ug/kg	*7.99*		*68.6*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	5.09			ug/kg	*7.99*		*63.7*	*40-126*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Aroclor PCB - Quality Control

Batch BJB0519 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0519-MS1)	**Source: 21B0081-01**			Prepared: 18-Feb-2021	Analyzed: 04-Mar-2021 03:58						
Surrogate: Tetrachlorometaxylene [2C]	4.70			ug/kg	*7.99*		*58.8*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0519-MSD1)	**Source: 21B0081-01**			Prepared: 18-Feb-2021	Analyzed: 04-Mar-2021 04:18						
Aroclor 1016	61.0	1.6	4.0	ug/kg	101	ND	60.6	56-120	5.73	30	
Aroclor 1260	54.5	0.6	4.0	ug/kg	101	ND	54.0	58-120	7.07	30	*
Surrogate: Decachlorobiphenyl	4.28			ug/kg	*7.99*		*53.5*	*40-126*			
Surrogate: Tetrachlorometaxylene	5.22			ug/kg	*7.99*		*65.3*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	4.76			ug/kg	*7.99*		*59.5*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	4.37			ug/kg	*7.99*		*54.6*	*44-120*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Metals and Metallic Compounds - Quality Control

Batch BJB0429 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0429-BLK1)					Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:05							
Barium	135	ND	0.06	0.50	mg/kg							U
Barium	137	ND	0.05	0.50	mg/kg							U
Chromium	52	ND	0.13	0.50	mg/kg							U
Chromium	53	ND	0.07	0.50	mg/kg							U
Cobalt	59	ND	0.03	0.20	mg/kg							U
Lead	208	ND	0.07	0.10	mg/kg							U
Silver	107	ND	0.02	0.20	mg/kg							U
Vanadium	51a	ND	0.04	0.20	mg/kg							U
Vanadium	51b	ND	0.02	0.20	mg/kg							U
Arsenic	75a	ND	0.02	0.20	mg/kg							U
Cadmium	111	ND	0.03	0.10	mg/kg							U
Cadmium	114	ND	0.04	0.10	mg/kg							U
Copper	63	ND	0.34	0.50	mg/kg							U
Copper	65	ND	0.35	0.50	mg/kg							U
Nickel	60	ND	0.05	0.50	mg/kg							U
Nickel	62	ND	0.22	0.50	mg/kg							U
Selenium	78	ND	0.44	0.50	mg/kg							U
Zinc	66	ND	0.8	4.0	mg/kg							U
Zinc	67	ND	0.9	4.0	mg/kg							U
LCS (BJB0429-BS1)					Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:10							
Barium	135	25.0	0.06	0.50	mg/kg	25.0		100	80-120			
Barium	137	24.8	0.05	0.50	mg/kg	25.0		99.3	80-120			
Chromium	52	26.2	0.13	0.50	mg/kg	25.0		105	80-120			
Chromium	53	25.3	0.07	0.50	mg/kg	25.0		101	80-120			
Cobalt	59	24.9	0.03	0.20	mg/kg	25.0		99.5	80-120			
Lead	208	26.8	0.07	0.10	mg/kg	25.0		107	80-120			
Silver	107	26.0	0.02	0.20	mg/kg	25.0		104	80-120			
Vanadium	51a	26.3	0.04	0.20	mg/kg	25.0		105	80-120			
Vanadium	51b	26.0	0.02	0.20	mg/kg	25.0		104	80-120			
Arsenic	75a	24.3	0.02	0.20	mg/kg	25.0		97.3	80-120			
Cadmium	111	25.5	0.03	0.10	mg/kg	25.0		102	80-120			
Cadmium	114	25.5	0.04	0.10	mg/kg	25.0		102	80-120			
Copper	63	25.7	0.34	0.50	mg/kg	25.0		103	80-120			
Copper	65	25.3	0.35	0.50	mg/kg	25.0		101	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Metals and Metallic Compounds - Quality Control

Batch BJB0429 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0429-BS1)						Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:10						
Nickel	60	24.6	0.05	0.50	mg/kg	25.0		98.6	80-120			
Nickel	62	24.5	0.22	0.50	mg/kg	25.0		97.9	80-120			
Zinc	66	77.2	0.8	4.0	mg/kg	80.0		96.5	80-120			
Zinc	67	72.9	0.9	4.0	mg/kg	80.0		91.1	80-120			
Duplicate (BJB0429-DUP1)			**Source: 21B0081-01**			Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:36						
Barium	135	26.5	0.06	0.53	mg/kg		26.9			1.26	20	
Chromium	52	12.2	0.14	0.53	mg/kg		11.3			7.40	20	
Cobalt	59	3.84	0.03	0.21	mg/kg		3.92			2.01	20	
Lead	208	2.01	0.07	0.11	mg/kg		1.99			0.57	20	
Silver	107	0.05	0.02	0.21	mg/kg		0.05			6.54	20	J
Vanadium	51a	35.1	0.04	0.21	mg/kg		34.5			1.77	20	
Arsenic	75a	2.12	0.02	0.21	mg/kg		2.22			4.63	20	
Cadmium	111	ND	0.03	0.11	mg/kg		ND					U
Copper	63	8.86	0.36	0.53	mg/kg		9.68			8.81	20	
Nickel	60	8.42	0.05	0.53	mg/kg		9.49			11.90	20	
Selenium	78	0.82	0.47	0.53	mg/kg		0.63			25.50	20	L
Zinc	66	22.4	0.9	4.2	mg/kg		22.3			0.46	20	
Matrix Spike (BJB0429-MS1)			**Source: 21B0081-01**			Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:41						
Barium	135	53.0	0.06	0.53	mg/kg	26.4	26.9	98.9	75-125			
Chromium	52	37.0	0.14	0.53	mg/kg	26.4	11.3	97.4	75-125			
Cobalt	59	31.0	0.03	0.21	mg/kg	26.4	3.92	103	75-125			
Lead	208	30.2	0.07	0.11	mg/kg	26.4	1.99	107	75-125			
Silver	107	25.8	0.02	0.21	mg/kg	26.4	0.05	97.6	75-125			
Vanadium	51a	60.4	0.04	0.21	mg/kg	26.4	34.5	98.3	75-125			
Arsenic	75a	28.4	0.02	0.21	mg/kg	26.4	2.22	99.2	75-125			
Cadmium	111	25.4	0.03	0.11	mg/kg	26.4	ND	96.4	75-125			
Copper	63	36.8	0.36	0.53	mg/kg	26.4	9.68	103	75-125			
Nickel	60	35.8	0.05	0.53	mg/kg	26.4	9.49	99.8	75-125			
Zinc	66	107	0.9	4.2	mg/kg	84.4	22.3	100	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0429-MSD1)			**Source: 21B0081-01**			Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:47						
Barium	135	51.1	0.06	0.53	mg/kg	26.4	26.9	91.9	75-125	3.55	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Metals and Metallic Compounds - Quality Control

Batch BJB0429 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0429-MSD1)		**Source: 21B0081-01**			Prepared: 17-Feb-2021		Analyzed: 18-Feb-2021 20:47					
Chromium	52	37.2	0.14	0.53	mg/kg	26.4	11.3	98.1	75-125	0.52	20	
Cobalt	59	30.0	0.03	0.21	mg/kg	26.4	3.92	98.9	75-125	3.16	20	
Lead	208	29.0	0.07	0.11	mg/kg	26.4	1.99	102	75-125	4.04	20	
Silver	107	25.5	0.02	0.21	mg/kg	26.4	0.05	96.5	75-125	1.12	20	
Vanadium	51a	61.6	0.04	0.21	mg/kg	26.4	34.5	103	75-125	1.85	20	
Arsenic	75a	26.7	0.02	0.21	mg/kg	26.4	2.22	92.7	75-125	6.23	20	
Cadmium	111	25.7	0.03	0.11	mg/kg	26.4	ND	97.6	75-125	1.25	20	
Copper	63	35.2	0.36	0.53	mg/kg	26.4	9.68	96.8	75-125	4.48	20	
Nickel	60	34.9	0.05	0.53	mg/kg	26.4	9.49	96.4	75-125	2.51	20	
Selenium	78	78.3	0.46	0.53	mg/kg	84.4	0.63	92.1	75-125	4.70	20	
Zinc	66	101	0.9	4.2	mg/kg	84.4	22.3	93.7	75-125	5.43	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Metals and Metallic Compounds - Quality Control

Batch BJB0430 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0430-BLK1)					Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:16							
Barium	135	ND	0.06	0.50	mg/kg							U
Barium	137	ND	0.05	0.50	mg/kg							U
Chromium	52	ND	0.13	0.50	mg/kg							U
Chromium	53	ND	0.07	0.50	mg/kg							U
Cobalt	59	ND	0.03	0.20	mg/kg							U
Lead	208	ND	0.07	0.10	mg/kg							U
Silver	107	ND	0.02	0.20	mg/kg							U
Vanadium	51a	ND	0.04	0.20	mg/kg							U
Vanadium	51b	ND	0.02	0.20	mg/kg							U
Arsenic	75a	ND	0.02	0.20	mg/kg							U
Cadmium	111	ND	0.03	0.10	mg/kg							U
Cadmium	114	ND	0.04	0.10	mg/kg							U
Copper	63	ND	0.34	0.50	mg/kg							U
Copper	65	ND	0.35	0.50	mg/kg							U
Nickel	60	ND	0.05	0.50	mg/kg							U
Nickel	62	ND	0.22	0.50	mg/kg							U
Selenium	78	ND	0.44	0.50	mg/kg							U
Zinc	66	ND	0.8	4.0	mg/kg							U
Zinc	67	ND	0.9	4.0	mg/kg							U
LCS (BJB0430-BS1)					Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:21							
Barium	135	23.9	0.06	0.50	mg/kg	25.0		95.6	80-120			
Barium	137	24.1	0.05	0.50	mg/kg	25.0		96.5	80-120			
Chromium	52	25.6	0.13	0.50	mg/kg	25.0		103	80-120			
Chromium	53	25.1	0.07	0.50	mg/kg	25.0		100	80-120			
Cobalt	59	25.0	0.03	0.20	mg/kg	25.0		100	80-120			
Lead	208	26.4	0.07	0.10	mg/kg	25.0		106	80-120			
Silver	107	26.1	0.02	0.20	mg/kg	25.0		104	80-120			
Vanadium	51a	25.8	0.04	0.20	mg/kg	25.0		103	80-120			
Vanadium	51b	25.7	0.02	0.20	mg/kg	25.0		103	80-120			
Arsenic	75a	23.9	0.02	0.20	mg/kg	25.0		95.6	80-120			
Cadmium	111	24.1	0.03	0.10	mg/kg	25.0		96.6	80-120			
Cadmium	114	24.0	0.04	0.10	mg/kg	25.0		96.0	80-120			
Copper	63	25.7	0.34	0.50	mg/kg	25.0		103	80-120			
Copper	65	25.3	0.35	0.50	mg/kg	25.0		101	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Metals and Metallic Compounds - Quality Control

Batch BJB0430 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0430-BS1)						Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:21						
Nickel	60	24.3	0.05	0.50	mg/kg	25.0		97.4	80-120			
Nickel	62	24.7	0.22	0.50	mg/kg	25.0		99.0	80-120			
Zinc	66	75.2	0.8	4.0	mg/kg	80.0		93.9	80-120			
Zinc	67	69.4	0.9	4.0	mg/kg	80.0		86.7	80-120			
Duplicate (BJB0430-DUP1)			**Source: 21B0081-30**			Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 22:53						
Barium	135	63.3	0.07	0.63	mg/kg		64.1			1.27	20	
Chromium	52	15.5	0.16	0.63	mg/kg		15.9			2.32	20	
Cobalt	59	5.43	0.04	0.25	mg/kg		6.01			9.98	20	
Lead	208	3.67	0.09	0.13	mg/kg		4.16			12.50	20	
Silver	107	0.09	0.02	0.25	mg/kg		0.09			0.10	20	J
Vanadium	51a	43.3	0.05	0.25	mg/kg		42.0			3.18	20	
Arsenic	75a	3.06	0.03	0.25	mg/kg		3.69			18.60	20	
Cadmium	111	0.05	0.04	0.13	mg/kg		ND					J
Copper	63	22.9	0.43	0.63	mg/kg		22.6			1.18	20	
Nickel	60	12.9	0.06	0.63	mg/kg		13.3			3.19	20	
Selenium	78	0.98	0.55	0.63	mg/kg		0.96			1.71	20	
Zinc	66	27.4	1.0	5.0	mg/kg		29.2			6.23	20	
Matrix Spike (BJB0430-MS1)			**Source: 21B0081-30**			Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 22:58						
Barium	135	94.2	0.07	0.63	mg/kg	31.4	64.1	95.9	75-125			
Chromium	52	44.3	0.16	0.63	mg/kg	31.4	15.9	90.6	75-125			
Cobalt	59	37.8	0.04	0.25	mg/kg	31.4	6.01	101	75-125			
Lead	208	36.4	0.09	0.13	mg/kg	31.4	4.16	103	75-125			
Silver	107	29.8	0.02	0.25	mg/kg	31.4	0.09	94.7	75-125			
Vanadium	51a	71.2	0.05	0.25	mg/kg	31.4	42.0	93.2	75-125			
Arsenic	75a	32.2	0.03	0.25	mg/kg	31.4	3.69	90.8	75-125			
Cadmium	111	30.9	0.04	0.13	mg/kg	31.4	ND	98.4	75-125			
Copper	63	54.0	0.43	0.63	mg/kg	31.4	22.6	100	75-125			
Nickel	60	44.4	0.06	0.63	mg/kg	31.4	13.3	99.2	75-125			
Zinc	66	123	1.0	5.0	mg/kg	100	29.2	93.5	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0430-MSD1)			**Source: 21B0081-30**			Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 23:04						
Barium	135	94.0	0.07	0.63	mg/kg	31.4	64.1	95.1	75-125	0.24	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Metals and Metallic Compounds - Quality Control

Batch BJB0430 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike Dup (BJB0430-MSD1)		**Source: 21B0081-30**			Prepared: 17-Feb-2021	Analyzed: 18-Feb-2021 23:04						
Chromium	52	46.0	0.16	0.63	mg/kg	31.4	15.9	96.0	75-125	3.85	20	
Cobalt	59	38.1	0.04	0.25	mg/kg	31.4	6.01	102	75-125	0.61	20	
Lead	208	35.8	0.09	0.13	mg/kg	31.4	4.16	101	75-125	1.89	20	
Silver	107	29.9	0.02	0.25	mg/kg	31.4	0.09	95.1	75-125	0.44	20	
Vanadium	51a	72.0	0.05	0.25	mg/kg	31.4	42.0	95.6	75-125	1.11	20	
Arsenic	75a	32.1	0.03	0.25	mg/kg	31.4	3.69	90.4	75-125	0.30	20	
Cadmium	111	31.1	0.04	0.13	mg/kg	31.4	ND	99.0	75-125	0.72	20	
Copper	63	55.2	0.43	0.63	mg/kg	31.4	22.6	104	75-125	2.28	20	
Nickel	60	44.8	0.06	0.63	mg/kg	31.4	13.3	101	75-125	1.01	20	
Selenium	78	92.3	0.55	0.63	mg/kg	100	0.96	90.9	75-125	2.95	20	
Zinc	66	123	1.0	5.0	mg/kg	100	29.2	93.5	75-125	0.02	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Metals and Metallic Compounds - Quality Control

Batch BJB0433 - SMM EPA 7471B

Instrument: HYDRA Analyst: BLC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0433-BLK1)				Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 13:34							
Mercury	ND	0.00525	0.0250	mg/kg							U
LCS (BJB0433-BS1)				Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 13:36							
Mercury	0.484	0.00525	0.0250	mg/kg	0.500		96.8	80-120			
Duplicate (BJB0433-DUP1)		**Source: 21B0081-01**		Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 13:40							
Mercury	0.0160	0.00420	0.0200	mg/kg		0.0126			23.70	20	L, J
Matrix Spike (BJB0433-MS1)		**Source: 21B0081-01**		Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 13:42							
Mercury	0.253	0.00420	0.0200	mg/kg	0.200	0.0126	120	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0433-MSD1)		**Source: 21B0081-01**		Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 13:45							
Mercury	0.260	0.00422	0.0201	mg/kg	0.201	0.0126	123	75-125	2.61	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Metals and Metallic Compounds - Quality Control

Batch BJB0434 - SMM EPA 7471B

Instrument: HYDRA Analyst: BLC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0434-BLK1)				Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 09:23							
Mercury	0.00878	0.00525	0.0250	mg/kg							J
LCS (BJB0434-BS1)				Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 09:26							
Mercury	0.527	0.00525	0.0250	mg/kg	0.500		105	80-120			
Duplicate (BJB0434-DUP1)		**Source: 21B0081-30**		Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 09:30							
Mercury	0.0487	0.00509	0.0242	mg/kg		0.0420			14.60	20	
Matrix Spike (BJB0434-MS1)		**Source: 21B0081-30**		Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 09:32							
Mercury	0.321	0.00511	0.0243	mg/kg	0.243	0.0420	115	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0434-MSD1)		**Source: 21B0081-30**		Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 09:34							
Mercury	0.322	0.00509	0.0242	mg/kg	0.242	0.0420	116	75-125	0.48	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Wet Chemistry - Quality Control

Batch BJB0199 - PSEP 1986 (modified)

Instrument: TOC Cube Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0199-BLK1)				Prepared: 05-Feb-2021	Analyzed: 06-Feb-2021 19:59						
Total Organic Carbon	ND	0.02	0.02	%							U
LCS (BJB0199-BS1)				Prepared: 05-Feb-2021	Analyzed: 06-Feb-2021 20:29						
Total Organic Carbon	44.6	0.02	0.02	%	44.4		100	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Wet Chemistry - Quality Control

Batch BJB0295 - No Prep Wet Chem

Instrument: UV1800-1 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0295-BLK1)					Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:46						
Hexavalent Chromium	ND	0.489	0.489	mg/kg							U
LCS (BJB0295-BS1)					Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:54						
Hexavalent Chromium	17.0	0.492	0.492	mg/kg	19.7		86.4	80-120			D
LCS (BJB0295-BS2)					Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:55						
Hexavalent Chromium	606	9.96	9.96	mg/kg	654		92.6	80-120			D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Wet Chemistry - Quality Control

Batch BJB0492 - No Prep Wet Chem

Instrument: BAL2 Analyst: UW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0492-BLK1)					Prepared: 17-Feb-2021 Analyzed: 17-Feb-2021 12:17						
Total Solids	ND	0.04	0.04	%							U
Duplicate (BJB0492-DUP1)		**Source: 21B0081-38**			Prepared: 17-Feb-2021 Analyzed: 17-Feb-2021 12:17						
Total Solids	86.03	0.04	0.04	%		86.32			0.34	20	
Duplicate (BJB0492-DUP2)		**Source: 21B0081-38**			Prepared: 17-Feb-2021 Analyzed: 17-Feb-2021 12:17						
Total Solids	88.78	0.04	0.04	%		86.32			2.82	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Certified Analyses included in this Report

Analyte	Certifications
EPA 6020B in Solid	
Silver-107	NELAP,DoD-ELAP,WADOE
Barium-135	NELAP,DoD-ELAP,WADOE,ADEC
Barium-137	NELAP,DoD-ELAP,WADOE,ADEC
Cobalt-59	NELAP,DoD-ELAP,WADOE
Chromium-52	NELAP,DoD-ELAP,WADOE,ADEC
Chromium-53	NELAP,DoD-ELAP,WADOE,ADEC
Lead-208	NELAP,DoD-ELAP,WADOE,ADEC
Vanadium-51a	NELAP,DoD-ELAP,WADOE,ADEC
Vanadium-51b	DoD-ELAP,WADOE,ADEC
EPA 6020B UCT-KED in Solid	
Arsenic-75a	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-111	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-114	NELAP,DoD-ELAP,WADOE,ADEC
Copper-63	NELAP,DoD-ELAP,WADOE
Copper-65	NELAP,DoD-ELAP,WADOE
Nickel-60	NELAP,DoD-ELAP,WADOE,ADEC
Nickel-62	NELAP,DoD-ELAP,WADOE,ADEC
Selenium-78	NELAP,DoD-ELAP,WADOE
Zinc-66	NELAP,DoD-ELAP,WADOE
Zinc-67	NELAP,DoD-ELAP,WADOE
EPA 7471B in Solid	
Mercury	WADOE,NELAP,DoD-ELAP
EPA 8082A in Solid	
Aroclor 1016	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,ADEC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1262	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1262 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1268	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1268 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
EPA 8260D in Solid	
Chloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Vinyl Chloride	WADOE,DoD-ELAP,NELAP,ADEC
Bromomethane	WADOE,DoD-ELAP,NELAP,ADEC
Chloroethane	WADOE,DoD-ELAP,NELAP,ADEC
Trichlorofluoromethane	WADOE,DoD-ELAP,NELAP,ADEC
Acrolein	WADOE,DoD-ELAP,NELAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	WADOE,DoD-ELAP,NELAP,ADEC
Acetone	WADOE,DoD-ELAP,NELAP
1,1-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Iodomethane	WADOE,DoD-ELAP,NELAP,ADEC
Methylene Chloride	WADOE,DoD-ELAP,NELAP,ADEC
Acrylonitrile	WADOE,DoD-ELAP,NELAP
Carbon Disulfide	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,2-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Vinyl Acetate	WADOE,DoD-ELAP,NELAP
1,1-Dichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
2-Butanone	WADOE,DoD-ELAP,NELAP
2,2-Dichloropropane	WADOE,DoD-ELAP,NELAP
cis-1,2-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Chloroform	WADOE,DoD-ELAP,NELAP,ADEC
Bromochloromethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1-Trichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
Carbon tetrachloride	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
Benzene	WADOE,DoD-ELAP,NELAP,ADEC
Trichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
Bromodichloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Dibromomethane	WADOE,DoD-ELAP,NELAP,ADEC
2-Chloroethyl vinyl ether	WADOE,DoD-ELAP,NELAP

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

4-Methyl-2-Pentanone	WADOE,DoD-ELAP,NELAP
cis-1,3-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
Toluene	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,3-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
2-Hexanone	WADOE,DoD-ELAP,NELAP
1,1,2-Trichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,3-Dichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
Tetrachloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Dibromochloromethane	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dibromoethane	WADOE,DoD-ELAP,NELAP,ADEC
Chlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Ethylbenzene	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1,2-Tetrachloroethane	WADOE,DoD-ELAP,NELAP,ADEC
m,p-Xylene	WADOE,DoD-ELAP,NELAP,ADEC
o-Xylene	WADOE,DoD-ELAP,NELAP,ADEC
Xylenes, total	WADOE
Styrene	WADOE,DoD-ELAP,NELAP,ADEC
Bromoform	WADOE,DoD-ELAP,NELAP,ADEC
1,1,2,2-Tetrachloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,2,3-Trichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,4-Dichloro 2-Butene	WADOE,DoD-ELAP,NELAP
n-Propylbenzene	WADOE,DoD-ELAP,NELAP
Bromobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Isopropyl Benzene	WADOE,DoD-ELAP,NELAP,ADEC
2-Chlorotoluene	WADOE,DoD-ELAP,NELAP
4-Chlorotoluene	WADOE,DoD-ELAP,NELAP
t-Butylbenzene	WADOE,DoD-ELAP,NELAP
1,3,5-Trimethylbenzene	WADOE,DoD-ELAP,NELAP
1,2,4-Trimethylbenzene	WADOE,DoD-ELAP,NELAP
s-Butylbenzene	WADOE,DoD-ELAP,NELAP
4-Isopropyl Toluene	WADOE,DoD-ELAP,NELAP
1,3-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,4-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
n-Butylbenzene	WADOE,DoD-ELAP,NELAP
1,2-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,2-Dibromo-3-chloropropane	WADOE,DoD-ELAP,NELAP,ADEC
1,2,4-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Hexachloro-1,3-Butadiene	WADOE,DoD-ELAP,NELAP,ADEC
Naphthalene	WADOE,DoD-ELAP,NELAP

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

1,2,3-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Dichlorodifluoromethane	WADOE,DoD-ELAP,NELAP,ADEC
Methyl tert-butyl Ether	WADOE,DoD-ELAP,NELAP
n-Hexane	WADOE
2-Pentanone	WADOE
Dibromofluoromethane	WADOE
4-Bromofluorobenzene	WADOE

EPA 8260D in Water

Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

EPA 8260D MED in Solid

Chloromethane	DoD-ELAP,WADOE,NELAP,ADEC
Vinyl Chloride	DoD-ELAP,WADOE,NELAP,ADEC
Bromomethane	DoD-ELAP,WADOE,NELAP,ADEC
Chloroethane	DoD-ELAP,WADOE,NELAP,ADEC
Trichlorofluoromethane	DoD-ELAP,WADOE,NELAP,ADEC
Acrolein	DoD-ELAP,WADOE,NELAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,WADOE,NELAP,ADEC
Acetone	DoD-ELAP,WADOE,NELAP
1,1-Dichloroethene	DoD-ELAP,WADOE,NELAP,ADEC
Iodomethane	DoD-ELAP,WADOE,NELAP,ADEC
Methylene Chloride	DoD-ELAP,WADOE,NELAP,ADEC
Acrylonitrile	DoD-ELAP,WADOE,NELAP
Carbon Disulfide	DoD-ELAP,WADOE,NELAP,ADEC
trans-1,2-Dichloroethene	DoD-ELAP,WADOE,NELAP,ADEC
Vinyl Acetate	DoD-ELAP,WADOE,NELAP
1,1-Dichloroethane	DoD-ELAP,WADOE,NELAP,ADEC
2-Butanone	DoD-ELAP,WADOE,NELAP
2,2-Dichloropropane	DoD-ELAP,WADOE,NELAP
cis-1,2-Dichloroethene	DoD-ELAP,WADOE,NELAP,ADEC
Chloroform	DoD-ELAP,WADOE,NELAP,ADEC
Bromochloromethane	DoD-ELAP,WADOE,NELAP,ADEC
1,1,1-Trichloroethane	DoD-ELAP,WADOE,NELAP,ADEC
1,1-Dichloropropene	DoD-ELAP,WADOE,NELAP,ADEC
Carbon tetrachloride	DoD-ELAP,WADOE,NELAP,ADEC
1,2-Dichloroethane	DoD-ELAP,WADOE,NELAP,ADEC
Benzene	DoD-ELAP,WADOE,NELAP,ADEC
Trichloroethene	DoD-ELAP,WADOE,NELAP,ADEC
1,2-Dichloropropane	DoD-ELAP,WADOE,NELAP,ADEC
Bromodichloromethane	DoD-ELAP,WADOE,NELAP,ADEC
Dibromomethane	DoD-ELAP,WADOE,NELAP,ADEC
2-Chloroethyl vinyl ether	DoD-ELAP
4-Methyl-2-Pentanone	DoD-ELAP,WADOE,NELAP
cis-1,3-Dichloropropene	DoD-ELAP,WADOE,NELAP,ADEC
Toluene	DoD-ELAP,WADOE,NELAP,ADEC

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

trans-1,3-Dichloropropene	DoD-ELAP,WADOE,NELAP,ADEC
2-Hexanone	DoD-ELAP,WADOE,NELAP
1,1,2-Trichloroethane	DoD-ELAP,WADOE,NELAP,ADEC
1,3-Dichloropropane	DoD-ELAP,WADOE,NELAP,ADEC
Tetrachloroethene	DoD-ELAP,WADOE,NELAP,ADEC
Dibromochloromethane	DoD-ELAP,WADOE,NELAP,ADEC
1,2-Dibromoethane	DoD-ELAP,WADOE,NELAP,ADEC
Chlorobenzene	DoD-ELAP,WADOE,NELAP,ADEC
Ethylbenzene	DoD-ELAP,WADOE,NELAP,ADEC
1,1,1,2-Tetrachloroethane	DoD-ELAP,WADOE,NELAP,ADEC
m,p-Xylene	DoD-ELAP,WADOE,NELAP,ADEC
o-Xylene	DoD-ELAP,WADOE,NELAP,ADEC
Styrene	DoD-ELAP,WADOE,NELAP,ADEC
Bromoform	DoD-ELAP,WADOE,NELAP,ADEC
1,1,2,2-Tetrachloroethane	DoD-ELAP,WADOE,NELAP,ADEC
1,2,3-Trichloropropane	DoD-ELAP,WADOE,NELAP,ADEC
trans-1,4-Dichloro 2-Butene	DoD-ELAP,WADOE
n-Propylbenzene	DoD-ELAP,WADOE,NELAP
Bromobenzene	DoD-ELAP,WADOE,NELAP,ADEC
Isopropyl Benzene	DoD-ELAP,WADOE,NELAP,ADEC
2-Chlorotoluene	DoD-ELAP,WADOE,NELAP
4-Chlorotoluene	DoD-ELAP,WADOE,NELAP
t-Butylbenzene	DoD-ELAP,WADOE,NELAP
1,3,5-Trimethylbenzene	DoD-ELAP,WADOE,NELAP
1,2,4-Trimethylbenzene	DoD-ELAP,WADOE,NELAP
s-Butylbenzene	DoD-ELAP,WADOE,NELAP
4-Isopropyl Toluene	DoD-ELAP,WADOE,NELAP
1,3-Dichlorobenzene	DoD-ELAP,WADOE,NELAP
1,4-Dichlorobenzene	DoD-ELAP,WADOE,NELAP
n-Butylbenzene	DoD-ELAP,WADOE,NELAP
1,2-Dichlorobenzene	DoD-ELAP,WADOE,NELAP
1,2-Dibromo-3-Chloropropane	DoD-ELAP,WADOE,NELAP,ADEC
1,2,4-Trichlorobenzene	DoD-ELAP,WADOE,NELAP,ADEC
Hexachloro-1,3-Butadiene	DoD-ELAP,WADOE,NELAP,ADEC
Naphthalene	DoD-ELAP,WADOE,NELAP
1,2,3-Trichlorobenzene	DoD-ELAP,WADOE,NELAP,ADEC
Dichlorodifluoromethane	DoD-ELAP,WADOE,NELAP,ADEC
Methyl tert-butyl Ether	DoD-ELAP,WADOE,NELAP
n-Hexane	WADOE

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

EPA 8270E in Solid

Phenol	DoD-ELAP,NELAP,WADOE
bis(2-chloroethyl) ether	DoD-ELAP,NELAP,WADOE
2-Chlorophenol	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,NELAP,WADOE
Benzyl Alcohol	DoD-ELAP,NELAP,WADOE
2,2'-Oxybis(1-chloropropane)	DoD-ELAP,NELAP
2-Methylphenol	DoD-ELAP,NELAP,WADOE
Hexachloroethane	DoD-ELAP,NELAP,WADOE
N-Nitroso-di-n-Propylamine	DoD-ELAP,NELAP,WADOE
4-Methylphenol	DoD-ELAP,NELAP,WADOE
Nitrobenzene	DoD-ELAP,NELAP,WADOE
Isophorone	DoD-ELAP,NELAP,WADOE
2-Nitrophenol	DoD-ELAP,NELAP,WADOE
2,4-Dimethylphenol	DoD-ELAP,NELAP,WADOE
Bis(2-Chloroethoxy)methane	DoD-ELAP,NELAP,WADOE
2,4-Dichlorophenol	DoD-ELAP,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,NELAP,WADOE
Naphthalene	DoD-ELAP,NELAP,WADOE,ADEC
Benzoic acid	DoD-ELAP,NELAP,WADOE
4-Chloroaniline	DoD-ELAP,NELAP,WADOE
Hexachlorobutadiene	DoD-ELAP,NELAP,WADOE
4-Chloro-3-Methylphenol	DoD-ELAP,NELAP,WADOE
2-Methylnaphthalene	DoD-ELAP,NELAP,WADOE,ADEC
Hexachlorocyclopentadiene	DoD-ELAP,NELAP,WADOE
2,4,6-Trichlorophenol	DoD-ELAP,NELAP,WADOE
2,4,5-Trichlorophenol	DoD-ELAP,NELAP,WADOE
2-Chloronaphthalene	DoD-ELAP,NELAP,WADOE
2-Nitroaniline	DoD-ELAP,NELAP,WADOE
Acenaphthylene	DoD-ELAP,NELAP,WADOE,ADEC
Dimethylphthalate	DoD-ELAP,NELAP,WADOE
2,6-Dinitrotoluene	DoD-ELAP,NELAP,WADOE
Acenaphthene	DoD-ELAP,NELAP,WADOE,ADEC
3-Nitroaniline	DoD-ELAP,NELAP,WADOE
2,4-Dinitrophenol	DoD-ELAP,NELAP,WADOE
Dibenzofuran	DoD-ELAP,NELAP,WADOE,ADEC
4-Nitrophenol	DoD-ELAP,NELAP,WADOE

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

2,4-Dinitrotoluene	DoD-ELAP,NELAP,WADOE
Fluorene	DoD-ELAP,NELAP,WADOE,ADEC
4-Chlorophenylphenyl ether	DoD-ELAP,NELAP
Diethyl phthalate	DoD-ELAP,NELAP,WADOE
4-Nitroaniline	DoD-ELAP,NELAP,WADOE
4,6-Dinitro-2-methylphenol	DoD-ELAP,NELAP,WADOE
N-Nitrosodiphenylamine	DoD-ELAP,NELAP,WADOE
4-Bromophenyl phenyl ether	DoD-ELAP,NELAP,WADOE
Hexachlorobenzene	DoD-ELAP,NELAP,WADOE
Pentachlorophenol	DoD-ELAP,NELAP,WADOE
Phenanthrene	DoD-ELAP,NELAP,WADOE,ADEC
Anthracene	DoD-ELAP,NELAP,WADOE,ADEC
Carbazole	DoD-ELAP,NELAP,WADOE,ADEC
Di-n-Butylphthalate	DoD-ELAP,NELAP,WADOE
Fluoranthene	DoD-ELAP,NELAP,WADOE,ADEC
Pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Butylbenzylphthalate	DoD-ELAP,NELAP,WADOE
Benzo(a)anthracene	DoD-ELAP,NELAP,WADOE,ADEC
3,3'-Dichlorobenzidine	DoD-ELAP,NELAP,WADOE
Chrysene	DoD-ELAP,NELAP,WADOE,ADEC
bis(2-Ethylhexyl)phthalate	DoD-ELAP,NELAP,WADOE
Di-n-Octylphthalate	DoD-ELAP,NELAP,WADOE
Benzo(b)fluoranthene	DoD-ELAP,NELAP,WADOE,ADEC
Benzo(k)fluoranthene	DoD-ELAP,NELAP,WADOE,ADEC
Benzofluoranthenes, Total	WADOE,ADEC
Benzo(a)pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Indeno(1,2,3-cd)pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Dibenzo(a,h)anthracene	DoD-ELAP,NELAP,WADOE,ADEC
Benzo(g,h,i)perylene	DoD-ELAP,NELAP,WADOE,ADEC
N-Nitrosodimethylamine	DoD-ELAP,NELAP,WADOE
Aniline	DoD-ELAP,NELAP,WADOE
Retene	DoD-ELAP,NELAP,WADOE
Pyridine	DoD-ELAP,NELAP,WADOE
1-Methylnaphthalene	DoD-ELAP,NELAP,WADOE,ADEC
Azobenzene (1,2-DP-Hydrazine)	NELAP,WADOE
2,3,4,6-Tetrachlorophenol	DoD-ELAP,WADOE
Benzidine	DoD-ELAP,NELAP
Tetrachloroguaiacol	DoD-ELAP,WADOE
3,4,5-Trichloroguaiacol	WADOE

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

3,4,6-Trichloroguaiacol	WADOE
4,5,6-Trichloroguaiacol	WADOE
Guaiacol	WADOE
EPA 9060A m in Solid	
Total Organic Carbon	WADOE
NWTPH-Dx in Solid	
Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C12-C22)	DoD-ELAP
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP,WADOE
Residual Range Organics (C23-C32)	DoD-ELAP
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP,WADOE
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE
NWTPHg in Solid	
Gasoline Range Organics (Tol-Nap)	DoD-ELAP
Gasoline Range Organics (2MP-TMB)	DoD-ELAP
Gasoline Range Organics (Tol-C12)	DoD-ELAP
Gasoline Range Organics (C6-C10)	DoD-ELAP
Gasoline Range Organics (C5-C12)	DoD-ELAP
4-Bromofluorobenzene (field spiked)	DoD-ELAP
NWTPHg in Water	
Gasoline Range Organics (Tol-Nap)	WADOE,DoD-ELAP
Gasoline Range Organics (2MP-TMB)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	WADOE,DoD-ELAP

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Gasoline Range Organics (C6-C10)	WADOE,ADEC,DoD-ELAP
Gasoline Range Organics (C5-C12)	WADOE,DoD-ELAP
SM 3500-Cr B-09 in Solid	
Hexavalent Chromium	DoD-ELAP,NELAP
WA EPH in Solid	
C8-C10 Aliphatics	WADOE,DoD-ELAP,NELAP
>C10-C12 Aliphatics	WADOE,DoD-ELAP,NELAP
C10-C12 Aliphatics	WADOE,DoD-ELAP,NELAP
>C12-C16 Aliphatics	WADOE,DoD-ELAP,NELAP
C12-C16 Aliphatics	WADOE,DoD-ELAP,NELAP
>C16-C21 Aliphatics	WADOE,DoD-ELAP,NELAP
C16-C21 Aliphatics	WADOE,DoD-ELAP,NELAP
>C21-C34 Aliphatics	WADOE,DoD-ELAP,NELAP
C21-C34 Aliphatics	WADOE,DoD-ELAP,NELAP
C8-C10 Aromatics	DoD-ELAP,NELAP,WADOE
>C10-C12 Aromatics	DoD-ELAP
C10-C12 Aromatics	DoD-ELAP,NELAP,WADOE
>C12-C16 Aromatics	DoD-ELAP
C12-C16 Aromatics	DoD-ELAP,NELAP,WADOE
>C16-C21 Aromatics	DoD-ELAP
C16-C21 Aromatics	DoD-ELAP,NELAP,WADOE
>C21-C34 Aromatics	DoD-ELAP
C21-C34 Aromatics	DoD-ELAP,NELAP,WADOE
WA VPH in Solid	
C5-C6 Aliphatics	DoD-ELAP,WADOE
>C6-C8 Aliphatics	DoD-ELAP,WADOE
C6-C8 Aliphatics	DoD-ELAP,WADOE
>C8-C10 Aliphatics	DoD-ELAP,WADOE
C8-C10 Aliphatics	DoD-ELAP,WADOE
>C10-C12 Aliphatics	DoD-ELAP,WADOE
C10-C12 Aliphatics	DoD-ELAP,WADOE
C8-C10 Aromatics	DoD-ELAP,WADOE
>C10-C12 Aromatics	DoD-ELAP,WADOE
C10-C12 Aromatics	DoD-ELAP,WADOE
>C12-C13 Aromatics	DoD-ELAP,WADOE
C12-C13 Aromatics	DoD-ELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,WADOE
Benzene	DoD-ELAP,WADOE

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Toluene	DoD-ELAP,WADOE
Ethylbenzene	DoD-ELAP,WADOE
m,p-Xylene	DoD-ELAP,WADOE
o-Xylene	DoD-ELAP,WADOE
1,2,3-Trimethylbenzene	DoD-ELAP,WADOE
Naphthalene	DoD-ELAP,WADOE
1-Methylnaphthalene	DoD-ELAP,WADOE
n-Pentane	DoD-ELAP
n-Hexane	DoD-ELAP
n-Octane	DoD-ELAP
n-Decane	DoD-ELAP
n-Dodecane	DoD-ELAP
PID: 2,5-Dibromotoluene	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2022
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2022
WADOE	WA Dept of Ecology	C558	06/30/2022
WA-DW	Ecology - Drinking Water	C558	06/30/2022

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 14:12

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
D1	Surrogate was not detected due to sample extract dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
H	Hold time violation - Hold time was exceeded.
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
NRS	This surrogate not reported due to chromatographic interference
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

03 August 2021

Meg Strong
Shannon & Wilson, Inc
400 N 34th St., Suite 100
Seattle, WA 98103-8636

RE: Lower Duwamish

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
21B0087	N/A

Susan Dunnihoo
Digitally signed by Susan Dunnihoo
Date: 2021.08.03 16:07:42 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0087	Turn-around Requested: Standard	Page: 1 of 4	
ARI Client Company: Shannon & Wilson, Inc.	Phone: 206-632-8020	Date: 2/3/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 4	Cooler Temps: See CRF
Client Project Name: EMJ			
Client Project #: 21-1-12596	Samplers: CTC		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	SVOCs	PCB aroclors	Metals	Hex. Chrome	T.O.C.	Grain Size	Porosity	Notes/Comments
					Analysis Requested												⊗ = Hold
MW-59:1.0-02032021	2/3	0915	soil	2		X			X			X					
MW-59:6.5-02032021	2/3	0925	Soil	2		X			X			X					
MW-59:9.5-02032021	2/3	0930	Soil	2		X			X			X					
MW-59:15.0-02032021	2/3	0940	Soil	2		⊗			⊗			⊗					
MW-59:20.5-02032021	2/3	0950	Soil	2		⊗			⊗			⊗					

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Mitchell Hatfield	Printed Name: Jacob Healy	Printed Name:	Printed Name:
	Company: SWI	Company: ARI	Company:	Company:
	Date & Time: 2/3/21 1640	Date & Time: 02/03/2021 1640	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0087	Turn-around Requested: Standard	Page: 2 of 4	
ARI Client Company: Shannon & Wilson, Inc.	Phone: 206-632-8020	Date: 2/3/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 4	Cooler Temps: See CRF
Client Project Name: EMJ			
Client Project #: 21-1-12596	Samplers: CTC		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	SVOCs	PCB aroclors	Metals	Hex. Chrome	T.O.C.	Grain Size	Porosity	Notes/Comments
MW-22R:1.0-02032021	2/3	1355	Soil	2		X			X			X					
MW-22R:5.5-02032021	2/3	1400	Soil	2		X			X			X					
MW-22R:9.0-02032021	2/3	1410	Soil	2		X			X			X					
MW-22R:15.5-02032021	2/3	1420	Soil	2		⊗ Run			⊗ Run			⊗ Run					MW-22R:15.5 Hold
MW-22R:20.5-02032021	2/3	1435	Soil	2		⊗ Run			⊗ Run			⊗ Run					MW-22R:20.5 Please run, don't hold
MW-55:1.5-02032021	2/3	1110	Soil	3		X			X			X	X		X		
MW-55:5.5-02032021	2/3	1120	Soil	2		X			X			X	X				
MW-55:9.5-02032021	2/3	1135	Soil	3		X			X			X	X		X		
MW-55:15.5-02032021	2/3	1145	Soil	2		⊗			⊗			⊗	⊗				
MW-55:20.5-02032021	2/3	1155	Soil	2		⊗			⊗			⊗	⊗				

Analysis Requested

Comments/Special Instructions: *Refer to EMJ analyte list

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)				
Printed Name:	Mitchell Hatfield	Jacob Labbe		
Company:	SWI	ARI		
Date & Time:	2/3/21 1640	02/03/2021 1640		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

ARI Assigned Number: 21B0087	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone: 206-695-6811
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: MRH

Page: 3 of 4
Date: 2/3/21 Ice Present? Yes
No. of Coolers: 4 Cooler Temps: See COC

Sample ID	Date	Time	Matrix	No. Containers	TPH-Dx	BTEX	HVOCs	PAHs	PCB	Metals			Notes/Comments
MW-54:1-02032021	2/3/21	1530	Soil	5	X	X	X	X	X	X			
MW-54:5.5-02032021		1535		5	X	X	X	X	X	X			
MW-54:9-02032021		1545		5	X	X	X	X	X	X			
MW-102:5.5-02032021		1600		5	X	X	X	X	X	X			

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Mitchell Hatfield	Printed Name: Jacob Galt	Printed Name:	Printed Name:
	Company: S&W	Company: ARI	Company:	Company:
	Date & Time: 2/3/21 1640	Date & Time: 02/03/2021 1640	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0087	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson	Phone: (206) 695-6811
Client Contact: Shoshana Howard	
Client Project Name: LDW	
Client Project #: 21-1-12596	Samplers: MRH

Page: 4 of 4
Date: 2/3/21 Ice Present? Yes
No. of Coolers: 4 Cooler Temps: See CRF

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	TPH-Dx	BTEX	HVOCs	PAHs	PLB (arochlors)	Metals	Total organic carbon	Grain size	Notes/Comments
MW-70:35-02032021	2/3/21	0850	Soil	6	H	X	X	H	H	H			
MW-70:45-02032021	"	0915	"	6	H	X	X	H	H	H			
MW-70:55-02032021	"	0940	"	6	H	X	X	H	H	H			
Trip Blank	2/3/21			1		X	X						
MW-53:1-02032021	2/3/21	1320	Soil	5	X	X	X	X	X	X			
MW-53:9.5-02032021	"	1340	"	6	X	X	X	X	X	X	X	X	
MW-53:11-02032021	"	1350	"	6	X	X	X	X	X	X		X	
MW-53:15.8-02032021	"	1400	"	5	H	H	H	H	H	H	X		
MW-53:20-02032021	"	1410	"	5	H	H	H	H	H	H			

Comments/Special Instructions: H = hold

	Relinquished by:	Received by:	Relinquished by:	Received by:
(Signature)	M Hall			
Printed Name:	Mitchell Hallfield	Jacob Salter		
Company:	SWI	ARI		
Date & Time:	2/3/21 1640	02/03/2021 1640		

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Materials Testing & Consulting, Inc.
Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project:	Lower Duwamish (21B0087)	**Date Received:**	February 5, 2021
Project #:	21S023-04	**Sampled By:**	Others
Client :	Analytical Resources, Inc.	**Date Reported:**	March 11, 2021
Source:	Multiple	**Tested By:**	B. Goble, S. Bennett
MTC Sample#:	Multiple		

CASE NARRATIVE

1. Four samples were submitted for grain size analysis according to Puget Sound Estuary Protocol (PSEP) methodology.
2. The samples were run in a single batch and one sample from another job was chosen for triplicate analysis. The triplicate data is reported on the QA summary.
3. The data is provided in summary tables and plots.
4. There were no other noted anomalies during this testing.

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: EGabriel Goble

Draft for Public Comment

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: Lower Duwamish (21B0087)
Project #: 21S023-04
Date Received: February 5, 2021
Date Tested: March 9, 2021

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: B. Goble, S. Bennett

Apparent Grain Size Distribution Summary

Percent Finer Than Indicated Size

Sample No.	Gravel			Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt				Clay	
Phi Size	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
Sieve Size (microns)	3/8"	#4 (4750)	#10 (2000)	#18 (1000)	#35 (500)	#60 (250)	#120 (125)	#230 (63)	31.0	15.6	7.8	3.9	2.0	1.0
MW-67:5.5-01262021	100.0	100.0	100.0	99.9	99.5	98.5	93.7	80.0	64.7	43.2	29.9	20.4	13.8	5.7
	100.0	100.0	100.0	99.8	99.4	97.2	92.4	78.5	63.0	44.1	30.5	20.8	13.6	5.6
	100.0	100.0	99.8	99.6	99.4	98.7	94.8	81.2	68.3	48.9	34.2	23.5	15.4	7.5
MW-55:1.5-02032021	100.0	96.0	87.9	77.5	56.5	27.7	13.6	8.6	5.7	4.7	3.8	2.8	2.0	1.1
MW-55:9.5-02032021	100.0	97.8	94.0	91.8	84.8	59.5	34.7	19.2	11.7	8.2	6.1	4.5	3.4	1.6
MW-53:9.5-02032021	100.0	99.5	98.8	98.2	96.5	88.4	54.7	22.6	14.4	10.1	7.7	5.8	4.4	2.0
MW-53:11-02032021	100.0	99.3	97.5	95.9	93.2	78.0	35.6	9.8	6.6	4.7	3.4	2.4	1.6	0.7

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: EGabriel Goble

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980
Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6061 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974
Visit our website: www.mtc-inc.net

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: Lower Duwamish (21B0087)
Project #: 21S023-04
Date Received: February 5, 2021
Date Tested: March 9, 2021

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: B. Goble, S. Bennett

Apparent Grain Size Distribution Summary

Percent Retained in Each Size Fraction

Sample No.	Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Coarse Silt	Medium Silt	Fine Silt	Very Fine Silt	Clay			Total Fines
Phi Size	< -1	-1 to 0	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	> 10	> 4
Sieve Size (microns)	> #10 (2000)	10-18 (2000-1000)	18-35 (1000-500)	35-60 (500-250)	60-120 (250-125)	120-230 (125-62)	62.5-31.0	31.0-15.6	15.6-7.8	7.8-3.9	3.9-2.0	2.0-1.0	<1.0	<230 (<62)
MW-67:5.5-01262021	0.0	0.1	0.4	1.0	4.8	13.7	15.3	21.5	13.3	9.5	6.7	8.0	5.7	80.0
	0.0	0.2	0.5	2.1	4.9	13.8	15.6	18.9	13.6	9.7	7.3	7.9	5.6	78.5
	0.2	0.2	0.2	0.7	3.9	13.6	12.9	19.4	14.7	10.7	8.1	8.0	7.5	81.2
MW-55:1.5-02032021	12.1	10.3	21.1	28.8	14.1	5.0	2.9	0.9	1.0	1.0	0.8	0.9	1.1	8.6
MW-55:9.5-02032021	6.0	2.3	7.0	25.3	24.8	15.5	7.6	3.5	2.1	1.5	1.2	1.8	1.6	19.2
MW-53:9.5-02032021	1.2	0.6	1.7	8.1	33.7	32.1	8.2	4.3	2.4	1.9	1.4	2.4	2.0	22.6
MW-53:11-02032021	2.5	1.6	2.7	15.3	42.4	25.8	3.2	1.9	1.3	1.0	0.7	1.0	0.7	9.8

All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: EGabriel Goble

Draft for Public Comment

Materials Testing & Consulting, Inc.

Geotechnical Engineering • Special Inspection • Materials Testing • Environmental Consulting

Project: Lower Duwamish (21B0087)
Project #: 21S023-04
Date Received: February 5, 2021
Date Tested: March 9, 2021

Client: Analytical Resources, Inc.
Sampled by: Others
Tested by: B. Goble, S. Bennett

Relative Standard Deviation, By Phi Size

Sample ID	-3	-2	-1	0	1	2	3	4	5	6	7	8	9	10
MW-67:5.5-01262021	100.0	100.0	100.0	99.9	99.5	98.5	93.7	80.0	64.7	43.2	29.9	20.4	13.8	5.7
	100.0	100.0	100.0	99.8	99.4	97.2	92.4	78.5	63.0	44.1	30.5	20.8	13.6	5.6
	100.0	100.0	99.8	99.6	99.4	98.7	94.8	81.2	68.3	48.9	34.2	23.5	15.4	7.5
AVE	100.0	100.0	99.9	99.8	99.4	98.2	93.6	79.9	65.3	45.4	31.5	21.6	14.2	6.3
STDEV	0.0	0.0	0.1	0.1	0.1	0.6	1.0	1.1	2.2	2.5	1.9	1.4	0.8	0.8
%RSD	0.0	0.0	0.1	0.1	0.1	0.7	1.1	1.4	3.4	5.5	6.0	6.3	5.9	13.4

The Triplicate Applies To The Following Samples

Client ID	Date Sampled	Date Extracted	Date Complete	QA Ratio (95-105)	Data Qualifiers	Pipette Portion (5.0-25.0g)
MW-67:5.5-01262021	1/26/2021	3/1/2021	3/9/2021	101.1		17.2
	1/26/2021	3/1/2021	3/9/2021	101.6		15.8
	1/26/2021	3/1/2021	3/9/2021	103.6		17.5
MW-55:1.5-02032021	2/3/2021	3/1/2021	3/9/2021	101.8		12.1
MW-55:9.5-02032021	2/3/2021	3/1/2021	3/9/2021	104.8		14.2
MW-53:9.5-02032021	2/3/2021	3/1/2021	3/9/2021	102.6		10.9
MW-53:11-02032021	2/3/2021	3/1/2021	3/9/2021	101.1		10.7

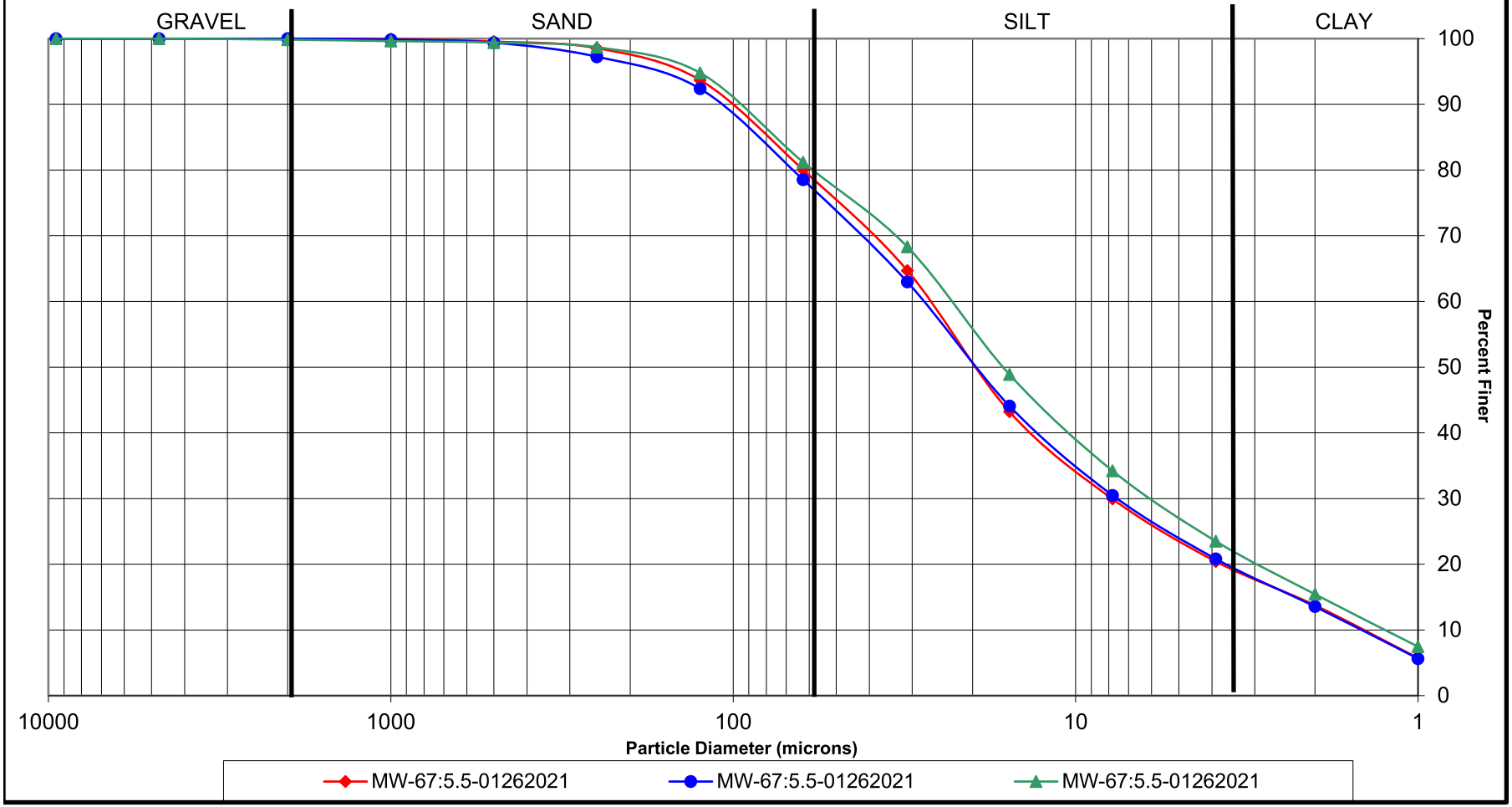
All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Reviewed by: E Gabe Goble

Corporate ~ 777 Chrysler Drive • Burlington, WA 98233 • Phone (360) 755-1990 • Fax (360) 755-1980
Regional Offices: Olympia ~ 360.534.9777 Bellingham ~ 360.647.6061 Silverdale ~ 360.698.6787 Tukwila ~ 206.241.1974
Visit our website: www.mtc-inc.net

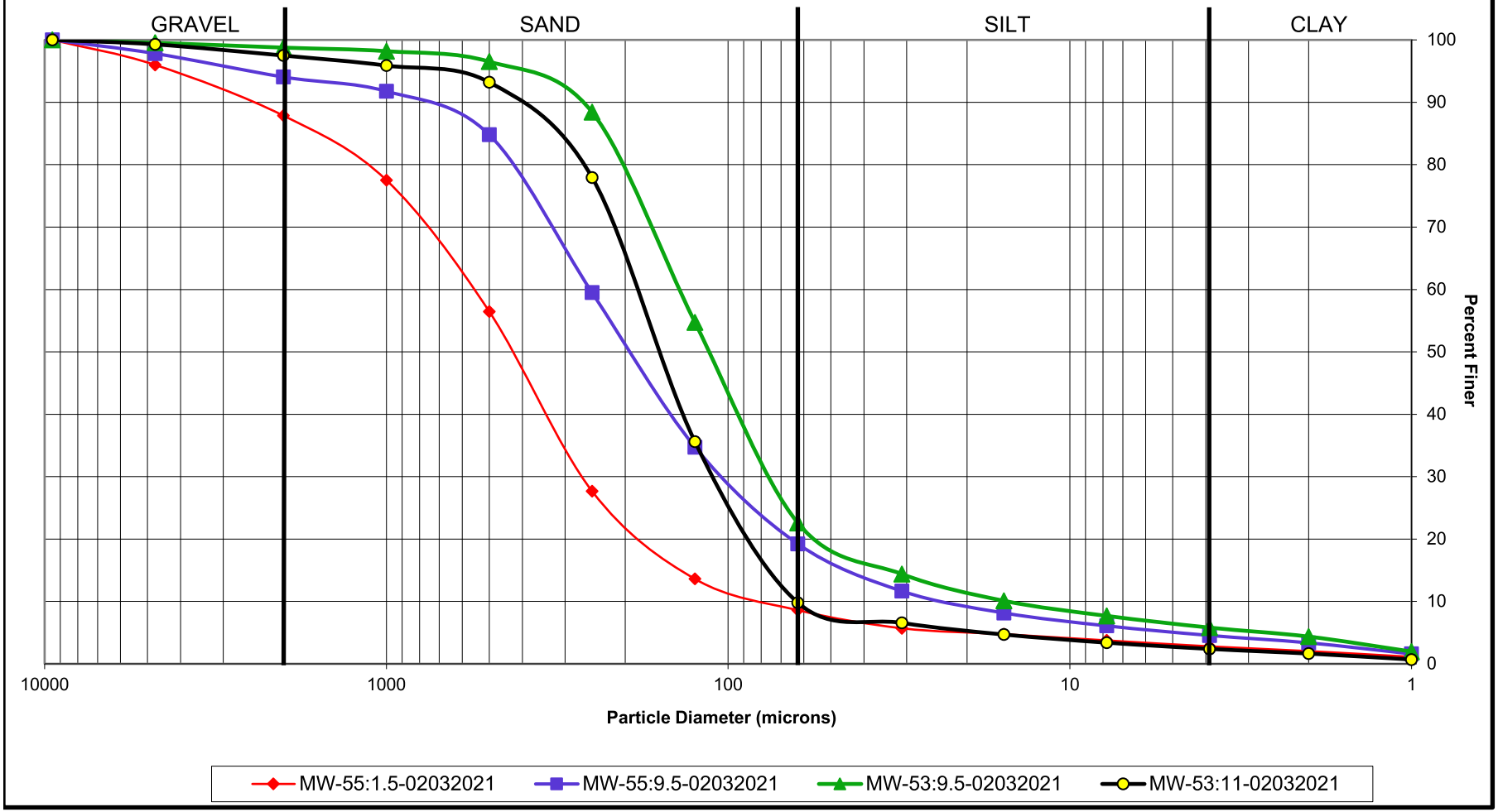
PSEP Grain Size Distribution

Triplicate Sample Plot



MATERIALS TESTING & CONSULTING, INC.

PSEP Grain Size Distribution



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-59:1.0-02032021	21B0087-01	Solid	03-Feb-2021 09:15	03-Feb-2021 16:40
MW-59:6.5-02032021	21B0087-02	Solid	03-Feb-2021 09:25	03-Feb-2021 16:40
MW-59:9.5-02032021	21B0087-03	Solid	03-Feb-2021 09:30	03-Feb-2021 16:40
MW-59:15.0-02032021	21B0087-04	Solid	03-Feb-2021 09:40	03-Feb-2021 16:40
MW-59:20.5-02032021	21B0087-05	Solid	03-Feb-2021 09:50	03-Feb-2021 16:40
MW-22R:1.0-02032021	21B0087-06	Solid	03-Feb-2021 13:55	03-Feb-2021 16:40
MW-22R:5.5-02032021	21B0087-07	Solid	03-Feb-2021 14:00	03-Feb-2021 16:40
MW-22R:9.0-02032021	21B0087-08	Solid	03-Feb-2021 14:10	03-Feb-2021 16:40
MW-22R:15.5-02032021	21B0087-09	Solid	03-Feb-2021 14:20	03-Feb-2021 16:40
MW-22R:20.5-02032021	21B0087-10	Solid	03-Feb-2021 14:35	03-Feb-2021 16:40
MW-55:1.5-02032021	21B0087-11	Solid	03-Feb-2021 11:10	03-Feb-2021 16:40
MW-55:5.5-02032021	21B0087-12	Solid	03-Feb-2021 11:20	03-Feb-2021 16:40
MW-55:9.5-02032021	21B0087-13	Solid	03-Feb-2021 11:35	03-Feb-2021 16:40
MW-55:15.5-02032021	21B0087-14	Solid	03-Feb-2021 11:45	03-Feb-2021 16:40
MW-55:20.5-02032021	21B0087-15	Solid	03-Feb-2021 11:55	03-Feb-2021 16:40
MW-54:1-02032021	21B0087-16	Solid	03-Feb-2021 15:30	03-Feb-2021 16:40
MW-54:5.5-02032021	21B0087-17	Solid	03-Feb-2021 15:35	03-Feb-2021 16:40
MW-54:9-02032021	21B0087-18	Solid	03-Feb-2021 15:45	03-Feb-2021 16:40
MW-102:5.5-02032021	21B0087-19	Solid	03-Feb-2021 16:00	03-Feb-2021 16:40
MW-70:35-02032021	21B0087-20	Solid	03-Feb-2021 08:50	03-Feb-2021 16:40
MW-70:45-02032021	21B0087-21	Solid	03-Feb-2021 09:15	03-Feb-2021 16:40
MW-70:55-02032021	21B0087-22	Solid	03-Feb-2021 09:40	03-Feb-2021 16:40
Trip Blank	21B0087-23	Water	03-Feb-2021 16:00	03-Feb-2021 16:40
MW-53:1-02032021	21B0087-24	Solid	03-Feb-2021 13:20	03-Feb-2021 16:40
MW-53:9.5-02032021	21B0087-25	Solid	03-Feb-2021 13:40	03-Feb-2021 16:40
MW-53:11-02032021	21B0087-26	Solid	03-Feb-2021 13:50	03-Feb-2021 16:40
MW-53:15.8-02032021	21B0087-27	Solid	03-Feb-2021 14:00	03-Feb-2021 16:40
MW-53:20-02032021	21B0087-28	Solid	03-Feb-2021 14:10	03-Feb-2021 16:40

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Work Order Case Narrative

Client: Shannon & Wilson, Inc
Project: Lower Duwamish
Work Order: 21B0087

Sample receipt

Samples as listed on the preceding page were received 03-Feb-2021 16:40 under ARI work order 21B0087. For details regarding sample receipt, please refer to the Cooler Receipt Form.

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements except Aroclor 1260 which was out of control low in closing continuing calibration verification (CCV) on column zb-5. Data reported from passing column zb-35.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The SRM was withing control limits.

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Polynuclear Aromatic Hydrocarbons (PAH) - EPA Method SW8270E-SIM

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements except Benzo(b)fluoranthene and Benzo(j)fluoranthene which were out of control low. All samples which contain analyte have been flagged with a "Q" qualifier.

Internal standard areas were within limits except Phenanthracene-d10 and Perylene-d12 which were out of control low in sample 21B0087-09 and Chrysene which was out of control high in samples 20B0087-03 and 20B0087-12. The samples were reanalyzed with passing internal standards. Both data sets have been reported.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0087-06 in batch BJB0470. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Total Metals - EPA Method 6020B

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0087-06 in batch BJB0467. The duplicate (DUP) relative percent difference (RPD) were within advisory control limits. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Total Hg - EPA Method 7470/7471

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0087-06 in batch BJB0468. The duplicate (DUP) relative percent difference (RPD) were within advisory control limits. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits except o-Terphenyl which was out of control high in sample 21C0087-07 at 217%. Deviation has been flagged. Probable double spike.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

Sample specific QC was performed in association with sample 21B0087-01 in batch BJB0403.
The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Grainsize

The samples were submitted to Materials Testing & Consulting, Inc. (MTC) for grainsize analysis. The MTC report is included here in its entirety.

REVISED to add trans-1,2-dichloroethene to VOC list.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Shannon & Wilson
Project Name: LDW / EMJ
COC No(s): ~~NA~~
Delivered by: Fed-Ex UPS Courier Hand Delivered Other:
Assigned ARI Job No: 21B0087
Tracking No: ~~NA~~

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1640 — 1.3 | 0.3 | 3.4 | 1.5 | ___ | ___

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: D005206

Cooler Accepted by: SG Date: 02/03/2021 Time: 1640

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not SJW
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	1/15/21	

Were the sample(s) split by ARI? NA YES Date/Time: ___ Equipment: ___ Split by: ___

Samples Logged by: SC Date: 2/4/21 Time: 1023 Labels checked by: SC

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

- Sample MW-55: 5.5 - 02032021 metals bottle left partially blank. Assumed to be this bottle based on being grouped in baggie w/ 16oz jar.
- Sample MW-55:15.5 - 02032021 ~~assumed~~ SC labels left partially blank. Assumed to be this sample based on process of elimination.

By: SC Date: 2/4/21

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:1.0-02032021

21B0087-01 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 09:15

Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 16:48

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-01 A 02
	Preparation Batch: BJB0470	Sample Size: 11.34 g (wet)	Dry Weight:10.12 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 89.24
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-01 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-01 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	41.7	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	61.4	ug/kg	E
2-Methylnaphthalene	91-57-6	1	0.13	0.49	70.0	ug/kg	E
Acenaphthylene	208-96-8	1	0.06	0.49	0.97	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.49	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.12	0.49	22.7	ug/kg	
Fluorene	86-73-7	1	0.07	0.49	0.89	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.49	41.3	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	9.31	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.49	29.5	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	32.8	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	22.6	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	28.9	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	26.2	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	8.90	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	9.29	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.49	16.4	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	11.3	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	4.38	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	14.7	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*60.1*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*61.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:1.0-02032021

21B0087-01 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 09:15
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 04:50

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-01 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:8.95 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 89.24

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.59	46.1	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.2	96.3	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*85.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:1.0-02032021

21B0087-01 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 09:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:19

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-01 B 01

Preparation Batch: BJB0430 — Sample Size: 1.012 g (wet) — Dry Weight:0.92 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.63

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.55	162	mg/kg	
Chromium	7440-47-3	20	0.14	0.55	10.4	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	7.49	mg/kg	
Lead	7439-92-1	20	0.07	0.11	12.1	mg/kg	
Silver	7440-22-4	20	0.02	0.22	0.08	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	36.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:1.0-02032021

21B0087-01 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 09:15

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:19

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-01 B 01

Preparation Batch: BJB0430 — Sample Size: 1.012 g (wet) — Dry Weight:0.92 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.63

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	3.72	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.05	mg/kg	J
Copper	7440-50-8	20	0.37	0.55	47.9	mg/kg	
Nickel	7440-02-0	20	0.05	0.55	15.2	mg/kg	
Selenium	7782-49-2	20	0.48	0.55	2.60	mg/kg	
Zinc	7440-66-6	20	0.9	4.4	35.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:1.0-02032021

21B0087-01 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 09:15

Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 10:04

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-01 B

Preparation Batch: BJB0434 — Sample Size: 0.215 g (wet) — Dry Weight:0.19 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.63

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00539	0.0257	0.0185	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:1.0-02032021

21B0087-01RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 09:15

Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 18:20

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-01RE1 A 02
	Preparation Batch: BJB0470	Sample Size: 11.34 g (wet)	Dry Weight:10.12 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 89.24
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-01RE1 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-01RE1 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	3	1.30	1.78	44.7	ug/kg	D
1-Methylnaphthalene	90-12-0	3	0.31	1.48	67.0	ug/kg	D
2-Methylnaphthalene	91-57-6	3	0.38	1.48	78.7	ug/kg	D
Acenaphthylene	208-96-8	3	0.19	1.48	ND	ug/kg	U
Acenaphthene	83-32-9	3	0.26	1.48	ND	ug/kg	U
Dibenzofuran	132-64-9	3	0.37	1.48	22.7	ug/kg	D
Fluorene	86-73-7	3	0.20	1.48	0.79	ug/kg	J, D
Phenanthrene	85-01-8	3	0.34	1.48	50.2	ug/kg	D
Anthracene	120-12-7	3	0.22	1.48	9.39	ug/kg	D
Fluoranthene	206-44-0	3	0.24	1.48	32.6	ug/kg	D
Pyrene	129-00-0	3	0.26	1.48	35.6	ug/kg	D
Benzo(a)anthracene	56-55-3	3	0.21	1.48	22.6	ug/kg	D
Chrysene	218-01-9	3	0.21	1.48	28.0	ug/kg	D
Benzo(b)fluoranthene	205-99-2	3	0.20	1.48	26.5	ug/kg	D
Benzo(k)fluoranthene	207-08-9	3	0.30	1.48	8.40	ug/kg	D
Benzo(j)fluoranthene	205-82-3	3	0.29	1.48	8.68	ug/kg	Q, D
Benzo(a)pyrene	50-32-8	3	0.26	1.48	16.2	ug/kg	D
Indeno(1,2,3-cd)pyrene	193-39-5	3	0.26	1.48	11.8	ug/kg	D
Dibenzo(a,h)anthracene	53-70-3	3	0.31	1.48	4.22	ug/kg	D
Benzo(g,h,i)perylene	191-24-2	3	0.25	1.48	14.3	ug/kg	D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*59.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*62.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:6.5-02032021

21B0087-02 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM			Sampled: 02/03/2021 09:25
Instrument: NT11 Analyst: VTS			Analyzed: 03/12/2021 17:20
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-02 A 02
	Preparation Batch: BJB0470	Sample Size: 11.26 g (wet)	Dry Weight:10.13 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 89.98
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-02 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-02 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	1.56	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	1.77	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	2.21	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	0.07	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.49	0.16	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.49	0.67	ug/kg	
Fluorene	86-73-7	1	0.07	0.49	0.09	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	2.74	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	0.34	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.49	1.37	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	1.77	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	1.05	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	1.40	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	0.93	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	0.41	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	0.39	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.49	0.86	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	0.38	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	0.11	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	0.81	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*39.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*61.6*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*60.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:6.5-02032021

21B0087-02 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 09:25
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 05:10

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-02 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:9.02 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 89.98

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.54	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.1	15.9	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*110*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:6.5-02032021

21B0087-02 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 09:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:25

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-02 B 01
Preparation Batch: BJB0430 — Sample Size: 1.057 g (wet) — Dry Weight:0.89 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 84.44

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.56	34.9	mg/kg	
Chromium	7440-47-3	20	0.15	0.56	10.4	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	5.01	mg/kg	
Lead	7439-92-1	20	0.08	0.11	2.28	mg/kg	
Silver	7440-22-4	20	0.02	0.22	0.06	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	34.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:6.5-02032021

21B0087-02 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 09:25
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:25

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-02 B 01
Preparation Batch: BJB0430 — Sample Size: 1.057 g (wet) — Dry Weight:0.89 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 84.44

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	2.79	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.05	mg/kg	J
Copper	7440-50-8	20	0.38	0.56	12.6	mg/kg	
Nickel	7440-02-0	20	0.06	0.56	9.72	mg/kg	
Selenium	7782-49-2	20	0.49	0.56	1.44	mg/kg	
Zinc	7440-66-6	20	0.9	4.5	24.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:6.5-02032021

21B0087-02 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 09:25
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 10:06

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-02 B
Preparation Batch: BJB0434 — Sample Size: 0.222 g (wet) — Dry Weight:0.19 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 84.44

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00560	0.0267	0.0164	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:9.5-02032021

21B0087-03 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 09:30
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 17:52

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-03 A 02
	Preparation Batch: BJB0470	Sample Size: 13.14 g (wet)	Dry Weight:10.04 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 76.37
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-03 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-03 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	0.67	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.59	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.64	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.07	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.11	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.34	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.09	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	2.43	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.22	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	3.30	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	4.16	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	2.54	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	3.31	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	2.32	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.42	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	1.35	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	3.37	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	1.96	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.49	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	2.56	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*35.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*61.1*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*60.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:9.5-02032021

21B0087-03 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 09:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 05:31

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-03 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:7.66 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 76.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.53	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	13.1	15.7	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*101*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:9.5-02032021

21B0087-03 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 09:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:30

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-03 B 01
Preparation Batch: BJB0430 — Sample Size: 1.05 g (wet) — Dry Weight:0.78 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 74.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.64	87.2	mg/kg	
Chromium	7440-47-3	20	0.17	0.64	17.9	mg/kg	
Cobalt	7440-48-4	20	0.04	0.26	10.9	mg/kg	
Lead	7439-92-1	20	0.09	0.13	6.28	mg/kg	
Silver	7440-22-4	20	0.02	0.26	0.11	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.26	51.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:9.5-02032021

21B0087-03 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 09:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:30

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-03 B 01
Preparation Batch: BJB0430 — Sample Size: 1.05 g (wet) — Dry Weight:0.78 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 74.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.26	6.92	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.12	mg/kg	J
Copper	7440-50-8	20	0.43	0.64	30.9	mg/kg	
Nickel	7440-02-0	20	0.06	0.64	18.7	mg/kg	
Selenium	7782-49-2	20	0.56	0.64	2.15	mg/kg	
Zinc	7440-66-6	20	1.0	5.1	59.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-59:9.5-02032021

21B0087-03 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 09:30

Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 10:09

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-03 B

Preparation Batch: BJB0434 — Sample Size: 0.287 g (wet) — Dry Weight:0.21 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 74.53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00491	0.0234	0.0598	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:1.0-02032021

21B0087-06 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 13:55
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 18:24

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-06 A 02
	Preparation Batch: BJB0470	Sample Size: 10.65 g (wet)	Dry Weight:10.05 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 94.37
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-06 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-06 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	0.44	ug/kg	J
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.52	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.56	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	0.23	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.24	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.13	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	1.85	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.10	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	1.95	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	3.78	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	1.34	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	4.76	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	2.64	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.86	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.62	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	2.23	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	1.53	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.55	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	6.35	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*49.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*62.0*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*64.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:1.0-02032021

21B0087-06 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 13:55
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 06:33

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-06 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:9.47 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 94.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	5	26.4	29.5	mg/kg	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	5	52.8	282	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:1.0-02032021

21B0087-06 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 13:55
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:57

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-06 B 01
Preparation Batch: BJB0467 — Sample Size: 1.092 g (wet) — Dry Weight:1.05 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 96.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.05	0.47	31.1	mg/kg	
Chromium	7440-47-3	20	0.12	0.47	11.2	mg/kg	
Cobalt	7440-48-4	20	0.03	0.19	5.30	mg/kg	
Lead	7439-92-1	20	0.06	0.09	3.00	mg/kg	
Silver	7440-22-4	20	0.02	0.19	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.19	36.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:1.0-02032021

21B0087-06 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 13:55
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:57

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-06 B 01
Preparation Batch: BJB0467 — Sample Size: 1.092 g (wet) — Dry Weight:1.05 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 96.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.19	2.64	mg/kg	
Cadmium	7440-43-9	20	0.03	0.09	ND	mg/kg	U
Copper	7440-50-8	20	0.32	0.47	17.7	mg/kg	
Nickel	7440-02-0	20	0.05	0.47	8.73	mg/kg	
Selenium	7782-49-2	20	0.42	0.47	1.54	mg/kg	
Zinc	7440-66-6	20	0.8	3.8	29.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:1.0-02032021

21B0087-06 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 13:55
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 11:22

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-06 B
Preparation Batch: BJB0468 — Sample Size: 0.277 g (wet) — Dry Weight:0.27 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 96.58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00392	0.0187	ND	mg/kg	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:5.5-02032021

21B0087-07 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 14:00
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 20:01

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-07 A 02
	Preparation Batch: BJB0470	Sample Size: 14.92 g (wet)	Dry Weight:10.01 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 67.12
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-07 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-07 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	5.39	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	7.90	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	7.74	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.91	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	5.95	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	5.85	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	7.44	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	24.5	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	6.84	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	22.0	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	22.8	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	7.70	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	18.2	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	13.8	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	4.16	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	3.51	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	10.0	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	5.22	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	1.90	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	13.0	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*44.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*36.6*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*56.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:5.5-02032021

21B0087-07 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 14:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 06:54

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-07 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:6.73 g
Prepared: 02/15/2021 — Final Volume: 5 mL — % Solids: 67.12

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	37.1	49.6	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	74.3	246	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*217*	*%*	*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:5.5-02032021

21B0087-07 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 14:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:35

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-07 B 01
Preparation Batch: BJB0467 — Sample Size: 1.067 g (wet) — Dry Weight:0.77 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 72.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.65	66.5	mg/kg	
Chromium	7440-47-3	20	0.17	0.65	15.9	mg/kg	
Cobalt	7440-48-4	20	0.04	0.26	8.13	mg/kg	
Lead	7439-92-1	20	0.09	0.13	5.10	mg/kg	
Silver	7440-22-4	20	0.02	0.26	0.10	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.26	43.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:5.5-02032021

21B0087-07 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 14:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:35

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-07 B 01
Preparation Batch: BJB0467 — Sample Size: 1.067 g (wet) — Dry Weight:0.77 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 72.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.26	5.46	mg/kg	
Cadmium	7440-43-9	20	0.04	0.13	0.11	mg/kg	J
Copper	7440-50-8	20	0.44	0.65	24.4	mg/kg	
Nickel	7440-02-0	20	0.06	0.65	16.4	mg/kg	
Selenium	7782-49-2	20	0.57	0.65	2.56	mg/kg	
Zinc	7440-66-6	20	1.1	5.2	41.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:5.5-02032021

21B0087-07 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 14:00
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 11:52

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-07 B
Preparation Batch: BJB0468 — Sample Size: 0.25 g (wet) — Dry Weight:0.18 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 72.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00581	0.0277	0.0531	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:9.0-02032021

21B0087-08 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 14:10
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 20:34

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-08 A 02
	Preparation Batch: BJB0470	Sample Size: 14.99 g (wet)	Dry Weight:10.02 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 66.85
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-08 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-08 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	48.7	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	9.72	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	12.8	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	11.3	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	9.87	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	9.47	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	9.04	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	33.8	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	3.75	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	24.6	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	24.4	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	5.68	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	9.34	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	7.91	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	3.51	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	3.54	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	7.45	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	5.48	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.92	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	7.24	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*42.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*42.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*48.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:9.0-02032021

21B0087-08 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 14:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 07:15

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-08 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:6.71 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 66.85

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.46	89.5	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	14.9	275	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:9.0-02032021

21B0087-08 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 14:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:40

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-08 B 01
Preparation Batch: BJB0467 — Sample Size: 1.055 g (wet) — Dry Weight:0.73 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 68.76

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.69	76.7	mg/kg	
Chromium	7440-47-3	20	0.18	0.69	20.0	mg/kg	
Cobalt	7440-48-4	20	0.04	0.28	7.08	mg/kg	
Lead	7439-92-1	20	0.09	0.14	11.4	mg/kg	
Silver	7440-22-4	20	0.02	0.28	0.09	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.28	44.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:9.0-02032021

21B0087-08 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 14:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:40

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-08 B 01
Preparation Batch: BJB0467 — Sample Size: 1.055 g (wet) — Dry Weight:0.73 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 68.76

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.28	6.04	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.11	mg/kg	J
Copper	7440-50-8	20	0.47	0.69	28.5	mg/kg	
Nickel	7440-02-0	20	0.07	0.69	18.8	mg/kg	
Selenium	7782-49-2	20	0.61	0.69	2.36	mg/kg	
Zinc	7440-66-6	20	1.1	5.5	57.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:9.0-02032021

21B0087-08 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 14:10
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 11:54

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-08 B
Preparation Batch: BJB0468 — Sample Size: 0.242 g (wet) — Dry Weight:0.17 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 68.76

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00631	0.0300	0.0873	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:15.5-02032021

21B0087-09 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 14:20
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 21:06

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-09 A 02
	Preparation Batch: BJB0470	Sample Size: 13.12 g (wet)	Dry Weight:10.03 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 76.45
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-09 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-09 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	16.2	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	6.25	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	7.68	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	2.84	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	3.75	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	4.65	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	10.9	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	34.4	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	2.10	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	19.8	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	33.4	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	5.97	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	12.7	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	8.62	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.98	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	2.67	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	7.33	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	3.19	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.70	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	7.31	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*44.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*42.8*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*108*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:15.5-02032021

21B0087-09 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 14:20
Instrument: FID4 Analyst: CTO — Analyzed: 03/01/2021 17:53

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-09 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:7.67 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 76.45

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	20	130	1090	mg/kg	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	20	261	3250	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*96.0*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:15.5-02032021

21B0087-09 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 14:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:45

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-09 B 01
Preparation Batch: BJB0467 — Sample Size: 1.005 g (wet) — Dry Weight:0.71 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 70.30

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.71	28.8	mg/kg	
Chromium	7440-47-3	20	0.18	0.71	9.50	mg/kg	
Cobalt	7440-48-4	20	0.04	0.28	3.97	mg/kg	
Lead	7439-92-1	20	0.10	0.14	1.54	mg/kg	
Silver	7440-22-4	20	0.02	0.28	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.28	34.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:15.5-02032021

21B0087-09 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 14:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:45

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-09 B 01
Preparation Batch: BJB0467 — Sample Size: 1.005 g (wet) — Dry Weight:0.71 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 70.30

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.28	1.18	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	ND	mg/kg	U
Copper	7440-50-8	20	0.48	0.71	11.1	mg/kg	
Nickel	7440-02-0	20	0.07	0.71	8.31	mg/kg	
Selenium	7782-49-2	20	0.62	0.71	1.58	mg/kg	
Zinc	7440-66-6	20	1.2	5.7	42.2	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:15.5-02032021

21B0087-09 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 14:20

Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 11:56

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-09 B

Preparation Batch: BJB0468 — Sample Size: 0.291 g (wet) — Dry Weight:0.20 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 70.30

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00513	0.0244	0.0184	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:15.5-02032021

21B0087-09RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 14:20
Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 18:52

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-09RE1 A 02
	Preparation Batch: BJB0470	Sample Size: 13.12 g (wet)	Dry Weight:10.03 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 76.45
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-09RE1 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-09RE1 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	3	1.31	1.79	16.1	ug/kg	D
1-Methylnaphthalene	90-12-0	3	0.32	1.50	8.08	ug/kg	D
2-Methylnaphthalene	91-57-6	3	0.38	1.50	8.24	ug/kg	D
Acenaphthylene	208-96-8	3	0.19	1.50	3.71	ug/kg	D
Acenaphthene	83-32-9	3	0.27	1.50	8.56	ug/kg	D
Dibenzofuran	132-64-9	3	0.38	1.50	6.30	ug/kg	D
Fluorene	86-73-7	3	0.20	1.50	12.8	ug/kg	D
Phenanthrene	85-01-8	3	0.34	1.50	32.4	ug/kg	D
Anthracene	120-12-7	3	0.22	1.50	ND	ug/kg	U
Fluoranthene	206-44-0	3	0.24	1.50	17.8	ug/kg	D
Pyrene	129-00-0	3	0.27	1.50	21.2	ug/kg	D
Benzo(a)anthracene	56-55-3	3	0.22	1.50	5.73	ug/kg	D
Chrysene	218-01-9	3	0.21	1.50	12.9	ug/kg	D
Benzo(b)fluoranthene	205-99-2	3	0.20	1.50	6.40	ug/kg	D
Benzo(k)fluoranthene	207-08-9	3	0.30	1.50	1.99	ug/kg	D
Benzo(j)fluoranthene	205-82-3	3	0.29	1.50	2.48	ug/kg	Q, D
Benzo(a)pyrene	50-32-8	3	0.26	1.50	5.22	ug/kg	D
Indeno(1,2,3-cd)pyrene	193-39-5	3	0.26	1.50	2.59	ug/kg	D
Dibenzo(a,h)anthracene	53-70-3	3	0.31	1.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	3	0.25	1.50	5.34	ug/kg	D
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*50.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*42.2*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*66.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:20.5-02032021

21B0087-10 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM			Sampled: 02/03/2021 14:35
Instrument: NT11 Analyst: VTS			Analyzed: 03/12/2021 21:38
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-10 A 02
	Preparation Batch: BJB0470	Sample Size: 12.76 g (wet)	Dry Weight:10.00 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 78.37
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-10 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-10 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.20	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.32	ug/kg	J
Acenaphthylene	208-96-8	1	0.06	0.50	0.15	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	1.00	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	0.26	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	1.97	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	4.92	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	ND	ug/kg	U
Fluoranthene	206-44-0	1	0.08	0.50	0.98	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	1.69	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.54	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	2.28	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.50	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.11	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.13	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.34	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.18	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*44.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*43.0*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*44.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:20.5-02032021

21B0087-10 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 14:35
Instrument: FID4 Analyst: CTO — Analyzed: 03/01/2021 18:14

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-10 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:7.86 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 78.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	10	63.6	330	mg/kg	D
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	10	127	977	mg/kg	D
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*80.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:20.5-02032021

21B0087-10 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 14:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:50

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-10 B 01
Preparation Batch: BJB0467 — Sample Size: 1.049 g (wet) — Dry Weight:0.85 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 81.10

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.59	20.8	mg/kg	
Chromium	7440-47-3	20	0.15	0.59	13.7	mg/kg	
Cobalt	7440-48-4	20	0.03	0.24	5.87	mg/kg	
Lead	7439-92-1	20	0.08	0.12	1.40	mg/kg	
Silver	7440-22-4	20	0.02	0.24	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.24	38.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:20.5-02032021

21B0087-10 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 14:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:50

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-10 B 01
Preparation Batch: BJB0467 — Sample Size: 1.049 g (wet) — Dry Weight:0.85 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 81.10

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.24	4.37	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	ND	mg/kg	U
Copper	7440-50-8	20	0.40	0.59	11.5	mg/kg	
Nickel	7440-02-0	20	0.06	0.59	11.6	mg/kg	
Selenium	7782-49-2	20	0.52	0.59	1.84	mg/kg	
Zinc	7440-66-6	20	1.0	4.7	25.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-22R:20.5-02032021

21B0087-10 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 14:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 11:59

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-10 B
Preparation Batch: BJB0468 — Sample Size: 0.275 g (wet) — Dry Weight:0.22 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 81.10

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00471	0.0224	0.00841	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:1.5-02032021

21B0087-11 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 11:10

Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 22:11

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-11 B 02
	Preparation Batch: BJB0470	Sample Size: 11.29 g (wet)	Dry Weight:10.06 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 89.12
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-11 B 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-11 B 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.11	0.50	0.60	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	0.59	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	ND	ug/kg	U
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	0.21	ug/kg	J
Fluorene	86-73-7	1	0.07	0.50	0.10	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	1.40	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.11	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	1.10	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	1.26	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	0.51	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	1.28	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	0.80	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	0.26	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.22	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.50	0.48	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.28	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	0.38	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*42.0*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*57.6*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*67.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:1.5-02032021

21B0087-11 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 11:10
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 08:17

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-11 B 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:8.94 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 89.12

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.59	7.93	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	11.2	41.1	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*108*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:1.5-02032021

21B0087-11 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 11:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:55

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-11 C 01
Preparation Batch: BJB0467 — Sample Size: 1.075 g (wet) — Dry Weight:0.90 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 83.41

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.56	25.4	mg/kg	
Chromium	7440-47-3	20	0.14	0.56	12.0	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	4.51	mg/kg	
Lead	7439-92-1	20	0.08	0.11	2.25	mg/kg	
Silver	7440-22-4	20	0.02	0.22	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	33.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:1.5-02032021

21B0087-11 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 11:10
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 20:55

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-11 C 01
Preparation Batch: BJB0467 — Sample Size: 1.075 g (wet) — Dry Weight:0.90 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 83.41

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	2.30	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.04	mg/kg	J
Copper	7440-50-8	20	0.38	0.56	10.5	mg/kg	
Nickel	7440-02-0	20	0.06	0.56	10.0	mg/kg	
Selenium	7782-49-2	20	0.49	0.56	1.01	mg/kg	
Zinc	7440-66-6	20	0.9	4.5	26.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:1.5-02032021

21B0087-11 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 11:10
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 12:01

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-11 C
Preparation Batch: BJB0468 — Sample Size: 0.283 g (wet) — Dry Weight:0.24 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 83.41

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00445	0.0212	0.0172	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:1.5-02032021

21B0087-11 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 02/03/2021 11:10

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 18:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0087-11 C

Preparation Batch: BJB0295 — Sample Size: 2.5584 g (wet)

Prepared: 02/09/2021 — Final Volume: 100 g

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.489	0.489	ND	mg/kg wet	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:5.5-02032021

21B0087-12 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 11:20
Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 19:24

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-12 A 02
	Preparation Batch: BJB0470	Sample Size: 14.79 g (wet)	Dry Weight:10.01 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 67.67
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-12 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-12 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	7.26	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	10.4	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	10.7	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	1.67	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	4.83	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	6.15	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	6.55	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	23.9	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	6.60	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	21.4	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	18.1	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	5.32	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	8.12	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	5.52	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.88	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	2.04	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	4.22	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	3.66	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.88	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	4.92	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*45.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*78.4*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*67.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:5.5-02032021

21B0087-12 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 11:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 08:38

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-12 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:6.79 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 67.67

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	7.37	18.1	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	14.7	48.6	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*108*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:5.5-02032021

21B0087-12 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 11:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:01

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-12 B 01
Preparation Batch: BJB0467 — Sample Size: 1.058 g (wet) — Dry Weight:0.70 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 66.32

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.71	75.1	mg/kg	
Chromium	7440-47-3	20	0.19	0.71	18.7	mg/kg	
Cobalt	7440-48-4	20	0.04	0.29	11.5	mg/kg	
Lead	7439-92-1	20	0.10	0.14	7.04	mg/kg	
Silver	7440-22-4	20	0.02	0.29	0.12	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.29	53.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:5.5-02032021

21B0087-12 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 11:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:01

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-12 B 01
Preparation Batch: BJB0467 — Sample Size: 1.058 g (wet) — Dry Weight:0.70 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 66.32

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.29	6.84	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	0.12	mg/kg	J
Copper	7440-50-8	20	0.50	0.71	30.0	mg/kg	
Nickel	7440-02-0	20	0.07	0.71	20.5	mg/kg	
Selenium	7782-49-2	20	0.63	0.71	2.74	mg/kg	
Zinc	7440-66-6	20	1.2	5.7	51.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:5.5-02032021

21B0087-12 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 11:20
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 12:03

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-12 B
Preparation Batch: BJB0468 — Sample Size: 0.218 g (wet) — Dry Weight:0.14 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 66.32

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00726	0.0346	0.0911	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:5.5-02032021

21B0087-12 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 02/03/2021 11:20

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 18:25

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0087-12 B

Preparation Batch: BJB0295 — Sample Size: 2.9678 g (wet)

Prepared: 02/09/2021 — Final Volume: 100 g

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.421	0.421	ND	mg/kg wet	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:9.5-02032021

21B0087-13 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 11:35
Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 19:57

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-13 B 02
	Preparation Batch: BJB0470	Sample Size: 13.72 g (wet)	Dry Weight:10.07 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 73.39
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-13 B 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-13 B 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	11.5	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	16.7	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	15.6	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	2.77	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	13.1	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	10.6	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	11.9	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	41.7	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	13.4	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	43.7	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	45.3	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	18.6	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	23.2	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	12.4	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	6.26	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	6.47	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	17.6	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	9.79	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	3.29	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	9.68	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.4*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*68.0*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*59.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:9.5-02032021

21B0087-13 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 11:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 08:58

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-13 B 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:7.36 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 73.39

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.79	19.9	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.6	38.7	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*111*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:9.5-02032021

21B0087-13 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 11:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:09

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-13 C 01
Preparation Batch: BJB0467 — Sample Size: 1.048 g (wet) — Dry Weight:0.65 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 62.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.09	0.77	85.5	mg/kg	
Chromium	7440-47-3	20	0.20	0.77	24.2	mg/kg	
Cobalt	7440-48-4	20	0.04	0.31	11.1	mg/kg	
Lead	7439-92-1	20	0.10	0.15	26.0	mg/kg	
Silver	7440-22-4	20	0.03	0.31	0.23	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.31	71.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:9.5-02032021

21B0087-13 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 11:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:09

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-13 C 01
Preparation Batch: BJB0467 — Sample Size: 1.048 g (wet) — Dry Weight:0.65 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 62.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.31	11.6	mg/kg	
Cadmium	7440-43-9	20	0.05	0.15	0.35	mg/kg	
Copper	7440-50-8	20	0.54	0.77	51.4	mg/kg	
Nickel	7440-02-0	20	0.08	0.77	23.1	mg/kg	
Selenium	7782-49-2	20	0.67	0.77	4.05	mg/kg	
Zinc	7440-66-6	20	1.3	6.1	74.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:9.5-02032021

21B0087-13 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 11:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 12:09

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-13 C
Preparation Batch: BJB0468 — Sample Size: 0.219 g (wet) — Dry Weight:0.14 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 62.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00770	0.0367	0.203	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-55:9.5-02032021

21B0087-13 (Solid)

Wet Chemistry

Method: SM 3500-Cr B-09 — Sampled: 02/03/2021 11:35

Instrument: UV1800-1 Analyst: WCW — Analyzed: 02/10/2021 18:26

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0087-13 C

Preparation Batch: BJB0295 — Sample Size: 2.8158 g (wet)

Prepared: 02/09/2021 — Final Volume: 100 g

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Hexavalent Chromium	1854-02-99	1.25	0.444	0.444	ND	mg/kg wet	U

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:1-02032021

21B0087-16 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/03/2021 15:30

Instrument: NT5 Analyst: PB — Analyzed: 02/04/2021 17:00

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0087-16 D

Preparation Batch: BJB0166 — Sample Size: 3.88 g (wet) — Dry Weight:3.38 g

Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 87.22

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.35	1.48	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.50	1.48	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.39	1.48	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.35	1.48	ND	ug/kg	U
Benzene	71-43-2	1	0.44	1.48	1.31	ug/kg	J
Trichloroethene	79-01-6	1	0.31	1.48	ND	ug/kg	U
Toluene	108-88-3	1	0.22	1.48	0.60	ug/kg	J
Tetrachloroethene	127-18-4	1	0.38	1.48	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.30	1.48	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.58	2.95	ND	ug/kg	U
o-Xylene	95-47-6	1	0.33	1.48	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.91	2.95	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*103*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*98.9*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:1-02032021

21B0087-16 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 15:30
Instrument: NT11 Analyst: VTS — Analyzed: 03/12/2021 23:47

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-16 A 02
	Preparation Batch: BJB0470	Sample Size: 11.32 g (wet)	Dry Weight:10.11 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 89.27
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-16 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-16 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	1.49	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.49	1.06	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.49	1.33	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.49	0.29	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.49	0.51	ug/kg	
Dibenzofuran	132-64-9	1	0.12	0.49	0.51	ug/kg	
Fluorene	86-73-7	1	0.07	0.49	0.31	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.49	6.35	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	1.05	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.49	11.9	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	16.7	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	7.47	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	14.0	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.49	18.8	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	7.84	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	6.74	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.49	7.82	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	7.74	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	2.61	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	8.45	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*41.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*45.1*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*56.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:1-02032021

21B0087-16 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 15:30
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 09:19

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-16 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:8.95 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 89.27

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.58	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	11.2	31.2	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:1-02032021

21B0087-16 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/03/2021 15:30

Instrument: ECD7 Analyst: JGR — Analyzed: 03/07/2021 16:36

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-16 A 03

Preparation Batch: BJB0471 — Sample Size: 14.1 g (wet) — Dry Weight:12.59 g

Prepared: 02/17/2021 — Final Volume: 2.5 mL — % Solids: 89.27

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1000	1550	3970	ND	ug/kg	U
Aroclor 1221	11104-28-2	1000	1550	3970	ND	ug/kg	U
Aroclor 1232	11141-16-5	1000	1550	3970	ND	ug/kg	U
Aroclor 1242	53469-21-9	1000	1550	3970	ND	ug/kg	U
Aroclor 1248	12672-29-6	1000	1550	3970	ND	ug/kg	U
Aroclor 1254	11097-69-1	1000	1550	3970	56100	ug/kg	D
Aroclor 1260	11096-82-5	1000	585	3970	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*D1*	D1, P1
Surrogate: Tetrachlorometaxylene				*44-120 %*		*D1*	D1
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*		*D1*	D1, P1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*		*D1*	D1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:1-02032021

21B0087-16 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 15:30

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:32

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-16 B 01

Preparation Batch: BJB0467 — Sample Size: 1.028 g (wet) — Dry Weight:0.90 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 87.54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.56	23.7	mg/kg	
Chromium	7440-47-3	20	0.14	0.56	16.5	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	4.67	mg/kg	
Lead	7439-92-1	20	0.08	0.11	67.2	mg/kg	
Silver	7440-22-4	20	0.02	0.22	0.06	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	33.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:1-02032021

21B0087-16 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 15:30
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:32

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-16 B 01
Preparation Batch: BJB0467 — Sample Size: 1.028 g (wet) — Dry Weight:0.90 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 87.54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	3.93	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.18	mg/kg	
Copper	7440-50-8	20	0.38	0.56	16.3	mg/kg	
Nickel	7440-02-0	20	0.06	0.56	11.5	mg/kg	
Selenium	7782-49-2	20	0.49	0.56	1.15	mg/kg	
Zinc	7440-66-6	20	1.0	4.4	68.0	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:1-02032021

21B0087-16 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 15:30

Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 12:12

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-16 B

Preparation Batch: BJB0468 — Sample Size: 0.223 g (wet) — Dry Weight:0.20 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 87.54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00538	0.0256	0.0134	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:5.5-02032021

21B0087-17 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/03/2021 15:35

Instrument: NT5 Analyst: PB — Analyzed: 02/04/2021 17:24

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0087-17 D

Preparation Batch: BJB0166 — Sample Size: 2.8 g (wet) — Dry Weight:2.40 g

Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 85.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.49	2.09	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.70	2.09	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.55	2.09	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.50	2.09	ND	ug/kg	U
Benzene	71-43-2	1	0.62	2.09	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.44	2.09	ND	ug/kg	U
Toluene	108-88-3	1	0.31	2.09	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.54	2.09	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.42	2.09	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.82	4.17	ND	ug/kg	U
o-Xylene	95-47-6	1	0.47	2.09	ND	ug/kg	U
Xylenes, total	1330-20-7	1	1.28	4.17	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*104*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*98.9*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:5.5-02032021

21B0087-17 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 15:35
Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 00:19

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-17 A 02
	Preparation Batch: BJB0470	Sample Size: 11.23 g (wet)	Dry Weight:10.06 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 89.55
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-17 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-17 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.34	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	1.55	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	2.13	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.09	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.24	ug/kg	J
Dibenzofuran	132-64-9	1	0.13	0.50	0.51	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.32	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	6.44	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.25	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.50	1.99	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	5.48	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	4.79	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	20.2	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	10.6	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	1.84	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	0.73	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	4.00	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	0.86	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	0.73	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	4.39	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*46.2*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*40.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*59.9*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:5.5-02032021

21B0087-17 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 15:35
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 09:40

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-17 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:8.98 g
Prepared: 02/15/2021 — Final Volume: 5 mL — % Solids: 89.55

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	27.8	63.5	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	55.7	665	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:5.5-02032021

21B0087-17 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/03/2021 15:35

Instrument: ECD7 Analyst: JGR — Analyzed: 03/14/2021 14:14

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-17 A 03

Preparation Batch: BJB0471 — Sample Size: 13.97 g (wet) — Dry Weight:12.51 g

Prepared: 02/17/2021 — Final Volume: 2.5 mL — % Solids: 89.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	5	7.8	20.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	5	7.8	20.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	5	7.8	20.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	5	7.8	20.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	5	7.8	20.0	75.7	ug/kg	D
Aroclor 1260	11096-82-5	5	2.9	20.0	21.8	ug/kg	D
Surrogate: Decachlorobiphenyl				*40-126 %*	*92.9*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*87.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*73.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*84.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:5.5-02032021

21B0087-17 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 15:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:37

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-17 B 01
Preparation Batch: BJB0467 — Sample Size: 1.057 g (wet) — Dry Weight:0.96 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.52	23.8	mg/kg	
Chromium	7440-47-3	20	0.14	0.52	10.3	mg/kg	
Cobalt	7440-48-4	20	0.03	0.21	4.93	mg/kg	
Lead	7439-92-1	20	0.07	0.10	16.2	mg/kg	
Silver	7440-22-4	20	0.02	0.21	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.21	36.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:5.5-02032021

21B0087-17 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 15:35
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/22/2021 18:37

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-17 B 01
Preparation Batch: BJB0467 — Sample Size: 1.057 g (wet) — Dry Weight:0.96 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.21	1.83	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	ND	mg/kg	U
Copper	7440-50-8	20	0.36	0.52	17.9	mg/kg	
Nickel	7440-02-0	20	0.05	0.52	9.91	mg/kg	
Selenium	7782-49-2	20	0.46	0.52	1.51	mg/kg	
Zinc	7440-66-6	20	0.9	4.2	28.8	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:5.5-02032021

21B0087-17 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 15:35
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 12:14

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-17 B
Preparation Batch: BJB0468 — Sample Size: 0.276 g (wet) — Dry Weight:0.25 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 90.55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00420	0.0200	0.00840	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:9-02032021

21B0087-18 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/03/2021 15:45

Instrument: NT5 Analyst: PB — Analyzed: 02/04/2021 17:47

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0087-18 D

Preparation Batch: BJB0166 — Sample Size: 4.9 g (wet) — Dry Weight:4.18 g

Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 85.40

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.28	1.19	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.40	1.19	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.32	1.19	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.29	1.19	ND	ug/kg	U
Benzene	71-43-2	1	0.35	1.19	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.25	1.19	ND	ug/kg	U
Toluene	108-88-3	1	0.18	1.19	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.31	1.19	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.24	1.19	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.47	2.39	ND	ug/kg	U
o-Xylene	95-47-6	1	0.27	1.19	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.74	2.39	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*102*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*98.8*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*105*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:9-02032021

21B0087-18 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 15:45
Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 00:52

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-18 A 02
	Preparation Batch: BJB0470	Sample Size: 12.55 g (wet)	Dry Weight:10.15 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 80.91
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-18 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-18 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	ND	ug/kg	U
1-Methylnaphthalene	90-12-0	1	0.10	0.49	0.39	ug/kg	J
2-Methylnaphthalene	91-57-6	1	0.13	0.49	0.33	ug/kg	J
Acenaphthylene	208-96-8	1	0.06	0.49	0.06	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.49	0.10	ug/kg	J
Dibenzofuran	132-64-9	1	0.12	0.49	0.25	ug/kg	J
Fluorene	86-73-7	1	0.07	0.49	ND	ug/kg	U
Phenanthrene	85-01-8	1	0.11	0.49	2.06	ug/kg	
Anthracene	120-12-7	1	0.07	0.49	0.12	ug/kg	J
Fluoranthene	206-44-0	1	0.08	0.49	1.10	ug/kg	
Pyrene	129-00-0	1	0.09	0.49	1.19	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.49	0.67	ug/kg	
Chrysene	218-01-9	1	0.07	0.49	1.33	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.06	0.49	1.26	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.49	0.40	ug/kg	J
Benzo(j)fluoranthene	205-82-3	1	0.10	0.49	0.35	ug/kg	J
Benzo(a)pyrene	50-32-8	1	0.09	0.49	0.45	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.49	0.37	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.49	0.17	ug/kg	J
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.49	0.41	ug/kg	J
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*38.6*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*45.7*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*59.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:9-02032021

21B0087-18 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 15:45
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 10:43

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-18 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:8.12 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 80.91

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.16	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.3	12.5	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*108*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:9-02032021

21B0087-18 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/03/2021 15:45

Instrument: ECD7 Analyst: JGR — Analyzed: 03/14/2021 14:35

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-18 A 03

Preparation Batch: BJB0471 — Sample Size: 15.51 g (wet) — Dry Weight:12.55 g

Prepared: 02/17/2021 — Final Volume: 2.5 mL — % Solids: 80.91

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	59.2	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*	*85.1*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*83.8*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*84.9*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*70.1*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:9-02032021

21B0087-18 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 15:45

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:42

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-18 B 01

Preparation Batch: BJB0467 — Sample Size: 1.061 g (wet) — Dry Weight:0.91 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 85.54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.55	24.0	mg/kg	
Chromium	7440-47-3	20	0.14	0.55	19.1	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	5.50	mg/kg	
Lead	7439-92-1	20	0.07	0.11	2.72	mg/kg	
Silver	7440-22-4	20	0.02	0.22	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	36.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:9-02032021

21B0087-18 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 15:45
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:42

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-18 B 01
Preparation Batch: BJB0467 — Sample Size: 1.061 g (wet) — Dry Weight:0.91 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 85.54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	2.59	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.04	mg/kg	J
Copper	7440-50-8	20	0.37	0.55	10.8	mg/kg	
Nickel	7440-02-0	20	0.06	0.55	11.2	mg/kg	
Selenium	7782-49-2	20	0.48	0.55	1.82	mg/kg	
Zinc	7440-66-6	20	0.9	4.4	28.1	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-54:9-02032021

21B0087-18 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 15:45
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 12:16

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-18 B
Preparation Batch: BJB0468 — Sample Size: 0.21 g (wet) — Dry Weight:0.18 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 85.54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00585	0.0278	0.0114	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-102:5.5-02032021

21B0087-19 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/03/2021 16:00

Instrument: NT5 Analyst: PB — Analyzed: 02/04/2021 18:11

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0087-19 D

Preparation Batch: BJB0166 — Sample Size: 3.73 g (wet) — Dry Weight:3.32 g

Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 89.08

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.35	1.50	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.51	1.50	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.40	1.50	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.36	1.50	ND	ug/kg	U
Benzene	71-43-2	1	0.45	1.50	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.32	1.50	ND	ug/kg	U
Toluene	108-88-3	1	0.23	1.50	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.39	1.50	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.30	1.50	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.59	3.01	ND	ug/kg	U
o-Xylene	95-47-6	1	0.34	1.50	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.93	3.01	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*105*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*99.3*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-102:5.5-02032021

21B0087-19 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 16:00
Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 01:24

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-19 A 02
	Preparation Batch: BJB0470	Sample Size: 11.36 g (wet)	Dry Weight:10.00 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 88.07
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-19 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-19 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	1.65	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	2.21	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	2.65	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.26	ug/kg	J
Acenaphthene	83-32-9	1	0.09	0.50	0.87	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	0.80	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.35	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	9.54	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	0.75	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	10.7	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	14.7	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	8.43	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	21.7	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	18.3	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	5.57	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	4.68	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	9.59	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	3.80	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	1.82	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	7.06	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*41.2*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*59.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-102:5.5-02032021

21B0087-19 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 16:00
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 11:03

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-19 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:8.83 g
Prepared: 02/15/2021 — Final Volume: 5 mL — % Solids: 88.07

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	28.3	42.2	mg/kg	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)	RRO	1	56.6	384	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*114*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-102:5.5-02032021

21B0087-19 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/03/2021 16:00
Instrument: ECD7 Analyst: JGR — Analyzed: 03/07/2021 16:57

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-19 A 03
Preparation Batch: BJB0471 — Sample Size: 14.23 g (wet) — Dry Weight:12.53 g
Prepared: 02/17/2021 — Final Volume: 2.5 mL — % Solids: 88.07

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	50	77.8	199	ND	ug/kg	U
Aroclor 1221	11104-28-2	50	77.8	199	ND	ug/kg	U
Aroclor 1232	11141-16-5	50	77.8	199	ND	ug/kg	U
Aroclor 1242	53469-21-9	50	77.8	199	ND	ug/kg	U
Aroclor 1248	12672-29-6	50	77.8	199	ND	ug/kg	U
Aroclor 1254	11097-69-1	50	77.8	199	4420	ug/kg	D
Aroclor 1260	11096-82-5	50	29.4	199	ND	ug/kg	U
Surrogate: Decachlorobiphenyl				*40-126 %*		*D1*	D1
Surrogate: Tetrachlorometaxylene				*44-120 %*		*D1*	D1
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*		*D1*	D1
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*		*D1*	D1

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-102:5.5-02032021

21B0087-19 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 16:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:47

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-19 B 01
Preparation Batch: BJB0467 — Sample Size: 1.074 g (wet) — Dry Weight:0.90 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 83.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.56	22.2	mg/kg	
Chromium	7440-47-3	20	0.14	0.56	10.4	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	4.73	mg/kg	
Lead	7439-92-1	20	0.08	0.11	9.57	mg/kg	
Silver	7440-22-4	20	0.02	0.22	0.04	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	32.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-102:5.5-02032021

21B0087-19 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 16:00
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:47

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-19 B 01
Preparation Batch: BJB0467 — Sample Size: 1.074 g (wet) — Dry Weight:0.90 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 83.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	2.39	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	ND	mg/kg	U
Copper	7440-50-8	20	0.38	0.56	12.0	mg/kg	
Nickel	7440-02-0	20	0.06	0.56	8.98	mg/kg	
Selenium	7782-49-2	20	0.49	0.56	1.42	mg/kg	
Zinc	7440-66-6	20	0.9	4.4	23.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-102:5.5-02032021

21B0087-19 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 16:00
Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 12:18

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-19 B
Preparation Batch: BJB0468 — Sample Size: 0.291 g (wet) — Dry Weight:0.24 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 83.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00430	0.0205	0.0122	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-70:35-02032021

21B0087-20 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/03/2021 08:50

Instrument: NT5 Analyst: PB — Analyzed: 02/04/2021 18:35

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0087-20 E

Preparation Batch: BJB0166 — Sample Size: 4.62 g (wet) — Dry Weight:3.64 g

Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 78.78

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.32	1.37	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.46	1.37	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.37	1.37	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.33	1.37	ND	ug/kg	U
Benzene	71-43-2	1	0.41	1.37	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.29	1.37	ND	ug/kg	U
Toluene	108-88-3	1	0.21	1.37	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.35	1.37	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.28	1.37	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.54	2.75	ND	ug/kg	U
o-Xylene	95-47-6	1	0.31	1.37	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.85	2.75	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*104*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*99.1*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*102*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-70:45-02032021

21B0087-21 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/03/2021 09:15

Instrument: NT5 Analyst: PB — Analyzed: 02/04/2021 18:59

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0087-21 E

Preparation Batch: BJB0166 — Sample Size: 4.46 g (wet) — Dry Weight:3.35 g

Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 75.03

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.35	1.49	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.50	1.49	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.40	1.49	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.36	1.49	ND	ug/kg	U
Benzene	71-43-2	1	0.44	1.49	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.32	1.49	ND	ug/kg	U
Toluene	108-88-3	1	0.23	1.49	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.38	1.49	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.30	1.49	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.59	2.99	ND	ug/kg	U
o-Xylene	95-47-6	1	0.33	1.49	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.92	2.99	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*104*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*98.3*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*103*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-70:55-02032021

21B0087-22 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/03/2021 09:40

Instrument: NT5 Analyst: PB — Analyzed: 02/04/2021 19:23

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0087-22 E

Preparation Batch: BJB0166 — Sample Size: 5.02 g (wet) — Dry Weight:3.93 g

Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 78.26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.30	1.27	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.43	1.27	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.34	1.27	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.31	1.27	ND	ug/kg	U
Benzene	71-43-2	1	0.38	1.27	ND	ug/kg	U
Trichloroethene	79-01-6	1	0.27	1.27	ND	ug/kg	U
Toluene	108-88-3	1	0.19	1.27	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.33	1.27	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.26	1.27	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.50	2.55	ND	ug/kg	U
o-Xylene	95-47-6	1	0.29	1.27	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.78	2.55	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*106*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*99.6*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*101*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Trip Blank

21B0087-23 (Water)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/03/2021 16:00
Instrument: NT2 Analyst: PKC — Analyzed: 02/11/2021 18:14

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) — Extract ID: 21B0087-23 A
Preparation Batch: BJB0383 — Sample Size: 10 mL
Prepared: 02/11/2021 — Final Volume: 10 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.08	0.20	ND	ug/L	U
1,1-Dichloroethene	75-35-4	1	0.08	0.20	ND	ug/L	U
trans-1,2-Dichloroethene	156-60-5	1	0.07	0.20	ND	ug/L	U
cis-1,2-Dichloroethene	156-59-2	1	0.08	0.20	ND	ug/L	U
Benzene	71-43-2	1	0.05	0.20	ND	ug/L	U
Trichloroethene	79-01-6	1	0.07	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.05	0.20	ND	ug/L	U
Tetrachloroethene	127-18-4	1	0.09	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.05	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.14	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.08	0.20	ND	ug/L	U
Xylenes, total	1330-20-7	1	0.22	0.60	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4				*80-129 %*	*116*	*%*	
Surrogate: Toluene-d8				*80-120 %*	*98.0*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*87.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*105*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:1-02032021

21B0087-24 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/03/2021 13:20

Instrument: NT5 Analyst: PB — Analyzed: 02/04/2021 19:47

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate) — Extract ID: 21B0087-24 D

Preparation Batch: BJB0166 — Sample Size: 4.87 g (wet) — Dry Weight:4.10 g

Prepared: 02/04/2021 — Final Volume: 5 mL — % Solids: 84.15

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.29	1.22	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.41	1.22	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.32	1.22	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.29	1.22	ND	ug/kg	U
Benzene	71-43-2	1	0.36	1.22	0.48	ug/kg	J
Trichloroethene	79-01-6	1	0.26	1.22	ND	ug/kg	U
Toluene	108-88-3	1	0.18	1.22	0.40	ug/kg	J
Tetrachloroethene	127-18-4	1	0.31	1.22	0.39	ug/kg	J
Ethylbenzene	100-41-4	1	0.25	1.22	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.48	2.44	ND	ug/kg	U
o-Xylene	95-47-6	1	0.27	1.22	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.75	2.44	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*105*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*98.7*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*94.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*104*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:1-02032021

21B0087-24 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 13:20
Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 01:56

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-24 A 02
	Preparation Batch: BJB0470	Sample Size: 11.54 g (wet)	Dry Weight:10.02 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 86.82
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-24 A 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-24 A 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	5.56	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	8.23	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	9.32	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.79	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	ND	ug/kg	U
Dibenzofuran	132-64-9	1	0.13	0.50	3.13	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.24	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	7.86	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	1.94	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	6.24	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	6.09	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	4.10	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	5.37	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	11.5	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	3.57	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	2.94	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	5.59	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	4.51	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	1.39	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	4.38	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*36.5*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*39.3*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*57.3*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:1-02032021

21B0087-24 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 13:20
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 11:24

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-24 A 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:8.71 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 86.82

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.74	11.6	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.5	33.1	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*107*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:1-02032021

21B0087-24 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/03/2021 13:20

Instrument: ECD7 Analyst: JGR — Analyzed: 03/14/2021 14:55

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-24 A 03

Preparation Batch: BJB0471 — Sample Size: 14.51 g (wet) — Dry Weight:12.60 g

Prepared: 02/17/2021 — Final Volume: 2.5 mL — % Solids: 86.82

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.5	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.5	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.5	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.5	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.5	4.0	5.6	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	16.0	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*81.7*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*81.5*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*81.6*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*64.7*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:1-02032021

21B0087-24 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 13:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:52

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-24 B 01
Preparation Batch: BJB0467 — Sample Size: 1.09 g (wet) — Dry Weight:0.92 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 84.02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.55	52.8	mg/kg	
Chromium	7440-47-3	20	0.14	0.55	44.9	mg/kg	
Cobalt	7440-48-4	20	0.03	0.22	7.03	mg/kg	
Lead	7439-92-1	20	0.07	0.11	30.3	mg/kg	
Silver	7440-22-4	20	0.02	0.22	0.15	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.22	43.7	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:1-02032021

21B0087-24 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 13:20
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 21:52

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-24 B 01
Preparation Batch: BJB0467 — Sample Size: 1.09 g (wet) — Dry Weight:0.92 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 84.02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.22	5.86	mg/kg	
Cadmium	7440-43-9	20	0.03	0.11	0.22	mg/kg	
Copper	7440-50-8	20	0.37	0.55	40.3	mg/kg	
Nickel	7440-02-0	20	0.05	0.55	31.5	mg/kg	
Selenium	7782-49-2	20	0.48	0.55	1.54	mg/kg	
Zinc	7440-66-6	20	1.0	4.4	82.4	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:1-02032021

21B0087-24 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 13:20

Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 12:20

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-24 B

Preparation Batch: BJB0468 — Sample Size: 0.279 g (wet) — Dry Weight:0.23 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 84.02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00448	0.0213	0.0450	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:9.5-02032021

21B0087-25 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM — Sampled: 02/03/2021 13:40
Instrument: NT11 Analyst: VTS — Analyzed: 03/13/2021 02:28

Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-25 B 02
	Preparation Batch: BJB0470	Sample Size: 12.52 g (wet)	Dry Weight:10.10 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 80.64
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-25 B 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-25 B 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.43	0.59	6.66	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.10	0.50	9.39	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	10.8	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	0.77	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	0.72	ug/kg	
Dibenzofuran	132-64-9	1	0.12	0.50	3.28	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	0.48	ug/kg	J
Phenanthrene	85-01-8	1	0.11	0.50	7.49	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	2.20	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	6.27	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	6.20	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	3.85	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	6.41	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	11.2	ug/kg	Q
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	3.46	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	2.80	ug/kg	
Benzo(a)pyrene	50-32-8	1	0.09	0.50	6.61	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	4.95	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.10	0.50	1.51	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.08	0.50	5.17	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*42.1*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*42.7*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*61.8*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:9.5-02032021

21B0087-25 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 13:40
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 11:45

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-25 B 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:8.09 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 80.64

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.18	18.7	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	12.4	48.8	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*120*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:9.5-02032021

21B0087-25 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/03/2021 13:40
Instrument: ECD7 Analyst: JGR — Analyzed: 03/14/2021 15:16

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0087-25 B 03
	Preparation Batch: BJB0471	Sample Size: 15.37 g (wet)	Dry Weight:12.39 g
	Prepared: 02/17/2021	Final Volume: 2.5 mL	% Solids: 80.64
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-25 B 03
	Cleanup Batch: CJC0053	Initial Volume: 2.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0087-25 B 03
	Cleanup Batch: CJC0051	Initial Volume: 2.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-25 B 03
	Cleanup Batch: CJC0052	Initial Volume: 2.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	3.7	ug/kg	J
Aroclor 1260	11096-82-5	1	0.6	4.0	4.7	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*79.5*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*85.3*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*82.2*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*67.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:9.5-02032021

21B0087-25 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 13:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 22:40

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-25 C 01
Preparation Batch: BJB0467 — Sample Size: 1.066 g (wet) — Dry Weight:0.83 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 77.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.60	17.9	mg/kg	
Chromium	7440-47-3	20	0.16	0.60	9.66	mg/kg	
Cobalt	7440-48-4	20	0.03	0.24	3.23	mg/kg	
Lead	7439-92-1	20	0.08	0.12	1.69	mg/kg	
Silver	7440-22-4	20	0.02	0.24	0.05	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.24	37.5	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:9.5-02032021

21B0087-25 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 13:40
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 22:40

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-25 C 01
Preparation Batch: BJB0467 — Sample Size: 1.066 g (wet) — Dry Weight:0.83 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 77.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.24	3.06	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	0.07	mg/kg	J
Copper	7440-50-8	20	0.41	0.60	12.7	mg/kg	
Nickel	7440-02-0	20	0.06	0.60	7.71	mg/kg	
Selenium	7782-49-2	20	0.53	0.60	1.46	mg/kg	
Zinc	7440-66-6	20	1.0	4.8	16.6	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:9.5-02032021

21B0087-25 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 13:40

Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 12:22

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-25 C

Preparation Batch: BJB0468 — Sample Size: 0.25 g (wet) — Dry Weight:0.19 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 77.89

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00539	0.0257	0.00981	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:9.5-02032021

21B0087-25 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 02/03/2021 13:40

Instrument: TOC Cube Analyst: BF — Analyzed: 02/12/2021 23:33

Sample Preparation: Preparation Method: PSEP 1986 (modified) — Extract ID: 21B0087-25 C

Preparation Batch: BJB0400 — Sample Size: 0.538 g (wet)

Prepared: 02/12/2021 — Final Volume: 0.538 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.08	% wet	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:11-02032021

21B0087-26 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM			Sampled: 02/03/2021 13:50
Instrument: NT11 Analyst: VTS			Analyzed: 03/13/2021 15:37
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Low Level		Extract ID: 21B0087-26 B 02
	Preparation Batch: BJB0470	Sample Size: 13.01 g (wet)	Dry Weight:10.00 g
	Prepared: 02/17/2021	Final Volume: 0.5 mL	% Solids: 76.84
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-26 B 02
	Cleanup Batch: CJC0058	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-26 B 02
	Cleanup Batch: CJC0056	Initial Volume: 0.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	0.44	0.60	18.9	ug/kg	
1-Methylnaphthalene	90-12-0	1	0.11	0.50	26.3	ug/kg	
2-Methylnaphthalene	91-57-6	1	0.13	0.50	32.5	ug/kg	
Acenaphthylene	208-96-8	1	0.06	0.50	1.20	ug/kg	
Acenaphthene	83-32-9	1	0.09	0.50	2.34	ug/kg	
Dibenzofuran	132-64-9	1	0.13	0.50	8.75	ug/kg	
Fluorene	86-73-7	1	0.07	0.50	2.17	ug/kg	
Phenanthrene	85-01-8	1	0.11	0.50	13.9	ug/kg	
Anthracene	120-12-7	1	0.07	0.50	3.75	ug/kg	
Fluoranthene	206-44-0	1	0.08	0.50	10.4	ug/kg	
Pyrene	129-00-0	1	0.09	0.50	10.6	ug/kg	
Benzo(a)anthracene	56-55-3	1	0.07	0.50	4.31	ug/kg	
Chrysene	218-01-9	1	0.07	0.50	6.04	ug/kg	
Benzo(b)fluoranthene	205-99-2	1	0.07	0.50	8.50	ug/kg	
Benzo(k)fluoranthene	207-08-9	1	0.10	0.50	2.63	ug/kg	
Benzo(j)fluoranthene	205-82-3	1	0.10	0.50	2.30	ug/kg	Q
Benzo(a)pyrene	50-32-8	1	0.09	0.50	5.24	ug/kg	
Indeno(1,2,3-cd)pyrene	193-39-5	1	0.09	0.50	6.07	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	0.11	0.50	1.72	ug/kg	
Benzo(g,h,i)perylene	191-24-2	1	0.09	0.50	8.10	ug/kg	
Surrogate: 2-Methylnaphthalene-d10				*30-160 %*	*43.8*	*%*	
Surrogate: Dibenzo[a,h]anthracene-d14				*30-160 %*	*65.9*	*%*	
Surrogate: Fluoranthene-d10				*30-160 %*	*59.4*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:11-02032021

21B0087-26 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx — Sampled: 02/03/2021 13:50
Instrument: FID4 Analyst: CTO — Analyzed: 02/27/2021 12:06

Sample Preparation: Preparation Method: EPA 3546 (Microwave) — Extract ID: 21B0087-26 B 01
Preparation Batch: BJB0403 — Sample Size: 10.03 g (wet) — Dry Weight:7.71 g
Prepared: 02/15/2021 — Final Volume: 1 mL — % Solids: 76.84

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.49	11.8	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	13.0	26.7	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*111*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:11-02032021

21B0087-26 (Solid)

Aroclor PCB

Method: EPA 8082A — Sampled: 02/03/2021 13:50
Instrument: ECD7 Analyst: JGR — Analyzed: 03/14/2021 16:18

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 21B0087-26 B 03
	Preparation Batch: BJB0471	Sample Size: 16.32 g (wet)	Dry Weight:12.54 g
	Prepared: 02/17/2021	Final Volume: 2.5 mL	% Solids: 76.84
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 21B0087-26 B 03
	Cleanup Batch: CJC0053	Initial Volume: 2.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfuric Acid		Extract ID:21B0087-26 B 03
	Cleanup Batch: CJC0051	Initial Volume: 2.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 2.5 mL	
Sample Cleanup:	Cleanup Method: Sulfur		Extract ID:21B0087-26 B 03
	Cleanup Batch: CJC0052	Initial Volume: 2.5 mL	
	Cleaned: 05-Mar-2021	Final Volume: 2.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	1.6	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	1.6	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	1.6	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	1.6	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	1.6	4.0	10.8	ug/kg	
Aroclor 1260	11096-82-5	1	0.6	4.0	23.4	ug/kg	
Surrogate: Decachlorobiphenyl				*40-126 %*	*87.4*	*%*	
Surrogate: Tetrachlorometaxylene				*44-120 %*	*88.0*	*%*	
Surrogate: Decachlorobiphenyl [2C]				*40-126 %*	*85.8*	*%*	
Surrogate: Tetrachlorometaxylene [2C]				*44-120 %*	*64.6*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:11-02032021

21B0087-26 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/03/2021 13:50

Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/19/2021 22:45

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-26 C 01

Preparation Batch: BJB0467 — Sample Size: 1.09 g (wet) — Dry Weight:0.84 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 77.11

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.07	0.59	40.6	mg/kg	
Chromium	7440-47-3	20	0.15	0.59	20.8	mg/kg	
Cobalt	7440-48-4	20	0.03	0.24	7.98	mg/kg	
Lead	7439-92-1	20	0.08	0.12	10.4	mg/kg	
Silver	7440-22-4	20	0.02	0.24	0.07	mg/kg	J
Vanadium	7440-62-2	20	0.05	0.24	34.3	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:11-02032021

21B0087-26 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/03/2021 13:50
Instrument: ICPMS2 Analyst: MCB — Analyzed: 02/22/2021 18:42

Sample Preparation: Preparation Method: SWN EPA 3050B — Extract ID: 21B0087-26 C 01
Preparation Batch: BJB0467 — Sample Size: 1.09 g (wet) — Dry Weight:0.84 g
Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 77.11

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.24	3.99	mg/kg	
Cadmium	7440-43-9	20	0.04	0.12	0.11	mg/kg	J
Copper	7440-50-8	20	0.42	0.59	24.7	mg/kg	
Nickel	7440-02-0	20	0.06	0.59	20.6	mg/kg	
Selenium	7782-49-2	20	0.52	0.59	1.20	mg/kg	
Zinc	7440-66-6	20	1.0	4.8	41.9	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:11-02032021

21B0087-26 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/03/2021 13:50

Instrument: HYDRA Analyst: BLC — Analyzed: 02/19/2021 12:24

Sample Preparation: Preparation Method: SMM EPA 7471B — Extract ID: 21B0087-26 C

Preparation Batch: BJB0468 — Sample Size: 0.205 g (wet) — Dry Weight:0.16 g

Prepared: 02/17/2021 — Final Volume: 50 mL — % Solids: 77.11

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00664	0.0316	0.0500	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:15.8-02032021

21B0087-27 (Solid)

Wet Chemistry

Method: EPA 9060A m — Sampled: 02/03/2021 14:00

Instrument: TOC Cube Analyst: BF — Analyzed: 02/13/2021 00:04

Sample Preparation: Preparation Method: PSEP 1986 (modified) — Extract ID: 21B0087-27 B

Preparation Batch: BJB0400 — Sample Size: 0.3542 g (wet) — Dry Weight:0.26 g

Prepared: 02/12/2021 — Final Volume: 0.3542 mL — % Solids: 73.67

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.79	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

MW-53:15.8-02032021

21B0087-27 (Solid)

Wet Chemistry

Method: SM 2540 G-97 — Sampled: 02/03/2021 14:00

Instrument: BAL2 Analyst: KLE — Analyzed: 02/07/2021 08:39

Sample Preparation: Preparation Method: No Prep Wet Chem — Extract ID: 21B0087-27

Preparation Batch: BJB0217 — Sample Size: 5 g (wet) — Dry Weight:3.68 g

Prepared: 02/07/2021 — Final Volume: 5 g — % Solids: 73.67

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	73.67	%	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Volatile Organic Compounds - Quality Control

Batch BJB0166 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0166-BLK1)				Prepared: 04-Feb-2021 Analyzed: 04-Feb-2021 13:20							
Vinyl Chloride	ND	0.24	1.00	ug/kg							U
1,1-Dichloroethene	ND	0.34	1.00	ug/kg							U
trans-1,2-Dichloroethene	ND	0.27	1.00	ug/kg							U
cis-1,2-Dichloroethene	ND	0.24	1.00	ug/kg							U
Benzene	ND	0.30	1.00	ug/kg							U
Trichloroethene	ND	0.21	1.00	ug/kg							U
Toluene	ND	0.15	1.00	ug/kg							U
Tetrachloroethene	ND	0.26	1.00	ug/kg							U
Ethylbenzene	ND	0.20	1.00	ug/kg							U
m,p-Xylene	ND	0.39	2.00	ug/kg							U
o-Xylene	ND	0.22	1.00	ug/kg							U
Xylenes, total	ND	0.62	2.00	ug/kg							U
Surrogate: 1,2-Dichloroethane-d4	47.0			ug/kg	*50.0*		*94.0*	*80-149*			
Surrogate: Toluene-d8	48.6			ug/kg	*50.0*		*97.2*	*77-120*			
Surrogate: 4-Bromofluorobenzene	50.3			ug/kg	*50.0*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	49.9			ug/kg	*50.0*		*99.7*	*80-120*			
LCS (BJB0166-BS1)				Prepared: 04-Feb-2021 Analyzed: 04-Feb-2021 12:00							
Vinyl Chloride	43.9			ug/kg	50.0		87.7	74-135			
1,1-Dichloroethene	42.9			ug/kg	50.0		85.8	77-134			
trans-1,2-Dichloroethene	43.5			ug/kg	50.0		87.0	79-130			
cis-1,2-Dichloroethene	42.8			ug/kg	50.0		85.6	80-125			
Benzene	44.4			ug/kg	50.0		88.7	80-120			
Trichloroethene	45.2			ug/kg	50.0		90.4	80-120			
Toluene	45.2			ug/kg	50.0		90.4	75-120			
Tetrachloroethene	46.0			ug/kg	50.0		91.9	74-124			
Ethylbenzene	44.8			ug/kg	50.0		89.6	80-125			
m,p-Xylene	90.5			ug/kg	100		90.5	76-121			
o-Xylene	45.2			ug/kg	50.0		90.5	67-132			
Xylenes, total	136			ug/kg	150		90.5	67-132			
Surrogate: 1,2-Dichloroethane-d4	46.6			ug/kg	*50.0*		*93.2*	*80-149*			
Surrogate: Toluene-d8	49.4			ug/kg	*50.0*		*98.8*	*77-120*			
Surrogate: 4-Bromofluorobenzene	50.3			ug/kg	*50.0*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.6			ug/kg	*50.0*		*101*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Volatile Organic Compounds - Quality Control

Batch BJB0166 - EPA 5035 (Sodium Bisulfate)

Instrument: NT5 Analyst: PB

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJB0166-BSD1)	Prepared: 04-Feb-2021 Analyzed: 04-Feb-2021 12:56										
Vinyl Chloride	46.2			ug/kg	50.0		92.4	74-135	5.18	30	
1,1-Dichloroethene	46.6			ug/kg	50.0		93.2	77-134	8.20	30	
trans-1,2-Dichloroethene	46.3			ug/kg	50.0		92.6	79-130	6.27	30	
cis-1,2-Dichloroethene	45.3			ug/kg	50.0		90.6	80-125	5.63	30	
Benzene	46.5			ug/kg	50.0		93.0	80-120	4.66	30	
Trichloroethene	47.6			ug/kg	50.0		95.2	80-120	5.12	30	
Toluene	47.5			ug/kg	50.0		95.0	75-120	4.96	30	
Tetrachloroethene	48.5			ug/kg	50.0		97.0	74-124	5.35	30	
Ethylbenzene	46.6			ug/kg	50.0		93.1	80-125	3.83	30	
m,p-Xylene	94.5			ug/kg	100		94.5	76-121	4.38	30	
o-Xylene	47.5			ug/kg	50.0		95.0	67-132	4.86	30	
Xylenes, total	142			ug/kg	150		94.7	67-132	4.54	30	
Surrogate: 1,2-Dichloroethane-d4	46.6			ug/kg	*50.0*		*93.2*	*80-149*			
Surrogate: Toluene-d8	49.6			ug/kg	*50.0*		*99.3*	*77-120*			
Surrogate: 4-Bromofluorobenzene	50.4			ug/kg	*50.0*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	50.2			ug/kg	*50.0*		*100*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Volatile Organic Compounds - Quality Control

Batch BJB0383 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0383-BLK1)				Prepared: 11-Feb-2021 Analyzed: 11-Feb-2021 17:12							
Vinyl Chloride	ND	0.08	0.20	ug/L							U
1,1-Dichloroethene	ND	0.08	0.20	ug/L							U
trans-1,2-Dichloroethene	ND	0.07	0.20	ug/L							U
cis-1,2-Dichloroethene	ND	0.08	0.20	ug/L							U
Benzene	ND	0.05	0.20	ug/L							U
Trichloroethene	ND	0.07	0.20	ug/L							U
Toluene	ND	0.05	0.20	ug/L							U
Tetrachloroethene	ND	0.09	0.20	ug/L							U
Ethylbenzene	ND	0.05	0.20	ug/L							U
m,p-Xylene	ND	0.14	0.40	ug/L							U
o-Xylene	ND	0.08	0.20	ug/L							U
Xylenes, total	ND	0.22	0.60	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.50			ug/L	*5.00*		*110*	*80-129*			
Surrogate: Toluene-d8	4.79			ug/L	*5.00*		*95.8*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.55			ug/L	*5.00*		*90.9*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.19			ug/L	*5.00*		*104*	*80-120*			
LCS (BJB0383-BS1)				Prepared: 11-Feb-2021 Analyzed: 11-Feb-2021 16:10							
Vinyl Chloride	9.85	0.08	0.20	ug/L	10.0		98.5	66-133			
1,1-Dichloroethene	10.1	0.08	0.20	ug/L	10.0		101	69-135			
trans-1,2-Dichloroethene	10.0	0.07	0.20	ug/L	10.0		100	78-128			
cis-1,2-Dichloroethene	10.1	0.08	0.20	ug/L	10.0		101	80-121			
Benzene	10.3	0.05	0.20	ug/L	10.0		103	80-120			
Trichloroethene	10.0	0.07	0.20	ug/L	10.0		100	80-120			
Toluene	9.80	0.05	0.20	ug/L	10.0		98.0	80-120			
Tetrachloroethene	10.3	0.09	0.20	ug/L	10.0		103	80-120			
Ethylbenzene	10.1	0.05	0.20	ug/L	10.0		101	80-120			
m,p-Xylene	21.6	0.14	0.40	ug/L	20.0		108	80-121			
o-Xylene	10.7	0.08	0.20	ug/L	10.0		107	80-121			
Xylenes, total	32.3	0.22	0.60	ug/L	30.0		108	76-127			
Surrogate: 1,2-Dichloroethane-d4	5.06			ug/L	*5.00*		*101*	*80-129*			
Surrogate: Toluene-d8	5.06			ug/L	*5.00*		*101*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.03			ug/L	*5.00*		*101*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.01			ug/L	*5.00*		*100*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Volatile Organic Compounds - Quality Control

Batch BJB0383 - EPA 5030C (Purge and Trap)

Instrument: NT2 Analyst: PKC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BJB0383-BSD1)					Prepared: 11-Feb-2021 Analyzed: 11-Feb-2021 16:30						
Vinyl Chloride	10.8	0.08	0.20	ug/L	10.0		108	66-133	8.92	30	
1,1-Dichloroethene	10.9	0.08	0.20	ug/L	10.0		109	69-135	7.85	30	
trans-1,2-Dichloroethene	10.6	0.07	0.20	ug/L	10.0		106	78-128	5.30	30	
cis-1,2-Dichloroethene	10.7	0.08	0.20	ug/L	10.0		107	80-121	6.28	30	
Benzene	11.0	0.05	0.20	ug/L	10.0		110	80-120	7.10	30	
Trichloroethene	10.7	0.07	0.20	ug/L	10.0		107	80-120	6.63	30	
Toluene	10.5	0.05	0.20	ug/L	10.0		105	80-120	6.87	30	
Tetrachloroethene	10.8	0.09	0.20	ug/L	10.0		108	80-120	4.91	30	
Ethylbenzene	10.7	0.05	0.20	ug/L	10.0		107	80-120	5.40	30	
m,p-Xylene	23.1	0.14	0.40	ug/L	20.0		116	80-121	6.82	30	
o-Xylene	11.3	0.08	0.20	ug/L	10.0		113	80-121	5.73	30	
Xylenes, total	34.4	0.22	0.60	ug/L	30.0		115	76-127	6.46	30	
Surrogate: 1,2-Dichloroethane-d4	5.09			ug/L	*5.00*		*102*	*80-129*			
Surrogate: Toluene-d8	5.09			ug/L	*5.00*		*102*	*80-120*			
Surrogate: 4-Bromofluorobenzene	5.18			ug/L	*5.00*		*104*	*80-120*			
Surrogate: 1,2-Dichlorobenzene-d4	5.04			ug/L	*5.00*		*101*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0470 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0470-BLK1)				Prepared: 17-Feb-2021 Analyzed: 12-Mar-2021 15:43							
Naphthalene	ND	0.44	0.60	ug/kg							U
1-Methylnaphthalene	0.11	0.11	0.50	ug/kg							J
2-Methylnaphthalene	0.15	0.13	0.50	ug/kg							J
Acenaphthylene	ND	0.06	0.50	ug/kg							U
Acenaphthene	ND	0.09	0.50	ug/kg							U
Dibenzofuran	ND	0.13	0.50	ug/kg							U
Fluorene	ND	0.07	0.50	ug/kg							U
Phenanthrene	ND	0.11	0.50	ug/kg							U
Anthracene	ND	0.07	0.50	ug/kg							U
Fluoranthene	ND	0.08	0.50	ug/kg							U
Pyrene	ND	0.09	0.50	ug/kg							U
Benzo(a)anthracene	ND	0.07	0.50	ug/kg							U
Chrysene	ND	0.07	0.50	ug/kg							U
Benzo(b)fluoranthene	ND	0.07	0.50	ug/kg							U
Benzo(k)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(j)fluoranthene	ND	0.10	0.50	ug/kg							U
Benzo(a)pyrene	ND	0.09	0.50	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	0.09	0.50	ug/kg							U
Dibenzo(a,h)anthracene	ND	0.11	0.50	ug/kg							U
Benzo(g,h,i)perylene	ND	0.09	0.50	ug/kg							U
Surrogate: 2-Methylnaphthalene-d10	7.43			ug/kg	*15.0*		*49.5*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	5.28			ug/kg	*15.0*		*35.2*	*30-160*			
Surrogate: Fluoranthene-d10	9.66			ug/kg	*15.0*		*64.4*	*30-160*			
LCS (BJB0470-BS1)				Prepared: 17-Feb-2021 Analyzed: 12-Mar-2021 16:15							
Naphthalene	6.29	0.44	0.60	ug/kg	15.0		41.9	30-160			
1-Methylnaphthalene	6.67	0.11	0.50	ug/kg	15.0		44.5	30-160			
2-Methylnaphthalene	6.64	0.13	0.50	ug/kg	15.0		44.3	30-160			
Acenaphthylene	5.82	0.06	0.50	ug/kg	15.0		38.8	30-160			
Acenaphthene	6.29	0.09	0.50	ug/kg	15.0		41.9	30-160			
Dibenzofuran	6.70	0.13	0.50	ug/kg	15.0		44.7	30-160			
Fluorene	7.30	0.07	0.50	ug/kg	15.0		48.7	30-160			
Phenanthrene	8.13	0.11	0.50	ug/kg	15.0		54.2	30-160			
Anthracene	7.07	0.07	0.50	ug/kg	15.0		47.1	30-160			
Fluoranthene	9.47	0.08	0.50	ug/kg	15.0		63.1	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0470 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0470-BS1)				Prepared: 17-Feb-2021 Analyzed: 12-Mar-2021 16:15							
Pyrene	9.67	0.09	0.50	ug/kg	15.0		64.5	30-160			
Benzo(a)anthracene	7.71	0.07	0.50	ug/kg	15.0		51.4	30-160			
Chrysene	10.4	0.07	0.50	ug/kg	15.0		69.1	30-160			
Benzo(b)fluoranthene	5.03	0.07	0.50	ug/kg	15.0		33.5	30-160			Q
Benzo(k)fluoranthene	8.10	0.10	0.50	ug/kg	15.0		54.0	30-160			
Benzo(j)fluoranthene	12.9	0.10	0.50	ug/kg	15.0		86.3	30-160			
Benzo(a)pyrene	7.70	0.09	0.50	ug/kg	15.0		51.4	30-160			
Indeno(1,2,3-cd)pyrene	6.83	0.09	0.50	ug/kg	15.0		45.5	30-160			
Dibenzo(a,h)anthracene	6.49	0.11	0.50	ug/kg	15.0		43.3	30-160			
Benzo(g,h,i)perylene	7.55	0.09	0.50	ug/kg	15.0		50.4	30-160			
Surrogate: 2-Methylnaphthalene-d10	6.77			ug/kg	*15.0*		*45.1*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	6.65			ug/kg	*15.0*		*44.3*	*30-160*			
Surrogate: Fluoranthene-d10	9.76			ug/kg	*15.0*		*65.1*	*30-160*			
Matrix Spike (BJB0470-MS1)	**Source: 21B0087-06**			Prepared: 17-Feb-2021 Analyzed: 12-Mar-2021 18:57							
Naphthalene	6.18	0.44	0.60	ug/kg	15.0	0.44	41.2	30-160			
1-Methylnaphthalene	7.51	0.11	0.50	ug/kg	15.0	0.52	46.7	30-160			
2-Methylnaphthalene	7.41	0.13	0.50	ug/kg	15.0	0.56	45.7	30-160			
Acenaphthylene	7.19	0.06	0.50	ug/kg	15.0	ND	47.9	30-160			
Acenaphthene	7.74	0.09	0.50	ug/kg	15.0	0.23	50.1	30-160			
Dibenzofuran	7.95	0.13	0.50	ug/kg	15.0	0.24	51.4	30-160			
Fluorene	8.72	0.07	0.50	ug/kg	15.0	0.13	57.3	30-160			
Phenanthrene	10.3	0.11	0.50	ug/kg	15.0	1.85	56.5	30-160			
Anthracene	8.38	0.07	0.50	ug/kg	15.0	0.10	55.3	30-160			
Fluoranthene	10.9	0.08	0.50	ug/kg	15.0	1.95	59.4	30-160			
Pyrene	13.0	0.09	0.50	ug/kg	15.0	3.78	61.4	30-160			
Benzo(a)anthracene	10.7	0.07	0.50	ug/kg	15.0	1.34	62.1	30-160			
Chrysene	13.3	0.07	0.50	ug/kg	15.0	4.76	56.6	30-160			
Benzo(b)fluoranthene	13.1	0.07	0.50	ug/kg	15.0	2.64	69.7	30-160			Q
Benzo(k)fluoranthene	8.78	0.10	0.50	ug/kg	15.0	0.86	52.8	30-160			
Benzo(j)fluoranthene	7.78	0.10	0.50	ug/kg	15.0	0.62	47.7	30-160			
Benzo(a)pyrene	11.2	0.09	0.50	ug/kg	15.0	2.23	59.6	30-160			
Indeno(1,2,3-cd)pyrene	10.3	0.09	0.50	ug/kg	15.0	1.53	58.2	30-160			
Dibenzo(a,h)anthracene	8.82	0.10	0.50	ug/kg	15.0	0.55	55.2	30-160			
Benzo(g,h,i)perylene	13.4	0.08	0.50	ug/kg	15.0	6.35	46.9	30-160			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Semivolatile Organic Compounds - SIM - Quality Control

Batch BJB0470 - EPA 3546 (Microwave) Low Level

Instrument: NT11 Analyst: VTS

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0470-MS1)	**Source: 21B0087-06**			Prepared: 17-Feb-2021	Analyzed: 12-Mar-2021 18:57						
Surrogate: 2-Methylnaphthalene-d10	6.99			ug/kg	*15.0*	*7.38*	*46.6*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	8.37			ug/kg	*15.0*	*9.26*	*55.8*	*30-160*			
Surrogate: Fluoranthene-d10	9.32			ug/kg	*15.0*	*9.59*	*62.2*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BJB0470-MSD1)	**Source: 21B0087-06**			Prepared: 17-Feb-2021	Analyzed: 12-Mar-2021 19:29						
Naphthalene	6.51	0.44	0.60	ug/kg	15.0	0.44	43.4	30-160	5.16	30	
1-Methylnaphthalene	7.49	0.11	0.50	ug/kg	15.0	0.52	46.5	30-160	0.32	30	
2-Methylnaphthalene	7.42	0.13	0.50	ug/kg	15.0	0.56	45.7	30-160	0.16	30	
Acenaphthylene	6.79	0.06	0.50	ug/kg	15.0	ND	45.3	30-160	5.62	30	
Acenaphthene	7.27	0.09	0.50	ug/kg	15.0	0.23	47.0	30-160	6.28	30	
Dibenzofuran	7.40	0.13	0.50	ug/kg	15.0	0.24	47.7	30-160	7.21	30	
Fluorene	8.08	0.07	0.50	ug/kg	15.0	0.13	53.0	30-160	7.59	30	
Phenanthrene	10.0	0.11	0.50	ug/kg	15.0	1.85	54.7	30-160	2.68	30	
Anthracene	7.76	0.07	0.50	ug/kg	15.0	0.10	51.1	30-160	7.75	30	
Fluoranthene	10.5	0.08	0.50	ug/kg	15.0	1.95	57.3	30-160	2.96	30	
Pyrene	12.7	0.09	0.50	ug/kg	15.0	3.78	59.7	30-160	1.97	30	
Benzo(a)anthracene	9.77	0.07	0.50	ug/kg	15.0	1.34	56.2	30-160	8.66	30	
Chrysene	13.0	0.07	0.50	ug/kg	15.0	4.76	54.8	30-160	2.13	30	
Benzo(b)fluoranthene	13.1	0.07	0.50	ug/kg	15.0	2.64	69.8	30-160	0.09	30	Q
Benzo(k)fluoranthene	8.57	0.10	0.50	ug/kg	15.0	0.86	51.4	30-160	2.42	30	
Benzo(j)fluoranthene	7.45	0.10	0.50	ug/kg	15.0	0.62	45.5	30-160	4.30	30	
Benzo(a)pyrene	11.2	0.09	0.50	ug/kg	15.0	2.23	59.5	30-160	0.03	30	
Indeno(1,2,3-cd)pyrene	8.88	0.09	0.50	ug/kg	15.0	1.53	49.0	30-160	14.50	30	
Dibenzo(a,h)anthracene	7.50	0.10	0.50	ug/kg	15.0	0.55	46.4	30-160	16.10	30	
Benzo(g,h,i)perylene	11.3	0.08	0.50	ug/kg	15.0	6.35	33.1	30-160	16.70	30	
Surrogate: 2-Methylnaphthalene-d10	7.07			ug/kg	*15.0*	*7.38*	*47.1*	*30-160*			
Surrogate: Dibenzo[a,h]anthracene-d14	7.14			ug/kg	*15.0*	*9.26*	*47.6*	*30-160*			
Surrogate: Fluoranthene-d10	8.61			ug/kg	*15.0*	*9.59*	*57.4*	*30-160*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Petroleum Hydrocarbons - Quality Control

Batch BJB0403 - EPA 3546 (Microwave)

Instrument: FID4 Analyst: CTO

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0403-BLK1)				Prepared: 15-Feb-2021	Analyzed: 27-Feb-2021 03:27					
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: o-Terphenyl	11.9		mg/kg	*11.3*		*106*	*50-150*			
LCS (BJB0403-BS1)				Prepared: 15-Feb-2021	Analyzed: 27-Feb-2021 03:47					
Diesel Range Organics (C12-C24)	161	5.00	mg/kg	150		107	63-120			
Surrogate: o-Terphenyl	12.3		mg/kg	*11.3*		*109*	*50-150*			
Matrix Spike (BJB0403-MS1)	**Source: 21B0087-01**			Prepared: 15-Feb-2021	Analyzed: 27-Feb-2021 04:08					
Diesel Range Organics (C12-C24)	207	5.59	mg/kg	168	46.1	95.9	63-120			
Surrogate: o-Terphenyl	11.4		mg/kg	*12.6*	*10.7*	*90.8*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BJB0403-MSD1)	**Source: 21B0087-01**			Prepared: 15-Feb-2021	Analyzed: 27-Feb-2021 04:29					
Diesel Range Organics (C12-C24)	221	5.59	mg/kg	168	46.1	104	63-120	6.49	30	
Surrogate: o-Terphenyl	12.4		mg/kg	*12.6*	*10.7*	*98.8*	*50-150*			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Aroclor PCB - Quality Control

Batch BJB0471 - EPA 3546 (Microwave)

Instrument: ECD7 Analyst: JGR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0471-BLK1)				Prepared: 17-Feb-2021 Analyzed: 14-Mar-2021 12:32							
Aroclor 1016	ND	1.6	4.0	ug/kg							U
Aroclor 1221	ND	1.6	4.0	ug/kg							U
Aroclor 1232	ND	1.6	4.0	ug/kg							U
Aroclor 1242	ND	1.6	4.0	ug/kg							U
Aroclor 1248	ND	1.6	4.0	ug/kg							U
Aroclor 1254	ND	1.6	4.0	ug/kg							U
Aroclor 1260	ND	0.6	4.0	ug/kg							U
Surrogate: Decachlorobiphenyl	6.99			ug/kg	*8.00*		*87.4*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.96			ug/kg	*8.00*		*87.0*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.74			ug/kg	*8.00*		*96.8*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.58			ug/kg	*8.00*		*69.7*	*44-120*			
LCS (BJB0471-BS1)				Prepared: 17-Feb-2021 Analyzed: 14-Mar-2021 12:52							
Aroclor 1016 [2C]	87.2	1.6	4.0	ug/kg	101		86.5	56-120			
Aroclor 1260 [2C]	98.3	0.6	4.0	ug/kg	101		97.5	58-120			
Surrogate: Decachlorobiphenyl	6.53			ug/kg	*8.00*		*81.6*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.92			ug/kg	*8.00*		*86.5*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.29			ug/kg	*8.00*		*91.1*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.61			ug/kg	*8.00*		*70.1*	*44-120*			
LCS Dup (BJB0471-BSD1)				Prepared: 17-Feb-2021 Analyzed: 14-Mar-2021 13:13							
Aroclor 1016 [2C]	92.8	1.6	4.0	ug/kg	101		92.1	56-120	6.30	30	
Aroclor 1260 [2C]	97.4	0.6	4.0	ug/kg	101		96.7	58-120	0.83	30	
Surrogate: Decachlorobiphenyl	6.38			ug/kg	*8.00*		*79.7*	*40-126*			
Surrogate: Tetrachlorometaxylene	6.62			ug/kg	*8.00*		*82.8*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	7.15			ug/kg	*8.00*		*89.4*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	5.54			ug/kg	*8.00*		*69.3*	*44-120*			
Reference (BJB0471-SRM1)				Prepared: 17-Feb-2021 Analyzed: 14-Mar-2021 13:33							
Aroclor 1260	103	2.9	20.0	ug/kg	108		95.0	38-167			
Surrogate: Decachlorobiphenyl	30.5			ug/kg	*40.0*		*76.2*	*40-126*			
Surrogate: Tetrachlorometaxylene	33.6			ug/kg	*40.0*		*83.9*	*44-120*			
Surrogate: Decachlorobiphenyl [2C]	31.0			ug/kg	*40.0*		*77.4*	*40-126*			
Surrogate: Tetrachlorometaxylene [2C]	28.8			ug/kg	*40.0*		*72.0*	*44-120*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Metals and Metallic Compounds - Quality Control

Batch BJB0430 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0430-BLK1)					Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:16							
Barium	135	ND	0.06	0.50	mg/kg							U
Barium	137	ND	0.05	0.50	mg/kg							U
Chromium	52	ND	0.13	0.50	mg/kg							U
Chromium	53	ND	0.07	0.50	mg/kg							U
Cobalt	59	ND	0.03	0.20	mg/kg							U
Lead	208	ND	0.07	0.10	mg/kg							U
Silver	107	ND	0.02	0.20	mg/kg							U
Vanadium	51a	ND	0.04	0.20	mg/kg							U
Vanadium	51b	ND	0.02	0.20	mg/kg							U
Arsenic	75a	ND	0.02	0.20	mg/kg							U
Cadmium	111	ND	0.03	0.10	mg/kg							U
Cadmium	114	ND	0.04	0.10	mg/kg							U
Copper	63	ND	0.34	0.50	mg/kg							U
Copper	65	ND	0.35	0.50	mg/kg							U
Nickel	60	ND	0.05	0.50	mg/kg							U
Nickel	62	ND	0.22	0.50	mg/kg							U
Selenium	78	ND	0.44	0.50	mg/kg							U
Zinc	66	ND	0.8	4.0	mg/kg							U
Zinc	67	ND	0.9	4.0	mg/kg							U
LCS (BJB0430-BS1)					Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:21							
Barium	135	23.9	0.06	0.50	mg/kg	25.0		95.6	80-120			
Barium	137	24.1	0.05	0.50	mg/kg	25.0		96.5	80-120			
Chromium	52	25.6	0.13	0.50	mg/kg	25.0		103	80-120			
Chromium	53	25.1	0.07	0.50	mg/kg	25.0		100	80-120			
Cobalt	59	25.0	0.03	0.20	mg/kg	25.0		100	80-120			
Lead	208	26.4	0.07	0.10	mg/kg	25.0		106	80-120			
Silver	107	26.1	0.02	0.20	mg/kg	25.0		104	80-120			
Vanadium	51a	25.8	0.04	0.20	mg/kg	25.0		103	80-120			
Vanadium	51b	25.7	0.02	0.20	mg/kg	25.0		103	80-120			
Arsenic	75a	23.9	0.02	0.20	mg/kg	25.0		95.6	80-120			
Cadmium	111	24.1	0.03	0.10	mg/kg	25.0		96.6	80-120			
Cadmium	114	24.0	0.04	0.10	mg/kg	25.0		96.0	80-120			
Copper	63	25.7	0.34	0.50	mg/kg	25.0		103	80-120			
Copper	65	25.3	0.35	0.50	mg/kg	25.0		101	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Metals and Metallic Compounds - Quality Control

Batch BJB0430 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0430-BS1)						Prepared: 17-Feb-2021 Analyzed: 18-Feb-2021 20:21						
Nickel	60	24.3	0.05	0.50	mg/kg	25.0		97.4	80-120			
Nickel	62	24.7	0.22	0.50	mg/kg	25.0		99.0	80-120			
Zinc	66	75.2	0.8	4.0	mg/kg	80.0		93.9	80-120			
Zinc	67	69.4	0.9	4.0	mg/kg	80.0		86.7	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Metals and Metallic Compounds - Quality Control

Batch BJB0434 - SMM EPA 7471B

Instrument: HYDRA Analyst: BLC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0434-BLK1)				Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 09:23							
Mercury	0.00878	0.00525	0.0250	mg/kg							J
LCS (BJB0434-BS1)				Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 09:26							
Mercury	0.527	0.00525	0.0250	mg/kg	0.500		105	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Metals and Metallic Compounds - Quality Control

Batch BJB0467 - SWN EPA 3050B

Instrument: ICPMS1 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0467-BLK2)					Prepared: 17-Feb-2021 Analyzed: 23-Feb-2021 11:38							
Selenium	78	ND	0.44	0.50	mg/kg							U
LCS (BJB0467-BS2)					Prepared: 17-Feb-2021 Analyzed: 23-Feb-2021 11:41							
Selenium	78	75.0	0.44	0.50	mg/kg	80.0		93.7	80-120			

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0467-BLK1)					Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 16:38							
Barium	135	ND	0.06	0.50	mg/kg							U
Barium	137	ND	0.05	0.50	mg/kg							U
Chromium	52	ND	0.13	0.50	mg/kg							U
Chromium	53	ND	0.07	0.50	mg/kg							U
Cobalt	59	ND	0.03	0.20	mg/kg							U
Lead	208	ND	0.07	0.10	mg/kg							U
Silver	107	ND	0.02	0.20	mg/kg							U
Vanadium	51a	ND	0.04	0.20	mg/kg							U
Vanadium	51b	ND	0.02	0.20	mg/kg							U
Arsenic	75a	ND	0.02	0.20	mg/kg							U
Cadmium	111	ND	0.03	0.10	mg/kg							U
Cadmium	114	ND	0.04	0.10	mg/kg							U
Copper	63	ND	0.34	0.50	mg/kg							U
Copper	65	ND	0.35	0.50	mg/kg							U
Nickel	60	ND	0.05	0.50	mg/kg							U
Nickel	62	ND	0.22	0.50	mg/kg							U
Zinc	66	ND	0.8	4.0	mg/kg							U
Zinc	67	ND	0.9	4.0	mg/kg							U
LCS (BJB0467-BS1)					Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 16:31							
Barium	135	24.5	0.06	0.50	mg/kg	25.0		98.1	80-120			
Barium	137	24.8	0.05	0.50	mg/kg	25.0		99.1	80-120			
Chromium	52	25.2	0.13	0.50	mg/kg	25.0		101	80-120			
Chromium	53	24.7	0.07	0.50	mg/kg	25.0		98.9	80-120			
Cobalt	59	27.6	0.03	0.20	mg/kg	25.0		111	80-120			
Lead	208	28.3	0.07	0.10	mg/kg	25.0		113	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Metals and Metallic Compounds - Quality Control

Batch BJB0467 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BJB0467-BS1)						Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 16:31						
Silver	107	25.8	0.02	0.20	mg/kg	25.0		103	80-120			
Vanadium	51a	24.7	0.04	0.20	mg/kg	25.0		98.9	80-120			
Vanadium	51b	24.6	0.02	0.20	mg/kg	25.0		98.3	80-120			
Arsenic	75a	24.7	0.02	0.20	mg/kg	25.0		98.7	80-120			
Cadmium	111	26.0	0.03	0.10	mg/kg	25.0		104	80-120			
Cadmium	114	26.5	0.04	0.10	mg/kg	25.0		106	80-120			
Copper	63	27.9	0.34	0.50	mg/kg	25.0		111	80-120			
Copper	65	27.8	0.35	0.50	mg/kg	25.0		111	80-120			
Nickel	60	27.7	0.05	0.50	mg/kg	25.0		111	80-120			
Nickel	62	28.0	0.22	0.50	mg/kg	25.0		112	80-120			
Zinc	66	83.1	0.8	4.0	mg/kg	80.0		104	80-120			
Zinc	67	76.0	0.9	4.0	mg/kg	80.0		95.0	80-120			
Duplicate (BJB0467-DUP1)			**Source: 21B0087-06**			Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 22:02						
Barium	135	30.3	0.05	0.47	mg/kg		31.1			2.37	20	
Chromium	52	11.2	0.12	0.47	mg/kg		11.2			0.11	20	
Cobalt	59	5.79	0.03	0.19	mg/kg		5.30			8.75	20	
Lead	208	2.98	0.06	0.09	mg/kg		3.00			0.84	20	
Silver	107	0.05	0.02	0.19	mg/kg		0.05			1.50	20	J
Vanadium	51a	37.8	0.04	0.19	mg/kg		36.5			3.60	20	
Arsenic	75a	2.68	0.02	0.19	mg/kg		2.64			1.47	20	
Copper	63	18.8	0.32	0.47	mg/kg		17.7			5.89	20	
Nickel	60	9.97	0.05	0.47	mg/kg		8.73			13.20	20	
Zinc	66	28.8	0.8	3.8	mg/kg		29.3			1.64	20	
Duplicate (BJB0467-DUP3)			**Source: 21B0087-06**			Prepared: 17-Feb-2021 Analyzed: 22-Feb-2021 20:43						
Cadmium	111	ND	0.03	0.09	mg/kg		ND					U
Selenium	78	1.52	0.42	0.47	mg/kg		1.54			1.70	20	
Matrix Spike (BJB0467-MS1)			**Source: 21B0087-06**			Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 22:07						
Barium	135	50.7	0.05	0.47	mg/kg	23.7	31.1	82.8	75-125			
Chromium	52	33.7	0.12	0.47	mg/kg	23.7	11.2	95.3	75-125			
Cobalt	59	32.9	0.03	0.19	mg/kg	23.7	5.30	117	75-125			
Lead	208	28.3	0.06	0.09	mg/kg	23.7	3.00	107	75-125			
Silver	107	23.6	0.02	0.19	mg/kg	23.7	0.05	99.6	75-125			
Vanadium	51a	56.5	0.04	0.19	mg/kg	23.7	36.5	84.4	75-125			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Metals and Metallic Compounds - Quality Control

Batch BJB0467 - SWN EPA 3050B

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Matrix Spike (BJB0467-MS1)			**Source: 21B0087-06**			Prepared: 17-Feb-2021		Analyzed: 19-Feb-2021 22:07				
Arsenic	75a	25.7	0.02	0.19	mg/kg	23.7	2.64	97.2	75-125			
Copper	63	43.3	0.32	0.47	mg/kg	23.7	17.7	108	75-125			
Nickel	60	36.1	0.05	0.47	mg/kg	23.7	8.73	116	75-125			
Zinc	66	109	0.8	3.8	mg/kg	75.8	29.3	105	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												
Matrix Spike (BJB0467-MS3)			**Source: 21B0087-06**			Prepared: 17-Feb-2021		Analyzed: 22-Feb-2021 20:48				
Cadmium	111	23.2	0.03	0.09	mg/kg	23.7	ND	97.9	75-125			
Selenium	78	69.6	0.42	0.47	mg/kg	75.8	1.54	89.8	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												
Matrix Spike Dup (BJB0467-MSD1)			**Source: 21B0087-06**			Prepared: 17-Feb-2021		Analyzed: 19-Feb-2021 22:13				
Barium	135	60.2	0.05	0.47	mg/kg	23.7	31.1	123	75-125	17.10	20	
Chromium	52	33.7	0.12	0.47	mg/kg	23.7	11.2	94.9	75-125	0.11	20	
Cobalt	59	33.1	0.03	0.19	mg/kg	23.7	5.30	117	75-125	0.38	20	
Lead	208	28.8	0.06	0.09	mg/kg	23.7	3.00	109	75-125	1.73	20	
Silver	107	24.0	0.02	0.19	mg/kg	23.7	0.05	101	75-125	1.37	20	
Vanadium	51a	55.0	0.04	0.19	mg/kg	23.7	36.5	78.1	75-125	2.62	20	
Arsenic	75a	26.0	0.02	0.19	mg/kg	23.7	2.64	98.4	75-125	1.29	20	
Copper	63	43.7	0.32	0.47	mg/kg	23.7	17.7	109	75-125	0.74	20	
Nickel	60	37.8	0.05	0.47	mg/kg	23.7	8.73	122	75-125	4.45	20	
Zinc	66	110	0.8	3.8	mg/kg	75.9	29.3	106	75-125	1.26	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												
Matrix Spike Dup (BJB0467-MSD3)			**Source: 21B0087-06**			Prepared: 17-Feb-2021		Analyzed: 22-Feb-2021 20:55				
Cadmium	111	24.0	0.03	0.09	mg/kg	23.7	ND	101	75-125	3.54	20	
Selenium	78	69.5	0.42	0.47	mg/kg	75.9	1.54	89.5	75-125	0.19	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Metals and Metallic Compounds - Quality Control

Batch BJB0468 - SMM EPA 7471B

Instrument: HYDRA Analyst: BLC

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0468-BLK1)				Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 11:15							
Mercury	ND	0.00525	0.0250	mg/kg							U
LCS (BJB0468-BS1)				Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 11:17							
Mercury	0.432	0.00525	0.0250	mg/kg	0.500		86.4	80-120			
Duplicate (BJB0468-DUP1)		**Source: 21B0087-06**		Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 11:24							
Mercury	0.00689	0.00391	0.0186	mg/kg		ND					J
Matrix Spike (BJB0468-MS1)		**Source: 21B0087-06**		Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 11:27							
Mercury	0.216	0.00392	0.0187	mg/kg	0.187	ND	116	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BJB0468-MSD1)		**Source: 21B0087-06**		Prepared: 17-Feb-2021 Analyzed: 19-Feb-2021 11:29							
Mercury	0.210	0.00390	0.0186	mg/kg	0.186	ND	111	75-125	2.98	20	

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Wet Chemistry - Quality Control

Batch BJB0217 - No Prep Wet Chem

Instrument: BAL2 Analyst: KLE

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0217-BLK1)				Prepared: 07-Feb-2021 Analyzed: 07-Feb-2021 08:39							
Total Solids	ND	0.04	0.04	%							U

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Wet Chemistry - Quality Control

Batch BJB0295 - No Prep Wet Chem

Instrument: UV1800-1 Analyst: WCW

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0295-BLK1)				Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:46							
Hexavalent Chromium	ND	0.489	0.489	mg/kg							U
LCS (BJB0295-BS1)				Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:54							
Hexavalent Chromium	17.0	0.492	0.492	mg/kg	19.7		86.4	80-120			D
LCS (BJB0295-BS2)				Prepared: 09-Feb-2021 Analyzed: 10-Feb-2021 17:55							
Hexavalent Chromium	606	9.96	9.96	mg/kg	654		92.6	80-120			D

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Wet Chemistry - Quality Control

Batch BJB0400 - PSEP 1986 (modified)

Instrument: TOC Cube Analyst: BF

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BJB0400-BLK1)				Prepared: 12-Feb-2021	Analyzed: 12-Feb-2021 20:31						
Total Organic Carbon	ND	0.02	0.02	%							U
LCS (BJB0400-BS1)				Prepared: 12-Feb-2021	Analyzed: 12-Feb-2021 21:01						
Total Organic Carbon	45.6	0.02	0.02	%	44.4		103	80-120			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Certified Analyses included in this Report

Analyte	Certifications
EPA 6020B in Solid	
Silver-107	NELAP,DoD-ELAP,WADOE
Barium-135	NELAP,DoD-ELAP,WADOE,ADEC
Barium-137	NELAP,DoD-ELAP,WADOE,ADEC
Cobalt-59	NELAP,DoD-ELAP,WADOE
Chromium-52	NELAP,DoD-ELAP,WADOE,ADEC
Chromium-53	NELAP,DoD-ELAP,WADOE,ADEC
Lead-208	NELAP,DoD-ELAP,WADOE,ADEC
Vanadium-51a	NELAP,DoD-ELAP,WADOE,ADEC
Vanadium-51b	DoD-ELAP,WADOE,ADEC
EPA 6020B UCT-KED in Solid	
Arsenic-75a	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-111	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-114	NELAP,DoD-ELAP,WADOE,ADEC
Copper-63	NELAP,DoD-ELAP,WADOE
Copper-65	NELAP,DoD-ELAP,WADOE
Nickel-60	NELAP,DoD-ELAP,WADOE,ADEC
Nickel-62	NELAP,DoD-ELAP,WADOE,ADEC
Selenium-78	NELAP,DoD-ELAP,WADOE
Zinc-66	NELAP,DoD-ELAP,WADOE
Zinc-67	NELAP,DoD-ELAP,WADOE
EPA 7471B in Solid	
Mercury	WADOE,NELAP,DoD-ELAP
EPA 8082A in Solid	
Aroclor 1016	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,ADEC

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1262	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1262 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1268	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1268 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
EPA 8260D in Solid	
Chloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Vinyl Chloride	WADOE,DoD-ELAP,NELAP,ADEC
Bromomethane	WADOE,DoD-ELAP,NELAP,ADEC
Chloroethane	WADOE,DoD-ELAP,NELAP,ADEC
Trichlorofluoromethane	WADOE,DoD-ELAP,NELAP,ADEC
Acrolein	WADOE,DoD-ELAP,NELAP
1,1,2-Trichloro-1,2,2-Trifluoroethane	WADOE,DoD-ELAP,NELAP,ADEC
Acetone	WADOE,DoD-ELAP,NELAP
1,1-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Iodomethane	WADOE,DoD-ELAP,NELAP,ADEC
Methylene Chloride	WADOE,DoD-ELAP,NELAP,ADEC
Acrylonitrile	WADOE,DoD-ELAP,NELAP
Carbon Disulfide	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,2-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Vinyl Acetate	WADOE,DoD-ELAP,NELAP
1,1-Dichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
2-Butanone	WADOE,DoD-ELAP,NELAP
2,2-Dichloropropane	WADOE,DoD-ELAP,NELAP
cis-1,2-Dichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Chloroform	WADOE,DoD-ELAP,NELAP,ADEC
Bromochloromethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1-Trichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,1-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
Carbon tetrachloride	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
Benzene	WADOE,DoD-ELAP,NELAP,ADEC
Trichloroethene	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
Bromodichloromethane	WADOE,DoD-ELAP,NELAP,ADEC
Dibromomethane	WADOE,DoD-ELAP,NELAP,ADEC
2-Chloroethyl vinyl ether	WADOE,DoD-ELAP,NELAP

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

4-Methyl-2-Pentanone	WADOE,DoD-ELAP,NELAP
cis-1,3-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
Toluene	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,3-Dichloropropene	WADOE,DoD-ELAP,NELAP,ADEC
2-Hexanone	WADOE,DoD-ELAP,NELAP
1,1,2-Trichloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,3-Dichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
Tetrachloroethene	WADOE,DoD-ELAP,NELAP,ADEC
Dibromochloromethane	WADOE,DoD-ELAP,NELAP,ADEC
1,2-Dibromoethane	WADOE,DoD-ELAP,NELAP,ADEC
Chlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Ethylbenzene	WADOE,DoD-ELAP,NELAP,ADEC
1,1,1,2-Tetrachloroethane	WADOE,DoD-ELAP,NELAP,ADEC
m,p-Xylene	WADOE,DoD-ELAP,NELAP,ADEC
o-Xylene	WADOE,DoD-ELAP,NELAP,ADEC
Xylenes, total	WADOE
Styrene	WADOE,DoD-ELAP,NELAP,ADEC
Bromoform	WADOE,DoD-ELAP,NELAP,ADEC
1,1,2,2-Tetrachloroethane	WADOE,DoD-ELAP,NELAP,ADEC
1,2,3-Trichloropropane	WADOE,DoD-ELAP,NELAP,ADEC
trans-1,4-Dichloro 2-Butene	WADOE,DoD-ELAP,NELAP
n-Propylbenzene	WADOE,DoD-ELAP,NELAP
Bromobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Isopropyl Benzene	WADOE,DoD-ELAP,NELAP,ADEC
2-Chlorotoluene	WADOE,DoD-ELAP,NELAP
4-Chlorotoluene	WADOE,DoD-ELAP,NELAP
t-Butylbenzene	WADOE,DoD-ELAP,NELAP
1,3,5-Trimethylbenzene	WADOE,DoD-ELAP,NELAP
1,2,4-Trimethylbenzene	WADOE,DoD-ELAP,NELAP
s-Butylbenzene	WADOE,DoD-ELAP,NELAP
4-Isopropyl Toluene	WADOE,DoD-ELAP,NELAP
1,3-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,4-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
n-Butylbenzene	WADOE,DoD-ELAP,NELAP
1,2-Dichlorobenzene	WADOE,DoD-ELAP,NELAP
1,2-Dibromo-3-chloropropane	WADOE,DoD-ELAP,NELAP,ADEC
1,2,4-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Hexachloro-1,3-Butadiene	WADOE,DoD-ELAP,NELAP,ADEC
Naphthalene	WADOE,DoD-ELAP,NELAP

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

1,2,3-Trichlorobenzene	WADOE,DoD-ELAP,NELAP,ADEC
Dichlorodifluoromethane	WADOE,DoD-ELAP,NELAP,ADEC
Methyl tert-butyl Ether	WADOE,DoD-ELAP,NELAP
n-Hexane	WADOE
2-Pentanone	WADOE
Dibromofluoromethane	WADOE
4-Bromofluorobenzene	WADOE

EPA 8260D in Water

Chloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Acrolein	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Iodomethane	DoD-ELAP,NELAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Butanone	DoD-ELAP,NELAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,WADOE

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

4-Methyl-2-Pentanone	DoD-ELAP,NELAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,WADOE
Styrene	DoD-ELAP,NELAP,WADOE
Bromoform	DoD-ELAP,NELAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,WADOE

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE
EPA 9060A m in Solid	
Total Organic Carbon	WADOE
NWTPH-Dx in Solid	
Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C12-C22)	DoD-ELAP
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP,WADOE
Residual Range Organics (C23-C32)	DoD-ELAP
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP,WADOE
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE
SM 3500-Cr B-09 in Solid	
Hexavalent Chromium	DoD-ELAP,NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2023
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/28/2022
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2022
WADOE	WA Dept of Ecology	C558	06/30/2022
WA-DW	Ecology - Drinking Water	C558	06/30/2022

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: Lower Duwamish	
400 N 34th St., Suite 100	Project Number: 21-1-12596	**Reported:**
Seattle WA, 98103-8636	Project Manager: Meg Strong	03-Aug-2021 15:37

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
D1	Surrogate was not detected due to sample extract dilution
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
H	Hold time violation - Hold time was exceeded.
J	Estimated concentration value detected below the reporting limit.
P1	The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

03 August 2021

Shoshana Howard
Shannon & Wilson, Inc
400 N 34th St., Suite 100
Seattle, WA 98103-8636

RE: EMJ

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
21B0101	N/A

Susan Dunnihoo

Digitally signed by Susan Dunnihoo
Date: 2021.08.03 17:06:00 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Susan Dunnihoo For Amanda Volgardsen Johnson, Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0101	Turn-around Requested: Standard
ARI Client Company: Shannon & Wilson, Inc.	Phone: 206-632-8020
Client Contact: Shoshana Howard	
Client Project Name: EMJ	
Client Project #: 21-1-12596	Samplers: CTC

Page: 1 of 2	
Date: 2/4/21	Ice Present? Yes
No. of Coolers: 2	Cooler Temps: 5.5 3.6

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	SVOCs	PCB aroclors	Metals	Hex. Chrome	T.O.C.	Grain Size	Porosity	Notes/Comments
~~MW-6S:20.5-02042021~~	2/4		Soil	5		⊗	X	X	⊗		⊗	⊗	⊗				⊗ = Hold
MW-7I:1.5-02042021	2/4	1030	Soil	5		X	X	X	X			X					
MW-7I:5.0-02042021	2/4	1035	Soil	5		X	X	X	X			X					
MW-7I:8.5-02042021	2/4	1045	Soil	5		X	X	X	X			X					
MW-7I:15.5-02042021	2/4	1055	Soil	5		⊗	X	X	⊗			⊗					
MW-7I:20.5-02042021	2/4	1105	Soil	5		⊗	X	X	⊗			⊗					
~~MW-10R:-02042021~~	~~2/4~~		~~Soil~~	~~5~~		X	X	X	X			X					
~~MW-10R:-02042021~~	~~2/4~~		~~Soil~~	~~5~~		X	X	X	X			X					
~~MW-10R:-02042021~~	~~2/4~~		~~Soil~~	~~5~~		X	X	X	X			X					
~~MW-10R:-02042021~~	~~2/4~~		~~Soil~~	~~5~~		⊗	⊗	⊗	⊗			⊗					

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
• Refer to EMJ analyte list.	Printed Name: Christian Canfield	Printed Name: Zach Hatt	Printed Name:	Printed Name:
	Company: SWI	Company: ARI	Company:	Company:
	Date & Time: 2/4/2021 1240	Date & Time: 02/04/2021 1240	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Draft for Public Comment

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 21B0101	Turn-around Requested: Standard	Page: 2 of 2	
ARI Client Company: Shannon & Wilson, Inc.	Phone: 206-632-8020	Date: 2/4/21	Ice Present? Yes
Client Contact: Shoshana Howard		No. of Coolers: 2	Cooler Temps: 5.5 3.6
Client Project Name: EMJ			
Client Project #: 21-1-12596	Samplers: CTC		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	TPH-G	TPH-Dx	BTEX	HVOCs	PAHs	SVOCs	PCB aroclors	Metals	Hex. Chrome	T.O.C.	Grain Size	Porosity	Notes/Comments
~~MW-10R-0204202~~	~~2/4~~		Soil	5		⊗	⊗	⊗	⊗			⊗					
~~MW-104-0204202~~	~~2/4~~		Soil	5		X	X	X	X			X					
MW-54:14.5-02042021	2/4	0840	soil	5		⊗	⊗	⊗	⊗		⊗	⊗					
MW-54:20.5-02042021	2/4	0900	Soil	5		⊗	⊗	⊗	⊗		⊗	⊗					
Trip Blank	2/4		Water	3			X	X									

⊗ = Hold

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
• Refer to EMJ analyte list.	Printed Name: Christian Canfield	Printed Name: Jacob Lee	Printed Name:	Printed Name:
	Company: SWI	Company: ARI	Company:	Company:
	Date & Time: 2/4/2021 1240	Date & Time: 02/04/2021 1240	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-71:1.5-02042021	21B0101-01	Solid	04-Feb-2021 10:30	04-Feb-2021 12:40
MW-71:5.0-02042021	21B0101-02	Solid	04-Feb-2021 10:35	04-Feb-2021 12:40
MW-71:8.5-02042021	21B0101-03	Solid	04-Feb-2021 10:45	04-Feb-2021 12:40
MW-71:15.5-02042021	21B0101-04	Solid	04-Feb-2021 10:55	04-Feb-2021 12:40
MW-71:20.5-02042021	21B0101-05	Solid	04-Feb-2021 11:05	04-Feb-2021 12:40
MW-54:14.5-02042021	21B0101-06	Solid	04-Feb-2021 08:40	04-Feb-2021 12:40
MW-54:20.5-02042021	21B0101-07	Solid	04-Feb-2021 09:00	04-Feb-2021 12:40
Trip Blank	21B0101-08	Water	04-Feb-2021 08:40	04-Feb-2021 12:40

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

Case Narrative

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times with the exception of the re-analysis of sample 21B0101-05RE. The associated sample has been flagged with a "H" qualifer.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits with the exception of the surrogate 1,2-Dichloroethane-d4 which is outside off the control limits. The sample was re-analyzed outside of the holding time with surrogate recovery in control.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

Semivolatiles - EPA Method SW8270E

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits with the exception of the RPDs flagged on the associated forms.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Total Metals - EPA Method 6020B and 7471B

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

REVISED to add trans-1,2-dichloroethene to VOC list.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Draft for Public Comment

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Sharon of Wilson Project Name: ENJ LOW

COC No(s): NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 21B0101 Tracking No: NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1240 5.10 3.6 ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: DOO 5006

Cooler Accepted by: JB Date: 02/04/2021 Time: 1240

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:

Was sufficient ice used (if appropriate)? NA YES NO

How were bottles sealed in plastic bags? Individually Grouped Not

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI NA 01/15/2021

Were the sample(s) split by ARI? NA YES Date/Time: Equipment: Split by:

Samples Logged by: JB Date: 02/04/2021 Time: 1415 Labels checked by: JB

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:1.5-02042021

21B0101-01 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/04/2021 10:30
Instrument: ICPMS2 — Analyzed: 19-Feb-2021 22:50

Sample Preparation: Preparation Method: SWN EPA 3050B
Preparation Batch: BJB0429 — Sample Size: 1.071 g (wet) — Dry Weight:0.98 g
Prepared: 17-Feb-2021 — Final Volume: 50 mL — % Solids: 91.47

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.06	0.51	**22.4**	mg/kg	
Chromium	7440-47-3	20	0.13	0.51	**9.91**	mg/kg	
Cobalt	7440-48-4	20	0.03	0.20	**5.71**	mg/kg	
Lead	7439-92-1	20	0.07	0.10	**2.55**	mg/kg	
Silver	7440-22-4	20	0.02	0.20	**0.05**	mg/kg	J
Vanadium	7440-62-2	20	0.04	0.20	**35.4**	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:1.5-02042021

21B0101-01 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/04/2021 10:30
Instrument: ICPMS2 — Analyzed: 22-Feb-2021 20:09

Sample Preparation: Preparation Method: SWN EPA 3050B
Preparation Batch: BJB0429 — Sample Size: 1.071 g (wet) — Dry Weight:0.98 g
Prepared: 17-Feb-2021 — Final Volume: 50 mL — % Solids: 91.47

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.02	0.20	**2.82**	mg/kg	
Cadmium	7440-43-9	20	0.03	0.10	ND	mg/kg	U
Copper	7440-50-8	20	0.35	0.51	**12.3**	mg/kg	
Nickel	7440-02-0	20	0.05	0.51	**8.84**	mg/kg	
Selenium	7782-49-2	20	0.45	0.51	**1.74**	mg/kg	
Zinc	7440-66-6	20	0.8	4.1	**27.2**	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:1.5-02042021

21B0101-01 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/04/2021 10:30
Instrument: HYDRA — Analyzed: 18-Feb-2021 14:30

Sample Preparation: Preparation Method: SMM EPA 7471B
Preparation Batch: BJB0433 — Sample Size: 0.202 g (wet) — Dry Weight:0.18 g
Prepared: 17-Feb-2021 — Final Volume: 50 mL — % Solids: 91.47

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00568	0.0271	**0.0159**	mg/kg	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:1.5-02042021

21B0101-01 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/04/2021 10:30
Instrument: NT5 — Analyzed: 12-Feb-2021 15:22

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate)
Preparation Batch: BJB0418 — Sample Size: 7.14 g (wet) — Dry Weight:6.15 g
Prepared: 12-Feb-2021 — Final Volume: 5 mL — % Solids: 86.19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.16	0.70	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.24	0.70	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.19	0.70	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.17	0.70	ND	ug/kg	U
Benzene	71-43-2	1	0.21	0.70	**0.42**	ug/kg	J
Trichloroethene	79-01-6	1	0.15	0.70	ND	ug/kg	U
Toluene	108-88-3	1	0.11	0.70	**0.22**	ug/kg	J
Tetrachloroethene	127-18-4	1	0.18	0.70	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.14	0.70	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.27	1.40	ND	ug/kg	U
o-Xylene	95-47-6	1	0.16	0.70	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.43	1.40	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*112*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*100*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*96.5*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*101*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:1.5-02042021

21B0101-01 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/04/2021 10:30
Instrument: NT10 — Analyzed: 06-Mar-2021 20:24

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		
	Preparation Batch: BJB0517	Sample Size: 11.61 g (wet)	Dry Weight:10.01 g
	Prepared: 18-Feb-2021	Final Volume: 1 mL	% Solids: 86.19
Sample Cleanup:	Cleanup Method: GPC		
	Cleanup Batch: CJC0047	Initial Volume: 1 uL	
	Cleaned: 05-Mar-2021	Final Volume: 1 uL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	4.5	17.2	**4.7**	ug/kg	J
2-Methylnaphthalene	91-57-6	1	4.9	17.2	**5.1**	ug/kg	J
Acenaphthylene	208-96-8	1	4.1	17.2	ND	ug/kg	U
Acenaphthene	83-32-9	1	4.4	17.2	ND	ug/kg	U
Dibenzofuran	132-64-9	1	4.0	17.2	ND	ug/kg	U
Fluorene	86-73-7	1	4.3	17.2	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	27.0	86.1	ND	ug/kg	U
Phenanthrene	85-01-8	1	4.0	17.2	**12.6**	ug/kg	J
Anthracene	120-12-7	1	5.1	17.2	ND	ug/kg	U
Fluoranthene	206-44-0	1	3.9	17.2	**13.0**	ug/kg	J
Pyrene	129-00-0	1	4.8	17.2	**13.9**	ug/kg	J
Benzo(a)anthracene	56-55-3	1	4.5	17.2	**6.3**	ug/kg	J
Chrysene	218-01-9	1	4.5	17.2	**10.8**	ug/kg	J
Benzofluoranthenes, Total		1	8.8	34.5	**21.1**	ug/kg	J
Benzo(a)pyrene	50-32-8	1	5.6	17.2	**10.4**	ug/kg	J
Indeno(1,2,3-cd)pyrene	193-39-5	1	5.2	17.2	**7.7**	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	5.3	17.2	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	5.0	17.2	**13.5**	ug/kg	J
Surrogate: Phenol-d5				*29-120 %*	*58.8*	*%*	
Surrogate: 2-Chlorophenol-d4				*31-120 %*	*77.2*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*32-120 %*	*76.5*	*%*	
Surrogate: Nitrobenzene-d5				*30-120 %*	*81.5*	*%*	
Surrogate: 2-Fluorobiphenyl				*35-120 %*	*78.5*	*%*	
Surrogate: 2,4,6-Tribromophenol				*24-134 %*	*69.6*	*%*	
Surrogate: p-Terphenyl-d14				*37-120 %*	*73.2*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:1.5-02042021

21B0101-01 (Solid)

Petroleum Hydrocarbons

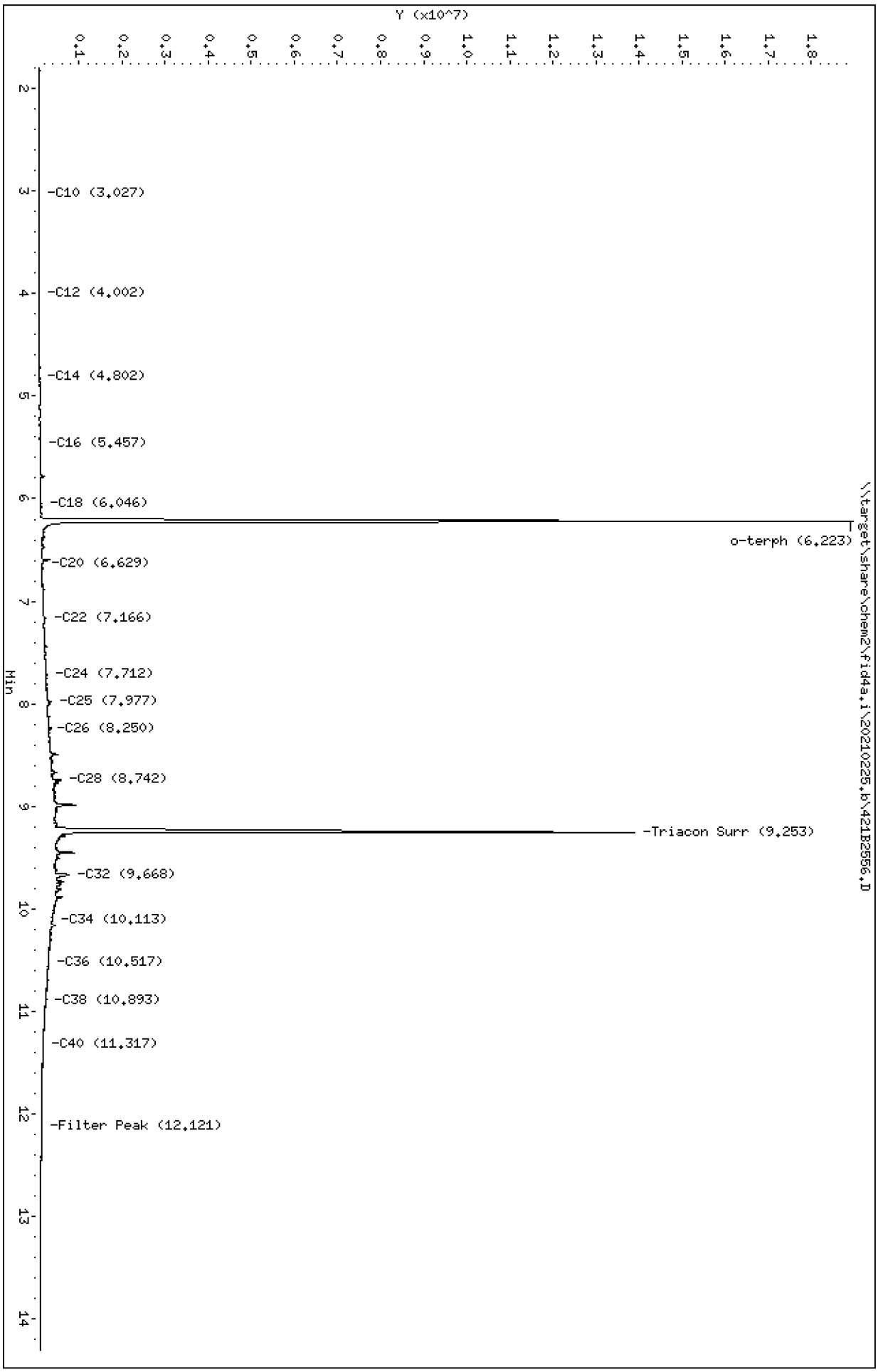
Method: NWTPH-Dx — Sampled: 02/04/2021 10:30
Instrument: FID4 — Analyzed: 26-Feb-2021 11:07

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BJB0456 — Sample Size: 10.04 g (wet) — Dry Weight:8.65 g
Prepared: 17-Feb-2021 — Final Volume: 1 mL — % Solids: 86.19

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.78	**10.1**	mg/kg	
HC ID: DIESEL						
Motor Oil Range Organics (C24-C38)	RRO	1	11.6	**65.5**	mg/kg	
HC ID: MOTOR OIL						
Surrogate: o-Terphenyl			*50-150 %*	*110*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Draft for Public Comment



Data File: \\target\share\chem2\fid4a.i\20210225.b\421B2556.D
Date : 26-FEB-2021 11:07
Client ID:
Sample Info: 21B0101-01
Column phase: RTX-1

Instrument: fid4a.i
Operator: CTO
Column diameter: 0.25

Draft for Public Comment

Analytical Resources Inc.
TPH Quantitation Report

Data file: 20210225.b/421B2556.D
Method: 20210225.b\FID4TPH.m
Instrument: fid4a.i, CTO
Report Date: 03/02/2021
Macro: 09-SEP-2019
Calibration Dates: Gas:XX-XXX-XXXX Diesel:08-JAN-2021 M.Oil:08-JAN-2021

ARI ID: 21B0101-01
Client ID:
Injection: 26-FEB-2021 11:07
Dilution Factor: 1
RT Std: 419H1603.D

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc(mg/L)
C8	1.916	0.015	8959	17017	WATPHD	(C12-C24)	11971651	87.1
C10	3.027	-0.001	713	410	WATPHM	(C24-C38)	57680574	566.6
C12	4.002	-0.004	2644	1670	AK102	(C10-C25)	13731981	81.7
C14	4.802	0.018	12437	13109	AK103	(C25-C36)	51916267	690.6
C16	5.457	0.007	22130	31434	OR.DIES	(C10-C28)	27465848	140.1
C18	6.046	-0.001	57258	91793				
C20	6.629	0.016	88723	163486	JET-A	(C10-C18)	2303217	13.9
C22	7.166	-0.006	147470	243471				
C24	7.712	-0.005	202868	312035				
C25	7.977	-0.008	283294	438670				
C26	8.250	0.004	234293	46774				
C28	8.742	-0.008	497737	672167				
C32	9.668	-0.011	710155	1784078				
C34	10.113	0.007	309777	275475				
Filter Peak	12.121	-0.004	54242	64467	BUNKERC	(C10-C38)	69734107	1766.4
C36	10.517	0.007	218890	267720				
C38	10.893	-0.001	157218	54595				
C40	11.317	0.001	95225	28516				
o-terph	6.223	0.001	18899615	21019432				
Triacon Surr	9.253	0.001	13420962	18652908	NAS DIES	(C10-C24)	12053533	61.8

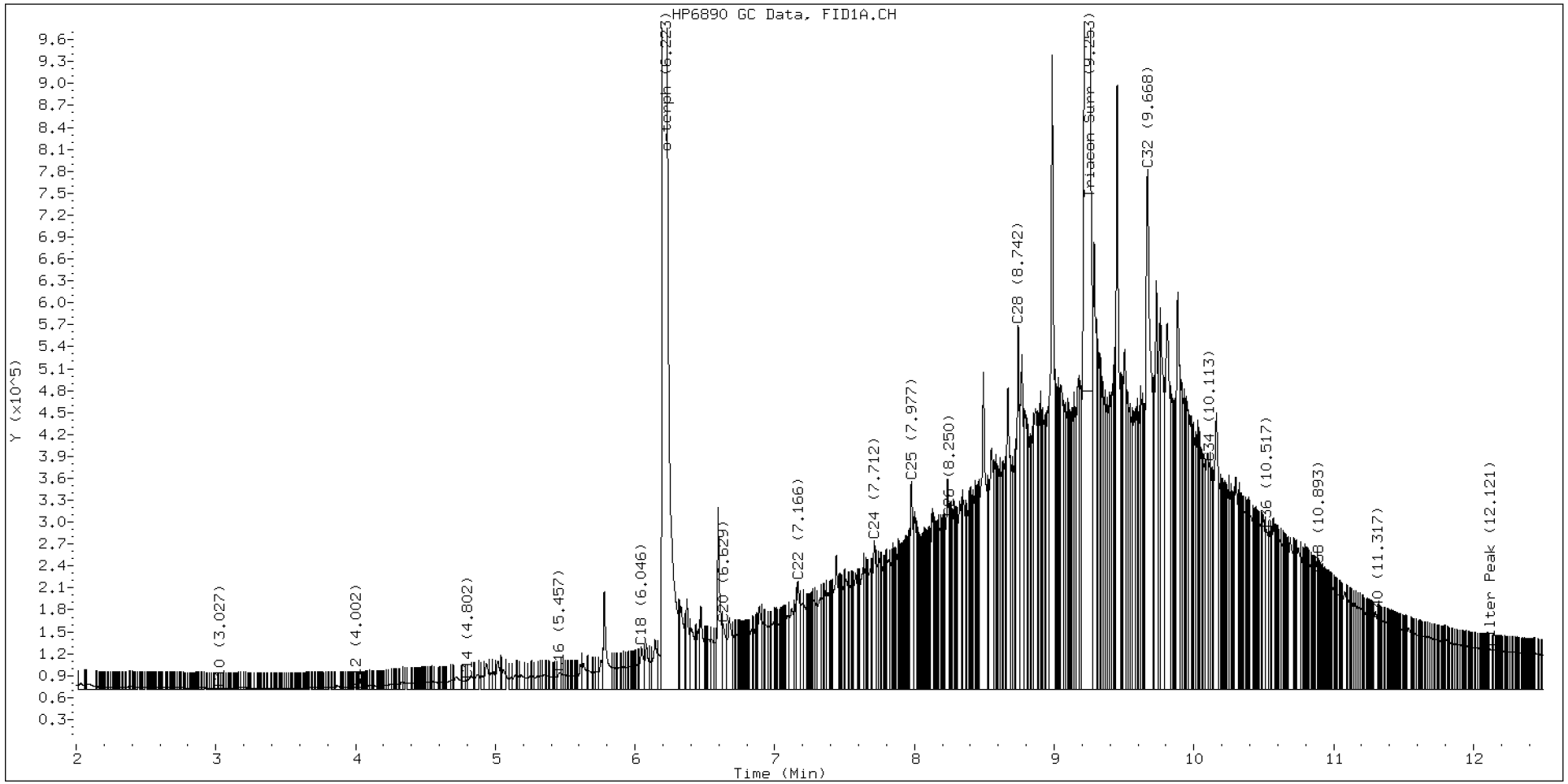
Range Times: NW Diesel(4.007 - 7.718) AK102(3.03 - 7.99) Jet A(3.03 - 6.05)
NW M.Oil(7.72 - 10.89) AK103(7.99 - 10.51) OR Diesel(3.03 - 8.75)

Surrogate	Area	Amount	
o-Terphenyl	21019432	123.2	
Triacontane	18652908	131.9	M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	170577.7	25-OCT-2019
Triacon Surr	141415.7	25-OCT-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	137498.1	08-JAN-2021
Motor Oil	101807.5	08-JAN-2021
AK102	168065.4	08-JAN-2021
AK103	75177.3	08-JAN-2021
JetA	165849.0	20-MAY-2020
OR Diesel	195999.1	25-OCT-2019
NAS Diesel	195148.2	25-OCT-2019
Bunker C	39477.2	13-MAR-2020

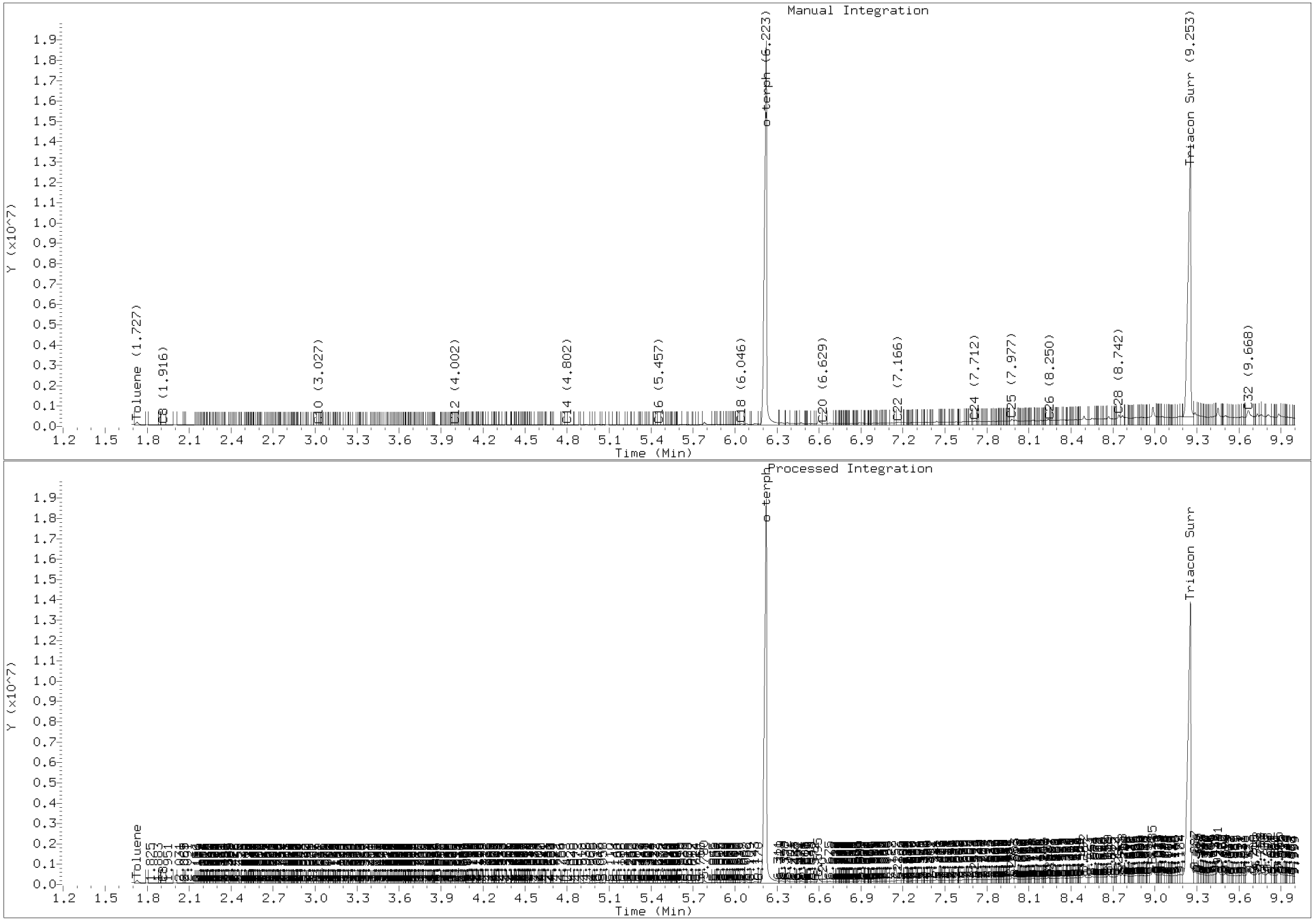
Datafile: FID4A, 20210225.b/421B2556.D 21B0101-01



TPH Manual Integrations Report

Datafile: FID4A, 20210225.b/421B2556.D Injection: 26-FEB-2021 11:07

Lab ID:21B0101-01



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:5.0-02042021

21B0101-02 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/04/2021 10:35

Instrument: ICPMS2 — Analyzed: 19-Feb-2021 22:55

Sample Preparation: Preparation Method: SWN EPA 3050B

Preparation Batch: BJB0429 — Sample Size: 1.037 g (wet) — Dry Weight:0.71 g

Prepared: 17-Feb-2021 — Final Volume: 50 mL — % Solids: 68.15

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.71	**84.3**	mg/kg	
Chromium	7440-47-3	20	0.18	0.71	**19.1**	mg/kg	
Cobalt	7440-48-4	20	0.04	0.28	**10.1**	mg/kg	
Lead	7439-92-1	20	0.10	0.14	**7.13**	mg/kg	
Silver	7440-22-4	20	0.02	0.28	**0.14**	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.28	**50.6**	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:5.0-02042021

21B0101-02 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/04/2021 10:35
Instrument: ICPMS2 — Analyzed: 19-Feb-2021 22:55

Sample Preparation: Preparation Method: SWN EPA 3050B
Preparation Batch: BJB0429 — Sample Size: 1.037 g (wet) — Dry Weight:0.71 g
Prepared: 17-Feb-2021 — Final Volume: 50 mL — % Solids: 68.15

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.28	**5.79**	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	**0.13**	mg/kg	J
Copper	7440-50-8	20	0.48	0.71	**32.1**	mg/kg	
Nickel	7440-02-0	20	0.07	0.71	**20.4**	mg/kg	
Selenium	7782-49-2	20	0.62	0.71	**2.78**	mg/kg	
Zinc	7440-66-6	20	1.2	5.7	**52.0**	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:5.0-02042021

21B0101-02 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B — Sampled: 02/04/2021 10:35
Instrument: HYDRA — Analyzed: 18-Feb-2021 14:32

Sample Preparation: Preparation Method: SMM EPA 7471B
Preparation Batch: BJB0433 — Sample Size: 0.284 g (wet) — Dry Weight:0.19 g
Prepared: 17-Feb-2021 — Final Volume: 50 mL — % Solids: 68.15

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Mercury	7439-97-6	1	0.00543	0.0258	**0.118**	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:5.0-02042021

21B0101-02 (Solid)

Volatile Organic Compounds

Method: EPA 8260D — Sampled: 02/04/2021 10:35

Instrument: NT5 — Analyzed: 12-Feb-2021 15:46

Sample Preparation: Preparation Method: EPA 5035 (Sodium Bisulfate)

Preparation Batch: BJB0418 — Sample Size: 6.92 g (wet) — Dry Weight:5.47 g

Prepared: 12-Feb-2021 — Final Volume: 5 mL — % Solids: 79.03

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Vinyl Chloride	75-01-4	1	0.17	0.72	ND	ug/kg	U
1,1-Dichloroethene	75-35-4	1	0.24	0.72	ND	ug/kg	U
trans-1,2-Dichloroethene	156-60-5	1	0.19	0.72	ND	ug/kg	U
cis-1,2-Dichloroethene	156-59-2	1	0.17	0.72	ND	ug/kg	U
Benzene	71-43-2	1	0.21	0.72	**0.27**	ug/kg	J
Trichloroethene	79-01-6	1	0.15	0.72	ND	ug/kg	U
Toluene	108-88-3	1	0.11	0.72	ND	ug/kg	U
Tetrachloroethene	127-18-4	1	0.19	0.72	ND	ug/kg	U
Ethylbenzene	100-41-4	1	0.15	0.72	ND	ug/kg	U
m,p-Xylene	179601-23-1	1	0.28	1.45	ND	ug/kg	U
o-Xylene	95-47-6	1	0.16	0.72	ND	ug/kg	U
Xylenes, total	1330-20-7	1	0.45	1.45	ND	ug/kg	U
Surrogate: 1,2-Dichloroethane-d4				*80-149 %*	*123*	*%*	
Surrogate: Toluene-d8				*77-120 %*	*102*	*%*	
Surrogate: 4-Bromofluorobenzene				*80-120 %*	*103*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*80-120 %*	*102*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:5.0-02042021

21B0101-02 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E — Sampled: 02/04/2021 10:35
Instrument: NT10 — Analyzed: 06-Mar-2021 22:15

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		
	Preparation Batch: BJB0517	Sample Size: 12.65 g (wet)	Dry Weight:10.00 g
	Prepared: 18-Feb-2021	Final Volume: 1 mL	% Solids: 79.03
Sample Cleanup:	Cleanup Method: GPC		
	Cleanup Batch: CJC0047	Initial Volume: 1 uL	
	Cleaned: 05-Mar-2021	Final Volume: 1 uL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Naphthalene	91-20-3	1	4.2	15.8	**6.6**	ug/kg	J
2-Methylnaphthalene	91-57-6	1	4.5	15.8	**7.6**	ug/kg	J
Acenaphthylene	208-96-8	1	3.8	15.8	ND	ug/kg	U
Acenaphthene	83-32-9	1	4.1	15.8	ND	ug/kg	U
Dibenzofuran	132-64-9	1	3.6	15.8	ND	ug/kg	U
Fluorene	86-73-7	1	3.9	15.8	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	24.7	79.1	ND	ug/kg	U
Phenanthrene	85-01-8	1	3.7	15.8	**5.7**	ug/kg	J
Anthracene	120-12-7	1	4.7	15.8	ND	ug/kg	U
Fluoranthene	206-44-0	1	3.6	15.8	ND	ug/kg	U
Pyrene	129-00-0	1	4.4	15.8	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	4.1	15.8	ND	ug/kg	U
Chrysene	218-01-9	1	4.1	15.8	ND	ug/kg	U
Benzofluoranthenes, Total		1	8.1	31.6	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	5.1	15.8	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	4.7	15.8	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	4.9	15.8	ND	ug/kg	U
Benzo(g,h,i)perylene	191-24-2	1	4.6	15.8	ND	ug/kg	U
Surrogate: Phenol-d5				*29-120 %*	*61.0*	*%*	
Surrogate: 2-Chlorophenol-d4				*31-120 %*	*85.4*	*%*	
Surrogate: 1,2-Dichlorobenzene-d4				*32-120 %*	*70.8*	*%*	
Surrogate: Nitrobenzene-d5				*30-120 %*	*77.9*	*%*	
Surrogate: 2-Fluorobiphenyl				*35-120 %*	*79.6*	*%*	
Surrogate: 2,4,6-Tribromophenol				*24-134 %*	*79.9*	*%*	
Surrogate: p-Terphenyl-d14				*37-120 %*	*71.5*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:5.0-02042021

21B0101-02 (Solid)

Petroleum Hydrocarbons

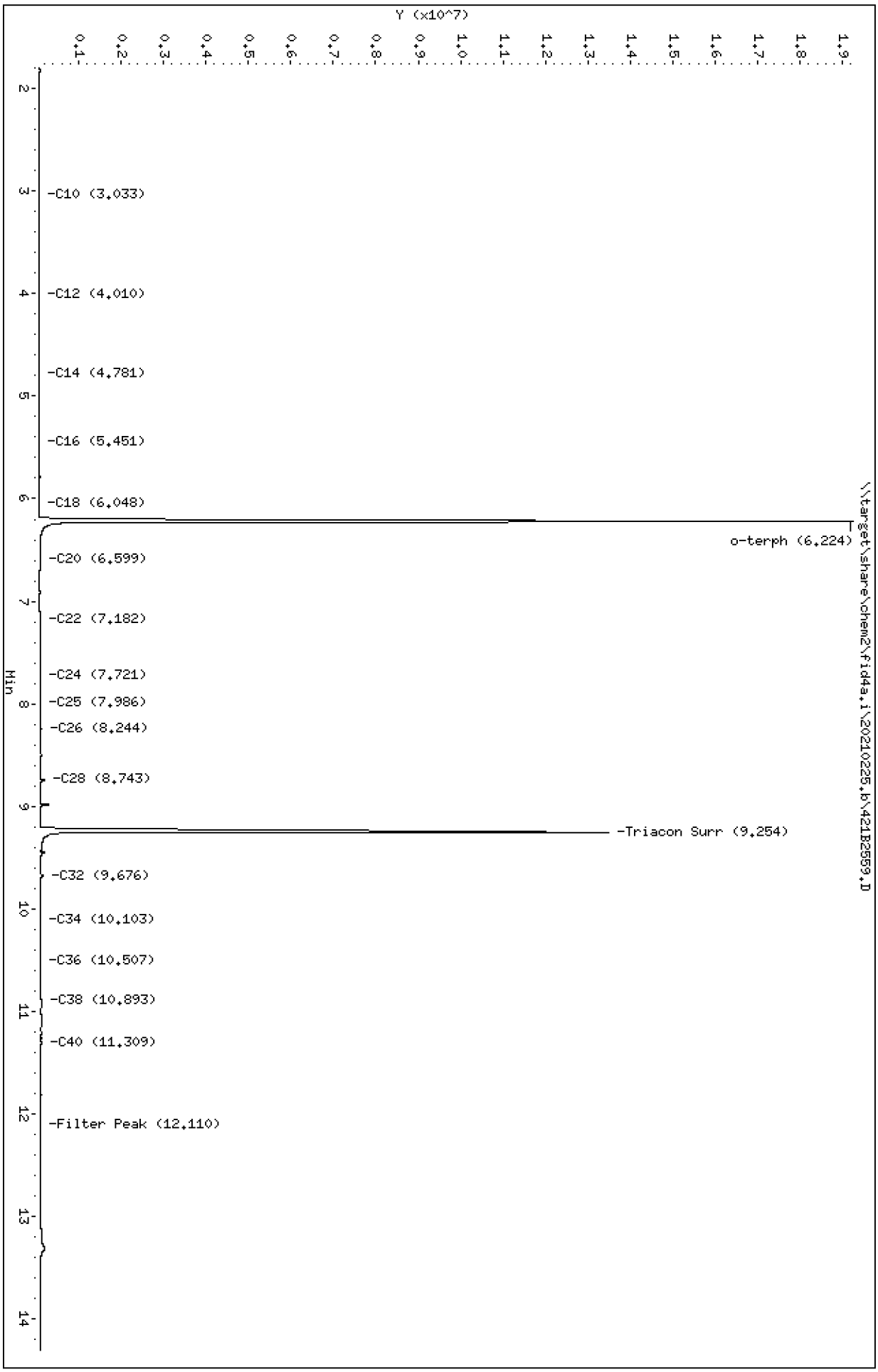
Method: NWTPH-Dx — Sampled: 02/04/2021 10:35
Instrument: FID4 — Analyzed: 26-Feb-2021 12:10

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BJB0456 — Sample Size: 10.05 g (wet) — Dry Weight:7.94 g
Prepared: 17-Feb-2021 — Final Volume: 1 mL — % Solids: 79.03

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	6.30	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	12.6	ND	mg/kg	U
Surrogate: o-Terphenyl			*50-150 %*	*114*	*%*	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Draft for Public Comment



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20210225.b/421B2559.D
Method: 20210225.b\FID4TPH.m
Instrument: fid4a.i, CTO
Report Date: 03/02/2021
Macro: 09-SEP-2019
Calibration Dates: Gas:XX-XXX-XXXX Diesel:08-JAN-2021 M.Oil:08-JAN-2021

ARI ID: 21B0101-02
Client ID:
Injection: 26-FEB-2021 12:10
Dilution Factor: 1
RT Std: 419H1603.D

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc(mg/L)
C8	1.894	-0.007	8921	5268	WATPHD	(C12-C24)	1858241	13.5
C10	3.033	0.004	2093	1440	WATPHM	(C24-C38)	6440401	63.3
C12	4.010	0.003	295	192	AK102	(C10-C25)	2139732	12.7
C14	4.781	-0.003	717	488	AK103	(C25-C36)	5078197	67.5
C16	5.451	0.002	1957	384	OR.DIES	(C10-C28)	3593918	18.3
C18	6.048	0.001	7726	17118				
C20	6.599	-0.014	24505	44212	JET-A	(C10-C18)	294342	1.8
C22	7.182	0.010	20868	56675				
C24	7.721	0.003	29166	33774				
C25	7.986	0.001	38893	96853				
C26	8.244	-0.002	49033	110470				
C28	8.743	-0.008	136993	193078				
C32	9.676	-0.003	104633	159407				
C34	10.103	-0.003	44019	159307				
Filter Peak	12.110	-0.015	47114	102750	BUNKERC	(C10-C38)	8357982	211.7
C36	10.507	-0.003	42095	99902				
C38	10.893	-0.002	51383	114497				
C40	11.309	-0.008	50429	144339				
o-terph	6.224	0.002	19183739	21960092				
Triacon Surr	9.254	0.002	13419691	20526515	NAS DIES	(C10-C24)	1917581	9.8

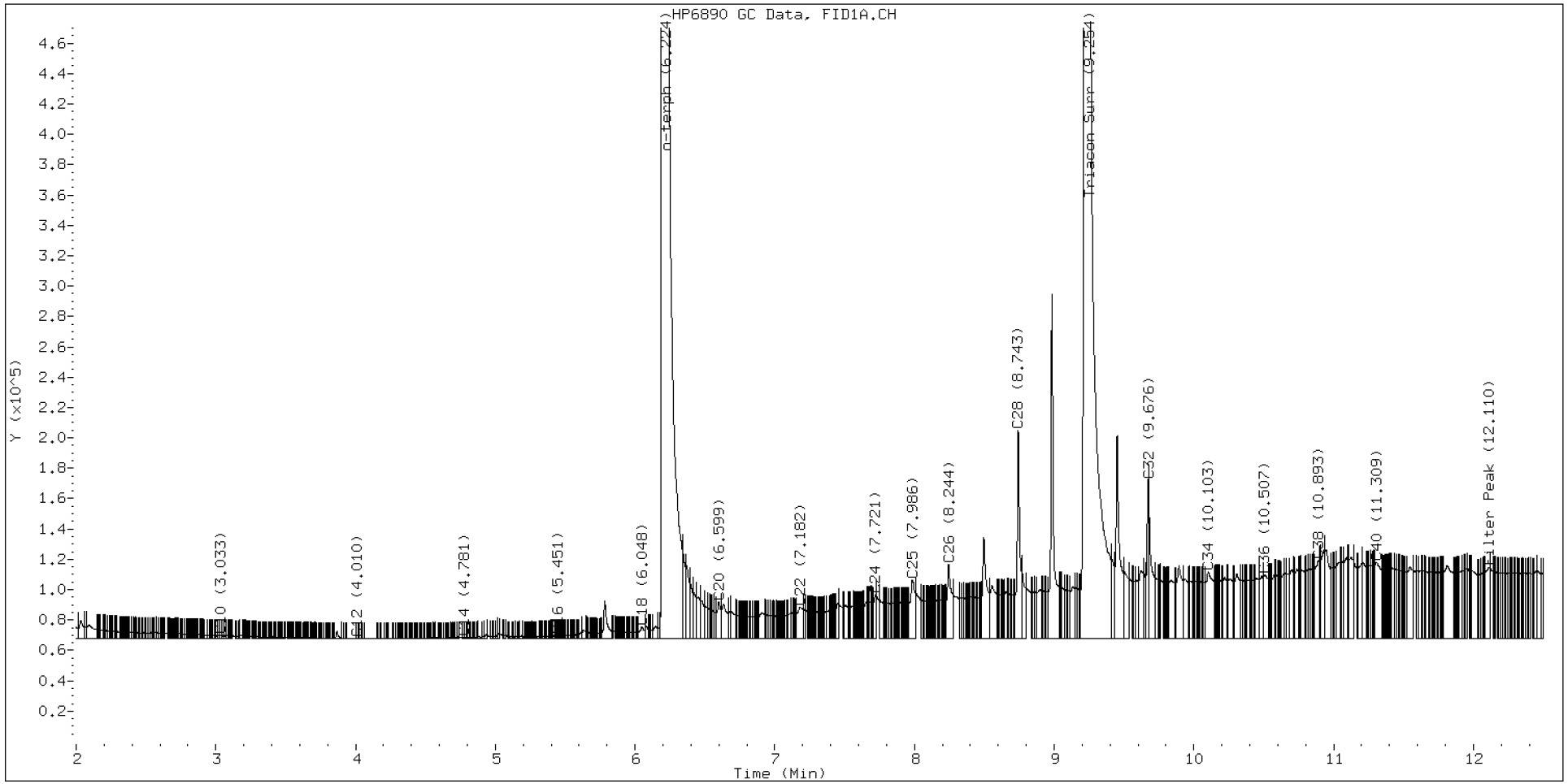
Range Times: NW Diesel(4.007 - 7.718) AK102(3.03 - 7.99) Jet A(3.03 - 6.05)
NW M.Oil(7.72 - 10.89) AK103(7.99 - 10.51) OR Diesel(3.03 - 8.75)

Surrogate	Area	Amount	
o-Terphenyl	21960092	128.7	
Triacontane	20526515	145.2	M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	170577.7	25-OCT-2019
Triacon Surr	141415.7	25-OCT-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	137498.1	08-JAN-2021
Motor Oil	101807.5	08-JAN-2021
AK102	168065.4	08-JAN-2021
AK103	75177.3	08-JAN-2021
JetA	165849.0	20-MAY-2020
OR Diesel	195999.1	25-OCT-2019
NAS Diesel	195148.2	25-OCT-2019
Bunker C	39477.2	13-MAR-2020

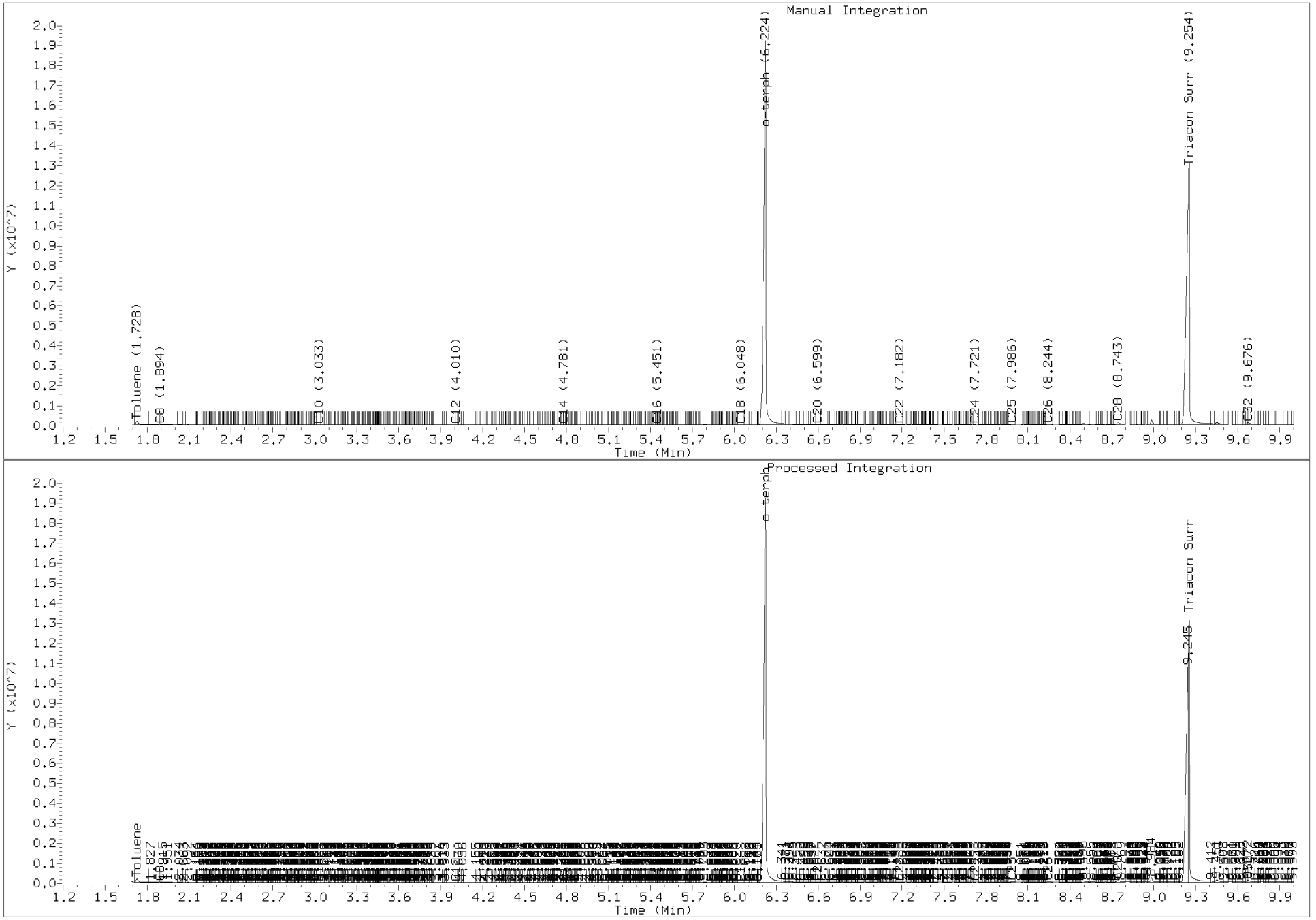
Datafile: FID4A, 20210225.b/421B2559.D 21B0101-02



TPH Manual Integrations Report

Datafile: FID4A, 20210225.b/421B2559.D Injection: 26-FEB-2021 12:10

Lab ID:21B0101-02



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:8.5-02042021

21B0101-03 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B — Sampled: 02/04/2021 10:45

Instrument: ICPMS2 — Analyzed: 19-Feb-2021 23:00

Sample Preparation: Preparation Method: SWN EPA 3050B

Preparation Batch: BJB0429 — Sample Size: 1.046 g (wet) — Dry Weight:0.70 g

Prepared: 17-Feb-2021 — Final Volume: 50 mL — % Solids: 67.25

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Barium	7440-39-3	20	0.08	0.71	**86.0**	mg/kg	
Chromium	7440-47-3	20	0.18	0.71	**21.2**	mg/kg	
Cobalt	7440-48-4	20	0.04	0.28	**8.19**	mg/kg	
Lead	7439-92-1	20	0.10	0.14	**17.3**	mg/kg	
Silver	7440-22-4	20	0.02	0.28	**0.11**	mg/kg	J
Vanadium	7440-62-2	20	0.06	0.28	**48.1**	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

Shannon & Wilson, Inc	Project: EMJ	
400 N 34th St., Suite 100	Project Number: 21-1-12596-04	**Reported:**
Seattle WA, 98103-8636	Project Manager: Shoshana Howard	03-Aug-2021 16:23

MW-71:8.5-02042021

21B0101-03 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED — Sampled: 02/04/2021 10:45
Instrument: ICPMS2 — Analyzed: 19-Feb-2021 23:00

Sample Preparation: Preparation Method: SWN EPA 3050B
Preparation Batch: BJB0429 — Sample Size: 1.046 g (wet) — Dry Weight:0.70 g
Prepared: 17-Feb-2021 — Final Volume: 50 mL — % Solids: 67.25

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Arsenic	7440-38-2	20	0.03	0.28	**8.72**	mg/kg	
Cadmium	7440-43-9	20	0.04	0.14	**0.28**	mg/kg	
Copper	7440-50-8	20	0.48	0.71	**31.0**	mg/kg	
Nickel	7440-02-0	20	0.07	0.71	**20.1**	mg/kg	
Selenium	7782-49-2	20	0.63	0.71	**2.83**	mg/kg	
Zinc	7440-66-6	20	1.2	5.7	**72.9**	mg/kg	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.