Table 78
Groundwater Analytical Results - Volatile Organic Compounds
Lot 6, Surrey-Brownsville Site

Area ID	FCSAP CLIL Fresh/Marine	Canadian DW Quality	BC CSR (DW/AW)	25, 26, 27, 30	25, 26, 27, 30	25, 26, 27, 30	25, 26, 27, 30	25, 26, 27, 30	25, 26, 27, 30	21	25, 30,34	25, 30,34	25, 30,34
Station ID				**BV-11BH-01M**	**BV-11BH-02M**	**BV-11BH-02M**	**BV-11BH-03M**	**BV-11BH-04M**	**BV-11BH-05M**	**BV-11BH-07M**	**MW06-2**	**MW07-6**	**MW07-7**
Field label				BV-11BH-01M	BV-11BH-02M	BV-GWDUP1	BV-11BH-03M	BV-11BH-04M	BV-11BH-05M	BV-11BH-07M	MW06-2	MW07-6	MW07-7
Duplicate ID					BV-GWDUP1	BV-11BH-02M							
Date				3/Feb/12	2/Feb/12	2/Feb/12	1/Feb/12	1/Feb/12	1/Feb/12	2/Feb/12	2/Feb/12	2/Feb/12	3/Feb/12
Lab report ID				12V571615	12V571329	12V571329	12V570940	12V570940	12V570940	12V571329	12V571329	12V571329	12V571615
Consultants				Franz	Franz	Franz	Franz	Franz	Franz	Franz	Franz	Franz	Franz
Screen depth (m)				3.05 – 4.57	3.05 – 4.57	3.05 – 4.57	2.44 – 3.96	1.52 – 3.05	2.44 – 3.96	0.91 – 2.44		0.6 – 3	0.5 – 3.5
Methyl tert-butyl ether	4300	15	15	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Area ID	FCSAP CLIL Fresh/Marine	Canadian DW Quality	BC CSR (DW/AW)	25, 30,34	25, 30,34	25, 30,34
Station ID				**MW07-8**	**MW08-10**	**MW08-13**
Field label				MW07-8	MW08-10	MW08-13
Duplicate ID						
Date				3/Feb/12	2/Feb/12	13/Feb/12
Lab report ID				12V571615	12V571329	12V574297
Consultants				Franz	Franz	Franz
Screen depth (m)				0.5 – 3.5	0.8 – 3.8	0.8 – 3.8
Methyl tert-butyl ether	4300	15	15	<1	<1	<1

Notes
All units in ug/L.
"-" indicates that there is no applicable standard or analyses were not performed.
Red cells indicates parameter exceeds FCSAP CLIL Fresh/Marine. (Current as of 9-November-2012)
Bold indicates parameter exceeds Candian DW Quality. (Current as of 9-November-2012)
Underline indicates parameter exceeds BC CSR (DW/AW). (Current as of 9-November-2012)

APPENDICES

APPENDIX A

SITE VISIT PHOTOGRAPHS

FRANZ ENVIRONMENTAL INC.
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PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Vancouver Fraser Port Authority	Brownsville/Mountainview	2090-1103

Photo No. 1

Date: December 12, 2011

Direction Photo taken:
East

Description:

Drilling borehole MV-11BH-06

Client Name:	Site Location:	Project No.
Vancouver Fraser Port Authority	Brownsville/Mountainview	2090-1103

Photo No. 2

Date: December 13, 2011

Direction Photo taken:
East

Description:

Cutting through the asphalt at the location of MV-11BH-15M

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PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Vancouver Fraser Port Authority	Brownsville/Mountainview	2090-1103

Photo No. 3

Date: December 14, 2011

Direction Photo taken:
Northwest

Description:

Drilling borehole BV-11BH-09M

Client Name:	Site Location:	Project No.
Vancouver Fraser Port Authority	Brownsville/Mountainview	2090-1103

Photo No. 4

Date: December 15, 2011

Direction Photo taken:
Southwest

Description:

Drilling borehole BV-11BH-03M

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PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Vancouver Fraser Port Authority	Brownsville/Mountainview	2090-1103

Photo No. 5

Date: December 17, 2011

Direction Photo taken:
West

Description:

Drilling borehole BV-11BH-05M

Client Name:	Site Location:	Project No.
Vancouver Fraser Port Authority	Brownsville/Mountainview	2090-1103

Photo No. 6

Date: February 10, 2011

Direction Photo taken:
n/a

Description:

Groundwater sampling at MV-11BH-15M

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PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
Vancouver Fraser Port Authority	Brownsville/Mountainview	2090-1103

Photo No. 7

Date: February 14, 2011

Direction Photo taken:
n/a

Description:

Groundwater sampling at 3-BH10

APPENDIX B

BOREHOLE LOGS

FRANZ ENVIRONMENTAL INC.

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Borehole Log: BV-11BH-01M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 25,26,27,32 ***Logged By: AS***

SUBSURFACE PROFILE

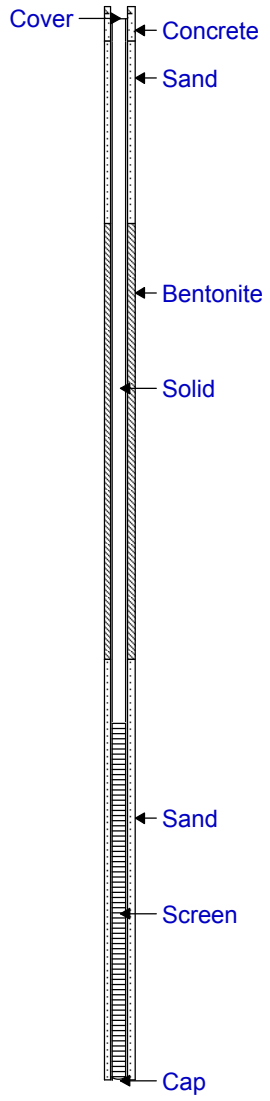
Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.0
0–6	0–2		***Fine to Medium Sand*** grey, medium dense, dry to moist	
6–7	2			2.0
7–10	2–3		***Silty Sand*** grey, medium dense, moist	
10	3			3.0
10–14	3–4		***Sandy Silt*** grey, medium dense, moist to wet	
14	4			4.5
15			End of Borehole	

SAMPLE

Sample No.	Duplicate	Type	Vapour ppm
1		G	
2		G	50
3		G	65
4		G	55
5	BV-DUP5	G	50

Vapour ppm: 200 600 1000 1400 1800

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 14, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: BV-11BH-02M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 25,26,27,32 ***Logged By: AS***

SUBSURFACE PROFILE

SAMPLE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)	Well Completion Details
0	0		Ground Surface	0.0					Cover → Concrete
			Asphalt	0.15					
1			***Medium Sand*** dark brown, loose, dry to moist		1		G	30 ×	Sand
2					2		G	30 ×	
3	1								
4									Bentonite
				1.5					
5			***Silty Sand*** grey, medium dense, moist to wet		3		G	65 ×	Solid
6	2								
7					4		G	40 ×	
8									
9				3.0					
10	3		***Sandy Silt*** grey, medium dense, wet		5		G	35 ×	Sand
11									
12									Screen
13	4				6		G	35 ×	
14				4.5					
15			End of Borehole						Cap

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 16, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: BV-11BH-03M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 25,26,27,32 ***Logged By: AS***

SUBSURFACE PROFILE				SAMPLE				
Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)	Well Completion Details
0 / 0		Ground Surface	0.0					Cover, Concrete
1		***Wood Fragments and Organics***	0.5					Sand
2 / 1		***Medium Sand*** brown, loose, dry		1		G	75	
3								Bentonite
4			1.5					
5 / 2		***Silty Sand*** dark grey, medium dense, moist to wet		2		G	180	Solid
6								
7				3		G	65	
8								
9 / 3								Sand
10				4		G	45	Screen
11								
12								
13 / 4				5		G	35	Cap
14			4.5					
15		End of Borehole						

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 15, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: BV-11BH-04M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

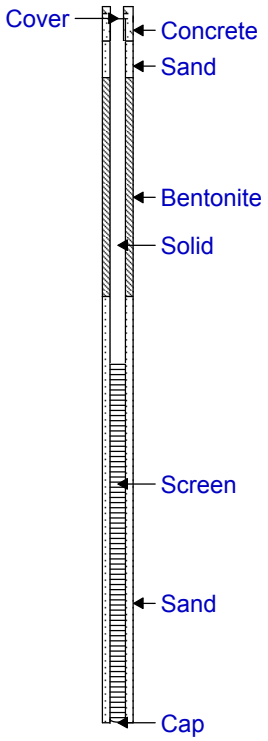
Apec: 25,26,27,32 ***Logged By: AS***

SUBSURFACE PROFILE

SAMPLE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)
0	0		Ground Surface	0.0				
0–3	0–1		***Sand and Gravel*** brown, loose, dry	1.0	1		G	
					2		G	70
3–10	1–3		***Silty Sand*** grey, medium dense, moist 1.5m - 3m: wet	3.0	3	BV-DUP9	G	65
					4		G	40
10–14	3–4		***Sandy Silt*** grey, medium dense, wet	4.5	5		G	50
					6		G	30
15			End of Borehole					

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 17, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: BV-11BH-05M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

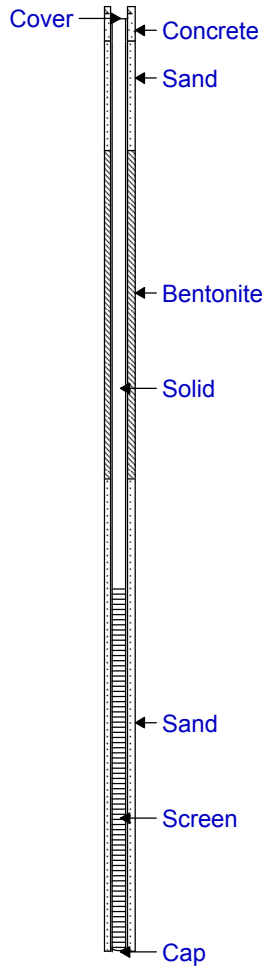
Client: Port Metro Vancouver

Apec: 25,26,27,32 ***Logged By: AS***

SUBSURFACE PROFILE / SAMPLE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)
0	0		Ground Surface	0.0				
0–1			***Sand and Gravel*** trace silt, brown, loose, dry	0.5	1		G	
2			***Silty Sand*** brown, medium dense, moist		2		G	35 ×
3–4	1							
5					3		G	45 ×
6–7	2				4		G	60 ×
8–9			3.0m: wet	3.0				
10	3		***Sandy Silt*** grey, medium dense, wet		5	BV-DUP10	G	70 ×
11–13	4							
14					6		G	30 ×
15			End of Borehole	4.5				

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 17, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: BV-11BH-07M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

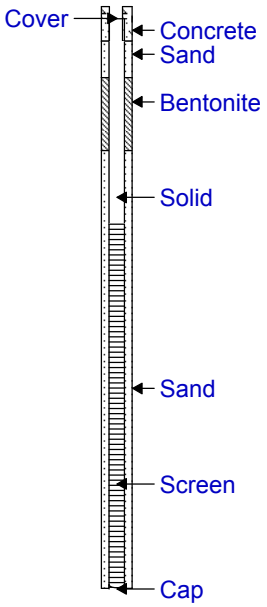
Apec: 21 ***Logged By: AS***

SUBSURFACE PROFILE

SAMPLE

Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)
0 / 0		Ground Surface	0.0				
0–5 / 0–1.5		***Medium Sand*** trace gravel, grey, loose, dry to moist, slight hydrocarbon odour	1.5	1		G	40
				2	BV-DUP8	G	55
5–6.5 / 1.5–2.0		***Silty Sand*** trace wood debris, dark grey, medium dense, wet	2.0	3		G	35
6.5–10 / 2.0–3.0		***Wood Fragments***	3.0	4		G	
10–13 / 3.0–4.0		***Silt*** grey, medium dense, moist to wet	4.0	5		G	15
13 / 4.0		End of Borehole					

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 17, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

CONSULTING ♦ ENGINEERING ♦ TECHNOLOGIES ♦

Borehole Log: BV-11BH-08M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 22 ***Logged By: AS***

SUBSURFACE PROFILE				SAMPLE					Well Completion Details
Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)		
0 / 0		Ground Surface	0.0						Cover
1		***Concrete***	0.36						Concrete
1		***Medium Sand*** dark grey, loose, dry to moist		1		G	55		Sand
2				2		G	35		
3 / 1									
4			1.5						Bentonite
5		***Sandy Silt*** grey, medium dense, moist		3		G	40		Solid
6 / 2									
7		2.5m - 3m: soft, wet		4		G	30		
8									Sand
9									
10 / 3				5		G	35		Screen
11									
12									Cap
13 / 4				6		G	50		
14			4.5						
15		End of Borehole							

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 16, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: BV-11BH-09M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 23 ***Logged By: AS***

SUBSURFACE PROFILE				SAMPLE					Well Completion Details
Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)		
0 / 0		Ground Surface	0.0						Cover → Concrete
		Asphalt							
1		***Silty Sand*** some organics, black, medium dense, moist	0.5	1		G	60 ×		Sand
2		***Sandy Silt*** wood fragments throughout, black, medium dense, moist		2		G	65 ×		
3 / 1									
4			1.5						Bentonite
5		***Wood Fragments*** some silt, brown, medium dense, moist		3		G	100 ×		Solid
6 / 2			2.0						
7		***Silt*** some organics, brownish grey, medium dense, moist		4		G	65 ×		
8									
9			3.0						Sand
10 / 3		***Sandy Silt*** grey, medium dense, wet		5		G	55 ×		Screen
11									
12									
13 / 4				6		G			Cap
14			4.5						
15		End of Borehole							

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 14, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

CONSULTING ♦ ENGINEERING ♦ TECHNOLOGIES ♦

Borehole Log: MV-11BH-01M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 2 ***Logged By: AS***

SUBSURFACE PROFILE

SAMPLE

Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)	Well Completion Details
0 / 0		Ground Surface	0.0					Cover → Concrete
0		***Asphalt***						
1		***Medium Sand*** brown, loose, dry to moist						← Sand
2								
3 / 1				1		G		← Bentonite
4								← Solid
5								
6 / 2								
7								
8			2.5					
9		***Silty Sand*** grey, medium dense, moist		2		G		
10 / 3			3.0					
11		***Wood Fragments and Organics*** some silt, brown, medium dense, moist		3		G		
12								
13 / 4								
14			4.5					
15		***Sandy Silt*** grey, loose, wet		4	MV-DUP6	G		← Sand
16								← Screen
17 / 5				5		G		
18								
19			6.0					← Cap
20 / 6		End of Borehole						

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 15, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-02M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 1,2,26,27 ***Logged By: AS***

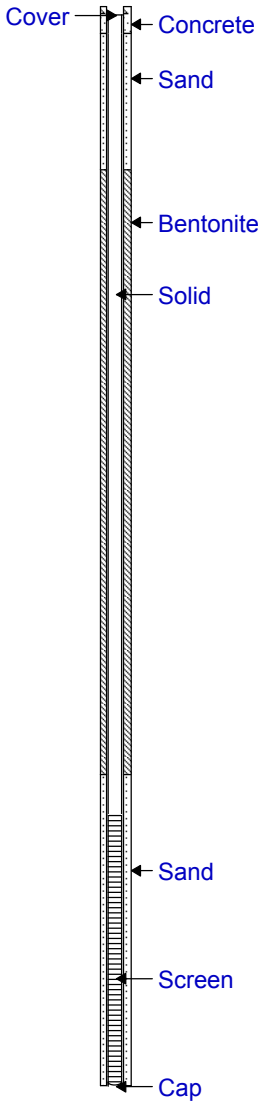
SUBSURFACE PROFILE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.0
0–6	0–2		***Medium Sand*** some gravel, brown, loose, dry 0m - 0.5m: little to no recovery	2.0
6–20	2–6		***Silty Sand*** trace organics, brown, medium dense, dry to moist 4.5m - 6m: wet	6.0
20	6		End of Borehole	

SAMPLE

Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)
1		G	
2		G	15
3		G	30
4		G	130
5		G	35
6		G	35

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 16, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-03M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 1,2,26,27 ***Logged By: AS***

SUBSURFACE PROFILE

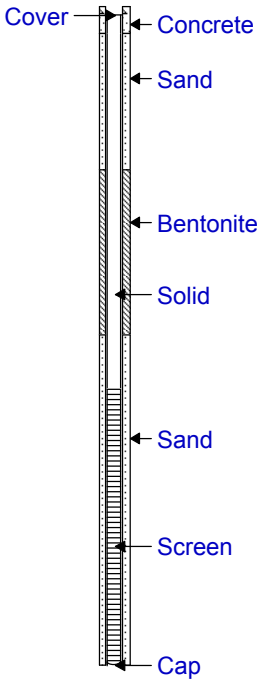
Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.0
0–5	0–1.5		***Medium Sand*** brown, loose, dry	1.5
5–10	1.5–3.0		***Silty Sand*** grey, medium dense, moist; 3.0m: wet	3.0
10–20	3.0–6.0		***Silt*** grey, medium dense, moist to wet	6.0
20	6		End of Borehole	

SAMPLE

Sample No.	Duplicate	Type	Vapour ppm
1		G	
2		G	
3		G	50 ×
4		G	40 ×
5		G	60 ×
6		G	

Vapour ppm: 200 600 1000 1400 1800

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 16, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

CONSULTING ♦ ENGINEERING ♦ TECHNOLOGIES ♦

Borehole Log: MV-11BH-04M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 7 ***Logged By: AS***

SUBSURFACE PROFILE

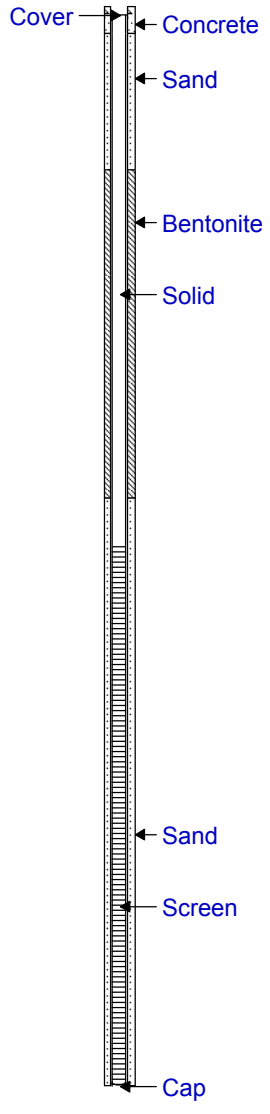
Depth (ft / m)	Symbol	Description	Depth/Elev.
0 / 0		Ground Surface	0.0
		Asphalt	
1 / 0		***Road Base*** sand and gravel, some cobbles, brown, medium dense, moist	
4 / 1			1.5
5 / 2		***Silt*** trace organics, grey, medium dense, moist	
14 / 4		4.5m to 5m: wood fragments	
19 / 6			6.0
20 / 6		End of Borehole	

SAMPLE

Sample No.	Duplicate	Type
1		G
2		G
3		G
4		G
5		G
6		G

Vapour ppm: 200 600 1000 1400 1800

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 16, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-05

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 9 ***Logged By: AS***

SUBSURFACE PROFILE				SAMPLE				
Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)	Well Completion Details
0 / 0		Ground Surface	0.0					
		Asphalt	0.15					
1 / 1		***Medium Sand*** grey, loose, moist		1		G		
2								
3 / 1								
4				2		G		
5			1.5					
6 / 2		***Silt*** some wood waste and organics, brown, medium dense, moist		3		G		
7								
8				4		G		
9								
10 / 3								
11				5		G		
12								
13 / 4								
14								
15			4.5					
		End of Borehole						

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 12, 2011

Hole Diameter: 6"

Well Diameter: n/a

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-06

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 9 ***Logged By: AS***

SUBSURFACE PROFILE				SAMPLE				
Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)	Well Completion Details
0 / 0		Ground Surface	0.0					
		Asphalt	0.1					
1		***Medium Sand*** wood fragments, grey, medium dense, moist						
2				1		G		
3 / 1			1.0					
4		***Organics*** wood debris, brown, medium dense, moist		2		G		
5			1.5					
6 / 2		***Silt*** some wood waste and organics, brown, medium dense, moist		3		G		
7								
8				4		G		
9								
10 / 3								
11				5		G		
12			3.75					
13 / 4		***Clayey Silt*** grey, medium dense, moist		6		G		
14			4.5					
15		End of Borehole						

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 12, 2011

Hole Diameter: 6"

Well Diameter: n/a

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-07M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 9 ***Logged By: AS***

SUBSURFACE PROFILE

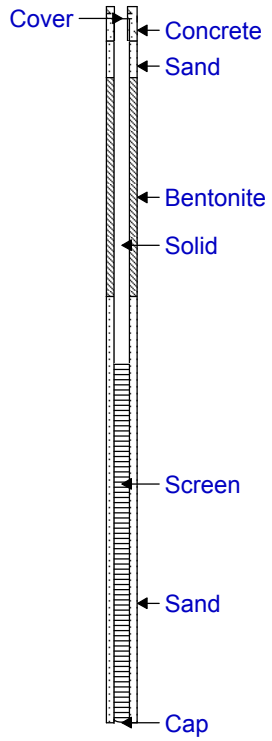
Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.0
0	0		***Asphalt***	
1			***Medium Sand*** grey, loose, moist, hydrocarbon odour 0.1m - 0.5m: no recovery	
5	1.5		***Silt*** some organics and wood waste, brown, medium dense, moist 1.5m - 3.0m: wet	
15	4.5		End of Borehole	

SAMPLE

Sample No.	Duplicate	Type
1		G
2		G
3		G
4		G
5		G
6		G

Vapour ppm: 200 600 1000 1400 1800

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 13, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-08

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 9 ***Logged By: AS***

SUBSURFACE PROFILE				SAMPLE				
Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)	Well Completion Details
0 / 0		Ground Surface	0.0					
		Asphalt						
1 / 2 / 3 / 1		***Silt*** some sand and clay, greyish brown, medium dense, moist		1 2	MV-DUP1	G G		
4 / 5			1.5					
6 / 2		***Silt*** some clay, grey, medium dense, moist to wet wood fragments throughout		3 4		G G		
10 / 3				5		G		
12 / 13 / 4								
14			4.5					
15		End of Borehole						

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 12, 2011

Hole Diameter: 6"

Well Diameter: n/a

Sheet: 1 of 1

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Borehole Log: MV-11BH-09

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 9 ***Logged By: AS***

SUBSURFACE PROFILE				SAMPLE				
Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)	Well Completion Details
0 / 0		Ground Surface	0.0					
		Asphalt	0.15					
1 / 1		***Sandy Silt*** brown, medium dense, moist 0.15 - 0.5m: little to no recovery		1		G		
3 / 1				2		G		
4 / 1			1.5					
5 / 2		***Silt*** organics and wood debris, brown, medium dense, moist		3		G		
6 / 2								
7 / 2				4		G		
8 / 2								
9 / 3								
10 / 3		3.0m - 4.5m: wet		5		G		
11 / 3								
12 / 3								
13 / 4				6		G		
14 / 4			4.5					
15 / 4		End of Borehole						

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 13, 2011

Hole Diameter: 6"

Well Diameter: n/a

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-10M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 9 ***Logged By: AS***

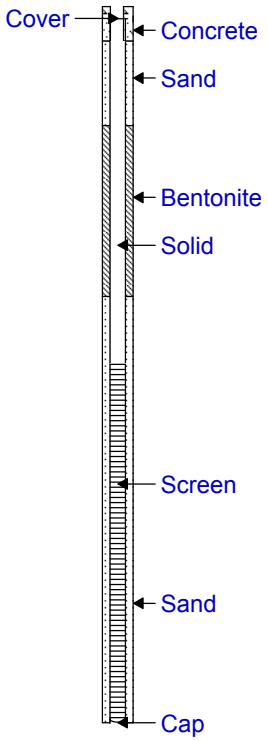
SUBSURFACE PROFILE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.0
0	0		***Asphalt***	
1			***Concrete Debris***	
2				0.75
3	1		***Medium Sand*** grey, loose, moist	
4				1.5
5			***Silt*** trace sand, brownish grey, medium dense, moist to wet	
6	2			2.0
7			***Silt*** wood debris, brown, medium dense, moist	
8				
9				
10	3			
11				
12				
13	4			
14				
15			End of Borehole	4.5

SAMPLE

Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)
1		G	0
2		G	45
3		G	0
4		G	0
5		G	

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 12, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-11M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 10,11 ***Logged By: AS***

SUBSURFACE PROFILE

SAMPLE

Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)	Well Completion Details
0 / 0		Ground Surface	0.0					Cover, Concrete
0–5 / 0–1.5		***Sandy Silt*** some organics, brownish grey, loose, moist	1.5	1	MV-DUP4	G	60 ×	Bentonite, Solid
5–15 / 1.5–4.5		***Silt*** some organics, brownish grey, medium dense, moist to wet	4.5	2		G	60 ×	Screen
				3		G	60 ×	Sand, Cap
				4		G	100 ×	
15 / 4.5		End of Borehole						

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 14, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

Borehole Log: MV-11BH-12M

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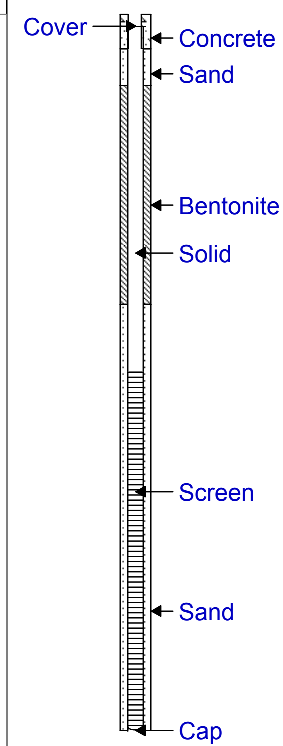
Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 14 ***Logged By: AS***

Depth (ft / m)	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm
0 / 0	Ground Surface	0.0				
0–4.5 m	***Silt and Wood Fragments*** brown, medium dense, moist 1.5m - 4.5m: moist to wet					
			1		G	70
			2		G	80
			3		G	55
			4		G	55
	End of Borehole	4.5				



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 14, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-13M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 14 ***Logged By: AS***

SUBSURFACE PROFILE

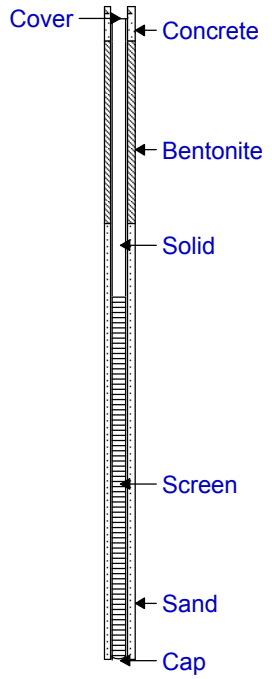
Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.0
0–5	0–1.5		***Wood Fragments*** trace sand, brown, loose, moist	1.5
5–15	1.5–4.5		***Silt*** some wood waste, brown, medium dense, wet 3.0m -4.5m: moist	4.5
15	4.5		End of Borehole	

SAMPLE

Sample No.	Duplicate	Type	Vapour ppm
1		G	65
2		G	55
3		G	55
4		G	100

Vapour ppm scale: 200 600 1000 1400 1800

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 14, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-14M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 16 ***Logged By: AS***

SUBSURFACE PROFILE				SAMPLE				
Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)	Well Completion Details
0 / 0		Ground Surface	0.0					Cover, Concrete
0		***Asphalt***						
1		***Medium Sand and Gravel*** greyish brown, loose, dry to moist		1		G	35	Bentonite
2 / 1		little to no recovery to 0.5m		2		G	30	Solid
4			1.5					
5		***Medium Sand*** some silt, gravel and organics, greyish brown, loose, wet		3		G	50	
6 / 2								Screen
7			2.25					
8		***Silt*** some organics and wood debris, brown, medium dense, moist		4		G	45	Sand
9								Cap
10 / 3				5		G	35	
12								
13 / 4								
14			4.5					
15		End of Borehole						

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 13, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-15M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 14 ***Logged By: AS***

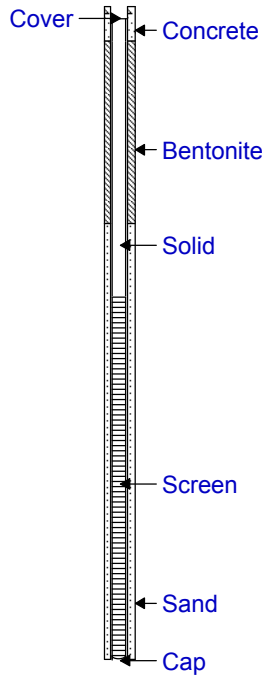
SUBSURFACE PROFILE

Depth (ft / m)	Symbol	Description	Depth/Elev.
0 / 0		Ground Surface	0.0
0		***Asphalt***	
1		***Medium Sand*** grey, loose, moist	
5 / 1.5		***Silt*** some organics and wood debris, grey, medium dense, moist to wet	
10 / 3		3.0 - 4.5m: some clay	
15 / 4.5		End of Borehole	

SAMPLE

Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)
1		G	
2		G	
3	MV-DUP3	G	
4		G	
5		G	

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 13, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-16M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 20 ***Logged By: AS***

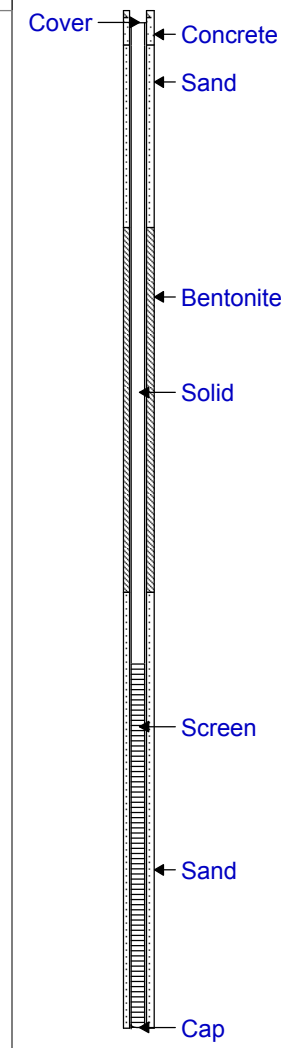
SUBSURFACE PROFILE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.0
0			***Asphalt***	
1			***Medium Sand*** grey, loose, dry to moist	
2			very little recovery to 0.5m	
3	1			1.0
4			***Sandy Silt*** grey, medium dense, moist 10% recovery	
5				1.5
6	2		***Silt*** some clay, grey, dense, moist	
7				
8				
9				
10	3			3.0
10			***Silt*** grey, dense, wet	
11				
12				
13	4			
14				4.5
15			End of Borehole	

SAMPLE

Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)
1	MV-DUP2	G	50
2		G	70
3		G	30
4		G	55
5		G	130

Well Completion Details



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 13, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

FRANZ ENVIRONMENTAL INC.

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Borehole Log: MV-11BH-17M

Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 34 ***Logged By: AS***

SUBSURFACE PROFILE

SAMPLE

Depth (ft / m)	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm (200 600 1000 1400 1800)	Well Completion Details
0 / 0		Ground Surface						Cover
		Asphalt	0.15					Concrete
		Concrete Debris some sand, grey, dry to moist						Sand
1 /				1		G	15	Bentonite
2 /								Solid
3 / 1			1.22					
4 /		***Silt*** grey, medium dense, moist		2		G	45	
5 /				3		G	30	Sand
6 /								
7 / 2								Screen
8 /				4		G	0	Cap
9 /								
10 / 3		End of Borehole	3.0					

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 15, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

APPENDIX C

DUPLICATE ANALYSIS (QA/QC) - SOIL

Station ID	RDL	BV-11BH-07M	BV-11BH-07M	RPD	MV-11BH-01M	MV-11BH-01M	RPD	MV-11BH-11M	MV-11BH-11M	RPD
Field label		BV-11BH-07M-2	BV-DUP8		MV-11BH-01M-4	MV-Dup		MV-11BH-11M-1	MV-Dup4	
Duplicate ID		BV-DUP8	BV-11BH-07M-2		MV-Dup	MV-11BH-01M-4		MV-Dup4	MV-11BH-11M-1	
Date		19/Dec/11	19/Dec/11		16/Dec/11	16/Dec/11		15/Dec/11	15/Dec/11	
Depth (m)		0.5 – 1	0.5 – 1		4.5 – 5	4.5 – 5		0.5 – 1	0.5 – 1	
Benzene	0.005	<0.005	<0.005	NC	<0.025	<0.025	NC	<0.005	<0.005	NC
Ethylbenzene	0.01	<0.01	<0.01	NC	<0.025	<0.025	NC	<0.01	<0.01	NC
Styrene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Toluene	0.05	<0.05	<0.05	NC	<0.025	<0.025	NC	0.10	<0.05	NC
m+p-Xylene	0.05	<0.05	<0.05	NC	<0.025	<0.025	NC	<0.05	<0.05	NC
o-Xylene	0.05	<0.05	<0.05	NC	<0.025	<0.025	NC	<0.05	<0.05	NC
Xylenes (total)	0.05	<0.05	<0.05	NC	-	-	-	<0.05	<0.05	NC

Notes

All units in ug/g.

"-" indicates that there is no applicable regulation or analyses were not performed.

"NC" indicates RPD not calculated due to the sample or its duplicate value being less than method detection limits.

Station ID	RDL	BV-11BH-07M	BV-11BH-07M	RPD	MV-11BH-11M	MV-11BH-11M	RPD	MV-11BH-16M	MV-11BH-16M	RPD
Field label		BV-11BH-07M-2	BV-DUP8		MV-11BH-11M-1	MV-Dup4		MV-11BH-16M-1	MV-Dup 2	
Duplicate ID		BV-DUP8	BV-11BH-07M-2		MV-Dup4	MV-11BH-11M-1		MV-Dup 2	MV-11BH-16M-1	
Date		19/Dec/11	19/Dec/11		15/Dec/11	15/Dec/11		14/Dec/11	14/Dec/11	
Depth (m)		0.5 – 1	0.5 – 1		0.5 – 1	0.5 – 1		0.5 – 1	0.5 – 1	
HEPH	25	110	33	NC	1100	2600	81%	<25	<25	NC
LEPH	25	30	<25	NC	68	120	NC	<25	<25	NC
VPH (VH6-10) minus BTEX	10	<10	<10	NC	27	<10	NC	-	-	-
F1 (C6-C10)	10	<10	<10	NC	<10	<10	NC	-	<10	NC
F1 (C6-C10) minus BTEX	10	<10	<10	NC	<10	<10	NC	-	<10	NC
F2 (C10-C16)	10	29	13	NC	20	18	NC	<10	<10	NC
F3 (C16-C34)	10	206	136	41%	1150	1030	11%	<10	<10	NC
F4 (C34-C50)	10	92	80	14%	818	760	7%	12	<10	NC

Station ID	RDL	MV-11BH-17M	MV-11BH-17M	RPD
Field label		MV-11BH-17M-3	MV-DUP7	
Duplicate ID		MV-DUP7	MV-11BH-17M-3	
Date		16/Dec/11	16/Dec/11	
Depth (m)		1.5 – 2	1.5 – 2	
HEPH	25	56	49	NC
LEPH	25	<25	<25	NC
VPH (VH6-10) minus BTEX	10	-	-	-
F1 (C6-C10)	10	-	-	-
F1 (C6-C10) minus BTEX	10	-	-	-
F2 (C10-C16)	10	<10	<10	NC
F3 (C16-C34)	10	29	29	NC
F4 (C34-C50)	10	25	21	NC

Notes

All units in ug/g.

"-" indicates that there is no applicable regulation or analyses were not performed.

"NC" indicates RPD not calculated due to the sample or its duplicate value being less than method detection limits.

Station ID	RDL	BV-11BH-07M	BV-11BH-07M	RPD	MV-11BH-02M	MV-11BH-02M	RPD	MV-11BH-11M	MV-11BH-11M	RPD
Field label		BV-11BH-07M-2	BV-DUP8		MV-11BH-02M-5	MV-Dup		MV-11BH-11M-1	MV-Dup4	
Duplicate ID		BV-DUP8	BV-11BH-07M-2		MV-Dup	MV-11BH-02M-5				
Date		19/Dec/11	19/Dec/11		16/Dec/11	17/Dec/11		15/Dec/11	15/Dec/11	
Depth (m)		0.5 – 1	0.5 – 1		4.5 – 5	4.5 – 5		0.5 – 1	0.5 – 1	
Bromodichloromethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Bromoform	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Bromomethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Carbon tetrachloride	0.025	-	-	-	<0.025	<0.025	NC	-	-	-
Chlorobenzene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Chlorodibromomethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Chloroethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Chloroform	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Chloromethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
1,2-Dichlorobenzene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
1,3-Dichlorobenzene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
1,4-Dichlorobenzene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
1,1-Dichloroethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
1,2-Dichloroethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
1,1-Dichloroethene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
cis-1,2-Dichloroethene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
trans-1,2-Dichloroethene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Dichloromethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
1,2-Dichloropropane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
cis-1,3-Dichloropropene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
trans-1,3-Dichloropropene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Ethylene dibromide	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Methyl ethyl ketone	0.5	-	-	-	<0.5	<0.5	NC	-	-	-
Methyl isobutyl ketone	0.5	-	-	-	<0.5	<0.5	NC	-	-	-
Methyl tert-butyl ether	0.05	<0.1	<0.1	NC	<0.1	<0.05	NC	<0.1	<0.1	NC
1,1,1,2-Tetrachloroethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
1,1,2,2-Tetrachloroethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Tetrachloroethene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
1,2,4-Trichlorobenzene	0.05				<0.05	<0.05	NC			
1,1,1-Trichloroethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
1,1,2-Trichloroethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Trichloroethene	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Trichlorofluoromethane	0.05	-	-	-	<0.05	<0.05	NC	-	-	-
Vinyl chloride	0.05	-	-	-	<0.05	<0.05	NC	-	-	-

Notes

All units in ug/g, unless otherwise noted.

"-" indicates that there is no applicable regulation or analyses were not performed.

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Station ID	RDL	BV-11BH-07M	BV-11BH-07M	RPD	MV-11BH-11M	MV-11BH-11M	RPD	MV-11BH-16M	MV-11BH-16M	RPD
Field label		BV-11BH-07M-2	BV-DUP8		MV-11BH-11M-1	MV-Dup4		MV-11BH-16M-1	MV-Dup 2	
Duplicate ID		BV-DUP8	BV-11BH-07M-2		MV-Dup4	MV-11BH-11M-1		MV-Dup 2	MV-11BH-16M-1	
Date		19/Dec/11	19/Dec/11		15/Dec/11	15/Dec/11		14/Dec/11	14/Dec/11	
Depth (m)		0.5 – 1	0.5 – 1		0.5 – 1	0.5 – 1		0.5 – 1	0.5 – 1	
Acenaphthene	0.01	<0.01	<0.01	NC	0.23	0.30	26%	<0.01	<0.01	NC
Acenaphthylene	0.01	<0.01	<0.01	NC	0.04	0.08	NC	<0.01	<0.01	NC
Anthracene	0.02	<0.02	<0.02	NC	0.30	0.48	46%	<0.02	<0.02	NC
Benzo[a]anthracene	0.02	<0.02	<0.02	NC	0.80	1.00	22%	<0.02	<0.02	NC
Benzo[a]pyrene	0.05	<0.05	<0.05	NC	0.68	0.90	28%	<0.05	<0.05	NC
Benzo[b]fluoranthene	0.02	<0.02	<0.02	NC	0.58	0.88	41%	<0.02	<0.02	NC
Benzo[ghi]perylene	0.05	<0.05	<0.05	NC	0.31	0.30	3%	<0.05	<0.05	NC
Benzo[k]fluoranthene	0.02	<0.02	<0.02	NC	0.29	0.35	19%	<0.02	<0.02	NC
Chrysene	0.05	<0.05	<0.05	NC	0.68	1.00	38%	<0.05	<0.05	NC
Dibenzo[a,h]anthracene	0.02	<0.02	<0.02	NC	0.08	0.12	NC	<0.02	<0.02	NC
Fluoranthene	0.05	<0.05	<0.05	NC	1.80	2.30	24%	<0.05	<0.05	NC
Fluorene	0.02	0.03	0.02	NC	0.31	0.44	35%	<0.02	<0.02	NC
Indeno[1,2,3-cd]pyrene	0.02	<0.02	<0.02	NC	0.31	0.38	20%	<0.02	<0.02	NC
2-Methylnaphthalene	0.01	0.14	0.14	0%	0.19	0.21	10%	<0.01	<0.01	NC
Naphthalene	0.01	0.02	0.02	NC	0.32	0.37	14%	<0.01	<0.01	NC
Phenanthrene	0.02	0.07	0.07	NC	1.20	1.90	45%	<0.02	<0.02	NC
Pyrene	0.02	<0.02	0.02	NC	1.60	2.20	32%	<0.02	<0.02	NC

Station ID	RDL	MV-11BH-17M	MV-11BH-17M	RPD
Field label		MV-11BH-17M-3	MV-DUP7	
Duplicate ID		MV-DUP7	MV-11BH-17M-3	
Date		16/Dec/11	16/Dec/11	
Depth (m)		1.5 – 2	1.5 – 2	
Acenaphthene	0.01	<0.01	<0.01	NC
Acenaphthylene	0.01	<0.01	<0.01	NC
Anthracene	0.02	<0.02	<0.02	NC
Benzo[a]anthracene	0.02	<0.02	0.02	NC
Benzo[a]pyrene	0.05	<0.05	<0.05	NC
Benzo[b]fluoranthene	0.02	<0.02	0.02	NC
Benzo[ghi]perylene	0.05	<0.05	<0.05	NC
Benzo[k]fluoranthene	0.02	<0.02	<0.02	NC
Chrysene	0.05	<0.05	<0.05	NC
Dibenzo[a,h]anthracene	0.02	<0.02	<0.02	NC
Fluoranthene	0.05	<0.05	<0.05	NC
Fluorene	0.02	<0.02	<0.02	NC
Indeno[1,2,3-cd]pyrene	0.02	<0.02	<0.02	NC
2-Methylnaphthalene	0.01	<0.01	0.01	NC
Naphthalene	0.01	<0.01	0.01	NC
Phenanthrene	0.02	<0.02	0.03	NC
Pyrene	0.02	<0.02	0.03	NC

Notes

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Station ID	RDL	BV-11BH-01M	BV-11BH-01M	RPD	BV-11BH-04M	BV-11BH-04M	RPD	MV-11BH-15M	MV-11BH-15M	RPD
Field label		BV-11BH-01M-5	BV-Dup5		BV-11BH-04M-3	BV-Dup9		MV-11BH-15M-3	MV-Dup 3	
Duplicate ID		BV-Dup5	BV-11BH-01M-5		BV-Dup9	BV-11BH-04M-3		MV-Dup 3	MV-11BH-15M-3	
Date		15/Dec/11	15/Dec/11		19/Dec/11	19/Dec/11		14/Dec/11	14/Dec/11	
Depth (m)		3 – 4	3 – 4		1.5 – 2	1.5 – 2		1.5 – 2	1.5 – 2	
4-Chloro-3-methylphenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2-Chlorophenol	0.002	<0.002	<0.002	NC	<0.002	<0.002	NC	-	-	-
o-Cresol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
m+p-Cresol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2,4-Dichlorophenol	0.003	<0.003	<0.003	NC	<0.002	<0.002	NC	-	-	-
2,6-Dichlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2,4-Dimethylphenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2,4-Dinitrophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2-Methyl 4,6-dinitrophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
Dinoseb	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2-Nitrophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
4-Nitrophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
Pentachlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
Phenol	0.002	<0.002	<0.002	NC	<0.002	<0.002	NC	-	-	-
2,3,4,5-Tetrachlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2,3,4,6-Tetrachlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2,3,5,6-Tetrachlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2,3,4-Trichlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2,3,5-Trichlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2,3,6-Trichlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2,4,5-Trichlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
2,4,6-Trichlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
3,4,5-Trichlorophenol	0.005	<0.005	<0.005	NC	<0.005	<0.005	NC	-	-	-
Total Phenolics	0.050	-	-	-	-	-	-	4.40	2.70	48%

Notes

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Station ID	RDL	BV-11BH-01M	BV-11BH-01M	RPD	BV-11BH-04M	BV-11BH-04M	RPD	BV-11BH-05M	BV-11BH-05M	RPD
Field label		BV-11BH-01M-5	BV-Dup5		BV-11BH-04M-3	BV-Dup9		BV-11BH-05M-5	BV-Dup10	
Duplicate ID		BV-Dup5	BV-11BH-01M-5		BV-Dup9	BV-11BH-04M-3		BV-Dup10	BV-11BH-05M-5	
Date		15/Dec/11	15/Dec/11		19/Dec/11	19/Dec/11		19/Dec/11	19/Dec/11	
Depth (m)		3 – 4	3 – 4		1.5 – 2	1.5 – 2		3 – 4	3 – 4	
Antimony	0.05	0.56	0.64	13%	0.66	0.29	78%	0.48	0.44	9%
Arsenic	0.1	17.2	17.5	2%	7.0	5.4	26%	11.7	14.6	22%
Barium	0.5	87.7	86.9	1%	57.0	54.7	4%	81.0	76.8	5%
Beryllium	0.02	0.34	0.31	9%	0.20	0.18	11%	0.26	0.27	4%
Boron	0.1	0.4	0.4	NC	0.2	0.2	NC	0.2	0.2	NC
Cadmium	0.01	0.31	0.31	0%	0.12	0.12	0%	0.22	0.24	9%
Chromium	1	43	40	7%	30	28	7%	35	34	3%
Cobalt	0.1	11.4	11.0	4%	8.2	7.9	4%	10.6	10.4	2%
Copper	0.2	30.7	30.3	1%	16.7	15.2	9%	27.6	28.1	2%
Lead	0.05	7.65	7.39	3%	3.24	2.89	11%	5.59	6.34	13%
Mercury	0.01	0.06	0.06	0%	0.03	0.02	NC	0.04	0.04	NC
Molybdenum	0.05	0.81	0.80	1%	0.47	0.42	11%	0.58	0.70	19%
Nickel	0.5	37.8	37.5	1%	32.0	31.2	3%	36.4	36.4	0%
Selenium	0.1	0.6	0.6	0%	0.2	0.3	NC	0.4	0.4	NC
Silver	0.05	0.10	0.10	NC	0.06	<0.05	NC	0.07	0.08	NC
Thallium	0.05	0.09	0.09	NC	0.06	<0.05	NC	0.08	0.08	NC
Tin	0.05	0.70	0.93	28%	0.32	0.35	9%	0.49	0.46	6%
Uranium	0.05	0.70	0.69	1%	0.39	0.33	17%	0.54	0.55	2%
Vanadium	1	44	43	2%	41	40	2%	46	44	4%
Zinc	1	66	64	3%	40	41	2%	60	59	2%

Station ID	RDL	MV-11BH-08	MV-11BH-08	RPD
Field label		MV-11BH-08-2	MV-Dup1	
Duplicate ID		MV-Dup1	MV-11BH-08-2	
Date		12/Dec/11	12/Dec/11	
Depth (m)		0.5 – 1	0.5 – 1	
Antimony	0.05	0.42	0.51	19%
Arsenic	0.1	4.5	5.1	13%
Barium	0.5	98.5	119.0	19%
Beryllium	0.02	0.38	0.52	31%
Boron	0.1	0.2	0.2	NC
Cadmium	0.01	0.09	0.09	0%
Chromium	1	39	50	25%
Cobalt	0.1	11.6	13.5	15%
Copper	0.2	18.4	20.8	12%
Lead	0.05	6.54	8.13	22%
Mercury	0.01	0.04	0.04	NC
Molybdenum	0.05	0.51	0.85	50%
Nickel	0.5	32.0	36.5	13%
Selenium	0.1	0.4	0.6	NC
Silver	0.05	<0.05	<0.05	NC
Thallium	0.05	0.10	0.13	NC
Tin	0.05	0.38	0.43	12%
Uranium	0.05	0.75	0.94	22%
Vanadium	1	59	68	14%
Zinc	1	70	84	18%

Notes

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Area ID	CCME IL (Fine, Surface)	CCME IL (Coarse, Surface)	CCME IL (Fine, Subsoil)	BC CSR IL (STRINGENT)	25, 26, 27, 30	25, 26, 27, 30	25, 26, 27, 30	RPD	23	23	10, 11	10, 11	RPD	10, 11	14	14	14	14
Station ID					BV-11BH-01M	BV-11BH-01M	BV-11BH-01M		BV-11BH-09M	BV-11BH-09M	MV-11BH-11M	MV-11BH-11M		MV-11BH-11M	MV-11BH-12M	MV-11BH-12M	MV-11BH-13M	MV-11BH-13M
Field label					BV-11BH-01M-2	BV-11BH-01M-5	BV-Dup5		BV-11BH-09M-1	BV-11BH-09M-5	MV-11BH-11M-1	MV-Dup4		MV-11BH-11M-4	MV-11BH-12M-1	MV-11BH-12M-2	MV-11BH-13M-2	MV-11BH-13M-3
Duplicate ID																		
Date					15/Dec/11	15/Dec/11	15/Dec/11		15/Dec/11	15/Dec/11	15/Dec/11	15/Dec/11		15/Dec/11	15/Dec/11	15/Dec/11	15/Dec/11	15/Dec/11
Lab report ID					11V559640	11V559640	11V559640		11V559640	11V559640	11V559640	11V559640		11V559640	11V559640	11V559640	11V559640	11V559640
Consultants																		
Depth (m)					0.5 – 1	3 – 4	3 – 4		0 – 0.5	3 – 4	0.5 – 1	0.5 – 1		3 – 4	0.5 – 1	1.5 – 2	1.5 – 2	2 – 3
Grain Type					coarse	fine	fine		coarse	fine	fine	fine		fine	fine	fine	fine	fine
Monocyclic Aromatic Hydrocarbons																		
Benzene	0.0068	0.03	0.0068	0.04	<0.005	<0.005	-	-	-	-	<0.005	<0.005	NC	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	0.018	0.082	0.018	7	<0.01	<0.01	-	-	-	-	<0.01	<0.01	NC	<0.01	<0.01	<0.01	<0.01	<0.01
Styrene	50	50	50	50	<0.05	<0.05	-	-	-	-	<0.05	<0.05	NC	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	0.08	0.37	0.08	2.5	<0.05	<0.05	-	-	-	-	0.10	<0.05	NC	<0.05	0.13	<0.05	<0.05	<0.05
m+p-Xylene	-	-	-	-	<0.05	<0.05	-	-	-	-	<0.05	<0.05	NC	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	-	-	-	-	<0.05	<0.05	-	-	-	-	<0.05	<0.05	NC	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (total)	2.4	11	2.4	20	<0.05	<0.05	-	-	-	-	<0.05	<0.05	NC	<0.05	<0.05	<0.05	<0.05	<0.05
Metals																		
Antimony	40	40	40	40	0.31	0.56	0.64	13%	2.05	0.49	1.36	-	-	0.90	1.17	0.56	0.58	0.53
Arsenic	12	12	12	15	3.6	*17.2*	*17.5*	2%	4.5	6.2	5.1	-	-	11.6	5.7	3.9	3.4	3.8
Barium	2000	2000	2000	400	57.9	87.7	86.9	1%	174.0	93.3	61.4	-	-	160.0	74.3	182.0	171.0	157.0
Beryllium	8	8	8	8	0.21	0.34	0.31	9%	0.26	0.32	0.14	-	-	0.64	0.17	0.61	0.58	0.44
Boron	—	—	—	-	0.1	0.4	0.4	NC	1.5	0.8	2.2	-	-	0.3	2.5	0.1	0.1	0.1
Cadmium	22	22	22	1.5 to 25	0.12	0.31	0.31	0%	0.25	0.27	0.48	-	-	0.37	1.05	0.26	0.19	0.16
Chromium	87	87	87	60	25	43	40	7%	38	34	30	-	-	41	26	51	52	41
Cobalt	300	300	300	300	7.2	11.4	11.0	4%	7.5	11.6	4.7	-	-	10.4	3.0	8.6	7.5	7.4
Copper	91	91	91	200 to 250	18.0	30.7	30.3	1%	31.1	29.8	27.7	-	-	47.5	27.1	29.9	27.7	18.9
Lead	600	600	600	100 to 2000	3.30	7.65	7.39	3%	18.10	7.47	46.20	-	-	10.30	*107.00*	11.80	11.70	11.00
Mercury	50	50	50	150	0.02	0.06	0.06	0%	0.03	0.06	0.06	-	-	0.08	0.14	0.08	0.08	0.06
Molybdenum	40	40	40	40	0.72	0.81	0.80	1%	2.14	0.69	3.52	-	-	4.70	2.55	0.64	0.52	0.57
Nickel	50	50	50	500	30.1	37.8	37.5	1%	29.0	38.6	18.7	-	-	40.9	12.5	30.5	30.5	27.2
Selenium	2.9	2.9	2.9	10	0.2	0.6	0.6	0%	0.3	0.6	0.5	-	-	1.4	0.5	0.8	0.8	0.6
Silver	40	40	40	40	<0.05	0.10	0.10	NC	0.08	0.09	0.09	-	-	0.16	0.10	0.10	0.10	0.07
Thallium	1	1	1	-	<0.05	0.09	0.09	NC	<0.05	0.08	<0.05	-	-	0.15	0.07	0.24	0.14	0.17
Tin	300	300	300	300	0.28	0.70	0.93	28%	3.92	1.70	1.33	-	-	0.67	2.89	0.89	1.00	1.52
Uranium	300	300	300	200	0.38	0.70	0.69	1%	0.84	0.67	0.74	-	-	2.46	0.55	1.88	1.31	1.27
Vanadium	130	130	130	-	36	44	43	2%	40	47	32	-	-	62	26	61	61	49
Zinc	360	360	360	150 to 600	39	66	64	3%	80	64	108	-	-	76	*422*	57	53	58
Polycyclic Aromatic Hydrocarbons																		
Acenaphthene	0.28	0.28	0.28	-	<0.01	0.01	-	-	<0.01	<0.01	0.23	0.30	26%	<0.01	0.02	<0.01	<0.01	<0.01
Acenaphthylene	320	320	320	-	<0.01	0.01	-	-	0.01	<0.01	0.04	0.08	NC	<0.01	0.13	<0.01	<0.01	<0.01
Anthracene	32	32	32	-	<0.02	<0.02	-	-	<0.02	<0.02	0.30	0.48	46%	<0.02	0.07	<0.02	<0.02	<0.02
Benzo[a]anthracene	10	10	10	10	<0.02	<0.02	-	-	<0.02	<0.02	0.80	1.00	22%	<0.02	0.10	<0.02	<0.02	<0.02
Benzo[a]pyrene	72	72	72	10	<0.05	<0.05	-	-	<0.05	<0.05	0.68	0.90	28%	<0.05	0.10	<0.05	<0.05	<0.05
Benzo[b]fluoranthene	10	10	10	10	<0.02	<0.02	-	-	<0.02	<0.02	0.58	0.88	41%	<0.02	0.16	<0.02	<0.02	<0.02
Benzo[ghi]perylene	-	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	0.31	0.30	3%	<0.05	0.10	<0.05	<0.05	<0.05
Benzo[k]fluoranthene	10	10	10	10	<0.02	<0.02	-	-	<0.02	<0.02	0.29	0.35	19%	<0.02	0.05	<0.02	<0.02	<0.02
Chrysene	-	-	-	-	<0.05	<0.05	-	-	<0.05	<0.05	0.68	1.00	38%	<0.05	0.10	<0.05	<0.05	<0.05
Dibenzo[a,h]anthracene	10	10	10	10	<0.02	<0.02	-	-	<0.02	<0.02	0.08	0.12	NC	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	180	180	180	-	<0.05	<0.05	-	-	<0.05	<0.05	1.80	2.30	24%	<0.05	0.50	<0.05	<0.05	<0.05
Fluorene	0.25	0.25	0.25	-	<0.02	<0.02	-	-	<0.02	<0.02	0.31	0.44	35%	<0.02	0.06	<0.02	<0.02	<0.02
Indeno[1,2,3-cd]pyrene	10	10	10	10	<0.02	<0.02	-	-	<0.02	<0.02	0.31	0.38	20%	<0.02	<0.02	<0.02	<0.02	<0.02
2-Methylnaphthalene	-	-	-	-	<0.01	<0.01	-	-	0.04	<0.01	0.19	0.21	10%	<0.01	0.19	<0.01	0.01	<0.01
Naphthalene	0.013	0.013	0.013	50	<0.01	0.03	-	-	**0.09**	0.01	0.32	0.37	14%	<0.01	0.89	<0.01	0.02	0.01
Phenanthrene	0.046	0.046	0.046	50	<0.02	0.04	-	-	0.02	0.03	1.20	1.90	45%	<0.02	0.52	<0.02	0.04	<0.02
Pyrene	100	100	100	100	<0.02	0.04	-	-	0.03	0.03	1.60	2.20	32%	<0.02	0.50	<0.02	0.02	<0.02
Petroleum Hydrocarbons																		
HEPH	-	-	-	5000	<25	79	-	-	600	60	1100	2600	81%	260	1100	250	203	201
LEPH	-	-	-	2000	<25	<25	-	-	41	<25	68	120	NC	<25	180	26	<25	<25
VPH (VH6-10) minus BTEX	-	-	-	200	<10	<10	-	-	-	-	27	<10	NC	<10	67	<10	<10	22
F1 (C6-C10)	-	-	-	-	<10	<10	-	-	-	-	<10	<10	NC	<10	<10	<10	<10	<10
F1 (C6-C10) minus BTEX	320	320	800	-	<10	<10	-	-	-	-	<10	<10	NC	<10	<10	<10	<10	<10
F2 (C10-C16)	260	260	1000	-	<10	<10	-	-	<10	<10	20	18	NC	13	99	<10	<10	<10
F3 (C16-C34)	2500	1700	5000	-	<10	97	-	-	494	12	1150	1030	11%	412	1490	171	139	244
F4 (C34-C50)	6600	3300	10000	-	<10	39	-	-	344	<10	818	760	7%	306	1060	240	62	115
F4SG Gravimetric	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Phenols																		
pH	6 to 8	6 to 8	6 to 8	-	-	-	-	-	-	-	-	-		-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2-Chlorophenol	5	5	5	5	<0.002	<0.002	<0.002	NC	<0.002	<0.002	<0.002	-	-	<0.002	<0.002	<0.002	<0.002	<0.002
o-Cresol	-	-	-	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
m+p-Cresol	-	-	-	-	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	0.474	<0.005	<0.005	<0.005
2,4-Dichlorophenol	5	5	5	5	<0.003	<0.003	<0.003	NC	<0.003	<0.003	<0.003	-	-	<0.003	<0.003	<0.003	<0.003	<0.003
2,6-Dichlorophenol	5	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	10	10	10	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dinitrophenol	10	10	10	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
Dinoseb	-	-	-	620	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2-Methyl 4,6-dinitrophenol	10	10	10	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2-Nitrophenol	10	10	10	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
4-Nitrophenol	10	10	10	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
Pentachlorophenol	7.6	7.6	7.6	0.15 to 0.3	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	0.034
Phenol	3.8	3.8	3.8	10	<0.002	<0.002	<0.002	NC	<0.002	<0.002	<0.002	-	-	<0.002	0.097	<0.002	<0.002	0.014
2,3,4,5-Tetrachlorophenol	5	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	5	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	5	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4-Trichlorophenol	5	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5-Trichlorophenol	5	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	5	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,5-Trichlorophenol	5	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,6-Trichlorophenol	5	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
3,4,5-Trichlorophenol	5	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
Volatile Organic Compound																		
Methyl tert-butyl ether	-	-	-	700	<0.1	<0.1	-	-	-	-	<0.1	<0.1	NC	<0.1	<0.1	<0.1	<0.1	<0.1

Notes
All units in ug/g, unless otherwise noted.
"-" indicates that there is no applicable standard or analyses were not performed.
Red cells indicates parameter exceeds CCME IL (Fine, Surface). (Current as of 16-November-2012)
Bold indicates parameter exceeds CCME IL (Coarse, Surface). (Current as of 16-November-2012)
Underline indicates parameter exceeds CCME IL (Fine, Subsoil). (Current as of 16-November-2012)
Italic and dark blue text indicates parameter exceeds BC CSR IL (STRINGENT). (Current as of 16-November-2012)

DQO Table for Soil Samples
Collected December 17, 2011

Area ID	CCME IL (Coarse, Surface)	CCME IL (Fine, Subsoil)	BC CSR IL (STRINGENT)	25, 26, 27, 30	25, 26, 27, 30	25, 26, 27, 30	RPD	25, 26, 27, 30	25, 26, 27, 30	25, 26, 27, 30	RPD	21	21	RPD	21
Station ID				BV-11BH-04M	BV-11BH-04M	BV-11BH-04M		BV-11BH-05M	BV-11BH-05M	BV-11BH-05M		BV-11BH-07M	BV-11BH-07M		BV-11BH-07M
Field label				BV-11BH-04M-1	BV-11BH-04M-3	BV-Dup9		BV-11BH-05M-1	BV-11BH-05M-5	BV-Dup10		BV-11BH-07M-2	BV-DUP8		BV-11BH-07M-3
Duplicate ID					BV-Dup9	BV-11BH-04M-3			BV-Dup10	BV-11BH-05M-5		BV-DUP8	BV-11BH-07M-2		
Date				17/Dec/11	17/Dec/11	17/Dec/11		17/Dec/11	17/Dec/11	17/Dec/11		17/Dec/11	17/Dec/11		17/Dec/11
Lab report ID				11V560784	11V560784	11V560784		11V560784	11V560784	11V560784		11V560784	11V560784		11V560784
Consultants												Franz	Franz		Franz
Depth (m)				0 – 0.5	1.5 – 2	1.5 – 2		0 – 0.5	3 – 4	3 – 4		0.5 – 1	0.5 – 1		1.5 – 2
Grain Type				coarse	coarse	coarse		coarse	fine	fine		coarse	coarse		coarse
Monocyclic Aromatic Hydrocarbons															
Benzene	0.03	0.0068	0.04	<0.005	<0.005	-	-	<0.005	<0.005	-	-	<0.005	<0.005	NC	<0.005
Ethylbenzene	0.082	0.018	7	<0.01	<0.01	-	-	<0.01	<0.01	-	-	<0.01	<0.01	NC	<0.01
Styrene	50	50	50	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	<0.05	NC	<0.05
Toluene	0.37	0.08	2.5	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	<0.05	NC	<0.05
m+p-Xylene				<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	<0.05	NC	<0.05
o-Xylene				<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	<0.05	NC	<0.05
Xylenes (total)	11	2.4	20	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	<0.05	NC	<0.05
Metals															
Antimony	40	40	40	0.56	0.66	0.29	78%	0.92	0.48	0.44	9%	-	-	-	-
Arsenic	12	12	15	4.4	7.0	5.4	26%	5.2	11.7	**14.6**	22%	-	-	-	-
Barium	2000	2000	400	80.5	57.0	54.7	4%	69.5	81.0	76.8	5%	-	-	-	-
Beryllium	8	8	8	0.24	0.20	0.18	11%	0.21	0.26	0.27	4%	-	-	-	-
Boron	50	50	150	1.2	0.2	0.2	NC	0.3	0.2	0.2	NC	-	-	-	-
Cadmium	22	22	2 to 2.5	0.37	0.12	0.12	0%	0.22	0.22	0.24	9%	-	-	-	-
Chromium	87	87	60	37	30	28	7%	29	35	34	3%	-	-	-	-
Cobalt	300	300	300	8.5	8.2	7.9	4%	8.3	10.6	10.4	2%	-	-	-	-
Copper	91	91	250	27.3	16.7	15.2	9%	24.0	27.6	28.1	2%	-	-	-	-
Lead	600	600	2000	18.60	3.24	2.89	11%	14.80	5.59	6.34	13%	-	-	-	-
Mercury	50	50	150	0.05	0.03	0.02	NC	0.04	0.04	0.04	NC	-	-	-	-
Molybdenum	40	40	40	2.24	0.47	0.42	11%	0.75	0.58	0.70	19%	-	-	-	-
Nickel	50	50	500	31.1	32.0	31.2	3%	30.1	36.4	36.4	0%	-	-	-	-
Selenium	2.9	2.9	10	0.4	0.2	0.3	NC	0.3	0.4	0.4	NC	-	-	-	-
Silver	40	40	40	0.09	0.06	<0.05	NC	0.06	0.07	0.08	NC	-	-	-	-
Thallium	1	1		0.07	0.06	<0.05	NC	0.06	0.08	0.08	NC	-	-	-	-
Tin	300	300	300	1.30	0.32	0.35	9%	0.86	0.49	0.46	6%	-	-	-	-
Uranium	300	300		0.54	0.39	0.33	17%	0.43	0.54	0.55	2%	-	-	-	-
Vanadium	130	130		40	41	40	2%	43	46	44	4%	-	-	-	-
Zinc	360	360	300 to 600	108	40	41	2%	125	60	59	2%	-	-	-	-
Polycyclic Aromatic Hydrocarbons															
Acenaphthene	0.28	0.28		<0.01	<0.01	-	-	<0.01	<0.01	-	-	<0.01	<0.01	NC	<0.01
Acenaphthylene	320	320		<0.01	<0.01	-	-	<0.01	0.02	-	-	<0.01	<0.01	NC	0.01
Anthracene	32	32		<0.02	<0.02	-	-	<0.02	0.02	-	-	<0.02	<0.02	NC	<0.02
Benzo[a]anthracene	10	10	10	0.02	<0.02	-	-	<0.02	0.13	-	-	<0.02	<0.02	NC	<0.02
Benzo[a]pyrene	72	72	10	<0.05	<0.05	-	-	<0.05	0.15	-	-	<0.05	<0.05	NC	<0.05
Benzo[b]fluoranthene	10	10	10	0.03	<0.02	-	-	<0.02	0.11	-	-	<0.02	<0.02	NC	<0.02
Benzo[ghi]perylene				<0.05	<0.05	-	-	<0.05	0.07	-	-	<0.05	<0.05	NC	<0.05
Benzo[k]fluoranthene	10	10	10	<0.02	<0.02	-	-	<0.02	0.06	-	-	<0.02	<0.02	NC	<0.02
Chrysene				<0.05	<0.05	-	-	<0.05	0.19	-	-	<0.05	<0.05	NC	<0.05
Dibenzo[a,h]anthracene	10	10	10	<0.02	<0.02	-	-	<0.02	0.02	-	-	<0.02	<0.02	NC	<0.02
Fluoranthene	180	180		0.06	<0.05	-	-	<0.05	0.29	-	-	<0.05	<0.05	NC	<0.05
Fluorene	0.25	0.25		<0.02	<0.02	-	-	<0.02	<0.02	-	-	0.03	0.02	NC	<0.02
Indeno[1,2,3-cd]pyrene	10	10	10	<0.02	<0.02	-	-	<0.02	0.06	-	-	<0.02	<0.02	NC	<0.02
2-Methylnaphthalene				0.01	<0.01	-	-	<0.01	<0.01	-	-	0.14	0.14	0%	0.05
Naphthalene	0.013	0.013	50	0.02	<0.01	-	-	<0.01	0.01	-	-	0.02	0.02	NC	0.07
Phenanthrene	0.046	0.046	50	0.04	<0.02	-	-	<0.02	0.05	-	-	0.07	0.07	NC	0.05
Pyrene	100	100	100	0.06	<0.02	-	-	<0.02	0.38	-	-	<0.02	0.02	NC	0.04
Petroleum Hydrocarbons															
HEPH			5000	170	<25	-	-	54	78	-	-	110	33	NC	220
LEPH			2000	<25	<25	-	-	<25	<25	-	-	30	<25	NC	43
VPH (VH6-10) minus BTEX			200	<10	<10	-	-	<10	<10	-	-	<10	<10	NC	<10
F1 (C6-C10)				<10	<10	-	-	<10	<10	-	-	<10	<10	NC	<10
F1 (C6-C10) minus BTEX	320	800		<10	<10	-	-	<10	<10	-	-	<10	<10	NC	<10
F2 (C10-C16)	260	1000		<10	<10	-	-	11	<10	-	-	29	13	NC	17
F3 (C16-C34)	1700	5000		314	<10	-	-	145	34	-	-	206	136	41%	150
F4 (C34-C50)	3300	10000		205	19	-	-	524	63	-	-	92	80	14%	112
Phenols															
4-Chloro-3-methylphenol				<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2-Chlorophenol	5	5	5	<0.002	<0.002	<0.002	NC	<0.002	<0.002	-	-	-	-	-	-
o-Cresol			10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
m+p-Cresol				<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2,4-Dichlorophenol	5	5	5	<0.002	<0.002	<0.002	NC	<0.002	<0.002	-	-	-	-	-	-
2,6-Dichlorophenol	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2,4-Dimethylphenol	10	10	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2,4-Dinitrophenol	10	10	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
Dinoseb				<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2-Methyl 4,6-dinitrophenol	10	10	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2-Nitrophenol	10	10	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
4-Nitrophenol	10	10	10	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
Pentachlorophenol	7.6	7.6	0.15	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
Phenol	3.8	3.8	10	<0.002	<0.002	<0.002	NC	<0.002	<0.002	-	-	-	-	-	-
2,3,4,5-Tetrachlorophenol	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2,3,4,6-Tetrachlorophenol	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2,3,5,6-Tetrachlorophenol	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2,3,4-Trichlorophenol	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2,3,5-Trichlorophenol	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2,3,6-Trichlorophenol	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2,4,5-Trichlorophenol	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
2,4,6-Trichlorophenol	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
3,4,5-Trichlorophenol	5	5	5	<0.005	<0.005	<0.005	NC	<0.005	<0.005	-	-	-	-	-	-
Volatile Organic Compound															
Methyl tert-butyl ether				<0.1	<0.1	-	-	<0.1	<0.1	-	-	<0.1	<0.1	NC	<0.1

Notes
All units in ug/g, unless otherwise noted.
"-" indicates that there is no applicable standard or analyses were not performed.
Red cells indicates parameter exceeds CCME IL (Coarse, Surface). (Current as of 19-November-2012)
Bold indicates parameter exceeds CCME IL (Fine, Subsoil). (Current as of 19-November-2012)
Underline indicates parameter exceeds BC CSR IL (STRINGENT). (Current as of 19-November-2012)

APPENDIX D

DUPLICATE ANALYSIS (QA/QC) - GROUNDWATER

Station ID	RDL	BV-11BH-02M	BV-11BH-02M	RPD	MV-11BH-14M	MV-11BH-14M	RPD	3-BH10	3-BH10	RPD
Field label		BV-11BH-02M	BV-GWDUP1		MV-11BH-14M	MV-GWDUP3		3-BH10	MV-GWDUP5	
Duplicate ID		BV-GWDUP1	BV-11BH-02M		MV-GWDUP3	MV-11BH-14M		MV-GWDUP5	3-BH10	
Date		2/Feb/12	2/Feb/12		7/Feb/12	7/Feb/12		14/Feb/12	14/Feb/12	
Acenaphthene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Acenaphthylene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Acridine	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Anthracene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Benzo[a]anthracene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Benzo[a]pyrene	0.01	<0.01	<0.01	NC	<0.01	<0.01	NC	<0.01	<0.01	NC
Benzo[b]fluoranthene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Benzo[ghi]perylene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Benzo[k]fluoranthene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Chrysene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Dibenzo[a,h]anthracene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Fluoranthene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Fluorene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Indeno[1,2,3-cd]pyrene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Naphthalene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Phenanthrene	0.05	<0.05	<0.05	NC	<0.05	<0.05	NC	<0.05	<0.05	NC
Pyrene	0.02	<0.02	<0.02	NC	0.02	<0.02	NC	<0.02	<0.02	NC
Quinoline	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC	<0.1	<0.1	NC

Notes

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Station ID	RDL	BV-11BH-02M	BV-11BH-02M	RPD	MV-11BH-15M	MV-11BH-15M	RPD
Field label		BV-11BH-02M	BV-GWDUP1		MV-11BH-15M	MV-GWDUP4	
Duplicate ID		BV-GWDUP1	BV-11BH-02M		MV-GWDUP4	MV-11BH-15M	
Date		2/Feb/12	2/Feb/12		10/Feb/12	10/Feb/12	
4-Chloro-3-methylphenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
2-Chlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
o-Cresol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
m+p-Cresol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
2,4-Dichlorophenol	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC
2,6-Dichlorophenol	0.1	<0.1	<0.1	NC	<0.1	<0.1	NC
2,4-Dimethylphenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
2,4-Dinitrophenol	5	<5	<5	NC	<5	<5	NC
Dinoseb	5	<5	<5	NC	<5	<5	NC
2-Methyl 4,6-dinitrophenol	5	<5	<5	NC	<5	<5	NC
2-Nitrophenol	5	<5	<5	NC	<5	<5	NC
4-Nitrophenol	5	<5	<5	NC	<5	<5	NC
Pentachlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
Phenol	2	<2	<2	NC	<2	<2	NC
2,3,4,5-Tetrachlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
2,3,4,6-Tetrachlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
2,3,5,6-Tetrachlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
2,3,4-Trichlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
2,3,5-Trichlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
2,3,6-Trichlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
2,4,5-Trichlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
2,4,6-Trichlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC
3,4,5-Trichlorophenol	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC

Notes

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Area ID	BC CSR AW	FCSAP CLIL Fresh/Marine	RDL			RPD
Station ID				**MV-11BH-03M**	**MV-11BH-03M**	
Field label				MV-11BH-03M	MV-GWDUP2	
Duplicate ID				MV-GWDUP2	MV-11BH-03M	
Date				6/Feb/12	6/Feb/12	
Lab report ID				12V572231	12V572231	
Consultants						
Chloride ion	1500000	230000	0.05	8860	8960	1%

Notes

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Red cells indicates parameter exceeds BC CSR AW. (Current as of 1-March-2012)

Bold indicates parameter exceeds FCSAP CLIL Fresh/Marine. (Current up to 1-November·

Station ID	RDL	BV-11BH-02M	BV-11BH-02M	RPD	MV-11BH-14M	MV-11BH-14M	RPD	3-BH10	3-BH10	RPD
Field label		BV-11BH-02M	BV-GWDUP1		MV-11BH-14M	MV-GWDUP3		3-BH10	MV-GWDUP5	
Duplicate ID		BV-GWDUP1	BV-11BH-02M		MV-GWDUP3	MV-11BH-14M		MV-GWDUP5	3-BH10	
Date		2/Feb/12	2/Feb/12		7/Feb/12	7/Feb/12		14/Feb/12	14/Feb/12	
EPH (C10-C19)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
LEPH	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
VH (C6-C10)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
VPH (VH6-10) minus BTEX	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
F1 (C6-C10)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
F1 (C6-C10) minus BTEX	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
F2 (C10-C16)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
F3 (C16-C34)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
F4 (C34-C50)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC

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Station ID	RDL	BV-11BH-02M	BV-11BH-02M	RPD	MV-11BH-14M	MV-11BH-14M	RPD	3-BH10	3-BH10	RPD
Field label		BV-11BH-02M	BV-GWDUP1		MV-11BH-14M	MV-GWDUP3		3-BH10	MV-GWDUP5	
Duplicate ID		BV-GWDUP1	BV-11BH-02M		MV-GWDUP3	MV-11BH-14M		MV-GWDUP5	3-BH10	
Date		2/Feb/12	2/Feb/12		7/Feb/12	7/Feb/12		14/Feb/12	14/Feb/12	
EPH (C10-C19)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
LEPH	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
VH (C6-C10)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
VPH (VH6-10) minus BTEX	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
F1 (C6-C10)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
F1 (C6-C10) minus BTEX	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
F2 (C10-C16)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
F3 (C16-C34)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC
F4 (C34-C50)	100	<100	<100	NC	<100	<100	NC	<100	<100	NC

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Station ID		BV-11BH-02M	BV-11BH-02M		MV-11BH-03M	MV-11BH-03M		MV-11BH-14M	MV-11BH-14M		3-BH10	3-BH10	
Field label	RDL	BV-11BH-02M	BV-GWDUP1	RPD	MV-11BH-03M	MV-GWDUP2	RPD	MV-11BH-14M	MV-GWDUP3	RPD	3-BH10	MV-GWDUP5	RPD
Duplicate ID		BV-GWDUP1	BV-11BH-02M		MV-GWDUP2	MV-11BH-03M		MV-GWDUP3	MV-11BH-14M		MV-GWDUP5	3-BH10	
Date		2/Feb/12	2/Feb/12		6/Feb/12	6/Feb/12		7/Feb/12	7/Feb/12		14/Feb/12	14/Feb/12	
Bromodichloromethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Bromoform	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Bromomethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Carbon tetrachloride	0.5	-	-	-	<0.5	<0.5	NC	-	-	-	-	-	-
Chlorobenzene	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Chlorodibromomethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Chloroethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Chloroform	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Chloromethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
1,2-Dichlorobenzene	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
1,3-Dichlorobenzene	0.5	-	-	-	<0.5	<0.5	NC	-	-	-	-	-	-
1,4-Dichlorobenzene	0.5	-	-	-	<0.5	<0.5	NC	-	-	-	-	-	-
1,1-Dichloroethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
1,2-Dichloroethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
1,1-Dichloroethene	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
cis-1,2-Dichloroethene	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
trans-1,2-Dichloroethene	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Dichloromethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
1,2-Dichloropropane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
cis-1,3-Dichloropropene	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
trans-1,3-Dichloropropene	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Ethylene dibromide	0.3	-	-	-	<0.3	<0.3	NC	-	-	-	-	-	-
Methyl ethyl ketone	10	-	-	-	<10	<10	NC	-	-	-	-	-	-
Methyl isobutyl ketone	10	-	-	-	<10	<10	NC	-	-	-	-	-	-
Methyl tert-butyl ether	1	<1	<1	NC	<1	<1	NC	<1	<1	NC	<1	<1	NC
1,1,1,2-Tetrachloroethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Tetrachloroethene	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
1,2,4-Trichlorobenzene	1	-	-	-	<1	-	-	<1	-	-	-	-	-
1,1,1-Trichloroethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
1,1,2-Trichloroethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Trichloroethene	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Trichlorofluoromethane	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Vinyl chloride	1	-	-	-	<1	<1	NC	-	-	-	-	-	-

Notes

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Station ID	RDL	BV-11BH-02M	BV-11BH-02M	RPD	MV-11BH-03M	MV-11BH-03M	RPD	MV-11BH-14M	MV-11BH-14M	RPD
Field label		BV-11BH-02M	BV-GWDUP1		MV-11BH-03M	MV-GWDUP2		MV-11BH-14M	MV-GWDUP3	
Duplicate ID		BV-GWDUP1	BV-11BH-02M		MV-GWDUP2	MV-11BH-03M		MV-GWDUP3	MV-11BH-14M	
Date		2/Feb/12	2/Feb/12		6/Feb/12	6/Feb/12		7/Feb/12	7/Feb/12	
Benzene	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC	<0.5	<0.5	NC
Ethylbenzene	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC	<0.5	<0.5	NC
Styrene	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC	<0.5	<0.5	NC
Toluene	0.5	<0.5	<0.5	NC	<0.5	<0.5	NC	<0.5	<0.5	NC
Xylenes (total)	0.5	<0.5	<0.5	NC	<0.5	-	-	<0.5	<0.5	NC

Station ID	RDL	3-BH10	3-BH10	RPD
Field label		3-BH10	MV-GWDUP5	
Duplicate ID		MV-GWDUP5	3-BH10	
Date		14/Feb/12	14/Feb/12	
Benzene	0.5	<0.5	<0.5	NC
Ethylbenzene	0.5	<0.5	<0.5	NC
Styrene	0.5	<0.5	<0.5	NC
Toluene	0.5	<0.5	<0.5	NC
Xylenes (total)	0.5	<0.5	<0.5	NC

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Station ID	RDL	BV-11BH-02M	BV-11BH-02M	RPD	MV-11BH-03M	MV-11BH-03M	RPD
Field label		BV-11BH-02M	BV-GWDUP1		MV-11BH-03M	MV-GWDUP2	
Duplicate ID		BV-GWDUP1	BV-11BH-02M		MV-GWDUP2	MV-11BH-03M	
Date		2/Feb/12	2/Feb/12		6/Feb/12	6/Feb/12	
Hardness (CaCO3) (mg/L)		-	-		-	-	
Dissolved Aluminum	1	4	2	NC	66	-	-
Dissolved Antimony	0.05	0.06	<0.05	NC	0.09	-	-
Dissolved Arsenic	0.1	26.0	25.9	0.39%	4.4	-	-
Dissolved Barium	0.1	58.1	58.4	0.52%	108.0	-	-
Dissolved Beryllium	0.01	<0.01	<0.01	NC	0.01	-	-
Dissolved Boron	1	128	129	0.78%	52	-	-
Dissolved Cadmium	0.01	0.01	<0.01	NC	0.02	-	-
Dissolved Calcium	0.05	45600	46000	0.87%	77800	-	-
Dissolved Chromium	0.5	1.2	1.2	NC	25.0	-	-
Dissolved Cobalt	0.05	0.15	0.14	NC	2.59	-	-
Dissolved Copper	0.2	0.4	0.2	NC	0.4	-	-
Dissolved Iron	0.01	37200	37800	1.60%	34600	-	-
Dissolved Lead	0.01	0.03	<0.01	NC	0.22	-	-
Dissolved Lithium	0.1	2.1	2.0	4.88%	0.6	-	-
Dissolved Magnesium	0.05	9370	9470	1.06%	11400	-	-
Dissolved Manganese	0.001	1630	1640	0.61%	1800	-	-
Dissolved Mercury	0.003	<0.003	<0.003	NC	0.003	-	-
Dissolved Molybdenum	0.05	0.57	0.32	56.18%	0.35	-	-
Dissolved Nickel	0.1	0.7	0.2	NC	4.3	-	-
Dissolved Selenium	0.1	0.1	<0.1	NC	0.2	-	-
Dissolved Silver	0.01	<0.01	<0.01	NC	<0.01	-	-
Dissolved Sodium	0.05	9310	9420	1.17%	7980	8500	6%
Dissolved Thallium	0.002	<0.002	<0.002	NC	0.017	-	-
Dissolved Titanium	0.1	58.3	58.3	0.00%	102.0	-	-
Dissolved Uranium	0.01	0.01	<0.01	NC	0.20	-	-
Dissolved Vanadium	0.1	0.8	0.9	11.76%	2.8	-	-
Dissolved Zinc	1	7	2	NC	15	-	-

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DQO Table for Groundwater Samples Collected February 2nd 2012

Area ID	FCSAP CLIL Fresh/Marine	Canadian DW Quality	BC CSR (DW/AW)	25, 26, 27, 30	25, 26, 27, 30	RPD	21	25, 30,34	25, 30,34	25, 30,34
Station ID				**BV-11BH-02M**	**BV-11BH-02M**		**BV-11BH-07M**	**MW06-2**	**MW07-6**	**MW08-10**
Field label				BV-11BH-02M	BV-GWDUP1		BV-11BH-07M	MW06-2	MW07-6	MW08-10
Duplicate ID										
Date				2/Feb/12	2/Feb/12		2/Feb/12	2/Feb/12	2/Feb/12	2/Feb/12
Lab report ID				12V571329	12V571329		12V571329	12V571329	12V571329	12V571329
Consultants							Franz	Hemmera	Hemmera	Hemmera
Screen depth (m)				3.05 – 4.57	3.05 – 4.57		0.91 – 2.44		0.6 – 3	0.8 – 3.8
Monocyclic Aromatic Hydrocarbons										
Benzene	200	5	5	<0.5	<0.5	NC	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	11000	2.4	2.4	<0.5	<0.5	NC	<0.5	<0.5	<0.5	<0.5
Styrene	72		720	<0.5	<0.5	NC	<0.5	<0.5	<0.5	<0.5
Toluene	83	24	24	<0.5	<0.5	NC	<0.5	<0.5	<0.5	<0.5
m+p-Xylene				-	-	-	-	-	-	<0.5
o-Xylene				-	-	-	-	-	-	<0.5
Xylenes (total)	18000	300	300	<0.5	<0.5	NC	<0.5	<0.5	<0.5	-
Metals										
Dissolved Aluminum		100	9500	4	2	NC	-	-	-	-
Dissolved Antimony	1600	6	6	0.06	<0.05	NC	-	-	-	-
Dissolved Arsenic	5	10	10	**26.0**	**25.9**	0.39%	-	-	-	-
Dissolved Barium	500	1000	1000	58.1	58.4	0.52%	-	-	-	-
Dissolved Beryllium	5.3		53	<0.01	<0.01	NC	-	-	-	-
Dissolved Boron	5000	5000	5000	128	129	0.78%	-	-	-	-
Dissolved Cadmium	0.017	5	0.6	0.01	<0.01	NC	-	-	-	-
Dissolved Calcium				45600	46000	0.87%	-	-	-	-
Dissolved Chromium	8.9	50	10	1.2	1.2	NC	-	-	-	-
Dissolved Cobalt			40	0.15	0.14	NC	-	-	-	-
Dissolved Copper	2	1000	20	0.4	0.2	NC	-	-	-	-
Dissolved Iron	300	300	6500	**37200**	**37800**	1.60%	-	-	-	-
Dissolved Lead	2	10	10	0.03	<0.01	NC	-	-	-	-
Dissolved Lithium			730	2.1	2.0	4.88%	-	-	-	-
Dissolved Magnesium			100000	9370	9470	1.06%	-	-	-	-
Dissolved Manganese		50	550	**1630**	**1640**	0.61%	-	-	-	-
Dissolved Mercury	0.016	1	1	<0.003	<0.003	NC	-	-	-	-
Dissolved Molybdenum	73		250	0.57	0.32	56.18%	-	-	-	-
Dissolved Nickel	83		83	0.7	0.2	NC	-	-	-	-
Dissolved Selenium	1	10	10	0.1	<0.1	NC	-	-	-	-
Dissolved Silver	0.1		15	<0.01	<0.01	NC	-	-	-	-
Dissolved Sodium		200000	200000	9310	9420	1.17%	-	-	-	-
Dissolved Thallium	0.8		3	<0.002	<0.002	NC	-	-	-	-
Dissolved Titanium	100		1000	58.3	58.3	0.00%	-	-	-	-
Dissolved Uranium	300	20	20	0.01	<0.01	NC	-	-	-	-
Dissolved Vanadium				0.8	0.9	11.76%	-	-	-	-
Dissolved Zinc	10	5000	100	7	2	NC	-	-	-	-
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	5.8		60	<0.05	<0.05	NC	0.14	0.05	<0.05	-
Acenaphthylene	46			<0.05	<0.05	NC	<0.05	<0.05	<0.05	-
Acridine	0.05		0.5	<0.05	<0.05	NC	<0.05	<0.05	<0.05	-
Anthracene	0.012		1	<0.05	<0.05	NC	<0.05	<0.05	<0.05	-
Benzo[a]anthracene	0.018		1	<0.05	<0.05	NC	<0.05	0.05	<0.05	-
Benzo[a]pyrene	0.015	0.01	0.01	<0.01	<0.01	NC	<0.01	**0.04**	<0.01	-
Benzo[b]fluoranthene				<0.05	<0.05	NC	<0.05	0.05	<0.05	-
Benzo[ghi]perylene	0.17			<0.05	<0.05	NC	<0.05	<0.05	<0.05	-
Benzo[k]fluoranthene	0.48			<0.05	<0.05	NC	<0.05	<0.05	<0.05	-
Chrysene	1.4		1	<0.05	<0.05	NC	<0.05	0.06	<0.05	-
Dibenzo[a,h]anthracene	0.26			<0.05	<0.05	NC	<0.05	<0.05	<0.05	-
Fluoranthene	0.04		2	<0.05	<0.05	NC	<0.05	0.27	<0.05	-
Fluorene	3		120	<0.05	<0.05	NC	0.18	<0.05	<0.05	-
Indeno[1,2,3-cd]pyrene	0.21			<0.05	<0.05	NC	<0.05	<0.05	<0.05	-
Naphthalene	1.1		10	<0.05	<0.05	NC	0.05	0.07	0.07	-
Phenanthrene	0.4		3	<0.05	<0.05	NC	0.11	<0.05	<0.05	-
Pyrene	0.025		0.2	<0.02	<0.02	NC	<0.02	0.29	<0.02	-
Quinoline	3.4		34	<0.1	<0.1	NC	<0.1	<0.1	<0.1	-
Petroleum Hydrocarbons										
EPH (C10-C19)			5000	<100	<100	NC	550	1640	360	-
EPH (C19-C32)				<100	<100	NC	390	140	<100	-
HEPH				<100	<100	NC	390	140	<100	-
LEPH			500	<100	<100	NC	550	1640	360	-
VH C6-C10			15000	<100	<100	NC	200	790	730	<100
VPH (VH6-10) minus BTEX			1500	<100	<100	NC	200	790	730	<100
F1 (C6-C10)				<100	<100	NC	200	300	200	-
F1 (C6-C10) minus BTEX	9100			<100	<100	NC	200	300	200	-
F2 (C10-C16)	1300			<100	<100	NC	300	800	400	-
F3 (C16-C34)				<100	<100	NC	100	<100	<100	-
F4 (C34-C50)				<100	<100	NC	<100	<100	<100	-
Phenols										
4-Chloro-3-methylphenol				<0.5	<0.5	NC	-	-	-	-
2-Chlorophenol	4400		58.5	<0.5	<0.5	NC	-	-	-	-
o-Cresol				<0.5	<0.5	NC	-	-	-	-
m+p-Cresol				<0.5	<0.5	NC	-	-	-	-
2,4-Dichlorophenol	0.2	0.3	9	<0.1	<0.1	NC	-	-	-	-
2,6-Dichlorophenol			30	<0.1	<0.1	NC	-	-	-	-
2,4-Dimethylphenol	2100		730	<0.5	<0.5	NC	-	-	-	-
2,4-Dinitrophenol	150			<5	<5	NC	-	-	-	-
Dinoseb	0.05	10	0.5	<5	<5	NC	-	-	-	-
2-Methyl 4,6-dinitrophenol			3.7	<5	<5	NC	-	-	-	-
2-Nitrophenol				<5	<5	NC	-	-	-	-
4-Nitrophenol				<5	<5	NC	-	-	-	-
Pentachlorophenol	0.5	30	1	<0.5	<0.5	NC	-	-	-	-
Phenol	4		11000	<2	<2	NC	-	-	-	-
2,3,4,5-Tetrachlorophenol			6	<0.5	<0.5	NC	-	-	-	-
2,3,4,6-Tetrachlorophenol	1	1	10	<0.5	<0.5	NC	-	-	-	-
2,3,5,6-Tetrachlorophenol			7.5	<0.5	<0.5	NC	-	-	-	-
2,3,4-Trichlorophenol			7.5	<0.5	<0.5	NC	-	-	-	-
2,3,5-Trichlorophenol			7.5	<0.5	<0.5	NC	-	-	-	-
2,3,6-Trichlorophenol			24	<0.5	<0.5	NC	-	-	-	-
2,4,5-Trichlorophenol	63		7.5	<0.5	<0.5	NC	-	-	-	-
2,4,6-Trichlorophenol	18	2	18	<0.5	<0.5	NC	-	-	-	-
3,4,5-Trichlorophenol			3	<0.5	<0.5	NC	-	-	-	-
Volatile Organic Compound										
Methyl tert-butyl ether	4300	15	15	<1	<1	NC	<1	<1	<1	<1

Notes

All units in ug/L, unless otherwise noted.

"-" indicates that there is no applicable standard or analyses were not performed.

Red cells indicates parameter exceeds FCSAP CLIL Fresh/Marine. (Current as of 19-November-2012)

Bold indicates parameter exceeds Candian DW Quality. (Current as of 19-November-2012)

Underline indicates parameter exceeds BC CSR (DW/AW). (Current as of 19-November-2012)

APPENDIX E

LABORATORY REPORTS - SOIL

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V559211

SOIL ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

DATE REPORTED: Dec 19, 2011

PAGES (INCLUDING COVER): 8

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V559211
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 12, 2011 | DATE RECEIVED: Dec 12, 2011 | DATE REPORTED: Dec 19, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-10M-1 3008313	MV-11BH-10M-3 3008316	MV-11BH-08-2 3008321	MV-11BH-08-3 3008322	MV-Dup1 3008326	MV-11BH-06-1 3008327	MV-11BH-06-3 3008329	MV-11BH-05-2 3008335
Antimony	µg/g	40	0.05	0.27	0.50	0.42	0.52	0.51	0.30	0.38	0.18
Arsenic	µg/g	15	0.1	3.0	2.5	4.5	4.2	5.1	2.2	3.2	2.4
Barium	µg/g	400	0.5	51.8	135	98.5	136	119	54.4	166	42.1
Beryllium	µg/g	8	0.02	0.18	0.39	0.38	0.47	0.52	0.14	0.51	0.16
Boron (Hot Water Soluble)	µg/g		0.1	0.4	0.3	0.2	0.2	0.2	1.8	0.5	0.1
Cadmium	µg/g		0.01	0.11	0.21	0.09	0.25	0.09	0.09	0.20	0.10
Chromium	µg/g	60	1	21	55	39	53	50	27	33	26
Cobalt	µg/g	300	0.1	7.1	9.3	11.6	9.6	13.5	5.9	3.9	6.1
Copper	µg/g		0.2	14.2	22.2	18.4	31.4	20.8	15.0	18.2	11.7
Lead	µg/g		0.05	3.13	9.00	6.54	7.86	8.13	5.29	13.1	2.14
Mercury	µg/g		0.01	0.03	0.05	0.04	0.06	0.04	0.03	0.08	0.02
Molybdenum	µg/g	40	0.05	0.32	0.54	0.51	0.85	0.85	1.19	0.68	0.52
Nickel	µg/g	500	0.5	26.8	34.6	32.0	38.1	36.5	24.0	18.8	24.2
Selenium	µg/g	10	0.1	0.2	0.5	0.4	0.5	0.6	0.2	0.6	0.2
Silver	µg/g	40	0.05	<0.05	0.07	<0.05	0.10	<0.05	<0.05	0.12	<0.05
Thallium	µg/g		0.05	<0.05	0.14	0.10	0.12	0.13	<0.05	0.16	<0.05
Tin	µg/g	300	0.05	0.22	0.55	0.38	0.43	0.43	0.45	1.22	0.15
Uranium	µg/g	200	0.05	0.28	0.95	0.75	1.12	0.94	0.28	1.06	0.25
Vanadium	µg/g		1	41	58	59	62	68	37	39	37
Zinc	µg/g		1	52	75	70	80	84	44	40	36
pH 1:2	pH units		0.1	7.7	7.1	6.2	5.9	5.9	6.1	5.4	6.3

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3008313-3008335 Results are based on the dry weight of the sample

Certified By: Marie England

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V559211
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

LEPH/HEPH Soil (180-423)

DATE SAMPLED: Dec 12, 2011 | DATE RECEIVED: Dec 12, 2011 | DATE REPORTED: Dec 19, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-10M-1 3008313	MV-11BH-10M-2 3008315
Naphthalene	µg/g	50	0.01	0.50	<0.01
2-Methylnaphthalene	µg/g		0.01	0.65	<0.01
1-Methylnaphthalene	µg/g		0.01	0.28	<0.01
Acenaphthylene	µg/g		0.01	0.02	<0.01
Acenaphthene	µg/g		0.01	<0.01	<0.01
Fluorene	µg/g		0.02	<0.02	<0.02
Phenanthrene	µg/g	50	0.02	<0.02	<0.02
Anthracene	µg/g		0.02	<0.02	<0.02
Fluoranthene	µg/g		0.05	<0.05	<0.05
Pyrene	µg/g	100	0.02	0.02	<0.02
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02
Chrysene	µg/g		0.05	0.06	<0.05
Benzo(b)fluoranthene	µg/g	10	0.02	0.02	<0.02
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05
LEPH C10-C19	µg/g	2000	25	<25	<25
HEPH C19-C32	µg/g	5000	25	196	<25
Surrogate	**Unit**	**Acceptable Limits**			
Nitrobenzene - d5	%	50-130		83	96
2-Fluorobiphenyl	%	50-130		91	104
P-Terphenyl - d14	%	60-130		87	95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3008313-3008315 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

AGAT Laboratories

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Burnaby, British Columbia
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TEL (778)452-4000
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Certificate of Analysis

AGAT WORK ORDER: 11V559211
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (F2-F4) in Soil

DATE SAMPLED: Dec 12, 2011 | DATE RECEIVED: Dec 12, 2011 | DATE REPORTED: Dec 19, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-10M-1 3008313	MV-11BH-10M-2 3008315
C10 - C16 (F2)	mg/kg	260	10	<10	<10
C16 - C34 (F3)	mg/kg	2500	10	522	<10
C34 - C50 (F4)	mg/kg	6600	10	822	<10
Moisture Content	%		1	15.5	20
Surrogate	Unit	Acceptable Limits			
o-Terphenyl (F2-F4)	%	50-150		93	87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,F)

3008313-3008315 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram has returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559211

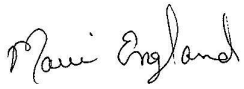
PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 19, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	20111	3008313	0.27	0.31	13.8%	< 0.05	100%	70%	130%	92%	90%	110%	108%	80%	120%
Arsenic	20111	3008313	3.1	3.0	3.3%	< 0.1	106%	70%	130%	99%	90%	110%	95%	80%	120%
Barium	20111	3008313	51.8	48.6	6.0%	< 0.5	91%	70%	130%	109%	90%	110%	94%	80%	120%
Beryllium	20111	3008313	0.18	0.17	6.0%	< 0.02	101%	70%	130%	104%	90%	110%	102%	80%	120%
Boron (Hot Water Soluble)	20111	3008313	<0.1	<0.1	0.0%	< 0.1				99%	90%	110%	96%	80%	120%
Cadmium	20111	3008313	0.11	0.10	10.0%	< 0.01				103%	90%	110%	97%	80%	120%
Chromium	20111	3008313	21	18	15.0%	< 1	106%	70%	130%	101%	90%	110%	95%	80%	120%
Cobalt	20111	3008313	7.1	6.5	9.0%	< 0.1	98%	70%	130%	102%	90%	110%	94%	80%	120%
Copper	20111	3008313	14.2	13.4	6.0%	< 0.2	94%	70%	130%	102%	90%	110%	94%	80%	120%
Lead	20111	3008313	3.13	3.45	10.0%	< 0.05	91%	70%	130%	102%	90%	110%	97%	80%	120%
Mercury	20111	3008313	0.03	0.02	40.0%	< 0.01	99%	70%	130%	107%	90%	110%	107%	80%	120%
Molybdenum	20111	3008313	0.32	0.41	25.0%	< 0.05	92%	70%	130%	106%	90%	110%	101%	80%	120%
Nickel	20111	3008313	26.8	24.5	9.0%	< 0.5	99%	70%	130%	103%	90%	110%	96%	80%	120%
Selenium	20111	3008313	0.2	0.1	67.0%	< 0.1				104%	90%	110%	113%	80%	120%
Silver	20111	3008313	<0.05	<0.05	0.0%	< 0.05				102%	90%	110%	96%	80%	120%
Thallium	20111	3008313	<0.05	<0.05	0.0%	< 0.05				106%	90%	110%	97%	80%	120%
Tin	20111	3008313	0.22	0.23	4.0%	< 0.05				97%	90%	110%	97%	80%	120%
Uranium	20111	3008313	0.27	0.28	3.6%	< 0.05		0%	0%	99%	90%	110%	105%	80%	120%
Vanadium	20111	3008313	41	38	8.0%	< 1	109%	70%	130%	102%	90%	110%	97%	80%	120%
Zinc	20111	3008313	52	41	24.0%	< 1	109%	70%	130%	98%	90%	110%	116%	80%	120%
pH 1:2	1	3008313	7.7	7.8	1.3%	< 0.1				100%	95%	105%	95%	90%	110%

Certified By:



AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 19, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
LEPH/HEPH Soil (180-423)															
Naphthalene	1	3008313	0.5	0.36	32.6%	< 0.01	102%	80%	120%				113%	50%	130%
2-Methylnaphthalene	1	3008313	0.65	0.45	36.0%	< 0.01	102%	80%	120%				113%	50%	130%
1-Methylnaphthalene	1	3008313	0.28	0.19	38.0%	< 0.01	103%	80%	120%				115%	50%	130%
Acenaphthylene	1	3008313	NA	NA	0.0%	< 0.01	102%	80%	120%				106%	50%	130%
Acenaphthene	1	3008313	<0.01	<0.01	0.0%	< 0.01	104%	80%	120%				103%	50%	130%
Fluorene	1	3008313	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				109%	50%	130%
Phenanthrene	1	3008313	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				102%	60%	130%
Anthracene	1	3008313	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Fluoranthene	1	3008313	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				109%	60%	130%
Pyrene	1	3008313	0.02	<0.02	0.0%	< 0.02	101%	80%	120%				108%	60%	130%
Benzo(a)anthracene	1	3008313	<0.02	<0.02	0.0%	< 0.02	102%	80%	120%				104%	60%	130%
Chrysene	1	3008313	0.06	<0.05	0.0%	< 0.05	101%	80%	120%				110%	60%	130%
Benzo(b)fluoranthene	1	3008313	0.02	<0.02	0.0%	< 0.02	100%	80%	120%				88%	60%	130%
Benzo(k)fluoranthene	1	3008313	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				107%	60%	130%
Benzo(a)pyrene	1	3008313	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				101%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3008313	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				100%	60%	130%
Dibenzo(a,h)anthracene	1	3008313	<0.02	<0.02	0.0%	< 0.02	101%	80%	130%				93%	60%	130%
Benzo(g,h.i)perylene	1	3008313	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				105%	60%	130%
Nitrobenzene - d5	1	3008313	83	128	43.0%	<	98%	80%	120%				88%	50%	130%
2-Fluorobiphenyl	1	3008313	91	113	22.0%	<	101%	80%	120%				100%	50%	130%
P-Terphenyl - d14	1	3008313	87	108	22.0%	<	100%	80%	120%				92%	60%	130%
Petroleum Hydrocarbons (F2-F4) in Soil															
C10 - C16 (F2)	873	2986212	<10	<10	NA	< 10	106%	80%	120%	102%	80%	120%	102%	60%	140%
C16 - C34 (F3)	873	2986212	24	29	NA	< 10	106%	80%	120%	96%	80%	120%	103%	60%	140%
C34 - C50 (F4)	873	2986212	14	16	NA	< 10	106%	80%	120%	98%	80%	120%	104%	60%	140%

Certified By:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
C10 - C16 (F2)	TO 0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO 0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)
Regular TAT 5 to 7 working days ☒
Rush TAT 24 to 48 hours ☐
48 to 72 hours ☐
Date Required: _____
Please contact laboratory if Rush is required

Report To:
Company: Franz Environmental
Contact: Amanda Salway
Address: 308 - 1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9941
LSD:
Client Project #: 2090-1103

Report Information
1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Vivane Dubois-Côté
Email: vdcote@franzbc.com

Report Format
☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Laboratory Use Only
Arrival Temperature: 10°C / 5°C
AGAT Job Number:
Notes:
DEC 12 PM 5:52

Invoice To: Same as above Yes ☒ No ☐
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):
☒ BC CSR - Soil
☒ Agricultural ☐ Industrial ☐ Urban/Park ☐ Commercial
☐ BC CSR - Water
☐ Drinking Water ☐ Aquatic Life ☐ Irrigation ☐ Livestock
☒ CCME
☐ Drinking Water ☒ Industrial ☐ Residential/Park ☐ Drinking Water ☐ Commercial ☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F2-F4	CSR and CCME metals	Benzo PAHs			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3008313	MV-11BH-10M-1	SOIL	12/12/2011			X						X	X	X						
315	MV-11BH-10M-2					X						X		X						X
316	MV-11BH-10M-3												X							
317	MV-11BH-10M-4																			X
318	MV-11BH-10M-5																			X
319	MV-11BH-08-1																			X
321	MV-11BH-08-2												X							
322	MV-11BH-08-3												X							
324	MV-11BH-08-4																			X
325	MV-11BH-08-5																			X
326	MV-DUP1												X							
327	MV-11BH-906-1												X							

Samples Relinquished by (print name & sign): Amanda Salway	Date 12/12/2011	Samples Received by (Print name & sign): Angela Bond	Date Dec 12/11 17:52	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 1 of 2
NO: 000286

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

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Ph.: 778.452.4000 - Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days ☒
Rush TAT 24 to 48 hours ☐
48 to 72 hours ☐
Date Required: _____
Please contact laboratory if Rush is required

Report To:
Company: same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #: 2090-1103

Report Information
1. Name: same as
Email: previous
2. Name:
Email:

Report Format
☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Laboratory Use Only
Arrival Temperature: 10°C / 5°C
AGAT Job Number: 11V559211
Notes: DEC 12 PM 5:52

Invoice To: Same as above Yes ☒ No ☐
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):
☒ BC CSR – Soil
- ☐ Agricultural
- ☒ Industrial
- ☐ Urban/Park
- ☐ Commercial

☐ BC CSR – Water
- ☐ Drinking Water
- ☐ Aquatic Life
- ☐ Irrigation
- ☐ Livestock

☒ CCME
- ☐ Drinking Water
- ☒ Industrial
- ☐ Residential/Park
- ☐ Drinking Water
- ☐ Commercial
- ☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability		CSR and CCME metals					Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1-YEAR– 60 days
3008328	MV-11BH-06-2	SOIL	12/12/2011																	X
329	MV-11BH-06-3											X								
331	MV-11BH-06-4																			X
332	MV-11BH-06-5																			X
333	MV-11BH-06-6																			X
334	MV-11BH-05-1																			X
335	MV-11BH-05-2											X								
336	MV-11BH-05-3																			X
338	MV-11BH-05-4																			X
339	MV-11BH-05-5																			X

Samples Relinquished by (print name & sign): Amanda Stalnaker	Date 12/12/2011	Samples Received by (Print name & sign): Angela Bond Angela Bond	Date Dec 12/11 17:52	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 2 of 2
NO: 000287

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order #_____

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: December 12/11 17:52
Courier: n/d
Received by: AB
Relinquished by: Amanda S.
Branch Received From: n/d
Company: Fraser Environmental
Consultant: n/d
Client left without count verified: no

COC INFORMATION:
Received (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why:_____
TURNAROUND TIME: Reg
COC Numbers: 000286, 287

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 32 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 12-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: LEPH/HEPH
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 19-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 9 + 10 + 10 = 10 °C (2) 4 + 6 + 6 = 5 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM Work order # 11V559211

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: DEC. 15, 2011 / 8:16
Courier: DHL
Received by: JAN
Relinquished by: _____
Company: ~~FRANZ ENVIRONMENTAL~~
Consultant: _____
Client left without count verified: _____

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: REGULAR
COC Numbers: 000286 WO# 11V559211

SAMPLE QUANTITIES:
Coolers: 1 Bottles (Jars) 2 Bags: 0

TIME SENSITIVE ISSUES:
Earliest Date Sampled: DEC. 12, 2011
Microbiology: Test: _____ ALREADY EXCEEDED? Yes (No)
Expiry: _____
Hydrocarbons: Test: _____
Expiry: _____
Samples are received >5 days after sampling: Yes (No)

SPECIALTY ISSUES:
Legal Samples: Yes (No)
International Samples: Yes (No)
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:

Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 3 + ___ = 3 °C (2) ___ + ___ + ___ = ___ °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available
JAR W/ICE

Additional integrity issues (note here and on CoC next to the sample ID):
1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
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CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V559211

SOIL ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

DATE REPORTED: Dec 19, 2011

PAGES (INCLUDING COVER): 8

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V559211
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 12, 2011 | DATE RECEIVED: Dec 12, 2011 | DATE REPORTED: Dec 19, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-10M-1 3008313	MV-11BH-10M-3 3008316	MV-11BH-08-2 3008321	MV-11BH-08-3 3008322	MV-Dup1 3008326	MV-11BH-06-1 3008327	MV-11BH-06-3 3008329	MV-11BH-05-2 3008335
Antimony	µg/g	40	0.05	0.27	0.50	0.42	0.52	0.51	0.30	0.38	0.18
Arsenic	µg/g	12	0.1	3.0	2.5	4.5	4.2	5.1	2.2	3.2	2.4
Barium	µg/g	2000	0.5	51.8	135	98.5	136	119	54.4	166	42.1
Beryllium	µg/g	8	0.02	0.18	0.39	0.38	0.47	0.52	0.14	0.51	0.16
Boron (Hot Water Soluble)	µg/g	1.4	0.1	0.4	0.3	0.2	0.2	0.2	1.8	0.5	0.1
Cadmium	µg/g	22	0.01	0.11	0.21	0.09	0.25	0.09	0.09	0.20	0.10
Chromium	µg/g	87	1	21	55	39	53	50	27	33	26
Cobalt	µg/g	300	0.1	7.1	9.3	11.6	9.6	13.5	5.9	3.9	6.1
Copper	µg/g	91	0.2	14.2	22.2	18.4	31.4	20.8	15.0	18.2	11.7
Lead	µg/g	600	0.05	3.13	9.00	6.54	7.86	8.13	5.29	13.1	2.14
Mercury	µg/g	50	0.01	0.03	0.05	0.04	0.06	0.04	0.03	0.08	0.02
Molybdenum	µg/g	40	0.05	0.32	0.54	0.51	0.85	0.85	1.19	0.68	0.52
Nickel	µg/g	50	0.5	26.8	34.6	32.0	38.1	36.5	24.0	18.8	24.2
Selenium	µg/g	2.9	0.1	0.2	0.5	0.4	0.5	0.6	0.2	0.6	0.2
Silver	µg/g	40	0.05	<0.05	0.07	<0.05	0.10	<0.05	<0.05	0.12	<0.05
Thallium	µg/g	1	0.05	<0.05	0.14	0.10	0.12	0.13	<0.05	0.16	<0.05
Tin	µg/g	300	0.05	0.22	0.55	0.38	0.43	0.43	0.45	1.22	0.15
Uranium	µg/g	300	0.05	0.28	0.95	0.75	1.12	0.94	0.28	1.06	0.25
Vanadium	µg/g	130	1	41	58	59	62	68	37	39	37
Zinc	µg/g	360	1	52	75	70	80	84	44	40	36
pH 1:2	pH units		0.1	7.7	7.1	6.2	5.9	5.9	6.1	5.4	6.3

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)
3008313-3008335 Results are based on the dry weight of the sample

Certified By: Marie England

AGAT Laboratories

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Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11V559211
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

LEPH/HEPH Soil (180-423)

DATE SAMPLED: Dec 12, 2011 | DATE RECEIVED: Dec 12, 2011 | DATE REPORTED: Dec 19, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-10M-1 3008313	MV-11BH-10M-2 3008315
Naphthalene	µg/g	50	0.01	0.50	<0.01
2-Methylnaphthalene	µg/g		0.01	0.65	<0.01
1-Methylnaphthalene	µg/g		0.01	0.28	<0.01
Acenaphthylene	µg/g		0.01	0.02	<0.01
Acenaphthene	µg/g		0.01	<0.01	<0.01
Fluorene	µg/g		0.02	<0.02	<0.02
Phenanthrene	µg/g	50	0.02	<0.02	<0.02
Anthracene	µg/g		0.02	<0.02	<0.02
Fluoranthene	µg/g		0.05	<0.05	<0.05
Pyrene	µg/g	100	0.02	0.02	<0.02
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02
Chrysene	µg/g		0.05	0.06	<0.05
Benzo(b)fluoranthene	µg/g	10	0.02	0.02	<0.02
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05
LEPH C10-C19	µg/g	2000	25	<25	<25
HEPH C19-C32	µg/g	5000	25	196	<25
Surrogate	**Unit**	**Acceptable Limits**			
Nitrobenzene - d5	%	50-130		83	96
2-Fluorobiphenyl	%	50-130		91	104
P-Terphenyl - d14	%	60-130		87	95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3008313-3008315 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11V559211
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (F2-F4) in Soil

DATE SAMPLED: Dec 12, 2011 | DATE RECEIVED: Dec 12, 2011 | DATE REPORTED: Dec 19, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-10M-1 3008313	MV-11BH-10M-2 3008315
C10 - C16 (F2)	mg/kg	260	10	<10	<10
C16 - C34 (F3)	mg/kg	2500	10	522	<10
C34 - C50 (F4)	mg/kg	6600	10	822	<10
Moisture Content	%		1	15.5	20
Surrogate	Unit	Acceptable Limits			
o-Terphenyl (F2-F4)	%	50-150		93	87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,F)

3008313-3008315 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram has returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559211

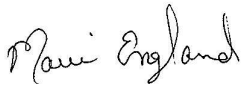
PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 19, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	20111	3008313	0.27	0.31	13.8%	< 0.05	100%	70%	130%	92%	90%	110%	108%	80%	120%
Arsenic	20111	3008313	3.1	3.0	3.3%	< 0.1	106%	70%	130%	99%	90%	110%	95%	80%	120%
Barium	20111	3008313	51.8	48.6	6.0%	< 0.5	91%	70%	130%	109%	90%	110%	94%	80%	120%
Beryllium	20111	3008313	0.18	0.17	6.0%	< 0.02	101%	70%	130%	104%	90%	110%	102%	80%	120%
Boron (Hot Water Soluble)	20111	3008313	<0.1	<0.1	0.0%	< 0.1				99%	90%	110%	96%	80%	120%
Cadmium	20111	3008313	0.11	0.10	10.0%	< 0.01				103%	90%	110%	97%	80%	120%
Chromium	20111	3008313	21	18	15.0%	< 1	106%	70%	130%	101%	90%	110%	95%	80%	120%
Cobalt	20111	3008313	7.1	6.5	9.0%	< 0.1	98%	70%	130%	102%	90%	110%	94%	80%	120%
Copper	20111	3008313	14.2	13.4	6.0%	< 0.2	94%	70%	130%	102%	90%	110%	94%	80%	120%
Lead	20111	3008313	3.13	3.45	10.0%	< 0.05	91%	70%	130%	102%	90%	110%	97%	80%	120%
Mercury	20111	3008313	0.03	0.02	40.0%	< 0.01	99%	70%	130%	107%	90%	110%	107%	80%	120%
Molybdenum	20111	3008313	0.32	0.41	25.0%	< 0.05	92%	70%	130%	106%	90%	110%	101%	80%	120%
Nickel	20111	3008313	26.8	24.5	9.0%	< 0.5	99%	70%	130%	103%	90%	110%	96%	80%	120%
Selenium	20111	3008313	0.2	0.1	67.0%	< 0.1				104%	90%	110%	113%	80%	120%
Silver	20111	3008313	<0.05	<0.05	0.0%	< 0.05				102%	90%	110%	96%	80%	120%
Thallium	20111	3008313	<0.05	<0.05	0.0%	< 0.05				106%	90%	110%	97%	80%	120%
Tin	20111	3008313	0.22	0.23	4.0%	< 0.05				97%	90%	110%	97%	80%	120%
Uranium	20111	3008313	0.27	0.28	3.6%	< 0.05		0%	0%	99%	90%	110%	105%	80%	120%
Vanadium	20111	3008313	41	38	8.0%	< 1	109%	70%	130%	102%	90%	110%	97%	80%	120%
Zinc	20111	3008313	52	41	24.0%	< 1	109%	70%	130%	98%	90%	110%	116%	80%	120%
pH 1:2	1	3008313	7.7	7.8	1.3%	< 0.1				100%	95%	105%	95%	90%	110%

Certified By:



AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 19, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
LEPH/HEPH Soil (180-423)															
Naphthalene	1	3008313	0.5	0.36	32.6%	< 0.01	102%	80%	120%				113%	50%	130%
2-Methylnaphthalene	1	3008313	0.65	0.45	36.0%	< 0.01	102%	80%	120%				113%	50%	130%
1-Methylnaphthalene	1	3008313	0.28	0.19	38.0%	< 0.01	103%	80%	120%				115%	50%	130%
Acenaphthylene	1	3008313	NA	NA	0.0%	< 0.01	102%	80%	120%				106%	50%	130%
Acenaphthene	1	3008313	<0.01	<0.01	0.0%	< 0.01	104%	80%	120%				103%	50%	130%
Fluorene	1	3008313	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				109%	50%	130%
Phenanthrene	1	3008313	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				102%	60%	130%
Anthracene	1	3008313	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Fluoranthene	1	3008313	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				109%	60%	130%
Pyrene	1	3008313	0.02	<0.02	0.0%	< 0.02	101%	80%	120%				108%	60%	130%
Benzo(a)anthracene	1	3008313	<0.02	<0.02	0.0%	< 0.02	102%	80%	120%				104%	60%	130%
Chrysene	1	3008313	0.06	<0.05	0.0%	< 0.05	101%	80%	120%				110%	60%	130%
Benzo(b)fluoranthene	1	3008313	0.02	<0.02	0.0%	< 0.02	100%	80%	120%				88%	60%	130%
Benzo(k)fluoranthene	1	3008313	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				107%	60%	130%
Benzo(a)pyrene	1	3008313	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				101%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3008313	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				100%	60%	130%
Dibenzo(a,h)anthracene	1	3008313	<0.02	<0.02	0.0%	< 0.02	101%	80%	130%				93%	60%	130%
Benzo(g,h.i)perylene	1	3008313	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				105%	60%	130%
Nitrobenzene - d5	1	3008313	83	128	43.0%	<	98%	80%	120%				88%	50%	130%
2-Fluorobiphenyl	1	3008313	91	113	22.0%	<	101%	80%	120%				100%	50%	130%
P-Terphenyl - d14	1	3008313	87	108	22.0%	<	100%	80%	120%				92%	60%	130%
Petroleum Hydrocarbons (F2-F4) in Soil															
C10 - C16 (F2)	873	2986212	<10	<10	NA	< 10	106%	80%	120%	102%	80%	120%	102%	60%	140%
C16 - C34 (F3)	873	2986212	24	29	NA	< 10	106%	80%	120%	96%	80%	120%	103%	60%	140%
C34 - C50 (F4)	873	2986212	14	16	NA	< 10	106%	80%	120%	98%	80%	120%	104%	60%	140%

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
C10 - C16 (F2)	TO 0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO 0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)
Regular TAT 5 to 7 working days ☒
Rush TAT 24 to 48 hours ☐
48 to 72 hours ☐
Date Required: _____
Please contact laboratory if Rush is required

Report To:
Company: Franz Environmental
Contact: Amanda Salway
Address: 308 - 1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9941
LSD:
Client Project #: 2090-1103

Report Information
1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Vivane Dubois-Côté
Email: vdcote@franzbc.com

Report Format
☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Laboratory Use Only
Arrival Temperature: 10°C / 5°C
AGAT Job Number:
Notes:
DEC 12 PM 5:52

Invoice To: Same as above Yes ☒ No ☐
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):
☒ BC CSR - Soil
☒ Agricultural ☐ Industrial ☐ Urban/Park ☐ Commercial
☐ BC CSR - Water
☐ Drinking Water ☐ Aquatic Life ☐ Irrigation ☐ Livestock
☒ CCME
☐ Drinking Water ☒ Industrial ☐ Residential/Park ☐ Drinking Water ☐ Commercial ☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F2-F4	CSR and CCME metals	Benzo PAHs			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3008313	MV-11BH-10M-1	SOIL	12/12/2011			X						X	X	X						
315	MV-11BH-10M-2					X						X		X						X
316	MV-11BH-10M-3												X							
317	MV-11BH-10M-4																			X
318	MV-11BH-10M-5																			X
319	MV-11BH-08-1																			X
321	MV-11BH-08-2												X							
322	MV-11BH-08-3												X							
324	MV-11BH-08-4																			X
325	MV-11BH-08-5																			X
326	MV-DUP1												X							
327	MV-11BH-906-1												X							

Samples Relinquished by (print name & sign): Amanda Salway	Date 12/12/2011	Samples Received by (Print name & sign): Angela Bond	Date Dec 12/11 17:52	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 1 of 2
NO: 000286

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

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Ph.: 778.452.4000 - Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days ☒
Rush TAT 24 to 48 hours ☐
48 to 72 hours ☐
Date Required: _____
Please contact laboratory if Rush is required

Report To:
Company: same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #: 2090-1103

Report Information
1. Name: same as
Email: previous
2. Name:
Email:

Report Format
☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Laboratory Use Only
Arrival Temperature: 10°C / 5°C
AGAT Job Number: 11V559211
Notes: DEC 12 PM 5:52

Invoice To: Same as above Yes ☒ No ☐
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):
☒ BC CSR – Soil
- ☐ Agricultural
- ☒ Industrial
- ☐ Urban/Park
- ☐ Commercial

☐ BC CSR – Water
- ☐ Drinking Water
- ☐ Aquatic Life
- ☐ Irrigation
- ☐ Livestock

☒ CCME
- ☐ Drinking Water
- ☒ Industrial
- ☐ Residential/Park
- ☐ Drinking Water
- ☐ Commercial
- ☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability		CSR and CCME metals					Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1-YEAR– 60 days
3008328	MV-11BH-06-2	SOIL	12/12/2011																	X
329	MV-11BH-06-3											X								
331	MV-11BH-06-4																			X
332	MV-11BH-06-5																			X
333	MV-11BH-06-6																			X
334	MV-11BH-05-1																			X
335	MV-11BH-05-2											X								
336	MV-11BH-05-3																			X
338	MV-11BH-05-4																			X
339	MV-11BH-05-5																			X

Samples Relinquished by (print name & sign): Amanda Stalnaker	Date 12/12/2011	Samples Received by (Print name & sign): Angela Bond Angela Bond	Date Dec 12/11 17:52	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 2 of 2
NO: 000287

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order #_____

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: December 12/11 17:52
Courier: n/d
Received by: AB
Relinquished by: Amanda S.
Branch Received From: n/d
Company: Fraser Environmental
Consultant: n/d
Client left without count verified: no

COC INFORMATION:
Received (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why:_____
TURNAROUND TIME: Reg
COC Numbers: 000286, 287

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 32 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 12-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: LEPH/HEPH
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 19-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 9 + 10 + 10 = 10 °C (2) 4 + 6 + 6 = 5 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM Work order # 11V559211

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: DEC. 15, 2011 / 8:16
Courier: DHL
Received by: JAN
Relinquished by: _____
Company: ~~FRANZ ENVIRONMENTAL~~
Consultant: _____
Client left without count verified: _____

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: REGULAR
COC Numbers: 000286 WO# 11V559211

SAMPLE QUANTITIES:
Coolers: 1 Bottles (Jars) 2 Bags: 0

TIME SENSITIVE ISSUES:
Earliest Date Sampled: DEC. 12, 2011
Microbiology: Test: _____ ALREADY EXCEEDED? Yes (No)
Expiry: _____
Hydrocarbons: Test: _____
Expiry: _____
Samples are received >5 days after sampling: Yes (No)

SPECIALTY ISSUES:
Legal Samples: Yes (No)
International Samples: Yes (No)
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:

Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 3 + ___ = 3 °C (2) ___ + ___ + ___ = ___ °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available
JAR W/ICE

Additional integrity issues (note here and on CoC next to the sample ID):
1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

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CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V559248

SOIL ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

DATE REPORTED: Dec 23, 2011

PAGES (INCLUDING COVER): 15

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-09-1 3008714	MV-11BH-09-2 3008722	MV-11BH-07M-1 3008753	MV-11BH-07M-3 3008755
Antimony	µg/g	40	0.05	0.40	0.33	0.34	0.49
Arsenic	µg/g	15	0.1	2.8	2.3	2.8	3.0
Barium	µg/g	400	0.5	110	107	58.0	153
Beryllium	µg/g	8	0.02	0.31	0.30	0.18	0.43
Boron (Hot Water Soluble)	µg/g		0.1	0.5	0.4	0.1	0.9
Cadmium	µg/g		0.01	0.13	0.09	0.12	0.50
Chromium	µg/g	60	1	38	36	28	40
Cobalt	µg/g	300	0.1	5.1	5.4	7.1	3.8
Copper	µg/g		0.2	17.1	14.8	16.8	15.3
Lead	µg/g		0.05	11.4	9.03	3.23	16.6
Mercury	µg/g		0.01	0.06	0.05	0.03	0.07
Molybdenum	µg/g	40	0.05	0.70	0.58	0.57	0.61
Nickel	µg/g	500	0.5	18.9	19.6	29.5	18.1
Selenium	µg/g	10	0.1	0.3	0.4	0.2	0.8
Silver	µg/g	40	0.05	0.08	0.06	<0.05	0.10
Thallium	µg/g		0.05	0.14	0.14	<0.05	0.19
Tin	µg/g	300	0.05	0.66	0.49	0.33	2.50
Uranium	µg/g	200	0.05	0.79	0.73	0.33	1.11
Vanadium	µg/g		1	48	44	41	41
Zinc	µg/g		1	62	53	43	89
pH 1:2	pH units		0.1	6.5	6.5	8.7	7.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3008714-3008755 Results are based on the dry weight of the sample

Certified By: Marie England

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AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenols, Total - 4AAP (181-140)

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-15M-1 3008734	RDL	MV-11BH-15M-3 3008736	MV-Dup 3 3008752
Phenolics, Total	µg/g	10	0.05	0.24	0.1	4.4	2.7

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

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AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

BTEX / VPH / LEPH/HEPH Soil (180-028)

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-14M-3 3008762	RDL	MV-11BH-14M-4 3008764
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02	0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05	0.05	<0.05
Ethylbenzene	µg/g	7	0.05	<0.05	0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05	0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05	0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	0.05	<0.05
VPH	µg/g	200	10	<10	10	40
Naphthalene	µg/g	50	0.01	<0.01	0.02	<0.02
2-Methylnaphthalene	µg/g		0.01	<0.01	0.02	<0.02
1-Methylnaphthalene	µg/g		0.01	0.01	0.02	<0.02
Acenaphthylene	µg/g		0.01	<0.01	0.02	<0.02
Acenaphthene	µg/g		0.01	<0.01	0.02	<0.02
Fluorene	µg/g		0.02	<0.02	0.04	<0.04
Phenanthrene	µg/g	50	0.02	<0.02	0.04	<0.04
Anthracene	µg/g		0.02	<0.02	0.04	<0.04
Fluoranthene	µg/g		0.05	<0.05	0.1	<0.1
Pyrene	µg/g	100	0.02	<0.02	0.04	<0.04
Benzo(a)anthracene	µg/g	10	0.02	<0.02	0.04	<0.04
Chrysene	µg/g		0.05	<0.05	0.1	<0.1
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	0.04	<0.04
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	0.04	<0.04
Benzo(a)pyrene	µg/g		0.05	<0.05	0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	0.04	<0.04
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	0.04	<0.04
Benzo(g,h.i)perylene	µg/g		0.05	0.05	0.1	<0.1
LEPH C10-C19	µg/g	2000	25	38	25	<50
HEPH C19-C32	µg/g	5000	25	162	25	338

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AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

BTEX / VPH / LEPH/HEPH Soil (180-028)

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-14M-3 3008762	MV-11BH-14M-4 3008764
Nitrobenzene - d5	%	50-130	87	92
2-Fluorobiphenyl	%	50-130	94	99
P-Terphenyl - d14	%	50-130	89	95
Bromofluorobenzene	%	70-130	98.3	105
Toluene - d8	%	70-130	105	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3008762 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3008764 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Detection limits elevated due to high sample moisture content.

Certified By:

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AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-16M-1 3008727	MV-11BH-16M-5 3008731	MV-Dup 2 3008732	MV-11BH-14M-3 3008762	MV-11BH-14M-4 3008764
Benzene	mg/kg		0.005		<0.005	<0.005	<0.005	<0.005
C10 - C16 (F2)	mg/kg		10	<10	<10	<10	<10	<10
Toluene	mg/kg		0.05		<0.05	<0.05	<0.05	<0.05
C16 - C34 (F3)	mg/kg		10	<10	<10	<10	115	304
Ethylbenzene	mg/kg		0.01		<0.01	<0.01	<0.01	<0.01
C34 - C50 (F4)	mg/kg		10	12	<10	<10	87	164
Xylenes	mg/kg		0.05		<0.05	<0.05	<0.05	<0.05
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A
C6 - C10 (F1)	mg/kg		10		<10	<10	<10	<10
Moisture Content	%		1	19	23	19	47	68
C6 - C10 (F1 minus BTEX)	mg/kg		10		<10	<10	<10	<10
Surrogate	Unit	Acceptable Limits						
Toluene-d8 (BTEX)	%	50-150		99	98	101	100	98
Ethylbenzene-d10 (BTEX)	%	50-150		99	98	102	88	82
o-Terphenyl (F2-F4)	%	50-150		98	103	98	98	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)

3008727-3008764 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

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AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-16M-1 3008727	MV-11BH-16M-5 3008731	MV-Dup 2 3008732	MV-11BH-07M-2 3008754	RDL	MV-11BH-07M-4 3008756
Naphthalene	µg/g	50	0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
Methyl tert-butyl ether (MTBE)	µg/g		0.1				<0.1	0.4	<0.4
Benzene	µg/g		0.02				<0.02	0.08	<0.08
2-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
Toluene	µg/g		0.05				<0.05	0.2	<0.2
1-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
Ethylbenzene	µg/g		0.05				<0.05	0.2	<0.2
Acenaphthylene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
m&p-Xylene	µg/g		0.05				<0.05	0.2	<0.2
Acenaphthene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
o-Xylene	µg/g		0.05				<0.05	0.2	<0.2
Fluorene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Styrene	µg/g		0.05				<0.05	0.2	<0.2
Phenanthrene	µg/g	50	0.02	<0.02	<0.02	<0.02	<0.02	0.06	0.11
VPH	µg/g		10				<10	40	<40
Anthracene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Fluoranthene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.2
Pyrene	µg/g	100	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.2
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.2
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.2
LEPH C10-C19	µg/g	2000	25	<25	<25	<25	113	25	139
HEPH C19-C32	µg/g	5000	25	<25	<25	<25	12800	25	1230
EPH C10-C19	µg/g		25				113	25	139
EPH C19-C32	µg/g		25				12800	25	1230

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Certificate of Analysis

AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-16M-1 3008727	MV-11BH-16M-5 3008731	MV-Dup 2 3008732	MV-11BH-07M-2 3008754	MV-11BH-07M-4 3008756
Nitrobenzene - d5	%	50-130	84	85	82	75	102
2-Fluorobiphenyl	%	50-130	99	109	101	94	84
P-Terphenyl - d14	%	60-130	89	99	91	89	94
Bromofluorobenzene	%	70-130				111	114
Toluene - d8	%	70-130				121	115

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3008727-3008732 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

3008754 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3008756 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Detection limits increased due to high moisture content.

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	20111	3008313	0.27	0.31	14.0%	< 0.05	100%	70%	130%	108%	90%	110%	92%	80%	120%
Arsenic	20111	3008313	3.1	2.9	6.7%	< 0.1	106%	70%	130%	99%	90%	110%	95%	80%	120%
Barium	20111	3008313	51.8	48.6	6.0%	< 0.5	91%	70%	130%	109%	90%	110%	94%	80%	120%
Beryllium	20111	3008313	0.18	0.17	6.0%	< 0.02	101%	70%	130%	104%	90%	110%	102%	80%	120%
Boron (Hot Water Soluble)	20111	3008313	0.5	0.5	0.0%	< 0.1				99%	90%	110%	106%	80%	120%
Cadmium	20111	3008313	0.11	0.10	10.0%	< 0.01				103%	90%	110%	97%	80%	120%
Chromium	20111	3008313	21	18	15.0%	< 1	106%	70%	130%	101%	90%	110%	95%	80%	120%
Cobalt	20111	3008313	7.1	6.5	9.0%	< 0.1	98%	70%	130%	102%	90%	110%	94%	80%	120%
Copper	20111	3008313	14.2	13.4	6.0%	< 0.2	94%	70%	130%	102%	90%	110%	94%	80%	120%
Lead	20111	3008313	3.13	3.45	10.0%	< 0.05	91%	70%	130%	102%	90%	110%	97%	80%	120%
Mercury	20111	3008313	0.03	0.02	NA	< 0.01	99%	70%	130%	95%	90%	110%	107%	80%	120%
Molybdenum	20111	3008313	0.32	0.41	25.0%	< 0.05	92%	70%	130%	106%	90%	110%	101%	80%	120%
Nickel	20111	3008313	26.8	24.5	9.0%	< 0.5	99%	70%	130%	103%	90%	110%	96%	80%	120%
Selenium	20111	3008313	0.2	0.1	NA	< 0.1				104%	90%	110%	113%	80%	120%
Silver	20111	3008313	<0.05	<0.05	0.0%	< 0.05				102%	90%	110%	96%	80%	120%
Thallium	20111	3008313	<0.05	<0.05	0.0%	< 0.05				106%	90%	110%	97%	80%	120%
Tin	20111	3008313	0.22	0.23	4.0%	< 0.05				102%	90%	110%	97%	80%	120%
Uranium	20111	3008313	0.27	0.28	3.6%	< 0.05		0%	0%	102%	90%	110%	99%	80%	120%
Vanadium	20111	3008313	41	38	8.0%	< 1	109%	70%	130%	102%	90%	110%	97%	80%	120%
Zinc	20111	3008313	52	41	24.0%	< 1	109%	70%	130%	105%	90%	110%	116%	80%	120%
pH 1:2	20111	3008313	7.7	7.8	1.3%	< 0.1				100%	95%	105%	99%	90%	110%
Phenols, Total - 4AAP (181-140)															
Phenolics, Total	1	3008734	0.24	0.24	0.0%	< 0.05	70%	70%	130%	90%	90%	110%	89%	80%	120%

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
BTEX / VPH / LEPH/HEPH Soil (180-028)															
Methyl tert-butyl ether (MTBE)	1	3008762	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				101%	70%	130%
Benzene	1	3008762	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				102%	70%	130%
Toluene	1	3008762	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				99%	70%	130%
Ethylbenzene	1	3008762	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				88%	70%	130%
m&p-Xylene	1	3008762	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				85%	70%	130%
o-Xylene	1	3008762	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				86%	70%	130%
Styrene	1	3008762	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				87%	70%	130%
VPH	1	3008762	<10	<10	0.0%	< 10									
Bromofluorobenzene	1	3008762	98.3	101	3.0%	<	107%	70%	130%				115%	70%	130%
Toluene - d8	1	3008762	105	115	9.0%	<	101%	70%	130%				121%	70%	130%
Petroleum Hydrocarbons in Soil															
Naphthalene	1	559211	0.5	0.36	32.6%	< 0.01	102%	80%	120%				113%	50%	130%
2-Methylnaphthalene	1	559211	0.65	0.45	36.0%	< 0.01	102%	80%	120%				113%	50%	130%
1-Methylnaphthalene	1	559211	0.28	0.19	38.0%	< 0.01	103%	80%	120%				115%	50%	130%
Acenaphthylene	1	559211	NA	NA	0.0%	< 0.01	102%	80%	120%				106%	50%	130%
Acenaphthene	1	559211	<0.01	<0.01	0.0%	< 0.01	104%	80%	120%				103%	50%	130%
Fluorene	1	559211	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				109%	50%	130%
Phenanthrene	1	559211	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				102%	60%	130%
Anthracene	1	559211	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Fluoranthene	1	559211	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				109%	60%	130%
Pyrene	1	559211	0.02	<0.02	0.0%	< 0.02	101%	80%	120%				108%	60%	130%
Benzo(a)anthracene	1	559211	<0.02	<0.02	0.0%	< 0.02	102%	80%	120%				104%	60%	130%
Chrysene	1	559211	0.06	<0.05	0.0%	< 0.05	101%	80%	120%				110%	60%	130%
Benzo(b)fluoranthene	1	559211	0.02	<0.02	0.0%	< 0.02	100%	80%	120%				88%	60%	130%
Benzo(k)fluoranthene	1	559211	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				107%	60%	130%
Benzo(a)pyrene	1	559211	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				101%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	559211	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				100%	60%	130%
Dibenzo(a,h)anthracene	1	559211	<0.02	<0.02	0.0%	< 0.02	101%	80%	130%				93%	60%	130%
Benzo(g,h.i)perylene	1	559211	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				105%	60%	130%
Nitrobenzene - d5	1	559211	83	128	43.0%	<	98%	80%	120%				88%	50%	130%
2-Fluorobiphenyl	1	559211	91	113	22.0%	<	101%	80%	120%				100%	50%	130%
P-Terphenyl - d14	1	559211	87	108	22.0%	<	100%	80%	120%				92%	60%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
C10 - C16 (F2)	849	3013650	<10	<10	NA	< 10	103%	80%	120%	103%	80%	120%	95%	60%	140%
C16 - C34 (F3)	849	3013650	<10	<10	NA	< 10	103%	80%	120%	100%	80%	120%	96%	60%	140%
C34 - C50 (F4)	849	3013650	<10	<10	NA	< 10	103%	80%	120%	99%	80%	120%	99%	60%	140%
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3008754	<0.1	<0.1	0.0%	< 0.1	104%	80%	120%				89%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 23, 2011

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Benzene	1	3008754	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				95%	70%	130%
Toluene	1	3008754	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	70%	130%
Ethylbenzene	1	3008754	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				84%	70%	130%
m&p-Xylene	1	3008754	<0.05	<0.05	0.0%	< 0.05	106%	80%	120%				79%	70%	130%
o-Xylene	1	3008754	<0.05	<0.05	0.0%	< 0.05	107%	80%	120%				82%	70%	130%
Styrene	1	3008754	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				85%	70%	130%
VPH	1	3008754	<10	<10	0.0%	< 10									
Naphthalene	1	3008754	<0.01	<0.01	0.0%	< 0.01	102%	80%	120%				105%	50%	130%
2-Methylnaphthalene	1	3008754	<0.01	<0.01	0.0%	< 0.01	103%	80%	120%				99%	50%	130%
1-Methylnaphthalene	1	3008754	<0.01	<0.01	0.0%	< 0.01	103%	80%	120%				102%	50%	130%
Acenaphthylene	1	3008754	<0.01	<0.01	0.0%	< 0.01	102%	80%	120%				94%	50%	130%
Acenaphthene	1	3008754	<0.01	0.01	0.0%	< 0.01	105%	80%	120%				90%	50%	130%
Fluorene	1	3008754	<0.02	<0.02	0.0%	< 0.02	102%	80%	120%				95%	50%	130%
Phenanthrene	1	3008754	<0.02	<0.02	0.0%	< 0.02	98%	80%	120%				92%	60%	130%
Anthracene	1	3008754	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				79%	60%	130%
Fluoranthene	1	3008754	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				96%	60%	130%
Pyrene	1	3008754	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				98%	60%	130%
Benzo(a)anthracene	1	3008754	<0.02	<0.02	0.0%	< 0.02	102%	80%	120%				88%	60%	130%
Chrysene	1	3008754	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	3008754	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				87%	60%	130%
Benzo(k)fluoranthene	1	3008754	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Benzo(a)pyrene	1	3008754	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3008754	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				90%	60%	130%
Dibenzo(a,h)anthracene	1	3008754	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	3008754	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Nitrobenzene - d5	1	3008754	75	83	10.0%	<	100%	80%	120%				100%	50%	130%
2-Fluorobiphenyl	1	3008754	94	89	5.0%	<	101%	80%	120%				91%	50%	130%
P-Terphenyl - d14	1	3008754	89	82	8.0%	<	98%	80%	120%				88%	50%	130%
LEPH C10-C19	1	3008754	113	128	12.0%	< 25									
HEPH C19-C32	1	3008754	12800	12500	2.0%	< 25									
Bromofluorobenzene	1	3008754	111	103	7.0%	<	105%	70%	130%				113%	70%	130%
Toluene - d8	1	3008754	121	125	3.0%	<	93%	70%	130%				114%	70%	130%
EPH C10-C19	1	3008754	113	128	12.0%	<	91%	90%	110%		70%	130%	88%	70%	130%
EPH C19-C32	1	3008754	12800	12500	2.0%	<	97%	90%	110%		70%	130%	88%	70%	130%

Certified By:

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER
Phenolics, Total	INOR-181-6014, LAB-181-4013	Modified from EPA 9013A and BC MOE Lab Manual	CONTINUOUS FLOW ANALYZER

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS

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Method Summary

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PROJECT NO: 2090-1103

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
EPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
EPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
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Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9947
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Vivian Dubois-Coté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 2°C
AGAT Job Number: 11V559248
Notes: DEC 14 AM8:02

Invoice To: Same as above Yes [X] No [ ]

Company: Send copy of SRC to vdcote@franzbc.com
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[X] **BC CSR – Soil** [ ] **BC CSR – Water**
[ ] Agricultural [ ] Drinking Water
[X] Industrial [ ] Aquatic Life
[ ] Urban/Park [ ] Irrigation
[ ] Commercial [ ] Livestock
[X] **CCME**
[ ] Drinking Water [X] Industrial
[ ] Residential/Park [ ] Drinking Water
[ ] Commercial [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability		CSR and CCME metals	PAH	CCME F2-F4			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3006714	MV-11BH-09-1	Soil	13/12/2011									X								
722	MV-11BH-09-2											X								
723	MV-11BH-09-3																			X
724	MV-11BH-09-4																			X
725	MV-11BH-09-5																			X
726	MV-11BH-09-6																			X
727	MV-11BH-16M-1					X							X	X						X
728	MV-11BH-16M-2																			X
729	MV-11BH-16M-3																			X
730	MV-11BH-16M-4																			X
731	MV-11BH-16M-5					X							X	X						
732	MV-DUP2					X							X	X						

Samples Relinquished by (print name & sign): Amanda Salway — Date: 13/12/2011
Samples Received by (Print name & sign): S. Cowzer — Date: 14-DEC-11 @ 8:02 AM
Samples Relinquished by (print name & sign): — Date:
Samples Received by (Print name & sign): — Date:
Samples Relinquished by (print name & sign): — Date:
Samples Received by (Print name & sign): — Date:

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Page 1 of 3
NO: 000288

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

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webearth.agatlabs.com
Ph.: 778.452.4000 - Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Report Information

1. Name: same as previous
Email:
2. Name:
Email:

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature:
AGAT Job Number: 11V559248

Notes: DEC 14 AM8:03

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[X] BC CSR – Soil
- [ ] Agricultural
- [X] Industrial
- [ ] Urban/Park
- [ ] Commercial

[ ] BC CSR – Water
- [ ] Drinking Water
- [ ] Aquatic Life
- [ ] Irrigation
- [ ] Livestock

[X] CCME
- [ ] Drinking Water
- [X] Industrial
- [ ] Residential/Park
- [ ] Drinking Water
- [ ] Commercial
- [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability	CSR and CCME metals	phenols					Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3008734	MV-11BH-15M-1	Soil	13/12/2011									X								
735	MV-11BH-15M-2																			X
736	MV-11BH-15M-3											X								
740	MV-11BH-15M-4																			X
743	MV-11BH-15M-5																			X
750	MV-DUP3											X								
753	MV-11BH-07M-1										X									
754	MV-11BH-07M-2																			X
755	MV-11BH-07M-3										X									
756	MV-11BH-07M-4																			X
757	MV-11BH-07M-5																			X
758	MV-11BH-07M-6																			X

Samples Relinquished by (print name & sign): Amanda Galway — Date: 13/12/2011
Samples Received by (Print name & sign): S. Courens — Date: 14-DEC-11 @ 8:02 AM

Samples Relinquished by (print name & sign): — Date:
Samples Received by (Print name & sign): — Date:

Samples Relinquished by (print name & sign): — Date:
Samples Received by (Print name & sign): — Date:

Pink Copy - Client
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White Copy - AGAT

NO: 000289

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

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V5J 0B6
webearth.agatlabs.com
Ph.: 778.452.4000 • Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT	5 to 7 working days	☒
Rush TAT	24 to 48 hours	☐
	48 to 72 hours	☐

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: same as
Contact: previous
Address:

Phone: _____ Fax: _____
LSD:
Client Project #:

Report Information

1. Name: same as
Email: previous
2. Name:
Email:

Report Format

- ☐ Single Sample per page
- ☒ Multiple Samples per page
- ☒ Excel Format Included

Laboratory Use Only

Arrival Temperature: _____
AGAT Job Number: 11V559248

Notes:
DEC 14 AM8:03

Invoice To: Same as above Yes ☒ No ☐

Company:
Contact:
Address:

Phone: _____ Fax: _____
PO/AFE #:

Regulatory Requirements (Check):

- ☒ **BC CSR – Soil**
  - ☐ Agricultural
  - ☒ Industrial
  - ☐ Urban/Park
  - ☐ Commercial
- ☐ **BC CSR – Water**
  - ☐ Drinking Water
  - ☐ Aquatic Life
  - ☐ Irrigation
  - ☐ Livestock
- ☒ **CCME**
  - ☐ Drinking Water
  - ☒ Industrial
  - ☐ Residential/Park
  - ☐ Drinking Water
  - ☐ Commercial
  - ☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F1	CCME F2-F4	PAH			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3008759	MV-11BH-14M-1	SOIL	13/12/2011																	X
761	MV-11BH-14M-2																			X
762	MV-11BH-14M-3				X	X						X	X	X						X
764	MV-11BH-14M-4				X	X						X	X	X						*
√766	MV-11BH-14M-5																			X

Samples Relinquished by (print name & sign): Amanda Galway	Date 13/12/2011	Samples Received by (Print name & sign): S. Courns	Date 14-DEC-11 @ 8:02 AM	Pink Copy - Client	Page 3 of 3	
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT		
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT	NO: 000290	

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order #_____

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 14-DEC-11 @ 8:02AM
Courier: _____
Received by: S. Couzens
Relinquished by: Amanda Salway
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: N/A

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000288, 289, 290

SAMPLE QUANTITIES:
Coolers: 2 Bottles/Jars: 34 Bags: 6

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 13-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: LEPH/HEPH
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 20-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 4 + 4 + 3 = 4 °C (2) 0 + 0 + 1 = 0 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM Work order # 11V559248

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: DEC. 15, 2011 / 8:16
Courier: DHL
Received by: JAN
Relinquished by: _____
Company: ~~FRANZ ENVIRONMENTAL~~
Consultant: _____
Client left without count verified: _____

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: REGULAR
COC Numbers: 000280 WH 11V559248

SAMPLE QUANTITIES:
Coolers: 1 Bottles (Jars): 5 Bags: 0

TIME SENSITIVE ISSUES:
Earliest Date Sampled: DEC. 13, 2011
Microbiology: Test: —
Hydrocarbons: Test: —
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: —
Expiry: —

SPECIALTY ISSUES:
Legal Samples: Yes (No)
International Samples: Yes (No)
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 3 + 3 = 3 °C (2) ___ + ___ + ___ = ___ °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available
JARS W/ ICE

Additional integrity issues (note here and on CoC next to the sample ID):
1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:
_____
_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V559248

SOIL ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

DATE REPORTED: Dec 23, 2011

PAGES (INCLUDING COVER): 15

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-09-1 3008714	MV-11BH-09-2 3008722	MV-11BH-07M-1 3008753	MV-11BH-07M-3 3008755
Antimony	µg/g	40	0.05	0.40	0.33	0.34	0.49
Arsenic	µg/g	12	0.1	2.8	2.3	2.8	3.0
Barium	µg/g	2000	0.5	110	107	58.0	153
Beryllium	µg/g	8	0.02	0.31	0.30	0.18	0.43
Boron (Hot Water Soluble)	µg/g	1.4	0.1	0.5	0.4	0.1	0.9
Cadmium	µg/g	22	0.01	0.13	0.09	0.12	0.50
Chromium	µg/g	87	1	38	36	28	40
Cobalt	µg/g	300	0.1	5.1	5.4	7.1	3.8
Copper	µg/g	91	0.2	17.1	14.8	16.8	15.3
Lead	µg/g	600	0.05	11.4	9.03	3.23	16.6
Mercury	µg/g	50	0.01	0.06	0.05	0.03	0.07
Molybdenum	µg/g	40	0.05	0.70	0.58	0.57	0.61
Nickel	µg/g	50	0.5	18.9	19.6	29.5	18.1
Selenium	µg/g	2.9	0.1	0.3	0.4	0.2	0.8
Silver	µg/g	40	0.05	0.08	0.06	<0.05	0.10
Thallium	µg/g	1	0.05	0.14	0.14	<0.05	0.19
Tin	µg/g	300	0.05	0.66	0.49	0.33	2.50
Uranium	µg/g	300	0.05	0.79	0.73	0.33	1.11
Vanadium	µg/g	130	1	48	44	41	41
Zinc	µg/g	360	1	62	53	43	89
pH 1:2	pH units		0.1	6.5	6.5	8.7	7.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)
3008714-3008755 Results are based on the dry weight of the sample

Certified By: Marie England

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenols, Total - 4AAP (181-140)

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-15M-1 3008734	RDL	MV-11BH-15M-3 3008736	MV-Dup 3 3008752
Phenolics, Total	µg/g	10	0.05	0.24	0.1	4.4	2.7

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

Certified By:

AGAT Laboratories

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AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

BTEX / VPH / LEPH/HEPH Soil (180-028)

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-14M-3 3008762	RDL	MV-11BH-14M-4 3008764
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02	0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05	0.05	<0.05
Ethylbenzene	µg/g	7	0.05	<0.05	0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05	0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05	0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	0.05	<0.05
VPH	µg/g	200	10	<10	10	40
Naphthalene	µg/g	50	0.01	<0.01	0.02	<0.02
2-Methylnaphthalene	µg/g		0.01	<0.01	0.02	<0.02
1-Methylnaphthalene	µg/g		0.01	0.01	0.02	<0.02
Acenaphthylene	µg/g		0.01	<0.01	0.02	<0.02
Acenaphthene	µg/g		0.01	<0.01	0.02	<0.02
Fluorene	µg/g		0.02	<0.02	0.04	<0.04
Phenanthrene	µg/g	50	0.02	<0.02	0.04	<0.04
Anthracene	µg/g		0.02	<0.02	0.04	<0.04
Fluoranthene	µg/g		0.05	<0.05	0.1	<0.1
Pyrene	µg/g	100	0.02	<0.02	0.04	<0.04
Benzo(a)anthracene	µg/g	10	0.02	<0.02	0.04	<0.04
Chrysene	µg/g		0.05	<0.05	0.1	<0.1
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	0.04	<0.04
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	0.04	<0.04
Benzo(a)pyrene	µg/g		0.05	<0.05	0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	0.04	<0.04
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	0.04	<0.04
Benzo(g,h.i)perylene	µg/g		0.05	0.05	0.1	<0.1
LEPH C10-C19	µg/g	2000	25	38	25	<50
HEPH C19-C32	µg/g	5000	25	162	25	338

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

BTEX / VPH / LEPH/HEPH Soil (180-028)

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-14M-3 3008762	MV-11BH-14M-4 3008764
Nitrobenzene - d5	%	50-130	87	92
2-Fluorobiphenyl	%	50-130	94	99
P-Terphenyl - d14	%	50-130	89	95
Bromofluorobenzene	%	70-130	98.3	105
Toluene - d8	%	70-130	105	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3008762 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3008764 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Detection limits elevated due to high sample moisture content.

Certified By:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-16M-1 3008727	MV-11BH-16M-5 3008731	MV-Dup 2 3008732	MV-11BH-14M-3 3008762	MV-11BH-14M-4 3008764
Benzene	mg/kg		0.005		<0.005	<0.005	<0.005	<0.005
C10 - C16 (F2)	mg/kg		10	<10	<10	<10	<10	<10
Toluene	mg/kg		0.05		<0.05	<0.05	<0.05	<0.05
C16 - C34 (F3)	mg/kg		10	<10	<10	<10	115	304
Ethylbenzene	mg/kg		0.01		<0.01	<0.01	<0.01	<0.01
C34 - C50 (F4)	mg/kg		10	12	<10	<10	87	164
Xylenes	mg/kg		0.05		<0.05	<0.05	<0.05	<0.05
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A
C6 - C10 (F1)	mg/kg		10		<10	<10	<10	<10
Moisture Content	%		1	19	23	19	47	68
C6 - C10 (F1 minus BTEX)	mg/kg		10		<10	<10	<10	<10
Surrogate	Unit	Acceptable Limits						
Toluene-d8 (BTEX)	%	50-150		99	98	101	100	98
Ethylbenzene-d10 (BTEX)	%	50-150		99	98	102	88	82
o-Terphenyl (F2-F4)	%	50-150		98	103	98	98	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)

3008727-3008764 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By:

AGAT Laboratories

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Burnaby, British Columbia
CANADA V5J 0B6
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Certificate of Analysis

AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-16M-1 3008727	MV-11BH-16M-5 3008731	MV-Dup 2 3008732	MV-11BH-07M-2 3008754	RDL	MV-11BH-07M-4 3008756
Naphthalene	µg/g	50	0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
Methyl tert-butyl ether (MTBE)	µg/g		0.1				<0.1	0.4	<0.4
Benzene	µg/g		0.02				<0.02	0.08	<0.08
2-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
Toluene	µg/g		0.05				<0.05	0.2	<0.2
1-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
Ethylbenzene	µg/g		0.05				<0.05	0.2	<0.2
Acenaphthylene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
m&p-Xylene	µg/g		0.05				<0.05	0.2	<0.2
Acenaphthene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.03
o-Xylene	µg/g		0.05				<0.05	0.2	<0.2
Fluorene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Styrene	µg/g		0.05				<0.05	0.2	<0.2
Phenanthrene	µg/g	50	0.02	<0.02	<0.02	<0.02	<0.02	0.06	0.11
VPH	µg/g		10				<10	40	<40
Anthracene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Fluoranthene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.2
Pyrene	µg/g	100	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.2
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.2
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.06
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	0.2	<0.2
LEPH C10-C19	µg/g	2000	25	<25	<25	<25	113	25	139
HEPH C19-C32	µg/g	5000	25	<25	<25	<25	12800	25	1230
EPH C10-C19	µg/g		25				113	25	139
EPH C19-C32	µg/g		25				12800	25	1230

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 11V559248
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 13, 2011 | DATE RECEIVED: Dec 14, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-16M-1 3008727	MV-11BH-16M-5 3008731	MV-Dup 2 3008732	MV-11BH-07M-2 3008754	MV-11BH-07M-4 3008756
Nitrobenzene - d5	%	50-130	84	85	82	75	102
2-Fluorobiphenyl	%	50-130	99	109	101	94	84
P-Terphenyl - d14	%	60-130	89	99	91	89	94
Bromofluorobenzene	%	70-130				111	114
Toluene - d8	%	70-130				121	115

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3008727-3008732 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

3008754 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3008756 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Detection limits increased due to high moisture content.

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	20111	3008313	0.27	0.31	14.0%	< 0.05	100%	70%	130%	108%	90%	110%	92%	80%	120%
Arsenic	20111	3008313	3.1	2.9	6.7%	< 0.1	106%	70%	130%	99%	90%	110%	95%	80%	120%
Barium	20111	3008313	51.8	48.6	6.0%	< 0.5	91%	70%	130%	109%	90%	110%	94%	80%	120%
Beryllium	20111	3008313	0.18	0.17	6.0%	< 0.02	101%	70%	130%	104%	90%	110%	102%	80%	120%
Boron (Hot Water Soluble)	20111	3008313	0.5	0.5	0.0%	< 0.1				99%	90%	110%	106%	80%	120%
Cadmium	20111	3008313	0.11	0.10	10.0%	< 0.01				103%	90%	110%	97%	80%	120%
Chromium	20111	3008313	21	18	15.0%	< 1	106%	70%	130%	101%	90%	110%	95%	80%	120%
Cobalt	20111	3008313	7.1	6.5	9.0%	< 0.1	98%	70%	130%	102%	90%	110%	94%	80%	120%
Copper	20111	3008313	14.2	13.4	6.0%	< 0.2	94%	70%	130%	102%	90%	110%	94%	80%	120%
Lead	20111	3008313	3.13	3.45	10.0%	< 0.05	91%	70%	130%	102%	90%	110%	97%	80%	120%
Mercury	20111	3008313	0.03	0.02	NA	< 0.01	99%	70%	130%	95%	90%	110%	107%	80%	120%
Molybdenum	20111	3008313	0.32	0.41	25.0%	< 0.05	92%	70%	130%	106%	90%	110%	101%	80%	120%
Nickel	20111	3008313	26.8	24.5	9.0%	< 0.5	99%	70%	130%	103%	90%	110%	96%	80%	120%
Selenium	20111	3008313	0.2	0.1	NA	< 0.1				104%	90%	110%	113%	80%	120%
Silver	20111	3008313	<0.05	<0.05	0.0%	< 0.05				102%	90%	110%	96%	80%	120%
Thallium	20111	3008313	<0.05	<0.05	0.0%	< 0.05				106%	90%	110%	97%	80%	120%
Tin	20111	3008313	0.22	0.23	4.0%	< 0.05				102%	90%	110%	97%	80%	120%
Uranium	20111	3008313	0.27	0.28	3.6%	< 0.05		0%	0%	102%	90%	110%	99%	80%	120%
Vanadium	20111	3008313	41	38	8.0%	< 1	109%	70%	130%	102%	90%	110%	97%	80%	120%
Zinc	20111	3008313	52	41	24.0%	< 1	109%	70%	130%	105%	90%	110%	116%	80%	120%
pH 1:2	20111	3008313	7.7	7.8	1.3%	< 0.1				100%	95%	105%	99%	90%	110%
Phenols, Total - 4AAP (181-140)															
Phenolics, Total	1	3008734	0.24	0.24	0.0%	< 0.05	70%	70%	130%	90%	90%	110%	89%	80%	120%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
BTEX / VPH / LEPH/HEPH Soil (180-028)															
Methyl tert-butyl ether (MTBE)	1	3008762	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				101%	70%	130%
Benzene	1	3008762	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				102%	70%	130%
Toluene	1	3008762	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				99%	70%	130%
Ethylbenzene	1	3008762	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				88%	70%	130%
m&p-Xylene	1	3008762	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				85%	70%	130%
o-Xylene	1	3008762	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				86%	70%	130%
Styrene	1	3008762	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				87%	70%	130%
VPH	1	3008762	<10	<10	0.0%	< 10									
Bromofluorobenzene	1	3008762	98.3	101	3.0%	<	107%	70%	130%				115%	70%	130%
Toluene - d8	1	3008762	105	115	9.0%	<	101%	70%	130%				121%	70%	130%
Petroleum Hydrocarbons in Soil															
Naphthalene	1	559211	0.5	0.36	32.6%	< 0.01	102%	80%	120%				113%	50%	130%
2-Methylnaphthalene	1	559211	0.65	0.45	36.0%	< 0.01	102%	80%	120%				113%	50%	130%
1-Methylnaphthalene	1	559211	0.28	0.19	38.0%	< 0.01	103%	80%	120%				115%	50%	130%
Acenaphthylene	1	559211	NA	NA	0.0%	< 0.01	102%	80%	120%				106%	50%	130%
Acenaphthene	1	559211	<0.01	<0.01	0.0%	< 0.01	104%	80%	120%				103%	50%	130%
Fluorene	1	559211	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				109%	50%	130%
Phenanthrene	1	559211	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				102%	60%	130%
Anthracene	1	559211	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Fluoranthene	1	559211	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				109%	60%	130%
Pyrene	1	559211	0.02	<0.02	0.0%	< 0.02	101%	80%	120%				108%	60%	130%
Benzo(a)anthracene	1	559211	<0.02	<0.02	0.0%	< 0.02	102%	80%	120%				104%	60%	130%
Chrysene	1	559211	0.06	<0.05	0.0%	< 0.05	101%	80%	120%				110%	60%	130%
Benzo(b)fluoranthene	1	559211	0.02	<0.02	0.0%	< 0.02	100%	80%	120%				88%	60%	130%
Benzo(k)fluoranthene	1	559211	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				107%	60%	130%
Benzo(a)pyrene	1	559211	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				101%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	559211	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				100%	60%	130%
Dibenzo(a,h)anthracene	1	559211	<0.02	<0.02	0.0%	< 0.02	101%	80%	130%				93%	60%	130%
Benzo(g,h.i)perylene	1	559211	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				105%	60%	130%
Nitrobenzene - d5	1	559211	83	128	43.0%	<	98%	80%	120%				88%	50%	130%
2-Fluorobiphenyl	1	559211	91	113	22.0%	<	101%	80%	120%				100%	50%	130%
P-Terphenyl - d14	1	559211	87	108	22.0%	<	100%	80%	120%				92%	60%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
C10 - C16 (F2)	849	3013650	<10	<10	NA	< 10	103%	80%	120%	103%	80%	120%	95%	60%	140%
C16 - C34 (F3)	849	3013650	<10	<10	NA	< 10	103%	80%	120%	100%	80%	120%	96%	60%	140%
C34 - C50 (F4)	849	3013650	<10	<10	NA	< 10	103%	80%	120%	99%	80%	120%	99%	60%	140%
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3008754	<0.1	<0.1	0.0%	< 0.1	104%	80%	120%				89%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 23, 2011

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Benzene	1	3008754	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				95%	70%	130%
Toluene	1	3008754	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	70%	130%
Ethylbenzene	1	3008754	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				84%	70%	130%
m&p-Xylene	1	3008754	<0.05	<0.05	0.0%	< 0.05	106%	80%	120%				79%	70%	130%
o-Xylene	1	3008754	<0.05	<0.05	0.0%	< 0.05	107%	80%	120%				82%	70%	130%
Styrene	1	3008754	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				85%	70%	130%
VPH	1	3008754	<10	<10	0.0%	< 10									
Naphthalene	1	3008754	<0.01	<0.01	0.0%	< 0.01	102%	80%	120%				105%	50%	130%
2-Methylnaphthalene	1	3008754	<0.01	<0.01	0.0%	< 0.01	103%	80%	120%				99%	50%	130%
1-Methylnaphthalene	1	3008754	<0.01	<0.01	0.0%	< 0.01	103%	80%	120%				102%	50%	130%
Acenaphthylene	1	3008754	<0.01	<0.01	0.0%	< 0.01	102%	80%	120%				94%	50%	130%
Acenaphthene	1	3008754	<0.01	0.01	0.0%	< 0.01	105%	80%	120%				90%	50%	130%
Fluorene	1	3008754	<0.02	<0.02	0.0%	< 0.02	102%	80%	120%				95%	50%	130%
Phenanthrene	1	3008754	<0.02	<0.02	0.0%	< 0.02	98%	80%	120%				92%	60%	130%
Anthracene	1	3008754	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				79%	60%	130%
Fluoranthene	1	3008754	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				96%	60%	130%
Pyrene	1	3008754	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				98%	60%	130%
Benzo(a)anthracene	1	3008754	<0.02	<0.02	0.0%	< 0.02	102%	80%	120%				88%	60%	130%
Chrysene	1	3008754	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	3008754	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				87%	60%	130%
Benzo(k)fluoranthene	1	3008754	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Benzo(a)pyrene	1	3008754	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3008754	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				90%	60%	130%
Dibenzo(a,h)anthracene	1	3008754	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	3008754	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Nitrobenzene - d5	1	3008754	75	83	10.0%	<	100%	80%	120%				100%	50%	130%
2-Fluorobiphenyl	1	3008754	94	89	5.0%	<	101%	80%	120%				91%	50%	130%
P-Terphenyl - d14	1	3008754	89	82	8.0%	<	98%	80%	120%				88%	50%	130%
LEPH C10-C19	1	3008754	113	128	12.0%	< 25									
HEPH C19-C32	1	3008754	12800	12500	2.0%	< 25									
Bromofluorobenzene	1	3008754	111	103	7.0%	<	105%	70%	130%				113%	70%	130%
Toluene - d8	1	3008754	121	125	3.0%	<	93%	70%	130%				114%	70%	130%
EPH C10-C19	1	3008754	113	128	12.0%	<	91%	90%	110%		70%	130%	88%	70%	130%
EPH C19-C32	1	3008754	12800	12500	2.0%	<	97%	90%	110%		70%	130%	88%	70%	130%

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER
Phenolics, Total	INOR-181-6014, LAB-181-4013	Modified from EPA 9013A and BC MOE Lab Manual	CONTINUOUS FLOW ANALYZER

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS

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http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
EPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
EPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID

AGAT Laboratories

120 - 8600 Glenlyon Parkway
Burnaby, BC,
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webearth.agatlabs.com
Ph.: 778.452.4000 · Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9947
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Vivian Dubois-Coté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 2°C
AGAT Job Number: 11V559248
Notes: DEC 14 AM8:02

Invoice To: Same as above Yes [X] No [ ]

Company: Send copy of SRC to vdcote@franzbc.com
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[X] **BC CSR – Soil** [ ] **BC CSR – Water**
[ ] Agricultural [ ] Drinking Water
[X] Industrial [ ] Aquatic Life
[ ] Urban/Park [ ] Irrigation
[ ] Commercial [ ] Livestock
[X] **CCME**
[ ] Drinking Water [X] Industrial
[ ] Residential/Park [ ] Drinking Water
[ ] Commercial [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability		CSR and CCME metals	PAH	CCME F2-F4			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3006714	MV-11BH-09-1	Soil	13/12/2011									X								
722	MV-11BH-09-2											X								
723	MV-11BH-09-3																			X
724	MV-11BH-09-4																			X
725	MV-11BH-09-5																			X
726	MV-11BH-09-6																			X
727	MV-11BH-16M-1					X							X	X						X
728	MV-11BH-16M-2																			X
729	MV-11BH-16M-3																			X
730	MV-11BH-16M-4																			X
731	MV-11BH-16M-5					X							X	X						
732	MV-DUP2					X							X	X						

Samples Relinquished by (print name & sign): Amanda Salway — Date: 13/12/2011
Samples Received by (Print name & sign): S. Cowzer — Date: 14-DEC-11 @ 8:02 AM
Samples Relinquished by (print name & sign): — Date:
Samples Received by (Print name & sign): — Date:
Samples Relinquished by (print name & sign): — Date:
Samples Received by (Print name & sign): — Date:

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Page 1 of 3
NO: 000288

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

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webearth.agatlabs.com
Ph.: 778.452.4000 - Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Report Information

1. Name: same as previous
Email:
2. Name:
Email:

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature:
AGAT Job Number: 11V559248

Notes: DEC 14 AM8:03

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[X] BC CSR – Soil
- [ ] Agricultural
- [X] Industrial
- [ ] Urban/Park
- [ ] Commercial

[ ] BC CSR – Water
- [ ] Drinking Water
- [ ] Aquatic Life
- [ ] Irrigation
- [ ] Livestock

[X] CCME
- [ ] Drinking Water
- [X] Industrial
- [ ] Residential/Park
- [ ] Drinking Water
- [ ] Commercial
- [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability	CSR and CCME metals	phenols					Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3008734	MV-11BH-15M-1	Soil	13/12/2011									X								
735	MV-11BH-15M-2																			X
736	MV-11BH-15M-3											X								
740	MV-11BH-15M-4																			X
743	MV-11BH-15M-5																			X
750	MV-DUP3											X								
753	MV-11BH-07M-1										X									
754	MV-11BH-07M-2																			X
755	MV-11BH-07M-3										X									
756	MV-11BH-07M-4																			X
757	MV-11BH-07M-5																			X
758	MV-11BH-07M-6																			X

Samples Relinquished by (print name & sign): Amanda Galway — Date: 13/12/2011
Samples Received by (Print name & sign): S. Courens — Date: 14-DEC-11 @ 8:02 AM

Samples Relinquished by (print name & sign): — Date:
Samples Received by (Print name & sign): — Date:

Samples Relinquished by (print name & sign): — Date:
Samples Received by (Print name & sign): — Date:

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NO: 000289

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

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V5J 0B6
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Ph.: 778.452.4000 • Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT	5 to 7 working days	☒
Rush TAT	24 to 48 hours	☐
	48 to 72 hours	☐

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: same as
Contact: previous
Address:

Phone: _____ Fax: _____
LSD:
Client Project #:

Report Information

1. Name: same as
Email: previous
2. Name:
Email:

Report Format

- ☐ Single Sample per page
- ☒ Multiple Samples per page
- ☒ Excel Format Included

Laboratory Use Only

Arrival Temperature: _____
AGAT Job Number: 11V559248

Notes:
DEC 14 AM8:03

Invoice To: Same as above Yes ☒ No ☐

Company:
Contact:
Address:

Phone: _____ Fax: _____
PO/AFE #:

Regulatory Requirements (Check):

- ☒ **BC CSR – Soil**
  - ☐ Agricultural
  - ☒ Industrial
  - ☐ Urban/Park
  - ☐ Commercial
- ☐ **BC CSR – Water**
  - ☐ Drinking Water
  - ☐ Aquatic Life
  - ☐ Irrigation
  - ☐ Livestock
- ☒ **CCME**
  - ☐ Drinking Water
  - ☒ Industrial
  - ☐ Residential/Park
  - ☐ Drinking Water
  - ☐ Commercial
  - ☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F1	CCME F2-F4	PAH			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3008759	MV-11BH-14M-1	SOIL	13/12/2011																	X
761	MV-11BH-14M-2																			X
762	MV-11BH-14M-3				X	X						X	X	X						X
764	MV-11BH-14M-4				X	X						X	X	X						*
√766	MV-11BH-14M-5																			X

Samples Relinquished by (print name & sign): Amanda Galway	Date 13/12/2011	Samples Received by (Print name & sign): S. Courns	Date 14-DEC-11 @ 8:02 AM	Pink Copy - Client	Page 3 of 3	
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT		
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT	NO: 000290	

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order #_____

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 14-DEC-11 @ 8:02AM
Courier: _____
Received by: S. Couzens
Relinquished by: Amanda Salway
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: N/A

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000288, 289, 290

SAMPLE QUANTITIES:
Coolers: 2 Bottles/Jars: 34 Bags: 6

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 13-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: LEPH/HEPH
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 20-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 4 + 4 + 3 = 4 °C (2) 0 + 0 + 1 = 0 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM Work order # 11V559248

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: DEC. 15, 2011 / 8:16
Courier: DHL
Received by: JAN
Relinquished by: _____
Company: ~~FRANZ ENVIRONMENTAL~~
Consultant: _____
Client left without count verified: _____

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: REGULAR
COC Numbers: 000280 WH 11V559248

SAMPLE QUANTITIES:
Coolers: 1 Bottles (Jars): 5 Bags: 0

TIME SENSITIVE ISSUES:
Earliest Date Sampled: DEC. 13, 2011
Microbiology: Test: —
Hydrocarbons: Test: —
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: —
Expiry: —

SPECIALTY ISSUES:
Legal Samples: Yes (No)
International Samples: Yes (No)
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 3 + 3 = 3 °C (2) ___ + ___ + ___ = ___ °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available
JARS W/ ICE

Additional integrity issues (note here and on CoC next to the sample ID):
1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:
_____
_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V559640

SOIL ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

DATE REPORTED: Dec 21, 2011

PAGES (INCLUDING COVER): 21

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-13M-2 3011798	MV-11BH-13M-3 3011800	MV-11BH-12M-1 3011803	MV-11BH-12M-2 3011805	MV-11BH-11M-1 3011812	MV-11BH-11M-4 3011820	BV-11BH-09M-1 3011831	BV-11BH-09M-5 3011841
Antimony	µg/g	40	0.05	0.58	0.53	1.17	0.56	1.36	0.90	2.05	0.49
Arsenic	µg/g	15	0.1	3.4	3.8	5.7	3.9	5.1	11.6	4.5	6.2
Barium	µg/g	400	0.5	171	157	74.3	182	61.4	160	174	93.3
Beryllium	µg/g	8	0.02	0.58	0.44	0.17	0.61	0.14	0.64	0.26	0.32
Boron (Hot Water Soluble)	µg/g		0.1	0.1	0.1	2.5	0.1	2.2	0.3	1.5	0.8
Cadmium	µg/g		0.01	0.19	0.16	1.05	0.26	0.48	0.37	0.25	0.27
Chromium	µg/g	60	1	52	41	26	51	30	41	38	34
Cobalt	µg/g	300	0.1	7.5	7.4	3.0	8.6	4.7	10.4	7.5	11.6
Copper	µg/g		0.2	27.7	18.9	27.1	29.9	27.7	47.5	31.1	29.8
Lead	µg/g		0.05	11.7	11.0	107	11.8	46.2	10.3	18.1	7.47
Mercury	µg/g		0.01	0.08	0.06	0.14	0.08	0.06	0.08	0.03	0.06
Molybdenum	µg/g	40	0.05	0.52	0.57	2.55	0.64	3.52	4.70	2.14	0.69
Nickel	µg/g	500	0.5	30.5	27.2	12.5	30.5	18.7	40.9	29.0	38.6
Selenium	µg/g	10	0.1	0.8	0.6	0.5	0.8	0.5	1.4	0.3	0.6
Silver	µg/g	40	0.05	0.10	0.07	0.10	0.10	0.09	0.16	0.08	0.09
Thallium	µg/g		0.05	0.14	0.17	0.07	0.24	<0.05	0.15	<0.05	0.08
Tin	µg/g	300	0.05	1.00	1.52	2.89	0.89	1.33	0.67	3.92	1.70
Uranium	µg/g	200	0.05	1.31	1.27	0.55	1.88	0.74	2.46	0.84	0.67
Vanadium	µg/g		1	61	49	26	61	32	62	40	47
Zinc	µg/g		1	53	58	446	57	108	76	80	64
pH 1:2	pH units		0.1	6.0	6.0	6.0	6.1	6.7	6.6	7.2	7.3

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-01M-2 3011850	BV-11BH-01M-5 3011858	BV-Dup5 3011859
Antimony	µg/g	40	0.05	0.31	0.56	0.64
Arsenic	µg/g	15	0.1	3.6	17.2	17.5
Barium	µg/g	400	0.5	57.9	87.7	86.9
Beryllium	µg/g	8	0.02	0.21	0.34	0.31
Boron (Hot Water Soluble)	µg/g		0.1	0.1	0.4	0.4
Cadmium	µg/g		0.01	0.12	0.31	0.31
Chromium	µg/g	60	1	25	43	40
Cobalt	µg/g	300	0.1	7.2	11.4	11.0
Copper	µg/g		0.2	18.0	30.7	30.3
Lead	µg/g		0.05	3.30	7.65	7.39
Mercury	µg/g		0.01	0.02	0.06	0.06
Molybdenum	µg/g	40	0.05	0.72	0.81	0.80
Nickel	µg/g	500	0.5	30.1	37.8	37.5
Selenium	µg/g	10	0.1	0.2	0.6	0.6
Silver	µg/g	40	0.05	<0.05	0.10	0.10
Thallium	µg/g		0.05	<0.05	0.09	0.09
Tin	µg/g	300	0.05	0.28	0.70	0.93
Uranium	µg/g	200	0.05	0.38	0.70	0.69
Vanadium	µg/g		1	36	44	43
Zinc	µg/g		1	39	66	64
pH 1:2	pH units		0.1	7.5	7.6	7.5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3011798-3011859 Results are based on the dry weight of the sample

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AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-13M-2 3011798	MV-11BH-13M-3 3011800	MV-11BH-12M-1 3011803	MV-11BH-12M-2 3011805	MV-11BH-11M-1 3011812	MV-11BH-11M-4 3011820	MV-Dup4 3011830	BV-11BH-01M-2 3011850
Benzene	mg/kg	0.030	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.37	0.05	<0.05	<0.05	0.13	<0.05	0.10	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.082	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg	11	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	320	10	<10	<10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	260	10	<10	<10	99	<10	20	13	18	<10
C16 - C34 (F3)	mg/kg	1700	10	139	244	1490	171	1150	412	1030	<10
C34 - C50 (F4)	mg/kg	3300	10	62	115	1060	240	818	306	760	<10
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%		1	42	45	78	41	31	82	26	8
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	50-150		102	101	101	104	104	100	101	103
Ethylbenzene-d10 (BTEX)	%	50-150		108	96	84	110	113	84	104	127
o-Terphenyl (F2-F4)	%	50-150		97	100	99	94	99	97	98	98

Parameter	Unit	G / S	RDL	BV-11BH-01M-5 3011858
Benzene	mg/kg	0.030	0.005	<0.005
Toluene	mg/kg	0.37	0.05	<0.05
Ethylbenzene	mg/kg	0.082	0.01	<0.01
Xylenes	mg/kg	11	0.05	<0.05
C6 - C10 (F1)	mg/kg	320	10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10
C10 - C16 (F2)	mg/kg	260	10	<10
C16 - C34 (F3)	mg/kg	1700	10	97
C34 - C50 (F4)	mg/kg	3300	10	39
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A
Moisture Content	%		1	29
Surrogate	Unit	Acceptable Limits		
Toluene-d8 (BTEX)	%	50-150		102
Ethylbenzene-d10 (BTEX)	%	50-150		110
o-Terphenyl (F2-F4)	%	50-150		96

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AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3011798-3011858 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

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AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (F2-F4) in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-09M-1 3011831	BV-11BH-09M-5 3011841
C10 - C16 (F2)	mg/kg	260	10	<10	<10
C16 - C34 (F3)	mg/kg	1700	10	494	12
C34 - C50 (F4)	mg/kg	3300	10	344	<10
Moisture Content	%		1	14	29
Surrogate	Unit	Acceptable Limits			
o-Terphenyl (F2-F4)	%	50-150		98	96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3011831-3011841 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram has returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

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AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-13M-2 3011798	MV-11BH-13M-3 3011800	RDL	MV-11BH-12M-1 3011803	RDL	MV-11BH-12M-2 3011805	RDL	MV-11BH-11M-1 3011812
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	<0.1	0.3	<0.3	0.2	<0.2	0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02	<0.02	0.06	<0.06	0.04	<0.04	0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05	<0.05	0.2	0.5	0.1	<0.1	0.05	0.09
Ethylbenzene	µg/g	7	0.05	<0.05	<0.05	0.2	<0.2	0.1	<0.1	0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05	<0.05	0.2	<0.2	0.1	<0.1	0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05	<0.05	0.2	<0.2	0.1	<0.1	0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	<0.05	0.2	<0.2	0.1	<0.1	0.05	<0.05
VPH	µg/g	200	10	<10	22	30	67	20	<20	10	27
Naphthalene	µg/g	50	0.01	0.02	0.01	0.02	0.89	0.01	<0.01	0.01	0.32
2-Methylnaphthalene	µg/g		0.01	0.01	<0.01	0.02	0.19	0.01	<0.01	0.01	0.19
1-Methylnaphthalene	µg/g		0.01	0.01	<0.01	0.02	0.12	0.01	<0.01	0.01	0.12
Acenaphthylene	µg/g		0.01	<0.01	<0.01	0.02	0.13	0.01	<0.01	0.01	0.04
Acenaphthene	µg/g		0.01	<0.01	<0.01	0.02	0.02	0.01	<0.01	0.01	0.23
Fluorene	µg/g		0.02	<0.02	<0.02	0.04	0.06	0.02	<0.02	0.02	0.31
Phenanthrene	µg/g	50	0.02	0.04	<0.02	0.04	0.52	0.02	<0.02	0.02	1.20
Anthracene	µg/g		0.02	<0.02	<0.02	0.04	0.07	0.02	<0.02	0.02	0.30
Fluoranthene	µg/g		0.05	<0.05	<0.05	0.1	0.5	0.05	<0.05	0.05	1.80
Pyrene	µg/g	100	0.02	0.02	<0.02	0.04	0.50	0.02	<0.02	0.02	1.60
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	0.04	0.10	0.02	<0.02	0.02	0.80
Chrysene	µg/g		0.05	<0.05	<0.05	0.1	0.1	0.05	<0.05	0.05	0.68
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	0.04	0.16	0.02	<0.02	0.02	0.58
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	0.04	0.05	0.02	<0.02	0.02	0.29
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	0.1	0.1	0.05	<0.05	0.05	0.68
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	0.04	<0.04	0.02	<0.02	0.02	0.31
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	0.04	<0.04	0.02	<0.02	0.02	0.08
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	0.1	0.1	0.05	<0.05	0.05	0.31
LEPH C10-C19	µg/g	2000	25	<25	<25	25	180	25	26	25	68
HEPH C19-C32	µg/g	5000	25	203	201	25	1100	25	250	25	1100

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AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-13M-2 3011798	MV-11BH-13M-3 3011800	MV-11BH-12M-1 3011803	MV-11BH-12M-2 3011805	MV-11BH-11M-1 3011812
Nitrobenzene - d5	%	50-130	117	108	114	110	100
2-Fluorobiphenyl	%	50-130	85	91	86	91	96
P-Terphenyl - d14	%	50-130	119	112	105	96	120
Bromofluorobenzene	%	70-130	94.9	94.6	88.8	96.3	99.6
Toluene - d8	%	70-130	109	102	111	117	120

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AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-11M-4 3011820	RDL	MV-Dup4 3011830	RDL	BV-11BH-09M-1 3011831	BV-11BH-09M-5 3011841	RDL	BV-11BH-01M-2 3011850
Methyl tert-butyl ether (MTBE)	µg/g	700	0.3	<0.3	0.2	<0.2	0.3			0.1	<0.1
Benzene	µg/g	0.04	0.06	<0.06	0.04	<0.04	0.06			0.02	<0.02
Toluene	µg/g	2.5	0.2	<0.2	0.1	0.1	0.2			0.05	<0.05
Ethylbenzene	µg/g	7	0.2	<0.2	0.1	<0.1	0.2			0.05	<0.05
m&p-Xylene	µg/g	20	0.2	<0.2	0.1	<0.1	0.2			0.05	<0.05
o-Xylene	µg/g	20	0.2	<0.2	0.1	<0.1	0.2			0.05	<0.05
Styrene	µg/g	50	0.2	<0.2	0.1	<0.1	0.2			0.05	<0.05
VPH	µg/g	200	30	<30	20	<20	30			10	<10
Naphthalene	µg/g	50	0.03	<0.03	0.02	0.37	0.01	0.09	0.01	0.01	<0.01
2-Methylnaphthalene	µg/g		0.03	<0.03	0.02	0.21	0.01	0.04	<0.01	0.01	<0.01
1-Methylnaphthalene	µg/g		0.03	<0.03	0.02	0.13	0.01	0.02	<0.01	0.01	<0.01
Acenaphthylene	µg/g		0.03	<0.03	0.02	0.08	0.01	0.01	<0.01	0.01	<0.01
Acenaphthene	µg/g		0.03	<0.03	0.02	0.30	0.01	<0.01	<0.01	0.01	<0.01
Fluorene	µg/g		0.06	<0.06	0.04	0.44	0.02	<0.02	<0.02	0.02	<0.02
Phenanthrene	µg/g	50	0.06	<0.06	0.04	1.90	0.02	0.02	0.03	0.02	<0.02
Anthracene	µg/g		0.06	<0.06	0.04	0.48	0.02	<0.02	<0.02	0.02	<0.02
Fluoranthene	µg/g		0.2	<0.2	0.1	2.3	0.05	<0.05	<0.05	0.05	<0.05
Pyrene	µg/g	100	0.06	<0.06	0.04	2.20	0.02	0.03	0.03	0.02	<0.02
Benzo(a)anthracene	µg/g	10	0.06	<0.06	0.04	1.00	0.02	<0.02	<0.02	0.02	<0.02
Chrysene	µg/g		0.2	<0.2	0.1	1.0	0.05	<0.05	<0.05	0.05	<0.05
Benzo(b)fluoranthene	µg/g	10	0.06	<0.06	0.04	0.88	0.02	<0.02	<0.02	0.02	<0.02
Benzo(k)fluoranthene	µg/g	10	0.06	<0.06	0.04	0.35	0.02	<0.02	<0.02	0.02	<0.02
Benzo(a)pyrene	µg/g		0.2	<0.2	0.1	0.9	0.05	<0.05	<0.05	0.05	<0.05
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.06	<0.06	0.04	0.38	0.02	<0.02	<0.02	0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	10	0.06	<0.06	0.04	0.12	0.02	<0.02	<0.02	0.02	<0.02
Benzo(g,h.i)perylene	µg/g		0.2	<0.2	0.1	0.3	0.05	<0.05	<0.05	0.05	<0.05
LEPH C10-C19	µg/g	2000	25	<80	25	120	25	41	<25	25	<25
HEPH C19-C32	µg/g	5000	25	260	25	2600	25	600	60	25	<25

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-11M-4 3011820	MV-Dup4 3011830	BV-11BH-09M-1 3011831	BV-11BH-09M-5 3011841	BV-11BH-01M-2 3011850
Nitrobenzene - d5	%	50-130	100	110	110	97	120
2-Fluorobiphenyl	%	50-130	95	89	90	93	120
P-Terphenyl - d14	%	50-130	100	170	70	110	100
Bromofluorobenzene	%	70-130	97.5	99.1			95.6
Toluene - d8	%	70-130	117	111			113

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-01M-5 3011858
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05
Ethylbenzene	µg/g	7	0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05
Styrene	µg/g	50	0.05	<0.05
VPH	µg/g	200	10	<10
Naphthalene	µg/g	50	0.01	0.03
2-Methylnaphthalene	µg/g		0.01	<0.01
1-Methylnaphthalene	µg/g		0.01	<0.01
Acenaphthylene	µg/g		0.01	0.01
Acenaphthene	µg/g		0.01	0.01
Fluorene	µg/g		0.02	<0.02
Phenanthrene	µg/g	50	0.02	0.04
Anthracene	µg/g		0.02	<0.02
Fluoranthene	µg/g		0.05	<0.05
Pyrene	µg/g	100	0.02	0.04
Benzo(a)anthracene	µg/g	10	0.02	<0.02
Chrysene	µg/g		0.05	<0.05
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02
Benzo(a)pyrene	µg/g		0.05	<0.05
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02
Benzo(g,h.i)perylene	µg/g		0.05	<0.05
LEPH C10-C19	µg/g	2000	25	<25
HEPH C19-C32	µg/g	5000	25	79

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AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	BV-11BH-01M-5 3011858
Nitrobenzene - d5	%	50-130	130
2-Fluorobiphenyl	%	50-130	100
P-Terphenyl - d14	%	50-130	110
Bromofluorobenzene	%	70-130	92.7
Toluene - d8	%	70-130	97.8

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3011798-3011800 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3011803-3011805 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Detection limits elevated due to high moisture content.

3011812 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3011820-3011830 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Detection limits elevated due to high moisture content.

3011831-3011841 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

3011850-3011858 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-13M-2 3011798	MV-11BH-13M-3 3011800	MV-11BH-12M-1 3011803	MV-11BH-12M-2 3011805	MV-11BH-11M-1 3011812	MV-11BH-11M-4 3011820	BV-11BH-09M-1 3011831	BV-11BH-09M-5 3011841
Phenol	mg/kg		0.002	<0.002	0.014	0.097	<0.002	<0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005	0.474	<0.005	<0.005	<0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	0.034	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Surrogate	Unit	Acceptable Limits									
2-Fluorophenol	%	50-150		116	115	115	110	122	108	110	111
2,4,6-Tribromophenol	%	50-150		114	115	111	109	114	108	109	110

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-01M-2 3011850	BV-11BH-01M-5 3011858	BV-Dup5 3011859
Phenol	mg/kg		0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.003	<0.003	<0.003	<0.003
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
Surrogate	Unit	Acceptable Limits				
2-Fluorophenol	%	50-150		121	116	111
2,4,6-Tribromophenol	%	50-150		119	116	111

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3011798-3011859 Results relate only to the items tested.

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 21, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	20111	3011798	0.58	0.58	0.0%	< 0.05	99%	70%	130%	99%	90%	110%	99%	80%	120%
Arsenic	20111	3011798	3.4	3.5	3.0%	< 0.1	106%	70%	130%	98%	90%	110%	98%	80%	120%
Barium	20111	3011798	171	170	1.0%	< 0.5	89%	70%	130%	99%	90%	110%	99%	80%	120%
Beryllium	20111	3011798	0.58	0.58	0.0%	< 0.02	97%	70%	130%	98%	90%	110%	98%	80%	120%
Boron (Hot Water Soluble)	20111	3011798	0.1	0.1	0.0%	< 0.1				99%	90%	110%	106%	80%	120%
Cadmium	20111	3011798	0.19	0.18	5.0%	< 0.01				98%	90%	110%	98%	80%	120%
Chromium	20111	3011798	52	52	0.0%	< 1	89%	70%	130%	93%	90%	110%	93%	80%	120%
Cobalt	20111	3011798	7.5	7.6	1.0%	< 0.1	85%	70%	130%	94%	90%	110%	94%	80%	120%
Copper	20111	3011798	27.7	28.4	2.0%	< 0.2	83%	70%	130%	95%	90%	110%	95%	80%	120%
Lead	20111	3011798	11.7	11.4	3.0%	< 0.05	89%	70%	130%	102%	90%	110%	102%	80%	120%
Mercury	20111	3011798	0.08	0.08	0.0%	< 0.01	99%	70%	130%	96%	90%	110%	98%	80%	120%
Molybdenum	20111	3011798	0.52	0.53	2.0%	< 0.05	97%	70%	130%	98%	90%	110%	98%	80%	120%
Nickel	20111	3011798	30.5	30.5	0.0%	< 0.5	84%	70%	130%	94%	90%	110%	94%	80%	120%
Selenium	20111	3011798	0.8	0.8	0.0%	< 0.1				100%	90%	110%	100%	80%	120%
Silver	20111	3011798	0.10	0.10	0.0%	< 0.05				99%	90%	110%	99%	80%	120%
Thallium	20111	3011798	0.14	0.14	0.0%	< 0.05				104%	90%	110%	104%	80%	120%
Tin	20111	3011798	1.00	0.85	16.2%	< 0.05				97%	90%	110%	99%	80%	120%
Uranium	20111	3011798	1.35	1.31	3.0%	< 0.05		0%	0%	101%	90%	110%	100%	80%	120%
Vanadium	20111	3011798	61	62	2.0%	< 1	90%	70%	130%	95%	90%	110%	95%	80%	120%
Zinc	20111	3011798	53	54	2.0%	< 1	91%	70%	130%	104%	90%	110%	104%	80%	120%
pH 1:2	20111	3011850	7.5	7.5	0.0%	< 0.1				101%	95%	105%	96%	90%	110%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 21, 2011

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3011798	<0.1	<0.1	0.0%	< 0.1	103%	80%	120%				86%	70%	130%
Benzene	1	3011798	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				91%	70%	130%
Toluene	1	3011798	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				88%	70%	130%
Ethylbenzene	1	3011798	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				81%	70%	130%
m&p-Xylene	1	3011798	<0.05	<0.05	0.0%	< 0.05	106%	80%	120%				76%	70%	130%
o-Xylene	1	3011798	<0.05	<0.05	0.0%	< 0.05	106%	80%	120%				76%	70%	130%
Styrene	1	3011798	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				81%	70%	130%
Naphthalene	1	3011798	NA	NA	0.0%	< 0.01	110%	80%	120%				125%	50%	130%
2-Methylnaphthalene	1	3011798	0.01	0.01	0.0%	< 0.01	100%	80%	120%				102%	50%	130%
1-Methylnaphthalene	1	3011798	0.01	0.01	0.0%	< 0.01	103%	80%	120%				106%	50%	130%
Acenaphthylene	1	3011798	<0.01	<0.01	0.0%	< 0.01	93%	80%	120%				123%	50%	130%
Acenaphthene	1	3011798	<0.01	<0.01	0.0%	< 0.01	107%	80%	120%				122%	50%	130%
Fluorene	1	3011798	<0.02	<0.02	0.0%	< 0.02	96%	80%	120%				116%	50%	130%
Phenanthrene	1	3011798	NA	NA	0.0%	< 0.02	117%	80%	120%				116%	60%	130%
Anthracene	1	3011798	<0.02	<0.02	0.0%	< 0.02	110%	80%	120%				93%	60%	130%
Fluoranthene	1	3011798	<0.05	<0.05	0.0%	< 0.05	105%	80%	120%				117%	60%	130%
Pyrene	1	3011798	0.02	0.02	0.0%	< 0.02	106%	80%	120%				119%	60%	130%
Benzo(a)anthracene	1	3011798	<0.02	<0.02	0.0%	< 0.02	97%	80%	120%				106%	60%	130%
Chrysene	1	3011798	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				113%	60%	130%
Benzo(b)fluoranthene	1	3011798	<0.02	<0.02	0.0%	< 0.02	115%	80%	120%				124%	60%	130%
Benzo(k)fluoranthene	1	3011798	<0.02	<0.02	0.0%	< 0.02	112%	80%	120%				122%	60%	130%
Benzo(a)pyrene	1	3011798	<0.05	<0.05	0.0%	< 0.05	107%	80%	120%				118%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3011798	<0.02	<0.02	0.0%	< 0.02	108%	80%	120%				110%	60%	130%
Dibenzo(a,h)anthracene	1	3011798	<0.02	<0.02	0.0%	< 0.02	112%	80%	120%				108%	60%	130%
Benzo(g,h.i)perylene	1	3011798	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				100%	60%	130%
Nitrobenzene - d5	1	3011798	117	102	14.0%	<	102%	80%	120%				122%	50%	130%
2-Fluorobiphenyl	1	3011798	85	90	6.0%	<	98%	80%	120%				105%	50%	130%
P-Terphenyl - d14	1	3011798	119	112	6.0%	<	103%	80%	120%				103%	50%	130%
LEPH C10-C19	1	3010601	1190	861	32.1%	< 25									
HEPH C19-C32	1	3010601	324	236	31.4%	< 25									
Bromofluorobenzene	1	3011798	94.9	91.6	4.0%	<	111%	70%	130%				111%	70%	130%
Toluene - d8	1	3011798	109	112	3.0%	<	110%	70%	130%				113%	70%	130%
Phenolic Compounds in Soil															
Phenol	126	3011798	<0.002	<0.002	NA	< 0.002	86%	80%	120%	98%	80%	120%	97%	80%	120%
4-Nitrophenol	126	3011798	<0.005	<0.005	NA	< 0.005	85%	80%	120%	95%	80%	120%	98%	80%	120%
m&p-Cresol (3&4-methylphenol)	126	3011798	<0.005	<0.005	NA	< 0.005				98%	80%	120%	98%	80%	120%
o-Cresol (2-methylphenol)	126	3011798	<0.005	<0.005	NA	< 0.005				96%	80%	120%	97%	80%	120%
2-Chlorophenol	126	3011798	<0.002	<0.002	NA	< 0.002				98%	80%	120%	100%	80%	120%

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TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 21, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2,4-Dinitrophenol	126	3011798	<0.005	<0.005	NA	< 0.005	92%	80%	120%	98%	80%	120%	104%	80%	120%
2-Nitrophenol	126	3011798	<0.005	<0.005	NA	< 0.005	98%	80%	120%	110%	80%	120%	120%	80%	120%
2,4-Dimethylphenol	126	3011798	<0.005	<0.005	NA	< 0.005	85%	80%	120%	102%	80%	120%	104%	80%	120%
2,6-Dichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				97%	80%	120%	96%	80%	120%
4-Chloro-3-methylphenol	126	3011798	<0.005	<0.005	NA	< 0.005	84%	80%	120%	98%	80%	120%	110%	80%	120%
2,4-Dichlorophenol	126	3011798	<0.002	<0.002	NA	< 0.003	87%	80%	120%	98%	80%	120%	102%	80%	120%
4,6-Dinitro-2-methylphenol	126	3011798	<0.005	<0.005	NA	< 0.005	95%	80%	120%	105%	80%	120%	115%	80%	120%
2,3,6-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				98%	80%	120%	100%	80%	120%
2,3,4-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				99%	80%	120%	101%	80%	120%
2,4,6-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005	87%	80%	120%	100%	80%	120%	106%	80%	120%
2,4,5-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				99%	80%	120%	101%	80%	120%
2,3,5-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				100%	80%	120%	101%	80%	120%
3,4,5-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				96%	80%	120%	95%	80%	120%
2,3,4,6-Tetrachlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				103%	80%	120%	106%	80%	120%
2,3,5,6-Tetrachlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				103%	80%	120%	104%	80%	120%
2,3,4,5-Tetrachlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				103%	80%	120%	105%	80%	120%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	126	3011798	<0.005	<0.005	NA	< 0.005				107%	80%	120%	85%	80%	120%
Pentachlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005	92%	80%	120%	104%	80%	120%	94%	80%	120%
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
Benzene	332	3011850	<0.005	<0.005	NA	< 0.005	83%	80%	120%	83%	80%	120%	87%	60%	140%
Toluene	332	3011850	<0.05	<0.05	NA	< 0.05	84%	80%	120%	90%	80%	120%	92%	60%	140%
Ethylbenzene	332	3011850	<0.01	<0.01	NA	< 0.01	86%	80%	120%	103%	80%	120%	101%	60%	140%
Xylenes	332	3011850	<0.05	<0.05	NA	< 0.05	85%	80%	120%	99%	80%	120%	98%	60%	140%
C6 - C10 (F1)	332	3011850	<10	<10	NA	< 10	82%	80%	120%	113%	80%	120%	126%	60%	140%
C10 - C16 (F2)	850	3011850	<10	<10	NA	< 10	102%	80%	120%	95%	80%	120%	100%	60%	140%
C16 - C34 (F3)	850	3011850	<10	<10	NA	< 10	102%	80%	120%	94%	80%	120%	93%	60%	140%
C34 - C50 (F4)	850	3011850	<10	<10	NA	< 10	102%	80%	120%	92%	80%	120%	94%	60%	140%

Certified By:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO 0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO 0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

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Method Summary

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

AGAT Laboratories

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Ph.: 778.452.4000 · Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 682-9711 Fax: 604 682-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number: 11V559640

Notes: DEC 15 AM8:03

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[X] BC CSR – Soil
- [ ] Agricultural
- [X] Industrial
- [ ] Urban/Park
- [ ] Commercial

[ ] BC CSR – Water
- [ ] Drinking Water
- [ ] Aquatic Life
- [ ] Irrigation
- [ ] Livestock

[X] CCME
- [ ] Drinking Water
- [X] Industrial
- [ ] Residential/Park
- [ ] Drinking Water
- [ ] Commercial
- [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F2-F4	CCME F1	PAH	phenols (monochlorinated)		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3011783	MV-11BH-13M-1	SOIL	14/12/2011													4			X
1798	MV-11BH-13M-2				X	X	X				X	X	X	X		4			
800	MV-11BH-13M-3				X	X	X				X	X	X	X		4			
802	MV-11BH-13M-4															3			X
803	MV-11BH-12M-1				X	X	X				X	X	X	X		4			
805	MV-11BH-12M-2				X	X	X				X	X	X	X		4			
807	MV-11BH-12M-3															4			X
810	MV-11BH-12M-4															3			X
812	MV-11BH-11M-1				X	X	X				X	X	X	X		4			
816	MV-11BH-11M-2															4			X
817	MV-11BH-11M-3															4			X
820	MV-11BH-11M-4				X	X	X				X	X	X	X		4			X

Samples Relinquished by (print name & sign): Amanda Salway	Date 14/12/2011	Samples Received by (Print name & sign): S.Carew	15-DEC-11 @	Date	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):		Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):		Date	White Copy - AGAT

Page 1 of 3

NO: 000291

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Chain of Custody Record

Turnaround Time Required (TAT)

- Regular TAT: 5 to 7 working days [X]
- Rush TAT: 24 to 48 hours [ ]
- 48 to 72 hours [ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Report Information

1. Name: same as previous
   Email:
2. Name:
   Email:

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number:
Notes: DEC 15 AM 8:04

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [X] BC CSR – Soil
  - [ ] Agricultural
  - [X] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [ ] BC CSR – Water
  - [ ] Drinking Water
  - [ ] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [X] Industrial
  - [ ] Residential/Park
  - [ ] Drinking Water
  - [ ] Commercial
  - [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F2-F4	CCME F1	PAH	phenols (chlorinated and non-chlorinated)		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3011830	MV-DUP4	soil	14/12/2011		X	X						X	X	X			2			
831	BV-11BH-09M-1					X	X					X		X	X		3			
833	BV-11BH-09M-2																3			X
834	BV-11BH-09M-3																3			X
838	BV-11BH-09M-4																3			X
841	BV-11BH-09M-5					X	X					X		X	X		3			X
842	BV-11BH-09M-6																3			X
845	BV-11BH-01M-1																4			X
850	BV-11BH-01M-2					X	X					X		X	X		4			
851	BV-11BH-01M-3																4			X
855	BV-11BH-01M-4																4			X
858	BV-11BH-01M-5					X	X					X		X	X		4			

Samples Relinquished by (print name & sign): Amanda Sallan	Date 14/12/2011	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

NO: 000292

AGAT Laboratories

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webearth.agatlabs.com
Ph.: 778.452.4000 - Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:
Company: same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Report Information
1. Name: same as previous
Email:
2. Name:
Email:

Report Format
[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only
Arrival Temperature: 3°C
AGAT Job Number:
Notes: DEC 15 AM 8:04

Invoice To: Same as above Yes [X] No [ ]
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):
[X] BC CSR – Soil [ ] BC CSR – Water
[ ] Agricultural [ ] Drinking Water
[X] Industrial [ ] Aquatic Life
[ ] Urban/Park [ ] Irrigation
[ ] Commercial [ ] Livestock
[X] CCME
[ ] Drinking Water [X] Industrial
[ ] Residential/Park [ ] Drinking Water
[ ] Commercial [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME PHC-FU	Phenols (Chlorinated)			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3011859	BV-DUPS	Soil	14/12/2011				X						X			2			

Samples Relinquished by (print name & sign): Amanda Scanlan	Date 14/12/2011	Samples Received by (Print name & sign):	Date	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 3 of 3
NO: 000293

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11V559640

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 15-DEC-11 @8:03AM
Courier: _____
Received by: S. Couzens
Relinquished by: In drop off Shed
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: N/A

CoC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg TAT
COC Numbers: 000291, 292, 293

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: _____ Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 14-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 20-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 3 + 2 = 3 °C (2) 2 + 2 + 4 = 3 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM Work order # 11V559640

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: Dec. 16, 2014 / 8:18 AM
Courier: DHL
Received by: JAN
Relinquished by: _____
Company: TRANZ ENVIRONMENTAL
Consultant: _____
Client left without count verified: _____

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: REGULAR
COC Numbers: 000291 WO# 11V559640

SAMPLE QUANTITIES:
Coolers: 1 Bottles/Jars: 22 Bags: 0

TIME SENSITIVE ISSUES:
Earliest Date Sampled: Dec. 14, 2014
Microbiology: Test: —
Hydrocarbons: Test: —
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: —
Expiry: —

SPECIALTY ISSUES:
Legal Samples: Yes (No)
International Samples: Yes (No)
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.
Correct bottles used for testing: (Yes) No
If No, explain: _____
Correct amount of sample for analysis: (Yes) No
If No, explain: _____
Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 0 + 0 + 0 = 0 °C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available
JAR W/ICE
Additional integrity issues (note here and on CoC next to the sample ID):
1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:
_____
_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V559640

SOIL ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

DATE REPORTED: Dec 21, 2011

PAGES (INCLUDING COVER): 21

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-13M-2 3011798	MV-11BH-13M-3 3011800	MV-11BH-12M-1 3011803	MV-11BH-12M-2 3011805	MV-11BH-11M-1 3011812	MV-11BH-11M-4 3011820	BV-11BH-09M-1 3011831	BV-11BH-09M-5 3011841
Antimony	µg/g	40	0.05	0.58	0.53	1.17	0.56	1.36	0.90	2.05	0.49
Arsenic	µg/g	12	0.1	3.4	3.8	5.7	3.9	5.1	11.6	4.5	6.2
Barium	µg/g	2000	0.5	171	157	74.3	182	61.4	160	174	93.3
Beryllium	µg/g	8	0.02	0.58	0.44	0.17	0.61	0.14	0.64	0.26	0.32
Boron (Hot Water Soluble)	µg/g	1.4	0.1	0.1	0.1	2.5	0.1	2.2	0.3	1.5	0.8
Cadmium	µg/g	22	0.01	0.19	0.16	1.05	0.26	0.48	0.37	0.25	0.27
Chromium	µg/g	87	1	52	41	26	51	30	41	38	34
Cobalt	µg/g	300	0.1	7.5	7.4	3.0	8.6	4.7	10.4	7.5	11.6
Copper	µg/g	91	0.2	27.7	18.9	27.1	29.9	27.7	47.5	31.1	29.8
Lead	µg/g	600	0.05	11.7	11.0	107	11.8	46.2	10.3	18.1	7.47
Mercury	µg/g	50	0.01	0.08	0.06	0.14	0.08	0.06	0.08	0.03	0.06
Molybdenum	µg/g	40	0.05	0.52	0.57	2.55	0.64	3.52	4.70	2.14	0.69
Nickel	µg/g	50	0.5	30.5	27.2	12.5	30.5	18.7	40.9	29.0	38.6
Selenium	µg/g	2.9	0.1	0.8	0.6	0.5	0.8	0.5	1.4	0.3	0.6
Silver	µg/g	40	0.05	0.10	0.07	0.10	0.10	0.09	0.16	0.08	0.09
Thallium	µg/g	1	0.05	0.14	0.17	0.07	0.24	<0.05	0.15	<0.05	0.08
Tin	µg/g	300	0.05	1.00	1.52	2.89	0.89	1.33	0.67	3.92	1.70
Uranium	µg/g	300	0.05	1.31	1.27	0.55	1.88	0.74	2.46	0.84	0.67
Vanadium	µg/g	130	1	61	49	26	61	32	62	40	47
Zinc	µg/g	360	1	53	58	446	57	108	76	80	64
pH 1:2	pH units		0.1	6.0	6.0	6.0	6.1	6.7	6.6	7.2	7.3

Certified By: Marie England

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-01M-2 3011850	BV-11BH-01M-5 3011858	BV-Dup5 3011859
Antimony	µg/g	40	0.05	0.31	0.56	0.64
Arsenic	µg/g	12	0.1	3.6	17.2	17.5
Barium	µg/g	2000	0.5	57.9	87.7	86.9
Beryllium	µg/g	8	0.02	0.21	0.34	0.31
Boron (Hot Water Soluble)	µg/g	1.4	0.1	0.1	0.4	0.4
Cadmium	µg/g	22	0.01	0.12	0.31	0.31
Chromium	µg/g	87	1	25	43	40
Cobalt	µg/g	300	0.1	7.2	11.4	11.0
Copper	µg/g	91	0.2	18.0	30.7	30.3
Lead	µg/g	600	0.05	3.30	7.65	7.39
Mercury	µg/g	50	0.01	0.02	0.06	0.06
Molybdenum	µg/g	40	0.05	0.72	0.81	0.80
Nickel	µg/g	50	0.5	30.1	37.8	37.5
Selenium	µg/g	2.9	0.1	0.2	0.6	0.6
Silver	µg/g	40	0.05	<0.05	0.10	0.10
Thallium	µg/g	1	0.05	<0.05	0.09	0.09
Tin	µg/g	300	0.05	0.28	0.70	0.93
Uranium	µg/g	300	0.05	0.38	0.70	0.69
Vanadium	µg/g	130	1	36	44	43
Zinc	µg/g	360	1	39	66	64
pH 1:2	pH units		0.1	7.5	7.6	7.5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)
3011798-3011859 Results are based on the dry weight of the sample

Certified By: Marie England

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AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-13M-2 3011798	MV-11BH-13M-3 3011800	MV-11BH-12M-1 3011803	MV-11BH-12M-2 3011805	MV-11BH-11M-1 3011812	MV-11BH-11M-4 3011820	MV-Dup4 3011830	BV-11BH-01M-2 3011850
Benzene	mg/kg	0.030	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.37	0.05	<0.05	<0.05	0.13	<0.05	0.10	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.082	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg	11	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	320	10	<10	<10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	260	10	<10	<10	99	<10	20	13	18	<10
C16 - C34 (F3)	mg/kg	1700	10	139	244	1490	171	1150	412	1030	<10
C34 - C50 (F4)	mg/kg	3300	10	62	115	1060	240	818	306	760	<10
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%		1	42	45	78	41	31	82	26	8
Surrogate	Unit	Acceptable Limits									
Toluene-d8 (BTEX)	%	50-150		102	101	101	104	104	100	101	103
Ethylbenzene-d10 (BTEX)	%	50-150		108	96	84	110	113	84	104	127
o-Terphenyl (F2-F4)	%	50-150		97	100	99	94	99	97	98	98

Parameter	Unit	G / S	RDL	BV-11BH-01M-5 3011858
Benzene	mg/kg	0.030	0.005	<0.005
Toluene	mg/kg	0.37	0.05	<0.05
Ethylbenzene	mg/kg	0.082	0.01	<0.01
Xylenes	mg/kg	11	0.05	<0.05
C6 - C10 (F1)	mg/kg	320	10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10
C10 - C16 (F2)	mg/kg	260	10	<10
C16 - C34 (F3)	mg/kg	1700	10	97
C34 - C50 (F4)	mg/kg	3300	10	39
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A
Moisture Content	%		1	29
Surrogate	Unit	Acceptable Limits		
Toluene-d8 (BTEX)	%	50-150		102
Ethylbenzene-d10 (BTEX)	%	50-150		110
o-Terphenyl (F2-F4)	%	50-150		96

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3011798-3011858 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (F2-F4) in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-09M-1 3011831	BV-11BH-09M-5 3011841
C10 - C16 (F2)	mg/kg	260	10	<10	<10
C16 - C34 (F3)	mg/kg	1700	10	494	12
C34 - C50 (F4)	mg/kg	3300	10	344	<10
Moisture Content	%		1	14	29
Surrogate	**Unit**	**Acceptable Limits**			
o-Terphenyl (F2-F4)	%	50-150		98	96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3011831-3011841 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram has returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-13M-2 3011798	MV-11BH-13M-3 3011800	RDL	MV-11BH-12M-1 3011803	RDL	MV-11BH-12M-2 3011805	RDL	MV-11BH-11M-1 3011812
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	<0.1	0.3	<0.3	0.2	<0.2	0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02	<0.02	0.06	<0.06	0.04	<0.04	0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05	<0.05	0.2	0.5	0.1	<0.1	0.05	0.09
Ethylbenzene	µg/g	7	0.05	<0.05	<0.05	0.2	<0.2	0.1	<0.1	0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05	<0.05	0.2	<0.2	0.1	<0.1	0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05	<0.05	0.2	<0.2	0.1	<0.1	0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	<0.05	0.2	<0.2	0.1	<0.1	0.05	<0.05
VPH	µg/g	200	10	<10	22	30	67	20	<20	10	27
Naphthalene	µg/g	50	0.01	0.02	0.01	0.02	0.89	0.01	<0.01	0.01	0.32
2-Methylnaphthalene	µg/g		0.01	0.01	<0.01	0.02	0.19	0.01	<0.01	0.01	0.19
1-Methylnaphthalene	µg/g		0.01	0.01	<0.01	0.02	0.12	0.01	<0.01	0.01	0.12
Acenaphthylene	µg/g		0.01	<0.01	<0.01	0.02	0.13	0.01	<0.01	0.01	0.04
Acenaphthene	µg/g		0.01	<0.01	<0.01	0.02	0.02	0.01	<0.01	0.01	0.23
Fluorene	µg/g		0.02	<0.02	<0.02	0.04	0.06	0.02	<0.02	0.02	0.31
Phenanthrene	µg/g	50	0.02	0.04	<0.02	0.04	0.52	0.02	<0.02	0.02	1.20
Anthracene	µg/g		0.02	<0.02	<0.02	0.04	0.07	0.02	<0.02	0.02	0.30
Fluoranthene	µg/g		0.05	<0.05	<0.05	0.1	0.5	0.05	<0.05	0.05	1.80
Pyrene	µg/g	100	0.02	0.02	<0.02	0.04	0.50	0.02	<0.02	0.02	1.60
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	0.04	0.10	0.02	<0.02	0.02	0.80
Chrysene	µg/g		0.05	<0.05	<0.05	0.1	0.1	0.05	<0.05	0.05	0.68
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	0.04	0.16	0.02	<0.02	0.02	0.58
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	0.04	0.05	0.02	<0.02	0.02	0.29
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	0.1	0.1	0.05	<0.05	0.05	0.68
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	0.04	<0.04	0.02	<0.02	0.02	0.31
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	0.04	<0.04	0.02	<0.02	0.02	0.08
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	0.1	0.1	0.05	<0.05	0.05	0.31
LEPH C10-C19	µg/g	2000	25	<25	<25	25	180	25	26	25	68
HEPH C19-C32	µg/g	5000	25	203	201	25	1100	25	250	25	1100

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-13M-2 3011798	MV-11BH-13M-3 3011800	MV-11BH-12M-1 3011803	MV-11BH-12M-2 3011805	MV-11BH-11M-1 3011812
Nitrobenzene - d5	%	50-130	117	108	114	110	100
2-Fluorobiphenyl	%	50-130	85	91	86	91	96
P-Terphenyl - d14	%	50-130	119	112	105	96	120
Bromofluorobenzene	%	70-130	94.9	94.6	88.8	96.3	99.6
Toluene - d8	%	70-130	109	102	111	117	120

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-11M-4 3011820	RDL	MV-Dup4 3011830	RDL	BV-11BH-09M-1 3011831	BV-11BH-09M-5 3011841	RDL	BV-11BH-01M-2 3011850
Methyl tert-butyl ether (MTBE)	µg/g	700	0.3	<0.3	0.2	<0.2	0.3			0.1	<0.1
Benzene	µg/g	0.04	0.06	<0.06	0.04	<0.04	0.06			0.02	<0.02
Toluene	µg/g	2.5	0.2	<0.2	0.1	0.1	0.2			0.05	<0.05
Ethylbenzene	µg/g	7	0.2	<0.2	0.1	<0.1	0.2			0.05	<0.05
m&p-Xylene	µg/g	20	0.2	<0.2	0.1	<0.1	0.2			0.05	<0.05
o-Xylene	µg/g	20	0.2	<0.2	0.1	<0.1	0.2			0.05	<0.05
Styrene	µg/g	50	0.2	<0.2	0.1	<0.1	0.2			0.05	<0.05
VPH	µg/g	200	30	<30	20	<20	30			10	<10
Naphthalene	µg/g	50	0.03	<0.03	0.02	0.37	0.01	0.09	0.01	0.01	<0.01
2-Methylnaphthalene	µg/g		0.03	<0.03	0.02	0.21	0.01	0.04	<0.01	0.01	<0.01
1-Methylnaphthalene	µg/g		0.03	<0.03	0.02	0.13	0.01	0.02	<0.01	0.01	<0.01
Acenaphthylene	µg/g		0.03	<0.03	0.02	0.08	0.01	0.01	<0.01	0.01	<0.01
Acenaphthene	µg/g		0.03	<0.03	0.02	0.30	0.01	<0.01	<0.01	0.01	<0.01
Fluorene	µg/g		0.06	<0.06	0.04	0.44	0.02	<0.02	<0.02	0.02	<0.02
Phenanthrene	µg/g	50	0.06	<0.06	0.04	1.90	0.02	0.02	0.03	0.02	<0.02
Anthracene	µg/g		0.06	<0.06	0.04	0.48	0.02	<0.02	<0.02	0.02	<0.02
Fluoranthene	µg/g		0.2	<0.2	0.1	2.3	0.05	<0.05	<0.05	0.05	<0.05
Pyrene	µg/g	100	0.06	<0.06	0.04	2.20	0.02	0.03	0.03	0.02	<0.02
Benzo(a)anthracene	µg/g	10	0.06	<0.06	0.04	1.00	0.02	<0.02	<0.02	0.02	<0.02
Chrysene	µg/g		0.2	<0.2	0.1	1.0	0.05	<0.05	<0.05	0.05	<0.05
Benzo(b)fluoranthene	µg/g	10	0.06	<0.06	0.04	0.88	0.02	<0.02	<0.02	0.02	<0.02
Benzo(k)fluoranthene	µg/g	10	0.06	<0.06	0.04	0.35	0.02	<0.02	<0.02	0.02	<0.02
Benzo(a)pyrene	µg/g		0.2	<0.2	0.1	0.9	0.05	<0.05	<0.05	0.05	<0.05
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.06	<0.06	0.04	0.38	0.02	<0.02	<0.02	0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	10	0.06	<0.06	0.04	0.12	0.02	<0.02	<0.02	0.02	<0.02
Benzo(g,h.i)perylene	µg/g		0.2	<0.2	0.1	0.3	0.05	<0.05	<0.05	0.05	<0.05
LEPH C10-C19	µg/g	2000	25	<80	25	120	25	41	<25	25	<25
HEPH C19-C32	µg/g	5000	25	260	25	2600	25	600	60	25	<25

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AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-11M-4 3011820	MV-Dup4 3011830	BV-11BH-09M-1 3011831	BV-11BH-09M-5 3011841	BV-11BH-01M-2 3011850
Nitrobenzene - d5	%	50-130	100	110	110	97	120
2-Fluorobiphenyl	%	50-130	95	89	90	93	120
P-Terphenyl - d14	%	50-130	100	170	70	110	100
Bromofluorobenzene	%	70-130	97.5	99.1			95.6
Toluene - d8	%	70-130	117	111			113

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PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-01M-5 3011858
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05
Ethylbenzene	µg/g	7	0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05
Styrene	µg/g	50	0.05	<0.05
VPH	µg/g	200	10	<10
Naphthalene	µg/g	50	0.01	0.03
2-Methylnaphthalene	µg/g		0.01	<0.01
1-Methylnaphthalene	µg/g		0.01	<0.01
Acenaphthylene	µg/g		0.01	0.01
Acenaphthene	µg/g		0.01	0.01
Fluorene	µg/g		0.02	<0.02
Phenanthrene	µg/g	50	0.02	0.04
Anthracene	µg/g		0.02	<0.02
Fluoranthene	µg/g		0.05	<0.05
Pyrene	µg/g	100	0.02	0.04
Benzo(a)anthracene	µg/g	10	0.02	<0.02
Chrysene	µg/g		0.05	<0.05
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02
Benzo(a)pyrene	µg/g		0.05	<0.05
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02
Benzo(g,h.i)perylene	µg/g		0.05	<0.05
LEPH C10-C19	µg/g	2000	25	<25
HEPH C19-C32	µg/g	5000	25	79

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Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	BV-11BH-01M-5 3011858
Nitrobenzene - d5	%	50-130	130
2-Fluorobiphenyl	%	50-130	100
P-Terphenyl - d14	%	50-130	110
Bromofluorobenzene	%	70-130	92.7
Toluene - d8	%	70-130	97.8

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3011798-3011800 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3011803-3011805 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Detection limits elevated due to high moisture content.

3011812 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3011820-3011830 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Detection limits elevated due to high moisture content.

3011831-3011841 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

3011850-3011858 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

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AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-13M-2 3011798	MV-11BH-13M-3 3011800	MV-11BH-12M-1 3011803	MV-11BH-12M-2 3011805	MV-11BH-11M-1 3011812	MV-11BH-11M-4 3011820	BV-11BH-09M-1 3011831	BV-11BH-09M-5 3011841
Phenol	mg/kg		0.002	<0.002	0.014	0.097	<0.002	<0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005	0.474	<0.005	<0.005	<0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	0.034	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Surrogate	Unit	Acceptable Limits									
2-Fluorophenol	%	50-150		116	115	115	110	122	108	110	111
2,4,6-Tribromophenol	%	50-150		114	115	111	109	114	108	109	110

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Certificate of Analysis

AGAT WORK ORDER: 11V559640
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 14, 2011 | DATE RECEIVED: Dec 15, 2011 | DATE REPORTED: Dec 21, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-01M-2 3011850	BV-11BH-01M-5 3011858	BV-Dup5 3011859
Phenol	mg/kg		0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.003	<0.003	<0.003	<0.003
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005
Surrogate	Unit	Acceptable Limits				
2-Fluorophenol	%	50-150		121	116	111
2,4,6-Tribromophenol	%	50-150		119	116	111

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3011798-3011859 Results relate only to the items tested.

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 21, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	20111	3011798	0.58	0.58	0.0%	< 0.05	99%	70%	130%	99%	90%	110%	99%	80%	120%
Arsenic	20111	3011798	3.4	3.5	3.0%	< 0.1	106%	70%	130%	98%	90%	110%	98%	80%	120%
Barium	20111	3011798	171	170	1.0%	< 0.5	89%	70%	130%	99%	90%	110%	99%	80%	120%
Beryllium	20111	3011798	0.58	0.58	0.0%	< 0.02	97%	70%	130%	98%	90%	110%	98%	80%	120%
Boron (Hot Water Soluble)	20111	3011798	0.1	0.1	0.0%	< 0.1				99%	90%	110%	106%	80%	120%
Cadmium	20111	3011798	0.19	0.18	5.0%	< 0.01				98%	90%	110%	98%	80%	120%
Chromium	20111	3011798	52	52	0.0%	< 1	89%	70%	130%	93%	90%	110%	93%	80%	120%
Cobalt	20111	3011798	7.5	7.6	1.0%	< 0.1	85%	70%	130%	94%	90%	110%	94%	80%	120%
Copper	20111	3011798	27.7	28.4	2.0%	< 0.2	83%	70%	130%	95%	90%	110%	95%	80%	120%
Lead	20111	3011798	11.7	11.4	3.0%	< 0.05	89%	70%	130%	102%	90%	110%	102%	80%	120%
Mercury	20111	3011798	0.08	0.08	0.0%	< 0.01	99%	70%	130%	96%	90%	110%	98%	80%	120%
Molybdenum	20111	3011798	0.52	0.53	2.0%	< 0.05	97%	70%	130%	98%	90%	110%	98%	80%	120%
Nickel	20111	3011798	30.5	30.5	0.0%	< 0.5	84%	70%	130%	94%	90%	110%	94%	80%	120%
Selenium	20111	3011798	0.8	0.8	0.0%	< 0.1				100%	90%	110%	100%	80%	120%
Silver	20111	3011798	0.10	0.10	0.0%	< 0.05				99%	90%	110%	99%	80%	120%
Thallium	20111	3011798	0.14	0.14	0.0%	< 0.05				104%	90%	110%	104%	80%	120%
Tin	20111	3011798	1.00	0.85	16.2%	< 0.05				97%	90%	110%	99%	80%	120%
Uranium	20111	3011798	1.35	1.31	3.0%	< 0.05		0%	0%	101%	90%	110%	100%	80%	120%
Vanadium	20111	3011798	61	62	2.0%	< 1	90%	70%	130%	95%	90%	110%	95%	80%	120%
Zinc	20111	3011798	53	54	2.0%	< 1	91%	70%	130%	104%	90%	110%	104%	80%	120%
pH 1:2	20111	3011850	7.5	7.5	0.0%	< 0.1				101%	95%	105%	96%	90%	110%

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 21, 2011

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3011798	<0.1	<0.1	0.0%	< 0.1	103%	80%	120%				86%	70%	130%
Benzene	1	3011798	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				91%	70%	130%
Toluene	1	3011798	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				88%	70%	130%
Ethylbenzene	1	3011798	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				81%	70%	130%
m&p-Xylene	1	3011798	<0.05	<0.05	0.0%	< 0.05	106%	80%	120%				76%	70%	130%
o-Xylene	1	3011798	<0.05	<0.05	0.0%	< 0.05	106%	80%	120%				76%	70%	130%
Styrene	1	3011798	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				81%	70%	130%
Naphthalene	1	3011798	NA	NA	0.0%	< 0.01	110%	80%	120%				125%	50%	130%
2-Methylnaphthalene	1	3011798	0.01	0.01	0.0%	< 0.01	100%	80%	120%				102%	50%	130%
1-Methylnaphthalene	1	3011798	0.01	0.01	0.0%	< 0.01	103%	80%	120%				106%	50%	130%
Acenaphthylene	1	3011798	<0.01	<0.01	0.0%	< 0.01	93%	80%	120%				123%	50%	130%
Acenaphthene	1	3011798	<0.01	<0.01	0.0%	< 0.01	107%	80%	120%				122%	50%	130%
Fluorene	1	3011798	<0.02	<0.02	0.0%	< 0.02	96%	80%	120%				116%	50%	130%
Phenanthrene	1	3011798	NA	NA	0.0%	< 0.02	117%	80%	120%				116%	60%	130%
Anthracene	1	3011798	<0.02	<0.02	0.0%	< 0.02	110%	80%	120%				93%	60%	130%
Fluoranthene	1	3011798	<0.05	<0.05	0.0%	< 0.05	105%	80%	120%				117%	60%	130%
Pyrene	1	3011798	0.02	0.02	0.0%	< 0.02	106%	80%	120%				119%	60%	130%
Benzo(a)anthracene	1	3011798	<0.02	<0.02	0.0%	< 0.02	97%	80%	120%				106%	60%	130%
Chrysene	1	3011798	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				113%	60%	130%
Benzo(b)fluoranthene	1	3011798	<0.02	<0.02	0.0%	< 0.02	115%	80%	120%				124%	60%	130%
Benzo(k)fluoranthene	1	3011798	<0.02	<0.02	0.0%	< 0.02	112%	80%	120%				122%	60%	130%
Benzo(a)pyrene	1	3011798	<0.05	<0.05	0.0%	< 0.05	107%	80%	120%				118%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3011798	<0.02	<0.02	0.0%	< 0.02	108%	80%	120%				110%	60%	130%
Dibenzo(a,h)anthracene	1	3011798	<0.02	<0.02	0.0%	< 0.02	112%	80%	120%				108%	60%	130%
Benzo(g,h.i)perylene	1	3011798	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				100%	60%	130%
Nitrobenzene - d5	1	3011798	117	102	14.0%	<	102%	80%	120%				122%	50%	130%
2-Fluorobiphenyl	1	3011798	85	90	6.0%	<	98%	80%	120%				105%	50%	130%
P-Terphenyl - d14	1	3011798	119	112	6.0%	<	103%	80%	120%				103%	50%	130%
LEPH C10-C19	1	3010601	1190	861	32.1%	< 25									
HEPH C19-C32	1	3010601	324	236	31.4%	< 25									
Bromofluorobenzene	1	3011798	94.9	91.6	4.0%	<	111%	70%	130%				111%	70%	130%
Toluene - d8	1	3011798	109	112	3.0%	<	110%	70%	130%				113%	70%	130%
Phenolic Compounds in Soil															
Phenol	126	3011798	<0.002	<0.002	NA	< 0.002	86%	80%	120%	98%	80%	120%	97%	80%	120%
4-Nitrophenol	126	3011798	<0.005	<0.005	NA	< 0.005	85%	80%	120%	95%	80%	120%	98%	80%	120%
m&p-Cresol (3&4-methylphenol)	126	3011798	<0.005	<0.005	NA	< 0.005				98%	80%	120%	98%	80%	120%
o-Cresol (2-methylphenol)	126	3011798	<0.005	<0.005	NA	< 0.005				96%	80%	120%	97%	80%	120%
2-Chlorophenol	126	3011798	<0.002	<0.002	NA	< 0.002				98%	80%	120%	100%	80%	120%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 21, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2,4-Dinitrophenol	126	3011798	<0.005	<0.005	NA	< 0.005	92%	80%	120%	98%	80%	120%	104%	80%	120%
2-Nitrophenol	126	3011798	<0.005	<0.005	NA	< 0.005	98%	80%	120%	110%	80%	120%	120%	80%	120%
2,4-Dimethylphenol	126	3011798	<0.005	<0.005	NA	< 0.005	85%	80%	120%	102%	80%	120%	104%	80%	120%
2,6-Dichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				97%	80%	120%	96%	80%	120%
4-Chloro-3-methylphenol	126	3011798	<0.005	<0.005	NA	< 0.005	84%	80%	120%	98%	80%	120%	110%	80%	120%
2,4-Dichlorophenol	126	3011798	<0.002	<0.002	NA	< 0.003	87%	80%	120%	98%	80%	120%	102%	80%	120%
4,6-Dinitro-2-methylphenol	126	3011798	<0.005	<0.005	NA	< 0.005	95%	80%	120%	105%	80%	120%	115%	80%	120%
2,3,6-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				98%	80%	120%	100%	80%	120%
2,3,4-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				99%	80%	120%	101%	80%	120%
2,4,6-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005	87%	80%	120%	100%	80%	120%	106%	80%	120%
2,4,5-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				99%	80%	120%	101%	80%	120%
2,3,5-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				100%	80%	120%	101%	80%	120%
3,4,5-Trichlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				96%	80%	120%	95%	80%	120%
2,3,4,6-Tetrachlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				103%	80%	120%	106%	80%	120%
2,3,5,6-Tetrachlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				103%	80%	120%	104%	80%	120%
2,3,4,5-Tetrachlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005				103%	80%	120%	105%	80%	120%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	126	3011798	<0.005	<0.005	NA	< 0.005				107%	80%	120%	85%	80%	120%
Pentachlorophenol	126	3011798	<0.005	<0.005	NA	< 0.005	92%	80%	120%	104%	80%	120%	94%	80%	120%
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
Benzene	332	3011850	<0.005	<0.005	NA	< 0.005	83%	80%	120%	83%	80%	120%	87%	60%	140%
Toluene	332	3011850	<0.05	<0.05	NA	< 0.05	84%	80%	120%	90%	80%	120%	92%	60%	140%
Ethylbenzene	332	3011850	<0.01	<0.01	NA	< 0.01	86%	80%	120%	103%	80%	120%	101%	60%	140%
Xylenes	332	3011850	<0.05	<0.05	NA	< 0.05	85%	80%	120%	99%	80%	120%	98%	60%	140%
C6 - C10 (F1)	332	3011850	<10	<10	NA	< 10	82%	80%	120%	113%	80%	120%	126%	60%	140%
C10 - C16 (F2)	850	3011850	<10	<10	NA	< 10	102%	80%	120%	95%	80%	120%	100%	60%	140%
C16 - C34 (F3)	850	3011850	<10	<10	NA	< 10	102%	80%	120%	94%	80%	120%	93%	60%	140%
C34 - C50 (F4)	850	3011850	<10	<10	NA	< 10	102%	80%	120%	92%	80%	120%	94%	60%	140%

Certified By:

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO 0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO 0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 682-9711 Fax: 604 682-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number: 11V559640

Notes: DEC 15 AM8:03

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[X] BC CSR – Soil
- [ ] Agricultural
- [X] Industrial
- [ ] Urban/Park
- [ ] Commercial

[ ] BC CSR – Water
- [ ] Drinking Water
- [ ] Aquatic Life
- [ ] Irrigation
- [ ] Livestock

[X] CCME
- [ ] Drinking Water
- [X] Industrial
- [ ] Residential/Park
- [ ] Drinking Water
- [ ] Commercial
- [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F2-F4	CCME F1	PAH	phenols (monochlorinated)		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3011783	MV-11BH-13M-1	SOIL	14/12/2011													4			X
1798	MV-11BH-13M-2				X	X	X				X	X	X	X		4			
800	MV-11BH-13M-3				X	X	X				X	X	X	X		4			
802	MV-11BH-13M-4															3			X
803	MV-11BH-12M-1				X	X	X				X	X	X	X		4			
805	MV-11BH-12M-2				X	X	X				X	X	X	X		4			
807	MV-11BH-12M-3															4			X
810	MV-11BH-12M-4															3			X
812	MV-11BH-11M-1				X	X	X				X	X	X	X		4			
816	MV-11BH-11M-2															4			X
817	MV-11BH-11M-3															4			X
820	MV-11BH-11M-4				X	X	X				X	X	X	X		4			X

Samples Relinquished by (print name & sign): Amanda Salway	Date 14/12/2011	Samples Received by (Print name & sign): S.Carew	15-DEC-11 @	Date	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):		Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):		Date	White Copy - AGAT

Page 1 of 3

NO: 000291

AGAT Laboratories

120 - 8600 Glenlyon Parkway
Burnaby, BC,
V5J 0B6
webearth.agatlabs.com

Ph.: 778.452.4000 · Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

- Regular TAT: 5 to 7 working days [X]
- Rush TAT: 24 to 48 hours [ ]
- 48 to 72 hours [ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Report Information

1. Name: same as previous
   Email:
2. Name:
   Email:

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number:
Notes: DEC 15 AM 8:04

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [X] BC CSR – Soil
  - [ ] Agricultural
  - [X] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [ ] BC CSR – Water
  - [ ] Drinking Water
  - [ ] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [X] Industrial
  - [ ] Residential/Park
  - [ ] Drinking Water
  - [ ] Commercial
  - [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F2-F4	CCME F1	PAH	phenols (chlorinated and non-chlorinated)		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3011830	MV-DUP4	soil	14/12/2011		X	X						X	X	X			2			
831	BV-11BH-09M-1					X	X					X		X	X		3			
833	BV-11BH-09M-2																3			X
834	BV-11BH-09M-3																3			X
838	BV-11BH-09M-4																3			X
841	BV-11BH-09M-5					X	X					X		X	X		3			X
842	BV-11BH-09M-6																3			X
845	BV-11BH-01M-1																4			X
850	BV-11BH-01M-2					X	X					X		X	X		4			
851	BV-11BH-01M-3																4			X
855	BV-11BH-01M-4																4			X
858	BV-11BH-01M-5					X	X					X		X	X		4			

Samples Relinquished by (print name & sign): Amanda Sallan	Date 14/12/2011	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

NO: 000292

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:
Company: same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Report Information
1. Name: same as previous
Email:
2. Name:
Email:

Report Format
[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only
Arrival Temperature: 3°C
AGAT Job Number:
Notes: DEC 15 AM 8:04

Invoice To: Same as above Yes [X] No [ ]
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):
[X] BC CSR – Soil [ ] BC CSR – Water
[ ] Agricultural [ ] Drinking Water
[X] Industrial [ ] Aquatic Life
[ ] Urban/Park [ ] Irrigation
[ ] Commercial [ ] Livestock
[X] CCME
[ ] Drinking Water [X] Industrial
[ ] Residential/Park [ ] Drinking Water
[ ] Commercial [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME PHC-FU	Phenols (Chlorinated)			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3011859	BV-DUPS	Soil	14/12/2011				X						X			2			

Samples Relinquished by (print name & sign): Amanda Scanlan	Date 14/12/2011	Samples Received by (Print name & sign):	Date	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 3 of 3
NO: 000293

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11V559640

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 15-DEC-11 @8:03AM
Courier: _____
Received by: S. Couzens
Relinquished by: In drop off Shed
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: N/A

CoC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg TAT
COC Numbers: 000291, 292, 293

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: _____ Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 14-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 20-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 3 + 2 = 3 °C (2) 2 + 2 + 4 = 3 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM Work order # 11V559640

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: Dec. 16, 2014 / 8:18 AM
Courier: DHL
Received by: JAN
Relinquished by: _____
Company: TRANZ ENVIRONMENTAL
Consultant: _____
Client left without count verified: _____

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: REGULAR
COC Numbers: 000291 WO# 11V559640

SAMPLE QUANTITIES:
Coolers: 1 Bottles/Jars: 22 Bags: 0

TIME SENSITIVE ISSUES:
Earliest Date Sampled: Dec. 14, 2014
Microbiology: Test: —
Hydrocarbons: Test: —
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: —
Expiry: —

SPECIALTY ISSUES:
Legal Samples: Yes (No)
International Samples: Yes (No)
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.
Correct bottles used for testing: (Yes) No
If No, explain: _____
Correct amount of sample for analysis: (Yes) No
If No, explain: _____
Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 0 + 0 + 0 = 0 °C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available
JAR W/ICE
Additional integrity issues (note here and on CoC next to the sample ID):
1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:
_____
_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560293

SOIL ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

DATE REPORTED: Dec 23, 2011

PAGES (INCLUDING COVER): 20

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-2 3017390	MV-11BH-01M-3 3017392	MV-11BH-01M-4 3017393	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432
Antimony	µg/g	40	0.05	0.52	1.65	0.61	0.39	0.82
Arsenic	µg/g	15	0.1	5.9	4.2	5.5	4.3	10.0
Barium	µg/g	400	0.5	99.1	123	101	74.7	83.8
Beryllium	µg/g	8	0.02	0.34	0.18	0.31	0.21	0.24
Boron (Hot Water Soluble)	µg/g		0.1	0.3	13.7	1.2	0.2	0.2
Cadmium	µg/g		0.01	0.40	0.39	0.30	0.14	0.22
Chromium	µg/g	60	1	38	31	38	27	29
Cobalt	µg/g	300	0.1	12.3	6.6	11.0	8.6	9.6
Copper	µg/g		0.2	32.7	30.2	30.3	37.3	22.6
Lead	µg/g		0.05	6.02	33.6	8.55	3.62	7.24
Mercury	µg/g		0.01	0.04	0.12	0.06	0.03	0.04
Molybdenum	µg/g	40	0.05	1.14	1.03	0.84	0.60	0.94
Nickel	µg/g	500	0.5	45.8	36.5	38.4	30.0	34.9
Selenium	µg/g	10	0.1	0.6	0.3	0.5	0.3	0.4
Silver	µg/g	40	0.05	0.10	0.10	0.09	0.05	0.07
Thallium	µg/g		0.05	0.11	0.06	0.10	0.06	0.08
Tin	µg/g	300	0.05	0.52	4.77	0.93	0.29	0.48
Uranium	µg/g	200	0.05	0.68	0.67	0.73	0.39	0.55
Vanadium	µg/g		1	48	31	49	37	39
Zinc	µg/g		1	67	111	71	47	48
pH 1:2	pH units		0.1	7.2	7.3	7.2	7.5	7.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3017390-3017432 Results are based on the dry weight of the sample

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Soil Analysis - Ion Analysis with Conversions - Cl & Na

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-4 3017393
Chloride, Soluble	mg/L		2	13
Sodium, Soluble	mg/L		2	17
Chloride, Soluble (mg/kg)	mg/kg		2	7
Sodium, Soluble (mg/kg)	mg/kg		2	9

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

Certified By: Marie England

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432
Benzene	mg/kg		0.005	<0.005	<0.005
Toluene	mg/kg		0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	<0.01	<0.01
Xylenes	mg/kg		0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg		10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10
C10 - C16 (F2)	mg/kg		10	<10	<10
C16 - C34 (F3)	mg/kg		10	<10	<10
C34 - C50 (F4)	mg/kg		10	<10	<10
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A
Moisture Content	%		1	17	23
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8 (BTEX)	%	50-150		99	99
Ethylbenzene-d10 (BTEX)	%	50-150		99	95
o-Terphenyl (F2-F4)	%	50-150		100	99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)

3017398-3017432 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By:

AGAT Laboratories

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Burnaby, British Columbia
CANADA V5J 0B6
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FAX (778)452-4074
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (F2-F4) in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-17M-1 3017445	MV-11BH-17M-3 3017448	MV-DUP7 3017451
C10 - C16 (F2)	mg/kg		10	<10	<10	<10
C16 - C34 (F3)	mg/kg		10	24	29	29
C34 - C50 (F4)	mg/kg		10	27	25	21
Moisture Content	%		1	23	31	31
Surrogate	Unit	Acceptable Limits				
o-Terphenyl (F2-F4)	%	50-150		103	98	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)

3017445-3017451 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram has returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432	MV-11BH-17M-1 3017445	MV-11BH-17M-3 3017448	MV-DUP7 3017451
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	<0.1			
Benzene	µg/g	0.04	0.02	<0.02	<0.02			
Toluene	µg/g	2.5	0.05	<0.05	<0.05			
Ethylbenzene	µg/g	7	0.05	<0.05	<0.05			
m&p-Xylene	µg/g	20	0.05	<0.05	<0.05			
o-Xylene	µg/g	20	0.05	<0.05	<0.05			
Styrene	µg/g	50	0.05	<0.05	<0.05			
VPH	µg/g	200	10	<10	<10			
Naphthalene	µg/g	50	0.01	<0.01	0.01	0.02	<0.01	0.01
2-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	0.02	<0.01	0.01
1-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	0.01	<0.01	<0.01
Acenaphthylene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	µg/g	50	0.02	0.02	<0.02	0.04	<0.02	0.03
Anthracene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	µg/g		0.05	<0.05	<0.05	0.06	<0.05	<0.05
Pyrene	µg/g	100	0.02	<0.02	<0.02	0.05	<0.02	0.03
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	0.03	<0.02	0.02
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	0.02	<0.02	0.02
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/g	2000	25	<25	<25	<25	<25	<25
HEPH C19-C32	µg/g	5000	25	<25	71	41	56	49

Certified By:

AGAT Laboratories

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Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432	MV-11BH-17M-1 3017445	MV-11BH-17M-3 3017448	MV-DUP7 3017451
Nitrobenzene - d5	%	50-130	100	89	83	100	89
2-Fluorobiphenyl	%	50-130	100	91	92	98	95
P-Terphenyl - d14	%	50-130	99	91	93	110	100
Bromofluorobenzene	%	70-130	108	97.4			
Toluene - d8	%	70-130	128	116			

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3017398-3017432 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3017445-3017451 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432
Phenol	mg/kg		0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.002	<0.002	<0.002
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	<0.005
Surrogate	**Unit**	**Acceptable Limits**			
2-Fluorophenol	%	50-150		109	112
2,4,6-Tribromophenol	%	50-150		108	111

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3017398-3017432 Results relate only to the items tested.

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-4 3017393	MV-Dup 3017396
Chloromethane	µg/g	160	0.05	<0.05	<0.05
Vinyl Chloride	µg/g	7.5	0.05	<0.05	<0.05
Bromomethane	µg/g	13	0.05	<0.05	<0.05
Chloroethane	µg/g	65	0.05	<0.05	<0.05
Trichlorofluoromethane	µg/g	2000	0.05	<0.05	<0.05
Acetone	µg/g	54000	0.5	<0.5	<0.5
1,1-Dichloroethene	µg/g	50	0.05	<0.05	<0.05
Dichloromethane	µg/g	50	0.05	<0.05	<0.05
Methyl tert-butyl ether (MTBE)	µg/g	700	0.05	<0.05	<0.05
2-Butanone (MEK)	µg/g	110000	0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05
1,1-Dichloroethane	µg/g	50	0.05	<0.05	<0.05
cis-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05
Chloroform	µg/g	50	0.05	<0.05	<0.05
1,2-Dichloroethane	µg/g	50	0.05	<0.05	<0.05
1,1,1-Trichloroethane	µg/g	50	0.05	<0.05	<0.05
Carbon Tetrachloride	µg/g	50	0.025	<0.025	<0.025
Benzene	µg/g	0.04	0.025	<0.025	<0.025
1,2-Dichloropropane	µg/g	50	0.05	<0.05	<0.05
Trichloroethene	µg/g	0.015	0.05	<0.05	<0.05
Bromodichloromethane	µg/g	18	0.05	<0.05	<0.05
trans-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05
4-Methyl-2-pentanone (MIBK)	µg/g		0.5	<0.5	<0.5
cis-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05
1,1,2-Trichloroethane	µg/g	50	0.05	<0.05	<0.05
Toluene	µg/g	2.5	0.025	<0.025	<0.025
Dibromochloromethane	µg/g	26	0.05	<0.05	<0.05
Ethylene Dibromide	µg/g	0.73	0.05	<0.05	<0.05
Tetrachloroethene	µg/g		0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	µg/g	73	0.05	<0.05	<0.05
Chlorobenzene	µg/g	10	0.05	<0.05	<0.05
Ethylbenzene	µg/g	7	0.025	<0.025	<0.025
m&p-Xylene	µg/g	20	0.025	<0.025	<0.025

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-4 3017393	MV-Dup 3017396
Bromoform	µg/g	2200	0.05	<0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	µg/g	9.3	0.05	<0.05	<0.05
o-Xylene	µg/g	20	0.025	<0.025	<0.025
1,3-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05
1,4-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05
1,2-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05
1,2,4-Trichlorobenzene	µg/g	10	0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits			
Bromofluorobenzene	%	50-150		91	110
Dibromofluoromethane	%	50-150		110	130
Toluene - d8	%	50-150		110	130

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3017393-3017396 Results are based on dry weight of sample.

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Soil Analysis - Ion Analysis with Conversions - Cl & Na															
Chloride, Soluble	90	632	11	11	0.0%	< 2	106%	80%	120%	96%			102%	80%	120%
Sodium, Soluble	6812	6923	16	16	0.9%	< 2	97%	80%	120%					80%	120%
Comments: N/A: Not applicable															
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony		3017432	0.8	0.5	46.2%	< 0.05	102%	70%	130%	95%	90%	110%	95%	80%	120%
Arsenic		3017432	10.0	9.2	8.3%	< 0.1	110%	70%	130%	109%	90%	110%	109%	80%	120%
Barium		3017432	83.8	74.0	12.4%	< 0.5	98%	70%	130%	103%	90%	110%	103%	80%	120%
Beryllium		3017432	0.24	0.26	8.0%	< 0.02	104%	70%	130%	100%	90%	110%	100%	80%	120%
Boron (Hot Water Soluble)		3020034	0.103	0.097	6.0%	< 0.1				106%	90%	110%	112%	80%	120%
Cadmium		3017432	0.22	0.23	4.4%	< 0.01				98%	90%	110%	98%	80%	120%
Chromium		3017432	29	30	3.4%	< 1	99%	70%	130%	98%	90%	110%	98%	80%	120%
Cobalt		3017432	9.6	9.9	3.1%	< 0.1	92%	70%	130%	98%	90%	110%	98%	80%	120%
Copper		3017432	22.6	23.6	4.3%	< 0.2	90%	70%	130%	97%	90%	110%	97%	80%	120%
Lead		3017432	7.24	4.09	55.6%	< 0.05	92%	70%	130%	97%	90%	110%	97%	80%	120%
Mercury		3017432	0.041	0.043	4.8%	< 0.01	95%	70%	130%	95%	90%	110%	96%	80%	120%
Molybdenum		3017432	0.94	0.92	2.2%	< 0.05	99%	70%	130%	101%	90%	110%	101%	80%	120%
Nickel		3017432	34.9	36.9	5.6%	< 0.5	93%	70%	130%	96%	90%	110%	96%	80%	120%
Selenium		3017432	0.4	0.5	22.2%	< 0.1				99%	90%	110%	113%	80%	120%
Silver		3017432	0.07	0.07	0.0%	< 0.05				97%	90%	110%	97%	80%	120%
Thallium		3017432	0.08	0.08	0.0%	< 0.05				97%	90%	110%	97%	80%	120%
Tin		3017432	0.48	0.46	4.3%	< 0.05				108%	90%	110%	108%	80%	120%
Uranium		3017432	0.55	0.53	3.7%	< 0.05		0%	0%	97%	90%	110%	95%	80%	120%
Vanadium		3017432	39	42	7.4%	< 1	100%	70%	130%	99%	90%	110%	99%	80%	120%
Zinc		3017432	48	51	6.1%	< 1	99%	70%	130%	109%	90%	110%	109%	80%	120%
pH 1:2		3021236	6.9	6.6	4.4%	< 0.1				100%	95%	105%	100%	90%	110%
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	20111	3017432	0.82	0.45	58.0%	< 0.05	102%	70%	130%	95%	90%	110%	95%	80%	120%
Arsenic	20111	-11111	0	0	0.0%	< 0.1	110%	70%	130%	109%	90%	110%	109%	80%	120%
Barium	20111	3017432	83.8	74.0	12.0%	< 0.5	98%	70%	130%	103%	90%	110%	103%	80%	120%
Beryllium	20111	3017432	0.24	0.26	8.0%	< 0.02	104%	70%	130%	100%	90%	110%	100%	80%	120%
Boron (Hot Water Soluble)	20111	3017432	0.2	0.2	0.0%	< 0.1				121%	90%	110%		80%	120%
Cadmium	20111	3017432	0.22	0.23	4.0%	< 0.01	124%			98%	90%	110%	98%	80%	120%
Chromium	20111	3017432	29	30	3.0%	< 1	99%	70%	130%	98%	90%	110%	98%	80%	120%
Cobalt	20111	3017432	9.6	9.9	3.0%	< 0.1	92%	70%	130%	98%	90%	110%	98%	80%	120%
Copper	20111	3017432	22.6	23.6	4.0%	< 0.2	90%	70%	130%	97%	90%	110%	97%	80%	120%
Lead	20111	3017432	7.24	4.09	56.0%	< 0.05	92%	70%	130%	97%	90%	110%	97%	80%	120%
Mercury	20111	3017432	0.04	0.04	0.0%	< 0.01	95%	70%	130%		90%	110%		80%	120%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Molybdenum	20111	3017432	0.94	0.92	2.0%	< 0.05	99%	70%	130%	101%	90%	110%	101%	80%	120%
Nickel	20111	3017432	34.9	36.9	6.0%	< 0.5	93%	70%	130%	96%	90%	110%	96%	80%	120%
Selenium	20111	3017432	0.4	0.5	22.0%	< 0.1	49%			23%	90%	110%	23%	80%	120%
Silver	20111	3017432	0.07	0.07	0.0%	< 0.05	117%			97%	90%	110%	97%	80%	120%
Thallium	20111	3017432	0.08	0.08	0.0%	< 0.05	68%			97%	90%	110%	97%	80%	120%
Tin	20111	3017432	0.48	0.46	4.0%	< 0.05	122%			108%	90%	110%	108%	80%	120%
Vanadium	20111	3017432	39	42	7.0%	< 1	100%	70%	130%	99%	90%	110%	99%	80%	120%
Zinc	20111	3017432	48	51	6.0%	< 1	99%	70%	130%	109%	90%	110%	109%	80%	120%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
Benzene	134	3020411	<0.005	<0.005	NA	< 0.005	119%	80%	120%	114%	80%	120%	118%	60%	140%
Toluene	134	3020411	<0.05	<0.05	NA	< 0.05	113%	80%	120%	108%	80%	120%	112%	60%	140%
Ethylbenzene	134	3020411	<0.01	<0.01	NA	< 0.01	109%	80%	120%	108%	80%	120%	112%	60%	140%
Xylenes	134	3020411	<0.05	<0.05	NA	< 0.05	109%	80%	120%	107%	80%	120%	111%	60%	140%
C6 - C10 (F1)	134	3020411	<10	<10	NA	< 10	106%	80%	120%	80%	80%	120%	82%	60%	140%
C10 - C16 (F2)	876	3019368	20	<10	NA	< 10	113%	80%	120%	108%	80%	120%	104%	60%	140%
C16 - C34 (F3)	876	3019368	<10	<10	NA	< 10	113%	80%	120%	102%	80%	120%	106%	60%	140%
C34 - C50 (F4)	876	3019368	<10	<10	NA	< 10	113%	80%	120%	101%	80%	120%	107%	60%	140%
Volatile Organic Compounds in Soil (180-054)															
Chloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				109%	70%	130%
Vinyl Chloride	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				109%	70%	130%
Bromomethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	96%	80%	120%				106%	70%	130%
Chloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Trichlorofluoromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				111%	70%	130%
Acetone	1	3020046	<0.5	<0.5	0.0%	< 0.5	109%	80%	120%				129%	70%	130%
1,1-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				112%	70%	130%
Dichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				113%	70%	130%
Methyl tert-butyl ether (MTBE)	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				116%	70%	130%
2-Butanone (MEK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	102%	80%	120%				111%	70%	130%
trans-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				114%	70%	130%
1,1-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
cis-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Chloroform	1	3020046	<0.05	<0.05	0.0%	< 0.05	91%	80%	120%				104%	70%	130%
1,2-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				116%	70%	130%
1,1,1-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				113%	70%	130%
Carbon Tetrachloride	1	3020046	<0.025	<0.025	0.0%	< 0.025	101%	80%	120%				112%	70%	130%
Benzene	1	3020046	<0.025	<0.025	0.0%	< 0.025	100%	80%	120%				115%	70%	130%
1,2-Dichloropropane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Trichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
Bromodichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				116%	70%	130%
trans-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				112%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	104%	80%	120%				112%	70%	130%
cis-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				113%	70%	130%
1,1,2-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				114%	70%	130%
Toluene	1	3020046	<0.025	<0.025	0.0%	< 0.025	101%	80%	120%				114%	70%	130%
Dibromochloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				114%	70%	130%
Ethylene Dibromide	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Tetrachloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				126%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,1,1,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				114%	70%	130%
Chlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				109%	70%	130%
Ethylbenzene	1	3020046	<0.025	<0.025	0.0%	< 0.025	102%	80%	120%				110%	70%	130%
m&p-Xylene	1	3020046	<0.025	<0.025	0.0%	< 0.025	102%	80%	120%				111%	70%	130%
Bromoform	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				109%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				110%	70%	130%
1,1,2,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				108%	70%	130%
o-Xylene	1	3020046	<0.025	<0.025	0.0%	< 0.025	102%	80%	120%				112%	70%	130%
1,3-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				105%	70%	130%
1,4-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				105%	70%	130%
1,2-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				106%	70%	130%
1,2,4-Trichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				105%	70%	130%
Bromofluorobenzene	1	3020046	107	78	31.0%	<	111%	70%	130%				128%	70%	130%
Dibromofluoromethane	1	3020046	121	80	41.0%	<	111%	70%	130%				129%	70%	130%
Toluene - d8	1	3020046	125	86	37.0%	<	110%	70%	130%				128%	70%	130%
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3020046	<0.1	<0.1	0.0%	< 0.1	99%	80%	120%				91%	70%	130%
Benzene	1	3020046	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				93%	70%	130%
Toluene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				90%	70%	130%
Ethylbenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				85%	70%	130%
m&p-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				79%	70%	130%
o-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				84%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				85%	70%	130%
VPH	1	3020046	<10	<10	0.0%	< 10									
Naphthalene	1	3018978	0.02	0.02	0.0%	< 0.01	102%	80%	120%				105%	50%	130%
2-Methylnaphthalene	1	3018978	0.01	0.01	0.0%	< 0.01	103%	80%	120%				99%	50%	130%
1-Methylnaphthalene	1	3018978	<0.01	0.01	0.0%	< 0.01	103%	80%	120%				102%	50%	130%
Acenaphthylene	1	3018978	0.01	0.01	0.0%	< 0.01	102%	80%	120%				94%	50%	130%
Acenaphthene	1	3018978	NA	NA	0.0%	< 0.01	105%	80%	120%				90%	50%	130%
Fluorene	1	3018978	<0.02	0.02	0.0%	< 0.02	102%	80%	120%				95%	50%	130%
Phenanthrene	1	3018978	0.04	0.05	22.0%	< 0.02	98%	80%	120%				92%	60%	130%
Anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				79%	60%	130%
Fluoranthene	1	3018978	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				96%	60%	130%
Pyrene	1	3018978	0.06	0.05	18.0%	< 0.02	100%	80%	120%				98%	60%	130%
Benzo(a)anthracene	1	3018978	0.02	0.02	0.0%	< 0.02	102%	80%	120%				88%	60%	130%
Chrysene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	3018978	0.02	0.02	0.0%	< 0.02	101%	80%	120%				87%	60%	130%
Benzo(k)fluoranthene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Benzo(a)pyrene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	60%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Indeno(1,2,3-c,d)pyrene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				90%	60%	130%
Dibenzo(a,h)anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Nitrobenzene - d5	1	3018978	81	90	11.0%	<	100%	80%	120%				100%	50%	130%
2-Fluorobiphenyl	1	3018978	86	94	9.0%	<	101%	80%	120%				91%	50%	130%
P-Terphenyl - d14	1	3018978	90	99	10.0%	<	98%	80%	120%				88%	50%	130%
LEPH C10-C19	1	3018978	<25	<25	0.0%	< 25									
HEPH C19-C32	1	3018978	<25	<25	0.0%	< 25									
Bromofluorobenzene	1	3020046	103	81.8	23.0%	<	108%	70%	130%				108%	70%	130%
Toluene - d8	1	3020046	124	92.9	29.0%	<	100%	70%	130%				111%	70%	130%
Phenolic Compounds in Soil															
Phenol	127	3021236	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	97%	70%	130%	96%	60%	140%
4-Nitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	94%	70%	130%	93%	60%	140%
m&p-Cresol (3&4-methylphenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
o-Cresol (2-methylphenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	95%	60%	140%
2-Chlorophenol	127	3021236	<0.002	<0.002	0.0%	< 0.002				98%	70%	130%	97%	60%	140%
2,4-Dinitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	96%	70%	130%	95%	60%	140%
2-Nitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	94%	80%	120%	109%	70%	130%	107%	60%	140%
2,4-Dimethylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	97%	70%	130%	95%	60%	140%
2,6-Dichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	94%	60%	140%
4-Chloro-3-methylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	82%	80%	120%	99%	70%	130%	100%	60%	140%
2,4-Dichlorophenol	127	3021236	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	100%	70%	130%	95%	60%	140%
4,6-Dinitro-2-methylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	93%	80%	120%	100%	70%	130%	102%	60%	140%
2,3,6-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	96%	60%	140%
2,4,6-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	84%	80%	120%	99%	70%	130%	98%	60%	140%
2,4,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
2,3,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				99%	70%	130%	98%	60%	140%
3,4,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	100%	60%	140%
2,3,5,6-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	98%	60%	140%
Pentachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	102%	70%	130%	100%	60%	140%

Certified By:

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER
Chloride, Soluble	SOIL 0110; SOIL 0120; INST 0330	SHEPPARD 2007, EATON 2005	CONTINUOUS FLOW ANALYZER
Sodium, Soluble	SOIL 0110; SOIL 0120; INST 0140	SHEPPARD 2007; EATON 2005	ICP/OES

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO 0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO 0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV

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TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Benzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

AGAT Laboratories

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CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Dibromochloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylbenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
m&p-Xylene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Styrene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
o-Xylene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

AGAT Laboratories

120 - 8600 Glenlyon Parkway
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Chain of Custody Record

Turnaround Time Required (TAT)

- **Regular TAT** 5 to 7 working days ☒
- **Rush TAT** 24 to 48 hours ☐
- 48 to 72 hours ☐

Date Required: ______

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St. Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604-632-9941
LSD:
Client Project #: 2090-1103

Invoice To: Same as above Yes ☒ No ☐

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Report Information

1. Name: Amanda Salway
   Email: asalway@franzbc.com
2. Name: Viviane Dubois-Coté
   Email: vdcote@franzbc.com

Regulatory Requirements (Check):

- ☒ **BC CSR – Soil**
  - ☐ Agricultural
  - ☒ Industrial
  - ☐ Urban/Park
  - ☐ Commercial
- ☐ **BC CSR – Water**
  - ☐ Drinking Water
  - ☐ Aquatic Life
  - ☐ Irrigation
  - ☐ Livestock
- ☒ **CCME**
  - ☐ Drinking Water
  - ☐ Residential/Park
  - ☐ Commercial
  - ☒ Industrial
  - ☐ Drinking Water
  - ☐ FWAL

Report Format

- ☐ Single Sample per page
- ☒ Multiple Samples per page
- ☒ Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number: 11V560293

Notes: DEC 16 AM 7:56

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and CCME metals	VOCs	BC CSR Schedule II	Routine Potability	sulfides	salts	F1-F4	PAH	phenols (chlorinated and non-chlorinated)	CCME F2-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
17386	MV-11BH-01M-1	Soil	15/12/2011														1			X
390	MV-11BH-01M-2	↓	↓	analyze metals only (hold remainder of sample for MV-11BH-01M-2)			X										3			
392	MV-11BH-01M-3						X										1			
393	MV-11BH-01M-4						X	X			X	X					3			
394	MV-11BH-01M-5																3			X
396	MV-DUP6							X									1			
398	BV-11BH-03M-1				X	X	X						X	X	X		4			
400	BV-11BH-03M-2																4			X
432	BV-11BH-03M-3				X	X	X						X	X	X		4			
443	BV-11BH-03M-4																4			X
444	BV-11BH-03M-5																4			X
445	MV-11BH-17M-1					X								X		X	2			

30

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Amanda Salway	15/12/2011	S. Couzens 16-DEC-11 @ 7:56 AM	

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 2

NO: 000294

AGAT Laboratories

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Burnaby, BC,
V5J 0B6
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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT	5 to 7 working days	[X]
Rush TAT	24 to 48 hours	[ ]
	48 to 72 hours	[ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: same as previous
Contact:
Address:

Phone: _____ Fax: _____
LSD:
Client Project #:

Report Information

1. Name: same as previous
   Email:
2. Name:
   Email:

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number: 11V560293

Notes: DEC 16 AM 7:56

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:

Phone: _____ Fax: _____
PO/AFE #:

Regulatory Requirements (Check):

- [X] **BC CSR – Soil**
  - [ ] Agricultural
  - [X] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [ ] **BC CSR – Water**
  - [ ] Drinking Water
  - [ ] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] **CCME**
  - [ ] Drinking Water
  - [X] Industrial
  - [ ] Residential/Park
  - [ ] Drinking Water
  - [ ] Commercial
  - [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F2-F4	PAH					Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
B017446	MW-11BH-17M-2	SOIL	15/12/2011														2			
448	MW-11BH-17M-3	↓	↓			X					X	X					2			
449	MW-11BH-17M-4																2			X
451	MW-DUP7					X					X	X					2			

Samples Relinquished by (print name & sign): Amy Sawka	Date 15/12/2011	Samples Received by (Print name & sign): S. Courens	Date 16-DEC-11 @ 7:56 AM	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 2 of 2

NO: 000295

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11V560293

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 16-DEC-11 @
Courier: _____
Received by: S. Cowens
Relinquished by: In dropoff Area
Branch Received From: _____
Company: Franzen
Consultant: _____
Client left without count verified: N/A

CoC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 295, 294

SAMPLE QUANTITIES:
Coolers: 1 Bottles/Jars: 42 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 15-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 22-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3+4+3=3 °C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) Client requesting "Salts" for analysis
2) which test is this?
3) _____

Account Project Manager: Melissa Bhess Have they been notified of the above issues: (Yes) No
Whom spoken to: Melissa Bhess Date and Time: 16-DEC-11 @10:00Am

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
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http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560293

SOIL ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

DATE REPORTED: Dec 23, 2011

PAGES (INCLUDING COVER): 20

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-2 3017390	MV-11BH-01M-3 3017392	MV-11BH-01M-4 3017393	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432
Antimony	µg/g	40	0.05	0.52	1.65	0.61	0.39	0.82
Arsenic	µg/g	12	0.1	5.9	4.2	5.5	4.3	10.0
Barium	µg/g	2000	0.5	99.1	123	101	74.7	83.8
Beryllium	µg/g	8	0.02	0.34	0.18	0.31	0.21	0.24
Boron (Hot Water Soluble)	µg/g	1.4	0.1	0.3	13.7	1.2	0.2	0.2
Cadmium	µg/g	22	0.01	0.40	0.39	0.30	0.14	0.22
Chromium	µg/g	87	1	38	31	38	27	29
Cobalt	µg/g	300	0.1	12.3	6.6	11.0	8.6	9.6
Copper	µg/g	91	0.2	32.7	30.2	30.3	37.3	22.6
Lead	µg/g	600	0.05	6.02	33.6	8.55	3.62	7.24
Mercury	µg/g	50	0.01	0.04	0.12	0.06	0.03	0.04
Molybdenum	µg/g	40	0.05	1.14	1.03	0.84	0.60	0.94
Nickel	µg/g	50	0.5	45.8	36.5	38.4	30.0	34.9
Selenium	µg/g	2.9	0.1	0.6	0.3	0.5	0.3	0.4
Silver	µg/g	40	0.05	0.10	0.10	0.09	0.05	0.07
Thallium	µg/g	1	0.05	0.11	0.06	0.10	0.06	0.08
Tin	µg/g	300	0.05	0.52	4.77	0.93	0.29	0.48
Uranium	µg/g	300	0.05	0.68	0.67	0.73	0.39	0.55
Vanadium	µg/g	130	1	48	31	49	37	39
Zinc	µg/g	360	1	67	111	71	47	48
pH 1:2	pH units		0.1	7.2	7.3	7.2	7.5	7.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)
3017390-3017432 Results are based on the dry weight of the sample

Certified By: Marie England

AGAT Laboratories

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Burnaby, British Columbia
CANADA V5J 0B6
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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Soil Analysis - Ion Analysis with Conversions - Cl & Na

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-4 3017393
Chloride, Soluble	mg/L		2	13
Sodium, Soluble	mg/L		2	17
Chloride, Soluble (mg/kg)	mg/kg		2	7
Sodium, Soluble (mg/kg)	mg/kg		2	9

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

Certified By: Marie England

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432
Benzene	mg/kg		0.005	<0.005	<0.005
Toluene	mg/kg		0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	<0.01	<0.01
Xylenes	mg/kg		0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg		10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10
C10 - C16 (F2)	mg/kg		10	<10	<10
C16 - C34 (F3)	mg/kg		10	<10	<10
C34 - C50 (F4)	mg/kg		10	<10	<10
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A
Moisture Content	%		1	17	23
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8 (BTEX)	%	50-150		99	99
Ethylbenzene-d10 (BTEX)	%	50-150		99	95
o-Terphenyl (F2-F4)	%	50-150		100	99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)

3017398-3017432 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (F2-F4) in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-17M-1 3017445	MV-11BH-17M-3 3017448	MV-DUP7 3017451
C10 - C16 (F2)	mg/kg		10	<10	<10	<10
C16 - C34 (F3)	mg/kg		10	24	29	29
C34 - C50 (F4)	mg/kg		10	27	25	21
Moisture Content	%		1	23	31	31
Surrogate	Unit	Acceptable Limits				
o-Terphenyl (F2-F4)	%	50-150		103	98	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)

3017445-3017451 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram has returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432	MV-11BH-17M-1 3017445	MV-11BH-17M-3 3017448	MV-DUP7 3017451
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	<0.1			
Benzene	µg/g	0.04	0.02	<0.02	<0.02			
Toluene	µg/g	2.5	0.05	<0.05	<0.05			
Ethylbenzene	µg/g	7	0.05	<0.05	<0.05			
m&p-Xylene	µg/g	20	0.05	<0.05	<0.05			
o-Xylene	µg/g	20	0.05	<0.05	<0.05			
Styrene	µg/g	50	0.05	<0.05	<0.05			
VPH	µg/g	200	10	<10	<10			
Naphthalene	µg/g	50	0.01	<0.01	0.01	0.02	<0.01	0.01
2-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	0.02	<0.01	0.01
1-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	0.01	<0.01	<0.01
Acenaphthylene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	µg/g	50	0.02	0.02	<0.02	0.04	<0.02	0.03
Anthracene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	µg/g		0.05	<0.05	<0.05	0.06	<0.05	<0.05
Pyrene	µg/g	100	0.02	<0.02	<0.02	0.05	<0.02	0.03
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	0.03	<0.02	0.02
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	0.02	<0.02	0.02
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/g	2000	25	<25	<25	<25	<25	<25
HEPH C19-C32	µg/g	5000	25	<25	71	41	56	49

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432	MV-11BH-17M-1 3017445	MV-11BH-17M-3 3017448	MV-DUP7 3017451
Nitrobenzene - d5	%	50-130	100	89	83	100	89
2-Fluorobiphenyl	%	50-130	100	91	92	98	95
P-Terphenyl - d14	%	50-130	99	91	93	110	100
Bromofluorobenzene	%	70-130	108	97.4			
Toluene - d8	%	70-130	128	116			

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3017398-3017432 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3017445-3017451 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432
Phenol	mg/kg		0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.002	<0.002	<0.002
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	<0.005
Surrogate	**Unit**	**Acceptable Limits**			
2-Fluorophenol	%	50-150		109	112
2,4,6-Tribromophenol	%	50-150		108	111

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3017398-3017432 Results relate only to the items tested.

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-4 3017393	MV-Dup 3017396
Chloromethane	µg/g	160	0.05	<0.05	<0.05
Vinyl Chloride	µg/g	7.5	0.05	<0.05	<0.05
Bromomethane	µg/g	13	0.05	<0.05	<0.05
Chloroethane	µg/g	65	0.05	<0.05	<0.05
Trichlorofluoromethane	µg/g	2000	0.05	<0.05	<0.05
Acetone	µg/g	54000	0.5	<0.5	<0.5
1,1-Dichloroethene	µg/g	50	0.05	<0.05	<0.05
Dichloromethane	µg/g	50	0.05	<0.05	<0.05
Methyl tert-butyl ether (MTBE)	µg/g	700	0.05	<0.05	<0.05
2-Butanone (MEK)	µg/g	110000	0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05
1,1-Dichloroethane	µg/g	50	0.05	<0.05	<0.05
cis-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05
Chloroform	µg/g	50	0.05	<0.05	<0.05
1,2-Dichloroethane	µg/g	50	0.05	<0.05	<0.05
1,1,1-Trichloroethane	µg/g	50	0.05	<0.05	<0.05
Carbon Tetrachloride	µg/g	50	0.025	<0.025	<0.025
Benzene	µg/g	0.04	0.025	<0.025	<0.025
1,2-Dichloropropane	µg/g	50	0.05	<0.05	<0.05
Trichloroethene	µg/g	0.015	0.05	<0.05	<0.05
Bromodichloromethane	µg/g	18	0.05	<0.05	<0.05
trans-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05
4-Methyl-2-pentanone (MIBK)	µg/g		0.5	<0.5	<0.5
cis-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05
1,1,2-Trichloroethane	µg/g	50	0.05	<0.05	<0.05
Toluene	µg/g	2.5	0.025	<0.025	<0.025
Dibromochloromethane	µg/g	26	0.05	<0.05	<0.05
Ethylene Dibromide	µg/g	0.73	0.05	<0.05	<0.05
Tetrachloroethene	µg/g		0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	µg/g	73	0.05	<0.05	<0.05
Chlorobenzene	µg/g	10	0.05	<0.05	<0.05
Ethylbenzene	µg/g	7	0.025	<0.025	<0.025
m&p-Xylene	µg/g	20	0.025	<0.025	<0.025

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-4 3017393	MV-Dup 3017396
Bromoform	µg/g	2200	0.05	<0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	µg/g	9.3	0.05	<0.05	<0.05
o-Xylene	µg/g	20	0.025	<0.025	<0.025
1,3-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05
1,4-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05
1,2-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05
1,2,4-Trichlorobenzene	µg/g	10	0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits			
Bromofluorobenzene	%	50-150		91	110
Dibromofluoromethane	%	50-150		110	130
Toluene - d8	%	50-150		110	130

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3017393-3017396 Results are based on dry weight of sample.

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Soil Analysis - Ion Analysis with Conversions - Cl & Na															
Chloride, Soluble	90	632	11	11	0.0%	< 2	106%	80%	120%	96%			102%	80%	120%
Sodium, Soluble	6812	6923	16	16	0.9%	< 2	97%	80%	120%					80%	120%
Comments: N/A: Not applicable															
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony		3017432	0.8	0.5	46.2%	< 0.05	102%	70%	130%	95%	90%	110%	95%	80%	120%
Arsenic		3017432	10.0	9.2	8.3%	< 0.1	110%	70%	130%	109%	90%	110%	109%	80%	120%
Barium		3017432	83.8	74.0	12.4%	< 0.5	98%	70%	130%	103%	90%	110%	103%	80%	120%
Beryllium		3017432	0.24	0.26	8.0%	< 0.02	104%	70%	130%	100%	90%	110%	100%	80%	120%
Boron (Hot Water Soluble)		3020034	0.103	0.097	6.0%	< 0.1				106%	90%	110%	112%	80%	120%
Cadmium		3017432	0.22	0.23	4.4%	< 0.01				98%	90%	110%	98%	80%	120%
Chromium		3017432	29	30	3.4%	< 1	99%	70%	130%	98%	90%	110%	98%	80%	120%
Cobalt		3017432	9.6	9.9	3.1%	< 0.1	92%	70%	130%	98%	90%	110%	98%	80%	120%
Copper		3017432	22.6	23.6	4.3%	< 0.2	90%	70%	130%	97%	90%	110%	97%	80%	120%
Lead		3017432	7.24	4.09	55.6%	< 0.05	92%	70%	130%	97%	90%	110%	97%	80%	120%
Mercury		3017432	0.041	0.043	4.8%	< 0.01	95%	70%	130%	95%	90%	110%	96%	80%	120%
Molybdenum		3017432	0.94	0.92	2.2%	< 0.05	99%	70%	130%	101%	90%	110%	101%	80%	120%
Nickel		3017432	34.9	36.9	5.6%	< 0.5	93%	70%	130%	96%	90%	110%	96%	80%	120%
Selenium		3017432	0.4	0.5	22.2%	< 0.1				99%	90%	110%	113%	80%	120%
Silver		3017432	0.07	0.07	0.0%	< 0.05				97%	90%	110%	97%	80%	120%
Thallium		3017432	0.08	0.08	0.0%	< 0.05				97%	90%	110%	97%	80%	120%
Tin		3017432	0.48	0.46	4.3%	< 0.05				108%	90%	110%	108%	80%	120%
Uranium		3017432	0.55	0.53	3.7%	< 0.05		0%	0%	97%	90%	110%	95%	80%	120%
Vanadium		3017432	39	42	7.4%	< 1	100%	70%	130%	99%	90%	110%	99%	80%	120%
Zinc		3017432	48	51	6.1%	< 1	99%	70%	130%	109%	90%	110%	109%	80%	120%
pH 1:2		3021236	6.9	6.6	4.4%	< 0.1				100%	95%	105%	100%	90%	110%
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	20111	3017432	0.82	0.45	58.0%	< 0.05	102%	70%	130%	95%	90%	110%	95%	80%	120%
Arsenic	20111	-11111	0	0	0.0%	< 0.1	110%	70%	130%	109%	90%	110%	109%	80%	120%
Barium	20111	3017432	83.8	74.0	12.0%	< 0.5	98%	70%	130%	103%	90%	110%	103%	80%	120%
Beryllium	20111	3017432	0.24	0.26	8.0%	< 0.02	104%	70%	130%	100%	90%	110%	100%	80%	120%
Boron (Hot Water Soluble)	20111	3017432	0.2	0.2	0.0%	< 0.1				121%	90%	110%		80%	120%
Cadmium	20111	3017432	0.22	0.23	4.0%	< 0.01	124%			98%	90%	110%	98%	80%	120%
Chromium	20111	3017432	29	30	3.0%	< 1	99%	70%	130%	98%	90%	110%	98%	80%	120%
Cobalt	20111	3017432	9.6	9.9	3.0%	< 0.1	92%	70%	130%	98%	90%	110%	98%	80%	120%
Copper	20111	3017432	22.6	23.6	4.0%	< 0.2	90%	70%	130%	97%	90%	110%	97%	80%	120%
Lead	20111	3017432	7.24	4.09	56.0%	< 0.05	92%	70%	130%	97%	90%	110%	97%	80%	120%
Mercury	20111	3017432	0.04	0.04	0.0%	< 0.01	95%	70%	130%		90%	110%		80%	120%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Molybdenum	20111	3017432	0.94	0.92	2.0%	< 0.05	99%	70%	130%	101%	90%	110%	101%	80%	120%
Nickel	20111	3017432	34.9	36.9	6.0%	< 0.5	93%	70%	130%	96%	90%	110%	96%	80%	120%
Selenium	20111	3017432	0.4	0.5	22.0%	< 0.1	49%			23%	90%	110%	23%	80%	120%
Silver	20111	3017432	0.07	0.07	0.0%	< 0.05	117%			97%	90%	110%	97%	80%	120%
Thallium	20111	3017432	0.08	0.08	0.0%	< 0.05	68%			97%	90%	110%	97%	80%	120%
Tin	20111	3017432	0.48	0.46	4.0%	< 0.05	122%			108%	90%	110%	108%	80%	120%
Vanadium	20111	3017432	39	42	7.0%	< 1	100%	70%	130%	99%	90%	110%	99%	80%	120%
Zinc	20111	3017432	48	51	6.0%	< 1	99%	70%	130%	109%	90%	110%	109%	80%	120%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
Benzene	134	3020411	<0.005	<0.005	NA	< 0.005	119%	80%	120%	114%	80%	120%	118%	60%	140%
Toluene	134	3020411	<0.05	<0.05	NA	< 0.05	113%	80%	120%	108%	80%	120%	112%	60%	140%
Ethylbenzene	134	3020411	<0.01	<0.01	NA	< 0.01	109%	80%	120%	108%	80%	120%	112%	60%	140%
Xylenes	134	3020411	<0.05	<0.05	NA	< 0.05	109%	80%	120%	107%	80%	120%	111%	60%	140%
C6 - C10 (F1)	134	3020411	<10	<10	NA	< 10	106%	80%	120%	80%	80%	120%	82%	60%	140%
C10 - C16 (F2)	876	3019368	20	<10	NA	< 10	113%	80%	120%	108%	80%	120%	104%	60%	140%
C16 - C34 (F3)	876	3019368	<10	<10	NA	< 10	113%	80%	120%	102%	80%	120%	106%	60%	140%
C34 - C50 (F4)	876	3019368	<10	<10	NA	< 10	113%	80%	120%	101%	80%	120%	107%	60%	140%
Volatile Organic Compounds in Soil (180-054)															
Chloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				109%	70%	130%
Vinyl Chloride	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				109%	70%	130%
Bromomethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	96%	80%	120%				106%	70%	130%
Chloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Trichlorofluoromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				111%	70%	130%
Acetone	1	3020046	<0.5	<0.5	0.0%	< 0.5	109%	80%	120%				129%	70%	130%
1,1-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				112%	70%	130%
Dichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				113%	70%	130%
Methyl tert-butyl ether (MTBE)	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				116%	70%	130%
2-Butanone (MEK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	102%	80%	120%				111%	70%	130%
trans-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				114%	70%	130%
1,1-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
cis-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Chloroform	1	3020046	<0.05	<0.05	0.0%	< 0.05	91%	80%	120%				104%	70%	130%
1,2-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				116%	70%	130%
1,1,1-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				113%	70%	130%
Carbon Tetrachloride	1	3020046	<0.025	<0.025	0.0%	< 0.025	101%	80%	120%				112%	70%	130%
Benzene	1	3020046	<0.025	<0.025	0.0%	< 0.025	100%	80%	120%				115%	70%	130%
1,2-Dichloropropane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Trichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
Bromodichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				116%	70%	130%
trans-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				112%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	104%	80%	120%				112%	70%	130%
cis-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				113%	70%	130%
1,1,2-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				114%	70%	130%
Toluene	1	3020046	<0.025	<0.025	0.0%	< 0.025	101%	80%	120%				114%	70%	130%
Dibromochloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				114%	70%	130%
Ethylene Dibromide	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Tetrachloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				126%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,1,1,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				114%	70%	130%
Chlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				109%	70%	130%
Ethylbenzene	1	3020046	<0.025	<0.025	0.0%	< 0.025	102%	80%	120%				110%	70%	130%
m&p-Xylene	1	3020046	<0.025	<0.025	0.0%	< 0.025	102%	80%	120%				111%	70%	130%
Bromoform	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				109%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				110%	70%	130%
1,1,2,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				108%	70%	130%
o-Xylene	1	3020046	<0.025	<0.025	0.0%	< 0.025	102%	80%	120%				112%	70%	130%
1,3-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				105%	70%	130%
1,4-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				105%	70%	130%
1,2-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				106%	70%	130%
1,2,4-Trichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				105%	70%	130%
Bromofluorobenzene	1	3020046	107	78	31.0%	<	111%	70%	130%				128%	70%	130%
Dibromofluoromethane	1	3020046	121	80	41.0%	<	111%	70%	130%				129%	70%	130%
Toluene - d8	1	3020046	125	86	37.0%	<	110%	70%	130%				128%	70%	130%
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3020046	<0.1	<0.1	0.0%	< 0.1	99%	80%	120%				91%	70%	130%
Benzene	1	3020046	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				93%	70%	130%
Toluene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				90%	70%	130%
Ethylbenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				85%	70%	130%
m&p-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				79%	70%	130%
o-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				84%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				85%	70%	130%
VPH	1	3020046	<10	<10	0.0%	< 10									
Naphthalene	1	3018978	0.02	0.02	0.0%	< 0.01	102%	80%	120%				105%	50%	130%
2-Methylnaphthalene	1	3018978	0.01	0.01	0.0%	< 0.01	103%	80%	120%				99%	50%	130%
1-Methylnaphthalene	1	3018978	<0.01	0.01	0.0%	< 0.01	103%	80%	120%				102%	50%	130%
Acenaphthylene	1	3018978	0.01	0.01	0.0%	< 0.01	102%	80%	120%				94%	50%	130%
Acenaphthene	1	3018978	NA	NA	0.0%	< 0.01	105%	80%	120%				90%	50%	130%
Fluorene	1	3018978	<0.02	0.02	0.0%	< 0.02	102%	80%	120%				95%	50%	130%
Phenanthrene	1	3018978	0.04	0.05	22.0%	< 0.02	98%	80%	120%				92%	60%	130%
Anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				79%	60%	130%
Fluoranthene	1	3018978	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				96%	60%	130%
Pyrene	1	3018978	0.06	0.05	18.0%	< 0.02	100%	80%	120%				98%	60%	130%
Benzo(a)anthracene	1	3018978	0.02	0.02	0.0%	< 0.02	102%	80%	120%				88%	60%	130%
Chrysene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	3018978	0.02	0.02	0.0%	< 0.02	101%	80%	120%				87%	60%	130%
Benzo(k)fluoranthene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Benzo(a)pyrene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	60%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Indeno(1,2,3-c,d)pyrene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				90%	60%	130%
Dibenzo(a,h)anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Nitrobenzene - d5	1	3018978	81	90	11.0%	<	100%	80%	120%				100%	50%	130%
2-Fluorobiphenyl	1	3018978	86	94	9.0%	<	101%	80%	120%				91%	50%	130%
P-Terphenyl - d14	1	3018978	90	99	10.0%	<	98%	80%	120%				88%	50%	130%
LEPH C10-C19	1	3018978	<25	<25	0.0%	< 25									
HEPH C19-C32	1	3018978	<25	<25	0.0%	< 25									
Bromofluorobenzene	1	3020046	103	81.8	23.0%	<	108%	70%	130%				108%	70%	130%
Toluene - d8	1	3020046	124	92.9	29.0%	<	100%	70%	130%				111%	70%	130%
Phenolic Compounds in Soil															
Phenol	127	3021236	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	97%	70%	130%	96%	60%	140%
4-Nitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	94%	70%	130%	93%	60%	140%
m&p-Cresol (3&4-methylphenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
o-Cresol (2-methylphenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	95%	60%	140%
2-Chlorophenol	127	3021236	<0.002	<0.002	0.0%	< 0.002				98%	70%	130%	97%	60%	140%
2,4-Dinitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	96%	70%	130%	95%	60%	140%
2-Nitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	94%	80%	120%	109%	70%	130%	107%	60%	140%
2,4-Dimethylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	97%	70%	130%	95%	60%	140%
2,6-Dichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	94%	60%	140%
4-Chloro-3-methylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	82%	80%	120%	99%	70%	130%	100%	60%	140%
2,4-Dichlorophenol	127	3021236	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	100%	70%	130%	95%	60%	140%
4,6-Dinitro-2-methylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	93%	80%	120%	100%	70%	130%	102%	60%	140%
2,3,6-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	96%	60%	140%
2,4,6-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	84%	80%	120%	99%	70%	130%	98%	60%	140%
2,4,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
2,3,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				99%	70%	130%	98%	60%	140%
3,4,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	100%	60%	140%
2,3,5,6-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	98%	60%	140%
Pentachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	102%	70%	130%	100%	60%	140%

Certified By:

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER
Chloride, Soluble	SOIL 0110; SOIL 0120; INST 0330	SHEPPARD 2007, EATON 2005	CONTINUOUS FLOW ANALYZER
Sodium, Soluble	SOIL 0110; SOIL 0120; INST 0140	SHEPPARD 2007; EATON 2005	ICP/OES

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO 0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO 0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Benzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Dibromochloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylbenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
m&p-Xylene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Styrene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
o-Xylene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

AGAT Laboratories

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Ph.: 778.452.4000 · Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

- Regular TAT: 5 to 7 working days ☒
- Rush TAT: 24 to 48 hours ☐
- 48 to 72 hours ☐

Date Required: ____

Please contact laboratory if Rush is required

Laboratory Use Only

Arrival Temperature: 3°C

AGAT Job Number: 11V560293

Notes: DEC 16 AM 7:56

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St. Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604-632-9941
LSD:
Client Project #: 2090-1103

Invoice To: Same as above Yes ☒ No ☐

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Report Information

1. Name: Amanda Salway
   Email: asalway@franzbc.com
2. Name: Viviane Dubois-Coté
   Email: vdcote@franzbc.com

Report Format

- ☐ Single Sample per page
- ☒ Multiple Samples per page
- ☒ Excel Format Included

Regulatory Requirements (Check):

☒ **BC CSR – Soil**
- ☐ Agricultural
- ☒ Industrial
- ☐ Urban/Park
- ☐ Commercial

☐ **BC CSR – Water**
- ☐ Drinking Water
- ☐ Aquatic Life
- ☐ Irrigation
- ☐ Livestock

☒ **CCME**
- ☐ Drinking Water
- ☐ Residential/Park
- ☐ Commercial
- ☒ Industrial
- ☐ Drinking Water
- ☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and CCME metals	VOCs	BC CSR Schedule II	Routine Potability	sulfides	salts	F1-F4	PAH	phenols (chlorinated and non-chlorinated)	CCME F2-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
30 17386	MV-11BH-01M-1	Soil	15/12/2011														1			X
390	MV-11BH-01M-2	↓	↓	analyze metals only (hold remainder of sample for			X										3			
392	MV-11BH-01M-3						X										1			
393	MV-11BH-01M-4			MV-11BH-01M-2)			X	X			X	X					3			
394	MV-11BH-01M-5																3			X
396	MV-DUP6							X									1			
398	BV-11BH-03M-1				X	X	X						X	X	X		4			
400	BV-11BH-03M-2																4			X
432	BV-11BH-03M-3				X	X	X						X	X	X		4			
443	BV-11BH-03M-4																4			X
444	BV-11BH-03M-5																4			X
445	MV-11BH-17M-1					X								X		X	2			

Samples Relinquished by (print name & sign): Amanda Salway [signature] Date: 15/12/2011
Samples Received by (Print name & sign): S. Couzens [signature] Date: 16-DEC-11 @ 7:56 AM

Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 2

NO: 000294

AGAT Laboratories

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V5J 0B6
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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT	5 to 7 working days	[X]
Rush TAT	24 to 48 hours	[ ]
	48 to 72 hours	[ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: same as previous
Contact:
Address:

Phone: _____ Fax: _____
LSD:
Client Project #:

Report Information

1. Name: same as previous
   Email:
2. Name:
   Email:

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number: 11V560293

Notes: DEC 16 AM 7:56

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:

Phone: _____ Fax: _____
PO/AFE #:

Regulatory Requirements (Check):

- [X] **BC CSR – Soil**
  - [ ] Agricultural
  - [X] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [ ] **BC CSR – Water**
  - [ ] Drinking Water
  - [ ] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] **CCME**
  - [ ] Drinking Water
  - [X] Industrial
  - [ ] Residential/Park
  - [ ] Drinking Water
  - [ ] Commercial
  - [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F2-F4	PAH					Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
B017446	MW-11BH-17M-2	SOIL	15/12/2011														2			
448	MW-11BH-17M-3	↓	↓			X					X	X					2			
449	MW-11BH-17M-4																2			X
451	MW-DUP7					X					X	X					2			

Samples Relinquished by (print name & sign): Amy Sawka	Date 15/12/2011	Samples Received by (Print name & sign): S. Courens	Date 16-DEC-11 @ 7:56 AM	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 2 of 2

NO: 000295

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11V560293

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 16-DEC-11 @
Courier: _____
Received by: S. Cowens
Relinquished by: In dropoff Area
Branch Received From: _____
Company: Franzen
Consultant: _____
Client left without count verified: N/A

CoC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 295, 294

SAMPLE QUANTITIES:
Coolers: 1 Bottles/Jars: 42 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 15-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 22-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3+4+3=3 °C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) Client requesting "Salts" for analysis
2) which test is this?
3) _____

Account Project Manager: Melissa Bhess Have they been notified of the above issues: (Yes) No
Whom spoken to: Melissa Bhess Date and Time: 16-DEC-11 @10:00Am

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560293

SOIL ANALYSIS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

DATE REPORTED: Dec 23, 2011

PAGES (INCLUDING COVER): 21

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES
VERSION 2:Report reissued to include sulphide on samples as requested by the client.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-2 3017390	MV-11BH-01M-3 3017392	MV-11BH-01M-4 3017393	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432
Antimony	µg/g	40	0.05	0.52	1.65	0.61	0.39	0.82
Arsenic	µg/g	15	0.1	5.9	4.2	5.5	4.3	10.0
Barium	µg/g	400	0.5	99.1	123	101	74.7	83.8
Beryllium	µg/g	8	0.02	0.34	0.18	0.31	0.21	0.24
Boron (Hot Water Soluble)	µg/g		0.1	0.3	13.7	1.2	0.2	0.2
Cadmium	µg/g		0.01	0.40	0.39	0.30	0.14	0.22
Chromium	µg/g	60	1	38	31	38	27	29
Cobalt	µg/g	300	0.1	12.3	6.6	11.0	8.6	9.6
Copper	µg/g		0.2	32.7	30.2	30.3	37.3	22.6
Lead	µg/g		0.05	6.02	33.6	8.55	3.62	7.24
Mercury	µg/g		0.01	0.04	0.12	0.06	0.03	0.04
Molybdenum	µg/g	40	0.05	1.14	1.03	0.84	0.60	0.94
Nickel	µg/g	500	0.5	45.8	36.5	38.4	30.0	34.9
Selenium	µg/g	10	0.1	0.6	0.3	0.5	0.3	0.4
Silver	µg/g	40	0.05	0.10	0.10	0.09	0.05	0.07
Thallium	µg/g		0.05	0.11	0.06	0.10	0.06	0.08
Tin	µg/g	300	0.05	0.52	4.77	0.93	0.29	0.48
Uranium	µg/g	200	0.05	0.68	0.67	0.73	0.39	0.55
Vanadium	µg/g		1	48	31	49	37	39
Zinc	µg/g		1	67	111	71	47	48
pH 1:2	pH units		0.1	7.2	7.3	7.2	7.5	7.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3017390-3017432 Results are based on the dry weight of the sample

Certified By:

AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Miscellaneous Techniques-Sulfide

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-4 3017393
Sulfide	%		0.01	<0.01

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

AGAT Laboratories

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CANADA V5J 0B6
TEL (778)452-4000
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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Soil Analysis - Ion Analysis with Conversions - Cl & Na

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-4 3017393
Chloride, Soluble	mg/L		2	13
Sodium, Soluble	mg/L		2	17
Chloride, Soluble (mg/kg)	mg/kg		2	7
Sodium, Soluble (mg/kg)	mg/kg		2	9

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

Certified By:

AGAT Laboratories

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Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432
Benzene	mg/kg		0.005	<0.005	<0.005
Toluene	mg/kg		0.05	<0.05	<0.05
Ethylbenzene	mg/kg		0.01	<0.01	<0.01
Xylenes	mg/kg		0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg		10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10
C10 - C16 (F2)	mg/kg		10	<10	<10
C16 - C34 (F3)	mg/kg		10	<10	<10
C34 - C50 (F4)	mg/kg		10	<10	<10
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A
Moisture Content	%		1	17	23
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8 (BTEX)	%	50-150		99	99
Ethylbenzene-d10 (BTEX)	%	50-150		99	95
o-Terphenyl (F2-F4)	%	50-150		100	99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)

3017398-3017432 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

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Certificate of Analysis

AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (F2-F4) in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-17M-1 3017445	MV-11BH-17M-3 3017448	MV-DUP7 3017451
C10 - C16 (F2)	mg/kg		10	<10	<10	<10
C16 - C34 (F3)	mg/kg		10	24	29	29
C34 - C50 (F4)	mg/kg		10	27	25	21
Moisture Content	%		1	23	31	31
Surrogate	Unit	Acceptable Limits				
o-Terphenyl (F2-F4)	%	50-150		103	98	100

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)

3017445-3017451 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram has returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

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PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432	MV-11BH-17M-1 3017445	MV-11BH-17M-3 3017448	MV-DUP7 3017451
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	<0.1			
Benzene	µg/g	0.04	0.02	<0.02	<0.02			
Toluene	µg/g	2.5	0.05	<0.05	<0.05			
Ethylbenzene	µg/g	7	0.05	<0.05	<0.05			
m&p-Xylene	µg/g	20	0.05	<0.05	<0.05			
o-Xylene	µg/g	20	0.05	<0.05	<0.05			
Styrene	µg/g	50	0.05	<0.05	<0.05			
VPH	µg/g	200	10	<10	<10			
Naphthalene	µg/g	50	0.01	<0.01	0.01	0.02	<0.01	0.01
2-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	0.02	<0.01	0.01
1-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	0.01	<0.01	<0.01
Acenaphthylene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	µg/g	50	0.02	0.02	<0.02	0.04	<0.02	0.03
Anthracene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	µg/g		0.05	<0.05	<0.05	0.06	<0.05	<0.05
Pyrene	µg/g	100	0.02	<0.02	<0.02	0.05	<0.02	0.03
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	0.03	<0.02	0.02
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	0.02	<0.02	0.02
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/g	2000	25	<25	<25	<25	<25	<25
HEPH C19-C32	µg/g	5000	25	<25	71	41	56	49

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AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432	MV-11BH-17M-1 3017445	MV-11BH-17M-3 3017448	MV-DUP7 3017451
Nitrobenzene - d5	%	50-130	100	89	83	100	89
2-Fluorobiphenyl	%	50-130	100	91	92	98	95
P-Terphenyl - d14	%	50-130	99	91	93	110	100
Bromofluorobenzene	%	70-130	108	97.4			
Toluene - d8	%	70-130	128	116			

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3017398-3017432 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3017445-3017451 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

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AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-03M-1 3017398	BV-11BH-03M-3 3017432
Phenol	mg/kg		0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.002	<0.002	<0.002
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	<0.005
Surrogate	**Unit**	**Acceptable Limits**			
2-Fluorophenol	%	50-150		109	112
2,4,6-Tribromophenol	%	50-150		108	111

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3017398-3017432 Results relate only to the items tested.

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AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-4 3017393	MV-Dup 3017396
Chloromethane	µg/g	160	0.05	<0.05	<0.05
Vinyl Chloride	µg/g	7.5	0.05	<0.05	<0.05
Bromomethane	µg/g	13	0.05	<0.05	<0.05
Chloroethane	µg/g	65	0.05	<0.05	<0.05
Trichlorofluoromethane	µg/g	2000	0.05	<0.05	<0.05
Acetone	µg/g	54000	0.5	<0.5	<0.5
1,1-Dichloroethene	µg/g	50	0.05	<0.05	<0.05
Dichloromethane	µg/g	50	0.05	<0.05	<0.05
Methyl tert-butyl ether (MTBE)	µg/g	700	0.05	<0.05	<0.05
2-Butanone (MEK)	µg/g	110000	0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05
1,1-Dichloroethane	µg/g	50	0.05	<0.05	<0.05
cis-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05
Chloroform	µg/g	50	0.05	<0.05	<0.05
1,2-Dichloroethane	µg/g	50	0.05	<0.05	<0.05
1,1,1-Trichloroethane	µg/g	50	0.05	<0.05	<0.05
Carbon Tetrachloride	µg/g	50	0.025	<0.025	<0.025
Benzene	µg/g	0.04	0.025	<0.025	<0.025
1,2-Dichloropropane	µg/g	50	0.05	<0.05	<0.05
Trichloroethene	µg/g	0.015	0.05	<0.05	<0.05
Bromodichloromethane	µg/g	18	0.05	<0.05	<0.05
trans-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05
4-Methyl-2-pentanone (MIBK)	µg/g		0.5	<0.5	<0.5
cis-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05
1,1,2-Trichloroethane	µg/g	50	0.05	<0.05	<0.05
Toluene	µg/g	2.5	0.025	<0.025	<0.025
Dibromochloromethane	µg/g	26	0.05	<0.05	<0.05
Ethylene Dibromide	µg/g	0.73	0.05	<0.05	<0.05
Tetrachloroethene	µg/g		0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	µg/g	73	0.05	<0.05	<0.05
Chlorobenzene	µg/g	10	0.05	<0.05	<0.05
Ethylbenzene	µg/g	7	0.025	<0.025	<0.025
m&p-Xylene	µg/g	20	0.025	<0.025	<0.025

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AGAT WORK ORDER: 11V560293
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 15, 2011 | DATE RECEIVED: Dec 16, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-01M-4 3017393	MV-Dup 3017396
Bromoform	µg/g	2200	0.05	<0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	µg/g	9.3	0.05	<0.05	<0.05
o-Xylene	µg/g	20	0.025	<0.025	<0.025
1,3-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05
1,4-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05
1,2-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05
1,2,4-Trichlorobenzene	µg/g	10	0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits			
Bromofluorobenzene	%	50-150		91	110
Dibromofluoromethane	%	50-150		110	130
Toluene - d8	%	50-150		110	130

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3017393-3017396 Results are based on dry weight of sample.

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Soil Analysis - Ion Analysis with Conversions - Cl & Na															
Chloride, Soluble	90	632	11	11	0.0%	< 2	106%	80%	120%	96%			102%	80%	120%
Sodium, Soluble	6812	6923	16	16	0.9%	< 2	97%	80%	120%					80%	120%
Comments: N/A: Not applicable															
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony		3017432	0.8	0.5	46.2%	< 0.05	102%	70%	130%	95%	90%	110%	95%	80%	120%
Arsenic		3017432	10.0	9.2	8.3%	< 0.1	110%	70%	130%	109%	90%	110%	109%	80%	120%
Barium		3017432	83.8	74.0	12.4%	< 0.5	98%	70%	130%	103%	90%	110%	103%	80%	120%
Beryllium		3017432	0.24	0.26	8.0%	< 0.02	104%	70%	130%	100%	90%	110%	100%	80%	120%
Boron (Hot Water Soluble)		3020034	0.103	0.097	6.0%	< 0.1				106%	90%	110%	112%	80%	120%
Cadmium		3017432	0.22	0.23	4.4%	< 0.01				98%	90%	110%	98%	80%	120%
Chromium		3017432	29	30	3.4%	< 1	99%	70%	130%	98%	90%	110%	98%	80%	120%
Cobalt		3017432	9.6	9.9	3.1%	< 0.1	92%	70%	130%	98%	90%	110%	98%	80%	120%
Copper		3017432	22.6	23.6	4.3%	< 0.2	90%	70%	130%	97%	90%	110%	97%	80%	120%
Lead		3017432	7.24	4.09	55.6%	< 0.05	92%	70%	130%	97%	90%	110%	97%	80%	120%
Mercury		3017432	0.041	0.043	4.8%	< 0.01	95%	70%	130%	95%	90%	110%	96%	80%	120%
Molybdenum		3017432	0.94	0.92	2.2%	< 0.05	99%	70%	130%	101%	90%	110%	101%	80%	120%
Nickel		3017432	34.9	36.9	5.6%	< 0.5	93%	70%	130%	96%	90%	110%	96%	80%	120%
Selenium		3017432	0.4	0.5	22.2%	< 0.1				99%	90%	110%	113%	80%	120%
Silver		3017432	0.07	0.07	0.0%	< 0.05				97%	90%	110%	97%	80%	120%
Thallium		3017432	0.08	0.08	0.0%	< 0.05				97%	90%	110%	97%	80%	120%
Tin		3017432	0.48	0.46	4.3%	< 0.05				108%	90%	110%	108%	80%	120%
Uranium		3017432	0.55	0.53	3.7%	< 0.05		0%	0%	97%	90%	110%	95%	80%	120%
Vanadium		3017432	39	42	7.4%	< 1	100%	70%	130%	99%	90%	110%	99%	80%	120%
Zinc		3017432	48	51	6.1%	< 1	99%	70%	130%	109%	90%	110%	109%	80%	120%
pH 1:2		3021236	6.9	6.6	4.4%	< 0.1				100%	95%	105%	100%	90%	110%
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	20111	3017432	0.82	0.45	58.0%	< 0.05	102%	70%	130%	95%	90%	110%	95%	80%	120%
Arsenic	20111	-11111	0	0	0.0%	< 0.1	110%	70%	130%	109%	90%	110%	109%	80%	120%
Barium	20111	3017432	83.8	74.0	12.0%	< 0.5	98%	70%	130%	103%	90%	110%	103%	80%	120%
Beryllium	20111	3017432	0.24	0.26	8.0%	< 0.02	104%	70%	130%	100%	90%	110%	100%	80%	120%
Boron (Hot Water Soluble)	20111	3017432	0.2	0.2	0.0%	< 0.1				121%	90%	110%		80%	120%
Cadmium	20111	3017432	0.22	0.23	4.0%	< 0.01	124%			98%	90%	110%	98%	80%	120%
Chromium	20111	3017432	29	30	3.0%	< 1	99%	70%	130%	98%	90%	110%	98%	80%	120%
Cobalt	20111	3017432	9.6	9.9	3.0%	< 0.1	92%	70%	130%	98%	90%	110%	98%	80%	120%
Copper	20111	3017432	22.6	23.6	4.0%	< 0.2	90%	70%	130%	97%	90%	110%	97%	80%	120%
Lead	20111	3017432	7.24	4.09	56.0%	< 0.05	92%	70%	130%	97%	90%	110%	97%	80%	120%
Mercury	20111	3017432	0.04	0.04	0.0%	< 0.01	95%	70%	130%		90%	110%		80%	120%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Molybdenum	20111	3017432	0.94	0.92	2.0%	< 0.05	99%	70%	130%	101%	90%	110%	101%	80%	120%
Nickel	20111	3017432	34.9	36.9	6.0%	< 0.5	93%	70%	130%	96%	90%	110%	96%	80%	120%
Selenium	20111	3017432	0.4	0.5	22.0%	< 0.1	49%			23%	90%	110%	23%	80%	120%
Silver	20111	3017432	0.07	0.07	0.0%	< 0.05	117%			97%	90%	110%	97%	80%	120%
Thallium	20111	3017432	0.08	0.08	0.0%	< 0.05	68%			97%	90%	110%	97%	80%	120%
Tin	20111	3017432	0.48	0.46	4.0%	< 0.05	122%			108%	90%	110%	108%	80%	120%
Vanadium	20111	3017432	39	42	7.0%	< 1	100%	70%	130%	99%	90%	110%	99%	80%	120%
Zinc	20111	3017432	48	51	6.0%	< 1	99%	70%	130%	109%	90%	110%	109%	80%	120%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
Benzene	134	3020411	<0.005	<0.005	NA	< 0.005	119%	80%	120%	114%	80%	120%	118%	60%	140%
Toluene	134	3020411	<0.05	<0.05	NA	< 0.05	113%	80%	120%	108%	80%	120%	112%	60%	140%
Ethylbenzene	134	3020411	<0.01	<0.01	NA	< 0.01	109%	80%	120%	108%	80%	120%	112%	60%	140%
Xylenes	134	3020411	<0.05	<0.05	NA	< 0.05	109%	80%	120%	107%	80%	120%	111%	60%	140%
C6 - C10 (F1)	134	3020411	<10	<10	NA	< 10	106%	80%	120%	80%	80%	120%	82%	60%	140%
C10 - C16 (F2)	876	3019368	20	<10	NA	< 10	113%	80%	120%	108%	80%	120%	104%	60%	140%
C16 - C34 (F3)	876	3019368	<10	<10	NA	< 10	113%	80%	120%	102%	80%	120%	106%	60%	140%
C34 - C50 (F4)	876	3019368	<10	<10	NA	< 10	113%	80%	120%	101%	80%	120%	107%	60%	140%
Volatile Organic Compounds in Soil (180-054)															
Chloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				109%	70%	130%
Vinyl Chloride	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				109%	70%	130%
Bromomethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	96%	80%	120%				106%	70%	130%
Chloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Trichlorofluoromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				111%	70%	130%
Acetone	1	3020046	<0.5	<0.5	0.0%	< 0.5	109%	80%	120%				129%	70%	130%
1,1-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				112%	70%	130%
Dichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				113%	70%	130%
Methyl tert-butyl ether (MTBE)	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				116%	70%	130%
2-Butanone (MEK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	102%	80%	120%				111%	70%	130%
trans-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				114%	70%	130%
1,1-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
cis-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Chloroform	1	3020046	<0.05	<0.05	0.0%	< 0.05	91%	80%	120%				104%	70%	130%
1,2-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				116%	70%	130%
1,1,1-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				113%	70%	130%
Carbon Tetrachloride	1	3020046	<0.025	<0.025	0.0%	< 0.025	101%	80%	120%				112%	70%	130%
Benzene	1	3020046	<0.025	<0.025	0.0%	< 0.025	100%	80%	120%				115%	70%	130%
1,2-Dichloropropane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Trichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
Bromodichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				116%	70%	130%
trans-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				112%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	104%	80%	120%				112%	70%	130%
cis-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				113%	70%	130%
1,1,2-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				114%	70%	130%
Toluene	1	3020046	<0.025	<0.025	0.0%	< 0.025	101%	80%	120%				114%	70%	130%
Dibromochloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				114%	70%	130%
Ethylene Dibromide	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Tetrachloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				126%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,1,1,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				114%	70%	130%
Chlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				109%	70%	130%
Ethylbenzene	1	3020046	<0.025	<0.025	0.0%	< 0.025	102%	80%	120%				110%	70%	130%
m&p-Xylene	1	3020046	<0.025	<0.025	0.0%	< 0.025	102%	80%	120%				111%	70%	130%
Bromoform	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				109%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				110%	70%	130%
1,1,2,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				108%	70%	130%
o-Xylene	1	3020046	<0.025	<0.025	0.0%	< 0.025	102%	80%	120%				112%	70%	130%
1,3-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				105%	70%	130%
1,4-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				105%	70%	130%
1,2-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				106%	70%	130%
1,2,4-Trichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				105%	70%	130%
Bromofluorobenzene	1	3020046	107	78	31.0%	<	111%	70%	130%				128%	70%	130%
Dibromofluoromethane	1	3020046	121	80	41.0%	<	111%	70%	130%				129%	70%	130%
Toluene - d8	1	3020046	125	86	37.0%	<	110%	70%	130%				128%	70%	130%
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3020046	<0.1	<0.1	0.0%	< 0.1	99%	80%	120%				91%	70%	130%
Benzene	1	3020046	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				93%	70%	130%
Toluene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				90%	70%	130%
Ethylbenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				85%	70%	130%
m&p-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				79%	70%	130%
o-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				84%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				85%	70%	130%
VPH	1	3020046	<10	<10	0.0%	< 10									
Naphthalene	1	3018978	0.02	0.02	0.0%	< 0.01	102%	80%	120%				105%	50%	130%
2-Methylnaphthalene	1	3018978	0.01	0.01	0.0%	< 0.01	103%	80%	120%				99%	50%	130%
1-Methylnaphthalene	1	3018978	<0.01	0.01	0.0%	< 0.01	103%	80%	120%				102%	50%	130%
Acenaphthylene	1	3018978	0.01	0.01	0.0%	< 0.01	102%	80%	120%				94%	50%	130%
Acenaphthene	1	3018978	NA	NA	0.0%	< 0.01	105%	80%	120%				90%	50%	130%
Fluorene	1	3018978	<0.02	0.02	0.0%	< 0.02	102%	80%	120%				95%	50%	130%
Phenanthrene	1	3018978	0.04	0.05	22.0%	< 0.02	98%	80%	120%				92%	60%	130%
Anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				79%	60%	130%
Fluoranthene	1	3018978	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				96%	60%	130%
Pyrene	1	3018978	0.06	0.05	18.0%	< 0.02	100%	80%	120%				98%	60%	130%
Benzo(a)anthracene	1	3018978	0.02	0.02	0.0%	< 0.02	102%	80%	120%				88%	60%	130%
Chrysene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	3018978	0.02	0.02	0.0%	< 0.02	101%	80%	120%				87%	60%	130%
Benzo(k)fluoranthene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Benzo(a)pyrene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	60%	130%

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Quality Assurance

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AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Indeno(1,2,3-c,d)pyrene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				90%	60%	130%
Dibenzo(a,h)anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Nitrobenzene - d5	1	3018978	81	90	11.0%	<	100%	80%	120%				100%	50%	130%
2-Fluorobiphenyl	1	3018978	86	94	9.0%	<	101%	80%	120%				91%	50%	130%
P-Terphenyl - d14	1	3018978	90	99	10.0%	<	98%	80%	120%				88%	50%	130%
LEPH C10-C19	1	3018978	<25	<25	0.0%	< 25									
HEPH C19-C32	1	3018978	<25	<25	0.0%	< 25									
Bromofluorobenzene	1	3020046	103	81.8	23.0%	<	108%	70%	130%				108%	70%	130%
Toluene - d8	1	3020046	124	92.9	29.0%	<	100%	70%	130%				111%	70%	130%
Phenolic Compounds in Soil															
Phenol	127	3021236	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	97%	70%	130%	96%	60%	140%
4-Nitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	94%	70%	130%	93%	60%	140%
m&p-Cresol (3&4-methylphenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
o-Cresol (2-methylphenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	95%	60%	140%
2-Chlorophenol	127	3021236	<0.002	<0.002	0.0%	< 0.002				98%	70%	130%	97%	60%	140%
2,4-Dinitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	96%	70%	130%	95%	60%	140%
2-Nitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	94%	80%	120%	109%	70%	130%	107%	60%	140%
2,4-Dimethylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	97%	70%	130%	95%	60%	140%
2,6-Dichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	94%	60%	140%
4-Chloro-3-methylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	82%	80%	120%	99%	70%	130%	100%	60%	140%
2,4-Dichlorophenol	127	3021236	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	100%	70%	130%	95%	60%	140%
4,6-Dinitro-2-methylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	93%	80%	120%	100%	70%	130%	102%	60%	140%
2,3,6-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	96%	60%	140%
2,4,6-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	84%	80%	120%	99%	70%	130%	98%	60%	140%
2,4,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
2,3,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				99%	70%	130%	98%	60%	140%
3,4,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	100%	60%	140%
2,3,5,6-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	98%	60%	140%
Pentachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	102%	70%	130%	100%	60%	140%

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER
Sulfide			GRAVIMETRIC
Chloride, Soluble	SOIL 0110; SOIL 0120; INST 0330	SHEPPARD 2007, EATON 2005	CONTINUOUS FLOW ANALYZER
Sodium, Soluble	SOIL 0110; SOIL 0120; INST 0140	SHEPPARD 2007; EATON 2005	ICP/OES

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Method Summary

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AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO 0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO 0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

AGAT Laboratories

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TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Benzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Dibromochloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylbenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
m&p-Xylene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Styrene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
o-Xylene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

AGAT Laboratories

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Chain of Custody Record

Report To:
Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St. Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604-632-9941
LSD:
Client Project #: 2090-1103

Invoice To: Same as above Yes ☒ No ☐
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Report Information
1. Name: Amanda Salway
   Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
   Email: vdcote@franzbc.com

Regulatory Requirements (Check):
☒ **BC CSR – Soil**
☐ Agricultural
☒ Industrial
☐ Urban/Park
☐ Commercial

☐ **BC CSR – Water**
☐ Drinking Water
☐ Aquatic Life
☐ Irrigation
☐ Livestock

☒ **CCME**
☐ Drinking Water
☐ Residential/Park
☐ Commercial
☒ Industrial
☐ Drinking Water
☐ FWAL

Report Format
☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Turnaround Time Required (TAT)
Regular TAT 5 to 7 working days ☒
Rush TAT 24 to 48 hours ☐
48 to 72 hours ☐
Date Required:
Please contact laboratory if Rush is required

Laboratory Use Only
Arrival Temperature: 3°C
AGAT Job Number: 11V560293
Notes:
DEC 16 AM 7:56

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and CCME metals	VOCs	BC CSR Schedule II	Routine Potability	sulfides	salts	F1-F4	PAH	phenols (chlorinated and non-chlorinated)	CCME F2-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
30 17386	MV-11BH-01M-1	Soil	15/12/2011														1			X
390	MV-11BH-01M-2			analyze metals only (hold remainder of sample for MV-11BH-01M-2)			X										3			
392	MV-11BH-01M-3						X										1			
393	MV-11BH-01M-4						X	X			X	X					3			
394	MV-11BH-01M-5																3			X
396	MV-DUP6							X									1			
398	BV-11BH-03M-1				X	X	X						X	X	X		4			
400	BV-11BH-03M-2																4			X
432	BV-11BH-03M-3				X	X	X						X	X	X		4			
443	BV-11BH-03M-4																4			X
444	BV-11BH-03M-5																4			X
445	MV-11BH-17M-1					X								X		X	2			

Samples Relinquished by (print name & sign): Amanda Salway Date: 15/12/2011
Samples Received by (Print name & sign): S. Couzens 16-DEC-11 @ 7:56 AM Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 2

NO: 000294

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT	5 to 7 working days	[X]
Rush TAT	24 to 48 hours	[ ]
	48 to 72 hours	[ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: same as previous
Contact:
Address:

Phone: _____ Fax: _____
LSD:
Client Project #:

Report Information

1. Name: same as previous
   Email:
2. Name:
   Email:

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number: 11V560293

Notes: DEC 16 AM 7:56

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:

Phone: _____ Fax: _____
PO/AFE #:

Regulatory Requirements (Check):

- [X] **BC CSR – Soil**
  - [ ] Agricultural
  - [X] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [ ] **BC CSR – Water**
  - [ ] Drinking Water
  - [ ] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] **CCME**
  - [ ] Drinking Water
  - [X] Industrial
  - [ ] Residential/Park
  - [ ] Drinking Water
  - [ ] Commercial
  - [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F2-F4	PAH					Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
B017446	MW-11BH-17M-2	SOIL	15/12/2011														2			
448	MW-11BH-17M-3	↓	↓			X					X	X					2			
449	MW-11BH-17M-4																2			X
451	MW-DUP7					X					X	X					2			

Samples Relinquished by (print name & sign): Amy Sawka	Date 15/12/2011	Samples Received by (Print name & sign): S. Courens	Date 16-DEC-11 @ 7:56 AM	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 2 of 2

NO: 000295

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11V560293

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 16-DEC-11 @
Courier: _____
Received by: S. Cowens
Relinquished by: In dropoff Area
Branch Received From: _____
Company: Franzen
Consultant: _____
Client left without count verified: N/A

CoC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 295, 294

SAMPLE QUANTITIES:
Coolers: 1 Bottles/Jars: 42 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 15-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 22-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3+4+3=3 °C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) Client requesting "Salts" for analysis
2) which test is this?
3) _____

Account Project Manager: Melissa Bhess Have they been notified of the above issues: (Yes) No
Whom spoken to: Melissa Bhess Date and Time: 16-DEC-11 @10:00Am

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560614

SOIL ANALYSIS REVIEWED BY: Angela Bond, Technical Reviewer

TRACE ORGANICS REVIEWED BY: Angela Bond, Technical Reviewer

DATE REPORTED: Dec 30, 2011

PAGES (INCLUDING COVER): 20

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 1:Sample 3020056 was reprepped and analyzed in duplicate, and the chromium value was confirmed.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-04M-3 3020034	MV-11BH-04M-4 3020035	MV-11BH-04M-5 3020036	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-03M-5 3020049	MV-11BH-02M-3 3020054	MV-11BH-02M-4 3020055
Antimony	µg/g	40	0.05	0.44	0.65	0.63	0.29	0.55	0.65	0.47	0.28
Arsenic	µg/g	15	0.1	4.0	6.5	5.4	4.0	5.1	9.3	4.9	3.1
Barium	µg/g	400	0.5	154	155	149	53.1	125	150	83.3	75.1
Beryllium	µg/g	8	0.02	0.45	0.55	0.50	0.17	0.40	0.53	0.29	0.21
Boron (Hot Water Soluble)	µg/g		0.1	<0.1	0.2	0.2	0.2	0.5	0.4	0.1	<0.1
Cadmium	µg/g		0.01	0.09	0.31	0.31	0.16	0.26	0.28	0.27	0.14
Chromium	µg/g	60	1	50	46	46	44	50	47	34	28
Cobalt	µg/g	300	0.1	10.5	10.3	10.5	6.4	15.7	11.8	10.6	7.7
Copper	µg/g		0.2	16.1	37.9	33.9	18.9	37.9	42.4	25.4	15.8
Lead	µg/g		0.05	10.0	9.55	10.3	5.72	7.24	8.25	4.85	2.74
Mercury	µg/g		0.01	0.04	0.06	0.06	0.03	0.05	0.06	0.04	0.02
Molybdenum	µg/g	40	0.05	1.24	1.91	1.78	0.38	0.82	2.60	1.00	0.49
Nickel	µg/g	500	0.5	32.9	36.0	35.4	23.7	47.0	39.3	39.3	32.1
Selenium	µg/g	10	0.1	0.6	1.0	1.0	0.2	0.7	0.8	0.7	0.3
Silver	µg/g	40	0.05	<0.05	0.11	0.10	<0.05	0.11	0.13	0.08	<0.05
Thallium	µg/g		0.05	0.17	0.16	0.16	0.06	0.12	0.14	0.08	0.06
Tin	µg/g	300	0.05	1.41	1.03	1.19	1.16	0.96	0.94	0.60	0.62
Uranium	µg/g	200	0.05	1.13	2.01	2.15	0.36	0.87	1.80	0.61	0.33
Vanadium	µg/g		1	63	64	61	35	59	64	44	33
Zinc	µg/g		1	73	71	72	38	69	72	55	40
pH 1:2	pH units		0.1	7.9	6.3	6.0	6.2	6.3	6.1	6.2	6.4

Certified By: Angela Bond

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-02M-5 3020056	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Antimony	µg/g	40	0.05	0.79	0.19	0.52
Arsenic	µg/g	15	0.1	7.6	2.8	7.9
Barium	µg/g	400	0.5	87.6	49.0	97.1
Beryllium	µg/g	8	0.02	0.29	0.17	0.34
Boron (Hot Water Soluble)	µg/g		0.1	0.6	<0.1	1.4
Cadmium	µg/g		0.01	0.40	0.12	0.26
Chromium	µg/g	60	1	885	27	43
Cobalt	µg/g	300	0.1	10.5	7.5	12.4
Copper	µg/g		0.2	30.0	14.4	29.5
Lead	µg/g		0.05	12.2	2.75	8.09
Mercury	µg/g		0.01	0.11	0.02	0.07
Molybdenum	µg/g	40	0.05	0.59	0.33	0.72
Nickel	µg/g	500	0.5	35.9	31.9	47.3
Selenium	µg/g	10	0.1	0.4	0.1	0.5
Silver	µg/g	40	0.05	0.07	<0.05	0.09
Thallium	µg/g		0.05	0.09	<0.05	0.09
Tin	µg/g	300	0.05	6.51	0.45	0.82
Uranium	µg/g	200	0.05	0.63	0.26	0.60
Vanadium	µg/g		1	45	42	50
Zinc	µg/g		1	66	36	67
pH 1:2	pH units		0.1	6.4	7.3	6.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3020034-3020067 Results are based on the dry weight of the sample

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Soil Analysis - Ion Analysis with Conversions - Cl & Na

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-02M-5 3020056
Chloride, Soluble	mg/L		2	11	101
Sodium, Soluble	mg/L		2	8	13
Chloride, Soluble (mg/kg)	mg/kg		2	4	45
Sodium, Soluble (mg/kg)	mg/kg		2	3	6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Benzene	mg/kg	0.030	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.37	0.05	<0.05	0.07	0.13	0.09	<0.05	0.13
Ethylbenzene	mg/kg	0.082	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Xylenes	mg/kg	11	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	320	10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	260	10	16	33	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	1700	10	<10	<10	186	62	108	20
C34 - C50 (F4)	mg/kg	3300	10	156	<10	115	70	412	65
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%		1	18.2	26.8	25.9	25.5	5.1	26
Surrogate	**Unit**	**Acceptable Limits**							
Toluene-d8 (BTEX)	%	50-150		96	94	97	98	98	98
Ethylbenzene-d10 (BTEX)	%	50-150		107	98	108	113	97	101
o-Terphenyl (F2-F4)	%	50-150		115	100	103	100	98	97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3020046-3020067 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (F2-F4) in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-08M-1 3020058	BV-11BH-08M-4 3020062
C10 - C16 (F2)	mg/kg	260	10	<10	<10
C16 - C34 (F3)	mg/kg	1700	10	<10	<10
C34 - C50 (F4)	mg/kg	3300	10	<10	35
Moisture Content	%		1	12.6	25.9
Surrogate	Unit	Acceptable Limits			
o-Terphenyl (F2-F4)	%	50-150		98	99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3020058-3020062 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram has returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-08M-1 3020058	BV-11BH-08M-4 3020062	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	<0.1	<0.1	<0.1			<0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02	<0.02	<0.02	<0.02			<0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
Ethylbenzene	µg/g	7	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
VPH	µg/g	200	10	<10	<10	<10	<10			<10	<10
Naphthalene	µg/g	50	0.01	0.03	0.01	0.05	0.45	<0.01	<0.01	0.02	0.10
2-Methylnaphthalene	µg/g		0.01	0.01	<0.01	0.01	0.22	<0.01	<0.01	0.03	0.01
1-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	<0.01	0.09	<0.01	<0.01	0.01	0.01
Acenaphthylene	µg/g		0.01	0.01	<0.01	<0.01	0.41	<0.01	<0.01	<0.01	0.01
Acenaphthene	µg/g		0.01	<0.01	<0.01	0.01	0.25	<0.01	<0.01	<0.01	0.02
Fluorene	µg/g		0.02	<0.02	<0.02	0.02	0.22	<0.02	<0.02	<0.02	<0.02
Phenanthrene	µg/g	50	0.02	0.04	0.02	0.09	1.08	<0.02	<0.02	0.02	0.17
Anthracene	µg/g		0.02	<0.02	<0.02	0.02	0.55	<0.02	<0.02	<0.02	0.04
Fluoranthene	µg/g		0.05	0.05	<0.05	0.05	3.98	<0.05	<0.05	<0.05	0.59
Pyrene	µg/g	100	0.02	0.03	0.02	0.05	4.62	<0.02	<0.02	<0.02	0.63
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	2.83	<0.02	<0.02	<0.02	0.29
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	2.77	<0.05	<0.05	<0.05	0.37
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	1.70	<0.02	<0.02	<0.02	0.30
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	1.20	<0.02	<0.02	<0.02	0.17
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	3.00	<0.05	<0.05	<0.05	0.38
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	<0.02	1.40	<0.02	<0.02	<0.02	0.18
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	0.49	<0.02	<0.02	<0.02	0.04
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	<0.05	1.50	<0.05	<0.05	<0.05	0.19
LEPH C10-C19	µg/g	2000	25	<25	<25	<25	<25	<25	<25	<25	<25
HEPH C19-C32	µg/g	5000	25	26	<25	182	120	<25	<25	64	27

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-08M-1 3020058	BV-11BH-08M-4 3020062	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Nitrobenzene - d5	%	50-130	98	93	89	86	95	87	89	88
2-Fluorobiphenyl	%	50-130	94	96	104	95	96	96	89	97
P-Terphenyl - d14	%	50-130	90	105	114	102	94	96	91	100
Bromofluorobenzene	%	70-130	103	96.8	101	100			106	95
Toluene - d8	%	70-130	124	117	128	117			127	122

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3020046-3020057 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3020058-3020062 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

3020066-3020067 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Phenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Surrogate	Unit	Acceptable Limits							
2-Fluorophenol	%	50-150		112	112	109	109	110	108
2,4,6-Tribromophenol	%	50-150		111	111	108	110	109	107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3020046-3020067 Results relate only to the items tested.

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057
Chloromethane	µg/g	160	0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	µg/g	7.5	0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	µg/g	13	0.05	<0.05	<0.05	<0.05	<0.05
Chloroethane	µg/g	65	0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	µg/g	2000	0.05	<0.05	<0.05	<0.05	<0.05
Acetone	µg/g	54000	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Dichloromethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
2-Butanone (MEK)	µg/g	110000	0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	µg/g	50	0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethene	µg/g	0.015	0.05	<0.05	<0.05	<0.05	<0.05
Bromodichloromethane	µg/g	18	0.05	<0.05	<0.05	<0.05	<0.05
trans-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
4-Methyl-2-pentanone (MIBK)	µg/g		0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	µg/g	26	0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	µg/g	0.73	0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	µg/g	73	0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	µg/g	2200	0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	µg/g	9.3	0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05

Certified By: Angela Bond

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057
1,2,4-Trichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits					
Bromofluorobenzene	%	50-150		107	98	117	103
Dibromofluoromethane	%	50-150		121	111	128	118
Toluene - d8	%	50-150		125	121	129	123

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3020046-3020057 Results are based on dry weight of sample.

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	3020034		0.44	0.43	2.3%	< 0.05	96%	70%	130%	93%	90%	110%	97%	80%	120%
Arsenic	3020034		4.0	3.8	5.1%	< 0.1	102%	70%	130%	100%	90%	110%	103%	80%	120%
Barium	3020034		154	157	1.9%	< 0.5	89%	70%	130%	97%	90%	110%	97%	80%	120%
Beryllium	3020034		0.45	0.47	4.3%	< 0.02	91%	70%	130%	99%	90%	110%	99%	80%	120%
Boron (Hot Water Soluble)	3020034		< 0.1	< 0.1	0.0%	< 0.1				106%	90%	110%	113%	80%	120%
Cadmium	3020034		0.09	0.1	10.5%	< 0.01				97%	90%	110%	98%	80%	120%
Chromium	3020034		50	51	2.0%	< 1	93%	70%	130%	101%	90%	110%	100%	80%	120%
Cobalt	3020034		10.5	10.9	3.7%	< 0.1	89%	70%	130%	101%	90%	110%	102%	80%	120%
Copper	3020034		16.0	15.9	0.6%	< 0.2	85%	70%	130%	101%	90%	110%	102%	80%	120%
Lead	3020034		10.0	10.4	3.9%	< 0.05	84%	70%	130%	93%	90%	110%	96%	80%	120%
Mercury	3020034		0.04	0.05	22.2%	< 0.01	110%	70%	130%	94%	90%	110%	93%	80%	120%
Molybdenum	3020034		1.24	1.23	0.8%	< 0.05	93%	70%	130%	98%	90%	110%	100%	80%	120%
Nickel	3020034		32.9	33.4	1.5%	< 0.5	89%	70%	130%	101%	90%	110%	101%	80%	120%
Selenium	3020034		0.6	0.6	0.0%	< 0.1					90%	110%	100%	80%	120%
Silver	3020034		< 0.05	< 0.05	0.0%	< 0.05				98%	90%	110%	96%	80%	120%
Thallium	3020034		0.17	0.18	5.7%	< 0.05				96%	90%	110%	99%	80%	120%
Tin	3020034		1.22	1.59	26.3%	< 0.05				105%	90%	110%	99%	80%	120%
Uranium	3020034		1.13	1.08	4.5%	< 0.05		0%	0%	94%	90%	110%	92%	80%	120%
Vanadium	3020034		63	66	4.7%	< 1	95%	70%	130%	102%	90%	110%	101%	80%	120%
Zinc	3020034		73	71	2.8%	< 1	94%	70%	130%	107%	90%	110%	106%	80%	120%
pH 1:2	3020034		6.9	6.6	4.4%	< 0.1				100%	95%	105%	100%	90%	110%
Soil Analysis - Ion Analysis with Conversions - Cl & Na															
Chloride, Soluble	94	451	12	10	18.2%	< 2	97%	80%	120%						
Sodium, Soluble	141	7606	1890	1840	2.9%	< 2	102%	80%	120%						

Comments: N/A: Not applicable

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3020046	<0.1	<0.1	0.0%	< 0.1	99%	80%	120%				91%	70%	130%
Benzene	1	3020046	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				93%	70%	130%
Toluene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				90%	70%	130%
Ethylbenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				85%	70%	130%
m&p-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				79%	70%	130%
o-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				84%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				85%	70%	130%
VPH	1	3020046	<10	<10	0.0%	< 10									
Naphthalene	1	3018978	0.02	0.02	0.0%	< 0.01	102%	80%	120%				105%	50%	130%
2-Methylnaphthalene	1	3018978	0.01	0.01	0.0%	< 0.01	103%	80%	120%				99%	50%	130%
1-Methylnaphthalene	1	3018978	<0.01	0.01	0.0%	< 0.01	103%	80%	120%				102%	50%	130%
Acenaphthylene	1	3018978	0.01	0.01	0.0%	< 0.01	102%	80%	120%				94%	50%	130%
Acenaphthene	1	3018978	NA	NA	0.0%	< 0.01	105%	80%	120%				90%	50%	130%
Fluorene	1	3018978	<0.02	0.02	0.0%	< 0.02	102%	80%	120%				95%	50%	130%
Phenanthrene	1	3018978	0.04	0.05	22.2%	< 0.02	98%	80%	120%				92%	60%	130%
Anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				79%	60%	130%
Fluoranthene	1	3018978	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				96%	60%	130%
Pyrene	1	3018978	0.06	0.05	18.2%	< 0.02	100%	80%	120%				98%	60%	130%
Benzo(a)anthracene	1	3018978	0.02	0.02	0.0%	< 0.02	102%	80%	120%				88%	60%	130%
Chrysene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	3018978	0.02	0.02	0.0%	< 0.02	101%	80%	120%				87%	60%	130%
Benzo(k)fluoranthene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Benzo(a)pyrene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				90%	60%	130%
Dibenzo(a,h)anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Nitrobenzene - d5	1	3018978	81	90	10.5%	<	100%	80%	120%				100%	50%	130%
2-Fluorobiphenyl	1	3018978	86	94	8.9%	<	101%	80%	120%				91%	50%	130%
P-Terphenyl - d14	1	3018978	90	99	9.5%	<	98%	80%	120%				88%	50%	130%
LEPH C10-C19	1	3018978	<25	<25	0.0%	< 25									
HEPH C19-C32	1	3018978	<25	<25	0.0%	< 25									
Bromofluorobenzene	1	3020046	103	81.8	23.0%	<	108%	70%	130%				108%	70%	130%
Toluene - d8	1	3020046	124	92.9	29.0%	<	100%	70%	130%				111%	70%	130%
Volatile Organic Compounds in Soil (180-054)															
Chloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				109%	70%	130%
Vinyl Chloride	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				109%	70%	130%
Bromomethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	96%	80%	120%				106%	70%	130%
Chloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Trichlorofluoromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				111%	70%	130%
Acetone	1	3020046	<0.5	<0.5	0.0%	< 0.5	109%	80%	120%				129%	70%	130%
1,1-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				112%	70%	130%
Dichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				113%	70%	130%
2-Butanone (MEK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	102%	80%	120%				111%	70%	130%
trans-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				114%	70%	130%
1,1-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
cis-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Chloroform	1	3020046	<0.05	<0.05	0.0%	< 0.05	91%	80%	120%				104%	70%	130%
1,2-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				116%	70%	130%
1,1,1-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				113%	70%	130%
Carbon Tetrachloride	1	3020046	<0.025	<0.025	0.0%	< 0.025	101%	80%	120%				112%	70%	130%
1,2-Dichloropropane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Trichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
Bromodichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				116%	70%	130%
trans-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				112%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	104%	80%	120%				112%	70%	130%
cis-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				113%	70%	130%
1,1,2-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				114%	70%	130%
Dibromochloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				114%	70%	130%
Ethylene Dibromide	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Tetrachloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				126%	70%	130%
1,1,1,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				114%	70%	130%
Chlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				109%	70%	130%
Bromoform	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				109%	70%	130%
1,1,2,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				108%	70%	130%
1,3-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				105%	70%	130%
1,4-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				105%	70%	130%
1,2-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				106%	70%	130%
1,2,4-Trichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				105%	70%	130%
Bromofluorobenzene	1	3020046	107	78	31.0%	<	111%	70%	130%				128%	70%	130%
Dibromofluoromethane	1	3020046	121	80	41.0%	<	111%	70%	130%				129%	70%	130%
Toluene - d8	1	3020046	125	86	37.0%	<	110%	70%	130%				128%	70%	130%
Phenolic Compounds in Soil															
Phenol	127	3020046	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	97%	70%	130%	96%	60%	140%
4-Nitrophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	94%	70%	130%	93%	60%	140%
m&p-Cresol (3&4-methylphenol)	127	3020046	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
o-Cresol (2-methylphenol)	127	3020046	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	96%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2-Chlorophenol	127	3020046	<0.002	<0.002	0.0%	< 0.002				98%	70%	130%	97%	60%	140%
2,4-Dinitrophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	96%	70%	130%	97%	60%	140%
2-Nitrophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	94%	80%	120%	109%	70%	130%	107%	60%	140%
2,4-Dimethylphenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	97%	70%	130%	95%	60%	140%
2,6-Dichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	95%	60%	140%
4-Chloro-3-methylphenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	82%	80%	120%	99%	70%	130%	92%	60%	140%
2,4-Dichlorophenol	127	3020046	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	100%	70%	130%	94%	60%	140%
4,6-Dinitro-2-methylphenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	93%	80%	120%	100%	70%	130%	93%	60%	140%
2,3,6-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	96%	60%	140%
2,3,4-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	95%	60%	140%
2,4,6-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	84%	80%	120%	99%	70%	130%	97%	60%	140%
2,4,5-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	97%	60%	140%
2,3,5-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				99%	70%	130%	98%	60%	140%
3,4,5-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	99%	60%	140%
2,3,5,6-Tetrachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	99%	60%	140%
2,3,4,5-Tetrachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	127	3020046	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	98%	60%	140%
Pentachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	102%	70%	130%	99%	60%	140%
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
Benzene	1488	3020066	< 0.005	< 0.005	NA	< 0.005	85%	80%	120%	95%	80%	120%	90%	60%	140%
Toluene	1488	3020066	< 0.05	< 0.05	NA	< 0.05	82%	80%	120%	97%	80%	120%	87%	60%	140%
Ethylbenzene	1488	3020066	< 0.01	< 0.01	NA	< 0.01	81%	80%	120%	107%	80%	120%	91%	60%	140%
Xylenes	1488	3020066	< 0.05	< 0.05	NA	< 0.05	86%	80%	120%	108%	80%	120%	93%	60%	140%
C6 - C10 (F1)	1488	3020066	< 10	< 10	NA	< 10	102%	80%	120%	108%	80%	120%	117%	60%	140%
C10 - C16 (F2)	878	3020066	<10	<10	NA	< 10	115%	80%	120%	90%	80%	120%	119%	60%	140%
C16 - C34 (F3)	878	3020066	108	86	23.0%	< 10	115%	80%	120%	86%	80%	120%	126%	60%	140%
C34 - C50 (F4)	878	3020066	412	408	1.0%	< 10	115%	80%	120%	86%	80%	120%	130%	60%	140%

Certified By: Angela Bond

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER
Chloride, Soluble	SOIL 0110; SOIL 0120; INST 0330	SHEPPARD 2007, EATON 2005	CONTINUOUS FLOW ANALYZER
Sodium, Soluble	SOIL 0110; SOIL 0120; INST 0140	SHEPPARD 2007; EATON 2005	ICP/OES

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO 0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO 0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromochloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1,1,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

- **Regular TAT** 5 to 7 working days ☒
- **Rush TAT** 24 to 48 hours ☐
- 48 to 72 hours ☐

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

- ☐ Single Sample per page
- ☒ Multiple Samples per page
- ☒ Excel Format Included

Laboratory Use Only

Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614

Notes: DEC 17 AM 8:04

Invoice To: Same as above Yes ☒ No ☐

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- ☒ **BC CSR – Soil**
  - ☐ Agricultural
  - ☒ Industrial
  - ☐ Urban/Park
  - ☐ Commercial
- ☐ **BC CSR – Water**
  - ☐ Drinking Water
  - ☐ Aquatic Life
  - ☐ Irrigation
  - ☐ Livestock
- ☒ **CCME**
  - ☐ Drinking Water
  - ☒ Industrial
  - ☐ Residential/Park
  - ☐ Drinking Water
  - ☐ Commercial
  - ☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1-F4	PAH	sulfides	sodium and chloride	phenols (chlorinated and non-chlorinated)	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3020032	MV-11BH-04M-1	soil	16/12/2011													1			X
033	MV-11BH-04M-2															1			X
034	MV-11BH-04M-3						X									1			
035	MV-11BH-04M-4						X									1			
036	MV-11BH-04M-5						X									1			
037	MV-11BH-04M-6															1			X
038	MV-11BH-03M-1															1			X
043	MV-11BH-03M-2			For samples with 5 jars and only metals analysis, hold the remaining 4 jars												1			X
046	MV-11BH-03M-3				X	X	X	X			X	X	X	X	X	5			
047	MV-11BH-03M-4				X	X	X	X			X	X			X	5			
049	MV-11BH-03M-5						X									5			[redacted]
051	MV-11BH-03M-6															1			X

Samples Relinquished by (print name & sign): Amanda Salway	Date 16/12/2011	Samples Received by (Print name & sign): S. Coles	Date 17-DEC-11 @ 8:04 AM
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

NO: 000296

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

- Regular TAT: 5 to 7 working days [X]
- Rush TAT: 24 to 48 hours [ ]
- 48 to 72 hours [ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact:
Address: Same as previous
Phone: _____ Fax:
LSD:
Client Project #:

Report Information

1. Name:
Email: Same as previous
2. Name:
Email:

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614

Notes: DEC 17 AM 8:04

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: _____ Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [X] BC CSR – Soil
  - [ ] Agricultural
  - [X] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [ ] BC CSR – Water
  - [ ] Drinking Water
  - [ ] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [X] Industrial
  - [ ] Residential/Park
  - [ ] Drinking Water
  - [ ] Commercial
  - [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1-F4	PAH	Sulfides	Sodium and Chloride	Phenols (Chlorinated)	CCME F2-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3020052	MW-11BH-02M-1	Soil	16/12/2011	For samples with 5 jars and only metals analysis, hold the other 4 jars													1			X
053	MW-11BH-02M-2																5			X
054	MW-11BH-02M-3						X										5			
055	MW-11BH-02M-4						X										5			
056	MW-11BH-02M-5																5			
057	MW-11BH-02M-6				X	X	X	X			X	X	X	X	X		5			
058	BW-11BH-08M-1				X	X		X			X	X			X		5			
059	BW-11BH-08M-2					X						X				X	2			
060	BW-11BH-08M-3																2			X
062	BW-11BH-08M-4																2			X
063	BW-11BH-08M-5					X						X				X	2			
064	BW-11BH-08M-6																2			X
																	2			X

Samples Relinquished by (print name & sign):	Date: 16/12/2011	Samples Received by (Print name & sign): S. Carens	Date: 17-DEC-11 @ 8:04 AM	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date:	Samples Received by (Print name & sign):	Date:	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date:	Samples Received by (Print name & sign):	Date:	White Copy - AGAT

Page 2 of 3

NO: 000297

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:
Company: Same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Report Information
1. Name: Same as previous
Email:
2. Name:
Email:

Report Format
[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only
Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614
Notes: DEC 17 AM8:04

Invoice To: Same as above Yes [X] No [ ]
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):
[X] **BC CSR – Soil**: [ ] Agricultural [X] Industrial [ ] Urban/Park [ ] Commercial
[ ] **BC CSR – Water**: [ ] Drinking Water [ ] Aquatic Life [ ] Irrigation [ ] Livestock
[X] **CCME**: [ ] Drinking Water [X] Industrial [ ] Residential/Park [ ] Drinking Water [ ] Commercial [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME PHCs F1-F4	Phenols (chlorinated)	PAH chlorinated				Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
30220065	BV-11BH-02M-1	Soil	16/12/2011														4			X
1066	BV-11BH-02M-2	↓	↓		X	X	X				X	X	X				4			X
1067	BV-11BH-02M-3				X	X	X				X	X	X				4			X
1068	BV-11BH-02M-4																4			X
1069	BV-11BH-02M-5																4			X
↓070	BV-11BH-02M-6	↓	↓														4			X

Samples Relinquished by (print name & sign): [signature] Date: 16/12/2011
Samples Received by (Print name & sign): S. Cauzza 17-DEC-11 @ 8:04 AM Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 3 of 3
NO: 000298

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11V560614

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 17-DEC-11 @ 8:04 AM
Courier: _____
Received by: S. Couzens
Relinquished by: In dropoff Area
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: N/A

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 00296, 297, 298

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 86 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 16-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 23-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 2 + 2 = 2 °C (2) 2 + 4 + 2 = 3 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560614

SOIL ANALYSIS REVIEWED BY: Angela Bond, Technical Reviewer

TRACE ORGANICS REVIEWED BY: Angela Bond, Technical Reviewer

DATE REPORTED: Dec 30, 2011

PAGES (INCLUDING COVER): 20

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 1:Sample 3020056 was reprepped and analyzed in duplicate, and the chromium value was confirmed.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-04M-3 3020034	MV-11BH-04M-4 3020035	MV-11BH-04M-5 3020036	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-03M-5 3020049	MV-11BH-02M-3 3020054	MV-11BH-02M-4 3020055
Antimony	µg/g	40	0.05	0.44	0.65	0.63	0.29	0.55	0.65	0.47	0.28
Arsenic	µg/g	12	0.1	4.0	6.5	5.4	4.0	5.1	9.3	4.9	3.1
Barium	µg/g	2000	0.5	154	155	149	53.1	125	150	83.3	75.1
Beryllium	µg/g	8	0.02	0.45	0.55	0.50	0.17	0.40	0.53	0.29	0.21
Boron (Hot Water Soluble)	µg/g	1.4	0.1	<0.1	0.2	0.2	0.2	0.5	0.4	0.1	<0.1
Cadmium	µg/g	22	0.01	0.09	0.31	0.31	0.16	0.26	0.28	0.27	0.14
Chromium	µg/g	87	1	50	46	46	44	50	47	34	28
Cobalt	µg/g	300	0.1	10.5	10.3	10.5	6.4	15.7	11.8	10.6	7.7
Copper	µg/g	91	0.2	16.1	37.9	33.9	18.9	37.9	42.4	25.4	15.8
Lead	µg/g	600	0.05	10.0	9.55	10.3	5.72	7.24	8.25	4.85	2.74
Mercury	µg/g	50	0.01	0.04	0.06	0.06	0.03	0.05	0.06	0.04	0.02
Molybdenum	µg/g	40	0.05	1.24	1.91	1.78	0.38	0.82	2.60	1.00	0.49
Nickel	µg/g	50	0.5	32.9	36.0	35.4	23.7	47.0	39.3	39.3	32.1
Selenium	µg/g	2.9	0.1	0.6	1.0	1.0	0.2	0.7	0.8	0.7	0.3
Silver	µg/g	40	0.05	<0.05	0.11	0.10	<0.05	0.11	0.13	0.08	<0.05
Thallium	µg/g	1	0.05	0.17	0.16	0.16	0.06	0.12	0.14	0.08	0.06
Tin	µg/g	300	0.05	1.41	1.03	1.19	1.16	0.96	0.94	0.60	0.62
Uranium	µg/g	300	0.05	1.13	2.01	2.15	0.36	0.87	1.80	0.61	0.33
Vanadium	µg/g	130	1	63	64	61	35	59	64	44	33
Zinc	µg/g	360	1	73	71	72	38	69	72	55	40
pH 1:2	pH units		0.1	7.9	6.3	6.0	6.2	6.3	6.1	6.2	6.4

Certified By: Angela Bond

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-02M-5 3020056	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Antimony	µg/g	40	0.05	0.79	0.19	0.52
Arsenic	µg/g	12	0.1	7.6	2.8	7.9
Barium	µg/g	2000	0.5	87.6	49.0	97.1
Beryllium	µg/g	8	0.02	0.29	0.17	0.34
Boron (Hot Water Soluble)	µg/g	1.4	0.1	0.6	<0.1	1.4
Cadmium	µg/g	22	0.01	0.40	0.12	0.26
Chromium	µg/g	87	1	885	27	43
Cobalt	µg/g	300	0.1	10.5	7.5	12.4
Copper	µg/g	91	0.2	30.0	14.4	29.5
Lead	µg/g	600	0.05	12.2	2.75	8.09
Mercury	µg/g	50	0.01	0.11	0.02	0.07
Molybdenum	µg/g	40	0.05	0.59	0.33	0.72
Nickel	µg/g	50	0.5	35.9	31.9	47.3
Selenium	µg/g	2.9	0.1	0.4	0.1	0.5
Silver	µg/g	40	0.05	0.07	<0.05	0.09
Thallium	µg/g	1	0.05	0.09	<0.05	0.09
Tin	µg/g	300	0.05	6.51	0.45	0.82
Uranium	µg/g	300	0.05	0.63	0.26	0.60
Vanadium	µg/g	130	1	45	42	50
Zinc	µg/g	360	1	66	36	67
pH 1:2	pH units		0.1	6.4	7.3	6.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)
3020034-3020067 Results are based on the dry weight of the sample

Certified By: Angela Bond

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Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Soil Analysis - Ion Analysis with Conversions - Cl & Na

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-02M-5 3020056
Chloride, Soluble	mg/L		2	11	101
Sodium, Soluble	mg/L		2	8	13
Chloride, Soluble (mg/kg)	mg/kg		2	4	45
Sodium, Soluble (mg/kg)	mg/kg		2	3	6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By: Angela Bond

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Benzene	mg/kg	0.030	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.37	0.05	<0.05	0.07	0.13	0.09	<0.05	0.13
Ethylbenzene	mg/kg	0.082	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Xylenes	mg/kg	11	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	320	10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	260	10	16	33	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	1700	10	<10	<10	186	62	108	20
C34 - C50 (F4)	mg/kg	3300	10	156	<10	115	70	412	65
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%		1	18.2	26.8	25.9	25.5	5.1	26
Surrogate	Unit	Acceptable Limits							
Toluene-d8 (BTEX)	%	50-150		96	94	97	98	98	98
Ethylbenzene-d10 (BTEX)	%	50-150		107	98	108	113	97	101
o-Terphenyl (F2-F4)	%	50-150		115	100	103	100	98	97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3020046-3020067 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By: Angela Bond

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (F2-F4) in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-08M-1 3020058	BV-11BH-08M-4 3020062
C10 - C16 (F2)	mg/kg	260	10	<10	<10
C16 - C34 (F3)	mg/kg	1700	10	<10	<10
C34 - C50 (F4)	mg/kg	3300	10	<10	35
Moisture Content	%		1	12.6	25.9
Surrogate	**Unit**	**Acceptable Limits**			
o-Terphenyl (F2-F4)	%	50-150		98	99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3020058-3020062 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram has returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By: Angela Bond

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-08M-1 3020058	BV-11BH-08M-4 3020062	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	<0.1	<0.1	<0.1			<0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02	<0.02	<0.02	<0.02			<0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
Ethylbenzene	µg/g	7	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
VPH	µg/g	200	10	<10	<10	<10	<10			<10	<10
Naphthalene	µg/g	50	0.01	0.03	0.01	0.05	0.45	<0.01	<0.01	0.02	0.10
2-Methylnaphthalene	µg/g		0.01	0.01	<0.01	0.01	0.22	<0.01	<0.01	0.03	0.01
1-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	<0.01	0.09	<0.01	<0.01	0.01	0.01
Acenaphthylene	µg/g		0.01	0.01	<0.01	<0.01	0.41	<0.01	<0.01	<0.01	0.01
Acenaphthene	µg/g		0.01	<0.01	<0.01	0.01	0.25	<0.01	<0.01	<0.01	0.02
Fluorene	µg/g		0.02	<0.02	<0.02	0.02	0.22	<0.02	<0.02	<0.02	<0.02
Phenanthrene	µg/g	50	0.02	0.04	0.02	0.09	1.08	<0.02	<0.02	0.02	0.17
Anthracene	µg/g		0.02	<0.02	<0.02	0.02	0.55	<0.02	<0.02	<0.02	0.04
Fluoranthene	µg/g		0.05	0.05	<0.05	0.05	3.98	<0.05	<0.05	<0.05	0.59
Pyrene	µg/g	100	0.02	0.03	0.02	0.05	4.62	<0.02	<0.02	<0.02	0.63
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	2.83	<0.02	<0.02	<0.02	0.29
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	2.77	<0.05	<0.05	<0.05	0.37
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	1.70	<0.02	<0.02	<0.02	0.30
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	1.20	<0.02	<0.02	<0.02	0.17
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	3.00	<0.05	<0.05	<0.05	0.38
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	<0.02	1.40	<0.02	<0.02	<0.02	0.18
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	0.49	<0.02	<0.02	<0.02	0.04
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	<0.05	1.50	<0.05	<0.05	<0.05	0.19
LEPH C10-C19	µg/g	2000	25	<25	<25	<25	<25	<25	<25	<25	<25
HEPH C19-C32	µg/g	5000	25	26	<25	182	120	<25	<25	64	27

Certified By: Angela Bond

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-08M-1 3020058	BV-11BH-08M-4 3020062	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Nitrobenzene - d5	%	50-130	98	93	89	86	95	87	89	88
2-Fluorobiphenyl	%	50-130	94	96	104	95	96	96	89	97
P-Terphenyl - d14	%	50-130	90	105	114	102	94	96	91	100
Bromofluorobenzene	%	70-130	103	96.8	101	100			106	95
Toluene - d8	%	70-130	124	117	128	117			127	122

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3020046-3020057 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3020058-3020062 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

3020066-3020067 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By: Angela Bond

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Phenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Surrogate	Unit	Acceptable Limits							
2-Fluorophenol	%	50-150		112	112	109	109	110	108
2,4,6-Tribromophenol	%	50-150		111	111	108	110	109	107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3020046-3020067 Results relate only to the items tested.

Certified By: Angela Bond

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057
Chloromethane	µg/g	160	0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	µg/g	7.5	0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	µg/g	13	0.05	<0.05	<0.05	<0.05	<0.05
Chloroethane	µg/g	65	0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	µg/g	2000	0.05	<0.05	<0.05	<0.05	<0.05
Acetone	µg/g	54000	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Dichloromethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
2-Butanone (MEK)	µg/g	110000	0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	µg/g	50	0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethene	µg/g	0.015	0.05	<0.05	<0.05	<0.05	<0.05
Bromodichloromethane	µg/g	18	0.05	<0.05	<0.05	<0.05	<0.05
trans-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
4-Methyl-2-pentanone (MIBK)	µg/g		0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	µg/g	26	0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	µg/g	0.73	0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	µg/g	73	0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	µg/g	2200	0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	µg/g	9.3	0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05

Certified By: Angela Bond

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057
1,2,4-Trichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits					
Bromofluorobenzene	%	50-150		107	98	117	103
Dibromofluoromethane	%	50-150		121	111	128	118
Toluene - d8	%	50-150		125	121	129	123

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3020046-3020057 Results are based on dry weight of sample.

Certified By: Angela Bond

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	3020034		0.44	0.43	2.3%	< 0.05	96%	70%	130%	93%	90%	110%	97%	80%	120%
Arsenic	3020034		4.0	3.8	5.1%	< 0.1	102%	70%	130%	100%	90%	110%	103%	80%	120%
Barium	3020034		154	157	1.9%	< 0.5	89%	70%	130%	97%	90%	110%	97%	80%	120%
Beryllium	3020034		0.45	0.47	4.3%	< 0.02	91%	70%	130%	99%	90%	110%	99%	80%	120%
Boron (Hot Water Soluble)	3020034		< 0.1	< 0.1	0.0%	< 0.1				106%	90%	110%	113%	80%	120%
Cadmium	3020034		0.09	0.1	10.5%	< 0.01				97%	90%	110%	98%	80%	120%
Chromium	3020034		50	51	2.0%	< 1	93%	70%	130%	101%	90%	110%	100%	80%	120%
Cobalt	3020034		10.5	10.9	3.7%	< 0.1	89%	70%	130%	101%	90%	110%	102%	80%	120%
Copper	3020034		16.0	15.9	0.6%	< 0.2	85%	70%	130%	101%	90%	110%	102%	80%	120%
Lead	3020034		10.0	10.4	3.9%	< 0.05	84%	70%	130%	93%	90%	110%	96%	80%	120%
Mercury	3020034		0.04	0.05	22.2%	< 0.01	110%	70%	130%	94%	90%	110%	93%	80%	120%
Molybdenum	3020034		1.24	1.23	0.8%	< 0.05	93%	70%	130%	98%	90%	110%	100%	80%	120%
Nickel	3020034		32.9	33.4	1.5%	< 0.5	89%	70%	130%	101%	90%	110%	101%	80%	120%
Selenium	3020034		0.6	0.6	0.0%	< 0.1					90%	110%	100%	80%	120%
Silver	3020034		< 0.05	< 0.05	0.0%	< 0.05				98%	90%	110%	96%	80%	120%
Thallium	3020034		0.17	0.18	5.7%	< 0.05				96%	90%	110%	99%	80%	120%
Tin	3020034		1.22	1.59	26.3%	< 0.05				105%	90%	110%	99%	80%	120%
Uranium	3020034		1.13	1.08	4.5%	< 0.05		0%	0%	94%	90%	110%	92%	80%	120%
Vanadium	3020034		63	66	4.7%	< 1	95%	70%	130%	102%	90%	110%	101%	80%	120%
Zinc	3020034		73	71	2.8%	< 1	94%	70%	130%	107%	90%	110%	106%	80%	120%
pH 1:2	3020034		6.9	6.6	4.4%	< 0.1				100%	95%	105%	100%	90%	110%
Soil Analysis - Ion Analysis with Conversions - Cl & Na															
Chloride, Soluble	94	451	12	10	18.2%	< 2	97%	80%	120%						
Sodium, Soluble	141	7606	1890	1840	2.9%	< 2	102%	80%	120%						

Comments: N/A: Not applicable

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3020046	<0.1	<0.1	0.0%	< 0.1	99%	80%	120%				91%	70%	130%
Benzene	1	3020046	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				93%	70%	130%
Toluene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				90%	70%	130%
Ethylbenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				85%	70%	130%
m&p-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				79%	70%	130%
o-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				84%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				85%	70%	130%
VPH	1	3020046	<10	<10	0.0%	< 10									
Naphthalene	1	3018978	0.02	0.02	0.0%	< 0.01	102%	80%	120%				105%	50%	130%
2-Methylnaphthalene	1	3018978	0.01	0.01	0.0%	< 0.01	103%	80%	120%				99%	50%	130%
1-Methylnaphthalene	1	3018978	<0.01	0.01	0.0%	< 0.01	103%	80%	120%				102%	50%	130%
Acenaphthylene	1	3018978	0.01	0.01	0.0%	< 0.01	102%	80%	120%				94%	50%	130%
Acenaphthene	1	3018978	NA	NA	0.0%	< 0.01	105%	80%	120%				90%	50%	130%
Fluorene	1	3018978	<0.02	0.02	0.0%	< 0.02	102%	80%	120%				95%	50%	130%
Phenanthrene	1	3018978	0.04	0.05	22.2%	< 0.02	98%	80%	120%				92%	60%	130%
Anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				79%	60%	130%
Fluoranthene	1	3018978	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				96%	60%	130%
Pyrene	1	3018978	0.06	0.05	18.2%	< 0.02	100%	80%	120%				98%	60%	130%
Benzo(a)anthracene	1	3018978	0.02	0.02	0.0%	< 0.02	102%	80%	120%				88%	60%	130%
Chrysene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	3018978	0.02	0.02	0.0%	< 0.02	101%	80%	120%				87%	60%	130%
Benzo(k)fluoranthene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Benzo(a)pyrene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				90%	60%	130%
Dibenzo(a,h)anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Nitrobenzene - d5	1	3018978	81	90	10.5%	<	100%	80%	120%				100%	50%	130%
2-Fluorobiphenyl	1	3018978	86	94	8.9%	<	101%	80%	120%				91%	50%	130%
P-Terphenyl - d14	1	3018978	90	99	9.5%	<	98%	80%	120%				88%	50%	130%
LEPH C10-C19	1	3018978	<25	<25	0.0%	< 25									
HEPH C19-C32	1	3018978	<25	<25	0.0%	< 25									
Bromofluorobenzene	1	3020046	103	81.8	23.0%	<	108%	70%	130%				108%	70%	130%
Toluene - d8	1	3020046	124	92.9	29.0%	<	100%	70%	130%				111%	70%	130%
Volatile Organic Compounds in Soil (180-054)															
Chloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				109%	70%	130%
Vinyl Chloride	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				109%	70%	130%
Bromomethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	96%	80%	120%				106%	70%	130%
Chloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Trichlorofluoromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				111%	70%	130%
Acetone	1	3020046	<0.5	<0.5	0.0%	< 0.5	109%	80%	120%				129%	70%	130%
1,1-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				112%	70%	130%
Dichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				113%	70%	130%
2-Butanone (MEK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	102%	80%	120%				111%	70%	130%
trans-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				114%	70%	130%
1,1-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
cis-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Chloroform	1	3020046	<0.05	<0.05	0.0%	< 0.05	91%	80%	120%				104%	70%	130%
1,2-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				116%	70%	130%
1,1,1-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				113%	70%	130%
Carbon Tetrachloride	1	3020046	<0.025	<0.025	0.0%	< 0.025	101%	80%	120%				112%	70%	130%
1,2-Dichloropropane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Trichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
Bromodichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				116%	70%	130%
trans-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				112%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	104%	80%	120%				112%	70%	130%
cis-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				113%	70%	130%
1,1,2-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				114%	70%	130%
Dibromochloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				114%	70%	130%
Ethylene Dibromide	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Tetrachloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				126%	70%	130%
1,1,1,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				114%	70%	130%
Chlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				109%	70%	130%
Bromoform	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				109%	70%	130%
1,1,2,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				108%	70%	130%
1,3-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				105%	70%	130%
1,4-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				105%	70%	130%
1,2-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				106%	70%	130%
1,2,4-Trichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				105%	70%	130%
Bromofluorobenzene	1	3020046	107	78	31.0%	<	111%	70%	130%				128%	70%	130%
Dibromofluoromethane	1	3020046	121	80	41.0%	<	111%	70%	130%				129%	70%	130%
Toluene - d8	1	3020046	125	86	37.0%	<	110%	70%	130%				128%	70%	130%
Phenolic Compounds in Soil															
Phenol	127	3020046	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	97%	70%	130%	96%	60%	140%
4-Nitrophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	94%	70%	130%	93%	60%	140%
m&p-Cresol (3&4-methylphenol)	127	3020046	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
o-Cresol (2-methylphenol)	127	3020046	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	96%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2-Chlorophenol	127	3020046	<0.002	<0.002	0.0%	< 0.002				98%	70%	130%	97%	60%	140%
2,4-Dinitrophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	96%	70%	130%	97%	60%	140%
2-Nitrophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	94%	80%	120%	109%	70%	130%	107%	60%	140%
2,4-Dimethylphenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	97%	70%	130%	95%	60%	140%
2,6-Dichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	95%	60%	140%
4-Chloro-3-methylphenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	82%	80%	120%	99%	70%	130%	92%	60%	140%
2,4-Dichlorophenol	127	3020046	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	100%	70%	130%	94%	60%	140%
4,6-Dinitro-2-methylphenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	93%	80%	120%	100%	70%	130%	93%	60%	140%
2,3,6-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	96%	60%	140%
2,3,4-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	95%	60%	140%
2,4,6-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	84%	80%	120%	99%	70%	130%	97%	60%	140%
2,4,5-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	97%	60%	140%
2,3,5-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				99%	70%	130%	98%	60%	140%
3,4,5-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	99%	60%	140%
2,3,5,6-Tetrachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	99%	60%	140%
2,3,4,5-Tetrachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	127	3020046	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	98%	60%	140%
Pentachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	102%	70%	130%	99%	60%	140%
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
Benzene	1488	3020066	< 0.005	< 0.005	NA	< 0.005	85%	80%	120%	95%	80%	120%	90%	60%	140%
Toluene	1488	3020066	< 0.05	< 0.05	NA	< 0.05	82%	80%	120%	97%	80%	120%	87%	60%	140%
Ethylbenzene	1488	3020066	< 0.01	< 0.01	NA	< 0.01	81%	80%	120%	107%	80%	120%	91%	60%	140%
Xylenes	1488	3020066	< 0.05	< 0.05	NA	< 0.05	86%	80%	120%	108%	80%	120%	93%	60%	140%
C6 - C10 (F1)	1488	3020066	< 10	< 10	NA	< 10	102%	80%	120%	108%	80%	120%	117%	60%	140%
C10 - C16 (F2)	878	3020066	<10	<10	NA	< 10	115%	80%	120%	90%	80%	120%	119%	60%	140%
C16 - C34 (F3)	878	3020066	108	86	23.0%	< 10	115%	80%	120%	86%	80%	120%	126%	60%	140%
C34 - C50 (F4)	878	3020066	412	408	1.0%	< 10	115%	80%	120%	86%	80%	120%	130%	60%	140%

Certified By: Angela Bond

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER
Chloride, Soluble	SOIL 0110; SOIL 0120; INST 0330	SHEPPARD 2007, EATON 2005	CONTINUOUS FLOW ANALYZER
Sodium, Soluble	SOIL 0110; SOIL 0120; INST 0140	SHEPPARD 2007; EATON 2005	ICP/OES

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO 0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO 0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV

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PROJECT NO: 2090-1103

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromochloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1,1,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

AGAT Laboratories

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Burnaby, BC,
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Chain of Custody Record

Turnaround Time Required (TAT)

- **Regular TAT** 5 to 7 working days ☒
- **Rush TAT** 24 to 48 hours ☐
- 48 to 72 hours ☐

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

- ☐ Single Sample per page
- ☒ Multiple Samples per page
- ☒ Excel Format Included

Laboratory Use Only

Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614

Notes: DEC 17 AM 8:04

Invoice To: Same as above Yes ☒ No ☐

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- ☒ **BC CSR – Soil**
  - ☐ Agricultural
  - ☒ Industrial
  - ☐ Urban/Park
  - ☐ Commercial
- ☐ **BC CSR – Water**
  - ☐ Drinking Water
  - ☐ Aquatic Life
  - ☐ Irrigation
  - ☐ Livestock
- ☒ **CCME**
  - ☐ Drinking Water
  - ☒ Industrial
  - ☐ Residential/Park
  - ☐ Drinking Water
  - ☐ Commercial
  - ☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1-F4	PAH	sulfides	sodium and chloride	phenols (chlorinated and non-chlorinated)	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3020032	MV-11BH-04M-1	soil	16/12/2011													1			X
033	MV-11BH-04M-2															1			X
034	MV-11BH-04M-3						X									1			
035	MV-11BH-04M-4						X									1			
036	MV-11BH-04M-5						X									1			
037	MV-11BH-04M-6															1			X
038	MV-11BH-03M-1															1			X
043	MV-11BH-03M-2			For samples with 5 jars and only metals analysis, hold the remaining 4 jars												1			X
046	MV-11BH-03M-3				X	X	X	X			X	X	X	X	X	5			
047	MV-11BH-03M-4				X	X	X	X			X	X			X	5			
049	MV-11BH-03M-5						X									5			[redacted]
051	MV-11BH-03M-6															1			X

Samples Relinquished by (print name & sign): Amanda Salway	Date 16/12/2011	Samples Received by (Print name & sign): S. Coles	Date 17-DEC-11 @ 8:04 AM
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

NO: 000296

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Chain of Custody Record

Turnaround Time Required (TAT)

- Regular TAT: 5 to 7 working days [X]
- Rush TAT: 24 to 48 hours [ ]
- 48 to 72 hours [ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact:
Address: Same as previous
Phone: _____ Fax:
LSD:
Client Project #:

Report Information

1. Name:
Email: Same as previous
2. Name:
Email:

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614

Notes: DEC 17 AM 8:04

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: _____ Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [X] BC CSR – Soil
  - [ ] Agricultural
  - [X] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [ ] BC CSR – Water
  - [ ] Drinking Water
  - [ ] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [X] Industrial
  - [ ] Residential/Park
  - [ ] Drinking Water
  - [ ] Commercial
  - [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1-F4	PAH	Sulfides	Sodium and Chloride	Phenols (Chlorinated)	CCME F2-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3020052	MW-11BH-02M-1	Soil	16/12/2011	For samples with 5 jars and only metals analysis, hold the other 4 jars													1			X
053	MW-11BH-02M-2																5			X
054	MW-11BH-02M-3						X										5			
055	MW-11BH-02M-4						X										5			
056	MW-11BH-02M-5																5			
057	MW-11BH-02M-6				X	X	X	X			X	X	X	X	X		5			
058	BW-11BH-08M-1				X	X		X			X	X			X		5			
059	BW-11BH-08M-2					X						X				X	2			
060	BW-11BH-08M-3																2			X
062	BW-11BH-08M-4																2			X
063	BW-11BH-08M-5					X						X				X	2			
064	BW-11BH-08M-6																2			X
																	2			X

Samples Relinquished by (print name & sign):	Date: 16/12/2011	Samples Received by (Print name & sign): S. Carens	Date: 17-DEC-11 @ 8:04 AM	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date:	Samples Received by (Print name & sign):	Date:	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date:	Samples Received by (Print name & sign):	Date:	White Copy - AGAT

Page 2 of 3

NO: 000297

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:
Company: Same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Report Information
1. Name: Same as previous
Email:
2. Name:
Email:

Report Format
[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only
Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614
Notes: DEC 17 AM8:04

Invoice To: Same as above Yes [X] No [ ]
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):
[X] **BC CSR – Soil**: [ ] Agricultural [X] Industrial [ ] Urban/Park [ ] Commercial
[ ] **BC CSR – Water**: [ ] Drinking Water [ ] Aquatic Life [ ] Irrigation [ ] Livestock
[X] **CCME**: [ ] Drinking Water [X] Industrial [ ] Residential/Park [ ] Drinking Water [ ] Commercial [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME PHCs F1-F4	Phenols (chlorinated)	PAH chlorinated				Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
30220065	BV-11BH-02M-1	Soil	16/12/2011														4			X
1066	BV-11BH-02M-2	↓	↓		X	X	X				X	X	X				4			X
1067	BV-11BH-02M-3				X	X	X				X	X	X				4			X
1068	BV-11BH-02M-4																4			X
1069	BV-11BH-02M-5																4			X
↓070	BV-11BH-02M-6	↓	↓														4			X

Samples Relinquished by (print name & sign): [signature] Date: 16/12/2011
Samples Received by (Print name & sign): S. Cauzza 17-DEC-11 @ 8:04 AM Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

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NO: 000298

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11V560614

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 17-DEC-11 @ 8:04 AM
Courier: _____
Received by: S. Couzens
Relinquished by: In dropoff Area
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: N/A

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 00296, 297, 298

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 86 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 16-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 23-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 2 + 2 = 2 °C (2) 2 + 4 + 2 = 3 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
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http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560614

SOIL ANALYSIS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

TRACE ORGANICS REVIEWED BY: Angela Bond, Technical Reviewer

DATE REPORTED: Dec 30, 2011

PAGES (INCLUDING COVER): 21

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 2:Sample 3020056 was reprepped and analyzed in duplicate, and the chromium value was confirmed.

Report reissued to include sulphide on samples as requested by the client.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-04M-3 3020034	MV-11BH-04M-4 3020035	MV-11BH-04M-5 3020036	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-03M-5 3020049	MV-11BH-02M-3 3020054	MV-11BH-02M-4 3020055
Antimony	µg/g	40	0.05	0.44	0.65	0.63	0.29	0.55	0.65	0.47	0.28
Arsenic	µg/g	15	0.1	4.0	6.5	5.4	4.0	5.1	9.3	4.9	3.1
Barium	µg/g	400	0.5	154	155	149	53.1	125	150	83.3	75.1
Beryllium	µg/g	8	0.02	0.45	0.55	0.50	0.17	0.40	0.53	0.29	0.21
Boron (Hot Water Soluble)	µg/g		0.1	<0.1	0.2	0.2	0.2	0.5	0.4	0.1	<0.1
Cadmium	µg/g		0.01	0.09	0.31	0.31	0.16	0.26	0.28	0.27	0.14
Chromium	µg/g	60	1	50	46	46	44	50	47	34	28
Cobalt	µg/g	300	0.1	10.5	10.3	10.5	6.4	15.7	11.8	10.6	7.7
Copper	µg/g		0.2	16.1	37.9	33.9	18.9	37.9	42.4	25.4	15.8
Lead	µg/g		0.05	10.0	9.55	10.3	5.72	7.24	8.25	4.85	2.74
Mercury	µg/g		0.01	0.04	0.06	0.06	0.03	0.05	0.06	0.04	0.02
Molybdenum	µg/g	40	0.05	1.24	1.91	1.78	0.38	0.82	2.60	1.00	0.49
Nickel	µg/g	500	0.5	32.9	36.0	35.4	23.7	47.0	39.3	39.3	32.1
Selenium	µg/g	10	0.1	0.6	1.0	1.0	0.2	0.7	0.8	0.7	0.3
Silver	µg/g	40	0.05	<0.05	0.11	0.10	<0.05	0.11	0.13	0.08	<0.05
Thallium	µg/g		0.05	0.17	0.16	0.16	0.06	0.12	0.14	0.08	0.06
Tin	µg/g	300	0.05	1.41	1.03	1.19	1.16	0.96	0.94	0.60	0.62
Uranium	µg/g	200	0.05	1.13	2.01	2.15	0.36	0.87	1.80	0.61	0.33
Vanadium	µg/g		1	63	64	61	35	59	64	44	33
Zinc	µg/g		1	73	71	72	38	69	72	55	40
pH 1:2	pH units		0.1	7.9	6.3	6.0	6.2	6.3	6.1	6.2	6.4

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-02M-5 3020056	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Antimony	µg/g	40	0.05	0.79	0.19	0.52
Arsenic	µg/g	15	0.1	7.6	2.8	7.9
Barium	µg/g	400	0.5	87.6	49.0	97.1
Beryllium	µg/g	8	0.02	0.29	0.17	0.34
Boron (Hot Water Soluble)	µg/g		0.1	0.6	<0.1	1.4
Cadmium	µg/g		0.01	0.40	0.12	0.26
Chromium	µg/g	60	1	885	27	43
Cobalt	µg/g	300	0.1	10.5	7.5	12.4
Copper	µg/g		0.2	30.0	14.4	29.5
Lead	µg/g		0.05	12.2	2.75	8.09
Mercury	µg/g		0.01	0.11	0.02	0.07
Molybdenum	µg/g	40	0.05	0.59	0.33	0.72
Nickel	µg/g	500	0.5	35.9	31.9	47.3
Selenium	µg/g	10	0.1	0.4	0.1	0.5
Silver	µg/g	40	0.05	0.07	<0.05	0.09
Thallium	µg/g		0.05	0.09	<0.05	0.09
Tin	µg/g	300	0.05	6.51	0.45	0.82
Uranium	µg/g	200	0.05	0.63	0.26	0.60
Vanadium	µg/g		1	45	42	50
Zinc	µg/g		1	66	36	67
pH 1:2	pH units		0.1	6.4	7.3	6.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3020034-3020067 Results are based on the dry weight of the sample

Certified By:

AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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CANADA V5J 0B6
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CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Miscellaneous Techniques-Sulfide

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-02M-5 3020056
Sulfide	%		0.01	<0.01	0.11

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Soil Analysis - Ion Analysis with Conversions - Cl & Na

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-02M-5 3020056
Chloride, Soluble	mg/L		2	11	101
Sodium, Soluble	mg/L		2	8	13
Chloride, Soluble (mg/kg)	mg/kg		2	4	45
Sodium, Soluble (mg/kg)	mg/kg		2	3	6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Benzene	mg/kg	0.030	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.37	0.05	<0.05	0.07	0.13	0.09	<0.05	0.13
Ethylbenzene	mg/kg	0.082	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Xylenes	mg/kg	11	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	320	10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	260	10	16	33	<10	<10	<10	<10
C16 - C34 (F3)	mg/kg	1700	10	<10	<10	186	62	108	20
C34 - C50 (F4)	mg/kg	3300	10	156	<10	115	70	412	65
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%		1	18.2	26.8	25.9	25.5	5.1	26
Surrogate	Unit	Acceptable Limits							
Toluene-d8 (BTEX)	%	50-150		96	94	97	98	98	98
Ethylbenzene-d10 (BTEX)	%	50-150		107	98	108	113	97	101
o-Terphenyl (F2-F4)	%	50-150		115	100	103	100	98	97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3020046-3020067 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By: Angela Bond

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (F2-F4) in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-08M-1 3020058	BV-11BH-08M-4 3020062
C10 - C16 (F2)	mg/kg	260	10	<10	<10
C16 - C34 (F3)	mg/kg	1700	10	<10	<10
C34 - C50 (F4)	mg/kg	3300	10	<10	35
Moisture Content	%		1	12.6	25.9
Surrogate	**Unit**	**Acceptable Limits**			
o-Terphenyl (F2-F4)	%	50-150		98	99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3020058-3020062 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram has returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By: Angela Bond

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-08M-1 3020058	BV-11BH-08M-4 3020062	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	<0.1	<0.1	<0.1			<0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02	<0.02	<0.02	<0.02			<0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
Ethylbenzene	µg/g	7	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05			<0.05	<0.05
VPH	µg/g	200	10	<10	<10	<10	<10			<10	<10
Naphthalene	µg/g	50	0.01	0.03	0.01	0.05	0.45	<0.01	<0.01	0.02	0.10
2-Methylnaphthalene	µg/g		0.01	0.01	<0.01	0.01	0.22	<0.01	<0.01	0.03	0.01
1-Methylnaphthalene	µg/g		0.01	<0.01	<0.01	<0.01	0.09	<0.01	<0.01	0.01	0.01
Acenaphthylene	µg/g		0.01	0.01	<0.01	<0.01	0.41	<0.01	<0.01	<0.01	0.01
Acenaphthene	µg/g		0.01	<0.01	<0.01	0.01	0.25	<0.01	<0.01	<0.01	0.02
Fluorene	µg/g		0.02	<0.02	<0.02	0.02	0.22	<0.02	<0.02	<0.02	<0.02
Phenanthrene	µg/g	50	0.02	0.04	0.02	0.09	1.08	<0.02	<0.02	0.02	0.17
Anthracene	µg/g		0.02	<0.02	<0.02	0.02	0.55	<0.02	<0.02	<0.02	0.04
Fluoranthene	µg/g		0.05	0.05	<0.05	0.05	3.98	<0.05	<0.05	<0.05	0.59
Pyrene	µg/g	100	0.02	0.03	0.02	0.05	4.62	<0.02	<0.02	<0.02	0.63
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	2.83	<0.02	<0.02	<0.02	0.29
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	2.77	<0.05	<0.05	<0.05	0.37
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	1.70	<0.02	<0.02	<0.02	0.30
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	1.20	<0.02	<0.02	<0.02	0.17
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	3.00	<0.05	<0.05	<0.05	0.38
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	<0.02	1.40	<0.02	<0.02	<0.02	0.18
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	0.49	<0.02	<0.02	<0.02	0.04
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	<0.05	1.50	<0.05	<0.05	<0.05	0.19
LEPH C10-C19	µg/g	2000	25	<25	<25	<25	<25	<25	<25	<25	<25
HEPH C19-C32	µg/g	5000	25	26	<25	182	120	<25	<25	64	27

Certified By: Angela Bond

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-08M-1 3020058	BV-11BH-08M-4 3020062	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Nitrobenzene - d5	%	50-130	98	93	89	86	95	87	89	88
2-Fluorobiphenyl	%	50-130	94	96	104	95	96	96	89	97
P-Terphenyl - d14	%	50-130	90	105	114	102	94	96	91	100
Bromofluorobenzene	%	70-130	103	96.8	101	100			106	95
Toluene - d8	%	70-130	124	117	128	117			127	122

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3020046-3020057 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3020058-3020062 Results are based on dry weight of sample.
LEPH & HEPH results have been corrected for PAH contributions.

3020066-3020067 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057	BV-11BH-02M-2 3020066	BV-11BH-02M-3 3020067
Phenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Surrogate	Unit	Acceptable Limits							
2-Fluorophenol	%	50-150		112	112	109	109	110	108
2,4,6-Tribromophenol	%	50-150		111	111	108	110	109	107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3020046-3020067 Results relate only to the items tested.

Certified By: Angela Bond

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AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057
Chloromethane	µg/g	160	0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	µg/g	7.5	0.05	<0.05	<0.05	<0.05	<0.05
Bromomethane	µg/g	13	0.05	<0.05	<0.05	<0.05	<0.05
Chloroethane	µg/g	65	0.05	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	µg/g	2000	0.05	<0.05	<0.05	<0.05	<0.05
Acetone	µg/g	54000	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Dichloromethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
2-Butanone (MEK)	µg/g	110000	0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
cis-1,2-Dichloroethene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Chloroform	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	µg/g	50	0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloropropane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Trichloroethene	µg/g	0.015	0.05	<0.05	<0.05	<0.05	<0.05
Bromodichloromethane	µg/g	18	0.05	<0.05	<0.05	<0.05	<0.05
trans-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
4-Methyl-2-pentanone (MIBK)	µg/g		0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	µg/g	26	0.05	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	µg/g	0.73	0.05	<0.05	<0.05	<0.05	<0.05
Tetrachloroethene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	µg/g	73	0.05	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	µg/g	2200	0.05	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	µg/g	9.3	0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05

Certified By: Angela Bond

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Certificate of Analysis

AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Soil (180-054)

DATE SAMPLED: Dec 16, 2011 | DATE RECEIVED: Dec 17, 2011 | DATE REPORTED: Dec 30, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	MV-11BH-03M-3 3020046	MV-11BH-03M-4 3020047	MV-11BH-02M-5 3020056	MV-11BH-02M-6 3020057
1,2,4-Trichlorobenzene	µg/g	10	0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	Unit	Acceptable Limits					
Bromofluorobenzene	%	50-150		107	98	117	103
Dibromofluoromethane	%	50-150		121	111	128	118
Toluene - d8	%	50-150		125	121	129	123

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3020046-3020057 Results are based on dry weight of sample.

Certified By: Angela Bond

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	3020034		0.44	0.43	2.3%	< 0.05	96%	70%	130%	93%	90%	110%	97%	80%	120%
Arsenic	3020034		4.0	3.8	5.1%	< 0.1	102%	70%	130%	100%	90%	110%	103%	80%	120%
Barium	3020034		154	157	1.9%	< 0.5	89%	70%	130%	97%	90%	110%	97%	80%	120%
Beryllium	3020034		0.45	0.47	4.3%	< 0.02	91%	70%	130%	99%	90%	110%	99%	80%	120%
Boron (Hot Water Soluble)	3020034		< 0.1	< 0.1	0.0%	< 0.1				106%	90%	110%	113%	80%	120%
Cadmium	3020034		0.09	0.1	10.5%	< 0.01				97%	90%	110%	98%	80%	120%
Chromium	3020034		50	51	2.0%	< 1	93%	70%	130%	101%	90%	110%	100%	80%	120%
Cobalt	3020034		10.5	10.9	3.7%	< 0.1	89%	70%	130%	101%	90%	110%	102%	80%	120%
Copper	3020034		16.0	15.9	0.6%	< 0.2	85%	70%	130%	101%	90%	110%	102%	80%	120%
Lead	3020034		10.0	10.4	3.9%	< 0.05	84%	70%	130%	93%	90%	110%	96%	80%	120%
Mercury	3020034		0.04	0.05	22.2%	< 0.01	110%	70%	130%	94%	90%	110%	93%	80%	120%
Molybdenum	3020034		1.24	1.23	0.8%	< 0.05	93%	70%	130%	98%	90%	110%	100%	80%	120%
Nickel	3020034		32.9	33.4	1.5%	< 0.5	89%	70%	130%	101%	90%	110%	101%	80%	120%
Selenium	3020034		0.6	0.6	0.0%	< 0.1					90%	110%	100%	80%	120%
Silver	3020034		< 0.05	< 0.05	0.0%	< 0.05				98%	90%	110%	96%	80%	120%
Thallium	3020034		0.17	0.18	5.7%	< 0.05				96%	90%	110%	99%	80%	120%
Tin	3020034		1.22	1.59	26.3%	< 0.05				105%	90%	110%	99%	80%	120%
Uranium	3020034		1.13	1.08	4.5%	< 0.05		0%	0%	94%	90%	110%	92%	80%	120%
Vanadium	3020034		63	66	4.7%	< 1	95%	70%	130%	102%	90%	110%	101%	80%	120%
Zinc	3020034		73	71	2.8%	< 1	94%	70%	130%	107%	90%	110%	106%	80%	120%
pH 1:2	3020034		6.9	6.6	4.4%	< 0.1				100%	95%	105%	100%	90%	110%
Soil Analysis - Ion Analysis with Conversions - Cl & Na															
Chloride, Soluble	94	451	12	10	18.2%	< 2	97%	80%	120%						
Sodium, Soluble	141	7606	1890	1840	2.9%	< 2	102%	80%	120%						

Comments: N/A: Not applicable

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3020046	<0.1	<0.1	0.0%	< 0.1	99%	80%	120%				91%	70%	130%
Benzene	1	3020046	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				93%	70%	130%
Toluene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				90%	70%	130%
Ethylbenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				85%	70%	130%
m&p-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				79%	70%	130%
o-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				84%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				85%	70%	130%
VPH	1	3020046	<10	<10	0.0%	< 10									
Naphthalene	1	3018978	0.02	0.02	0.0%	< 0.01	102%	80%	120%				105%	50%	130%
2-Methylnaphthalene	1	3018978	0.01	0.01	0.0%	< 0.01	103%	80%	120%				99%	50%	130%
1-Methylnaphthalene	1	3018978	<0.01	0.01	0.0%	< 0.01	103%	80%	120%				102%	50%	130%
Acenaphthylene	1	3018978	0.01	0.01	0.0%	< 0.01	102%	80%	120%				94%	50%	130%
Acenaphthene	1	3018978	NA	NA	0.0%	< 0.01	105%	80%	120%				90%	50%	130%
Fluorene	1	3018978	<0.02	0.02	0.0%	< 0.02	102%	80%	120%				95%	50%	130%
Phenanthrene	1	3018978	0.04	0.05	22.2%	< 0.02	98%	80%	120%				92%	60%	130%
Anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				79%	60%	130%
Fluoranthene	1	3018978	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				96%	60%	130%
Pyrene	1	3018978	0.06	0.05	18.2%	< 0.02	100%	80%	120%				98%	60%	130%
Benzo(a)anthracene	1	3018978	0.02	0.02	0.0%	< 0.02	102%	80%	120%				88%	60%	130%
Chrysene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	3018978	0.02	0.02	0.0%	< 0.02	101%	80%	120%				87%	60%	130%
Benzo(k)fluoranthene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Benzo(a)pyrene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				90%	60%	130%
Dibenzo(a,h)anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Nitrobenzene - d5	1	3018978	81	90	10.5%	<	100%	80%	120%				100%	50%	130%
2-Fluorobiphenyl	1	3018978	86	94	8.9%	<	101%	80%	120%				91%	50%	130%
P-Terphenyl - d14	1	3018978	90	99	9.5%	<	98%	80%	120%				88%	50%	130%
LEPH C10-C19	1	3018978	<25	<25	0.0%	< 25									
HEPH C19-C32	1	3018978	<25	<25	0.0%	< 25									
Bromofluorobenzene	1	3020046	103	81.8	23.0%	<	108%	70%	130%				108%	70%	130%
Toluene - d8	1	3020046	124	92.9	29.0%	<	100%	70%	130%				111%	70%	130%
Volatile Organic Compounds in Soil (180-054)															
Chloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				109%	70%	130%
Vinyl Chloride	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				109%	70%	130%
Bromomethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	96%	80%	120%				106%	70%	130%
Chloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
AGAT WORK ORDER: 11V560614
PROJECT NO: 2090-1103
ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Trichlorofluoromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				111%	70%	130%
Acetone	1	3020046	<0.5	<0.5	0.0%	< 0.5	109%	80%	120%				129%	70%	130%
1,1-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				112%	70%	130%
Dichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				113%	70%	130%
2-Butanone (MEK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	102%	80%	120%				111%	70%	130%
trans-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				114%	70%	130%
1,1-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
cis-1,2-Dichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Chloroform	1	3020046	<0.05	<0.05	0.0%	< 0.05	91%	80%	120%				104%	70%	130%
1,2-Dichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				116%	70%	130%
1,1,1-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				113%	70%	130%
Carbon Tetrachloride	1	3020046	<0.025	<0.025	0.0%	< 0.025	101%	80%	120%				112%	70%	130%
1,2-Dichloropropane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Trichloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				115%	70%	130%
Bromodichloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				116%	70%	130%
trans-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				112%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3020046	<0.5	<0.5	0.0%	< 0.5	104%	80%	120%				112%	70%	130%
cis-1,3-Dichloropropene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				113%	70%	130%
1,1,2-Trichloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				114%	70%	130%
Dibromochloromethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				114%	70%	130%
Ethylene Dibromide	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				115%	70%	130%
Tetrachloroethene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				126%	70%	130%
1,1,1,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				114%	70%	130%
Chlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				109%	70%	130%
Bromoform	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				109%	70%	130%
1,1,2,2-Tetrachloroethane	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				108%	70%	130%
1,3-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				105%	70%	130%
1,4-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				105%	70%	130%
1,2-Dichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				106%	70%	130%
1,2,4-Trichlorobenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%				105%	70%	130%
Bromofluorobenzene	1	3020046	107	78	31.0%	<	111%	70%	130%				128%	70%	130%
Dibromofluoromethane	1	3020046	121	80	41.0%	<	111%	70%	130%				129%	70%	130%
Toluene - d8	1	3020046	125	86	37.0%	<	110%	70%	130%				128%	70%	130%
Phenolic Compounds in Soil															
Phenol	127	3020046	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	97%	70%	130%	96%	60%	140%
4-Nitrophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	94%	70%	130%	93%	60%	140%
m&p-Cresol (3&4-methylphenol)	127	3020046	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
o-Cresol (2-methylphenol)	127	3020046	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	96%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 30, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2-Chlorophenol	127	3020046	<0.002	<0.002	0.0%	< 0.002				98%	70%	130%	97%	60%	140%
2,4-Dinitrophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	96%	70%	130%	97%	60%	140%
2-Nitrophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	94%	80%	120%	109%	70%	130%	107%	60%	140%
2,4-Dimethylphenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	97%	70%	130%	95%	60%	140%
2,6-Dichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	95%	60%	140%
4-Chloro-3-methylphenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	82%	80%	120%	99%	70%	130%	92%	60%	140%
2,4-Dichlorophenol	127	3020046	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	100%	70%	130%	94%	60%	140%
4,6-Dinitro-2-methylphenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	93%	80%	120%	100%	70%	130%	93%	60%	140%
2,3,6-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	96%	60%	140%
2,3,4-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	95%	60%	140%
2,4,6-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	84%	80%	120%	99%	70%	130%	97%	60%	140%
2,4,5-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	97%	60%	140%
2,3,5-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				99%	70%	130%	98%	60%	140%
3,4,5-Trichlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	99%	60%	140%
2,3,5,6-Tetrachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	99%	60%	140%
2,3,4,5-Tetrachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005				102%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	127	3020046	<0.005	<0.005	0.0%	< 0.005				101%	70%	130%	98%	60%	140%
Pentachlorophenol	127	3020046	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	102%	70%	130%	99%	60%	140%
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
Benzene	1488	3020066	< 0.005	< 0.005	NA	< 0.005	85%	80%	120%	95%	80%	120%	90%	60%	140%
Toluene	1488	3020066	< 0.05	< 0.05	NA	< 0.05	82%	80%	120%	97%	80%	120%	87%	60%	140%
Ethylbenzene	1488	3020066	< 0.01	< 0.01	NA	< 0.01	81%	80%	120%	107%	80%	120%	91%	60%	140%
Xylenes	1488	3020066	< 0.05	< 0.05	NA	< 0.05	86%	80%	120%	108%	80%	120%	93%	60%	140%
C6 - C10 (F1)	1488	3020066	< 10	< 10	NA	< 10	102%	80%	120%	108%	80%	120%	117%	60%	140%
C10 - C16 (F2)	878	3020066	<10	<10	NA	< 10	115%	80%	120%	90%	80%	120%	119%	60%	140%
C16 - C34 (F3)	878	3020066	108	86	23.0%	< 10	115%	80%	120%	86%	80%	120%	126%	60%	140%
C34 - C50 (F4)	878	3020066	412	408	1.0%	< 10	115%	80%	120%	86%	80%	120%	130%	60%	140%

Certified By: Angela Bond

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER
Sulfide			GRAVIMETRIC
Chloride, Soluble	SOIL 0110; SOIL 0120; INST 0330	SHEPPARD 2007, EATON 2005	CONTINUOUS FLOW ANALYZER
Sodium, Soluble	SOIL 0110; SOIL 0120; INST 0140	SHEPPARD 2007; EATON 2005	ICP/OES

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO 0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO 0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
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TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromochloromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,1,1,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5103	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

AGAT Laboratories

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webearth.agatlabs.com
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Chain of Custody Record

Turnaround Time Required (TAT)

- **Regular TAT** 5 to 7 working days ☒
- **Rush TAT** 24 to 48 hours ☐
- 48 to 72 hours ☐

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

- ☐ Single Sample per page
- ☒ Multiple Samples per page
- ☒ Excel Format Included

Laboratory Use Only

Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614

Notes: DEC 17 AM 8:04

Invoice To: Same as above Yes ☒ No ☐

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- ☒ **BC CSR – Soil**
  - ☐ Agricultural
  - ☒ Industrial
  - ☐ Urban/Park
  - ☐ Commercial
- ☐ **BC CSR – Water**
  - ☐ Drinking Water
  - ☐ Aquatic Life
  - ☐ Irrigation
  - ☐ Livestock
- ☒ **CCME**
  - ☐ Drinking Water
  - ☒ Industrial
  - ☐ Residential/Park
  - ☐ Drinking Water
  - ☐ Commercial
  - ☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1-F4	PAH	sulfides	sodium and chloride	phenols (chlorinated and non-chlorinated)	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3020032	MV-11BH-04M-1	soil	16/12/2011													1			X
033	MV-11BH-04M-2															1			X
034	MV-11BH-04M-3						X									1			
035	MV-11BH-04M-4						X									1			
036	MV-11BH-04M-5						X									1			
037	MV-11BH-04M-6															1			X
038	MV-11BH-03M-1															1			X
043	MV-11BH-03M-2			For samples with 5 jars and only metals analysis, hold the remaining 4 jars												1			X
046	MV-11BH-03M-3				X	X	X	X			X	X	X	X	X	5			
047	MV-11BH-03M-4				X	X	X	X			X	X			X	5			
049	MV-11BH-03M-5						X									5			[redacted]
051	MV-11BH-03M-6															1			X

Samples Relinquished by (print name & sign): Amanda Salway	Date 16/12/2011	Samples Received by (Print name & sign): S. Coles	Date 17-DEC-11 @ 8:04 AM
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date

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NO: 000296

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Chain of Custody Record

Turnaround Time Required (TAT)

- Regular TAT: 5 to 7 working days [X]
- Rush TAT: 24 to 48 hours [ ]
- 48 to 72 hours [ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact:
Address: Same as previous
Phone: _____ Fax:
LSD:
Client Project #:

Report Information

1. Name:
Email: Same as previous
2. Name:
Email:

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614

Notes: DEC 17 AM 8:04

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: _____ Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [X] BC CSR – Soil
  - [ ] Agricultural
  - [X] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [ ] BC CSR – Water
  - [ ] Drinking Water
  - [ ] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [X] Industrial
  - [ ] Residential/Park
  - [ ] Drinking Water
  - [ ] Commercial
  - [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1-F4	PAH	Sulfides	Sodium and Chloride	Phenols (Chlorinated)	CCME F2-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3020052	MW-11BH-02M-1	Soil	16/12/2011	For samples with 5 jars and only metals analysis, hold the other 4 jars													1			X
053	MW-11BH-02M-2																5			X
054	MW-11BH-02M-3						X										5			
055	MW-11BH-02M-4						X										5			
056	MW-11BH-02M-5																5			
057	MW-11BH-02M-6				X	X	X	X			X	X	X	X	X		5			
058	BW-11BH-08M-1				X	X		X			X	X			X		5			
059	BW-11BH-08M-2					X						X				X	2			
060	BW-11BH-08M-3																2			X
062	BW-11BH-08M-4																2			X
063	BW-11BH-08M-5					X						X				X	2			
064	BW-11BH-08M-6																2			X
																	2			X

Samples Relinquished by (print name & sign):	Date: 16/12/2011	Samples Received by (Print name & sign): S. Carens	Date: 17-DEC-11 @ 8:04 AM	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date:	Samples Received by (Print name & sign):	Date:	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date:	Samples Received by (Print name & sign):	Date:	White Copy - AGAT

Page 2 of 3

NO: 000297

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:
Company: Same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Report Information
1. Name: Same as previous
Email:
2. Name:
Email:

Report Format
[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only
Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614
Notes: DEC 17 AM8:04

Invoice To: Same as above Yes [X] No [ ]
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):
[X] **BC CSR – Soil**: [ ] Agricultural [X] Industrial [ ] Urban/Park [ ] Commercial
[ ] **BC CSR – Water**: [ ] Drinking Water [ ] Aquatic Life [ ] Irrigation [ ] Livestock
[X] **CCME**: [ ] Drinking Water [X] Industrial [ ] Residential/Park [ ] Drinking Water [ ] Commercial [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME PHCs F1-F4	Phenols (chlorinated)	PAH chlorinated				Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
30220065	BV-11BH-02M-1	Soil	16/12/2011														4			X
1066	BV-11BH-02M-2	↓	↓		X	X	X				X	X	X				4			X
1067	BV-11BH-02M-3				X	X	X				X	X	X				4			X
1068	BV-11BH-02M-4																4			X
1069	BV-11BH-02M-5																4			X
↓070	BV-11BH-02M-6	↓	↓														4			X

Samples Relinquished by (print name & sign): [signature] Date: 16/12/2011
Samples Received by (Print name & sign): S. Cauzza 17-DEC-11 @ 8:04 AM Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

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Page 3 of 3
NO: 000298

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11V560614

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 17-DEC-11 @ 8:04 AM
Courier: _____
Received by: S. Couzens
Relinquished by: In dropoff Area
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: N/A

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 00296, 297, 298

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 86 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 16-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 23-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 2 + 2 = 2 °C (2) 2 + 4 + 2 = 3 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560784

SOIL ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

TRACE ORGANICS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

DATE REPORTED: Dec 23, 2011

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 11V560784
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 17, 2011 | DATE RECEIVED: Dec 19, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-04M-1 3021236	BV-11BH-04M-3 3021240	BV-Dup9 3021245	BV-11BH-05M-1 3021246	BV-11BH-05M-5 3021252	BV-Dup10 3021254
Antimony	µg/g	40	0.05	0.56	0.66	0.29	0.92	0.48	0.44
Arsenic	µg/g	15	0.1	4.4	7.0	5.4	5.2	11.7	14.6
Barium	µg/g	400	0.5	80.5	57.0	54.7	69.5	81.0	76.8
Beryllium	µg/g	8	0.02	0.24	0.20	0.18	0.21	0.26	0.27
Boron (Hot Water Soluble)	µg/g		0.1	1.2	0.2	0.2	0.3	0.2	0.2
Cadmium	µg/g		0.01	0.37	0.12	0.12	0.22	0.22	0.24
Chromium	µg/g	60	1	37	30	28	29	35	34
Cobalt	µg/g	300	0.1	8.5	8.2	7.9	8.3	10.6	10.4
Copper	µg/g		0.2	27.3	16.7	15.2	24.0	27.6	28.1
Lead	µg/g		0.05	18.6	3.24	2.89	14.8	5.59	6.34
Mercury	µg/g		0.01	0.05	0.03	0.02	0.04	0.04	0.04
Molybdenum	µg/g	40	0.05	2.24	0.47	0.42	0.75	0.58	0.70
Nickel	µg/g	500	0.5	31.1	32.0	31.2	30.1	36.4	36.4
Selenium	µg/g	10	0.1	0.4	0.2	0.3	0.3	0.4	0.4
Silver	µg/g	40	0.05	0.09	0.06	<0.05	0.06	0.07	0.08
Thallium	µg/g		0.05	0.07	0.06	<0.05	0.06	0.08	0.08
Tin	µg/g	300	0.05	1.30	0.32	0.35	0.86	0.49	0.46
Uranium	µg/g	200	0.05	0.54	0.39	0.33	0.43	0.54	0.55
Vanadium	µg/g		1	40	41	40	43	46	44
Zinc	µg/g		1	108	40	41	125	60	59
pH 1:2	pH units		0.1	6.9	7.0	7.1	7.0	7.1	7.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3021236-3021254 Results are based on the dry weight of the sample

Certified By: Marie England

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Certificate of Analysis

AGAT WORK ORDER: 11V560784
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 17, 2011 | DATE RECEIVED: Dec 19, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-07M-2 3021230	BV-11BH-07M-3 3021231	BV-DUP8 3021234	BV-11BH-04M-1 3021236	BV-11BH-04M-3 3021240	BV-11BH-05M-1 3021246	BV-11BH-05M-5 3021252
Benzene	mg/kg	0.030	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.37	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.082	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg	11	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	320	10	<10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	260	10	29	17	13	<10	<10	11	<10
C16 - C34 (F3)	mg/kg	1700	10	206	150	136	314	<10	145	34
C34 - C50 (F4)	mg/kg	3300	10	92	112	80	205	19	524	63
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%		1	21	41	21	14	24	16	24
Surrogate	Unit	Acceptable Limits								
Toluene-d8 (BTEX)	%	50-150		100	99	98	99	98	98	98
Ethylbenzene-d10 (BTEX)	%	50-150		104	76	101	100	98	98	99
o-Terphenyl (F2-F4)	%	50-150		140	125	129	120	121	131	120

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3021230-3021252 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

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Certificate of Analysis

AGAT WORK ORDER: 11V560784
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 17, 2011 | DATE RECEIVED: Dec 19, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-07M-2 3021230	BV-11BH-07M-3 3021231	BV-DUP8 3021234	BV-11BH-04M-1 3021236	BV-11BH-04M-3 3021240	BV-11BH-05M-1 3021246	BV-11BH-05M-5 3021252
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	µg/g	7	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VPH	µg/g	200	10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/g	50	0.01	0.02	0.07	0.02	0.02	<0.01	<0.01	0.01
2-Methylnaphthalene	µg/g		0.01	0.14	0.05	0.14	0.01	<0.01	<0.01	<0.01
1-Methylnaphthalene	µg/g		0.01	0.09	0.03	0.08	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	µg/g		0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.02
Acenaphthene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	µg/g		0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	µg/g	50	0.02	0.07	0.05	0.07	0.04	<0.02	<0.02	0.05
Anthracene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02
Fluoranthene	µg/g		0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	0.29
Pyrene	µg/g	100	0.02	<0.02	0.04	0.02	0.06	<0.02	<0.02	0.38
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.13
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.19
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.11
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.15
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
LEPH C10-C19	µg/g	2000	25	30	43	<25	<25	<25	<25	<25
HEPH C19-C32	µg/g	5000	25	110	220	33	170	<25	54	78

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Certificate of Analysis

AGAT WORK ORDER: 11V560784
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 17, 2011 | DATE RECEIVED: Dec 19, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	BV-11BH-07M-2 3021230	BV-11BH-07M-3 3021231	BV-DUP8 3021234	BV-11BH-04M-1 3021236	BV-11BH-04M-3 3021240	BV-11BH-05M-1 3021246	BV-11BH-05M-5 3021252
Nitrobenzene - d5	%	50-130	96	100	100	100	94	91	120
2-Fluorobiphenyl	%	50-130	86	96	91	97	91	87	91
P-Terphenyl - d14	%	50-130	86	95	89	99	89	88	92
Bromofluorobenzene	%	70-130	95.5	98.1	97.2	111	101	99.2	103
Toluene - d8	%	70-130	114	122	116	137	120	116	122

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3021230-3021252 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

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AGAT WORK ORDER: 11V560784
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 17, 2011 | DATE RECEIVED: Dec 19, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-04M-1 3021236	BV-11BH-04M-3 3021240	BV-Dup9 3021245	BV-11BH-05M-1 3021246	BV-11BH-05M-5 3021252
Phenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Surrogate	Unit	Acceptable Limits						
2-Fluorophenol	%	50-150		113	110	105	121	111
2,4,6-Tribromophenol	%	50-150		113	109	105	105	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3021236-3021252 Results relate only to the items tested.

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	3020034	0.44	0.43	2.3%	< 0.05	96%	70%	130%	93%	90%	110%	96%	80%	120%	
Arsenic	3020034	4.0	3.9	2.5%	< 0.1	102%	70%	130%	100%	90%	110%	103%	80%	120%	
Barium	3020034	154	157	1.9%	< 0.5	89%	70%	130%	97%	90%	110%	97%	80%	120%	
Beryllium	3020034	0.45	0.47	4.3%	< 0.02	91%	70%	130%	99%	90%	110%	99%	80%	120%	
Boron (Hot Water Soluble)	3020034	0.1	< 0.1	NA	< 0.1				109%	90%	110%	113%	80%	120%	
Cadmium	3020034	0.09	0.1	10.5%	< 0.01				97%	90%	110%	98%	80%	120%	
Chromium	3020034	50	51	2.0%	< 1	93%	70%	130%	101%	90%	110%	100%	80%	120%	
Cobalt	3020034	10.5	10.9	3.7%	< 0.1	89%	70%	130%	101%	90%	110%	102%	80%	120%	
Copper	3020034	16.0	15.9	0.6%	< 0.2	85%	70%	130%	101%	90%	110%	102%	80%	120%	
Lead	3020034	10.0	10.4	3.9%	< 0.05	84%	70%	130%	93%	90%	110%	96%	80%	120%	
Mercury	3020034	0.04	0.05	22.2%	< 0.01	110%	70%	130%	94%	90%	110%	93%	80%	120%	
Molybdenum	3020034	1.24	1.13	9.3%	< 0.05	93%	70%	130%	98%	90%	110%	100%	80%	120%	
Nickel	3020034	32.9	33.4	1.5%	< 0.5	89%	70%	130%	101%	90%	110%	101%	80%	120%	
Selenium	3020034	0.6	0.6	0.0%	< 0.1				106%	90%	110%	100%	80%	120%	
Silver	3020034	< 0.05			< 0.05				98%	90%	110%	96%	80%	120%	
Thallium	3020034	0.17	0.18	5.7%	< 0.05				96%	90%	110%	99%	80%	120%	
Tin	3020034	1.22	1.59	26.3%	< 0.05				105%	90%	110%	99%	80%	120%	
Uranium	3020034	1.13	1.08		< 0.05		0%	0%	94%	90%	110%	92%	80%	120%	
Vanadium	3020034	63	66	4.7%	< 1	95%	70%	130%	102%	90%	110%	101%	80%	120%	
Zinc	3020034	73	71	2.8%	< 1	94%	70%	130%	107%	90%	110%	106%	80%	120%	
pH 1:2	3021236	6.9	6.6	4.4%	< 0.1				100%	95%	105%	100%	90%	110%	

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 23, 2011

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3020046	<0.1	<0.1	0.0%	< 0.1	99%	80%	120%				91%	70%	130%
Benzene	1	3020046	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				93%	70%	130%
Toluene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				90%	70%	130%
Ethylbenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				85%	70%	130%
m&p-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				79%	70%	130%
o-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				84%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				85%	70%	130%
VPH	1	3020046	<10	<10	0.0%	< 10									
Naphthalene	1	3018978	0.02	0.02	0.0%	< 0.01	102%	80%	120%				105%	50%	130%
2-Methylnaphthalene	1	3018978	0.01	0.01	0.0%	< 0.01	103%	80%	120%				99%	50%	130%
1-Methylnaphthalene	1	3018978	<0.01	0.01	0.0%	< 0.01	103%	80%	120%				102%	50%	130%
Acenaphthylene	1	3018978	0.01	0.01	0.0%	< 0.01	102%	80%	120%				94%	50%	130%
Acenaphthene	1	3018978	NA	NA	0.0%	< 0.01	105%	80%	120%				90%	50%	130%
Fluorene	1	3018978	<0.02	0.02	0.0%	< 0.02	102%	80%	120%				95%	50%	130%
Phenanthrene	1	3018978	0.04	0.05	22.0%	< 0.02	98%	80%	120%				92%	60%	130%
Anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				79%	60%	130%
Fluoranthene	1	3018978	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				96%	60%	130%
Pyrene	1	3018978	0.06	0.05	18.0%	< 0.02	100%	80%	120%				98%	60%	130%
Benzo(a)anthracene	1	3018978	0.02	0.02	0.0%	< 0.02	102%	80%	120%				88%	60%	130%
Chrysene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	3018978	0.02	0.02	0.0%	< 0.02	101%	80%	120%				87%	60%	130%
Benzo(k)fluoranthene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Benzo(a)pyrene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				90%	60%	130%
Dibenzo(a,h)anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Nitrobenzene - d5	1	3018978	81	90	11.0%	<	100%	80%	120%				100%	50%	130%
2-Fluorobiphenyl	1	3018978	86	94	9.0%	<	101%	80%	120%				91%	50%	130%
P-Terphenyl - d14	1	3018978	90	99	10.0%	<	98%	80%	120%				88%	50%	130%
LEPH C10-C19	1	3018978	<25	<25	0.0%	< 25									
HEPH C19-C32	1	3018978	<25	<25	0.0%	< 25									
Bromofluorobenzene	1	3020046	103	81.8	23.0%	<	108%	70%	130%				108%	70%	130%
Toluene - d8	1	3020046	124	92.9	29.0%	<	100%	70%	130%				111%	70%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
C10 - C16 (F2)	1381	3021234	13	37	96.0%	< 10	108%	80%	120%	95%	80%	120%	121%	60%	140%
C16 - C34 (F3)	1381	3021234	136	84	47.0%	< 10	108%	80%	120%	105%	80%	120%	116%	60%	140%
C34 - C50 (F4)	1381	3021234	80	58	32.0%	< 10	108%	80%	120%	112%	80%	120%	116%	60%	140%
Phenolic Compounds in Soil															

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Phenol	127	3021236	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	97%	70%	130%	96%	60%	140%
4-Nitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	94%	70%	130%	93%	60%	140%
m&p-Cresol (3&4-methylphenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
o-Cresol (2-methylphenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	95%	60%	140%
2-Chlorophenol	127	3021236	<0.002	<0.002	0.0%	< 0.002				98%	70%	130%	97%	60%	140%
2,4-Dinitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	96%	70%	130%	95%	60%	140%
2-Nitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	94%	80%	120%	109%	70%	130%	107%	60%	140%
2,4-Dimethylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	97%	70%	130%	95%	60%	140%
2,6-Dichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	94%	60%	140%
4-Chloro-3-methylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	82%	80%	120%	99%	70%	130%	100%	60%	140%
2,4-Dichlorophenol	127	3021236	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	100%	70%	130%	95%	60%	140%
4,6-Dinitro-2-methylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	93%	80%	120%	100%	70%	130%	102%	60%	140%
2,3,6-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	96%	60%	140%
2,4,6-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	84%	80%	120%	99%	70%	130%	98%	60%	140%
2,4,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
2,3,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			99%	70%	130%	98%	60%	140%
3,4,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			102%	70%	130%	100%	60%	140%
2,3,5,6-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			101%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			102%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			101%	70%	130%	98%	60%	140%
Pentachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	102%	70%	130%	100%	60%	140%

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mountain St
Vancouver, BC V6R 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-110J

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 2°C
AGAT Job Number: 11V560784

Notes:
DEC 19 AM8:58

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[X] BC CSR – Soil
[ ] Agricultural
[X] Industrial
[ ] Urban/Park
[ ] Commercial

[ ] BC CSR – Water
[ ] Drinking Water
[ ] Aquatic Life
[ ] Irrigation
[ ] Livestock

[X] CCME
[ ] Drinking Water
[X] Industrial
[ ] Residential/Park
[ ] Drinking Water
[ ] Commercial
[ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1-F4	PAH	[redacted]	Phenols (Chlorinated Non-Chlorinated)		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
302228	BV-11BH-07M-1	Soil	17/12/2011													2	[redacted]		X
230	BV-11BH-07M-2				X	X					X	X				2			
231	BV-11BH-07M-3				X	X					X	X				2			
232	BV-11BH-07M-4															2			X
233	BV-11BH-07M-5															2			X
	~~[redacted]~~																		
234	BV-DUP8				X	X					X	X				2			
236	BV-11BH-04M-1				X	X	X				X	X		X		4			
237	BV-11BH-04M-2															4			X
240	BV-11BH-04M-3				X	X	X				X	X		X		4			
242	BV-11BH-04M-4															3			X
243	BV-11BH-04M-5															4			X

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign): S. CORDS	Date 19-DEC-11 @8:58 am	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 1 of 2
NO: 000299

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

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Chain of Custody Record

Ph.: 778.452.4000 · Fax: 778.452.7074

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days ☒
Rush TAT 24 to 48 hours ☐
48 to 72 hours ☐

Date Required: ____
Please contact laboratory if Rush is required

Report To:

Company: same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Report Information

1. Name: same as previous
Email:
2. Name:
Email:

Report Format

☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Laboratory Use Only
Arrival Temperature: 2°C
AGAT Job Number: 11V560784

Notes:
DEC 19 AM 8:58

Invoice To: Same as above Yes ☒ No ☐

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

☒ **BC CSR – Soil**
☐ Agricultural
☒ Industrial
☐ Urban/Park
☐ Commercial

☐ **BC CSR – Water**
☐ Drinking Water
☐ Aquatic Life
☐ Irrigation
☐ Livestock

☒ **CCME**
☐ Drinking Water
☐ Residential/Park
☐ Commercial
☒ Industrial
☐ Drinking Water
☐ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F1-F4	PAH	phenols (chlorinated and non-chlorinated)			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3021244	BV-11BH-04M-6	Soil	17/12/2011														4			X
245	BV-DUP9	↓	↓				X							X			2			
246	BV-11BH-05M-1				X	X	X					X	X	X			4			
249	BV-11BH-05M-2																4			X
250	BV-11BH-05M-3																4			X
251	BV-11BH-05M-4																4			X
252	BV-11BH-05M-5				X	X	X					X	X	X			4			
253	BV-11BH-05M-6																4			X
254	BV-DUP10	↓	↓				X										1			

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
[signature]	17/12/2011	Scan [signature] 19-DEC-11 @ 8:58 am	
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 2 of 2

NO: 000143

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11V560784

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 19-DEC-11
Courier: _____
Received by: S. Cowens
Relinquished by: Amanda Salway
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: No

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 00029995, 000143

SAMPLE QUANTITIES:
Coolers: 2 Bottles/Jars: 62 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 17-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 24-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 3 + 4 = 3 °C (2) 0 + 2 + 1 = 1 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

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Burnaby, British Columbia
CANADA V5J 0B6
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FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAILAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560784

SOIL ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

TRACE ORGANICS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

DATE REPORTED: Dec 23, 2011

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 11V560784
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia Metals Schedule 4 and 5 (181-588)

DATE SAMPLED: Dec 17, 2011 | DATE RECEIVED: Dec 19, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-04M-1 3021236	BV-11BH-04M-3 3021240	BV-Dup9 3021245	BV-11BH-05M-1 3021246	BV-11BH-05M-5 3021252	BV-Dup10 3021254
Antimony	µg/g	40	0.05	0.56	0.66	0.29	0.92	0.48	0.44
Arsenic	µg/g	12	0.1	4.4	7.0	5.4	5.2	11.7	14.6
Barium	µg/g	2000	0.5	80.5	57.0	54.7	69.5	81.0	76.8
Beryllium	µg/g	8	0.02	0.24	0.20	0.18	0.21	0.26	0.27
Boron (Hot Water Soluble)	µg/g	1.4	0.1	1.2	0.2	0.2	0.3	0.2	0.2
Cadmium	µg/g	22	0.01	0.37	0.12	0.12	0.22	0.22	0.24
Chromium	µg/g	87	1	37	30	28	29	35	34
Cobalt	µg/g	300	0.1	8.5	8.2	7.9	8.3	10.6	10.4
Copper	µg/g	91	0.2	27.3	16.7	15.2	24.0	27.6	28.1
Lead	µg/g	600	0.05	18.6	3.24	2.89	14.8	5.59	6.34
Mercury	µg/g	50	0.01	0.05	0.03	0.02	0.04	0.04	0.04
Molybdenum	µg/g	40	0.05	2.24	0.47	0.42	0.75	0.58	0.70
Nickel	µg/g	50	0.5	31.1	32.0	31.2	30.1	36.4	36.4
Selenium	µg/g	2.9	0.1	0.4	0.2	0.3	0.3	0.4	0.4
Silver	µg/g	40	0.05	0.09	0.06	<0.05	0.06	0.07	0.08
Thallium	µg/g	1	0.05	0.07	0.06	<0.05	0.06	0.08	0.08
Tin	µg/g	300	0.05	1.30	0.32	0.35	0.86	0.49	0.46
Uranium	µg/g	300	0.05	0.54	0.39	0.33	0.43	0.54	0.55
Vanadium	µg/g	130	1	40	41	40	43	46	44
Zinc	µg/g	360	1	108	40	41	125	60	59
pH 1:2	pH units		0.1	6.9	7.0	7.1	7.0	7.1	7.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (IL) (Van)
3021236-3021254 Results are based on the dry weight of the sample

Certified By: Marie England

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 11V560784
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)

DATE SAMPLED: Dec 17, 2011 | DATE RECEIVED: Dec 19, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-07M-2 3021230	BV-11BH-07M-3 3021231	BV-DUP8 3021234	BV-11BH-04M-1 3021236	BV-11BH-04M-3 3021240	BV-11BH-05M-1 3021246	BV-11BH-05M-5 3021252
Benzene	mg/kg	0.030	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	mg/kg	0.37	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	mg/kg	0.082	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	mg/kg	11	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (F1)	mg/kg	320	10	<10	<10	<10	<10	<10	<10	<10
C6 - C10 (F1 minus BTEX)	mg/kg		10	<10	<10	<10	<10	<10	<10	<10
C10 - C16 (F2)	mg/kg	260	10	29	17	13	<10	<10	11	<10
C16 - C34 (F3)	mg/kg	1700	10	206	150	136	314	<10	145	34
C34 - C50 (F4)	mg/kg	3300	10	92	112	80	205	19	524	63
Gravimetric Heavy Hydrocarbons	mg/kg		1000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Moisture Content	%		1	21	41	21	14	24	16	24
Surrogate	Unit	Acceptable Limits								
Toluene-d8 (BTEX)	%	50-150		100	99	98	99	98	98	98
Ethylbenzene-d10 (BTEX)	%	50-150		104	76	101	100	98	98	99
o-Terphenyl (F2-F4)	%	50-150		140	125	129	120	121	131	120

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (Ind,C)

3021230-3021252 Results are based on the dry weight of the sample.
The C6-C10 (F1) fraction is calculated using toluene response factor.
The C10 - C16 (F2), C16 - C34 (F3), and C34 - C50 (F4) fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons (F4g) are not included in and cannot be added to the Total C6-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
Total C6 - C50 results are corrected for BTEX and PAH contributions (if requested).
Quality control data is available upon request.
Assistance in the interpretation of data is available upon request.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
The chromatogram returned to baseline by the retention time of nC50.
Extraction and holding times were met for this sample.

Certified By:

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AGAT WORK ORDER: 11V560784
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 17, 2011 | DATE RECEIVED: Dec 19, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-07M-2 3021230	BV-11BH-07M-3 3021231	BV-DUP8 3021234	BV-11BH-04M-1 3021236	BV-11BH-04M-3 3021240	BV-11BH-05M-1 3021246	BV-11BH-05M-5 3021252
Methyl tert-butyl ether (MTBE)	µg/g	700	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzene	µg/g	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	2.5	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	µg/g	7	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m&p-Xylene	µg/g	20	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
o-Xylene	µg/g	20	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	µg/g	50	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VPH	µg/g	200	10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/g	50	0.01	0.02	0.07	0.02	0.02	<0.01	<0.01	0.01
2-Methylnaphthalene	µg/g		0.01	0.14	0.05	0.14	0.01	<0.01	<0.01	<0.01
1-Methylnaphthalene	µg/g		0.01	0.09	0.03	0.08	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	µg/g		0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.02
Acenaphthene	µg/g		0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	µg/g		0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.02
Phenanthrene	µg/g	50	0.02	0.07	0.05	0.07	0.04	<0.02	<0.02	0.05
Anthracene	µg/g		0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02
Fluoranthene	µg/g		0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	0.29
Pyrene	µg/g	100	0.02	<0.02	0.04	0.02	0.06	<0.02	<0.02	0.38
Benzo(a)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.13
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.19
Benzo(b)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.11
Benzo(k)fluoranthene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.15
Indeno(1,2,3-c,d)pyrene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06
Dibenzo(a,h)anthracene	µg/g	10	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02
Benzo(g,h.i)perylene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
LEPH C10-C19	µg/g	2000	25	30	43	<25	<25	<25	<25	<25
HEPH C19-C32	µg/g	5000	25	110	220	33	170	<25	54	78

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Certificate of Analysis

AGAT WORK ORDER: 11V560784
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 17, 2011 | DATE RECEIVED: Dec 19, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	BV-11BH-07M-2 3021230	BV-11BH-07M-3 3021231	BV-DUP8 3021234	BV-11BH-04M-1 3021236	BV-11BH-04M-3 3021240	BV-11BH-05M-1 3021246	BV-11BH-05M-5 3021252
Nitrobenzene - d5	%	50-130	96	100	100	100	94	91	120
2-Fluorobiphenyl	%	50-130	86	96	91	97	91	87	91
P-Terphenyl - d14	%	50-130	86	95	89	99	89	88	92
Bromofluorobenzene	%	70-130	95.5	98.1	97.2	111	101	99.2	103
Toluene - d8	%	70-130	114	122	116	137	120	116	122

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)

3021230-3021252 Results are based on dry weight of sample.
VPH results have been corrected for BTEXS contributions.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

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AGAT WORK ORDER: 11V560784
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Soil

DATE SAMPLED: Dec 17, 2011 | DATE RECEIVED: Dec 19, 2011 | DATE REPORTED: Dec 23, 2011 | SAMPLE TYPE: Soil

Parameter	Unit	G / S	RDL	BV-11BH-04M-1 3021236	BV-11BH-04M-3 3021240	BV-Dup9 3021245	BV-11BH-05M-1 3021246	BV-11BH-05M-5 3021252
Phenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
o-Cresol (2-methylphenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Chlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002
2,4-Dinitrophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/kg	10	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,6-Dichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4-Chloro-3-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4-Dichlorophenol	mg/kg		0.002	<0.002	<0.002	<0.002	<0.002	<0.002
4,6-Dinitro-2-methylphenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,6-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
3,4,5-Trichlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,5,6-Tetrachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,3,4,5-Tetrachlorophenol	mg/kg	5	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/kg		0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Surrogate	Unit	Acceptable Limits						
2-Fluorophenol	%	50-150		113	110	105	121	111
2,4,6-Tribromophenol	%	50-150		113	109	105	105	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (IL-G) (Van)
3021236-3021252 Results relate only to the items tested.

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Soil Analysis

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia Metals Schedule 4 and 5 (181-588)															
Antimony	3020034	0.44	0.43	2.3%	< 0.05	96%	70%	130%	93%	90%	110%	96%	80%	120%	
Arsenic	3020034	4.0	3.9	2.5%	< 0.1	102%	70%	130%	100%	90%	110%	103%	80%	120%	
Barium	3020034	154	157	1.9%	< 0.5	89%	70%	130%	97%	90%	110%	97%	80%	120%	
Beryllium	3020034	0.45	0.47	4.3%	< 0.02	91%	70%	130%	99%	90%	110%	99%	80%	120%	
Boron (Hot Water Soluble)	3020034	0.1	< 0.1	NA	< 0.1				109%	90%	110%	113%	80%	120%	
Cadmium	3020034	0.09	0.1	10.5%	< 0.01				97%	90%	110%	98%	80%	120%	
Chromium	3020034	50	51	2.0%	< 1	93%	70%	130%	101%	90%	110%	100%	80%	120%	
Cobalt	3020034	10.5	10.9	3.7%	< 0.1	89%	70%	130%	101%	90%	110%	102%	80%	120%	
Copper	3020034	16.0	15.9	0.6%	< 0.2	85%	70%	130%	101%	90%	110%	102%	80%	120%	
Lead	3020034	10.0	10.4	3.9%	< 0.05	84%	70%	130%	93%	90%	110%	96%	80%	120%	
Mercury	3020034	0.04	0.05	22.2%	< 0.01	110%	70%	130%	94%	90%	110%	93%	80%	120%	
Molybdenum	3020034	1.24	1.13	9.3%	< 0.05	93%	70%	130%	98%	90%	110%	100%	80%	120%	
Nickel	3020034	32.9	33.4	1.5%	< 0.5	89%	70%	130%	101%	90%	110%	101%	80%	120%	
Selenium	3020034	0.6	0.6	0.0%	< 0.1				106%	90%	110%	100%	80%	120%	
Silver	3020034	< 0.05			< 0.05				98%	90%	110%	96%	80%	120%	
Thallium	3020034	0.17	0.18	5.7%	< 0.05				96%	90%	110%	99%	80%	120%	
Tin	3020034	1.22	1.59	26.3%	< 0.05				105%	90%	110%	99%	80%	120%	
Uranium	3020034	1.13	1.08		< 0.05		0%	0%	94%	90%	110%	92%	80%	120%	
Vanadium	3020034	63	66	4.7%	< 1	95%	70%	130%	102%	90%	110%	101%	80%	120%	
Zinc	3020034	73	71	2.8%	< 1	94%	70%	130%	107%	90%	110%	106%	80%	120%	
pH 1:2	3021236	6.9	6.6	4.4%	< 0.1				100%	95%	105%	100%	90%	110%	

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 23, 2011

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Soil															
Methyl tert-butyl ether (MTBE)	1	3020046	<0.1	<0.1	0.0%	< 0.1	99%	80%	120%				91%	70%	130%
Benzene	1	3020046	<0.02	<0.02	0.0%	< 0.02	100%	80%	120%				93%	70%	130%
Toluene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				90%	70%	130%
Ethylbenzene	1	3020046	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%				85%	70%	130%
m&p-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	103%	80%	120%				79%	70%	130%
o-Xylene	1	3020046	<0.05	<0.05	0.0%	< 0.05	104%	80%	120%				84%	70%	130%
Styrene	1	3020046	<0.05	<0.05	0.0%	< 0.05	99%	80%	120%				85%	70%	130%
VPH	1	3020046	<10	<10	0.0%	< 10									
Naphthalene	1	3018978	0.02	0.02	0.0%	< 0.01	102%	80%	120%				105%	50%	130%
2-Methylnaphthalene	1	3018978	0.01	0.01	0.0%	< 0.01	103%	80%	120%				99%	50%	130%
1-Methylnaphthalene	1	3018978	<0.01	0.01	0.0%	< 0.01	103%	80%	120%				102%	50%	130%
Acenaphthylene	1	3018978	0.01	0.01	0.0%	< 0.01	102%	80%	120%				94%	50%	130%
Acenaphthene	1	3018978	NA	NA	0.0%	< 0.01	105%	80%	120%				90%	50%	130%
Fluorene	1	3018978	<0.02	0.02	0.0%	< 0.02	102%	80%	120%				95%	50%	130%
Phenanthrene	1	3018978	0.04	0.05	22.0%	< 0.02	98%	80%	120%				92%	60%	130%
Anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	103%	80%	120%				79%	60%	130%
Fluoranthene	1	3018978	<0.05	<0.05	0.0%	< 0.05	100%	80%	120%				96%	60%	130%
Pyrene	1	3018978	0.06	0.05	18.0%	< 0.02	100%	80%	120%				98%	60%	130%
Benzo(a)anthracene	1	3018978	0.02	0.02	0.0%	< 0.02	102%	80%	120%				88%	60%	130%
Chrysene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	3018978	0.02	0.02	0.0%	< 0.02	101%	80%	120%				87%	60%	130%
Benzo(k)fluoranthene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				91%	60%	130%
Benzo(a)pyrene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				90%	60%	130%
Indeno(1,2,3-c,d)pyrene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				90%	60%	130%
Dibenzo(a,h)anthracene	1	3018978	<0.02	<0.02	0.0%	< 0.02	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	3018978	<0.05	<0.05	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Nitrobenzene - d5	1	3018978	81	90	11.0%	<	100%	80%	120%				100%	50%	130%
2-Fluorobiphenyl	1	3018978	86	94	9.0%	<	101%	80%	120%				91%	50%	130%
P-Terphenyl - d14	1	3018978	90	99	10.0%	<	98%	80%	120%				88%	50%	130%
LEPH C10-C19	1	3018978	<25	<25	0.0%	< 25									
HEPH C19-C32	1	3018978	<25	<25	0.0%	< 25									
Bromofluorobenzene	1	3020046	103	81.8	23.0%	<	108%	70%	130%				108%	70%	130%
Toluene - d8	1	3020046	124	92.9	29.0%	<	100%	70%	130%				111%	70%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Soil (CWS)															
C10 - C16 (F2)	1381	3021234	13	37	96.0%	< 10	108%	80%	120%	95%	80%	120%	121%	60%	140%
C16 - C34 (F3)	1381	3021234	136	84	47.0%	< 10	108%	80%	120%	105%	80%	120%	116%	60%	140%
C34 - C50 (F4)	1381	3021234	80	58	32.0%	< 10	108%	80%	120%	112%	80%	120%	116%	60%	140%
Phenolic Compounds in Soil															

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Phenol	127	3021236	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	97%	70%	130%	96%	60%	140%
4-Nitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	94%	70%	130%	93%	60%	140%
m&p-Cresol (3&4-methylphenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
o-Cresol (2-methylphenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	95%	60%	140%
2-Chlorophenol	127	3021236	<0.002	<0.002	0.0%	< 0.002				98%	70%	130%	97%	60%	140%
2,4-Dinitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	96%	70%	130%	95%	60%	140%
2-Nitrophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	94%	80%	120%	109%	70%	130%	107%	60%	140%
2,4-Dimethylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	83%	80%	120%	97%	70%	130%	95%	60%	140%
2,6-Dichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	94%	60%	140%
4-Chloro-3-methylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	82%	80%	120%	99%	70%	130%	100%	60%	140%
2,4-Dichlorophenol	127	3021236	<0.002	<0.002	0.0%	< 0.002	84%	80%	120%	100%	70%	130%	95%	60%	140%
4,6-Dinitro-2-methylphenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	93%	80%	120%	100%	70%	130%	102%	60%	140%
2,3,6-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				96%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				97%	70%	130%	96%	60%	140%
2,4,6-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	84%	80%	120%	99%	70%	130%	98%	60%	140%
2,4,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005				98%	70%	130%	96%	60%	140%
2,3,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			99%	70%	130%	98%	60%	140%
3,4,5-Trichlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			102%	70%	130%	100%	60%	140%
2,3,5,6-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			101%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			102%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	127	3021236	<0.005	<0.005	0.0%	< 0.005	0%			101%	70%	130%	98%	60%	140%
Pentachlorophenol	127	3021236	<0.005	<0.005	0.0%	< 0.005	90%	80%	120%	102%	70%	130%	100%	60%	140%

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Arsenic	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Barium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Beryllium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-181-6101, LAB-181-4011	Modified from SSMA 2ND ED. CH 9 and SM 3120 B	ICP/OES
Cadmium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Chromium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Cobalt	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Copper	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Lead	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Mercury	MET-181-6100, LAB-181-4008	Mod BC MOE Sec C (SALM) & BC MOE (Mercury)	CV/AA
Molybdenum	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Nickel	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Selenium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Silver	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Thallium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Tin	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Uranium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6020A	ICP-MS
Vanadium	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
Zinc	MET-181-6102, LAB-181-4008	BC MOE Lab Manual C (SALM) and EPA 6010C	ICP-MS
pH 1:2	INOR-181-6031	BC MOE Lab Manual	PH METER

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0570	EPA SW-846 8260	GC/MS
Toluene	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0570	EPA SW-846 8260	GC/MS
Xylenes	TO 0570	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0570	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0570	CCME Tier 1 Method	GC/FID
C10 - C16 (F2)	TO-0560	CCME Tier 1 Method	GC/FID
C16 - C34 (F3)	TO-0560	CCME Tier 1 Method	GC/FID
C34 - C50 (F4)	TO 0560	CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	TO 0560	CCME Tier 1 Method	GC/FID
Moisture Content	TO 0560	CCME Tier 1 Method	GRAVIMETRIC
Toluene-d8 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
Ethylbenzene-d10 (BTEX)	TO 0570	EPA SW-846 8260	GC/MS
o-Terphenyl (F2-F4)	TO 0560	CCME Tier 1 Method	GC/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Benzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Ethylbenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
m&p-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
o-Xylene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Styrene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
VPH	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Naphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
1-Methylnaphthalene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Acenaphthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluorene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Phenanthrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chrysene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(b)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(k)fluoranthene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(a)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Indeno(1,2,3-c,d)pyrene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Benzo(g,h.i)perylene	ORG-180-5102	Modified from BC MOE Lab Manual Section D (PAH)	GC/MS
Nitrobenzene - d5	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
2-Fluorobiphenyl	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
P-Terphenyl - d14	ORG-180-5102	modified from BC MOE Lab Manual Section D (PAH)	GC/MS
LEPH C10-C19	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5101	Modified from BCMOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Toluene - d8	ORG-180-5100	Modified from BC MOE Lab Manual Sec D (BETX, VPH)	GC/MS/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mountain St
Vancouver, BC V6R 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-110J

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 2°C
AGAT Job Number: 11V560784

Notes:
DEC 19 AM8:58

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[X] BC CSR – Soil
[ ] Agricultural
[X] Industrial
[ ] Urban/Park
[ ] Commercial

[ ] BC CSR – Water
[ ] Drinking Water
[ ] Aquatic Life
[ ] Irrigation
[ ] Livestock

[X] CCME
[ ] Drinking Water
[X] Industrial
[ ] Residential/Park
[ ] Drinking Water
[ ] Commercial
[ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1-F4	PAH	[redacted]	Phenols (Chlorinated Non-Chlorinated)		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
302228	BV-11BH-07M-1	Soil	17/12/2011													2	[redacted]		X
230	BV-11BH-07M-2				X	X					X	X				2			
231	BV-11BH-07M-3				X	X					X	X				2			
232	BV-11BH-07M-4															2			X
233	BV-11BH-07M-5															2			X
	~~[redacted]~~																		
234	BV-DUP8				X	X					X	X				2			
236	BV-11BH-04M-1				X	X	X				X	X		X		4			
237	BV-11BH-04M-2															4			X
240	BV-11BH-04M-3				X	X	X				X	X		X		4			
242	BV-11BH-04M-4															3			X
243	BV-11BH-04M-5															4			X

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign): S. CORDS	Date 19-DEC-11 @8:58 am	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT

Page 1 of 2
NO: 000299

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

120 - 8600 Glenlyon Parkway
Burnaby, BC,
V5J 0B6
webearth.agatlabs.com
Ph.: 778.452.4000 · Fax: 778.452.7074

Chain of Custody Record

Report To:
Company: same as previous
Contact:
Address:
Phone: Fax:
LSD:
Client Project #:

Invoice To: Same as above Yes ☒ No ☐
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Report Information
1. Name: same as previous
Email:
2. Name:
Email:

Regulatory Requirements (Check):
☒ **BC CSR – Soil**
☐ Agricultural
☒ Industrial
☐ Urban/Park
☐ Commercial

☐ **BC CSR – Water**
☐ Drinking Water
☐ Aquatic Life
☐ Irrigation
☐ Livestock

☒ **CCME**
☐ Drinking Water
☐ Residential/Park
☐ Commercial
☒ Industrial
☐ Drinking Water
☐ FWAL

Report Format
☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Turnaround Time Required (TAT)
Regular TAT 5 to 7 working days ☒
Rush TAT 24 to 48 hours ☐
48 to 72 hours ☐
Date Required:
Please contact laboratory if Rush is required

Laboratory Use Only
Arrival Temperature: 2°C
AGAT Job Number: 11V560784
Notes:
DEC 19 AM 8:58

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F1-F4	PAH	phenols (chlorinated and non-chlorinated)			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3021244	BV-11BH-04M-6	Soil	17/12/2011														4			X
245	BV-DUP9	↓	↓				X							X			2			
246	BV-11BH-05M-1	↓	↓		X	X	X					X	X	X			4			
249	BV-11BH-05M-2	↓	↓														4			X
250	BV-11BH-05M-3	↓	↓														4			X
251	BV-11BH-05M-4	↓	↓														4			X
252	BV-11BH-05M-5	↓	↓		X	X	X					X	X	X			4			
253	BV-11BH-05M-6	↓	↓														4			X
254	BV-DUP10	↓	↓				X										1			

Samples Relinquished by (print name & sign): [signature] Date: 17/12/2011
Samples Received by (Print name & sign): 5 cans [signature] 19-DEC-11 @ 8:58am Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 2 of 2

NO: 000143

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11V560784

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 19-DEC-11
Courier: _____
Received by: S. Cowens
Relinquished by: Amanda Salway
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: No

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 00029995, 000143

SAMPLE QUANTITIES:
Coolers: 2 Bottles/Jars: 62 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 17-DEC-11
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 24-DEC-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 3 + 4 = 3 °C (2) 0 + 2 + 1 = 1 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

APPENDIX F

LABORATORY REPORTS - GROUNDWATER

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V570940

TRACE ORGANICS REVIEWED BY: Elena Gorobets, Senior Analyst

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Feb 08, 2012

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 12V570940
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 01, 2012 | DATE RECEIVED: Feb 01, 2012 | DATE REPORTED: Feb 08, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-04M 3091736	BV-11BH-05M 3091778	BV-11BH-03M 3091782
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits				
Toluene-d8 (BTEX)	%	50-150		100	102	102
o-Terphenyl (F2-F4)	%	50-150		108	108	108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3091736-3091782 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By: Elena Gorobets

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 12V570940
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 01, 2012 | DATE RECEIVED: Feb 01, 2012 | DATE REPORTED: Feb 08, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-04M 3091736	BV-11BH-05M 3091778	BV-11BH-03M 3091782
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1	<1	<1
Styrene	µg/L	720	0.5	<0.5	<0.5	<0.5
VPH	µg/L	1500	100	<100	<100	<100
Naphthalene	µg/L	10	0.05	<0.05	<0.05	<0.05
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/L	60	0.05	<0.05	<0.05	<0.05
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	<0.05
Pyrene	µg/L	0.2	0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/L	500	100	<100	<100	<100
HEPH C19-C32	µg/L		100	<100	<100	<100
Surrogate	Unit	Acceptable Limits				
Nitrobenzene - d5	%	50-130		85	81	88
Quinoline - d7	%	50-130		101	88	99
2-Fluorobiphenyl	%	50-130		81	79	81
P-Terphenyl - d14	%	60-130		94	91	88
Bromofluorobenzene	%	70-130		94	95	95
Dibromofluoromethane	%	70-130		106	114	114
Toluene - d8	%	70-130		110	113	111

Certified By: Elena Gorobets

AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
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TEL (778)452-4000
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http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 01, 2012	DATE RECEIVED: Feb 01, 2012	DATE REPORTED: Feb 08, 2012	SAMPLE TYPE: Water

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3091736-3091782 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By: Elena Gorobets

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 12V570940
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 01, 2012 | DATE RECEIVED: Feb 01, 2012 | DATE REPORTED: Feb 08, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-04M 3091736	BV-11BH-05M 3091778	BV-11BH-03M 3091782
Phenol	mg/L		0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Surrogate	Unit	Acceptable Limits				
2-Fluorophenol	%	50-150		96.7	101	101
2,4,6-Tribromophenol	%	50-150		108	112	113

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3091736-3091782 Results relate only to the items tested.

Certified By: Elena Gorobets

AGAT Laboratories

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Burnaby, British Columbia
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TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 12V570940
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 01, 2012 | DATE RECEIVED: Feb 01, 2012 | DATE REPORTED: Feb 08, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-04M 3091736	BV-11BH-05M 3091778	BV-11BH-03M 3091782
Aluminum Dissolved	µg/L		1	10	8	9
Antimony Dissolved	µg/L		0.05	0.06	0.06	<0.05
Arsenic Dissolved	µg/L	5	0.1	13.5	82.7	2.6
Barium Dissolved	µg/L		0.1	43.4	199	30.0
Beryllium Dissolved	µg/L		0.01	<0.01	<0.01	<0.01
Boron Dissolved	µg/L		1	57	42	16
Cadmium Dissolved	µg/L	0.017	0.01	<0.01	<0.01	<0.01
Calcium Dissolved	mg/L		0.05	22.7	153	31.5
Chromium Dissolved	µg/L		0.5	1.4	1.9	1.0
Cobalt Dissolved	µg/L		0.05	0.56	0.57	0.85
Copper Dissolved	µg/L		0.2	0.8	0.6	0.6
Iron Dissolved	mg/L	0.3	0.01	18.0	43.1	9.82
Lead Dissolved	µg/L		0.01	0.25	0.03	0.04
Lithium Dissolved	µg/L		0.1	2.0	2.2	0.7
Magnesium Dissolved	mg/L		0.05	30.0	24.2	16.2
Manganese Dissolved	mg/L		0.001	0.386	2.52	0.123
Mercury Dissolved	µg/L	0.026	0.003	0.004	<0.003	<0.003
Molybdenum Dissolved	µg/L	73	0.05	0.47	0.56	0.62
Nickel Dissolved	µg/L		0.1	1.4	1.2	2.4
Selenium Dissolved	µg/L	1	0.1	<0.1	0.2	<0.1
Silver Dissolved	µg/L	0.1	0.01	<0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	5.77	14.4	4.98
Thallium Dissolved	µg/L	0.8	0.002	<0.002	<0.002	<0.002
Titanium Dissolved	µg/L		0.1	30.9	194	39.8
Uranium Dissolved	µg/L		0.01	0.06	0.06	0.01
Vanadium Dissolved	µg/L		0.1	2.0	2.4	1.0
Zinc Dissolved	µg/L	30	1	15	8	3
Hardness (calc)	mg CaCO3/L		1	180	482	145

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL) (Van)

Certified By: Marie England

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
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FAX (778)452-4074
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Feb 08, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3089681	<1	<1	0.0%	< 1	94%	80%	120%				98%	70%	130%
Styrene	1	3089681	<0.5	<0.5	0.0%	< 0.5	97%	80%	120%				96%	70%	130%
VPH	1	3089681	130	140	7.0%	< 100									
Naphthalene	1	W-MS	0.09	0.11	20.0%	< 0.05	99%	80%	120%				92%	50%	130%
Quinoline	1	W-MS	0.1	<0.1	0.0%	< 0.1	99%	80%	120%				102%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				88%	50%	130%
Acenaphthene	1	W-MS	0.09	0.08	12.0%	< 0.05	100%	80%	120%				94%	50%	130%
Fluorene	1	W-MS	0.1	0.09	10.5%	< 0.05	101%	80%	120%				105%	50%	130%
Phenanthrene	1	W-MS	0.11	0.10	10.0%	< 0.05	99%	80%	120%				116%	60%	130%
Anthracene (Water)	1	W-MS	0.08	0.07	13.0%	< 0.05	100%	80%	120%				83%	60%	130%
Acridine	1	W-MS	0.09	0.08	12.0%	< 0.05	99%	80%	120%				92%	50%	130%
Fluoranthene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				98%	60%	130%
Pyrene	1	W-MS	0.1	0.09	10.5%	< 0.02	100%	80%	120%				107%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.09	0.0%	< 0.05	100%	80%	120%				97%	60%	130%
Chrysene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				100%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.11	0.11	0.0%	< 0.05	99%	80%	120%				113%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				100%	60%	130%
Benzo(a)pyrene	1	W-MS	0.08	0.08	0.0%	< 0.01	100%	80%	120%				89%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.1	0.1	0.0%	< 0.05	100%	80%	120%				102%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				102%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.1	0.1	0.0%	< 0.05	100%	80%	120%				104%	60%	130%
Nitrobenzene - d5	1	W-MS	80	67	18.0%	<	98%	80%	120%				81%	50%	130%
Quinoline - d7	1	W-MS	94	84	11.0%	<	99%	80%	120%				94%	50%	130%
2-Fluorobiphenyl	1	W-MS	83	81	2.0%	<	100%	80%	120%				83%	50%	130%
P-Terphenyl - d14	1	W-MS	92	89	3.0%	<	101%	80%	120%				92%	60%	130%
Bromofluorobenzene	1	3089681	78	80	3.0%		97%	70%	130%				113%	70%	130%
Dibromofluoromethane	1	3089681	118	113	4.0%		92%	70%	130%				105%	70%	130%
Toluene - d8	1	3089681	112	115	3.0%		88%	70%	130%				104%	70%	130%
Phenolic Compounds in Water															
Phenol	134	3095657	<0.002	<0.002	NA	< 0.002	86%	80%	120%	94%	70%	130%	93%	60%	140%
4-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	84%	80%	120%	91%	70%	130%	91%	60%	140%
m&p-Cresol (3&4-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
o-Cresol (2-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	89%	60%	140%
2-Chlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	80%	80%	120%	83%	70%	130%	81%	60%	140%
2,4-Dinitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	91%	80%	120%	95%	70%	130%	95%	60%	140%
2-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	91%	70%	130%	102%	60%	140%
2,4-Dimethylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	87%	70%	130%	87%	60%	140%
2,6-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001				89%	70%	130%	92%	60%	140%

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 08, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
4-Chloro-3-methylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	95%	60%	140%
2,4-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	80%	70%	130%	81%	60%	140%
4,6-Dinitro-2-methylphenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	90%	70%	130%	98%	60%	140%
2,3,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	93%	60%	140%
2,4,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	87%	80%	120%	95%	70%	130%	96%	60%	140%
2,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				91%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	97%	60%	140%
3,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,5,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,4,5-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				99%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	134	3095657	<0.005	<0.005	NA	< 0.005				97%	70%	130%	94%	60%	140%
Pentachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	90%	80%	120%	98%	70%	130%	107%	60%	140%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	95%	80%	120%	95%	80%	120%	87%	70%	130%
Toluene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	99%	80%	120%	98%	80%	120%	86%	70%	130%
Ethylbenzene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	106%	80%	120%	104%	80%	120%	85%	70%	130%
Xylenes	380	3091736	<0.0005	<0.0005	NA	< 0.0005	106%	80%	120%	104%	80%	120%	88%	70%	130%
C6 - C10 (F1)	380	3091736	<0.1	<0.1	NA	< 0.1	92%	80%	120%	111%	80%	120%	83%	70%	130%
C>10 - C16	24	3095453	<0.1	<0.1	NA	< 0.1	101%	80%	120%	93%	80%	120%	98%	70%	130%
C16 - C34	24	3095453	<0.1	<0.1	NA	< 0.1	101%	80%	120%	106%	80%	120%	103%	70%	130%

Certified By: Elena Gorobets

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Feb 08, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3091736	10	10	0.0%	< 1	103%	90%	110%	105%	85%	115%			
Antimony Dissolved	20120	3091736	0.06	0.06	0.0%	< 0.05	104%	90%	110%	102%	85%	110%			
Arsenic Dissolved	20120	3091736	13.5	13.6	1.0%	< 0.1	103%	90%	110%	109%	90%	110%			
Barium Dissolved	20120	3091736	43.4	42.6	2.0%	< 0.1	103%	90%	110%	99%	90%	110%			
Beryllium Dissolved	20120	3091736	<0.01	<0.01	0.0%	< 0.01	91%	90%	110%	97%	90%	110%			
Boron Dissolved	20120	3091736	57	58	2.0%	< 1	91%	90%	110%	101%	80%	120%			
Cadmium Dissolved	20120	3091736	<0.01	<0.01	0.0%	< 0.01	100%	90%	110%	101%	90%	110%			
Calcium Dissolved	20120	3091736	22.7	22.5	1.0%	< 0.05	100%	90%	110%	103%	90%	110%			
Chromium Dissolved	20120	3091736	1.4	1.3	7.0%	< 0.5	102%	90%	110%	97%	90%	110%			
Cobalt Dissolved	20120	3091736	0.56	0.52	7.0%	< 0.05	105%	90%	110%	104%	90%	110%			
Copper Dissolved	20120	3091736	0.8	0.8	0.0%	< 0.2	103%	90%	110%	104%	90%	110%			
Iron Dissolved	20120	3091736	18.0	17.8	1.1%	< 0.01	104%	90%	110%	104%	90%	110%			
Lead Dissolved	20120	3091736	0.25	0.25	0.0%	< 0.01	100%	90%	110%	100%	90%	110%			
Lithium Dissolved	20120	3091736	2.0	1.9	5.1%	< 0.1				105%	90%	110%			
Magnesium Dissolved	20120	3091736	30.0	29.8	0.7%	< 0.05	100%	90%	110%	105%	90%	110%			
Manganese Dissolved	20120	3091736	0.386	0.385	0.0%	< 0.001	104%	90%	110%	103%	90%	110%			
Mercury Dissolved	20120	3091736	0.004	0.004	0.0%	< 0.003	108%	90%	110%	104%	90%	110%			
Molybdenum Dissolved	20120	3091736	0.47	0.46	2.0%	< 0.05	97%	90%	110%	101%	90%	110%			
Nickel Dissolved	20120	3091736	1.4	1.4	0.0%	< 0.1	101%	90%	110%	103%	90%	110%			
Selenium Dissolved	20120	3091736	<0.1	0.2	0.0%	< 0.1	101%	90%	110%	110%	85%	115%			
Silver Dissolved	20120	3091736	<0.01	<0.01	0.0%	< 0.01				106%	90%	110%			
Sodium Dissolved	20120	3091736	5.77	5.73	1.0%	< 0.05	100%	90%	110%	106%	90%	110%			
Thallium Dissolved	20120	3091736	<0.002	<0.002	0.0%	< 0.002	93%	90%	110%	98%	90%	110%			
Titanium Dissolved	20120	3091736	30.9	31.4	2.0%	< 0.1				100%	90%	110%			
Uranium Dissolved	20120	3091736	0.06	0.05	NA	< 0.01	98%	90%	110%	102%	90%	110%			
Vanadium Dissolved	20120	3091736	2.0	1.8	10.5%	< 0.1	104%	90%	110%	100%	90%	110%			
Zinc Dissolved	20120	3091736	15	14	7.0%	< 1	100%	90%	110%	105%	85%	115%			

Certified By:

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT	5 to 7 working days	[X]
Rush TAT	24 to 48 hours	[ ]
	48 to 72 hours	[ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 4°C
AGAT Job Number: 12V570940

Notes:

FEB 1 PM 5:52

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [ ] **BC CSR – Soil**
  - [ ] Agricultural
  - [ ] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [X] **BC CSR – Water**
  - [ ] Drinking Water
  - [X] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] **CCME**
  - [ ] Drinking Water
  - [X] Industrial
  - [ ] Residential/Park
  - [ ] Drinking Water
  - [ ] Commercial
  - [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1	CCME F2-F4		Chlorinated + non-chlorinated phenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
309736	BV-11BH-04M	water	Feb 1st, 2012		X	X	X				X	X		X	7			
778	BV-11BH-05M	water	Feb 1st, 2012		X	X	X				X	X		X	7			
782	BV-11BH-03M	water	Feb 1st, 2012		X	X	X				X	X		X	7			

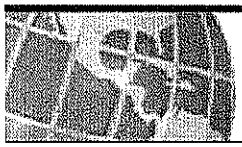
Samples Relinquished by (print name & sign):	Date	Samples Received by (print name & sign):	Date	Pink Copy - Client
	Feb 1, 2012	Amber Pitt Feb 1, 2012 15:52 pm		Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (print name & sign):	Date	

Page 1 of 1

NO: 000629

Document ID: DIV-186-0811.001

Date revised: August 24, 2011



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V570940

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: Feb 1/12 5:52
Courier: n/a
Received by: Amiel
Relinquished by: Amanda Salway
Branch Received From:
Company: Fram Env
Consultant:
Client left without count verified: No

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why:
TURNAROUND TIME: Reg
COC Numbers: 000629

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 21 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 01-FEB-12
Microbiology: Test:
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes No

ALREADY EXCEEDED? Yes (No)
Expiry:
Expiry: 08-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No
International Samples: Yes No
**Proper tape/labels applied: Yes No

n/A

Hazardous Samples:
Why hazardous:

Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain:

Correct amount of sample for analysis: (Yes) No
If No, explain:

Are all samples labeled correctly: (Yes) No
If No, explain:

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 4 + 4 + 4 = 4 °C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1)
2)
3)

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

AGAT Laboratories

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CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V570940

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Mar 02, 2012

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 1:Amended to include VH and EPH results as per client.
Version 2 is an amendment to version 1.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V570940
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 01, 2012 | DATE RECEIVED: Feb 01, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-04M 3091736	BV-11BH-05M 3091778	BV-11BH-03M 3091782
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits				
Toluene-d8 (BTEX)	%	50-150		100	102	102
o-Terphenyl (F2-F4)	%	50-150		108	108	108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3091736-3091782 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V570940
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 01, 2012 | DATE RECEIVED: Feb 01, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-04M 3091736	BV-11BH-05M 3091778	BV-11BH-03M 3091782
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1	<1	<1
Styrene	µg/L	720	0.5	<0.5	<0.5	<0.5
VPH	µg/L	1500	100	<100	<100	<100
VH	µg/L	15000	100	<100	<100	<100
Naphthalene	µg/L	10	0.05	<0.05	<0.05	<0.05
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/L	60	0.05	<0.05	<0.05	<0.05
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	<0.05
Pyrene	µg/L	0.2	0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/L	500	100	<100	<100	<100
HEPH C19-C32	µg/L		100	<100	<100	<100
EPH C10-C19	µg/L	5000	100	<100	<100	<100
EPH C19-C32	µg/L		100	<100	<100	<100

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V570940
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 01, 2012 | DATE RECEIVED: Feb 01, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Surrogate	Unit	Acceptable Limits	BV-11BH-04M 3091736	BV-11BH-05M 3091778	BV-11BH-03M 3091782
Nitrobenzene - d5	%	50-130	85	81	88
Quinoline - d7	%	50-130	101	88	99
2-Fluorobiphenyl	%	50-130	81	79	81
P-Terphenyl - d14	%	60-130	94	91	88
Bromofluorobenzene	%	70-130	94	95	95
Dibromofluoromethane	%	70-130	106	114	114
Toluene - d8	%	70-130	110	113	111

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3091736-3091782 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

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AGAT WORK ORDER: 12V570940
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 01, 2012 | DATE RECEIVED: Feb 01, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-04M 3091736	BV-11BH-05M 3091778	BV-11BH-03M 3091782
Phenol	mg/L		0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Surrogate	Unit	Acceptable Limits				
2-Fluorophenol	%	50-150		96.7	101	101
2,4,6-Tribromophenol	%	50-150		108	112	113

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3091736-3091782 Results relate only to the items tested.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V570940
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 01, 2012 | DATE RECEIVED: Feb 01, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-04M 3091736	BV-11BH-05M 3091778	BV-11BH-03M 3091782
Aluminum Dissolved	µg/L		1	10	8	9
Antimony Dissolved	µg/L	200	0.05	0.06	0.06	<0.05
Arsenic Dissolved	µg/L	50	0.1	13.5	82.7	2.6
Barium Dissolved	µg/L	10000	0.1	43.4	199	30.0
Beryllium Dissolved	µg/L	53	0.01	<0.01	<0.01	<0.01
Boron Dissolved	µg/L	50000	1	57	42	16
Cadmium Dissolved	µg/L		0.01	<0.01	<0.01	<0.01
Calcium Dissolved	mg/L		0.05	22.7	153	31.5
Chromium Dissolved	µg/L		0.5	1.4	1.9	1.0
Cobalt Dissolved	µg/L	40	0.05	0.56	0.57	0.85
Copper Dissolved	µg/L		0.2	0.8	0.6	0.6
Iron Dissolved	mg/L		0.01	18.0	43.1	9.82
Lead Dissolved	µg/L		0.01	0.25	0.03	0.04
Lithium Dissolved	µg/L		0.1	2.0	2.2	0.7
Magnesium Dissolved	mg/L		0.05	30.0	24.2	16.2
Manganese Dissolved	mg/L		0.001	0.386	2.52	0.123
Mercury Dissolved	µg/L	1	0.003	0.004	<0.003	<0.003
Molybdenum Dissolved	µg/L	10000	0.05	0.47	0.56	0.62
Nickel Dissolved	µg/L		0.1	1.4	1.2	2.4
Selenium Dissolved	µg/L	10	0.1	<0.1	0.2	<0.1
Silver Dissolved	µg/L		0.01	<0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	5.77	14.4	4.98
Thallium Dissolved	µg/L	3	0.002	<0.002	<0.002	<0.002
Titanium Dissolved	µg/L	1000	0.1	30.9	194	39.8
Uranium Dissolved	µg/L	3000	0.01	0.06	0.06	0.01
Vanadium Dissolved	µg/L		0.1	2.0	2.4	1.0
Zinc Dissolved	µg/L		1	15	8	3
Hardness (calc)	mg CaCO3/L		1	180	482	145

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By: Marie England

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3089681	<1	<1	0.0%	< 1	94%	80%	120%				98%	70%	130%
Styrene	1	3089681	<0.5	<0.5	0.0%	< 0.5	97%	80%	120%				96%	70%	130%
VPH	1	3089681	130	140	7.0%	< 100									
Naphthalene	1	W-MS	0.09	0.11	20.0%	< 0.05	99%	80%	120%				92%	50%	130%
Quinoline	1	W-MS	0.1	<0.1	0.0%	< 0.1	99%	80%	120%				102%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				88%	50%	130%
Acenaphthene	1	W-MS	0.09	0.08	12.0%	< 0.05	100%	80%	120%				94%	50%	130%
Fluorene	1	W-MS	0.1	0.09	10.5%	< 0.05	101%	80%	120%				105%	50%	130%
Phenanthrene	1	W-MS	0.11	0.10	10.0%	< 0.05	99%	80%	120%				116%	60%	130%
Anthracene (Water)	1	W-MS	0.08	0.07	13.0%	< 0.05	100%	80%	120%				83%	60%	130%
Acridine	1	W-MS	0.09	0.08	12.0%	< 0.05	99%	80%	120%				92%	50%	130%
Fluoranthene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				98%	60%	130%
Pyrene	1	W-MS	0.1	0.09	10.5%	< 0.02	100%	80%	120%				107%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.09	0.0%	< 0.05	100%	80%	120%				97%	60%	130%
Chrysene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				100%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.11	0.11	0.0%	< 0.05	99%	80%	120%				113%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				100%	60%	130%
Benzo(a)pyrene	1	W-MS	0.08	0.08	0.0%	< 0.01	100%	80%	120%				89%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.1	0.1	0.0%	< 0.05	100%	80%	120%				102%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				102%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.1	0.1	0.0%	< 0.05	100%	80%	120%				104%	60%	130%
Nitrobenzene - d5	1	W-MS	80	67	18.0%	<	98%	80%	120%				81%	50%	130%
Quinoline - d7	1	W-MS	94	84	11.0%	<	99%	80%	120%				94%	50%	130%
2-Fluorobiphenyl	1	W-MS	83	81	2.0%	<	100%	80%	120%				83%	50%	130%
P-Terphenyl - d14	1	W-MS	92	89	3.0%	<	101%	80%	120%				92%	60%	130%
Bromofluorobenzene	1	3089681	78	80	3.0%		97%	70%	130%				113%	70%	130%
Dibromofluoromethane	1	3089681	118	113	4.0%		92%	70%	130%				105%	70%	130%
Toluene - d8	1	3089681	112	115	3.0%		88%	70%	130%				104%	70%	130%
Phenolic Compounds in Water															
Phenol	134	3095657	<0.002	<0.002	NA	< 0.002	86%	80%	120%	94%	70%	130%	93%	60%	140%
4-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	84%	80%	120%	91%	70%	130%	91%	60%	140%
m&p-Cresol (3&4-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
o-Cresol (2-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	89%	60%	140%
2-Chlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	80%	80%	120%	83%	70%	130%	81%	60%	140%
2,4-Dinitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	91%	80%	120%	95%	70%	130%	95%	60%	140%
2-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	91%	70%	130%	102%	60%	140%
2,4-Dimethylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	87%	70%	130%	87%	60%	140%
2,6-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001				89%	70%	130%	92%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
4-Chloro-3-methylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	95%	60%	140%
2,4-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	80%	70%	130%	81%	60%	140%
4,6-Dinitro-2-methylphenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	90%	70%	130%	98%	60%	140%
2,3,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	93%	60%	140%
2,4,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	87%	80%	120%	95%	70%	130%	96%	60%	140%
2,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				91%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	97%	60%	140%
3,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,5,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,4,5-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				99%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	134	3095657	<0.005	<0.005	NA	< 0.005				97%	70%	130%	94%	60%	140%
Pentachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	90%	80%	120%	98%	70%	130%	107%	60%	140%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	95%	80%	120%	95%	80%	120%	87%	70%	130%
Toluene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	99%	80%	120%	98%	80%	120%	86%	70%	130%
Ethylbenzene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	106%	80%	120%	104%	80%	120%	85%	70%	130%
Xylenes	380	3091736	<0.0005	<0.0005	NA	< 0.0005	106%	80%	120%	104%	80%	120%	88%	70%	130%
C6 - C10 (F1)	380	3091736	<0.1	<0.1	NA	< 0.1	92%	80%	120%	111%	80%	120%	83%	70%	130%
C>10 - C16	24	3095453	<0.1	<0.1	NA	< 0.1	101%	80%	120%	93%	80%	120%	98%	70%	130%
C16 - C34	24	3095453	<0.1	<0.1	NA	< 0.1	101%	80%	120%	106%	80%	120%	103%	70%	130%

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3091736	10	10	0.0%	< 1	103%	90%	110%	105%	85%	115%			
Antimony Dissolved	20120	3091736	0.06	0.06	0.0%	< 0.05	104%	90%	110%	102%	85%	110%			
Arsenic Dissolved	20120	3091736	13.5	13.6	1.0%	< 0.1	103%	90%	110%	109%	90%	110%			
Barium Dissolved	20120	3091736	43.4	42.6	2.0%	< 0.1	103%	90%	110%	99%	90%	110%			
Beryllium Dissolved	20120	3091736	<0.01	<0.01	0.0%	< 0.01	91%	90%	110%	97%	90%	110%			
Boron Dissolved	20120	3091736	57	58	2.0%	< 1	91%	90%	110%	101%	80%	120%			
Cadmium Dissolved	20120	3091736	<0.01	<0.01	0.0%	< 0.01	100%	90%	110%	101%	90%	110%			
Calcium Dissolved	20120	3091736	22.7	22.5	1.0%	< 0.05	100%	90%	110%	103%	90%	110%			
Chromium Dissolved	20120	3091736	1.4	1.3	7.0%	< 0.5	102%	90%	110%	97%	90%	110%			
Cobalt Dissolved	20120	3091736	0.56	0.52	7.0%	< 0.05	105%	90%	110%	104%	90%	110%			
Copper Dissolved	20120	3091736	0.8	0.8	0.0%	< 0.2	103%	90%	110%	104%	90%	110%			
Iron Dissolved	20120	3091736	18.0	17.8	1.1%	< 0.01	104%	90%	110%	104%	90%	110%			
Lead Dissolved	20120	3091736	0.25	0.25	0.0%	< 0.01	100%	90%	110%	100%	90%	110%			
Lithium Dissolved	20120	3091736	2.0	1.9	5.1%	< 0.1				105%	90%	110%			
Magnesium Dissolved	20120	3091736	30.0	29.8	0.7%	< 0.05	100%	90%	110%	105%	90%	110%			
Manganese Dissolved	20120	3091736	0.386	0.385	0.0%	< 0.001	104%	90%	110%	103%	90%	110%			
Mercury Dissolved	20120	3091736	0.004	0.004	0.0%	< 0.003	108%	90%	110%	104%	90%	110%			
Molybdenum Dissolved	20120	3091736	0.47	0.46	2.0%	< 0.05	97%	90%	110%	101%	90%	110%			
Nickel Dissolved	20120	3091736	1.4	1.4	0.0%	< 0.1	101%	90%	110%	103%	90%	110%			
Selenium Dissolved	20120	3091736	<0.1	0.2	0.0%	< 0.1	101%	90%	110%	110%	85%	115%			
Silver Dissolved	20120	3091736	<0.01	<0.01	0.0%	< 0.01				106%	90%	110%			
Sodium Dissolved	20120	3091736	5.77	5.73	1.0%	< 0.05	100%	90%	110%	106%	90%	110%			
Thallium Dissolved	20120	3091736	<0.002	<0.002	0.0%	< 0.002	93%	90%	110%	98%	90%	110%			
Titanium Dissolved	20120	3091736	30.9	31.4	2.0%	< 0.1				100%	90%	110%			
Uranium Dissolved	20120	3091736	0.06	0.05	NA	< 0.01	98%	90%	110%	102%	90%	110%			
Vanadium Dissolved	20120	3091736	2.0	1.8	10.5%	< 0.1	104%	90%	110%	100%	90%	110%			
Zinc Dissolved	20120	3091736	15	14	7.0%	< 1	100%	90%	110%	105%	85%	115%			

Certified By:

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT	5 to 7 working days	[X]
Rush TAT	24 to 48 hours	[ ]
	48 to 72 hours	[ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 4°C
AGAT Job Number: 12V570940

Notes:

FEB 1 PM 5:52

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [ ] **BC CSR – Soil**
  - [ ] Agricultural
  - [ ] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [X] **BC CSR – Water**
  - [ ] Drinking Water
  - [X] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] **CCME**
  - [ ] Drinking Water
  - [X] Industrial
  - [ ] Residential/Park
  - [ ] Drinking Water
  - [ ] Commercial
  - [ ] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1	CCME F2-F4		Chlorinated + non-chlorinated phenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
309736	BV-11BH-04M	water	Feb 1st, 2012		X	X	X				X	X		X	7			
778	BV-11BH-05M	water	Feb 1st, 2012		X	X	X				X	X		X	7			
782	BV-11BH-03M	water	Feb 1st, 2012		X	X	X				X	X		X	7			

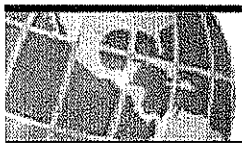
Samples Relinquished by (print name & sign):	Date	Samples Received by (print name & sign):	Date	Pink Copy - Client
	Feb 1, 2012	Amber Pitt Feb 1, 2012 15:52 pm		Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (print name & sign):	Date	

Page 1 of 1

NO: 000629

Document ID: DIV-186-0811.001

Date revised: August 24, 2011



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V570940

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: Feb 1/12 5:52
Courier: n/a
Received by: Amiel
Relinquished by: Amanda Salway
Branch Received From:
Company: Fram Env
Consultant:
Client left without count verified: No

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why:
TURNAROUND TIME: Reg
COC Numbers: 000629

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 21 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 01-FEB-12
Microbiology: Test:
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes No

ALREADY EXCEEDED? Yes (No)
Expiry:
Expiry: 08-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No
International Samples: Yes No
**Proper tape/labels applied: Yes No

n/A

Hazardous Samples:
Why hazardous:

Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain:

Correct amount of sample for analysis: (Yes) No
If No, explain:

Are all samples labeled correctly: (Yes) No
If No, explain:

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 4 + 4 + 4 = 4 °C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1)
2)
3)

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

AGAT Laboratories

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CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V571329

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Feb 09, 2012

PAGES (INCLUDING COVER): 13

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V571329
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 02, 2012 | DATE RECEIVED: Feb 02, 2012 | DATE REPORTED: Feb 09, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-02M 3094046	BV-GWDUP1 3094049	MW06-2 3094050	MW07-6 3094051	BV-11BH-07M 3094053
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1	0.3	0.2	0.2
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1	0.3	0.2	0.2
C>10 - C16	mg/L		0.1	<0.1	<0.1	0.8	0.4	0.3
C16 - C34	mg/L		0.1	<0.1	<0.1	<0.1	<0.1	0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits						
Toluene-d8 (BTEX)	%	50-150		100	101	101	100	101
o-Terphenyl (F2-F4)	%	50-150		107	109	109	110	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3094046-3094053 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V571329
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 02, 2012 | DATE RECEIVED: Feb 02, 2012 | DATE REPORTED: Feb 09, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-02M 3094046	BV-GWDUP1 3094049	MW06-2 3094050	MW07-6 3094051	MW08-10 3094052	BV-11BH-07M 3094053
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	720	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzene	µg/L	4000	0.5					<0.5	
VPH	µg/L	1500	100	<100	<100	790	730	<100	200
Toluene	µg/L	390	0.5					<0.5	
Ethylbenzene	µg/L	2000	0.5					<0.5	
Naphthalene	µg/L	10	0.05	<0.05	<0.05	0.07	0.07		0.05
m&p-Xylene	µg/L		0.5					<0.5	
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1	<0.1		<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
o-Xylene	µg/L		0.5					<0.5	
Acenaphthene	µg/L	60	0.05	<0.05	<0.05	0.05	<0.05		0.14
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05	<0.05		0.18
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05	<0.05		0.11
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	0.27	<0.05		<0.05
Pyrene	µg/L	0.2	0.02	<0.02	<0.02	0.29	<0.02		<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	0.05	<0.05		<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	0.06	<0.05		<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	0.05	<0.05		<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	0.04	<0.01		<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
LEPH C10-C19	µg/L	500	100	<100	<100	1640	360		550
HEPH C19-C32	µg/L		100	<100	<100	140	<100		390

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V571329
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 02, 2012 | DATE RECEIVED: Feb 02, 2012 | DATE REPORTED: Feb 09, 2012 | SAMPLE TYPE: Water

Surrogate	Unit	Acceptable Limits	BV-11BH-02M 3094046	BV-GWDUP1 3094049	MW06-2 3094050	MW07-6 3094051	MW08-10 3094052	BV-11BH-07M 3094053
Nitrobenzene - d5	%	50-130	75	69	NA	NA		89
Quinoline - d7	%	50-130	89	86	NA	NA		87
2-Fluorobiphenyl	%	50-130	68	65	71	71		53
P-Terphenyl - d14	%	60-130	88	87	90	90		62
Bromofluorobenzene	%	70-130	97	89	97	86	88	75
Dibromofluoromethane	%	70-130	118	111	128	112	104	112
Toluene - d8	%	70-130	114	103	113	111	104	113

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3094046-3094049 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3094050-3094051 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Quinoline-d7 and Nitrobenzene-d5 surrogate recoveries not available due to matrix interferences.

3094052 VPH results have been corrected for BTEX contributions.

3094053 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

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Certificate of Analysis

AGAT WORK ORDER: 12V571329
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 02, 2012 | DATE RECEIVED: Feb 02, 2012 | DATE REPORTED: Feb 09, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-02M 3094046	BV-GWDUP1 3094049
Phenol	mg/L		0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Surrogate	Unit	Acceptable Limits			
2-Fluorophenol	%	50-150		99.9	112
2,4,6-Tribromophenol	%	50-150		113	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3094046-3094049 Results relate only to the items tested.

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Certificate of Analysis

AGAT WORK ORDER: 12V571329
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 02, 2012 | DATE RECEIVED: Feb 02, 2012 | DATE REPORTED: Feb 09, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-02M 3094046	BV-GWDUP1 3094049
Aluminum Dissolved	µg/L		1	4	2
Antimony Dissolved	µg/L		0.05	0.06	<0.05
Arsenic Dissolved	µg/L	5	0.1	26.0	25.9
Barium Dissolved	µg/L		0.1	58.1	58.4
Beryllium Dissolved	µg/L		0.01	<0.01	<0.01
Boron Dissolved	µg/L		1	128	129
Cadmium Dissolved	µg/L	0.017	0.01	0.01	<0.01
Calcium Dissolved	mg/L		0.05	45.6	46.0
Chromium Dissolved	µg/L		0.5	1.2	1.2
Cobalt Dissolved	µg/L		0.05	0.15	0.14
Copper Dissolved	µg/L		0.2	0.4	0.2
Iron Dissolved	mg/L	0.3	0.01	37.2	37.8
Lead Dissolved	µg/L		0.01	0.03	<0.01
Lithium Dissolved	µg/L		0.1	2.1	2.0
Magnesium Dissolved	mg/L		0.05	9.37	9.47
Manganese Dissolved	mg/L		0.001	1.63	1.64
Mercury Dissolved	µg/L	0.026	0.003	<0.003	<0.003
Molybdenum Dissolved	µg/L	73	0.05	0.57	0.32
Nickel Dissolved	µg/L		0.1	0.7	0.2
Selenium Dissolved	µg/L	1	0.1	0.1	<0.1
Silver Dissolved	µg/L	0.1	0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	9.31	9.42
Thallium Dissolved	µg/L	0.8	0.002	<0.002	<0.002
Titanium Dissolved	µg/L		0.1	58.3	58.3
Uranium Dissolved	µg/L		0.01	0.01	<0.01
Vanadium Dissolved	µg/L		0.1	0.8	0.9
Zinc Dissolved	µg/L	30	1	7	2
Hardness (calc)	mg CaCO3/L		1	152	154

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL) (Van)

Certified By: Marie England

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Feb 09, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3089329	<1	<1	0.0%	< 1	98%	80%	120%				110%	70%	130%
Styrene	1	3089329	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				108%	70%	130%
VPH	1	3089329	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.09	0.11	20.0%	< 0.05	99%	80%	120%				92%	50%	130%
Quinoline	1	W-MS	0.1	<0.1	0.0%	< 0.1	99%	80%	120%				102%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				88%	50%	130%
Acenaphthene	1	W-MS	0.09	0.08	12.0%	< 0.05	100%	80%	120%				94%	50%	130%
Fluorene	1	W-MS	0.1	0.09	10.5%	< 0.05	101%	80%	120%				105%	50%	130%
Phenanthrene	1	W-MS	0.11	0.10	10.0%	< 0.05	99%	80%	120%				116%	60%	130%
Anthracene (Water)	1	W-MS	0.08	0.07	13.0%	< 0.05	100%	80%	120%				83%	60%	130%
Acridine	1	W-MS	0.09	0.08	12.0%	< 0.05	99%	80%	120%				92%	50%	130%
Fluoranthene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				98%	60%	130%
Pyrene	1	W-MS	0.1	0.09	10.5%	< 0.02	100%	80%	120%				107%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.09	0.0%	< 0.05	100%	80%	120%				97%	60%	130%
Chrysene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				100%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.11	0.11	0.0%	< 0.05	99%	80%	120%				113%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				100%	60%	130%
Benzo(a)pyrene	1	W-MS	0.08	0.08	0.0%	< 0.01	100%	80%	120%				89%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.1	0.1	0.0%	< 0.05	100%	80%	120%				102%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				102%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.1	0.1	0.0%	< 0.05	100%	80%	120%				104%	60%	130%
Nitrobenzene - d5	1	W-MS	80	67	18.0%	<	98%	80%	120%				81%	50%	130%
Quinoline - d7	1	W-MS	94	84	11.0%	<	99%	80%	120%				94%	50%	130%
2-Fluorobiphenyl	1	W-MS	83	81	2.0%	<	100%	80%	120%				83%	50%	130%
P-Terphenyl - d14	1	W-MS	92	89	3.0%	<	101%	80%	120%				92%	60%	130%
Bromofluorobenzene	1	3089329	96	98	2.0%		103%	70%	130%				114%	70%	130%
Dibromofluoromethane	1	3089329	115	112	3.0%		98%	70%	130%				104%	70%	130%
Toluene - d8	1	3089329	116	114	2.0%		96%	70%	130%				112%	70%	130%
Phenolic Compounds in Water															
Phenol	134	3095657	<0.002	<0.002	NA	< 0.002	86%	80%	120%	94%	70%	130%	93%	60%	140%
4-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	84%	80%	120%	91%	70%	130%	91%	60%	140%
m&p-Cresol (3&4-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
o-Cresol (2-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	89%	60%	140%
2-Chlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	80%	80%	120%	83%	70%	130%	81%	60%	140%
2,4-Dinitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	91%	80%	120%	95%	70%	130%	95%	60%	140%
2-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	91%	70%	130%	102%	60%	140%
2,4-Dimethylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	87%	70%	130%	87%	60%	140%
2,6-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001				89%	70%	130%	92%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 09, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
4-Chloro-3-methylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	95%	60%	140%
2,4-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	80%	70%	130%	81%	60%	140%
4,6-Dinitro-2-methylphenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	90%	70%	130%	98%	60%	140%
2,3,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	93%	60%	140%
2,4,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	87%	80%	120%	95%	70%	130%	96%	60%	140%
2,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				91%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	97%	60%	140%
3,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,5,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,4,5-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				99%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	134	3095657	<0.005	<0.005	NA	< 0.005				97%	70%	130%	94%	60%	140%
Pentachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	90%	80%	120%	98%	70%	130%	107%	60%	140%
2-Fluorophenol	134				106.0%	<	109%	50%	150%	102%	50%	150%	106%	50%	150%
2,4,6-Tribromophenol	134				113.0%	<	111%	50%	150%	113%	50%	150%	113%	50%	150%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	95%	80%	120%	95%	80%	120%	87%	70%	130%
Toluene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	99%	80%	120%	98%	80%	120%	86%	70%	130%
Ethylbenzene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	106%	80%	120%	104%	80%	120%	85%	70%	130%
Xylenes	380	3091736	<0.0005	<0.0005	NA	< 0.0005	106%	80%	120%	104%	80%	120%	88%	70%	130%
C6 - C10 (F1)	380	3091736	<0.1	<0.1	NA	< 0.1	92%	80%	120%	111%	80%	120%	83%	70%	130%
C>10 - C16	24	3095453	<0.1	<0.1	NA	< 0.1	101%	80%	120%	93%	80%	120%	98%	70%	130%
C16 - C34	24	3095453	<0.1	<0.1	NA	< 0.1	101%	80%	120%	102%	80%	120%	104%	70%	130%

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Feb 09, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3094046	4	4	0.0%	< 1	99%	90%	110%	104%	85%	115%			
Antimony Dissolved	20120	3094046	0.06	<0.05	0.0%	< 0.05	107%	90%	110%	101%	85%	110%			
Arsenic Dissolved	20120	3094046	26.0	25.7	1.2%	< 0.1	98%	90%	110%	107%	90%	110%			
Barium Dissolved	20120	3094046	58.1	57.7	1.0%	< 0.1	99%	90%	110%	94%	90%	110%			
Beryllium Dissolved	20120	3094046	<0.01	<0.01	0.0%	< 0.01	91%	90%	110%	103%	90%	110%			
Boron Dissolved	20120	3094046	128	128	0.0%	< 1	96%	90%	110%	102%	80%	120%			
Cadmium Dissolved	20120	3094046	0.01	<0.01	0.0%	< 0.01	102%	90%	110%	101%	90%	110%			
Calcium Dissolved	20120	3094046	45.6	46.2	1.0%	< 0.05	103%	90%	110%	101%	90%	110%			
Chromium Dissolved	20120	3094046	1.2	1.3	8.0%	< 0.5	102%	90%	110%	99%	90%	110%			
Cobalt Dissolved	20120	3094046	0.15	0.16	6.0%	< 0.05	98%	90%	110%	102%	90%	110%			
Copper Dissolved	20120	3094046	0.4	0.4	0.0%	< 0.2	101%	90%	110%	101%	90%	110%			
Iron Dissolved	20120	3094046	37.2	37.7	1.0%	< 0.01	109%	90%	110%	102%	90%	110%			
Lead Dissolved	20120	3094046	0.03	0.02	NA	< 0.01	101%	90%	110%	99%	90%	110%			
Lithium Dissolved	20120	3094046	2.1	2.1	0.0%	< 0.1				101%	90%	110%			
Magnesium Dissolved	20120	3094046	9.37	9.48	1.0%	< 0.05	107%	90%	110%	106%	90%	110%			
Manganese Dissolved	20120	3094046	1.63	1.63	0.0%	< 0.001	108%	90%	110%	102%	90%	110%			
Mercury Dissolved	20120	3094046	<0.003	<0.003	0.0%	< 0.003	97%	90%	110%	108%	90%	110%			
Molybdenum Dissolved	20120	3094046	0.28	0.37	NA	< 0.05	101%	90%	110%	101%	90%	110%			
Nickel Dissolved	20120	3094046	0.7	0.7	0.0%	< 0.1	98%	90%	110%	101%	90%	110%			
Selenium Dissolved	20120	3094046	0.1	<0.1	0.0%	< 0.1	96%	90%	110%	109%	85%	115%			
Silver Dissolved	20120	3094046	<0.01	<0.01	0.0%	< 0.01				105%	90%	110%			
Sodium Dissolved	20120	3094046	9.31	9.44	1.0%	< 0.05	104%	90%	110%	104%	90%	110%			
Thallium Dissolved	20120	3094046	<0.002	<0.002	0.0%	< 0.002	91%	90%	110%	95%	90%	110%			
Titanium Dissolved	20120	3094046	58.3	57.3	2.0%	< 0.1				105%	90%	110%			
Uranium Dissolved	20120	3094046	0.01	<0.01	0.0%	< 0.01		90%	110%	99%	90%	110%			
Vanadium Dissolved	20120	3094046	0.8	0.9	12.0%	< 0.1	101%	90%	110%	100%	90%	110%			
Zinc Dissolved	20120	3094046	7	7	0.0%	< 1	101%	90%	110%	95%	85%	115%			

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Benzene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Toluene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Ethylbenzene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
m&p-Xylene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
o-Xylene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Bromofluorobenzene	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibromofluoromethane	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Toluene - d8	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3.5°C
AGAT Job Number: 12V571329
Notes: FEB 2 PM 5:49

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[ ] BC CSR – Soil
- [ ] Agricultural
- [ ] Industrial
- [ ] Urban/Park
- [ ] Commercial

[X] BC CSR – Water
- [ ] Drinking Water
- [X] Aquatic Life
- [ ] Irrigation
- [ ] Livestock

[X] CCME
- [ ] Drinking Water
- [ ] Residential/Park
- [ ] Commercial
- [ ] Industrial
- [ ] Drinking Water
- [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F1	CCME F2-F4	Chlorinated & non-Chlorinated phenols		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3094046	BV-11BH-02M	water	Feb 2/2012		X	X	X					X	X	X		7			
049	BV-GWDUP1	water	Feb 2/2012		X	X	X					X	X	X		7			
050	MW06-2	water	Feb 2/2012		X	X						X	X			5			
051	MW07-6	water	Feb 2/2012		X	X						X	X			5			
052	MW08-10	water	Feb 2/2012		X											3			
053	BV-11BH-07M	water	Feb 2/2012		X	X						X	X			5			

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Pink Copy - Client
	02/02/2012	AMIEL [illegible] 2 FEB 2012 5:49pm		Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	

Page 1 of 1
NO: 000630

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V571329

RECEIVING BASICS:
***Complete CoC as well where required**
Date and Time: 02-FEB-12@5:49 pm
Courier: _____
Received by: Amiel
Relinquished by: Amanda
Branch Received From: _____
Company: FRANZ ENV.
Consultant: _____
Client left without count verified: No

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000630

SAMPLE QUANTITIES:
Coolers: 2 Bottles/Jars: 32 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 02-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 09-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:

Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 2 + 3 + 4 = 3 °C (2) 4 + 3 + 4 = 4 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

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CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V571329

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Mar 05, 2012

PAGES (INCLUDING COVER): 13

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 2:Amended to include VH and EPH results as per client.
Version 2 is an amendment to version 1.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V571329
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 02, 2012 | DATE RECEIVED: Feb 02, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-02M 3094046	BV-GWDUP1 3094049	MW06-2 3094050	MW07-6 3094051	BV-11BH-07M 3094053
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1	0.3	0.2	0.2
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1	0.3	0.2	0.2
C>10 - C16	mg/L		0.1	<0.1	<0.1	0.8	0.4	0.3
C16 - C34	mg/L		0.1	<0.1	<0.1	<0.1	<0.1	0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits						
Toluene-d8 (BTEX)	%	50-150		100	101	101	100	101
o-Terphenyl (F2-F4)	%	50-150		107	109	109	110	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3094046-3094053 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V571329
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 02, 2012 | DATE RECEIVED: Feb 02, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-02M 3094046	BV-GWDUP1 3094049	MW06-2 3094050	MW07-6 3094051	MW08-10 3094052	BV-11BH-07M 3094053
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1	<1	<1	<1	<1	<1
Benzene	µg/L	4000	0.5					<0.5	
Styrene	µg/L	720	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	390	0.5					<0.5	
VH	µg/L	15000	100	<100	<100	790	730	<100	200
Ethylbenzene	µg/L	2000	0.5					<0.5	
VPH	µg/L	1500	100	<100	<100	790	730	<100	200
m&p-Xylene	µg/L		0.5					<0.5	
Naphthalene	µg/L	10	0.05	<0.05	<0.05	0.07	0.07		0.05
o-Xylene	µg/L		0.5					<0.5	
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1	<0.1		<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Acenaphthene	µg/L	60	0.05	<0.05	<0.05	0.05	<0.05		0.14
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05	<0.05		0.18
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05	<0.05		0.11
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	0.27	<0.05		<0.05
Pyrene	µg/L	0.2	0.02	<0.02	<0.02	0.29	<0.02		<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	0.05	<0.05		<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	0.06	<0.05		<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	0.05	<0.05		<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	0.04	<0.01		<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
LEPH C10-C19	µg/L	500	100	<100	<100	1640	360		550
HEPH C19-C32	µg/L		100	<100	<100	140	<100		390
EPH C10-C19	µg/L	5000	100	<100	<100	1640	360		550
EPH C19-C32	µg/L		100	<100	<100	140	<100		390

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Certificate of Analysis

AGAT WORK ORDER: 12V571329
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 02, 2012 | DATE RECEIVED: Feb 02, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Surrogate	Unit	Acceptable Limits	BV-11BH-02M 3094046	BV-GWDUP1 3094049	MW06-2 3094050	MW07-6 3094051	MW08-10 3094052	BV-11BH-07M 3094053
Nitrobenzene - d5	%	50-130	75	69	NA	NA		89
Quinoline - d7	%	50-130	89	86	NA	NA		87
2-Fluorobiphenyl	%	50-130	68	65	71	71		53
P-Terphenyl - d14	%	60-130	88	87	90	90		62
Bromofluorobenzene	%	70-130	97	89	97	86	88	75
Dibromofluoromethane	%	70-130	118	111	128	112	104	112
Toluene - d8	%	70-130	114	103	113	111	104	113

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3094046-3094049 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3094050-3094051 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Quinoline-d7 and Nitrobenzene-d5 surrogate recoveries not available due to matrix interferences.

3094052 VPH results have been corrected for BTEX contributions.

3094053 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

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Certificate of Analysis

AGAT WORK ORDER: 12V571329
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 02, 2012 | DATE RECEIVED: Feb 02, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-02M 3094046	BV-GWDUP1 3094049
Phenol	mg/L		0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Surrogate	**Unit**	**Acceptable Limits**			
2-Fluorophenol	%	50-150		99.9	112
2,4,6-Tribromophenol	%	50-150		113	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3094046-3094049 Results relate only to the items tested.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V571329
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 02, 2012 | DATE RECEIVED: Feb 02, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-02M 3094046	BV-GWDUP1 3094049
Aluminum Dissolved	µg/L		1	4	2
Antimony Dissolved	µg/L	200	0.05	0.06	<0.05
Arsenic Dissolved	µg/L	50	0.1	26.0	25.9
Barium Dissolved	µg/L	10000	0.1	58.1	58.4
Beryllium Dissolved	µg/L	53	0.01	<0.01	<0.01
Boron Dissolved	µg/L	50000	1	128	129
Cadmium Dissolved	µg/L		0.01	0.01	<0.01
Calcium Dissolved	mg/L		0.05	45.6	46.0
Chromium Dissolved	µg/L		0.5	1.2	1.2
Cobalt Dissolved	µg/L	40	0.05	0.15	0.14
Copper Dissolved	µg/L		0.2	0.4	0.2
Iron Dissolved	mg/L		0.01	37.2	37.8
Lead Dissolved	µg/L		0.01	0.03	<0.01
Lithium Dissolved	µg/L		0.1	2.1	2.0
Magnesium Dissolved	mg/L		0.05	9.37	9.47
Manganese Dissolved	mg/L		0.001	1.63	1.64
Mercury Dissolved	µg/L	1	0.003	<0.003	<0.003
Molybdenum Dissolved	µg/L	10000	0.05	0.57	0.32
Nickel Dissolved	µg/L		0.1	0.7	0.2
Selenium Dissolved	µg/L	10	0.1	0.1	<0.1
Silver Dissolved	µg/L		0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	9.31	9.42
Thallium Dissolved	µg/L	3	0.002	<0.002	<0.002
Titanium Dissolved	µg/L	1000	0.1	58.3	58.3
Uranium Dissolved	µg/L	3000	0.01	0.01	<0.01
Vanadium Dissolved	µg/L		0.1	0.8	0.9
Zinc Dissolved	µg/L		1	7	2
Hardness (calc)	mg CaCO3/L		1	152	154

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By: Marie England

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Mar 05, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3089329	<1	<1	0.0%	< 1	98%	80%	120%				110%	70%	130%
Styrene	1	3089329	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				108%	70%	130%
VPH	1	3089329	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.09	0.11	20.0%	< 0.05	99%	80%	120%				92%	50%	130%
Quinoline	1	W-MS	0.1	<0.1	0.0%	< 0.1	99%	80%	120%				102%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				88%	50%	130%
Acenaphthene	1	W-MS	0.09	0.08	12.0%	< 0.05	100%	80%	120%				94%	50%	130%
Fluorene	1	W-MS	0.1	0.09	10.5%	< 0.05	101%	80%	120%				105%	50%	130%
Phenanthrene	1	W-MS	0.11	0.10	10.0%	< 0.05	99%	80%	120%				116%	60%	130%
Anthracene (Water)	1	W-MS	0.08	0.07	13.0%	< 0.05	100%	80%	120%				83%	60%	130%
Acridine	1	W-MS	0.09	0.08	12.0%	< 0.05	99%	80%	120%				92%	50%	130%
Fluoranthene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				98%	60%	130%
Pyrene	1	W-MS	0.1	0.09	10.5%	< 0.02	100%	80%	120%				107%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.09	0.0%	< 0.05	100%	80%	120%				97%	60%	130%
Chrysene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				100%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.11	0.11	0.0%	< 0.05	99%	80%	120%				113%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				100%	60%	130%
Benzo(a)pyrene	1	W-MS	0.08	0.08	0.0%	< 0.01	100%	80%	120%				89%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.1	0.1	0.0%	< 0.05	100%	80%	120%				102%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.1	0.09	10.5%	< 0.05	100%	80%	120%				102%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.1	0.1	0.0%	< 0.05	100%	80%	120%				104%	60%	130%
Nitrobenzene - d5	1	W-MS	80	67	18.0%	<	98%	80%	120%				81%	50%	130%
Quinoline - d7	1	W-MS	94	84	11.0%	<	99%	80%	120%				94%	50%	130%
2-Fluorobiphenyl	1	W-MS	83	81	2.0%	<	100%	80%	120%				83%	50%	130%
P-Terphenyl - d14	1	W-MS	92	89	3.0%	<	101%	80%	120%				92%	60%	130%
Bromofluorobenzene	1	3089329	96	98	2.0%		103%	70%	130%				114%	70%	130%
Dibromofluoromethane	1	3089329	115	112	3.0%		98%	70%	130%				104%	70%	130%
Toluene - d8	1	3089329	116	114	2.0%		96%	70%	130%				112%	70%	130%
Phenolic Compounds in Water															
Phenol	134	3095657	<0.002	<0.002	NA	< 0.002	86%	80%	120%	94%	70%	130%	93%	60%	140%
4-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	84%	80%	120%	91%	70%	130%	91%	60%	140%
m&p-Cresol (3&4-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
o-Cresol (2-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	89%	60%	140%
2-Chlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	80%	80%	120%	83%	70%	130%	81%	60%	140%
2,4-Dinitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	91%	80%	120%	95%	70%	130%	95%	60%	140%
2-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	91%	70%	130%	102%	60%	140%
2,4-Dimethylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	87%	70%	130%	87%	60%	140%
2,6-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001				89%	70%	130%	92%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 05, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
4-Chloro-3-methylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	95%	60%	140%
2,4-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	80%	70%	130%	81%	60%	140%
4,6-Dinitro-2-methylphenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	90%	70%	130%	98%	60%	140%
2,3,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	93%	60%	140%
2,4,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	87%	80%	120%	95%	70%	130%	96%	60%	140%
2,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				91%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	97%	60%	140%
3,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,5,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,4,5-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				99%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	134	3095657	<0.005	<0.005	NA	< 0.005				97%	70%	130%	94%	60%	140%
Pentachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	90%	80%	120%	98%	70%	130%	107%	60%	140%
2-Fluorophenol	134				106.0%	<	109%	50%	150%	102%	50%	150%	106%	50%	150%
2,4,6-Tribromophenol	134				113.0%	<	111%	50%	150%	113%	50%	150%	113%	50%	150%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	95%	80%	120%	95%	80%	120%	87%	70%	130%
Toluene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	99%	80%	120%	98%	80%	120%	86%	70%	130%
Ethylbenzene	380	3091736	<0.0005	<0.0005	NA	< 0.0005	106%	80%	120%	104%	80%	120%	85%	70%	130%
Xylenes	380	3091736	<0.0005	<0.0005	NA	< 0.0005	106%	80%	120%	104%	80%	120%	88%	70%	130%
C6 - C10 (F1)	380	3091736	<0.1	<0.1	NA	< 0.1	92%	80%	120%	111%	80%	120%	83%	70%	130%
C>10 - C16	24	3095453	<0.1	<0.1	NA	< 0.1	101%	80%	120%	93%	80%	120%	98%	70%	130%
C16 - C34	24	3095453	<0.1	<0.1	NA	< 0.1	101%	80%	120%	102%	80%	120%	104%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Mar 05, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3094046	4	4	0.0%	< 1	99%	90%	110%	104%	85%	115%			
Antimony Dissolved	20120	3094046	0.06	<0.05	0.0%	< 0.05	107%	90%	110%	101%	85%	110%			
Arsenic Dissolved	20120	3094046	26.0	25.7	1.2%	< 0.1	98%	90%	110%	107%	90%	110%			
Barium Dissolved	20120	3094046	58.1	57.7	1.0%	< 0.1	99%	90%	110%	94%	90%	110%			
Beryllium Dissolved	20120	3094046	<0.01	<0.01	0.0%	< 0.01	91%	90%	110%	103%	90%	110%			
Boron Dissolved	20120	3094046	128	128	0.0%	< 1	96%	90%	110%	102%	80%	120%			
Cadmium Dissolved	20120	3094046	0.01	<0.01	0.0%	< 0.01	102%	90%	110%	101%	90%	110%			
Calcium Dissolved	20120	3094046	45.6	46.2	1.0%	< 0.05	103%	90%	110%	101%	90%	110%			
Chromium Dissolved	20120	3094046	1.2	1.3	8.0%	< 0.5	102%	90%	110%	99%	90%	110%			
Cobalt Dissolved	20120	3094046	0.15	0.16	6.0%	< 0.05	98%	90%	110%	102%	90%	110%			
Copper Dissolved	20120	3094046	0.4	0.4	0.0%	< 0.2	101%	90%	110%	101%	90%	110%			
Iron Dissolved	20120	3094046	37.2	37.7	1.0%	< 0.01	109%	90%	110%	102%	90%	110%			
Lead Dissolved	20120	3094046	0.03	0.02	NA	< 0.01	101%	90%	110%	99%	90%	110%			
Lithium Dissolved	20120	3094046	2.1	2.1	0.0%	< 0.1				101%	90%	110%			
Magnesium Dissolved	20120	3094046	9.37	9.48	1.0%	< 0.05	107%	90%	110%	106%	90%	110%			
Manganese Dissolved	20120	3094046	1.63	1.63	0.0%	< 0.001	108%	90%	110%	102%	90%	110%			
Mercury Dissolved	20120	3094046	<0.003	<0.003	0.0%	< 0.003	97%	90%	110%	108%	90%	110%			
Molybdenum Dissolved	20120	3094046	0.28	0.37	NA	< 0.05	101%	90%	110%	101%	90%	110%			
Nickel Dissolved	20120	3094046	0.7	0.7	0.0%	< 0.1	98%	90%	110%	101%	90%	110%			
Selenium Dissolved	20120	3094046	0.1	<0.1	0.0%	< 0.1	96%	90%	110%	109%	85%	115%			
Silver Dissolved	20120	3094046	<0.01	<0.01	0.0%	< 0.01				105%	90%	110%			
Sodium Dissolved	20120	3094046	9.31	9.44	1.0%	< 0.05	104%	90%	110%	104%	90%	110%			
Thallium Dissolved	20120	3094046	<0.002	<0.002	0.0%	< 0.002	91%	90%	110%	95%	90%	110%			
Titanium Dissolved	20120	3094046	58.3	57.3	2.0%	< 0.1				105%	90%	110%			
Uranium Dissolved	20120	3094046	0.01	<0.01	0.0%	< 0.01		90%	110%	99%	90%	110%			
Vanadium Dissolved	20120	3094046	0.8	0.9	12.0%	< 0.1	101%	90%	110%	100%	90%	110%			
Zinc Dissolved	20120	3094046	7	7	0.0%	< 1	101%	90%	110%	95%	85%	115%			

Certified By:

AGAT Laboratories

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Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Benzene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Toluene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Ethylbenzene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
m&p-Xylene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
o-Xylene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Bromofluorobenzene	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibromofluoromethane	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Toluene - d8	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
EPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3.5°C
AGAT Job Number: 12V571329
Notes: FEB 2 PM 5:49

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[ ] BC CSR – Soil
- [ ] Agricultural
- [ ] Industrial
- [ ] Urban/Park
- [ ] Commercial

[X] BC CSR – Water
- [ ] Drinking Water
- [X] Aquatic Life
- [ ] Irrigation
- [ ] Livestock

[X] CCME
- [ ] Drinking Water
- [ ] Residential/Park
- [ ] Commercial
- [ ] Industrial
- [ ] Drinking Water
- [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F1	CCME F2-F4	Chlorinated & non-Chlorinated phenols		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
3094046	BV-11BH-02M	water	Feb 2/2012		X	X	X					X	X	X		7			
049	BV-GWDUP1	water	Feb 2/2012		X	X	X					X	X	X		7			
050	MW06-2	water	Feb 2/2012		X	X						X	X			5			
051	MW07-6	water	Feb 2/2012		X	X						X	X			5			
052	MW08-10	water	Feb 2/2012		X											3			
053	BV-11BH-07M	water	Feb 2/2012		X	X						X	X			5			

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Pink Copy - Client
	02/02/2012	AMIEL [illegible] 2 FEB 2012 5:49pm		Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	

Page 1 of 1
NO: 000630

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V571329

RECEIVING BASICS:
***Complete CoC as well where required**
Date and Time: 02-FEB-12@5:49 pm
Courier: _____
Received by: Amiel
Relinquished by: Amanda
Branch Received From: _____
Company: FRANZ ENV.
Consultant: _____
Client left without count verified: No

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000630

SAMPLE QUANTITIES:
Coolers: 2 Bottles/Jars: 32 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 02-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 09-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:

Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 2 + 3 + 4 = 3 °C (2) 4 + 3 + 4 = 4 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
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CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V571615

TRACE ORGANICS REVIEWED BY: Larissa Poryadina, Senior Analyst

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Feb 13, 2012

PAGES (INCLUDING COVER): 14

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Feb 13, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-01M 3095663	MW07-8 3095682	MW07-7 3095684
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1	0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1	0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1	0.7
C16 - C34	mg/L		0.1	0.1	<0.1	0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits				
Toluene-d8 (BTEX)	%	50-150		102	99	100
o-Terphenyl (F2-F4)	%	50-150		109	110	112

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3095663-3095684 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F2-F4) in Water

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Feb 13, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-08M 3095674	BV-11BH-09M 3095680
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	0.0009
Xylenes	mg/L		0.0005	<0.0005	0.0048
C>10 - C16	mg/L		0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8 (BTEX)	%	50-150		102	101
o-Terphenyl (F2-F4)	%	50-150		108	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3095674-3095680 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Feb 13, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-01M 3095663	BV-11BH-08M 3095674	BV-11BH-09M 3095680	MW07-8 3095682	MW07-9 3095683	MW07-7 3095684
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1			<1	<1	<1
Benzene	µg/L	4000	0.5					<0.5	
Styrene	µg/L	720	0.5	<0.5			<0.5	<0.5	<0.5
Toluene	µg/L	390	0.5					<0.5	
VPH	µg/L	1500	100	<100			<100	<100	270
Ethylbenzene	µg/L	2000	0.5					<0.5	
Naphthalene	µg/L	10	0.05	<0.05	<0.05	0.49	<0.05		1.08
m&p-Xylene	µg/L		0.5					<0.5	
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1	<0.1		0.2
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		0.06
o-Xylene	µg/L		0.5					<0.5	
Acenaphthene	µg/L	60	0.05	3.98	<0.05	<0.05	<0.05		5.43
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05	<0.05		3.89
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05	<0.05		5.65
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05		0.27
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05	<0.05		0.40
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	<0.05	<0.05		1.06
Pyrene	µg/L	0.2	0.02	<0.02	<0.02	<0.02	<0.02		0.52
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	<0.01	<0.01		<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
LEPH C10-C19	µg/L	500	100	140	<100	130	<100		860
HEPH C19-C32	µg/L		100	150	<100	140	<100		130

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Certificate of Analysis

AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Feb 13, 2012 | SAMPLE TYPE: Water

Surrogate	Unit	Acceptable Limits	BV-11BH-01M 3095663	BV-11BH-08M 3095674	BV-11BH-09M 3095680	MW07-8 3095682	MW07-9 3095683	MW07-7 3095684
Nitrobenzene - d5	%	50-130	83	94	102	77		NA
Quinoline - d7	%	50-130	94	95	96	93		99
2-Fluorobiphenyl	%	50-130	76	77	76	72		67
P-Terphenyl - d14	%	60-130	94	95	93	95		91
Bromofluorobenzene	%	70-130	93			88	90	89
Dibromofluoromethane	%	70-130	112			106	108	113
Toluene - d8	%	70-130	111			105	106	122

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3095663 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3095674-3095680 LEPH & HEPH results have been corrected for PAH contributions.

3095682 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3095683 VPH results have been corrected for BTEX contributions.

3095684 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Nitrobenzene-d5 surrogate not available due to sample matrix interference.

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AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Feb 13, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-01M 3095663	BV-11BH-09M 3095680
Phenol	mg/L		0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Surrogate	Unit	Acceptable Limits			
2-Fluorophenol	%	50-150		108	110
2,4,6-Tribromophenol	%	50-150		110	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3095663-3095680 Results relate only to the items tested.

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Certificate of Analysis

AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Feb 13, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-01M 3095663	BV-11BH-09M 3095680
Aluminum Dissolved	µg/L		1	23	7
Antimony Dissolved	µg/L		0.05	0.14	0.09
Arsenic Dissolved	µg/L	5	0.1	33.3	28.3
Barium Dissolved	µg/L		0.1	104	234
Beryllium Dissolved	µg/L		0.01	0.02	<0.01
Boron Dissolved	µg/L		1	64	243
Cadmium Dissolved	µg/L	0.017	0.01	<0.01	0.01
Calcium Dissolved	mg/L		0.05	58.3	145
Chromium Dissolved	µg/L		0.5	4.7	1.5
Cobalt Dissolved	µg/L		0.05	1.67	3.96
Copper Dissolved	µg/L		0.2	0.9	0.6
Iron Dissolved	mg/L	0.3	0.01	95.3	48.9
Lead Dissolved	µg/L		0.01	0.10	0.15
Lithium Dissolved	µg/L		0.1	3.8	3.6
Magnesium Dissolved	mg/L		0.05	11.4	41.5
Manganese Dissolved	mg/L		0.001	2.54	2.07
Mercury Dissolved	µg/L	0.026	0.003	<0.003	<0.003
Molybdenum Dissolved	µg/L	73	0.05	0.63	1.07
Nickel Dissolved	µg/L		0.1	1.7	3.9
Selenium Dissolved	µg/L	1	0.1	<0.1	<0.1
Silver Dissolved	µg/L	0.1	0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	8.86	71.8
Thallium Dissolved	µg/L	0.8	0.002	0.011	0.022
Titanium Dissolved	µg/L		0.1	91.7	178
Uranium Dissolved	µg/L		0.01	0.03	0.30
Vanadium Dissolved	µg/L		0.1	7.7	1.1
Zinc Dissolved	µg/L	30	1	8	7
Hardness (calc)	mg CaCO3/L		1	193	533

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL) (Van)

Certified By: Marie England

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Feb 13, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3089329	<1	<1	0.0%	< 1	98%	80%	120%				110%	70%	130%
Styrene	1	3089329	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				108%	70%	130%
VPH	1	3089329	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.09	0.08	11.8%	< 0.05	100%	80%	120%				91%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				84%	50%	130%
Acenaphthylene	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				75%	50%	130%
Acenaphthene	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				77%	50%	130%
Fluorene	1	W-MS	0.08	0.09	11.8%	< 0.05	100%	80%	120%				87%	50%	130%
Phenanthrene	1	W-MS	0.08	0.09	11.8%	< 0.05	97%	80%	120%				84%	60%	130%
Anthracene (Water)	1	W-MS	0.07	0.08	13.3%	< 0.05	102%	80%	120%				75%	60%	130%
Acridine	1	W-MS	0.09	0.10	10.5%	< 0.05	99%	80%	120%				94%	50%	130%
Fluoranthene	1	W-MS	0.08	0.09	11.8%	< 0.05	100%	80%	120%				89%	60%	130%
Pyrene	1	W-MS	0.09	0.10	10.5%	< 0.02	99%	80%	120%				91%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.10	10.5%	< 0.05	100%	80%	120%				92%	60%	130%
Chrysene	1	W-MS	0.09	0.10	10.5%	< 0.05	100%	80%	120%				92%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				108%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.09	0.1	10.5%	< 0.05	101%	80%	120%				100%	60%	130%
Benzo(a)pyrene	1	W-MS	0.08	0.09	11.8%	< 0.01	101%	80%	120%				86%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Nitrobenzene - d5	1	W-MS	79	70	12.1%		98%	80%	120%				80%	50%	130%
Quinoline - d7	1	W-MS	93	87	6.7%		102%	80%	120%				94%	50%	130%
2-Fluorobiphenyl	1	W-MS	79	69	13.5%		101%	80%	120%				79%	50%	130%
P-Terphenyl - d14	1	W-MS	94	95	1.1%		99%	80%	120%				95%	60%	130%
Bromofluorobenzene	1	3089329	96	98	2.0%		103%	70%	130%				114%	70%	130%
Dibromofluoromethane	1	3089329	115	112	3.0%		98%	70%	130%				104%	70%	130%
Toluene - d8	1	3089329	116	114	2.0%		96%	70%	130%				112%	70%	130%
Phenolic Compounds in Water															
Phenol	134	3095657	<0.002	<0.002	NA	< 0.002	86%	80%	120%	94%	70%	130%	93%	60%	140%
4-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	84%	80%	120%	91%	70%	130%	91%	60%	140%
m&p-Cresol (3&4-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
o-Cresol (2-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	89%	60%	140%
2-Chlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	80%	80%	120%	83%	70%	130%	81%	60%	140%
2,4-Dinitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	91%	80%	120%	95%	70%	130%	95%	60%	140%
2-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	91%	70%	130%	102%	60%	140%
2,4-Dimethylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	87%	70%	130%	87%	60%	140%
2,6-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001				89%	70%	130%	92%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 13, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
4-Chloro-3-methylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	95%	60%	140%
2,4-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	80%	70%	130%	81%	60%	140%
4,6-Dinitro-2-methylphenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	90%	70%	130%	98%	60%	140%
2,3,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	93%	60%	140%
2,4,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	87%	80%	120%	95%	70%	130%	96%	60%	140%
2,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				91%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	97%	60%	140%
3,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,5,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,4,5-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				99%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	134	3095657	<0.005	<0.005	NA	< 0.005				97%	70%	130%	94%	60%	140%
Pentachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	90%	80%	120%	98%	70%	130%	107%	60%	140%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	385	3095663	<0.0005	<0.0005	NA	< 0.0005	100%	80%	120%	99%	80%	120%	85%	70%	130%
Toluene	385	3095663	<0.0005	<0.0005	NA	< 0.0005	105%	80%	120%	104%	80%	120%	90%	70%	130%
Ethylbenzene	385	3095663	<0.0005	<0.0005	NA	< 0.0005	108%	80%	120%	109%	80%	120%	93%	70%	130%
Xylenes	385	3095663	<0.0005	<0.0005	NA	< 0.0005	108%	80%	120%	108%	80%	120%	94%	70%	130%
C6 - C10 (F1)	385	3095663	<0.1	<0.1	NA	< 0.1	101%	80%	120%	107%	80%	120%	90%	70%	130%
C>10 - C16	28	3095674	<0.1	<0.1	NA	< 0.1	98%	80%	120%	91%	80%	120%	101%	70%	130%
C16 - C34	28	3095674	<0.1	<0.1	NA	< 0.1	98%	80%	120%	106%	80%	120%	101%	70%	130%
Petroleum Hydrocarbons (BTEX/F2-F4) in Water															
Benzene	387	3095680	< 0.0005	< 0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	93%	70%	130%
Toluene	387	3095680	< 0.0005	< 0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	97%	70%	130%
Ethylbenzene	387	3095680	0.0009	0.0009	0.0%	< 0.0005	104%	80%	120%	97%	80%	120%	103%	70%	130%
Xylenes	387	3095680	0.0048	0.0047	2.1%	< 0.0005	102%	80%	120%	97%	80%	120%	101%	70%	130%

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Feb 13, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3095663	23	22	4.4%	< 1	108%	90%	110%	111%	85%	115%			
Antimony Dissolved	20120	3095663	0.14	0.13	7.0%	< 0.05	100%	90%	110%	101%	85%	110%			
Arsenic Dissolved	20120	3095663	33.3	32.9	1.0%	< 0.1	99%	90%	110%	105%	90%	110%			
Barium Dissolved	20120	3095663	104	107	3.0%	< 0.1	101%	90%	110%	101%	90%	110%			
Beryllium Dissolved	20120	3095663	0.01	<0.01	0.0%	< 0.01	90%	90%	110%	102%	90%	110%			
Boron Dissolved	20120	3095663	64	63	2.0%	< 1	99%	90%	110%	112%	80%	120%			
Cadmium Dissolved	20120	3095663	<0.01	<0.01	0.0%	< 0.01	98%	90%	110%	101%	90%	110%			
Calcium Dissolved	20120	3095663	58.3	57.7	1.0%	< 0.05	99%	90%	110%	103%	90%	110%			
Chromium Dissolved	20120	3095663	4.7	4.7	0.0%	< 0.5	101%	90%	110%	97%	90%	110%			
Cobalt Dissolved	20120	3095663	1.67	1.59	5.0%	< 0.05	100%	90%	110%	105%	90%	110%			
Copper Dissolved	20120	3095663	0.9	0.8	12.0%	< 0.2	101%	90%	110%	105%	90%	110%			
Iron Dissolved	20120	3095663	95.3	94.8	1.0%	< 0.01	104%	90%	110%	105%	90%	110%			
Lead Dissolved	20120	3095663	0.10	0.12	18.2%	< 0.01	99%	90%	110%	101%	90%	110%			
Lithium Dissolved	20120	3095663	3.8	3.8	0.0%	< 0.1				104%	90%	110%			
Magnesium Dissolved	20120	3095663	11.4	11.3	1.0%	< 0.05	104%	90%	110%	108%	90%	110%			
Manganese Dissolved	20120	3095663	2.54	2.51	1.0%	< 0.001	103%	90%	110%	104%	90%	110%			
Mercury Dissolved	20120	3095663	<0.003	<0.003	0.0%	< 0.003	95%	90%	110%	100%	90%	110%			
Molybdenum Dissolved	20120	3095663	0.63	0.62	2.0%	< 0.05	96%	90%	110%	103%	90%	110%			
Nickel Dissolved	20120	3095663	1.7	1.6	6.0%	< 0.1	96%	90%	110%	103%	90%	110%			
Selenium Dissolved	20120	3095663	<0.1	<0.1	0.0%	< 0.1	99%	90%	110%	101%	85%	115%			
Silver Dissolved	20120	3095663	<0.01	<0.01	0.0%	< 0.01				104%	90%	110%			
Sodium Dissolved	20120	3095663	8.86	8.78	1.0%	< 0.05	101%	90%	110%	107%	90%	110%			
Thallium Dissolved	20120	3095663	0.011	0.005	NA	< 0.002	92%	90%	110%	98%	90%	110%			
Titanium Dissolved	20120	3095663	91.7	90.7	1.0%	< 0.1				101%	90%	110%			
Uranium Dissolved	20120	3095663	0.03	0.03	0.0%	< 0.01		90%	110%	100%	90%	110%			
Vanadium Dissolved	20120	3095663	7.7	7.6	1.0%	< 0.1	101%	90%	110%	97%	90%	110%			
Zinc Dissolved	20120	3095663	8	7	13.3%	< 1	100%	90%	110%	102%	85%	115%			

Certified By:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Toluene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Ethylbenzene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
m&p-Xylene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
o-Xylene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Bromofluorobenzene	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibromofluoromethane	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Toluene - d8	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604-632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 4°
AGAT Job Number: 12V571615

Notes: FEB 3 PM 4:29

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[ ] BC CSR – Soil
- [ ] Agricultural
- [ ] Industrial
- [ ] Urban/Park
- [ ] Commercial

[X] BC CSR – Water
- [ ] Drinking Water
- [X] Aquatic Life
- [ ] Irrigation
- [ ] Livestock

[X] CCME
- [ ] Drinking Water
- [ ] Residential/Park
- [ ] Commercial
- [ ] Industrial
- [ ] Drinking Water
- [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F1	CCME F2-F4	Chlorinated and non-Chlorinated phenols			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
30975663	~~3097568~~ BV-11BH-01M	Water	Feb 3, 2012		X	X	X					X	X	X			7			
3095674	BV-11BH-08M					X							X				2			
3095680	~~BV~~ BV-11BH-09M					X	X						X	X			4			
682	MW07-8				X	X						X	X				5			
683	MW07-9				X												3			
684	MW07-7				X	X						X	X				5			

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
[signature]	Feb 3, 2012	Aniel Ocampo 3 FEB 2012	4:29 pm
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 1
NO: 000627

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order #_____

RECEIVING BASICS:
***Complete CoC as well where required**
Date and Time: 3 FEB 2012 4:29 pm
Courier: _____
Received by: AMIEL
Relinquished by: _____
Branch Received From: _____
Company: FRANZ ENV
Consultant: _____
Client left without count verified: _____

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: 5-7 DAYS
COC Numbers: 000 627

SAMPLE QUANTITIES:
Coolers: 1 Bottles/Jars: 26 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 3 FEB 2012
Microbiology: Test: _____
Hydrocarbons: Test: BTEX/VPH & EPH/HEPH
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 11 Feb, 2012

SPECIALTY ISSUES:
Legal Samples: Yes No
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous: _____
Precaution taken: _____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 5 + 4 + 4 = 4 °C (2) 4 + 3 + 4 = 4 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

03-Feb-2012

AGAT Laboratories Ltd

InterLab Shipment

Environmental Analysis

Company #: 35733-13
Bin #: FW-12
Date Required: 10-FEB-2012

Company: FRANZ ENVIRONMENTAL

Contact: Amanda Salway

Work Order #: 12V 571615
Branch: Vancouver
Assigned By: Amiel Ocampo
Logged By: Amiel Ocampo

Courier	Date Entered	From	To
Name Loomis	03-FEB-2012	Branch: Vancouver	Branch: Calgary
Waybill NA		CSR:	CSR:
		Shipped by:	Rcvd by:
		Shipped date: 06-FEB-2012	Rcvd date: 00- -0000

Comments: Chloronated/non chloronated phenols x 2
CCME F1-F4 X 3
CCME F2-F4 X 2

All samples sent to Calgary

AGAT Laboratories

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FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V571615

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Mar 05, 2012

PAGES (INCLUDING COVER): 14

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 2:Amended to include VH and EPH results as per client.
Version 2 is an amendment to version 1.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-01M 3095663	MW07-8 3095682	MW07-7 3095684
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1	0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1	0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1	0.7
C16 - C34	mg/L		0.1	0.1	<0.1	0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits				
Toluene-d8 (BTEX)	%	50-150		102	99	100
o-Terphenyl (F2-F4)	%	50-150		109	110	112

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3095663-3095684 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F2-F4) in Water

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-08M 3095674	BV-11BH-09M 3095680
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	0.0009
Xylenes	mg/L		0.0005	<0.0005	0.0048
C>10 - C16	mg/L		0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8 (BTEX)	%	50-150		102	101
o-Terphenyl (F2-F4)	%	50-150		108	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3095674-3095680 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-01M 3095663	BV-11BH-08M 3095674	BV-11BH-09M 3095680	MW07-8 3095682	MW07-9 3095683	MW07-7 3095684
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1			<1	<1	<1
Styrene	µg/L	720	0.5	<0.5			<0.5	<0.5	<0.5
Benzene	µg/L	4000	0.5					<0.5	
Toluene	µg/L	390	0.5					<0.5	
VPH	µg/L	1500	100	<100			<100	<100	270
Ethylbenzene	µg/L	2000	0.5					<0.5	
VH	µg/L	15000	100	<100			<100	<100	270
m&p-Xylene	µg/L		0.5					<0.5	
Naphthalene	µg/L	10	0.05	<0.05	<0.05	0.49	<0.05		1.08
o-Xylene	µg/L		0.5					<0.5	
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1	<0.1		0.2
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		0.06
Acenaphthene	µg/L	60	0.05	3.98	<0.05	<0.05	<0.05		5.43
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05	<0.05		3.89
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05	<0.05		5.65
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05		0.27
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05	<0.05		0.40
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	<0.05	<0.05		1.06
Pyrene	µg/L	0.2	0.02	<0.02	<0.02	<0.02	<0.02		0.52
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	<0.01	<0.01		<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05		<0.05
LEPH C10-C19	µg/L	500	100	140	<100	130	<100		860
HEPH C19-C32	µg/L		100	150	<100	140	<100		130
EPH C10-C19	µg/L	5000	100	140	<100	130	<100		860
EPH C19-C32	µg/L		100	150	<100	140	<100		130

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Certificate of Analysis

AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Surrogate	Unit	Acceptable Limits	BV-11BH-01M 3095663	BV-11BH-08M 3095674	BV-11BH-09M 3095680	MW07-8 3095682	MW07-9 3095683	MW07-7 3095684
Nitrobenzene - d5	%	50-130	83	94	102	77		NA
Quinoline - d7	%	50-130	94	95	96	93		99
2-Fluorobiphenyl	%	50-130	76	77	76	72		67
P-Terphenyl - d14	%	60-130	94	95	93	95		91
Bromofluorobenzene	%	70-130	93			88	90	89
Dibromofluoromethane	%	70-130	112			106	108	113
Toluene - d8	%	70-130	111			105	106	122

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3095663 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3095674-3095680 LEPH & HEPH results have been corrected for PAH contributions.

3095682 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3095683 VPH results have been corrected for BTEX contributions.

3095684 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Nitrobenzene-d5 surrogate not available due to sample matrix interference.

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AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-01M 3095663	BV-11BH-09M 3095680
Phenol	mg/L		0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Surrogate	**Unit**	**Acceptable Limits**			
2-Fluorophenol	%	50-150		108	110
2,4,6-Tribromophenol	%	50-150		110	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3095663-3095680 Results relate only to the items tested.

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Certificate of Analysis

AGAT WORK ORDER: 12V571615
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 03, 2012 | DATE RECEIVED: Feb 03, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	BV-11BH-01M 3095663	BV-11BH-09M 3095680
Aluminum Dissolved	µg/L		1	23	7
Antimony Dissolved	µg/L	200	0.05	0.14	0.09
Arsenic Dissolved	µg/L	50	0.1	33.3	28.3
Barium Dissolved	µg/L	10000	0.1	104	234
Beryllium Dissolved	µg/L	53	0.01	0.02	<0.01
Boron Dissolved	µg/L	50000	1	64	243
Cadmium Dissolved	µg/L		0.01	<0.01	0.01
Calcium Dissolved	mg/L		0.05	58.3	145
Chromium Dissolved	µg/L		0.5	4.7	1.5
Cobalt Dissolved	µg/L	40	0.05	1.67	3.96
Copper Dissolved	µg/L		0.2	0.9	0.6
Iron Dissolved	mg/L		0.01	95.3	48.9
Lead Dissolved	µg/L		0.01	0.10	0.15
Lithium Dissolved	µg/L		0.1	3.8	3.6
Magnesium Dissolved	mg/L		0.05	11.4	41.5
Manganese Dissolved	mg/L		0.001	2.54	2.07
Mercury Dissolved	µg/L	1	0.003	<0.003	<0.003
Molybdenum Dissolved	µg/L	10000	0.05	0.63	1.07
Nickel Dissolved	µg/L		0.1	1.7	3.9
Selenium Dissolved	µg/L	10	0.1	<0.1	<0.1
Silver Dissolved	µg/L		0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	8.86	71.8
Thallium Dissolved	µg/L	3	0.002	0.011	0.022
Titanium Dissolved	µg/L	1000	0.1	91.7	178
Uranium Dissolved	µg/L	3000	0.01	0.03	0.30
Vanadium Dissolved	µg/L		0.1	7.7	1.1
Zinc Dissolved	µg/L		1	8	7
Hardness (calc)	mg CaCO3/L		1	193	533

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By: Marie England

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Mar 05, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3089329	<1	<1	0.0%	< 1	98%	80%	120%				110%	70%	130%
Styrene	1	3089329	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				108%	70%	130%
VPH	1	3089329	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.09	0.08	11.8%	< 0.05	100%	80%	120%				91%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				84%	50%	130%
Acenaphthylene	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				75%	50%	130%
Acenaphthene	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				77%	50%	130%
Fluorene	1	W-MS	0.08	0.09	11.8%	< 0.05	100%	80%	120%				87%	50%	130%
Phenanthrene	1	W-MS	0.08	0.09	11.8%	< 0.05	97%	80%	120%				84%	60%	130%
Anthracene (Water)	1	W-MS	0.07	0.08	13.3%	< 0.05	102%	80%	120%				75%	60%	130%
Acridine	1	W-MS	0.09	0.10	10.5%	< 0.05	99%	80%	120%				94%	50%	130%
Fluoranthene	1	W-MS	0.08	0.09	11.8%	< 0.05	100%	80%	120%				89%	60%	130%
Pyrene	1	W-MS	0.09	0.10	10.5%	< 0.02	99%	80%	120%				91%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.10	10.5%	< 0.05	100%	80%	120%				92%	60%	130%
Chrysene	1	W-MS	0.09	0.10	10.5%	< 0.05	100%	80%	120%				92%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				108%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.09	0.1	10.5%	< 0.05	101%	80%	120%				100%	60%	130%
Benzo(a)pyrene	1	W-MS	0.08	0.09	11.8%	< 0.01	101%	80%	120%				86%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Nitrobenzene - d5	1	W-MS	79	70	12.1%		98%	80%	120%				80%	50%	130%
Quinoline - d7	1	W-MS	93	87	6.7%		102%	80%	120%				94%	50%	130%
2-Fluorobiphenyl	1	W-MS	79	69	13.5%		101%	80%	120%				79%	50%	130%
P-Terphenyl - d14	1	W-MS	94	95	1.1%		99%	80%	120%				95%	60%	130%
Bromofluorobenzene	1	3089329	96	98	2.0%		103%	70%	130%				114%	70%	130%
Dibromofluoromethane	1	3089329	115	112	3.0%		98%	70%	130%				104%	70%	130%
Toluene - d8	1	3089329	116	114	2.0%		96%	70%	130%				112%	70%	130%
Phenolic Compounds in Water															
Phenol	134	3095657	<0.002	<0.002	NA	< 0.002	86%	80%	120%	94%	70%	130%	93%	60%	140%
4-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	84%	80%	120%	91%	70%	130%	91%	60%	140%
m&p-Cresol (3&4-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
o-Cresol (2-methylphenol)	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	89%	60%	140%
2-Chlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	80%	80%	120%	83%	70%	130%	81%	60%	140%
2,4-Dinitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	91%	80%	120%	95%	70%	130%	95%	60%	140%
2-Nitrophenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	91%	70%	130%	102%	60%	140%
2,4-Dimethylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	87%	70%	130%	87%	60%	140%
2,6-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001				89%	70%	130%	92%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 05, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
4-Chloro-3-methylphenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	95%	60%	140%
2,4-Dichlorophenol	134	3095657	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	80%	70%	130%	81%	60%	140%
4,6-Dinitro-2-methylphenol	134	3095657	<0.005	<0.005	NA	< 0.005	95%	80%	120%	90%	70%	130%	98%	60%	140%
2,3,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	95%	60%	140%
2,3,4-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				89%	70%	130%	93%	60%	140%
2,4,6-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	87%	80%	120%	95%	70%	130%	96%	60%	140%
2,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				91%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	97%	60%	140%
3,4,5-Trichlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,5,6-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	101%	60%	140%
2,3,4,5-Tetrachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005				99%	70%	130%	100%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	134	3095657	<0.005	<0.005	NA	< 0.005				97%	70%	130%	94%	60%	140%
Pentachlorophenol	134	3095657	<0.0005	<0.0005	NA	< 0.0005	90%	80%	120%	98%	70%	130%	107%	60%	140%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	385	3095663	<0.0005	<0.0005	NA	< 0.0005	100%	80%	120%	99%	80%	120%	85%	70%	130%
Toluene	385	3095663	<0.0005	<0.0005	NA	< 0.0005	105%	80%	120%	104%	80%	120%	90%	70%	130%
Ethylbenzene	385	3095663	<0.0005	<0.0005	NA	< 0.0005	108%	80%	120%	109%	80%	120%	93%	70%	130%
Xylenes	385	3095663	<0.0005	<0.0005	NA	< 0.0005	108%	80%	120%	108%	80%	120%	94%	70%	130%
C6 - C10 (F1)	385	3095663	<0.1	<0.1	NA	< 0.1	101%	80%	120%	107%	80%	120%	90%	70%	130%
C>10 - C16	28	3095674	<0.1	<0.1	NA	< 0.1	98%	80%	120%	91%	80%	120%	101%	70%	130%
C16 - C34	28	3095674	<0.1	<0.1	NA	< 0.1	98%	80%	120%	106%	80%	120%	101%	70%	130%
Petroleum Hydrocarbons (BTEX/F2-F4) in Water															
Benzene	387	3095680	< 0.0005	< 0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	93%	70%	130%
Toluene	387	3095680	< 0.0005	< 0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	97%	70%	130%
Ethylbenzene	387	3095680	0.0009	0.0009	0.0%	< 0.0005	104%	80%	120%	97%	80%	120%	103%	70%	130%
Xylenes	387	3095680	0.0048	0.0047	2.1%	< 0.0005	102%	80%	120%	97%	80%	120%	101%	70%	130%

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Mar 05, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3095663	23	22	4.4%	< 1	108%	90%	110%	111%	85%	115%			
Antimony Dissolved	20120	3095663	0.14	0.13	7.0%	< 0.05	100%	90%	110%	101%	85%	110%			
Arsenic Dissolved	20120	3095663	33.3	32.9	1.0%	< 0.1	99%	90%	110%	105%	90%	110%			
Barium Dissolved	20120	3095663	104	107	3.0%	< 0.1	101%	90%	110%	101%	90%	110%			
Beryllium Dissolved	20120	3095663	0.01	<0.01	0.0%	< 0.01	90%	90%	110%	102%	90%	110%			
Boron Dissolved	20120	3095663	64	63	2.0%	< 1	99%	90%	110%	112%	80%	120%			
Cadmium Dissolved	20120	3095663	<0.01	<0.01	0.0%	< 0.01	98%	90%	110%	101%	90%	110%			
Calcium Dissolved	20120	3095663	58.3	57.7	1.0%	< 0.05	99%	90%	110%	103%	90%	110%			
Chromium Dissolved	20120	3095663	4.7	4.7	0.0%	< 0.5	101%	90%	110%	97%	90%	110%			
Cobalt Dissolved	20120	3095663	1.67	1.59	5.0%	< 0.05	100%	90%	110%	105%	90%	110%			
Copper Dissolved	20120	3095663	0.9	0.8	12.0%	< 0.2	101%	90%	110%	105%	90%	110%			
Iron Dissolved	20120	3095663	95.3	94.8	1.0%	< 0.01	104%	90%	110%	105%	90%	110%			
Lead Dissolved	20120	3095663	0.10	0.12	18.2%	< 0.01	99%	90%	110%	101%	90%	110%			
Lithium Dissolved	20120	3095663	3.8	3.8	0.0%	< 0.1				104%	90%	110%			
Magnesium Dissolved	20120	3095663	11.4	11.3	1.0%	< 0.05	104%	90%	110%	108%	90%	110%			
Manganese Dissolved	20120	3095663	2.54	2.51	1.0%	< 0.001	103%	90%	110%	104%	90%	110%			
Mercury Dissolved	20120	3095663	<0.003	<0.003	0.0%	< 0.003	95%	90%	110%	100%	90%	110%			
Molybdenum Dissolved	20120	3095663	0.63	0.62	2.0%	< 0.05	96%	90%	110%	103%	90%	110%			
Nickel Dissolved	20120	3095663	1.7	1.6	6.0%	< 0.1	96%	90%	110%	103%	90%	110%			
Selenium Dissolved	20120	3095663	<0.1	<0.1	0.0%	< 0.1	99%	90%	110%	101%	85%	115%			
Silver Dissolved	20120	3095663	<0.01	<0.01	0.0%	< 0.01				104%	90%	110%			
Sodium Dissolved	20120	3095663	8.86	8.78	1.0%	< 0.05	101%	90%	110%	107%	90%	110%			
Thallium Dissolved	20120	3095663	0.011	0.005	NA	< 0.002	92%	90%	110%	98%	90%	110%			
Titanium Dissolved	20120	3095663	91.7	90.7	1.0%	< 0.1				101%	90%	110%			
Uranium Dissolved	20120	3095663	0.03	0.03	0.0%	< 0.01		90%	110%	100%	90%	110%			
Vanadium Dissolved	20120	3095663	7.7	7.6	1.0%	< 0.1	101%	90%	110%	97%	90%	110%			
Zinc Dissolved	20120	3095663	8	7	13.3%	< 1	100%	90%	110%	102%	85%	115%			

Certified By:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Toluene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Ethylbenzene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
m&p-Xylene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
o-Xylene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Bromofluorobenzene	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibromofluoromethane	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Toluene - d8	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604-632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 4°
AGAT Job Number: 12V571615

Notes: FEB 3 PM 4:29

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[ ] BC CSR – Soil
- [ ] Agricultural
- [ ] Industrial
- [ ] Urban/Park
- [ ] Commercial

[X] BC CSR – Water
- [ ] Drinking Water
- [X] Aquatic Life
- [ ] Irrigation
- [ ] Livestock

[X] CCME
- [ ] Drinking Water
- [ ] Residential/Park
- [ ] Commercial
- [ ] Industrial
- [ ] Drinking Water
- [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F1	CCME F2-F4	Chlorinated and non-Chlorinated phenols			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for ~~1 YEAR~~ 60 days
30975663	~~3097568~~ BV-11BH-01M	Water	Feb 3, 2012		X	X	X					X	X	X			7			
3095674	BV-11BH-08M					X							X				2			
3095680	~~BV~~ BV-11BH-09M					X	X						X	X			4			
682	MW07-8				X	X						X	X				5			
683	MW07-9				X												3			
684	MW07-7				X	X						X	X				5			

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
[signature]	Feb 3, 2012	Aniel Ocampo 3 FEB 2012	4:29 pm
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 1
NO: 000627

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order #_____

RECEIVING BASICS:
***Complete CoC as well where required**
Date and Time: 3 FEB 2012 4:29 pm
Courier: _____
Received by: AMIEL
Relinquished by: _____
Branch Received From: _____
Company: FRANZ ENV
Consultant: _____
Client left without count verified: _____

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: 5-7 DAYS
COC Numbers: 000 627

SAMPLE QUANTITIES:
Coolers: 1 Bottles/Jars: 26 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 3 FEB 2012
Microbiology: Test: _____
Hydrocarbons: Test: BTEX/VPH & EPH/HEPH
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 11 Feb, 2012

SPECIALTY ISSUES:
Legal Samples: Yes No
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous: _____
Precaution taken: _____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 5 + 4 + 4 = 4 °C (2) 4 + 3 + 4 = 4 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

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CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V572231

TRACE ORGANICS REVIEWED BY: Larissa Poryadina, Senior Analyst

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Feb 14, 2012

PAGES (INCLUDING COVER): 20

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8 (BTEX)	%	50-150		118	108
o-Terphenyl (F2-F4)	%	50-150		110	109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3100893-3100904 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904	MV-11BH-07M 3100913
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1	<1	
Styrene	µg/L	720	0.5	<0.5	<0.5	
VPH	µg/L	1500	100	<100	<100	
Naphthalene	µg/L	10	0.05	<0.05	<0.05	<0.05
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/L	60	0.05	<0.05	<0.05	<0.05
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	<0.05
Pyrene	µg/L	0.2	0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/L	500	100	<100	<100	160
HEPH C19-C32	µg/L		100	<100	<100	580
Surrogate	**Unit**	**Acceptable Limits**				
Nitrobenzene - d5	%	50-130		75	82	109
Quinoline - d7	%	50-130		89	97	96
2-Fluorobiphenyl	%	50-130		68	70	69
P-Terphenyl - d14	%	60-130		95	89	108
Bromofluorobenzene	%	70-130		97	95	
Dibromofluoromethane	%	70-130		102	101	
Toluene - d8	%	70-130		111	106	

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Certificate of Analysis

AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 06, 2012	DATE RECEIVED: Feb 06, 2012	DATE REPORTED: Feb 14, 2012	SAMPLE TYPE: Water

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3100893-3100904 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3100913 LEPH & HEPH results have been corrected for PAH contributions.

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AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904
Phenol	mg/L		0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Surrogate	Unit	Acceptable Limits			
2-Fluorophenol	%	50-150		110	109
2,4,6-Tribromophenol	%	50-150		110	109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3100893-3100904 Results relate only to the items tested.

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AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904	MV-GWDUP2 3100910
Chloromethane	µg/L		1	<1	<1	<1
Vinyl Chloride	µg/L		1	<1	<1	<1
Bromomethane	µg/L		1	<1	<1	<1
Chloroethane	µg/L		1	<1	<1	<1
Trichlorofluoromethane	µg/L		1	<1	<1	<1
Acetone	µg/L		10	<10	<10	<10
1,1-Dichloroethene	µg/L		1	<1	<1	<1
Dichloromethane	µg/L	980	1	<1	<1	<1
2-Butanone (MEK)	µg/L		10	<10	<10	<10
Methyl tert-butyl ether (MTBE)	µg/L	34000	1			<1
trans-1,2-Dichloroethylene	µg/L		1	<1	<1	<1
1,1-Dichloroethane	µg/L		1	<1	<1	<1
cis-1,2-Dichloroethylene	µg/L		1	<1	<1	<1
Chloroform	µg/L	20	1	<1	<1	<1
1,2-Dichloroethane	µg/L	1000	1	<1	<1	<1
1,1,1-Trichloroethane	µg/L		1	<1	<1	<1
Carbon Tetrachloride	µg/L	130	0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L		1	<1	<1	<1
Trichloroethene	µg/L	200	1	<1	<1	<1
Benzene	µg/L		0.5			<0.5
Bromodichloromethane	µg/L		1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L		1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	µg/L		10	<10	<10	<10
cis-1,3-Dichloropropene	µg/L		1	<1	<1	<1
1,1,2-Trichloroethane	µg/L		1	<1	<1	<1
Dibromochloromethane	µg/L		1	<1	<1	<1
Ethylene Dibromide	µg/L		0.3	<0.3	<0.3	<0.3
Tetrachloroethene	µg/L	1100	1	<1	<1	<1
Toluene	µg/L		0.5			<0.5
1,1,1,2-Tetrachloroethane	µg/L		1	<1	<1	<1
Chlorobenzene	µg/L	13	1	<1	<1	<1
Bromoform	µg/L		1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L		1	<1	<1	<1

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AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904	MV-GWDUP2 3100910
1,3-Dichlorobenzene	µg/L	1500	0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	260	0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	2000	0.5			<0.5
m&p-Xylene	µg/L		0.5			<0.5
1,2-Dichlorobenzene	µg/L	7	1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	240	1	<1	<1	<1
Styrene	µg/L	720	0.5			<0.5
o-Xylene	µg/L		0.5			<0.5
Surrogate	**Unit**	**Acceptable Limits**				
Bromofluorobenzene	%	70-130		97	95	103
Dibromofluoromethane	%	70-130		102	101	109
Toluene - d8	%	70-130		111	106	118

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By:

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AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904	2-BH17 3100912	MV-11BH-07M 3100913
Aluminum Dissolved	µg/L		1	3	66	12	26
Antimony Dissolved	µg/L		0.05	<0.05	0.09	0.24	0.12
Arsenic Dissolved	µg/L	5	0.1	21.8	4.4	0.8	9.4
Barium Dissolved	µg/L		0.1	101	108	134	187
Beryllium Dissolved	µg/L		0.01	<0.01	0.01	<0.01	0.02
Boron Dissolved	µg/L		1	58	52	198	73
Cadmium Dissolved	µg/L	0.017	0.01	0.01	0.02	0.01	0.24
Calcium Dissolved	mg/L		0.05	142	77.8	189	59.2
Chromium Dissolved	µg/L		0.5	4.8	25.0	1.1	2.5
Cobalt Dissolved	µg/L		0.05	0.29	2.59	0.19	25.7
Copper Dissolved	µg/L		0.2	0.3	0.4	0.3	1.0
Iron Dissolved	mg/L	0.3	0.01	53.3	34.6	21.7	23.3
Lead Dissolved	µg/L		0.01	0.16	0.22	0.15	0.21
Lithium Dissolved	µg/L		0.1	2.8	0.6	6.6	6.6
Magnesium Dissolved	mg/L		0.05	25.3	11.4	19.9	7.83
Manganese Dissolved	mg/L		0.001	3.16	1.80	1.41	3.33
Mercury Dissolved	µg/L	0.026	0.003	<0.003	0.003	<0.003	<0.003
Molybdenum Dissolved	µg/L	73	0.05	0.49	0.35	1.49	30.5
Nickel Dissolved	µg/L		0.1	1.2	4.3	1.0	29.2
Selenium Dissolved	µg/L	1	0.1	<0.1	0.2	0.3	0.2
Silver Dissolved	µg/L	0.1	0.01	<0.01	<0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	7.96	7.98	25.5	89.4
Thallium Dissolved	µg/L	0.8	0.002	0.016	0.017	0.014	0.159
Titanium Dissolved	µg/L		0.1	162	102	237	74.0
Uranium Dissolved	µg/L		0.01	0.04	0.20	0.19	3.59
Vanadium Dissolved	µg/L		0.1	0.7	2.8	1.1	2.3
Zinc Dissolved	µg/L	30	1	5	15	7	11
Hardness (calc)	mg CaCO3/L		1	459	241	554	180

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL) (Van)

Certified By: Marie England

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AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Routine Water Analysis

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904	MV-GWDUP2 3100910
Chloride	mg/L	1500	0.05	22.0	8.86	8.96
Sodium Dissolved	mg/L		0.05			8.50

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By: Marie England

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Certificate of Analysis

AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

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CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Water Analysis - Sulphide

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904
Sulphide	mg/L		0.1	<0.1	<0.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By: Marie England

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Feb 14, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				NA	70%	130%
Styrene	1	3103286	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				112%	70%	130%
VPH	1	3103286	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.09	0.08	12.0%	< 0.05	100%	80%	120%				91%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				84%	50%	130%
Acenaphthylene	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				75%	50%	130%
Acenaphthene	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				77%	50%	130%
Fluorene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				87%	50%	130%
Phenanthrene	1	W-MS	0.08	0.09	12.0%	< 0.05	97%	80%	120%				84%	60%	130%
Anthracene (Water)	1	W-MS	0.07	0.08	13.0%	< 0.05	102%	80%	120%				75%	60%	130%
Acridine	1	W-MS	0.09	0.10	11.0%	< 0.05	99%	80%	120%				94%	50%	130%
Fluoranthene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				89%	60%	130%
Pyrene	1	W-MS	0.09	0.10	11.0%	< 0.02	99%	80%	120%				91%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.10	11.0%	< 0.05	100%	80%	120%				92%	60%	130%
Chrysene	1	W-MS	0.09	0.10	10.5%	< 0.05	100%	80%	120%				92%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				108%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	101%	80%	120%				100%	60%	130%
Benzo(a)pyrene	1	W-MS	0.08	0.09	12.0%	< 0.01	101%	80%	120%				86%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Nitrobenzene - d5	1	W-MS	79	70	12.0%		98%	80%	120%				80%	50%	130%
Quinoline - d7	1	W-MS	93	87	7.0%		102%	80%	120%				94%	50%	130%
2-Fluorobiphenyl	1	W-MS	79	69	14.0%		101%	80%	120%				79%	50%	130%
P-Terphenyl - d14	1	W-MS	94	95	1.0%		99%	80%	120%				95%	60%	130%
Bromofluorobenzene	1	3103286	106	102	4.0%		96%	70%	130%				117%	70%	130%
Dibromofluoromethane	1	3103286	112	107	5.0%		100%	70%	130%				124%	70%	130%
Toluene - d8	1	3103286	120	113	6.0%		92%	70%	130%				125%	70%	130%
Volatile Organic Compounds in Water															
Chloromethane	1	3103286	<1	<1	0.0%	< 1	93%	80%	120%				74%	70%	130%
Vinyl Chloride	1	3103286	<1	<1	0.0%	< 1	95%	80%	120%				76%	70%	130%
Bromomethane	1	3103286	<1	<1	0.0%	< 1	94%	80%	120%				83%	70%	130%
Chloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				95%	70%	130%
Trichlorofluoromethane	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				83%	70%	130%
Acetone	1	3103286	<10	<10	0.0%	< 10	94%	80%	120%				NA	70%	130%
1,1-Dichloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				100%	70%	130%
Dichloromethane	1	3103286	<1	<1	0.0%	< 1	92%	80%	120%				94%	70%	130%
2-Butanone (MEK)	1	3103286	<10	<10	0.0%	< 10	95%	80%	120%				NA	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 14, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
trans-1,2-Dichloroethylene	1	3103286	<1	<1	0.0%	< 1	99%	80%	120%				109%	70%	130%
1,1-Dichloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				114%	70%	130%
cis-1,2-Dichloroethylene	1	3103286	<1	<1	0.0%	< 1	99%	80%	120%				113%	70%	130%
Chloroform	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				115%	70%	130%
1,2-Dichloroethane	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				111%	70%	130%
1,1,1-Trichloroethane	1	3103286	<1	<1	0.0%	< 1	100%	80%	120%				108%	70%	130%
Carbon Tetrachloride	1	3103286	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				105%	70%	130%
1,2-Dichloropropane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				115%	70%	130%
Trichloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				112%	70%	130%
Bromodichloromethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				112%	70%	130%
trans-1,3-Dichloropropene	1	3103286	<1	<1	0.0%	< 1	102%	80%	120%				108%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3103286	<10	<10	0.0%	< 10	99%	80%	120%				NA	70%	130%
cis-1,3-Dichloropropene	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				109%	70%	130%
1,1,2-Trichloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				110%	70%	130%
Dibromochloromethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				110%	70%	130%
Ethylene Dibromide	1	3103286	<0.3	<0.3	0.0%	< 0.3	98%	80%	120%				110%	70%	130%
Tetrachloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				85%	70%	130%
1,1,1,2-Tetrachloroethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				113%	70%	130%
Chlorobenzene	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				109%	70%	130%
Bromoform	1	3103286	<1	<1	0.0%	< 1	100%	80%	120%				102%	70%	130%
1,1,2,2-Tetrachloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				103%	70%	130%
1,3-Dichlorobenzene	1	3103286	<0.5	<0.5	0.0%	< 0.5	98%	80%	120%				108%	70%	130%
1,4-Dichlorobenzene	1	3103286	<0.5	<0.5	0.0%	< 0.5	96%	80%	120%				106%	70%	130%
1,2-Dichlorobenzene	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				108%	70%	130%
1,2,4-Trichlorobenzene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				104%	70%	130%
Bromofluorobenzene	1	3103286	106	102	4.0%		96%	80%	120%				117%	70%	130%
Dibromofluoromethane	1	3103286	112	107	5.0%		100%	80%	120%				124%	70%	130%
Toluene - d8	1	3103286	120	113	6.0%		92%	80%	120%				125%	70%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	3466	3103238	<0.0005	<0.0005	NA	< 0.0005	109%	80%	120%	102%	80%	120%	112%	70%	130%
Toluene	3466	3103238	0.0014	0.0014	0.0%	< 0.0005	107%	80%	120%	99%	80%	120%	106%	70%	130%
Ethylbenzene	3466	3103238	<0.0005	<0.0005	NA	< 0.0005	97%	80%	120%	94%	80%	120%	93%	70%	130%
Xylenes	3466	3103238	<0.0005	<0.0005	NA	< 0.0005	105%	80%	120%	108%	80%	120%	103%	70%	130%
C6 - C10 (F1)	3466	3103238	<0.1	<0.1	NA	< 0.1	91%	80%	120%	104%	80%	120%	98%	70%	130%
C>10 - C16	27	3103244	0.1	0.1	0.0%	< 0.1	109%	80%	120%	93%	80%	120%	109%	70%	130%
C16 - C34	27	3103244	0.9	0.9	0.0%	< 0.1	109%	80%	120%	115%	80%	120%	122%	70%	130%
C>34 - C50	27	3103244	0.1	0.1	0.0%	< 0.1	109%	80%	120%	80%	80%	120%	70%	70%	130%
Phenolic Compounds in Water															

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 14, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Phenol	135	3100893	<0.002	<0.002	NA	< 0.002	85%	80%	120%	95%	70%	130%	95%	60%	140%
4-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	83%	80%	120%	88%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
o-Cresol (2-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2-Chlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	84%	80%	120%	95%	70%	130%	91%	60%	140%
2,4-Dinitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	90%	80%	120%	91%	70%	130%	93%	60%	140%
2-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	97%	80%	120%	106%	70%	130%	100%	60%	140%
2,4-Dimethylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	93%	70%	130%	89%	60%	140%
2,6-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001				93%	70%	130%	90%	60%	140%
4-Chloro-3-methylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	89%	60%	140%
2,4-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001	87%	80%	120%	87%	70%	130%	85%	60%	140%
4,6-Dinitro-2-methylphenol	135	3100893	<0.005	<0.005	NA	< 0.005	93%	80%	120%	85%	70%	130%	104%	60%	140%
2,3,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	86%	80%	120%	96%	70%	130%	95%	60%	140%
2,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				97%	70%	130%	95%	60%	140%
3,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	99%	60%	140%
2,3,5,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	98%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	135	3100893	<0.005	<0.005	NA	< 0.005				117%	70%	130%	97%	60%	140%
Pentachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	91%	80%	120%	107%	70%	130%	103%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Feb 14, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3100893	3	2	NA	< 1	107%	90%	110%	105%	85%	115%			
Antimony Dissolved	20120	3100893	< 0.05	< 0.05	0.0%	< 0.05	104%	90%	110%	98%	85%	110%			
Arsenic Dissolved	20120	3100893	21.8	21.5	1.0%	< 0.1	101%	90%	110%	109%	90%	110%			
Barium Dissolved	20120	3100893	101	98.4	3.0%	< 0.1	98%	90%	110%	94%	90%	110%			
Beryllium Dissolved	20120	3100893	< 0.01	< 0.01	0.0%	< 0.01	110%	90%	110%	101%	90%	110%			
Boron Dissolved	20120	3100893	58	55	5.0%	< 1	108%	90%	110%	108%	80%	120%			
Cadmium Dissolved	20120	3100893	0.01	<0.01	0.0%	< 0.01	99%	90%	110%	99%	90%	110%			
Calcium Dissolved	20120	3100893	142	142	0.0%	< 0.05	99%	90%	110%	103%	90%	110%			
Chromium Dissolved	20120	3100893	4.8	4.9	2.0%	< 0.5	99%	90%	110%	96%	90%	110%			
Cobalt Dissolved	20120	3100893	0.29	0.32	10.0%	< 0.05	97%	90%	110%	100%	90%	110%			
Copper Dissolved	20120	3100893	0.3	0.3	0.0%	< 0.2	101%	90%	110%	100%	90%	110%			
Iron Dissolved	20120	3100893	53.2	53.3	0.0%	< 0.01	104%	90%	110%	105%	90%	110%			
Lead Dissolved	20120	3100893	0.16	0.15	6.0%	< 0.01	101%	90%	110%	99%	90%	110%			
Lithium Dissolved	20120	3100893	2.8	2.7	4.0%	< 0.1				103%	90%	110%			
Magnesium Dissolved	20120	3100893	25.3	25.0	1.0%	< 0.05	104%	90%	110%	108%	90%	110%			
Manganese Dissolved	20120	3100893	3.16	3.12	1.0%	< 0.001	103%	90%	110%	104%	90%	110%			
Mercury Dissolved	20120	3100893	< 0.003	< 0.003	0.0%	< 0.003	92%	90%	110%	104%	90%	110%			
Molybdenum Dissolved	20120	3100893	0.49	0.48	2.0%	< 0.05	96%	90%	110%	101%	90%	110%			
Nickel Dissolved	20120	3100893	1.2	1.3	8.0%	< 0.1	99%	90%	110%	98%	90%	110%			
Selenium Dissolved	20120	3100893	< 0.1	< 0.1	0.0%	< 0.1	97%	90%	110%		85%	115%			
Silver Dissolved	20120	3100893	< 0.01	< 0.01	0.0%	< 0.01				101%	90%	110%			
Sodium Dissolved	20120	3100893	7.96	7.90	1.0%	< 0.05	101%	90%	110%	107%	90%	110%			
Thallium Dissolved	20120	3100893	0.016	0.015	6.0%	< 0.002	93%	90%	110%	96%	90%	110%			
Titanium Dissolved	20120	3100893	162	171	5.0%	< 0.1				108%	90%	110%			
Uranium Dissolved	20120	3100893	0.04	0.04	0.0%	< 0.01		90%	110%	98%	90%	110%			
Vanadium Dissolved	20120	3100893	0.7	0.8	13.0%	< 0.1	98%	90%	110%	102%	90%	110%			
Zinc Dissolved	20120	3100893	5	5	0.0%	< 1	103%	90%	110%	104%	85%	115%			
Routine Water Analysis															
Chloride	1	3102133	9007	9130	1.4%	< 0.05	103%	85%	115%	104%	90%	110%	101%	70%	130%
Water Analysis - Sulphide															
Sulphide	5846	5657	< 0.1	< 0.1	0.0%	< 0.1	105%	80%	120%				104%	80%	120%

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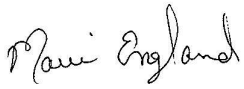

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Acetone	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Benzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromochloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylbenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
m&p-Xylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Bromoform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Styrene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
o-Xylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
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ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chloride	INOR-181-6002	Modified from SM 4110 B	ION CHROMATOGRAPH
Sulphide	WAT 0100	SM 4500 S2- D	SPECTROPHOTOMETER

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number: 12V512231

Notes: FEB 6 PM 5:24

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [ ] BC CSR – Soil
  - [ ] Agricultural
  - [ ] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [X] BC CSR – Water
  - [ ] Drinking Water
  - [X] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [ ] Residential/Park
  - [ ] Commercial
  - [ ] Industrial
  - [ ] Drinking Water
  - [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	Sulfides	Sodium + Chloride	CCME F1	CCME F2-4	Chlorinated and non-chlorinated phenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
100893	MV-11BH-02M	Water	Feb. 6, 2012		X	X	X	X			X	X	X	X	X	12			
1904	MV-11BH-03M				X	X	X	X			X	X	X	X	X	12			
	[illegible]				[illegible]						[illegible]								
910	MV-GWDUP2							X				X				4			
912	2-BH17						X									1			
913	MV-11BH-07M					X	X									2			

Samples Relinquished by (print name & sign): [signature] Date: 06/02/2012
Samples Received by (Print name & sign): [signature] Feb 6/12 @ 5:24pm Date: Feb 6/12

Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 1
NO: 000621

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V572231

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 06-FEB-12 05:24pm
Courier: _____
Received by: Melissa B
Relinquished by: Amanda
Branch Received From: _____
Company: FrancEnv
Consultant: _____
Client left without count verified: n

CoC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000621

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 31 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 06-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 13-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No n/a
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples;
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 5+1+2=3 °C (2) 5+2+4=3 °C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM Work order # 12V572231

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: Feb 10/12 0817
Courier: Loomis
Received by: Roberts
Relinquished by: _____
Company: FRAZ
Consultant: _____
Client left without count verified: _____

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: R4
COC Numbers: 621

SAMPLE QUANTITIES:
Coolers: 1 Bottles/Jars: 2 Bags: —

TIME SENSITIVE ISSUES:
Earliest Date Sampled: Feb 6/12
Microbiology: Test: —
Hydrocarbons: Test: Sulphide
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes No
Expiry: —
Expiry: —

SPECIALTY ISSUES:
Legal Samples: Yes (No)
International Samples: Yes (No)
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.
Correct bottles used for testing: (Yes) No
If No, explain: _____
Correct amount of sample for analysis: (Yes) No
If No, explain: _____
Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 1 + 2 + — = 2 °C (2) ___ + ___ + ___ = ___ °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available
flc

Additional integrity issues (note here and on CoC next to the sample ID):
1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:
_____
_____

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V572231

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

WATER ANALYSIS REVIEWED BY: Jada Benjamin, Inorganics Manager

DATE REPORTED: Mar 06, 2012

PAGES (INCLUDING COVER): 20

VERSION*: 3

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 3:Version 2 amended to include VH and EPH results as per client.

Report reissued to report sulphide to a lower detection limit as requested by Amanda Salway of Franz Environmental on March 5, 2012.

Version 3 is an amendment to Version 2.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8 (BTEX)	%	50-150		118	108
o-Terphenyl (F2-F4)	%	50-150		110	109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3100893-3100904 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904	MV-11BH-07M 3100913
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1	<1	
Styrene	µg/L	720	0.5	<0.5	<0.5	
VPH	µg/L	1500	100	<100	<100	
VH	µg/L	15000	100	<100	<100	
Naphthalene	µg/L	10	0.05	<0.05	<0.05	<0.05
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/L	60	0.05	<0.05	<0.05	<0.05
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	<0.05
Pyrene	µg/L	0.2	0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/L	500	100	<100	<100	160
HEPH C19-C32	µg/L		100	<100	<100	580
EPH C10-C19	µg/L	5000	100	<100	<100	160
EPH C19-C32	µg/L		100	<100	<100	580

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Surrogate	Unit	Acceptable Limits	MV-11BH-02M 3100893	MV-11BH-03M 3100904	MV-11BH-07M 3100913
Nitrobenzene - d5	%	50-130	75	82	109
Quinoline - d7	%	50-130	89	97	96
2-Fluorobiphenyl	%	50-130	68	70	69
P-Terphenyl - d14	%	60-130	95	89	108
Bromofluorobenzene	%	70-130	97	95	
Dibromofluoromethane	%	70-130	102	101	
Toluene - d8	%	70-130	111	106	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3100893-3100904 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3100913 LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904
Phenol	mg/L		0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Surrogate	**Unit**	**Acceptable Limits**			
2-Fluorophenol	%	50-150		110	109
2,4,6-Tribromophenol	%	50-150		110	109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3100893-3100904 Results relate only to the items tested.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904	MV-GWDUP2 3100910
Chloromethane	µg/L		1	<1	<1	<1
Vinyl Chloride	µg/L		1	<1	<1	<1
Bromomethane	µg/L		1	<1	<1	<1
Chloroethane	µg/L		1	<1	<1	<1
Trichlorofluoromethane	µg/L		1	<1	<1	<1
Acetone	µg/L		10	<10	<10	<10
1,1-Dichloroethene	µg/L		1	<1	<1	<1
Dichloromethane	µg/L	980	1	<1	<1	<1
2-Butanone (MEK)	µg/L		10	<10	<10	<10
Methyl tert-butyl ether (MTBE)	µg/L	34000	1			<1
trans-1,2-Dichloroethylene	µg/L		1	<1	<1	<1
1,1-Dichloroethane	µg/L		1	<1	<1	<1
cis-1,2-Dichloroethylene	µg/L		1	<1	<1	<1
Chloroform	µg/L	20	1	<1	<1	<1
1,2-Dichloroethane	µg/L	1000	1	<1	<1	<1
1,1,1-Trichloroethane	µg/L		1	<1	<1	<1
Carbon Tetrachloride	µg/L	130	0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L		1	<1	<1	<1
Trichloroethene	µg/L	200	1	<1	<1	<1
Benzene	µg/L		0.5			<0.5
Bromodichloromethane	µg/L		1	<1	<1	<1
trans-1,3-Dichloropropene	µg/L		1	<1	<1	<1
4-Methyl-2-pentanone (MIBK)	µg/L		10	<10	<10	<10
cis-1,3-Dichloropropene	µg/L		1	<1	<1	<1
1,1,2-Trichloroethane	µg/L		1	<1	<1	<1
Dibromochloromethane	µg/L		1	<1	<1	<1
Ethylene Dibromide	µg/L		0.3	<0.3	<0.3	<0.3
Toluene	µg/L		0.5			<0.5
Tetrachloroethene	µg/L	1100	1	<1	<1	<1
1,1,1,2-Tetrachloroethane	µg/L		1	<1	<1	<1
Chlorobenzene	µg/L	13	1	<1	<1	<1
Bromoform	µg/L		1	<1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L		1	<1	<1	<1

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Certificate of Analysis

AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904	MV-GWDUP2 3100910
1,3-Dichlorobenzene	µg/L	1500	0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	2000	0.5			<0.5
1,4-Dichlorobenzene	µg/L	260	0.5	<0.5	<0.5	<0.5
m&p-Xylene	µg/L		0.5			<0.5
1,2-Dichlorobenzene	µg/L	7	1	<1	<1	<1
1,2,4-Trichlorobenzene	µg/L	240	1	<1	<1	<1
Styrene	µg/L	720	0.5			<0.5
o-Xylene	µg/L		0.5			<0.5
Surrogate	**Unit**	**Acceptable Limits**				
Bromofluorobenzene	%	70-130		97	95	103
Dibromofluoromethane	%	70-130		102	101	109
Toluene - d8	%	70-130		111	106	118

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

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AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904	2-BH17 3100912	MV-11BH-07M 3100913
Aluminum Dissolved	µg/L		1	3	66	12	26
Antimony Dissolved	µg/L	200	0.05	<0.05	0.09	0.24	0.12
Arsenic Dissolved	µg/L	50	0.1	21.8	4.4	0.8	9.4
Barium Dissolved	µg/L	10000	0.1	101	108	134	187
Beryllium Dissolved	µg/L	53	0.01	<0.01	0.01	<0.01	0.02
Boron Dissolved	µg/L	50000	1	58	52	198	73
Cadmium Dissolved	µg/L		0.01	0.01	0.02	0.01	0.24
Calcium Dissolved	mg/L		0.05	142	77.8	189	59.2
Chromium Dissolved	µg/L		0.5	4.8	25.0	1.1	2.5
Cobalt Dissolved	µg/L	40	0.05	0.29	2.59	0.19	25.7
Copper Dissolved	µg/L		0.2	0.3	0.4	0.3	1.0
Iron Dissolved	mg/L		0.01	53.3	34.6	21.7	23.3
Lead Dissolved	µg/L		0.01	0.16	0.22	0.15	0.21
Lithium Dissolved	µg/L		0.1	2.8	0.6	6.6	6.6
Magnesium Dissolved	mg/L		0.05	25.3	11.4	19.9	7.83
Manganese Dissolved	mg/L		0.001	3.16	1.80	1.41	3.33
Mercury Dissolved	µg/L	1	0.003	<0.003	0.003	<0.003	<0.003
Molybdenum Dissolved	µg/L	10000	0.05	0.49	0.35	1.49	30.5
Nickel Dissolved	µg/L		0.1	1.2	4.3	1.0	29.2
Selenium Dissolved	µg/L	10	0.1	<0.1	0.2	0.3	0.2
Silver Dissolved	µg/L		0.01	<0.01	<0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	7.96	7.98	25.5	89.4
Thallium Dissolved	µg/L	3	0.002	0.016	0.017	0.014	0.159
Titanium Dissolved	µg/L	1000	0.1	162	102	237	74.0
Uranium Dissolved	µg/L	3000	0.01	0.04	0.20	0.19	3.59
Vanadium Dissolved	µg/L		0.1	0.7	2.8	1.1	2.3
Zinc Dissolved	µg/L		1	5	15	7	11
Hardness (calc)	mg CaCO3/L		1	459	241	554	180

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

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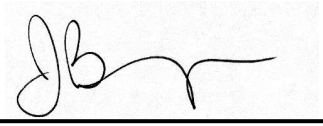

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AGAT WORK ORDER: 12V572231
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Routine Water Analysis

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904	MV-GWDUP2 3100910
Chloride	mg/L	1500	0.05	22.0	8.86	8.96
Sodium Dissolved	mg/L		0.05			8.50

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Water Analysis - Sulphide

DATE SAMPLED: Feb 06, 2012 | DATE RECEIVED: Feb 06, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-02M 3100893	MV-11BH-03M 3100904
Sulphide	mg/L		0.01	<0.01	<0.01

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Mar 06, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				NA	70%	130%
Styrene	1	3103286	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				112%	70%	130%
VPH	1	3103286	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.09	0.08	12.0%	< 0.05	100%	80%	120%				91%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				84%	50%	130%
Acenaphthylene	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				75%	50%	130%
Acenaphthene	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				77%	50%	130%
Fluorene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				87%	50%	130%
Phenanthrene	1	W-MS	0.08	0.09	12.0%	< 0.05	97%	80%	120%				84%	60%	130%
Anthracene (Water)	1	W-MS	0.07	0.08	13.0%	< 0.05	102%	80%	120%				75%	60%	130%
Acridine	1	W-MS	0.09	0.10	11.0%	< 0.05	99%	80%	120%				94%	50%	130%
Fluoranthene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				89%	60%	130%
Pyrene	1	W-MS	0.09	0.10	11.0%	< 0.02	99%	80%	120%				91%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.10	11.0%	< 0.05	100%	80%	120%				92%	60%	130%
Chrysene	1	W-MS	0.09	0.10	10.5%	< 0.05	100%	80%	120%				92%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				108%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	101%	80%	120%				100%	60%	130%
Benzo(a)pyrene	1	W-MS	0.08	0.09	12.0%	< 0.01	101%	80%	120%				86%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.10	0.11	9.5%	< 0.05	99%	80%	120%				103%	60%	130%
Nitrobenzene - d5	1	W-MS	79	70	12.0%		98%	80%	120%				80%	50%	130%
Quinoline - d7	1	W-MS	93	87	7.0%		102%	80%	120%				94%	50%	130%
2-Fluorobiphenyl	1	W-MS	79	69	14.0%		101%	80%	120%				79%	50%	130%
P-Terphenyl - d14	1	W-MS	94	95	1.0%		99%	80%	120%				95%	60%	130%
Bromofluorobenzene	1	3103286	106	102	4.0%		96%	70%	130%				117%	70%	130%
Dibromofluoromethane	1	3103286	112	107	5.0%		100%	70%	130%				124%	70%	130%
Toluene - d8	1	3103286	120	113	6.0%		92%	70%	130%				125%	70%	130%
Volatile Organic Compounds in Water															
Chloromethane	1	3103286	<1	<1	0.0%	< 1	93%	80%	120%				74%	70%	130%
Vinyl Chloride	1	3103286	<1	<1	0.0%	< 1	95%	80%	120%				76%	70%	130%
Bromomethane	1	3103286	<1	<1	0.0%	< 1	94%	80%	120%				83%	70%	130%
Chloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				95%	70%	130%
Trichlorofluoromethane	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				83%	70%	130%
Acetone	1	3103286	<10	<10	0.0%	< 10	94%	80%	120%				NA	70%	130%
1,1-Dichloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				100%	70%	130%
Dichloromethane	1	3103286	<1	<1	0.0%	< 1	92%	80%	120%				94%	70%	130%
2-Butanone (MEK)	1	3103286	<10	<10	0.0%	< 10	95%	80%	120%				NA	70%	130%

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CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 06, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
trans-1,2-Dichloroethylene	1	3103286	<1	<1	0.0%	< 1	99%	80%	120%				109%	70%	130%
1,1-Dichloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				114%	70%	130%
cis-1,2-Dichloroethylene	1	3103286	<1	<1	0.0%	< 1	99%	80%	120%				113%	70%	130%
Chloroform	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				115%	70%	130%
1,2-Dichloroethane	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				111%	70%	130%
1,1,1-Trichloroethane	1	3103286	<1	<1	0.0%	< 1	100%	80%	120%				108%	70%	130%
Carbon Tetrachloride	1	3103286	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				105%	70%	130%
1,2-Dichloropropane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				115%	70%	130%
Trichloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				112%	70%	130%
Bromodichloromethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				112%	70%	130%
trans-1,3-Dichloropropene	1	3103286	<1	<1	0.0%	< 1	102%	80%	120%				108%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3103286	<10	<10	0.0%	< 10	99%	80%	120%				NA	70%	130%
cis-1,3-Dichloropropene	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				109%	70%	130%
1,1,2-Trichloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				110%	70%	130%
Dibromochloromethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				110%	70%	130%
Ethylene Dibromide	1	3103286	<0.3	<0.3	0.0%	< 0.3	98%	80%	120%				110%	70%	130%
Tetrachloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				85%	70%	130%
1,1,1,2-Tetrachloroethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				113%	70%	130%
Chlorobenzene	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				109%	70%	130%
Bromoform	1	3103286	<1	<1	0.0%	< 1	100%	80%	120%				102%	70%	130%
1,1,2,2-Tetrachloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				103%	70%	130%
1,3-Dichlorobenzene	1	3103286	<0.5	<0.5	0.0%	< 0.5	98%	80%	120%				108%	70%	130%
1,4-Dichlorobenzene	1	3103286	<0.5	<0.5	0.0%	< 0.5	96%	80%	120%				106%	70%	130%
1,2-Dichlorobenzene	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				108%	70%	130%
1,2,4-Trichlorobenzene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				104%	70%	130%
Bromofluorobenzene	1	3103286	106	102	4.0%		96%	80%	120%				117%	70%	130%
Dibromofluoromethane	1	3103286	112	107	5.0%		100%	80%	120%				124%	70%	130%
Toluene - d8	1	3103286	120	113	6.0%		92%	80%	120%				125%	70%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	3466	3103238	<0.0005	<0.0005	NA	< 0.0005	109%	80%	120%	102%	80%	120%	112%	70%	130%
Toluene	3466	3103238	0.0014	0.0014	0.0%	< 0.0005	107%	80%	120%	99%	80%	120%	106%	70%	130%
Ethylbenzene	3466	3103238	<0.0005	<0.0005	NA	< 0.0005	97%	80%	120%	94%	80%	120%	93%	70%	130%
Xylenes	3466	3103238	<0.0005	<0.0005	NA	< 0.0005	105%	80%	120%	108%	80%	120%	103%	70%	130%
C6 - C10 (F1)	3466	3103238	<0.1	<0.1	NA	< 0.1	91%	80%	120%	104%	80%	120%	98%	70%	130%
C>10 - C16	27	3103244	0.1	0.1	0.0%	< 0.1	109%	80%	120%	93%	80%	120%	109%	70%	130%
C16 - C34	27	3103244	0.9	0.9	0.0%	< 0.1	109%	80%	120%	115%	80%	120%	122%	70%	130%
C>34 - C50	27	3103244	0.1	0.1	0.0%	< 0.1	109%	80%	120%	80%	80%	120%	70%	70%	130%
Phenolic Compounds in Water															

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 06, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Phenol	135	3100893	<0.002	<0.002	NA	< 0.002	85%	80%	120%	95%	70%	130%	95%	60%	140%
4-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	83%	80%	120%	88%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
o-Cresol (2-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2-Chlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	84%	80%	120%	95%	70%	130%	91%	60%	140%
2,4-Dinitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	90%	80%	120%	91%	70%	130%	93%	60%	140%
2-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	97%	80%	120%	106%	70%	130%	100%	60%	140%
2,4-Dimethylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	93%	70%	130%	89%	60%	140%
2,6-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001				93%	70%	130%	90%	60%	140%
4-Chloro-3-methylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	89%	60%	140%
2,4-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001	87%	80%	120%	87%	70%	130%	85%	60%	140%
4,6-Dinitro-2-methylphenol	135	3100893	<0.005	<0.005	NA	< 0.005	93%	80%	120%	85%	70%	130%	104%	60%	140%
2,3,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	86%	80%	120%	96%	70%	130%	95%	60%	140%
2,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				97%	70%	130%	95%	60%	140%
3,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	99%	60%	140%
2,3,5,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	98%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	135	3100893	<0.005	<0.005	NA	< 0.005				117%	70%	130%	97%	60%	140%
Pentachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	91%	80%	120%	107%	70%	130%	103%	60%	140%

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

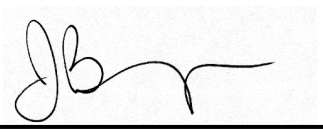
PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Mar 06, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3100893	3	2	NA	< 1	107%	90%	110%	105%	85%	115%			
Antimony Dissolved	20120	3100893	< 0.05	< 0.05	0.0%	< 0.05	104%	90%	110%	98%	85%	110%			
Arsenic Dissolved	20120	3100893	21.8	21.5	1.0%	< 0.1	101%	90%	110%	109%	90%	110%			
Barium Dissolved	20120	3100893	101	98.4	3.0%	< 0.1	98%	90%	110%	94%	90%	110%			
Beryllium Dissolved	20120	3100893	< 0.01	< 0.01	0.0%	< 0.01	110%	90%	110%	101%	90%	110%			
Boron Dissolved	20120	3100893	58	55	5.0%	< 1	108%	90%	110%	108%	80%	120%			
Cadmium Dissolved	20120	3100893	0.01	<0.01	0.0%	< 0.01	99%	90%	110%	99%	90%	110%			
Calcium Dissolved	20120	3100893	142	142	0.0%	< 0.05	99%	90%	110%	103%	90%	110%			
Chromium Dissolved	20120	3100893	4.8	4.9	2.0%	< 0.5	99%	90%	110%	96%	90%	110%			
Cobalt Dissolved	20120	3100893	0.29	0.32	10.0%	< 0.05	97%	90%	110%	100%	90%	110%			
Copper Dissolved	20120	3100893	0.3	0.3	0.0%	< 0.2	101%	90%	110%	100%	90%	110%			
Iron Dissolved	20120	3100893	53.2	53.3	0.0%	< 0.01	104%	90%	110%	105%	90%	110%			
Lead Dissolved	20120	3100893	0.16	0.15	6.0%	< 0.01	101%	90%	110%	99%	90%	110%			
Lithium Dissolved	20120	3100893	2.8	2.7	4.0%	< 0.1				103%	90%	110%			
Magnesium Dissolved	20120	3100893	25.3	25.0	1.0%	< 0.05	104%	90%	110%	108%	90%	110%			
Manganese Dissolved	20120	3100893	3.16	3.12	1.0%	< 0.001	103%	90%	110%	104%	90%	110%			
Mercury Dissolved	20120	3100893	< 0.003	< 0.003	0.0%	< 0.003	92%	90%	110%	104%	90%	110%			
Molybdenum Dissolved	20120	3100893	0.49	0.48	2.0%	< 0.05	96%	90%	110%	101%	90%	110%			
Nickel Dissolved	20120	3100893	1.2	1.3	8.0%	< 0.1	99%	90%	110%	98%	90%	110%			
Selenium Dissolved	20120	3100893	< 0.1	< 0.1	0.0%	< 0.1	97%	90%	110%		85%	115%			
Silver Dissolved	20120	3100893	< 0.01	< 0.01	0.0%	< 0.01				101%	90%	110%			
Sodium Dissolved	20120	3100893	7.96	7.90	1.0%	< 0.05	101%	90%	110%	107%	90%	110%			
Thallium Dissolved	20120	3100893	0.016	0.015	6.0%	< 0.002	93%	90%	110%	96%	90%	110%			
Titanium Dissolved	20120	3100893	162	171	5.0%	< 0.1				108%	90%	110%			
Uranium Dissolved	20120	3100893	0.04	0.04	0.0%	< 0.01		90%	110%	98%	90%	110%			
Vanadium Dissolved	20120	3100893	0.7	0.8	13.0%	< 0.1	98%	90%	110%	102%	90%	110%			
Zinc Dissolved	20120	3100893	5	5	0.0%	< 1	103%	90%	110%	104%	85%	115%			
Routine Water Analysis															
Chloride	1	3102133	9007	9130	1.4%	< 0.05	103%	85%	115%	104%	90%	110%	101%	70%	130%
Water Analysis - Sulphide															
Sulphide	5846	5657	< 0.1	< 0.1	0.0%	< 0.1	105%	80%	120%				104%	80%	120%

Certified By:



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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Bromomethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Benzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromochloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylbenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
m&p-Xylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Styrene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
o-Xylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

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Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chloride	INOR-181-6002	Modified from SM 4110 B	ION CHROMATOGRAPH
Sulphide	WAT 0100	SM 4500 S2- D	SPECTROPHOTOMETER

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number: 12V512231

Notes: FEB 6 PM 5:24

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [ ] BC CSR – Soil
  - [ ] Agricultural
  - [ ] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [X] BC CSR – Water
  - [ ] Drinking Water
  - [X] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [ ] Residential/Park
  - [ ] Commercial
  - [ ] Industrial
  - [ ] Drinking Water
  - [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	Sulfides	Sodium + Chloride	CCME F1	CCME F2-4	Chlorinated and non-chlorinated phenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
100893	MV-11BH-02M	Water	Feb. 6, 2012		X	X	X	X			X	X	X	X	X	12			
1904	MV-11BH-03M				X	X	X	X			X	X	X	X	X	12			
	[illegible]				[illegible]						[illegible]								
910	MV-GWDUP2							X				X				4			
912	2-BH17						X									1			
913	MV-11BH-07M					X	X									2			

Samples Relinquished by (print name & sign): [signature] Date: 06/02/2012
Samples Received by (Print name & sign): [signature] Feb 6/12 @ 5:24pm Date: Feb 6/12

Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 1
NO: 000621

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V572231

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 06-FEB-12 05:24pm
Courier: _____
Received by: Melissa B
Relinquished by: Amanda
Branch Received From: _____
Company: FrancEnv
Consultant: _____
Client left without count verified: n

CoC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000621

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 31 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 06-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 13-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No n/a
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples;
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 5+1+2=3 °C (2) 5+2+4=3 °C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM Work order # 12V572231

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: Feb 10/12 0817
Courier: Loomis
Received by: Roberts
Relinquished by: _____
Company: FRAZ
Consultant: _____
Client left without count verified: _____

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: R4
COC Numbers: 621

SAMPLE QUANTITIES:
Coolers: 1 Bottles/Jars: 2 Bags: —

TIME SENSITIVE ISSUES:
Earliest Date Sampled: Feb 6/12
Microbiology: Test: —
Hydrocarbons: Test: Sulphide
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes No
Expiry: —
Expiry: —

SPECIALTY ISSUES:
Legal Samples: Yes (No)
International Samples: Yes (No)
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.
Correct bottles used for testing: (Yes) No
If No, explain: _____
Correct amount of sample for analysis: (Yes) No
If No, explain: _____
Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 1 + 2 + — = 2 °C (2) ___ + ___ + ___ = ___ °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available
flc

Additional integrity issues (note here and on CoC next to the sample ID):
1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:
_____
_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V572681

TRACE ORGANICS REVIEWED BY: Larissa Poryadina, Senior Analyst

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Feb 14, 2012

PAGES (INCLUDING COVER): 21

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-14M 3103279	MV-GWDUP3 3103284	MW2-29 3103286
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits				
Toluene-d8 (BTEX)	%	50-150		101	100	123
o-Terphenyl (F2-F4)	%	50-150		101	102	102

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3103279-3103286 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F2-F4) in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	5-BH23 3103281	MV-11BH-10M 3103285	MV-11BH-17M 3103288
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005	<0.0005
C>10 - C16	mg/L		0.1	<0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits				
Toluene-d8 (BTEX)	%	50-150		103	102	100
o-Terphenyl (F2-F4)	%	50-150		102	102	101

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3103281-3103288 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

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AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-14M 3103279	5-BH23 3103281	MV-GWDUP3 3103284	MV-11BH-10M 3103285	MW2-29 3103286	MV-11BH-17M 3103288
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1		<1		<1	
Styrene	µg/L	720	0.5	<0.5		<0.5		<0.5	
VPH	µg/L	1500	100	<100		<100		<100	
Naphthalene	µg/L	10	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.10
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/L	60	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/L	0.2	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/L	500	100	<100	<100	<100	100	<100	<100
HEPH C19-C32	µg/L		100	<100	<100	<100	120	<100	110
Surrogate	Unit	Acceptable Limits							
Nitrobenzene - d5	%	50-130		92	63	81	115	92	94
Quinoline - d7	%	50-130		96	73	90	111	101	99
2-Fluorobiphenyl	%	50-130		77	57	70	76	83	74
P-Terphenyl - d14	%	60-130		105	70	102	104	102	94
Bromofluorobenzene	%	70-130		101		103		106	
Dibromofluoromethane	%	70-130		104		105		112	
Toluene - d8	%	70-130		111		112		120	

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Certificate of Analysis

AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3103279	VPH results have been corrected for BTEX contributions. LEPH & HEPH results have been corrected for PAH contributions.
3103281	LEPH & HEPH results have been corrected for PAH contributions.
3103284	VPH results have been corrected for BTEX contributions. LEPH & HEPH results have been corrected for PAH contributions.
3103285	LEPH & HEPH results have been corrected for PAH contributions.
3103286	VPH results have been corrected for BTEX contributions. LEPH & HEPH results have been corrected for PAH contributions.
3103288	LEPH & HEPH results have been corrected for PAH contributions.

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AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	5-BH23 3103281	MW2-29 3103286	MV-11BH-01M 3103287
Phenol	mg/L		0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Surrogate	Unit	Acceptable Limits				
2-Fluorophenol	%	50-150		113	110	110
2,4,6-Tribromophenol	%	50-150		112	109	108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3103281-3103287 Results relate only to the items tested.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-29 3103286	MV-11BH-01M 3103287
Chloromethane	µg/L		1	<1	<1
Vinyl Chloride	µg/L		1	<1	<1
Bromomethane	µg/L		1	<1	<1
Chloroethane	µg/L		1	<1	<1
Trichlorofluoromethane	µg/L		1	<1	<1
Acetone	µg/L		10	<10	<10
1,1-Dichloroethene	µg/L		1	<1	<1
Dichloromethane	µg/L	980	1	<1	<1
Methyl tert-butyl ether (MTBE)	µg/L	34000	1		<1
2-Butanone (MEK)	µg/L		10	<10	<10
trans-1,2-Dichloroethylene	µg/L		1	<1	<1
1,1-Dichloroethane	µg/L		1	<1	<1
cis-1,2-Dichloroethylene	µg/L		1	<1	<1
Chloroform	µg/L	20	1	<1	<1
1,2-Dichloroethane	µg/L	1000	1	<1	<1
1,1,1-Trichloroethane	µg/L		1	<1	<1
Carbon Tetrachloride	µg/L	130	0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L		1	<1	<1
Benzene	µg/L		0.5		<0.5
Trichloroethene	µg/L	200	1	<1	<1
Bromodichloromethane	µg/L		1	<1	<1
trans-1,3-Dichloropropene	µg/L		1	<1	<1
4-Methyl-2-pentanone (MIBK)	µg/L		10	<10	<10
cis-1,3-Dichloropropene	µg/L		1	<1	<1
1,1,2-Trichloroethane	µg/L		1	<1	<1
Dibromochloromethane	µg/L		1	<1	<1
Ethylene Dibromide	µg/L		0.3	<0.3	<0.3
Tetrachloroethene	µg/L	1100	1	<1	<1
Toluene	µg/L		0.5		<0.5
1,1,1,2-Tetrachloroethane	µg/L		1	<1	<1
Chlorobenzene	µg/L	13	1	<1	<1
Bromoform	µg/L		1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L		1	<1	<1

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-29 3103286	MV-11BH-01M 3103287
1,3-Dichlorobenzene	µg/L	1500	0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	260	0.5	<0.5	<0.5
Ethylbenzene	µg/L	2000	0.5		<0.5
1,2-Dichlorobenzene	µg/L	7	1	<1	<1
m&p-Xylene	µg/L		0.5		<0.5
1,2,4-Trichlorobenzene	µg/L	240	1	<1	<1
Styrene	µg/L	720	0.5		<0.5
o-Xylene	µg/L		0.5		<0.5
Surrogate	**Unit**	**Acceptable Limits**			
Bromofluorobenzene	%	70-130		106	102
Dibromofluoromethane	%	70-130		112	109
Toluene - d8	%	70-130		120	117

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-10M 3103285	MW2-29 3103286	MV-11BH-01M 3103287
Aluminum Dissolved	µg/L		1	21	5	16
Antimony Dissolved	µg/L		0.05	0.18	<0.05	0.08
Arsenic Dissolved	µg/L	5	0.1	4.8	51.9	7.0
Barium Dissolved	µg/L		0.1	251	179	175
Beryllium Dissolved	µg/L		0.01	0.03	0.01	0.01
Boron Dissolved	µg/L		1	326	41	262
Cadmium Dissolved	µg/L	0.017	0.01	0.41	0.02	0.02
Calcium Dissolved	mg/L		0.05	94.6	126	135
Chromium Dissolved	µg/L		0.5	2.5	1.7	1.6
Cobalt Dissolved	µg/L		0.05	20.9	0.59	7.47
Copper Dissolved	µg/L		0.2	2.4	1.0	0.6
Iron Dissolved	mg/L	0.3	0.01	12.1	79.9	42.9
Lead Dissolved	µg/L		0.01	0.18	0.21	0.24
Lithium Dissolved	µg/L		0.1	7.3	3.0	10.5
Magnesium Dissolved	mg/L		0.05	14.5	21.6	22.0
Manganese Dissolved	mg/L		0.001	4.71	5.59	3.24
Mercury Dissolved	µg/L	0.026	0.003	0.007	<0.003	<0.003
Molybdenum Dissolved	µg/L	73	0.05	9.78	1.03	0.41
Nickel Dissolved	µg/L		0.1	17.8	3.2	7.1
Selenium Dissolved	µg/L	1	0.1	0.8	<0.1	<0.1
Silver Dissolved	µg/L	0.1	0.01	<0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	88.7	6.21	30.5
Thallium Dissolved	µg/L	0.8	0.002	0.254	0.047	0.020
Titanium Dissolved	µg/L		0.1	127	152	169
Uranium Dissolved	µg/L		0.01	4.91	0.02	0.06
Vanadium Dissolved	µg/L		0.1	0.8	1.1	0.6
Zinc Dissolved	µg/L	30	1	16	9	8
Hardness (calc)	mg CaCO3/L		1	296	404	428

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL) (Van)

Certified By: Marie England

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Routine Water Analysis

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-29 3103286	MV-11BH-01M 3103287
Chloride	mg/L	1500	0.05	31.1	26.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By: Marie England

AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Water Analysis - Sulphide

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Feb 14, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-01M 3103287
Sulphide	mg/L		0.1	<0.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Feb 14, 2012

PARAMETER	Batch	Sample Id	DUPLICATE Dup #1	DUPLICATE Dup #2	DUPLICATE RPD	Method Blank	REFERENCE MATERIAL Measured Value	REFERENCE MATERIAL Acceptable Limits Lower	REFERENCE MATERIAL Acceptable Limits Upper	METHOD BLANK SPIKE Recovery	METHOD BLANK SPIKE Acceptable Limits Lower	METHOD BLANK SPIKE Acceptable Limits Upper	MATRIX SPIKE Recovery	MATRIX SPIKE Acceptable Limits Lower	MATRIX SPIKE Acceptable Limits Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				NA	70%	130%
Styrene	1	3103286	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				112%	70%	130%
VPH	1	3103286	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.09	0.09	0.0%	< 0.05	100%	80%	120%				95%	50%	130%
Quinoline	1	W-MS	<0.1	0.1	0.0%	< 0.1	100%	80%	120%				100%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				87%	50%	130%
Acenaphthene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				88%	50%	130%
Fluorene	1	W-MS	0.10	0.10	0.0%	< 0.05	100%	80%	120%				101%	50%	130%
Phenanthrene	1	W-MS	0.10	0.10	0.0%	< 0.05	97%	80%	120%				103%	60%	130%
Anthracene (Water)	1	W-MS	0.08	0.08	0.0%	< 0.05	102%	80%	120%				83%	60%	130%
Acridine	1	W-MS	0.10	0.10	0.0%	< 0.05	99%	80%	120%				104%	50%	130%
Fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	100%	80%	120%				95%	60%	130%
Pyrene	1	W-MS	0.10	0.10	0.0%	< 0.02	99%	80%	120%				104%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.10	11.0%	< 0.05	100%	80%	120%				96%	60%	130%
Chrysene	1	W-MS	0.09	0.10	11.0%	< 0.05	100%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.11	0.12	9.0%	< 0.05	99%	80%	120%				117%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.10	0.11	9.5%	< 0.05	101%	80%	120%				108%	60%	130%
Benzo(a)pyrene	1	W-MS	0.09	0.09	0.0%	< 0.01	101%	80%	120%				92%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.09	0.10	11.0%	< 0.05	99%	80%	120%				96%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				92%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				92%	60%	130%
Nitrobenzene - d5	1	W-MS	87	88	1.0%		98%	80%	120%				87%	50%	130%
Quinoline - d7	1	W-MS	102	102	0.0%		102%	80%	120%				102%	50%	130%
2-Fluorobiphenyl	1	W-MS	84	82	2.0%		101%	80%	120%				84%	50%	130%
P-Terphenyl - d14	1	W-MS	96	97	1.0%		99%	80%	120%				96%	60%	130%
Bromofluorobenzene	1	3103286	106	102	4.0%		96%	70%	130%				117%	70%	130%
Dibromofluoromethane	1	3103286	112	107	5.0%		100%	70%	130%				124%	70%	130%
Toluene - d8	1	3103286	120	113	6.0%		92%	70%	130%				125%	70%	130%
Volatile Organic Compounds in Water															
Chloromethane	1	3103286	<1	<1	0.0%	< 1	93%	80%	120%				74%	70%	130%
Vinyl Chloride	1	3103286	<1	<1	0.0%	< 1	95%	80%	120%				76%	70%	130%
Bromomethane	1	3103286	<1	<1	0.0%	< 1	94%	80%	120%				83%	70%	130%
Chloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				95%	70%	130%
Trichlorofluoromethane	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				83%	70%	130%
Acetone	1	3103286	<10	<10	0.0%	< 10	94%	80%	120%				NA	70%	130%
1,1-Dichloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				100%	70%	130%
Dichloromethane	1	3103286	<1	<1	0.0%	< 1	92%	80%	120%				94%	70%	130%
2-Butanone (MEK)	1	3103286	<10	<10	0.0%	< 10	95%	80%	120%				NA	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 14, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
trans-1,2-Dichloroethylene	1	3103286	<1	<1	0.0%	< 1	99%	80%	120%				109%	70%	130%
1,1-Dichloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				114%	70%	130%
cis-1,2-Dichloroethylene	1	3103286	<1	<1	0.0%	< 1	99%	80%	120%				113%	70%	130%
Chloroform	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				115%	70%	130%
1,2-Dichloroethane	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				111%	70%	130%
1,1,1-Trichloroethane	1	3103286	<1	<1	0.0%	< 1	100%	80%	120%				108%	70%	130%
Carbon Tetrachloride	1	3103286	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				105%	70%	130%
1,2-Dichloropropane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				115%	70%	130%
Trichloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				112%	70%	130%
Bromodichloromethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				112%	70%	130%
trans-1,3-Dichloropropene	1	3103286	<1	<1	0.0%	< 1	102%	80%	120%				108%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3103286	<10	<10	0.0%	< 10	99%	80%	120%				NA	70%	130%
cis-1,3-Dichloropropene	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				109%	70%	130%
1,1,2-Trichloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				110%	70%	130%
Dibromochloromethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				110%	70%	130%
Ethylene Dibromide	1	3103286	<0.3	<0.3	0.0%	< 0.3	98%	80%	120%				110%	70%	130%
Tetrachloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				85%	70%	130%
1,1,1,2-Tetrachloroethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				113%	70%	130%
Chlorobenzene	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				109%	70%	130%
Bromoform	1	3103286	<1	<1	0.0%	< 1	100%	80%	120%				102%	70%	130%
1,1,2,2-Tetrachloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				103%	70%	130%
1,3-Dichlorobenzene	1	3103286	<0.5	<0.5	0.0%	< 0.5	98%	80%	120%				108%	70%	130%
1,4-Dichlorobenzene	1	3103286	<0.5	<0.5	0.0%	< 0.5	96%	80%	120%				106%	70%	130%
1,2-Dichlorobenzene	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				108%	70%	130%
1,2,4-Trichlorobenzene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				104%	70%	130%
Bromofluorobenzene	1	3103286	106	102	4.0%	<	96%	80%	120%				117%	70%	130%
Dibromofluoromethane	1	3103286	112	107	5.0%	<	100%	80%	120%				124%	70%	130%
Toluene - d8	1	3103286	120	113	6.0%	<	92%	80%	120%				125%	70%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	3466	3103279	<0.0005	<0.0005	NA	< 0.0005	109%	80%	120%	102%	80%	120%	112%	70%	130%
Toluene	3466	3103279	<0.0005	<0.0005	NA	< 0.0005	107%	80%	120%	99%	80%	120%	106%	70%	130%
Ethylbenzene	3466	3103279	<0.0005	<0.0005	NA	< 0.0005	97%	80%	120%	94%	80%	120%	93%	70%	130%
Xylenes	3466	3103279	<0.0005	<0.0005	NA	< 0.0005	105%	80%	120%	108%	80%	120%	103%	70%	130%
C6 - C10 (F1)	3466	3103279	<0.1	<0.1	NA	< 0.1	91%	80%	120%	106%	80%	120%	98%	70%	130%
C>10 - C16	28	3095674	<0.1	<0.1	NA	< 0.1	107%	80%	120%	97%	80%	120%	101%	70%	130%
C16 - C34	28	3095674	<0.1	<0.1	NA	< 0.1	107%	80%	120%	112%	80%	120%	101%	70%	130%
C>34 - C50	28	3095674	<0.1	<0.1	NA	< 0.1	107%	80%	120%	104%	80%	120%	104%	70%	130%
Phenolic Compounds in Water															

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 14, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Phenol	135	3100893	<0.002	<0.002	NA	< 0.002	85%	80%	120%	95%	70%	130%	95%	60%	140%
4-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	83%	80%	120%	88%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
o-Cresol (2-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2-Chlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	84%	80%	120%	95%	70%	130%	91%	60%	140%
2,4-Dinitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	90%	80%	120%	91%	70%	130%	93%	60%	140%
2-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	97%	80%	120%	106%	70%	130%	100%	60%	140%
2,4-Dimethylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	93%	70%	130%	89%	60%	140%
2,6-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001				93%	70%	130%	90%	60%	140%
4-Chloro-3-methylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	89%	60%	140%
2,4-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001	87%	80%	120%	87%	70%	130%	85%	60%	140%
4,6-Dinitro-2-methylphenol	135	3100893	<0.005	<0.005	NA	< 0.005	93%	80%	120%	85%	70%	130%	104%	60%	140%
2,3,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	86%	80%	120%	96%	70%	130%	95%	60%	140%
2,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				97%	70%	130%	95%	60%	140%
3,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	99%	60%	140%
2,3,5,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	98%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	135	3100893	<0.005	<0.005	NA	< 0.005				117%	70%	130%	97%	60%	140%
Pentachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	91%	80%	120%	107%	70%	130%	103%	60%	140%
Petroleum Hydrocarbons (BTEX/F2-F4) in Water															
Benzene	387	3095680	< 0.0005	< 0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	93%	70%	130%
Toluene	387	3095680	< 0.0005	< 0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	97%	70%	130%
Ethylbenzene	387	3095680	0.0009	0.0009	0.0%	< 0.0005	104%	80%	120%	97%	80%	120%	103%	70%	130%
Xylenes	387	3095680	0.0048	0.0047	2.1%	< 0.0005	102%	80%	120%	97%	80%	120%	101%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Feb 14, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3100893	3	2	NA	< 1	107%	90%	110%	105%	85%	115%			
Antimony Dissolved	20120	3100893	<0.05	<0.05	0.0%	< 0.05	104%	90%	110%	98%	85%	110%			
Arsenic Dissolved	20120	3100893	21.8	21.5	1.0%	< 0.1	101%	90%	110%	109%	90%	110%			
Barium Dissolved	20120	3100893	101	98.4	3.0%	< 0.1	98%	90%	110%	94%	90%	110%			
Beryllium Dissolved	20120	3100893	<0.01	<0.01	0.0%	< 0.01	110%	90%	110%	101%	90%	110%			
Boron Dissolved	20120	3100893	58	55	5.0%	< 1	108%	90%	110%	108%	80%	120%			
Cadmium Dissolved	20120	3100893	0.01	<0.01	0.0%	< 0.01	99%	90%	110%	99%	90%	110%			
Calcium Dissolved	20120	3100893	142	142	0.0%	< 0.05	99%	90%	110%	103%	90%	110%			
Chromium Dissolved	20120	3100893	4.8	4.9	2.0%	< 0.5	99%	90%	110%	96%	90%	110%			
Cobalt Dissolved	20120	3100893	0.29	0.32	10.0%	< 0.05	97%	90%	110%	100%	90%	110%			
Copper Dissolved	20120	3100893	0.3	0.3	0.0%	< 0.2	101%	90%	110%	100%	90%	110%			
Iron Dissolved	20120	3100893	53.2	53.3	0.0%	< 0.01	104%	90%	110%	105%	90%	110%			
Lead Dissolved	20120	3100893	0.16	0.15	6.0%	< 0.01	101%	90%	110%	99%	90%	110%			
Lithium Dissolved	20120	3100893	2.8	2.7	4.0%	< 0.1				103%	90%	110%			
Magnesium Dissolved	20120	3100893	25.3	25.0	1.0%	< 0.05	104%	90%	110%	108%	90%	110%			
Manganese Dissolved	20120	3100893	3.16	3.12	1.0%	< 0.001	103%	90%	110%	104%	90%	110%			
Mercury Dissolved	20120	3100893	<0.003	<0.003	0.0%	< 0.003	92%	90%	110%	104%	90%	110%			
Molybdenum Dissolved	20120	3100893	0.49	0.48	2.0%	< 0.05	96%	90%	110%	101%	90%	110%			
Nickel Dissolved	20120	3100893	1.2	1.3	8.0%	< 0.1	99%	90%	110%	98%	90%	110%			
Selenium Dissolved	20120	3100893	<0.1	<0.1	0.0%	< 0.1	97%	90%	110%	99%	85%	115%			
Silver Dissolved	20120	3100893	<0.01	<0.01	0.0%	< 0.01				101%	90%	110%			
Sodium Dissolved	20120	3100893	7.96	7.90	1.0%	< 0.05	101%	90%	110%	107%	90%	110%			
Thallium Dissolved	20120	3100893	0.016	0.015	6.0%	< 0.002	93%	90%	110%	96%	90%	110%			
Titanium Dissolved	20120	3100893	162	171	5.0%	< 0.1				108%	90%	110%			
Uranium Dissolved	20120	3100893	0.04	0.04	0.0%	< 0.01		90%	110%	98%	90%	110%			
Vanadium Dissolved	20120	3100893	0.7	0.8	13.0%	< 0.1	98%	90%	110%	102%	90%	110%			
Zinc Dissolved	20120	3100893	5	5	0.0%	< 1	103%	90%	110%	104%	85%	115%			
Routine Water Analysis															
Chloride	1	3102133	9010	9130	1.3%	< 0.05	103%	85%	115%	104%	90%	110%	101%	70%	130%
Water Analysis - Sulphide															
Sulphide	5846	5657	< 0.1	< 0.1	0.0%	< 0.1	105%	80%	120%				104%	80%	120%

Certified By:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Benzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromochloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Tetrachloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylbenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
m&p-Xylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Styrene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
o-Xylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Chloride	INOR-181-6002	Modified from SM 4110 B	ION CHROMATOGRAPH

Unit 120, 8600 Glenlyon Parkway
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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Sulphide	WAT 0100	SM 4500 S2- D	SPECTROPHOTOMETER

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT	5 to 7 working days	☒
Rush TAT	24 to 48 hours	☐
	48 to 72 hours	☐

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632 9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Laboratory Use Only

Arrival Temperature: 5°C
AGAT Job Number: 12V572681

Notes: FEB 7 PM 5:46

Invoice To: Same as above Yes ☒ No ☐

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

☐ **BC CSR – Soil**
- ☐ Agricultural
- ☐ Industrial
- ☐ Urban/Park
- ☐ Commercial

☒ **BC CSR – Water**
- ☐ Drinking Water
- ☒ Aquatic Life
- ☐ Irrigation
- ☐ Livestock

☒ **CCME**
- ☐ Drinking Water
- ☐ Residential/Park
- ☐ Commercial
- ☐ Industrial
- ☐ Drinking Water
- ☒ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	Sulfide	CCME F1	CCME F2-F4	Sodium + Chloride	Chlorinated or non-chlorinated phenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
31 03279	MW-11BR-14M	Water	Feb 7, 2012		X	X						X	X			5			
281	S-BH23					X							X		X	3			
284	MW-GWDUP3				X	X						X	X			5			
285	MW-11BR-10M					X	X						X			3			
286	MW2-29				X	X	X	X				X	X	X	X	11			
287	MW-11BR-01M						X	X			X			X	X	7			
288	MW-11BR-17M					X							X			2			

Samples Relinquished by (print name & sign): [signature] Date: Feb 7, 2012
Samples Received by (Print name & sign): AMIEL OCAMPO 7 FEB 2012 5:46 pm Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 1

NO: 000622

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V572687

RECEIVING BASICS:
***Complete CoC as well where required**
Date and Time: 07-FEB-12@5:46pm
Courier: _____
Received by: Ariel Ocampo
Relinquished by: Amarela
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: No

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000622

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 36 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 07-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 14-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 2 + 3 + 4 = ___°C (2) 3 + 4 + 6 = ___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:
_____
_____
_____

AGAT Laboratories

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CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V572681

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

WATER ANALYSIS REVIEWED BY: Jada Benjamin, Inorganics Manager

DATE REPORTED: Mar 06, 2012

PAGES (INCLUDING COVER): 21

VERSION*: 3

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 3:Version 2 amended to include VH and EPH results as per client.

Report reissued to report sulphide to a lower detection limit as requested by Amanda Salway of Franz Environmental on March 5, 2012.

Version 3 is an amendment to Version 2.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
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Certificate of Analysis

AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-14M 3103279	MV-GWDUP3 3103284	MW2-29 3103286
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits				
Toluene-d8 (BTEX)	%	50-150		101	100	123
o-Terphenyl (F2-F4)	%	50-150		101	102	102

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3103279-3103286 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

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AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F2-F4) in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	5-BH23 3103281	MV-11BH-10M 3103285	MV-11BH-17M 3103288
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005	<0.0005
C>10 - C16	mg/L		0.1	<0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits				
Toluene-d8 (BTEX)	%	50-150		103	102	100
o-Terphenyl (F2-F4)	%	50-150		102	102	101

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3103281-3103288 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

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AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-14M 3103279	5-BH23 3103281	MV-GWDUP3 3103284	MV-11BH-10M 3103285	MW2-29 3103286	MV-11BH-17M 3103288
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1		<1		<1	
Styrene	µg/L	720	0.5	<0.5		<0.5		<0.5	
VPH	µg/L	1500	100	<100		<100		<100	
VH	µg/L	15000	100	<100		<100		<100	
Naphthalene	µg/L	10	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.10
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/L	60	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/L	0.2	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/L	500	100	<100	<100	<100	100	<100	<100
HEPH C19-C32	µg/L		100	<100	<100	<100	120	<100	110
EPH C10-C19	µg/L	5000	100	<100	<100	<100	100	<100	<100
EPH C19-C32	µg/L		100	<100	<100	<100	120	<100	110

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Certificate of Analysis

AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Surrogate	Unit	Acceptable Limits	MV-11BH-14M 3103279	5-BH23 3103281	MV-GWDUP3 3103284	MV-11BH-10M 3103285	MW2-29 3103286	MV-11BH-17M 3103288
Nitrobenzene - d5	%	50-130	92	63	81	115	92	94
Quinoline - d7	%	50-130	96	73	90	111	101	99
2-Fluorobiphenyl	%	50-130	77	57	70	76	83	74
P-Terphenyl - d14	%	60-130	105	70	102	104	102	94
Bromofluorobenzene	%	70-130	101		103		106	
Dibromofluoromethane	%	70-130	104		105		112	
Toluene - d8	%	70-130	111		112		120	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3103279 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3103281 LEPH & HEPH results have been corrected for PAH contributions.

3103284 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3103285 LEPH & HEPH results have been corrected for PAH contributions.

3103286 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3103288 LEPH & HEPH results have been corrected for PAH contributions.

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AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	5-BH23 3103281	MW2-29 3103286	MV-11BH-01M 3103287
Phenol	mg/L		0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Surrogate	Unit	Acceptable Limits				
2-Fluorophenol	%	50-150		113	110	110
2,4,6-Tribromophenol	%	50-150		112	109	108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3103281-3103287 Results relate only to the items tested.

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AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-29 3103286	MV-11BH-01M 3103287
Chloromethane	µg/L		1	<1	<1
Vinyl Chloride	µg/L		1	<1	<1
Bromomethane	µg/L		1	<1	<1
Chloroethane	µg/L		1	<1	<1
Trichlorofluoromethane	µg/L		1	<1	<1
Acetone	µg/L		10	<10	<10
1,1-Dichloroethene	µg/L		1	<1	<1
Dichloromethane	µg/L	980	1	<1	<1
Methyl tert-butyl ether (MTBE)	µg/L	34000	1		<1
2-Butanone (MEK)	µg/L		10	<10	<10
trans-1,2-Dichloroethylene	µg/L		1	<1	<1
1,1-Dichloroethane	µg/L		1	<1	<1
cis-1,2-Dichloroethylene	µg/L		1	<1	<1
Chloroform	µg/L	20	1	<1	<1
1,2-Dichloroethane	µg/L	1000	1	<1	<1
1,1,1-Trichloroethane	µg/L		1	<1	<1
Carbon Tetrachloride	µg/L	130	0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L		1	<1	<1
Benzene	µg/L		0.5		<0.5
Trichloroethene	µg/L	200	1	<1	<1
Bromodichloromethane	µg/L		1	<1	<1
trans-1,3-Dichloropropene	µg/L		1	<1	<1
4-Methyl-2-pentanone (MIBK)	µg/L		10	<10	<10
cis-1,3-Dichloropropene	µg/L		1	<1	<1
1,1,2-Trichloroethane	µg/L		1	<1	<1
Dibromochloromethane	µg/L		1	<1	<1
Ethylene Dibromide	µg/L		0.3	<0.3	<0.3
Tetrachloroethene	µg/L	1100	1	<1	<1
Toluene	µg/L		0.5		<0.5
1,1,1,2-Tetrachloroethane	µg/L		1	<1	<1
Chlorobenzene	µg/L	13	1	<1	<1
Bromoform	µg/L		1	<1	<1
1,1,2,2-Tetrachloroethane	µg/L		1	<1	<1

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Certificate of Analysis

AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-29 3103286	MV-11BH-01M 3103287
1,3-Dichlorobenzene	µg/L	1500	0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	260	0.5	<0.5	<0.5
Ethylbenzene	µg/L	2000	0.5		<0.5
1,2-Dichlorobenzene	µg/L	7	1	<1	<1
m&p-Xylene	µg/L		0.5		<0.5
1,2,4-Trichlorobenzene	µg/L	240	1	<1	<1
Styrene	µg/L	720	0.5		<0.5
o-Xylene	µg/L		0.5		<0.5
Surrogate	**Unit**	**Acceptable Limits**			
Bromofluorobenzene	%	70-130		106	102
Dibromofluoromethane	%	70-130		112	109
Toluene - d8	%	70-130		120	117

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By:

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AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

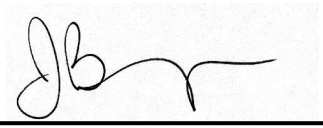
British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-10M 3103285	MW2-29 3103286	MV-11BH-01M 3103287
Aluminum Dissolved	µg/L		1	21	5	16
Antimony Dissolved	µg/L	200	0.05	0.18	<0.05	0.08
Arsenic Dissolved	µg/L	50	0.1	4.8	51.9	7.0
Barium Dissolved	µg/L	10000	0.1	251	179	175
Beryllium Dissolved	µg/L	53	0.01	0.03	0.01	0.01
Boron Dissolved	µg/L	50000	1	326	41	262
Cadmium Dissolved	µg/L		0.01	0.41	0.02	0.02
Calcium Dissolved	mg/L		0.05	94.6	126	135
Chromium Dissolved	µg/L		0.5	2.5	1.7	1.6
Cobalt Dissolved	µg/L	40	0.05	20.9	0.59	7.47
Copper Dissolved	µg/L		0.2	2.4	1.0	0.6
Iron Dissolved	mg/L		0.01	12.1	79.9	42.9
Lead Dissolved	µg/L		0.01	0.18	0.21	0.24
Lithium Dissolved	µg/L		0.1	7.3	3.0	10.5
Magnesium Dissolved	mg/L		0.05	14.5	21.6	22.0
Manganese Dissolved	mg/L		0.001	4.71	5.59	3.24
Mercury Dissolved	µg/L	1	0.003	0.007	<0.003	<0.003
Molybdenum Dissolved	µg/L	10000	0.05	9.78	1.03	0.41
Nickel Dissolved	µg/L		0.1	17.8	3.2	7.1
Selenium Dissolved	µg/L	10	0.1	0.8	<0.1	<0.1
Silver Dissolved	µg/L		0.01	<0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	88.7	6.21	30.5
Thallium Dissolved	µg/L	3	0.002	0.254	0.047	0.020
Titanium Dissolved	µg/L	1000	0.1	127	152	169
Uranium Dissolved	µg/L	3000	0.01	4.91	0.02	0.06
Vanadium Dissolved	µg/L		0.1	0.8	1.1	0.6
Zinc Dissolved	µg/L		1	16	9	8
Hardness (calc)	mg CaCO3/L		1	296	404	428

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By:



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AGAT WORK ORDER: 12V572681
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Routine Water Analysis

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-29 3103286	MV-11BH-01M 3103287
Chloride	mg/L	1500	0.05	31.1	26.6

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

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AGAT WORK ORDER: 12V572681
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CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Water Analysis - Sulphide

DATE SAMPLED: Feb 07, 2012 | DATE RECEIVED: Feb 07, 2012 | DATE REPORTED: Mar 06, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-01M 3103287
Sulphide	mg/L		0.01	<0.01

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Mar 06, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				NA	70%	130%
Styrene	1	3103286	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				112%	70%	130%
VPH	1	3103286	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.09	0.09	0.0%	< 0.05	100%	80%	120%				95%	50%	130%
Quinoline	1	W-MS	<0.1	0.1	0.0%	< 0.1	100%	80%	120%				100%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				87%	50%	130%
Acenaphthene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				88%	50%	130%
Fluorene	1	W-MS	0.10	0.10	0.0%	< 0.05	100%	80%	120%				101%	50%	130%
Phenanthrene	1	W-MS	0.10	0.10	0.0%	< 0.05	97%	80%	120%				103%	60%	130%
Anthracene (Water)	1	W-MS	0.08	0.08	0.0%	< 0.05	102%	80%	120%				83%	60%	130%
Acridine	1	W-MS	0.10	0.10	0.0%	< 0.05	99%	80%	120%				104%	50%	130%
Fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	100%	80%	120%				95%	60%	130%
Pyrene	1	W-MS	0.10	0.10	0.0%	< 0.02	99%	80%	120%				104%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.10	11.0%	< 0.05	100%	80%	120%				96%	60%	130%
Chrysene	1	W-MS	0.09	0.10	11.0%	< 0.05	100%	80%	120%				94%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.11	0.12	9.0%	< 0.05	99%	80%	120%				117%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.10	0.11	9.5%	< 0.05	101%	80%	120%				108%	60%	130%
Benzo(a)pyrene	1	W-MS	0.09	0.09	0.0%	< 0.01	101%	80%	120%				92%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.09	0.10	11.0%	< 0.05	99%	80%	120%				96%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				92%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				92%	60%	130%
Nitrobenzene - d5	1	W-MS	87	88	1.0%		98%	80%	120%				87%	50%	130%
Quinoline - d7	1	W-MS	102	102	0.0%		102%	80%	120%				102%	50%	130%
2-Fluorobiphenyl	1	W-MS	84	82	2.0%		101%	80%	120%				84%	50%	130%
P-Terphenyl - d14	1	W-MS	96	97	1.0%		99%	80%	120%				96%	60%	130%
Bromofluorobenzene	1	3103286	106	102	4.0%		96%	70%	130%				117%	70%	130%
Dibromofluoromethane	1	3103286	112	107	5.0%		100%	70%	130%				124%	70%	130%
Toluene - d8	1	3103286	120	113	6.0%		92%	70%	130%				125%	70%	130%
Volatile Organic Compounds in Water															
Chloromethane	1	3103286	<1	<1	0.0%	< 1	93%	80%	120%				74%	70%	130%
Vinyl Chloride	1	3103286	<1	<1	0.0%	< 1	95%	80%	120%				76%	70%	130%
Bromomethane	1	3103286	<1	<1	0.0%	< 1	94%	80%	120%				83%	70%	130%
Chloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				95%	70%	130%
Trichlorofluoromethane	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				83%	70%	130%
Acetone	1	3103286	<10	<10	0.0%	< 10	94%	80%	120%				NA	70%	130%
1,1-Dichloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				100%	70%	130%
Dichloromethane	1	3103286	<1	<1	0.0%	< 1	92%	80%	120%				94%	70%	130%
2-Butanone (MEK)	1	3103286	<10	<10	0.0%	< 10	95%	80%	120%				NA	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 06, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
trans-1,2-Dichloroethylene	1	3103286	<1	<1	0.0%	< 1	99%	80%	120%				109%	70%	130%
1,1-Dichloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				114%	70%	130%
cis-1,2-Dichloroethylene	1	3103286	<1	<1	0.0%	< 1	99%	80%	120%				113%	70%	130%
Chloroform	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				115%	70%	130%
1,2-Dichloroethane	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				111%	70%	130%
1,1,1-Trichloroethane	1	3103286	<1	<1	0.0%	< 1	100%	80%	120%				108%	70%	130%
Carbon Tetrachloride	1	3103286	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				105%	70%	130%
1,2-Dichloropropane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				115%	70%	130%
Trichloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				112%	70%	130%
Bromodichloromethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				112%	70%	130%
trans-1,3-Dichloropropene	1	3103286	<1	<1	0.0%	< 1	102%	80%	120%				108%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3103286	<10	<10	0.0%	< 10	99%	80%	120%				NA	70%	130%
cis-1,3-Dichloropropene	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				109%	70%	130%
1,1,2-Trichloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				110%	70%	130%
Dibromochloromethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				110%	70%	130%
Ethylene Dibromide	1	3103286	<0.3	<0.3	0.0%	< 0.3	98%	80%	120%				110%	70%	130%
Tetrachloroethene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				85%	70%	130%
1,1,1,2-Tetrachloroethane	1	3103286	<1	<1	0.0%	< 1	101%	80%	120%				113%	70%	130%
Chlorobenzene	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				109%	70%	130%
Bromoform	1	3103286	<1	<1	0.0%	< 1	100%	80%	120%				102%	70%	130%
1,1,2,2-Tetrachloroethane	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				103%	70%	130%
1,3-Dichlorobenzene	1	3103286	<0.5	<0.5	0.0%	< 0.5	98%	80%	120%				108%	70%	130%
1,4-Dichlorobenzene	1	3103286	<0.5	<0.5	0.0%	< 0.5	96%	80%	120%				106%	70%	130%
1,2-Dichlorobenzene	1	3103286	<1	<1	0.0%	< 1	97%	80%	120%				108%	70%	130%
1,2,4-Trichlorobenzene	1	3103286	<1	<1	0.0%	< 1	98%	80%	120%				104%	70%	130%
Bromofluorobenzene	1	3103286	106	102	4.0%	<	96%	80%	120%				117%	70%	130%
Dibromofluoromethane	1	3103286	112	107	5.0%	<	100%	80%	120%				124%	70%	130%
Toluene - d8	1	3103286	120	113	6.0%	<	92%	80%	120%				125%	70%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	3466	3103279	<0.0005	<0.0005	NA	< 0.0005	109%	80%	120%	102%	80%	120%	112%	70%	130%
Toluene	3466	3103279	<0.0005	<0.0005	NA	< 0.0005	107%	80%	120%	99%	80%	120%	106%	70%	130%
Ethylbenzene	3466	3103279	<0.0005	<0.0005	NA	< 0.0005	97%	80%	120%	94%	80%	120%	93%	70%	130%
Xylenes	3466	3103279	<0.0005	<0.0005	NA	< 0.0005	105%	80%	120%	108%	80%	120%	103%	70%	130%
C6 - C10 (F1)	3466	3103279	<0.1	<0.1	NA	< 0.1	91%	80%	120%	106%	80%	120%	98%	70%	130%
C>10 - C16	28	3095674	<0.1	<0.1	NA	< 0.1	107%	80%	120%	97%	80%	120%	101%	70%	130%
C16 - C34	28	3095674	<0.1	<0.1	NA	< 0.1	107%	80%	120%	112%	80%	120%	101%	70%	130%
C>34 - C50	28	3095674	<0.1	<0.1	NA	< 0.1	107%	80%	120%	104%	80%	120%	104%	70%	130%
Phenolic Compounds in Water															

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 06, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Phenol	135	3100893	<0.002	<0.002	NA	< 0.002	85%	80%	120%	95%	70%	130%	95%	60%	140%
4-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	83%	80%	120%	88%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
o-Cresol (2-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2-Chlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	84%	80%	120%	95%	70%	130%	91%	60%	140%
2,4-Dinitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	90%	80%	120%	91%	70%	130%	93%	60%	140%
2-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	97%	80%	120%	106%	70%	130%	100%	60%	140%
2,4-Dimethylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	93%	70%	130%	89%	60%	140%
2,6-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001				93%	70%	130%	90%	60%	140%
4-Chloro-3-methylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	89%	60%	140%
2,4-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001	87%	80%	120%	87%	70%	130%	85%	60%	140%
4,6-Dinitro-2-methylphenol	135	3100893	<0.005	<0.005	NA	< 0.005	93%	80%	120%	85%	70%	130%	104%	60%	140%
2,3,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	86%	80%	120%	96%	70%	130%	95%	60%	140%
2,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				97%	70%	130%	95%	60%	140%
3,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	99%	60%	140%
2,3,5,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	98%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	135	3100893	<0.005	<0.005	NA	< 0.005				117%	70%	130%	97%	60%	140%
Pentachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	91%	80%	120%	107%	70%	130%	103%	60%	140%
Petroleum Hydrocarbons (BTEX/F2-F4) in Water															
Benzene	387	3095680	< 0.0005	< 0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	93%	70%	130%
Toluene	387	3095680	< 0.0005	< 0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	97%	70%	130%
Ethylbenzene	387	3095680	0.0009	0.0009	0.0%	< 0.0005	104%	80%	120%	97%	80%	120%	103%	70%	130%
Xylenes	387	3095680	0.0048	0.0047	2.1%	< 0.0005	102%	80%	120%	97%	80%	120%	101%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Mar 06, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3100893	3	2	NA	< 1	107%	90%	110%	105%	85%	115%			
Antimony Dissolved	20120	3100893	<0.05	<0.05	0.0%	< 0.05	104%	90%	110%	98%	85%	110%			
Arsenic Dissolved	20120	3100893	21.8	21.5	1.0%	< 0.1	101%	90%	110%	109%	90%	110%			
Barium Dissolved	20120	3100893	101	98.4	3.0%	< 0.1	98%	90%	110%	94%	90%	110%			
Beryllium Dissolved	20120	3100893	<0.01	<0.01	0.0%	< 0.01	110%	90%	110%	101%	90%	110%			
Boron Dissolved	20120	3100893	58	55	5.0%	< 1	108%	90%	110%	108%	80%	120%			
Cadmium Dissolved	20120	3100893	0.01	<0.01	0.0%	< 0.01	99%	90%	110%	99%	90%	110%			
Calcium Dissolved	20120	3100893	142	142	0.0%	< 0.05	99%	90%	110%	103%	90%	110%			
Chromium Dissolved	20120	3100893	4.8	4.9	2.0%	< 0.5	99%	90%	110%	96%	90%	110%			
Cobalt Dissolved	20120	3100893	0.29	0.32	10.0%	< 0.05	97%	90%	110%	100%	90%	110%			
Copper Dissolved	20120	3100893	0.3	0.3	0.0%	< 0.2	101%	90%	110%	100%	90%	110%			
Iron Dissolved	20120	3100893	53.2	53.3	0.0%	< 0.01	104%	90%	110%	105%	90%	110%			
Lead Dissolved	20120	3100893	0.16	0.15	6.0%	< 0.01	101%	90%	110%	99%	90%	110%			
Lithium Dissolved	20120	3100893	2.8	2.7	4.0%	< 0.1				103%	90%	110%			
Magnesium Dissolved	20120	3100893	25.3	25.0	1.0%	< 0.05	104%	90%	110%	108%	90%	110%			
Manganese Dissolved	20120	3100893	3.16	3.12	1.0%	< 0.001	103%	90%	110%	104%	90%	110%			
Mercury Dissolved	20120	3100893	<0.003	<0.003	0.0%	< 0.003	92%	90%	110%	104%	90%	110%			
Molybdenum Dissolved	20120	3100893	0.49	0.48	2.0%	< 0.05	96%	90%	110%	101%	90%	110%			
Nickel Dissolved	20120	3100893	1.2	1.3	8.0%	< 0.1	99%	90%	110%	98%	90%	110%			
Selenium Dissolved	20120	3100893	<0.1	<0.1	0.0%	< 0.1	97%	90%	110%	99%	85%	115%			
Silver Dissolved	20120	3100893	<0.01	<0.01	0.0%	< 0.01				101%	90%	110%			
Sodium Dissolved	20120	3100893	7.96	7.90	1.0%	< 0.05	101%	90%	110%	107%	90%	110%			
Thallium Dissolved	20120	3100893	0.016	0.015	6.0%	< 0.002	93%	90%	110%	96%	90%	110%			
Titanium Dissolved	20120	3100893	162	171	5.0%	< 0.1				108%	90%	110%			
Uranium Dissolved	20120	3100893	0.04	0.04	0.0%	< 0.01		90%	110%	98%	90%	110%			
Vanadium Dissolved	20120	3100893	0.7	0.8	13.0%	< 0.1	98%	90%	110%	102%	90%	110%			
Zinc Dissolved	20120	3100893	5	5	0.0%	< 1	103%	90%	110%	104%	85%	115%			
Routine Water Analysis															
Chloride	1	3102133	9010	9130	1.3%	< 0.05	103%	85%	115%	104%	90%	110%	101%	70%	130%
Water Analysis - Sulphide															
Sulphide	5846	5657	< 0.1	< 0.1	0.0%	< 0.1	105%	80%	120%				104%	80%	120%

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Benzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromochloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylbenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
m&p-Xylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Styrene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
o-Xylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Chloride	INOR-181-6002	Modified from SM 4110 B	ION CHROMATOGRAPH

Unit 120, 8600 Glenlyon Parkway
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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Sulphide	WAT 0100	SM 4500 S2- D	SPECTROPHOTOMETER

AGAT Laboratories

120 - 8600 Glenlyon Parkway
Burnaby, BC,
V5J 0B6
webearth.agatlabs.com
Ph.: 778.452.4000 - Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT	5 to 7 working days	☒
Rush TAT	24 to 48 hours	☐
	48 to 72 hours	☐

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632 9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Laboratory Use Only

Arrival Temperature: 5°C
AGAT Job Number: 12V572681

Notes: FEB 7 PM 5:46

Invoice To: Same as above Yes ☒ No ☐

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

☐ **BC CSR – Soil**
- ☐ Agricultural
- ☐ Industrial
- ☐ Urban/Park
- ☐ Commercial

☒ **BC CSR – Water**
- ☐ Drinking Water
- ☒ Aquatic Life
- ☐ Irrigation
- ☐ Livestock

☒ **CCME**
- ☐ Drinking Water
- ☐ Residential/Park
- ☐ Commercial
- ☐ Industrial
- ☐ Drinking Water
- ☒ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	Sulfide	CCME F1	CCME F2-F4	Sodium + Chloride	Chlorinated or non-chlorinated phenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
31 03279	MW-11BR-14M	Water	Feb 7, 2012		X	X						X	X			5			
281	S-BH23					X							X		X	3			
284	MW-GWDUP3				X	X						X	X			5			
285	MW-11BR-10M					X	X						X			3			
286	MW2-29				X	X	X	X				X	X	X	X	11			
287	MW-11BR-01M						X	X			X			X	X	7			
288	MW-11BR-17M					X							X			2			

Samples Relinquished by (print name & sign): [signature] Date: Feb 7, 2012
Samples Received by (Print name & sign): AMIEL OCAMPO 7 FEB 2012 5:46 pm Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:
Samples Relinquished by (print name & sign): Date:
Samples Received by (Print name & sign): Date:

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 1

NO: 000622

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V572687

RECEIVING BASICS:
***Complete CoC as well where required**
Date and Time: 07-FEB-12@5:46pm
Courier: _____
Received by: Ariel Ocampo
Relinquished by: Amarela
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: No

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000622

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 36 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 07-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 14-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 2 + 3 + 4 = ___°C (2) 3 + 4 + 6 = ___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:
_____
_____
_____

AGAT Laboratories

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CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V573478

TRACE ORGANICS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

WATER ANALYSIS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

DATE REPORTED: Feb 17, 2012

PAGES (INCLUDING COVER): 19

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Feb 17, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059	3-BH31 3109082
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits			
Toluene-d8 (BTEX)	%	50-150		103	103
o-Terphenyl (F2-F4)	%	50-150		103	104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3109059-3109082 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F2-F4) in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Feb 17, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-16M 3109081
C>10 - C16	mg/L		0.1	<0.1
C16 - C34	mg/L		0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8 (BTEX)	%	50-150		NA
o-Terphenyl (F2-F4)	%	50-150		106

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3109081 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Feb 17, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059	MV-11BH-16M 3109081	3-BH31 3109082
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1		<1
Styrene	µg/L	720	0.5	<0.5		<0.5
VPH	µg/L	1500	100	<100		<100
Naphthalene	µg/L	10	0.05	<0.05	<0.05	<0.05
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/L	60	0.05	<0.05	<0.05	<0.05
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	<0.05
Pyrene	µg/L	0.2	0.02	0.03	<0.02	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/L	500	100	<100	<100	<100
HEPH C19-C32	µg/L		100	<100	<100	<100
Surrogate	Unit	Acceptable Limits				
Nitrobenzene - d5	%	50-130		84	91	90
Quinoline - d7	%	50-130		105	103	100
2-Fluorobiphenyl	%	50-130		84	82	83
P-Terphenyl - d14	%	60-130		95	96	95
Bromofluorobenzene	%	70-130		98		93
Dibromofluoromethane	%	70-130		119		114
Toluene - d8	%	70-130		116		109

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Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 09, 2012	DATE RECEIVED: Feb 09, 2012	DATE REPORTED: Feb 17, 2012	SAMPLE TYPE: Water

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3109059 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3109081 LEPH & HEPH results have been corrected for PAH contributions.

3109082 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

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AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Feb 17, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059
Phenol	mg/L		0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005
Surrogate	**Unit**	**Acceptable Limits**		
2-Fluorophenol	%	50-150		112
2,4,6-Tribromophenol	%	50-150		109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3109059 Results relate only to the items tested.

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AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Feb 17, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059
Chloromethane	µg/L		1	<1
Vinyl Chloride	µg/L		1	<1
Bromomethane	µg/L		1	<1
Chloroethane	µg/L		1	<1
Trichlorofluoromethane	µg/L		1	<1
Acetone	µg/L		10	<10
1,1-Dichloroethene	µg/L		1	<1
Dichloromethane	µg/L	980	1	<1
2-Butanone (MEK)	µg/L		10	<10
trans-1,2-Dichloroethylene	µg/L		1	<1
1,1-Dichloroethane	µg/L		1	<1
cis-1,2-Dichloroethylene	µg/L		1	<1
Chloroform	µg/L	20	1	<1
1,2-Dichloroethane	µg/L	1000	1	<1
1,1,1-Trichloroethane	µg/L		1	<1
Carbon Tetrachloride	µg/L	130	0.5	<0.5
1,2-Dichloropropane	µg/L		1	<1
Trichloroethene	µg/L	200	1	<1
Bromodichloromethane	µg/L		1	<1
trans-1,3-Dichloropropene	µg/L		1	<1
4-Methyl-2-pentanone (MIBK)	µg/L		10	<10
cis-1,3-Dichloropropene	µg/L		1	<1
1,1,2-Trichloroethane	µg/L		1	<1
Dibromochloromethane	µg/L		1	<1
Ethylene Dibromide	µg/L		0.3	<0.3
Tetrachloroethene	µg/L	1100	1	<1
1,1,1,2-Tetrachloroethane	µg/L		1	<1
Chlorobenzene	µg/L	13	1	<1
Bromoform	µg/L		1	<1
1,1,2,2-Tetrachloroethane	µg/L		1	<1
1,3-Dichlorobenzene	µg/L	1500	0.5	<0.5
1,4-Dichlorobenzene	µg/L	260	0.5	<0.5
1,2-Dichlorobenzene	µg/L	7	1	<1

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PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Feb 17, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059
1,2,4-Trichlorobenzene	µg/L	240	1	<1
Surrogate	**Unit**	**Acceptable Limits**		
Bromofluorobenzene	%	70-130		91
Dibromofluoromethane	%	70-130		86
Toluene - d8	%	70-130		94

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

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AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Feb 17, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059
Aluminum Dissolved	µg/L		1	4
Antimony Dissolved	µg/L		0.05	0.06
Arsenic Dissolved	µg/L	5	0.1	4.4
Barium Dissolved	µg/L		0.1	113
Beryllium Dissolved	µg/L		0.01	0.01
Boron Dissolved	µg/L		1	46
Cadmium Dissolved	µg/L	0.017	0.01	0.03
Calcium Dissolved	mg/L		0.05	98.2
Chromium Dissolved	µg/L		0.5	12.8
Cobalt Dissolved	µg/L		0.05	0.26
Copper Dissolved	µg/L		0.2	0.3
Iron Dissolved	mg/L	0.3	0.01	36.6
Lead Dissolved	µg/L		0.01	0.16
Lithium Dissolved	µg/L		0.1	2.9
Magnesium Dissolved	mg/L		0.05	35.9
Manganese Dissolved	mg/L		0.001	2.08
Mercury Dissolved	µg/L	0.026	0.003	<0.003
Molybdenum Dissolved	µg/L	73	0.05	<0.05
Nickel Dissolved	µg/L		0.1	1.5
Selenium Dissolved	µg/L	1	0.1	0.2
Silver Dissolved	µg/L	0.1	0.01	<0.01
Sodium Dissolved	mg/L		0.05	14.0
Thallium Dissolved	µg/L	0.8	0.002	0.024
Titanium Dissolved	µg/L		0.1	114
Uranium Dissolved	µg/L		0.01	0.01
Vanadium Dissolved	µg/L		0.1	0.9
Zinc Dissolved	µg/L	30	1	11
Hardness (calc)	mg CaCO3/L		1	393

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL) (Van)

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Certificate of Analysis

AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Routine Water Analysis

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Feb 17, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059
Chloride	mg/L	1500	0.05	20.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Feb 17, 2012

PARAMETER	Batch	Sample Id	DUPLICATE Dup #1	DUPLICATE Dup #2	DUPLICATE RPD	Method Blank	REFERENCE MATERIAL Measured Value	REFERENCE MATERIAL Acceptable Limits Lower	REFERENCE MATERIAL Acceptable Limits Upper	METHOD BLANK SPIKE Recovery	METHOD BLANK SPIKE Acceptable Limits Lower	METHOD BLANK SPIKE Acceptable Limits Upper	MATRIX SPIKE Recovery	MATRIX SPIKE Acceptable Limits Lower	MATRIX SPIKE Acceptable Limits Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3109059	<1	<1	0.0%	< 1	102%	80%	120%				100%	70%	130%
Styrene	1	3109059	<0.5	<0.5	0.0%	< 0.5	102%	80%	120%				105%	70%	130%
VPH	1	3109059	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.09	0.09	0.0%	< 0.05	100%	80%	120%				97%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	103%	80%	120%				91%	50%	130%
Acenaphthylene	1	W-MS	0.09	0.09	0.0%	< 0.05	103%	80%	120%				92%	50%	130%
Acenaphthene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				97%	50%	130%
Fluorene	1	W-MS	0.09	0.09	0.0%	< 0.05	103%	80%	120%				96%	50%	130%
Phenanthrene	1	W-MS	0.08	0.09	12.0%	< 0.05	103%	80%	120%				88%	60%	130%
Anthracene (Water)	1	W-MS	0.09	0.10	11.0%	< 0.05	98%	80%	120%				95%	60%	130%
Acridine	1	W-MS	0.08	0.09	12.0%	< 0.05	103%	80%	120%				88%	50%	130%
Fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	101%	80%	120%				95%	60%	130%
Pyrene	1	W-MS	0.09	0.10	11.0%	< 0.02	101%	80%	120%				94%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.09	0.0%	< 0.05	102%	80%	120%				92%	60%	130%
Chrysene	1	W-MS	0.09	0.10	11.0%	< 0.05	98%	80%	120%				98%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.08	0.09	12.0%	< 0.05	105%	80%	120%				86%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				86%	60%	130%
Benzo(a)pyrene	1	W-MS	0.09	0.09	0.0%	< 0.01	101%	80%	120%				92%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.10	0.10	0.0%	< 0.05	102%	80%	120%				103%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.10	0.10	0.0%	< 0.05	101%	80%	120%				101%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.10	0.11	9.5%	< 0.05	102%	80%	120%				105%	60%	130%
Nitrobenzene - d5	1	W-MS	98	101	3.0%		102%	80%	120%				99%	50%	130%
Quinoline - d7	1	W-MS	87	86	1.0%		106%	80%	120%				88%	50%	130%
2-Fluorobiphenyl	1	W-MS	97	97	0.0%		101%	80%	120%				97%	50%	130%
P-Terphenyl - d14	1	W-MS	95	100	5.0%		102%	80%	120%				95%	60%	130%
Bromofluorobenzene	1	3109059	98	96	2.0%		100%	70%	130%				110%	70%	130%
Dibromofluoromethane	1	3109059	119	119	0.0%		93%	70%	130%				98%	70%	130%
Toluene - d8	1	3109059	116	112	4.0%		95%	70%	130%				104%	70%	130%
Volatile Organic Compounds in Water															
Chloromethane	1	3109059	<1	<1	0.0%	< 1	96%	80%	120%				129%	70%	130%
Vinyl Chloride	1	3109059	<1	<1	0.0%	< 1	97%	80%	120%				119%	70%	130%
Bromomethane	1	3109059	<1	<1	0.0%	< 1	95%	80%	120%				119%	70%	130%
Chloroethane	1	3109059	<1	<1	0.0%	< 1	100%	80%	120%				119%	70%	130%
Trichlorofluoromethane	1	3109059	<1	<1	0.0%	< 1	99%	80%	120%				105%	70%	130%
Acetone	1	3109059	<10	<10	0.0%	< 10	104%	80%	120%				NA	70%	130%
1,1-Dichloroethene	1	3109059	<1	<1	0.0%	< 1	100%	80%	120%				116%	70%	130%
Dichloromethane	1	3109059	<1	<1	0.0%	< 1	98%	80%	120%				94%	70%	130%
2-Butanone (MEK)	1	3109059	<10	<10	0.0%	< 10	101%	80%	120%				NA	70%	130%

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CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 17, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
trans-1,2-Dichloroethylene	1	3109059	<1	<1	0.0%	< 1	99%	80%	120%				107%	70%	130%
1,1-Dichloroethane	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				108%	70%	130%
cis-1,2-Dichloroethylene	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				106%	70%	130%
Chloroform	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				104%	70%	130%
1,2-Dichloroethane	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				107%	70%	130%
1,1,1-Trichloroethane	1	3109059	<1	<1	0.0%	< 1	102%	80%	120%				105%	70%	130%
Carbon Tetrachloride	1	3109059	<0.5	<0.5	0.0%	< 0.5	103%	80%	120%				109%	70%	130%
1,2-Dichloropropane	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				103%	70%	130%
Trichloroethene	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				105%	70%	130%
Bromodichloromethane	1	3109059	<1	<1	0.0%	< 1	104%	80%	120%				102%	70%	130%
trans-1,3-Dichloropropene	1	3109059	<1	<1	0.0%	< 1	105%	80%	120%				105%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3109059	<10	<10	0.0%	< 10	105%	80%	120%				NA	70%	130%
cis-1,3-Dichloropropene	1	3109059	<1	<1	0.0%	< 1	105%	80%	120%				104%	70%	130%
1,1,2-Trichloroethane	1	3109059	<1	<1	0.0%	< 1	102%	80%	120%				100%	70%	130%
Dibromochloromethane	1	3109059	<1	<1	0.0%	< 1	105%	80%	120%				100%	70%	130%
Ethylene Dibromide	1	3109059	<0.3	<0.3	0.0%	< 0.3	103%	80%	120%				99%	70%	130%
Tetrachloroethene	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				82%	70%	130%
1,1,1,2-Tetrachloroethane	1	3109059	<1	<1	0.0%	< 1	104%	80%	120%				100%	70%	130%
Chlorobenzene	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				100%	70%	130%
Bromoform	1	3109059	<1	<1	0.0%	< 1	105%	80%	120%				99%	70%	130%
1,1,2,2-Tetrachloroethane	1	3109059	<1	<1	0.0%	< 1	103%	80%	120%				97%	70%	130%
1,3-Dichlorobenzene	1	3109059	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				103%	70%	130%
1,4-Dichlorobenzene	1	3109059	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				103%	70%	130%
1,2-Dichlorobenzene	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				101%	70%	130%
1,2,4-Trichlorobenzene	1	3109059	<1	<1	0.0%	< 1	102%	80%	120%				100%	70%	130%
Bromofluorobenzene	1	3109059	91	91	0.0%		104%	80%	120%				NA	70%	130%
Dibromofluoromethane	1	3109059	86	89	3.0%		108%	80%	120%				NA	70%	130%
Toluene - d8	1	3109059	94	97	3.0%		101%	80%	120%				NA	70%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	393	3115213	0.0687	0.0675	2.0%	< 0.0005	106%	80%	120%	97%	80%	120%	89%	70%	130%
Toluene	393	3115213	0.0340	0.0353	3.8%	< 0.0005	109%	80%	120%	100%	80%	120%	88%	70%	130%
Ethylbenzene	393	3115213	0.005	0.0059	17.0%	< 0.0005	112%	80%	120%	107%	80%	120%	88%	70%	130%
Xylenes	393	3115213	0.0103	0.0114	10.0%	< 0.0005	112%	80%	120%	105%	80%	120%	89%	70%	130%
C6 - C10 (F1)	393	3115213	0.5	0.5	0.0%	< 0.1	102%	80%	120%	111%	80%	120%	106%	70%	130%
C>10 - C16	30	3109059	<0.1	<0.1	0.0%	< 0.1	94%	80%	120%	87%	80%	120%	105%	70%	130%
C16 - C34	30	3109059	<0.1	<0.1	0.0%	< 0.1	94%	80%	120%	84%	80%	120%	102%	70%	130%
C>34 - C50	30	3109059	<0.1	<0.1	0.0%	< 0.1	94%	80%	120%	0%	80%	120%	0%	70%	130%
Phenolic Compounds in Water															

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 17, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Phenol	135	3100893	<0.002	<0.002	NA	< 0.002	85%	80%	120%	95%	70%	130%	95%	60%	140%
4-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	83%	80%	120%	88%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
o-Cresol (2-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2-Chlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	84%	80%	120%	95%	70%	130%	91%	60%	140%
2,4-Dinitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	90%	80%	120%	91%	70%	130%	93%	60%	140%
2-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	97%	80%	120%	106%	70%	130%	100%	60%	140%
2,4-Dimethylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	93%	70%	130%	89%	60%	140%
2,6-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001				93%	70%	130%	90%	60%	140%
4-Chloro-3-methylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	89%	60%	140%
2,4-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001	87%	80%	120%	87%	70%	130%	85%	60%	140%
4,6-Dinitro-2-methylphenol	135	3100893	<0.005	<0.005	NA	< 0.005	93%	80%	120%	85%	70%	130%	104%	60%	140%
2,3,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	86%	80%	120%	96%	70%	130%	95%	60%	140%
2,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				97%	70%	130%	95%	60%	140%
3,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	99%	60%	140%
2,3,5,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	98%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	135	3100893	<0.005	<0.005	NA	< 0.005				117%	70%	130%	97%	60%	140%
Pentachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	91%	80%	120%	107%	70%	130%	103%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Feb 17, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	3109059		4	4	0.0%	< 1	105%	90%	110%	108%	85%	115%			
Antimony Dissolved	3109059		0.06	0.16	NA	< 0.05	104%	90%	110%	107%	85%	110%			
Arsenic Dissolved	3109059		4.4	4.3	2.3%	< 0.1	102%	90%	110%	106%	90%	110%			
Barium Dissolved	3109059		113	113	0.0%	< 0.1	102%	90%	110%	99%	90%	110%			
Beryllium Dissolved	3109059		0.01	0.02	NA	< 0.01	90%	90%	110%	101%	90%	110%			
Boron Dissolved	3109059		45.9	49.0	6.5%	< 1	94%	90%	110%	102%	80%	120%			
Cadmium Dissolved	3109059		0.03	0.03	0.0%	< 0.01	102%	90%	110%	102%	90%	110%			
Calcium Dissolved	3106239		30.7	30.6	0.3%	< 0.05	100%	90%	110%	102%	90%	110%			
Chromium Dissolved	3109059		12.8	13.0	1.6%	< 0.5	90%	90%	110%	94%	90%	110%			
Cobalt Dissolved	3109059		0.26	0.25	3.9%	< 0.05	97%	90%	110%	100%	90%	110%			
Copper Dissolved	3109059		0.3	0.3	0.0%	< 0.2	100%	90%	110%	104%	90%	110%			
Iron Dissolved	3106239		<0.01	<0.01	0.0%	< 0.01	105%	90%	110%	103%	90%	110%			
Lead Dissolved	3109059		0.16	0.13	20.7%	< 0.01	105%	90%	110%	102%	90%	110%			
Lithium Dissolved	3109059		2.9	3.0	3.4%	< 0.1				103%	90%	110%			
Magnesium Dissolved	3106239		4.03	4.01	0.5%	< 0.05	104%	90%	110%	106%	90%	110%			
Manganese Dissolved	3106239		<0.001	<0.001	0.0%	< 0.001	104%	90%	110%	102%	90%	110%			
Mercury Dissolved	3106239		<0.003	<0.003	0.0%	< 0.003	95%	90%	110%	100%	90%	110%			
Molybdenum Dissolved	3109059		< 0.05	< 0.05	0.0%	< 0.05	95%	90%	110%	106%	90%	110%			
Nickel Dissolved	3109059		1.5	1.6	6.5%	< 0.1	94%	90%	110%	100%	90%	110%			
Selenium Dissolved	3109059		0.2	0.4	NA	< 0.1	102%	90%	110%	107%	85%	115%			
Silver Dissolved	3109059		< 0.01	< 0.01	0.0%	< 0.01				105%	90%	110%			
Sodium Dissolved	3106241		2.02	2.01	0.5%	< 0.05	101%	90%	110%	105%	90%	110%			
Thallium Dissolved	3109059		0.024	<0.002	NA	< 0.002	92%	90%	110%	98%	90%	110%			
Titanium Dissolved	3109059		114	118	3.4%	< 0.1				94%	90%	110%			
Uranium Dissolved	3109059		0.01	0.01	0.0%	< 0.01		90%	110%	102%	90%	110%			
Vanadium Dissolved	3109059		0.9	1.1	20.0%	< 0.1	90%	90%	110%	97%	90%	110%			
Zinc Dissolved	3109059		11	12	8.7%	< 1	98%	90%	110%	106%	85%	115%			
Routine Water Analysis															
Chloride	20120	3109059	20.1	20.2	0.5%	< 0.05	104%	85%	115%	96%	90%	110%	93%	70%	130%

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Method Summary

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AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Bromomethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromochloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
1,3-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Chloride	INOR-181-6002	Modified from SM 4110 B	ION CHROMATOGRAPH

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Ph.: 778.452.4000 · Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

- Regular TAT: 5 to 7 working days [X]
- Rush TAT: 24 to 48 hours [ ]
- 48 to 72 hours [ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Fraser Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604-632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@fraserbc.com
2. Name: Viviane Dubois-Coté
Email: vdcote@fraserbc.com

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 4.5°C
AGAT Job Number: 12V573478

Notes: FEB 9 PM 5:52

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [ ] BC CSR – Soil
  - [ ] Agricultural
  - [ ] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [X] BC CSR – Water
  - [ ] Drinking Water
  - [X] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [ ] Residential/Park
  - [ ] Commercial
  - [ ] Industrial
  - [ ] Drinking Water
  - [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	Sodium + Chloride	ECME PAH	CCME F2-F4	chlorinated and non-chlorinated phenols		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3109059	MW2-30	groundwater	Feb 9, 2012 11:30		X	X	X	X			X	X	X	X		11			
1081	MW-11BR-16M	↓	Feb 9, 2012 14:00			X							X			2			
↓082	3-BH31	↓	Feb 9, 2012 16:30		X	X						X	X			5			

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
[signature]	Feb 9, 2012	ANNIE OCAMPO [signature] 9 FEB 2012 5:52 PM	
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 1

NO: 000623

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V573478

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 09-FEB-12 @ 5:52 pm
Courier: _____
Received by: Amiel
Relinquished by: Amanda Salway
Branch Received From: _____
Company: FRANZ ENV.
Consultant: _____
Client left without count verified: N

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000623

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 18 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 09-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 16-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
*ICE PACKS
(1) 4 + 6 + 4 = 5 °C (2) 4 + 4 + 5 = 4 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V573478

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

WATER ANALYSIS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

DATE REPORTED: Mar 02, 2012

PAGES (INCLUDING COVER): 19

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 2:Amended to include VH and EPH results as per client.
Version 2 is an amendment to version 1.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059	3-BH31 3109082
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8 (BTEX)	%	50-150		103	103
o-Terphenyl (F2-F4)	%	50-150		92.7	104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3109059-3109082 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F2-F4) in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-16M 3109081
C>10 - C16	mg/L		0.1	<0.1
C16 - C34	mg/L		0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8 (BTEX)	%	50-150		NA
o-Terphenyl (F2-F4)	%	50-150		106

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3109081 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

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AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059	MV-11BH-16M 3109081	3-BH31 3109082
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1		<1
Styrene	µg/L	720	0.5	<0.5		<0.5
VPH	µg/L	1500	100	<100		<100
VH	µg/L	15000	100	<100		<100
Naphthalene	µg/L	10	0.05	<0.05	<0.05	<0.05
Quinoline	µg/L	34	0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/L	60	0.05	<0.05	<0.05	<0.05
Fluorene	µg/L	120	0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/L	3	0.05	<0.05	<0.05	<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05	<0.05
Acridine	µg/L	0.5	0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/L	2	0.05	<0.05	<0.05	<0.05
Pyrene	µg/L	0.2	0.02	0.03	<0.02	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05	<0.05
LEPH C10-C19	µg/L	500	100	<100	<100	<100
HEPH C19-C32	µg/L		100	<100	<100	<100
EPH C10-C19	µg/L	5000	100	<100	<100	<100
EPH C19-C32	µg/L		100	<100	<100	<100

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Certificate of Analysis

AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Surrogate	Unit	Acceptable Limits	MW2-30 3109059	MV-11BH-16M 3109081	3-BH31 3109082
Nitrobenzene - d5	%	50-130	84	91	90
Quinoline - d7	%	50-130	105	103	100
2-Fluorobiphenyl	%	50-130	84	82	83
P-Terphenyl - d14	%	60-130	95	96	95
Bromofluorobenzene	%	70-130	98		93
Dibromofluoromethane	%	70-130	119		114
Toluene - d8	%	70-130	116		109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3109059 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3109081 LEPH & HEPH results have been corrected for PAH contributions.

3109082 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

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AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059
Phenol	mg/L		0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005
Surrogate	Unit	Acceptable Limits		
2-Fluorophenol	%	50-150		112
2,4,6-Tribromophenol	%	50-150		109

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3109059 Results relate only to the items tested.

Certified By:

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AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059
Chloromethane	µg/L		1	<1
Vinyl Chloride	µg/L		1	<1
Bromomethane	µg/L		1	<1
Chloroethane	µg/L		1	<1
Trichlorofluoromethane	µg/L		1	<1
Acetone	µg/L		10	<10
1,1-Dichloroethene	µg/L		1	<1
Dichloromethane	µg/L	980	1	<1
2-Butanone (MEK)	µg/L		10	<10
trans-1,2-Dichloroethylene	µg/L		1	<1
1,1-Dichloroethane	µg/L		1	<1
cis-1,2-Dichloroethylene	µg/L		1	<1
Chloroform	µg/L	20	1	<1
1,2-Dichloroethane	µg/L	1000	1	<1
1,1,1-Trichloroethane	µg/L		1	<1
Carbon Tetrachloride	µg/L	130	0.5	<0.5
1,2-Dichloropropane	µg/L		1	<1
Trichloroethene	µg/L	200	1	<1
Bromodichloromethane	µg/L		1	<1
trans-1,3-Dichloropropene	µg/L		1	<1
4-Methyl-2-pentanone (MIBK)	µg/L		10	<10
cis-1,3-Dichloropropene	µg/L		1	<1
1,1,2-Trichloroethane	µg/L		1	<1
Dibromochloromethane	µg/L		1	<1
Ethylene Dibromide	µg/L		0.3	<0.3
Tetrachloroethene	µg/L	1100	1	<1
1,1,1,2-Tetrachloroethane	µg/L		1	<1
Chlorobenzene	µg/L	13	1	<1
Bromoform	µg/L		1	<1
1,1,2,2-Tetrachloroethane	µg/L		1	<1
1,3-Dichlorobenzene	µg/L	1500	0.5	<0.5
1,4-Dichlorobenzene	µg/L	260	0.5	<0.5
1,2-Dichlorobenzene	µg/L	7	1	<1

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Volatile Organic Compounds in Water

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059
1,2,4-Trichlorobenzene	µg/L	240	1	<1
Surrogate	**Unit**	**Acceptable Limits**		
Bromofluorobenzene	%	70-130		91
Dibromofluoromethane	%	70-130		86
Toluene - d8	%	70-130		94

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V573478
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059
Aluminum Dissolved	µg/L		1	4
Antimony Dissolved	µg/L	200	0.05	0.06
Arsenic Dissolved	µg/L	50	0.1	4.4
Barium Dissolved	µg/L	10000	0.1	113
Beryllium Dissolved	µg/L	53	0.01	0.01
Boron Dissolved	µg/L	50000	1	46
Cadmium Dissolved	µg/L		0.01	0.03
Calcium Dissolved	mg/L		0.05	98.2
Chromium Dissolved	µg/L		0.5	12.8
Cobalt Dissolved	µg/L	40	0.05	0.26
Copper Dissolved	µg/L		0.2	0.3
Iron Dissolved	mg/L		0.01	36.6
Lead Dissolved	µg/L		0.01	0.16
Lithium Dissolved	µg/L		0.1	2.9
Magnesium Dissolved	mg/L		0.05	35.9
Manganese Dissolved	mg/L		0.001	2.08
Mercury Dissolved	µg/L	1	0.003	<0.003
Molybdenum Dissolved	µg/L	10000	0.05	<0.05
Nickel Dissolved	µg/L		0.1	1.5
Selenium Dissolved	µg/L	10	0.1	0.2
Silver Dissolved	µg/L		0.01	<0.01
Sodium Dissolved	mg/L		0.05	14.0
Thallium Dissolved	µg/L	3	0.002	0.024
Titanium Dissolved	µg/L	1000	0.1	114
Uranium Dissolved	µg/L	3000	0.01	0.01
Vanadium Dissolved	µg/L		0.1	0.9
Zinc Dissolved	µg/L		1	11
Hardness (calc)	mg CaCO3/L		1	393

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By:

AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Routine Water Analysis

DATE SAMPLED: Feb 09, 2012 | DATE RECEIVED: Feb 09, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30 3109059
Chloride	mg/L	1500	0.05	20.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Mar 02, 2012

PARAMETER	Batch	Sample Id	DUPLICATE Dup #1	DUPLICATE Dup #2	DUPLICATE RPD	Method Blank	REFERENCE MATERIAL Measured Value	REFERENCE MATERIAL Acceptable Limits Lower	REFERENCE MATERIAL Acceptable Limits Upper	METHOD BLANK SPIKE Recovery	METHOD BLANK SPIKE Acceptable Limits Lower	METHOD BLANK SPIKE Acceptable Limits Upper	MATRIX SPIKE Recovery	MATRIX SPIKE Acceptable Limits Lower	MATRIX SPIKE Acceptable Limits Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3109059	<1	<1	0.0%	< 1	102%	80%	120%				100%	70%	130%
Styrene	1	3109059	<0.5	<0.5	0.0%	< 0.5	102%	80%	120%				105%	70%	130%
VPH	1	3109059	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.09	0.09	0.0%	< 0.05	100%	80%	120%				97%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	103%	80%	120%				91%	50%	130%
Acenaphthylene	1	W-MS	0.09	0.09	0.0%	< 0.05	103%	80%	120%				92%	50%	130%
Acenaphthene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				97%	50%	130%
Fluorene	1	W-MS	0.09	0.09	0.0%	< 0.05	103%	80%	120%				96%	50%	130%
Phenanthrene	1	W-MS	0.08	0.09	12.0%	< 0.05	103%	80%	120%				88%	60%	130%
Anthracene (Water)	1	W-MS	0.09	0.10	11.0%	< 0.05	98%	80%	120%				95%	60%	130%
Acridine	1	W-MS	0.08	0.09	12.0%	< 0.05	103%	80%	120%				88%	50%	130%
Fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	101%	80%	120%				95%	60%	130%
Pyrene	1	W-MS	0.09	0.10	11.0%	< 0.02	101%	80%	120%				94%	60%	130%
Benzo(a)anthracene	1	W-MS	0.09	0.09	0.0%	< 0.05	102%	80%	120%				92%	60%	130%
Chrysene	1	W-MS	0.09	0.10	11.0%	< 0.05	98%	80%	120%				98%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.08	0.09	12.0%	< 0.05	105%	80%	120%				86%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				86%	60%	130%
Benzo(a)pyrene	1	W-MS	0.09	0.09	0.0%	< 0.01	101%	80%	120%				92%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.10	0.10	0.0%	< 0.05	102%	80%	120%				103%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.10	0.10	0.0%	< 0.05	101%	80%	120%				101%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.10	0.11	9.5%	< 0.05	102%	80%	120%				105%	60%	130%
Nitrobenzene - d5	1	W-MS	98	101	3.0%		102%	80%	120%				99%	50%	130%
Quinoline - d7	1	W-MS	87	86	1.0%		106%	80%	120%				88%	50%	130%
2-Fluorobiphenyl	1	W-MS	97	97	0.0%		101%	80%	120%				97%	50%	130%
P-Terphenyl - d14	1	W-MS	95	100	5.0%		102%	80%	120%				95%	60%	130%
Bromofluorobenzene	1	3109059	98	96	2.0%		100%	70%	130%				110%	70%	130%
Dibromofluoromethane	1	3109059	119	119	0.0%		93%	70%	130%				98%	70%	130%
Toluene - d8	1	3109059	116	112	4.0%		95%	70%	130%				104%	70%	130%
Volatile Organic Compounds in Water															
Chloromethane	1	3109059	<1	<1	0.0%	< 1	96%	80%	120%				129%	70%	130%
Vinyl Chloride	1	3109059	<1	<1	0.0%	< 1	97%	80%	120%				119%	70%	130%
Bromomethane	1	3109059	<1	<1	0.0%	< 1	95%	80%	120%				119%	70%	130%
Chloroethane	1	3109059	<1	<1	0.0%	< 1	100%	80%	120%				119%	70%	130%
Trichlorofluoromethane	1	3109059	<1	<1	0.0%	< 1	99%	80%	120%				105%	70%	130%
Acetone	1	3109059	<10	<10	0.0%	< 10	104%	80%	120%				NA	70%	130%
1,1-Dichloroethene	1	3109059	<1	<1	0.0%	< 1	100%	80%	120%				116%	70%	130%
Dichloromethane	1	3109059	<1	<1	0.0%	< 1	98%	80%	120%				94%	70%	130%
2-Butanone (MEK)	1	3109059	<10	<10	0.0%	< 10	101%	80%	120%				NA	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
trans-1,2-Dichloroethylene	1	3109059	<1	<1	0.0%	< 1	99%	80%	120%				107%	70%	130%
1,1-Dichloroethane	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				108%	70%	130%
cis-1,2-Dichloroethylene	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				106%	70%	130%
Chloroform	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				104%	70%	130%
1,2-Dichloroethane	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				107%	70%	130%
1,1,1-Trichloroethane	1	3109059	<1	<1	0.0%	< 1	102%	80%	120%				105%	70%	130%
Carbon Tetrachloride	1	3109059	<0.5	<0.5	0.0%	< 0.5	103%	80%	120%				109%	70%	130%
1,2-Dichloropropane	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				103%	70%	130%
Trichloroethene	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				105%	70%	130%
Bromodichloromethane	1	3109059	<1	<1	0.0%	< 1	104%	80%	120%				102%	70%	130%
trans-1,3-Dichloropropene	1	3109059	<1	<1	0.0%	< 1	105%	80%	120%				105%	70%	130%
4-Methyl-2-pentanone (MIBK)	1	3109059	<10	<10	0.0%	< 10	105%	80%	120%				NA	70%	130%
cis-1,3-Dichloropropene	1	3109059	<1	<1	0.0%	< 1	105%	80%	120%				104%	70%	130%
1,1,2-Trichloroethane	1	3109059	<1	<1	0.0%	< 1	102%	80%	120%				100%	70%	130%
Dibromochloromethane	1	3109059	<1	<1	0.0%	< 1	105%	80%	120%				100%	70%	130%
Ethylene Dibromide	1	3109059	<0.3	<0.3	0.0%	< 0.3	103%	80%	120%				99%	70%	130%
Tetrachloroethene	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				82%	70%	130%
1,1,1,2-Tetrachloroethane	1	3109059	<1	<1	0.0%	< 1	104%	80%	120%				100%	70%	130%
Chlorobenzene	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				100%	70%	130%
Bromoform	1	3109059	<1	<1	0.0%	< 1	105%	80%	120%				99%	70%	130%
1,1,2,2-Tetrachloroethane	1	3109059	<1	<1	0.0%	< 1	103%	80%	120%				97%	70%	130%
1,3-Dichlorobenzene	1	3109059	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				103%	70%	130%
1,4-Dichlorobenzene	1	3109059	<0.5	<0.5	0.0%	< 0.5	100%	80%	120%				103%	70%	130%
1,2-Dichlorobenzene	1	3109059	<1	<1	0.0%	< 1	101%	80%	120%				101%	70%	130%
1,2,4-Trichlorobenzene	1	3109059	<1	<1	0.0%	< 1	102%	80%	120%				100%	70%	130%
Bromofluorobenzene	1	3109059	91	91	0.0%		104%	80%	120%				NA	70%	130%
Dibromofluoromethane	1	3109059	86	89	3.0%		108%	80%	120%				NA	70%	130%
Toluene - d8	1	3109059	94	97	3.0%		101%	80%	120%				NA	70%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	393	3115213	0.0687	0.0675	2.0%	< 0.0005	106%	80%	120%	97%	80%	120%	89%	70%	130%
Toluene	393	3115213	0.0340	0.0353	3.8%	< 0.0005	109%	80%	120%	100%	80%	120%	88%	70%	130%
Ethylbenzene	393	3115213	0.005	0.0059	17.0%	< 0.0005	112%	80%	120%	107%	80%	120%	88%	70%	130%
Xylenes	393	3115213	0.0103	0.0114	10.0%	< 0.0005	112%	80%	120%	105%	80%	120%	89%	70%	130%
C6 - C10 (F1)	393	3115213	0.5	0.5	0.0%	< 0.1	102%	80%	120%	111%	80%	120%	106%	70%	130%
C>10 - C16	44	3109059	<0.1	<0.1	0.0%	< 0.1	109%	80%	120%	93%	80%	120%	97%	70%	130%
C16 - C34	44	3109059	<0.1	<0.1	0.0%	< 0.1	109%	80%	120%	92%	80%	120%	93%	70%	130%
C>34 - C50	44	3109059	0.1	<0.1	0.0%	< 0.1	109%	80%	120%	0%	80%	120%	0%	70%	130%
Phenolic Compounds in Water															

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Phenol	135	3100893	<0.002	<0.002	NA	< 0.002	85%	80%	120%	95%	70%	130%	95%	60%	140%
4-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	83%	80%	120%	88%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
o-Cresol (2-methylphenol)	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2-Chlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	84%	80%	120%	95%	70%	130%	91%	60%	140%
2,4-Dinitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	90%	80%	120%	91%	70%	130%	93%	60%	140%
2-Nitrophenol	135	3100893	<0.005	<0.005	NA	< 0.005	97%	80%	120%	106%	70%	130%	100%	60%	140%
2,4-Dimethylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	93%	70%	130%	89%	60%	140%
2,6-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001				93%	70%	130%	90%	60%	140%
4-Chloro-3-methylphenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	94%	70%	130%	89%	60%	140%
2,4-Dichlorophenol	135	3100893	<0.0001	<0.0001	NA	< 0.0001	87%	80%	120%	87%	70%	130%	85%	60%	140%
4,6-Dinitro-2-methylphenol	135	3100893	<0.005	<0.005	NA	< 0.005	93%	80%	120%	85%	70%	130%	104%	60%	140%
2,3,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	86%	80%	120%	96%	70%	130%	95%	60%	140%
2,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				97%	70%	130%	95%	60%	140%
3,4,5-Trichlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	99%	60%	140%
2,3,5,6-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005				100%	70%	130%	98%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	135	3100893	<0.005	<0.005	NA	< 0.005				117%	70%	130%	97%	60%	140%
Pentachlorophenol	135	3100893	<0.0005	<0.0005	NA	< 0.0005	91%	80%	120%	107%	70%	130%	103%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	3109059		4	4	0.0%	< 1	105%	90%	110%	108%	85%	115%			
Antimony Dissolved	3109059		0.06	0.16	NA	< 0.05	104%	90%	110%	107%	85%	110%			
Arsenic Dissolved	3109059		4.4	4.3	2.3%	< 0.1	102%	90%	110%	106%	90%	110%			
Barium Dissolved	3109059		113	113	0.0%	< 0.1	102%	90%	110%	99%	90%	110%			
Beryllium Dissolved	3109059		0.01	0.02	NA	< 0.01	90%	90%	110%	101%	90%	110%			
Boron Dissolved	3109059		45.9	49.0	6.5%	< 1	94%	90%	110%	102%	80%	120%			
Cadmium Dissolved	3109059		0.03	0.03	0.0%	< 0.01	102%	90%	110%	102%	90%	110%			
Calcium Dissolved	3106239		30.7	30.6	0.3%	< 0.05	100%	90%	110%	102%	90%	110%			
Chromium Dissolved	3109059		12.8	13.0	1.6%	< 0.5	90%	90%	110%	94%	90%	110%			
Cobalt Dissolved	3109059		0.26	0.25	3.9%	< 0.05	97%	90%	110%	100%	90%	110%			
Copper Dissolved	3109059		0.3	0.3	0.0%	< 0.2	100%	90%	110%	104%	90%	110%			
Iron Dissolved	3106239		<0.01	<0.01	0.0%	< 0.01	105%	90%	110%	103%	90%	110%			
Lead Dissolved	3109059		0.16	0.13	20.7%	< 0.01	105%	90%	110%	102%	90%	110%			
Lithium Dissolved	3109059		2.9	3.0	3.4%	< 0.1				103%	90%	110%			
Magnesium Dissolved	3106239		4.03	4.01	0.5%	< 0.05	104%	90%	110%	106%	90%	110%			
Manganese Dissolved	3106239		<0.001	<0.001	0.0%	< 0.001	104%	90%	110%	102%	90%	110%			
Mercury Dissolved	3106239		<0.003	<0.003	0.0%	< 0.003	95%	90%	110%	100%	90%	110%			
Molybdenum Dissolved	3109059		< 0.05	< 0.05	0.0%	< 0.05	95%	90%	110%	106%	90%	110%			
Nickel Dissolved	3109059		1.5	1.6	6.5%	< 0.1	94%	90%	110%	100%	90%	110%			
Selenium Dissolved	3109059		0.2	0.4	NA	< 0.1	102%	90%	110%	107%	85%	115%			
Silver Dissolved	3109059		< 0.01	< 0.01	0.0%	< 0.01				105%	90%	110%			
Sodium Dissolved	3106241		2.02	2.01	0.5%	< 0.05	101%	90%	110%	105%	90%	110%			
Thallium Dissolved	3109059		0.024	<0.002	NA	< 0.002	92%	90%	110%	98%	90%	110%			
Titanium Dissolved	3109059		114	118	3.4%	< 0.1				94%	90%	110%			
Uranium Dissolved	3109059		0.01	0.01	0.0%	< 0.01		90%	110%	102%	90%	110%			
Vanadium Dissolved	3109059		0.9	1.1	20.0%	< 0.1	90%	90%	110%	97%	90%	110%			
Zinc Dissolved	3109059		11	12	8.7%	< 1	98%	90%	110%	106%	85%	115%			
Routine Water Analysis															
Chloride	20120	3109059	20.1	20.2	0.5%	< 0.05	104%	85%	115%	96%	90%	110%	93%	70%	130%

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
VH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Chloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Vinyl Chloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromomethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichlorofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Acetone	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
2-Butanone (MEK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,2-Dichloroethylene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Chloroform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Carbon Tetrachloride	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichloropropane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Trichloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromodichloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
trans-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
4-Methyl-2-pentanone (MIBK)	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
cis-1,3-Dichloropropene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2-Trichloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromochloromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Ethylene Dibromide	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Tetrachloroethene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,1,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromoform	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,1,2,2-Tetrachloroethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,3-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,4-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2-Dichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
1,2,4-Trichlorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Bromofluorobenzene	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Dibromofluoromethane	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS
Toluene - d8	ORG-180-5131	Modified from BC MOE Lab Manual Section D (VOC)	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Chloride	INOR-181-6002	Modified from SM 4110 B	ION CHROMATOGRAPH

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

- Regular TAT: 5 to 7 working days [X]
- Rush TAT: 24 to 48 hours [ ]
- 48 to 72 hours [ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Fraser Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604-632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@fraserbc.com
2. Name: Viviane Dubois-Coté
Email: vdcote@fraserbc.com

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 4.5°C
AGAT Job Number: 12V573478

Notes: FEB 9 PM 5:52

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [ ] BC CSR – Soil
  - [ ] Agricultural
  - [ ] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [X] BC CSR – Water
  - [ ] Drinking Water
  - [X] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [ ] Residential/Park
  - [ ] Commercial
  - [ ] Industrial
  - [ ] Drinking Water
  - [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	Sodium + Chloride	ECME PAH	CCME F2-F4	chlorinated and non-chlorinated phenols		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3109059	MW2-30	groundwater	Feb 9, 2012 11:30		X	X	X	X			X	X	X	X		11			
1081	MW-11BR-16M	↓	Feb 9, 2012 14:00			X							X			2			
↓082	3-BH31	↓	Feb 9, 2012 16:30		X	X						X	X			5			

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
[signature]	Feb 9, 2012	ANNIE OCAMPO [signature] 9 FEB 2012 5:52 PM	
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 1

NO: 000623

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V573478

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 09-FEB-12 @ 5:52 pm
Courier: _____
Received by: Amiel
Relinquished by: Amanda Salway
Branch Received From: _____
Company: FRANZ ENV.
Consultant: _____
Client left without count verified: N

COC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000623

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 18 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 09-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 16-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
*ICE PACKS
(1) 4 + 6 + 4 = 5 °C (2) 4 + 4 + 5 = 4 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V573781

TRACE ORGANICS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Feb 20, 2012

PAGES (INCLUDING COVER): 11

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V573781
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F2-F4) in Water

DATE SAMPLED: Feb 10, 2012 | DATE RECEIVED: Feb 10, 2012 | DATE REPORTED: Feb 20, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	OW5 3112958
C>10 - C16	mg/L		0.1	<0.1
C16 - C34	mg/L		0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8 (BTEX)	%	50-150		
o-Terphenyl (F2-F4)	%	50-150		108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3112958 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V573781
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 10, 2012 | DATE RECEIVED: Feb 10, 2012 | DATE REPORTED: Feb 20, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	OW5 3112958
Naphthalene	µg/L	10	0.05	<0.05
Quinoline	µg/L	34	0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05
Acenaphthene	µg/L	60	0.05	<0.05
Fluorene	µg/L	120	0.05	<0.05
Phenanthrene	µg/L	3	0.05	<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05
Acridine	µg/L	0.5	0.05	<0.05
Fluoranthene	µg/L	2	0.05	<0.05
Pyrene	µg/L	0.2	0.02	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05
LEPH C10-C19	µg/L	500	100	<100
HEPH C19-C32	µg/L		100	<100
Surrogate	**Unit**	**Acceptable Limits**		
Nitrobenzene - d5	%	50-130		69
Quinoline - d7	%	50-130		86
2-Fluorobiphenyl	%	50-130		67
P-Terphenyl - d14	%	60-130		87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)
3112958 LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V573781
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 10, 2012 | DATE RECEIVED: Feb 10, 2012 | DATE REPORTED: Feb 20, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	OW5 3112958	MV-11BH-15M 3112960	MV-GWDUP4 3112961
Phenol	mg/L		0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Surrogate	Unit	Acceptable Limits				
2-Fluorophenol	%	50-150		109	108	107
2,4,6-Tribromophenol	%	50-150		110	110	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3112958-3112961 Results relate only to the items tested.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V573781
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 10, 2012 | DATE RECEIVED: Feb 10, 2012 | DATE REPORTED: Feb 20, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	3-BH31 3112962
Aluminum Dissolved	µg/L		1	11
Antimony Dissolved	µg/L		0.05	0.06
Arsenic Dissolved	µg/L	5	0.1	13.9
Barium Dissolved	µg/L		0.1	84.8
Beryllium Dissolved	µg/L		0.01	<0.01
Boron Dissolved	µg/L		1	28
Cadmium Dissolved	µg/L	0.017	0.01	0.02
Calcium Dissolved	mg/L		0.05	49.9
Chromium Dissolved	µg/L		0.5	1.7
Cobalt Dissolved	µg/L		0.05	0.49
Copper Dissolved	µg/L		0.2	0.5
Iron Dissolved	mg/L	0.3	0.01	36.6
Lead Dissolved	µg/L		0.01	0.15
Lithium Dissolved	µg/L		0.1	1.1
Magnesium Dissolved	mg/L		0.05	12.4
Manganese Dissolved	mg/L		0.001	1.31
Mercury Dissolved	µg/L	0.026	0.003	<0.003
Molybdenum Dissolved	µg/L	73	0.05	0.53
Nickel Dissolved	µg/L		0.1	1.6
Selenium Dissolved	µg/L	1	0.1	0.4
Silver Dissolved	µg/L	0.1	0.01	<0.01
Sodium Dissolved	mg/L		0.05	8.98
Thallium Dissolved	µg/L	0.8	0.002	0.031
Titanium Dissolved	µg/L		0.1	62.5
Uranium Dissolved	µg/L		0.01	0.02
Vanadium Dissolved	µg/L		0.1	1.3
Zinc Dissolved	µg/L	30	1	7
Hardness (calc)	mg CaCO3/L		1	176

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL) (Van)

Certified By: Marie England

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
AGAT WORK ORDER: 12V573781
PROJECT NO: 2090-1103
ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Feb 20, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Naphthalene	1	W-MS	0.12	0.14	15.0%	< 0.05	100%	80%	120%				121%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				97%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				83%	50%	130%
Acenaphthene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				87%	50%	130%
Fluorene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				96%	50%	130%
Phenanthrene	1	W-MS	0.09	0.10	11.0%	< 0.05	99%	80%	120%				97%	60%	130%
Anthracene (Water)	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				72%	60%	130%
Acridine	1	W-MS	0.08	0.08	0.0%	< 0.05	99%	80%	120%				84%	50%	130%
Fluoranthene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				90%	60%	130%
Pyrene	1	W-MS	0.09	0.09	0.0%	< 0.02	99%	80%	120%				92%	60%	130%
Benzo(a)anthracene	1	W-MS	0.08	0.08	0.0%	< 0.05	101%	80%	120%				85%	60%	130%
Chrysene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	102%	80%	120%				98%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				90%	60%	130%
Benzo(a)pyrene	1	W-MS	0.07	0.07	0.0%	< 0.01	100%	80%	120%				76%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				91%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.08	0.09	12.0%	< 0.05	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.09	0.10	11.0%	< 0.05	101%	80%	120%				97%	60%	130%
Nitrobenzene - d5	1	W-MS	81	78	4.0%		99%	80%	120%				82%	50%	130%
Quinoline - d7	1	W-MS	93	90	3.0%		101%	80%	120%				93%	50%	130%
2-Fluorobiphenyl	1	W-MS	86	84	2.0%		100%	80%	120%				86%	50%	130%
P-Terphenyl - d14	1	W-MS	91	90	1.0%		101%	80%	120%				92%	60%	130%
Phenolic Compounds in Water															
Phenol	136	3112960	<0.002	<0.002	NA	< 0.002	85%	80%	120%	96%	70%	130%	95%	60%	140%
4-Nitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	82%	80%	120%	90%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	95%	60%	140%
o-Cresol (2-methylphenol)	136	3112960	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
2-Chlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	82%	80%	120%	94%	70%	130%	90%	60%	140%
2,4-Dinitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	89%	80%	120%	93%	70%	130%	94%	60%	140%
2-Nitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	95%	80%	120%	106%	70%	130%	96%	60%	140%
2,4-Dimethylphenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	93%	70%	130%	92%	60%	140%
2,6-Dichlorophenol	136	3112960	<0.0001	<0.0001	NA	< 0.0001				94%	70%	130%	89%	60%	140%
4-Chloro-3-methylphenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	81%	80%	120%	99%	70%	130%	103%	60%	140%
2,4-Dichlorophenol	136	3112960	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	91%	70%	130%	86%	60%	140%
4,6-Dinitro-2-methylphenol	136	3112960	<0.005	<0.005	NA	< 0.005	92%	80%	120%	104%	70%	130%	91%	60%	140%
2,3,6-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	96%	70%	130%	95%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 20, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2,4,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				96%	70%	130%	93%	60%	140%
2,3,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				98%	70%	130%	94%	60%	140%
3,4,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				102%	70%	130%	100%	60%	140%
2,3,5,6-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	99%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	136	3112960	<0.005	<0.005	NA	< 0.005				116%	70%	130%	120%	60%	140%
Pentachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	89%	80%	120%	108%	70%	130%	107%	60%	140%
Petroleum Hydrocarbons (BTEX/F2-F4) in Water															
C>10 - C16	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	89%	80%	120%	103%	70%	130%
C16 - C34	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	96%	80%	120%	104%	70%	130%
C>34 - C50	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	80%	80%	120%	70%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Feb 20, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	816		< 1	< 1	0.0%	< 1	110%	90%	110%	105%	85%	115%			
Antimony Dissolved	816		< 0.05	0.05	NA	< 0.05	98%	90%	110%	86%	85%	110%			
Arsenic Dissolved	816		0.3	0.3	0.0%	< 0.1	98%	90%	110%	102%	90%	110%			
Barium Dissolved	816		22.1	22.4	1.3%	< 0.1	100%	90%	110%	99%	90%	110%			
Beryllium Dissolved	185		< 0.01	< 0.01	0.0%	< 0.01	99%	90%	110%	101%	90%	110%			
Boron Dissolved	816		185	187	1.1%	< 1	91%	90%	110%	103%	80%	120%			
Cadmium Dissolved	816		0.04	0.04	0.0%	< 0.01	100%	90%	110%	99%	90%	110%			
Calcium Dissolved	816		59.1	59.0	0.2%	< 0.05	101%	90%	110%	104%	90%	110%			
Chromium Dissolved	816		< 0.5	< 0.5	0.0%	< 0.5	104%	90%	110%	103%	90%	110%			
Cobalt Dissolved	816		2.07	2.04	1.5%	< 0.05	92%	90%	110%	104%	90%	110%			
Copper Dissolved	816		0.6	0.5	NA	< 0.2	95%	90%	110%	106%	90%	110%			
Iron Dissolved	816		0.37	0.37	0.0%	< 0.01	106%	90%	110%	105%	90%	110%			
Lead Dissolved	816		0.14	0.11	NA	< 0.01	104%	90%	110%	99%	90%	110%			
Lithium Dissolved	816		40.4	40.2	0.5%	< 0.1				102%	90%	110%			
Magnesium Dissolved	816		13.8	13.8	0.0%	< 0.05	106%	90%	110%	108%	90%	110%			
Manganese Dissolved	816		0.883	0.884	0.1%	< 0.001	105%	90%	110%	105%	90%	110%			
Mercury Dissolved	816		< 0.003	< 0.003	0.0%	< 0.003	101%	90%	110%	104%	90%	110%			
Molybdenum Dissolved	816		8.60	8.79	2.2%	< 0.05	97%	90%	110%	98%	90%	110%			
Nickel Dissolved	816		6.3	6.2	1.6%	< 0.1	98%	90%	110%	105%	90%	110%			
Selenium Dissolved	816		0.3	< 0.1	NA	< 0.1	98%	90%	110%	99%	85%	115%			
Silver Dissolved	816		< 0.01	< 0.01	0.0%	< 0.01				102%	90%	110%			
Sodium Dissolved	816		150	151	0.7%	< 0.05	101%	90%	110%	105%	90%	110%			
Thallium Dissolved	816		0.141	0.131	7.4%	< 0.002	93%	90%	110%	98%	90%	110%			
Titanium Dissolved	816		75.9	73.3	3.5%	< 0.1				105%	90%	110%			
Uranium Dissolved	816		9.49	9.40	1.0%	< 0.01	95%	90%	110%	94%	90%	110%			
Vanadium Dissolved	816		< 0.1	< 0.1	0.0%	< 0.1	98%	90%	110%	103%	90%	110%			
Zinc Dissolved	816		9	9	0.0%	< 1	92%	90%	110%	97%	85%	115%			

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV

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AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

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PROJECT NO: 2090-1103

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

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Ph.: 778.452.4000 · Fax: 778.452.7074

Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
Phone: 604 632-9944 Fax: 604 632-9942
LSD:
Client Project #: 7090-110J

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Vivian Dubois-Cote
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number: 12V513781

Notes:
FEB 10 PM3:57

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[ ] BC CSR – Soil
- [ ] Agricultural
- [ ] Industrial
- [ ] Urban/Park
- [ ] Commercial

[X] BC CSR – Water
- [ ] Drinking Water
- [X] Aquatic Life
- [ ] Irrigation
- [ ] Livestock

[X] CCME
- [ ] Drinking Water
- [ ] Residential/Park
- [ ] Commercial
- [ ] Industrial
- [ ] Drinking Water
- [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	non-Chlorinated and Chlorinated phenols	CCME PHC F2-F4			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
B112958	OWS	groundwater	Feb 10, 2012 10:00			X					X	X			3			
960	MW-11BR-15M	↓	Feb 10, 2012 13:00								X				1			
961	MW-GWDUP4		Feb 10, 2012 13:00								X				1			
↓962	3-BH31		Feb 10, 2012 14:30				X								1			

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	Pink Copy - Client
	Feb 10, 2012	S. Coutts	10-FEB-11 @ 3:57pm	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	White Copy - AGAT
Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date	

Page 1 of 1
NO: 000624

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V573781

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 10-FEB-12@3:57pm
Courier: _____
Received by: S.Couzen
Relinquished by: Amanda Salway
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: N

CoC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000624

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 6 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 10-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: LEPH/HEPH
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 17-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 1 + 4 + 4 = 3 °C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V573781

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Mar 05, 2012

PAGES (INCLUDING COVER): 11

VERSION*: 3

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 3:Report re-issued with surrogate removed as per Amanda Salway.
Version 2 is an amendment to version 1.

Amended to include EPH results as per client.
Version 3 is an amendment to version 2.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V573781
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F2-F4) in Water

DATE SAMPLED: Feb 10, 2012 | DATE RECEIVED: Feb 10, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	OW5 3112958
C>10 - C16	mg/L		0.1	<0.1
C16 - C34	mg/L		0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**		
o-Terphenyl (F2-F4)	%	50-150		108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3112958 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V573781
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 10, 2012 | DATE RECEIVED: Feb 10, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	OW5 3112958
Naphthalene	µg/L	10	0.05	<0.05
Quinoline	µg/L	34	0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05
Acenaphthene	µg/L	60	0.05	<0.05
Fluorene	µg/L	120	0.05	<0.05
Phenanthrene	µg/L	3	0.05	<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05
Acridine	µg/L	0.5	0.05	<0.05
Fluoranthene	µg/L	2	0.05	<0.05
Pyrene	µg/L	0.2	0.02	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05
LEPH C10-C19	µg/L	500	100	<100
HEPH C19-C32	µg/L		100	<100
EPH C10-C19	µg/L	5000	100	<100
EPH C19-C32	µg/L		100	<100
Surrogate	Unit	Acceptable Limits		
Nitrobenzene - d5	%	50-130		69
Quinoline - d7	%	50-130		86
2-Fluorobiphenyl	%	50-130		67
P-Terphenyl - d14	%	60-130		87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)
3112958 LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V573781
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 10, 2012 | DATE RECEIVED: Feb 10, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	OW5 3112958	MV-11BH-15M 3112960	MV-GWDUP4 3112961
Phenol	mg/L		0.002	<0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005	<0.0005
Surrogate	Unit	Acceptable Limits				
2-Fluorophenol	%	50-150		109	108	107
2,4,6-Tribromophenol	%	50-150		110	110	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3112958-3112961 Results relate only to the items tested.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V573781
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 10, 2012 | DATE RECEIVED: Feb 10, 2012 | DATE REPORTED: Mar 05, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	3-BH31 3112962
Aluminum Dissolved	µg/L		1	11
Antimony Dissolved	µg/L	200	0.05	0.06
Arsenic Dissolved	µg/L	50	0.1	13.9
Barium Dissolved	µg/L	10000	0.1	84.8
Beryllium Dissolved	µg/L	53	0.01	<0.01
Boron Dissolved	µg/L	50000	1	28
Cadmium Dissolved	µg/L		0.01	0.02
Calcium Dissolved	mg/L		0.05	49.9
Chromium Dissolved	µg/L		0.5	1.7
Cobalt Dissolved	µg/L	40	0.05	0.49
Copper Dissolved	µg/L		0.2	0.5
Iron Dissolved	mg/L		0.01	36.6
Lead Dissolved	µg/L		0.01	0.15
Lithium Dissolved	µg/L		0.1	1.1
Magnesium Dissolved	mg/L		0.05	12.4
Manganese Dissolved	mg/L		0.001	1.31
Mercury Dissolved	µg/L	1	0.003	<0.003
Molybdenum Dissolved	µg/L	10000	0.05	0.53
Nickel Dissolved	µg/L		0.1	1.6
Selenium Dissolved	µg/L	10	0.1	0.4
Silver Dissolved	µg/L		0.01	<0.01
Sodium Dissolved	mg/L		0.05	8.98
Thallium Dissolved	µg/L	3	0.002	0.031
Titanium Dissolved	µg/L	1000	0.1	62.5
Uranium Dissolved	µg/L	3000	0.01	0.02
Vanadium Dissolved	µg/L		0.1	1.3
Zinc Dissolved	µg/L		1	7
Hardness (calc)	mg CaCO3/L		1	176

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By: Marie England

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Mar 05, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Naphthalene	1	W-MS	0.12	0.14	15.0%	< 0.05	100%	80%	120%				121%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				97%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				83%	50%	130%
Acenaphthene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				87%	50%	130%
Fluorene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				96%	50%	130%
Phenanthrene	1	W-MS	0.09	0.10	11.0%	< 0.05	99%	80%	120%				97%	60%	130%
Anthracene (Water)	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				72%	60%	130%
Acridine	1	W-MS	0.08	0.08	0.0%	< 0.05	99%	80%	120%				84%	50%	130%
Fluoranthene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				90%	60%	130%
Pyrene	1	W-MS	0.09	0.09	0.0%	< 0.02	99%	80%	120%				92%	60%	130%
Benzo(a)anthracene	1	W-MS	0.08	0.08	0.0%	< 0.05	101%	80%	120%				85%	60%	130%
Chrysene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	102%	80%	120%				98%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				90%	60%	130%
Benzo(a)pyrene	1	W-MS	0.07	0.07	0.0%	< 0.01	100%	80%	120%				76%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				91%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.08	0.09	12.0%	< 0.05	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.09	0.10	11.0%	< 0.05	101%	80%	120%				97%	60%	130%
Nitrobenzene - d5	1	W-MS	81	78	4.0%		99%	80%	120%				82%	50%	130%
Quinoline - d7	1	W-MS	93	90	3.0%		101%	80%	120%				93%	50%	130%
2-Fluorobiphenyl	1	W-MS	86	84	2.0%		100%	80%	120%				86%	50%	130%
P-Terphenyl - d14	1	W-MS	91	90	1.0%		101%	80%	120%				92%	60%	130%
Phenolic Compounds in Water															
Phenol	136	3112960	<0.002	<0.002	NA	< 0.002	85%	80%	120%	96%	70%	130%	95%	60%	140%
4-Nitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	82%	80%	120%	90%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	95%	60%	140%
o-Cresol (2-methylphenol)	136	3112960	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
2-Chlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	82%	80%	120%	94%	70%	130%	90%	60%	140%
2,4-Dinitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	89%	80%	120%	93%	70%	130%	94%	60%	140%
2-Nitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	95%	80%	120%	106%	70%	130%	96%	60%	140%
2,4-Dimethylphenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	93%	70%	130%	92%	60%	140%
2,6-Dichlorophenol	136	3112960	<0.0001	<0.0001	NA	< 0.0001				94%	70%	130%	89%	60%	140%
4-Chloro-3-methylphenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	81%	80%	120%	99%	70%	130%	103%	60%	140%
2,4-Dichlorophenol	136	3112960	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	91%	70%	130%	86%	60%	140%
4,6-Dinitro-2-methylphenol	136	3112960	<0.005	<0.005	NA	< 0.005	92%	80%	120%	104%	70%	130%	91%	60%	140%
2,3,6-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	96%	70%	130%	95%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 05, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2,4,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				96%	70%	130%	93%	60%	140%
2,3,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				98%	70%	130%	94%	60%	140%
3,4,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				102%	70%	130%	100%	60%	140%
2,3,5,6-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	99%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	136	3112960	<0.005	<0.005	NA	< 0.005				116%	70%	130%	120%	60%	140%
Pentachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	89%	80%	120%	108%	70%	130%	107%	60%	140%
Petroleum Hydrocarbons (BTEX/F2-F4) in Water															
C>10 - C16	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	89%	80%	120%	103%	70%	130%
C16 - C34	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	96%	80%	120%	104%	70%	130%
C>34 - C50	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	80%	80%	120%	70%	70%	130%

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573781

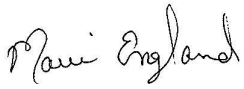
PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Mar 05, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	816	< 1	< 1	0.0%	< 1	110%	90%	110%	105%	85%	115%				
Antimony Dissolved	816	< 0.05	0.05	NA	< 0.05	98%	90%	110%	86%	85%	110%				
Arsenic Dissolved	816	0.3	0.3	0.0%	< 0.1	98%	90%	110%	102%	90%	110%				
Barium Dissolved	816	22.1	22.4	1.3%	< 0.1	100%	90%	110%	99%	90%	110%				
Beryllium Dissolved	185	< 0.01	< 0.01	0.0%	< 0.01	99%	90%	110%	101%	90%	110%				
Boron Dissolved	816	185	187	1.1%	< 1	91%	90%	110%	103%	80%	120%				
Cadmium Dissolved	816	0.04	0.04	0.0%	< 0.01	100%	90%	110%	99%	90%	110%				
Calcium Dissolved	816	59.1	59.0	0.2%	< 0.05	101%	90%	110%	104%	90%	110%				
Chromium Dissolved	816	< 0.5	< 0.5	0.0%	< 0.5	104%	90%	110%	103%	90%	110%				
Cobalt Dissolved	816	2.07	2.04	1.5%	< 0.05	92%	90%	110%	104%	90%	110%				
Copper Dissolved	816	0.6	0.5	NA	< 0.2	95%	90%	110%	106%	90%	110%				
Iron Dissolved	816	0.37	0.37	0.0%	< 0.01	106%	90%	110%	105%	90%	110%				
Lead Dissolved	816	0.14	0.11	NA	< 0.01	104%	90%	110%	99%	90%	110%				
Lithium Dissolved	816	40.4	40.2	0.5%	< 0.1				102%	90%	110%				
Magnesium Dissolved	816	13.8	13.8	0.0%	< 0.05	106%	90%	110%	108%	90%	110%				
Manganese Dissolved	816	0.883	0.884	0.1%	< 0.001	105%	90%	110%	105%	90%	110%				
Mercury Dissolved	816	< 0.003	< 0.003	0.0%	< 0.003	101%	90%	110%	104%	90%	110%				
Molybdenum Dissolved	816	8.60	8.79	2.2%	< 0.05	97%	90%	110%	98%	90%	110%				
Nickel Dissolved	816	6.3	6.2	1.6%	< 0.1	98%	90%	110%	105%	90%	110%				
Selenium Dissolved	816	0.3	< 0.1	NA	< 0.1	98%	90%	110%	99%	85%	115%				
Silver Dissolved	816	< 0.01	< 0.01	0.0%	< 0.01				102%	90%	110%				
Sodium Dissolved	816	150	151	0.7%	< 0.05	101%	90%	110%	105%	90%	110%				
Thallium Dissolved	816	0.141	0.131	7.4%	< 0.002	93%	90%	110%	98%	90%	110%				
Titanium Dissolved	816	75.9	73.3	3.5%	< 0.1				105%	90%	110%				
Uranium Dissolved	816	9.49	9.40	1.0%	< 0.01	95%	90%	110%	94%	90%	110%				
Vanadium Dissolved	816	< 0.1	< 0.1	0.0%	< 0.1	98%	90%	110%	103%	90%	110%				
Zinc Dissolved	816	9	9	0.0%	< 1	92%	90%	110%	97%	85%	115%				

Certified By:



AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
EPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days [X]
Rush TAT 24 to 48 hours [ ]
48 to 72 hours [ ]
Date Required: _____
Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-3474 Fax: 604 632-3470
LSD:
Client Project #: 2090-110J

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Vivian Dubois-Cote
Email: vdcote@franzbc.com

Report Format

[ ] Single Sample per page
[X] Multiple Samples per page
[X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 3°C
AGAT Job Number: 12V513781

Notes:
FEB 10 PM 3:57

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

[ ] BC CSR – Soil
[X] BC CSR – Water
[ ] Agricultural
[ ] Industrial
[ ] Urban/Park
[ ] Commercial
[ ] Drinking Water
[X] Aquatic Life
[ ] Irrigation
[ ] Livestock
[X] CCME
[ ] Drinking Water
[ ] Residential/Park
[ ] Commercial
[ ] Industrial
[ ] Drinking Water
[X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	Chlorinated phenols	CCME F2-F4			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3112958	QWS	groundwater	Feb 10, 2012 10:00			X					X	X			3			
960	MW-11BR-15M		Feb 10, 2012 13:00								X				1			
961	MW-GWDUP4		Feb 10 2012 13:00								X				1			
962	3-BH31		Feb 10, 2012 14:30				X								1			

Samples Relinquished by (print name & sign): _____ Date: Feb 10, 2012
Samples Received by (Print name & sign): S. Correia 10-FEB-11 @ 3:57pm Date:

Samples Relinquished by (print name & sign): _____ Date:
Samples Received by (Print name & sign): _____ Date:

Samples Relinquished by (print name & sign): _____ Date:
Samples Received by (Print name & sign): _____ Date: 07 42

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 1
NO: 000624

Document ID: DIV-186-0811.001
Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V573781

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 10-FEB-12 @ 3:57 pm
Courier: _____
Received by: S. Couzen
Relinquished by: Amanda Salway
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: N

CoC INFORMATION:
Received: (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000624

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 6 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 10-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: LEPH/HEPH
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 17-FEB-12

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 1 + 4 + 4 = 3 °C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM Work order # 12 V573781

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: FEB 14/12 0942
Courier: Loomis
Received by: ROBERT
Relinquished by:
Company: FRANZ
Consultant:
Client left without count verified:

COC INFORMATION:
Received: Yes No Emailed to PM
Completed in full: Yes No If NO, why:
TURNAROUND TIME: Reg
COC Numbers: 624

SAMPLE QUANTITIES:
Coolers: 1 Bottles/Jars: 4 Bags:

TIME SENSITIVE ISSUES:
Earliest Date Sampled: FEB 6/12 1000
Microbiology: Test:
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes No

ALREADY EXCEEDED? Yes No
Expiry:
Expiry: FEB 13/12

SPECIALTY ISSUES:
Legal Samples: Yes No
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:

Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: Yes No
If No, explain:

Correct amount of sample for analysis: Yes No
If No, explain:

Are all samples labeled correctly: Yes No
If No, explain:

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 2 + 4 + 4 = 3 °C (2) ___ + ___ + ___ = ___ °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available
ice

Additional integrity issues (note here and on CoC next to the sample ID):
1)
2)
3)

Account Project Manager: Have they been notified of the above issues: Yes No
Whom spoken to: Date and Time:

ADDITIONAL NOTES:

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V574297

TRACE ORGANICS REVIEWED BY: Elena Gorobets, Senior Analyst

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Feb 21, 2012

PAGES (INCLUDING COVER): 12

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V574297
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 13, 2012 | DATE RECEIVED: Feb 13, 2012 | DATE REPORTED: Feb 21, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-11M 3117392	MW08-13 3117404
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8 (BTEX)	%	50-150		108	107
o-Terphenyl (F2-F4)	%	50-150		108	107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3117392-3117404 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By: Elena Gorobets

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Certificate of Analysis

AGAT WORK ORDER: 12V574297
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 13, 2012 | DATE RECEIVED: Feb 13, 2012 | DATE REPORTED: Feb 21, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-11M 3117392	MW08-13 3117404
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1	<1
Styrene	µg/L	720	0.5	<0.5	<0.5
VPH	µg/L	1500	100	<100	<100
Naphthalene	µg/L	10	0.05	0.11	0.05
Quinoline	µg/L	34	0.1	<0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05
Acenaphthene	µg/L	60	0.05	0.07	<0.05
Fluorene	µg/L	120	0.05	0.05	<0.05
Phenanthrene	µg/L	3	0.05	0.12	<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05
Acridine	µg/L	0.5	0.05	0.05	<0.05
Fluoranthene	µg/L	2	0.05	0.11	<0.05
Pyrene	µg/L	0.2	0.02	0.09	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	0.04	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05
LEPH C10-C19	µg/L	500	100	520	110
HEPH C19-C32	µg/L		100	670	<100
Surrogate	**Unit**	**Acceptable Limits**			
Nitrobenzene - d5	%	50-130		NA	102
Quinoline - d7	%	50-130		105	94
2-Fluorobiphenyl	%	50-130		60	77
P-Terphenyl - d14	%	60-130		83	88
Bromofluorobenzene	%	70-130		86	77
Dibromofluoromethane	%	70-130		127	122
Toluene - d8	%	70-130		102	101

Certified By: Elena Gorobets

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Certificate of Analysis

AGAT WORK ORDER: 12V574297
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 13, 2012	DATE RECEIVED: Feb 13, 2012	DATE REPORTED: Feb 21, 2012	SAMPLE TYPE: Water

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3117392
VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Nitrobenzene-d5 surrogate recovery not available due to sample matrix interference.

3117404
VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By: Elena Gorobets

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Certificate of Analysis

AGAT WORK ORDER: 12V574297
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 13, 2012 | DATE RECEIVED: Feb 13, 2012 | DATE REPORTED: Feb 21, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-12M 3117399	MV-11BH-13M 3117402
Phenol	mg/L		0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	0.007	0.025
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Surrogate	Unit	Acceptable Limits			
2-Fluorophenol	%	50-150		114	117
2,4,6-Tribromophenol	%	50-150		110	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3117399-3117402 Results relate only to the items tested.

Certified By: Elena Gorobets

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Certificate of Analysis

AGAT WORK ORDER: 12V574297
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 13, 2012 | DATE RECEIVED: Feb 13, 2012 | DATE REPORTED: Feb 21, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-12M 3117399	MV-11BH-13M 3117402
Aluminum Dissolved	µg/L		1	163	247
Antimony Dissolved	µg/L		0.05	0.31	0.21
Arsenic Dissolved	µg/L	5	0.1	3.1	11.6
Barium Dissolved	µg/L		0.1	179	473
Beryllium Dissolved	µg/L		0.01	0.10	0.03
Boron Dissolved	µg/L		1	29	24
Cadmium Dissolved	µg/L	0.017	0.01	0.24	0.01
Calcium Dissolved	mg/L		0.05	46.5	151
Chromium Dissolved	µg/L		0.5	2.8	3.4
Cobalt Dissolved	µg/L		0.05	13.1	29.3
Copper Dissolved	µg/L		0.2	3.2	0.4
Iron Dissolved	mg/L	0.3	0.01	23.8	153
Lead Dissolved	µg/L		0.01	0.61	<0.01
Lithium Dissolved	µg/L		0.1	7.1	1.4
Magnesium Dissolved	mg/L		0.05	14.8	38.5
Manganese Dissolved	mg/L		0.001	2.40	8.02
Mercury Dissolved	µg/L	0.026	0.003	<0.003	<0.003
Molybdenum Dissolved	µg/L	73	0.05	2.64	0.57
Nickel Dissolved	µg/L		0.1	18.4	32.9
Selenium Dissolved	µg/L	1	0.1	0.9	1.0
Silver Dissolved	µg/L	0.1	0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	144	89.5
Thallium Dissolved	µg/L	0.8	0.002	0.087	<0.002
Titanium Dissolved	µg/L		0.1	58.8	176
Uranium Dissolved	µg/L		0.01	1.17	0.49
Vanadium Dissolved	µg/L		0.1	1.6	4.5
Zinc Dissolved	µg/L	30	1	40	30
Hardness (calc)	mg CaCO3/L		1	177	536

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL) (Van)

Certified By: Marie England

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Feb 21, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3118213	<1	<1	0.0%	< 1	98%	80%	120%				107%	70%	130%
Styrene	1	3118213	<0.5	<0.5	0.0%	< 0.5	98%	80%	120%				108%	70%	130%
VPH	1	3118213	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.12	0.14	15.0%	< 0.05	100%	80%	120%				121%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				97%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				83%	50%	130%
Acenaphthene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				87%	50%	130%
Fluorene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				96%	50%	130%
Phenanthrene	1	W-MS	0.09	0.10	11.0%	< 0.05	99%	80%	120%				97%	60%	130%
Anthracene (Water)	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				72%	60%	130%
Acridine	1	W-MS	0.08	0.08	0.0%	< 0.05	99%	80%	120%				84%	50%	130%
Fluoranthene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				90%	60%	130%
Pyrene	1	W-MS	0.09	0.09	0.0%	< 0.02	99%	80%	120%				92%	60%	130%
Benzo(a)anthracene	1	W-MS	0.08	0.08	0.0%	< 0.05	101%	80%	120%				85%	60%	130%
Chrysene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	102%	80%	120%				98%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				90%	60%	130%
Benzo(a)pyrene	1	W-MS	0.07	0.07	0.0%	< 0.01	100%	80%	120%				76%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				91%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.08	0.09	12.0%	< 0.05	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.09	0.10	11.0%	< 0.05	101%	80%	120%				97%	60%	130%
Nitrobenzene - d5	1	W-MS	81	78	4.0%		99%	80%	120%				82%	50%	130%
Quinoline - d7	1	W-MS	93	90	3.0%		101%	80%	120%				93%	50%	130%
2-Fluorobiphenyl	1	W-MS	86	84	2.0%		100%	80%	120%				86%	50%	130%
P-Terphenyl - d14	1	W-MS	91	90	1.0%		101%	80%	120%				92%	60%	130%
Bromofluorobenzene	1	3118213	89	86	3.0%		107%	70%	130%				115%	70%	130%
Dibromofluoromethane	1	3118213	109	103	6.0%		100%	70%	130%				108%	70%	130%
Toluene - d8	1	3118213	104	98	6.0%		100%	70%	130%				111%	70%	130%
Phenolic Compounds in Water															
Phenol	136	3112960	<0.002	<0.002	NA	< 0.002	85%	80%	120%	96%	70%	130%	95%	60%	140%
4-Nitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	82%	80%	120%	90%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	95%	60%	140%
o-Cresol (2-methylphenol)	136	3112960	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
2-Chlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	82%	80%	120%	94%	70%	130%	90%	60%	140%
2,4-Dinitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	89%	80%	120%	93%	70%	130%	94%	60%	140%
2-Nitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	95%	80%	120%	106%	70%	130%	96%	60%	140%
2,4-Dimethylphenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	93%	70%	130%	92%	60%	140%
2,6-Dichlorophenol	136	3112960	<0.0001	<0.0001	NA	< 0.0001				94%	70%	130%	89%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 21, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
4-Chloro-3-methylphenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	81%	80%	120%	99%	70%	130%	103%	60%	140%
2,4-Dichlorophenol	136	3112960	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	91%	70%	130%	86%	60%	140%
4,6-Dinitro-2-methylphenol	136	3112960	<0.005	<0.005	NA	< 0.005	92%	80%	120%	104%	70%	130%	91%	60%	140%
2,3,6-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	96%	70%	130%	95%	60%	140%
2,4,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				96%	70%	130%	93%	60%	140%
2,3,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				98%	70%	130%	94%	60%	140%
3,4,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				102%	70%	130%	100%	60%	140%
2,3,5,6-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	99%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	136	3112960	<0.005	<0.005	NA	< 0.005				116%	70%	130%	120%	60%	140%
Pentachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	89%	80%	120%	108%	70%	130%	107%	60%	140%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	98%	70%	130%
Toluene	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	92%	80%	120%	95%	80%	120%	93%	70%	130%
Ethylbenzene	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	94%	80%	120%	96%	80%	120%	95%	70%	130%
Xylenes	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	92%	80%	120%	93%	80%	120%	90%	70%	130%
C6 - C10 (F1)	3471	3117404	<0.1	<0.1	NA	< 0.1	98%	80%	120%	100%	80%	120%	93%	70%	130%
C>10 - C16	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	89%	80%	120%	103%	70%	130%
C16 - C34	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	96%	80%	120%	104%	70%	130%

Certified By: Elena Gorobets

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Feb 21, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3118219	< 1	< 1	0.0%	< 1	105%	90%	110%	111%	85%	115%			
Antimony Dissolved	20120	3118219	< 0.05	< 0.05	0.0%	< 0.05	100%	90%	110%	87%	85%	110%			
Arsenic Dissolved	20120	3118219	0.3	0.3	0.0%	< 0.1	95%	90%	110%	106%	90%	110%			
Barium Dissolved	20120	3118219	22.6	22.6	0.0%	< 0.1	104%	90%	110%	102%	90%	110%			
Beryllium Dissolved	20120	3118219	< 0.01	< 0.01	0.0%	< 0.01	109%	90%	110%	110%	90%	110%			
Boron Dissolved	20120	3118219	164	176	7.1%	< 1	108%	90%	110%	86%	80%	120%			
Cadmium Dissolved	20120	3118219	0.02	0.02	0.0%	< 0.01	98%	90%	110%	102%	90%	110%			
Calcium Dissolved	20120	3118219	57.3	56.9	0.7%	< 0.05	99%	90%	110%	102%	90%	110%			
Chromium Dissolved	20120	3118219	< 0.5	< 0.5	0.0%	< 0.5	101%	90%	110%	98%	90%	110%			
Cobalt Dissolved	20120	3118219	2.10	2.16	2.8%	< 0.05	93%	90%	110%	99%	90%	110%			
Copper Dissolved	20120	3118219	0.5	0.5	0.0%	< 0.2	94%	90%	110%	106%	90%	110%			
Iron Dissolved	20120	3118219	0.23	0.23	0.0%	< 0.01	104%	90%	110%	104%	90%	110%			
Lead Dissolved	20120	3118219	< 0.01	< 0.01	0.0%	< 0.01	98%	90%	110%	101%	90%	110%			
Lithium Dissolved	20120	3118219	38.9	39.9	2.5%	< 0.1				102%	90%	110%			
Magnesium Dissolved	20120	3118219	13.3	13.2	0.8%	< 0.05	99%	90%	110%	106%	90%	110%			
Manganese Dissolved	20120	3118219	0.872	0.877	0.6%	< 0.001	104%	90%	110%	103%	90%	110%			
Mercury Dissolved	20120	3118219	< 0.003	< 0.003	0.0%	< 0.003	102%	90%	110%	100%	90%	110%			
Molybdenum Dissolved	20120	3118219	8.71	8.90	2.2%	< 0.05	94%	90%	110%	100%	90%	110%			
Nickel Dissolved	20120	3118219	6.1	6.5	6.3%	< 0.1	101%	90%	110%	98%	90%	110%			
Selenium Dissolved	20120	3118219	< 0.1	< 0.1	0.0%	< 0.1	95%	90%	110%	99%	85%	115%			
Silver Dissolved	20120	3118219	< 0.01	< 0.01	0.0%	< 0.01				103%	90%	110%			
Sodium Dissolved	20120	3118219	144	143	0.7%	< 0.05	102%	90%	110%	107%	90%	110%			
Thallium Dissolved	20120	3118219	0.043	0.042	2.4%	< 0.002	91%	90%	110%	97%	90%	110%			
Titanium Dissolved	20120	3118219	66.9	68	1.6%	< 0.1				97%	90%	110%			
Uranium Dissolved	20120	3118219	9.18	9.43	2.7%	< 0.01		90%	110%	99%	90%	110%			
Vanadium Dissolved	20120	3118219	< 0.1	< 0.1	0.0%	< 0.1	97%	90%	110%	99%	90%	110%			
Zinc Dissolved	20120	3118219	4	5	NA	< 1	94%	90%	110%	106%	85%	115%			

Certified By:

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

AGAT Laboratories

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

- Regular TAT: 5 to 7 working days [X]
- Rush TAT: 24 to 48 hours [ ]
- 48 to 72 hours [ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 2° 3°
AGAT Job Number: 12V514297

Notes:
FEB 13 PM 5:10

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [ ] BC CSR – Soil
  - [ ] Agricultural
  - [ ] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [X] BC CSR – Water
  - [ ] Drinking Water
  - [X] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [ ] Residential/Park
  - [ ] Commercial
  - [ ] Industrial
  - [ ] Drinking Water
  - [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F1	CCME F2-F4	non-chlorinated phenols			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3117392	MV-11BH-11M	groundwater	Feb 13, 2012 10:00		X	X						X	X				5			
391	MV-11BH-12M	↓	Feb 13, 2012 10:30				X							X			2			
402	MV-11BH-13M		Feb 13, 2012 11:00				X							X			2			
↓404	MW08-13	↓	Feb 13, 2012 13:00		X	X						X	X				5			

Samples Relinquished by (print name & sign):	Date: Feb 13, 2012	Samples Received by (Print name & sign):	5:10pm Date: Feb 13/12	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date:	Samples Received by (Print name & sign):	Date:	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date:	Samples Received by (Print name & sign):	Date:	White Copy - AGAT

Page 1 of 1

NO: 000626

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V574297

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: Feb 13/12 5:10pm
Courier: n/a
Received by: Melissa Blues
Relinquished by: Amanda
Branch Received From: n/a
Company: Franz Env
Consultant: n/a
Client left without count verified: n/a

COC INFORMATION:
Received: Yes No Emailed to PM
Completed in full: Yes No If NO, why:
TURNAROUND TIME: Regular
COC Numbers: 000626

SAMPLE QUANTITIES:
Coolers: 2 Bottles/Jars: 14 Bags:

TIME SENSITIVE ISSUES:
Earliest Date Sampled: Feb 13/12
Microbiology: Test: n/a
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes No

ALREADY EXCEEDED? Yes (No)
Expiry:
Expiry: 21/Feb/12

SPECIALTY ISSUES:
Legal Samples: Yes No
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:

Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain:

Correct amount of sample for analysis: (Yes) No
If No, explain:

Are all samples labeled correctly: (Yes) No
If No, explain:

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 0 + 2 = 2 °C (2) 5 + 4 + 1 = 3 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1)
2)
3)

Account Project Manager: Have they been notified of the above issues: Yes No
Whom spoken to: Date and Time:

ADDITIONAL NOTES:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V574297

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

WATER ANALYSIS REVIEWED BY: Marie England, Inorganics Supervisor

DATE REPORTED: Mar 02, 2012

PAGES (INCLUDING COVER): 12

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 2:Amended to include VH and EPH results as per client.
Version 2 is an amendment to version 1.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V574297
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 13, 2012 | DATE RECEIVED: Feb 13, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-11M 3117392	MW08-13 3117404
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8 (BTEX)	%	50-150		108	107
o-Terphenyl (F2-F4)	%	50-150		108	107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3117392-3117404 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V574297
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 13, 2012 | DATE RECEIVED: Feb 13, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-11M 3117392	MW08-13 3117404
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1	<1
Styrene	µg/L	720	0.5	<0.5	<0.5
VPH	µg/L	1500	100	<100	<100
VH	µg/L	15000	100	<100	<100
Naphthalene	µg/L	10	0.05	0.11	0.05
Quinoline	µg/L	34	0.1	<0.1	<0.1
Acenaphthylene	µg/L		0.05	<0.05	<0.05
Acenaphthene	µg/L	60	0.05	0.07	<0.05
Fluorene	µg/L	120	0.05	0.05	<0.05
Phenanthrene	µg/L	3	0.05	0.12	<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05	<0.05
Acridine	µg/L	0.5	0.05	0.05	<0.05
Fluoranthene	µg/L	2	0.05	0.11	<0.05
Pyrene	µg/L	0.2	0.02	0.09	<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05	<0.05
Chrysene	µg/L	1	0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05	<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	0.04	<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05	<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05	<0.05
LEPH C10-C19	µg/L	500	100	520	110
HEPH C19-C32	µg/L		100	670	<100
EPH C10-C19	µg/L	5000	100	520	110
EPH C19-C32	µg/L		100	670	<100

Certified By:

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AGAT WORK ORDER: 12V574297
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 13, 2012 | DATE RECEIVED: Feb 13, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Surrogate	Unit	Acceptable Limits	MV-11BH-11M 3117392	MW08-13 3117404
Nitrobenzene - d5	%	50-130	NA	102
Quinoline - d7	%	50-130	105	94
2-Fluorobiphenyl	%	50-130	60	77
P-Terphenyl - d14	%	60-130	83	88
Bromofluorobenzene	%	70-130	86	77
Dibromofluoromethane	%	70-130	127	122
Toluene - d8	%	70-130	102	101

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3117392 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.
Nitrobenzene-d5 surrogate recovery not available due to sample matrix interference.

3117404 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V574297
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 13, 2012 | DATE RECEIVED: Feb 13, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-12M 3117399	MV-11BH-13M 3117402
Phenol	mg/L		0.002	<0.002	<0.002
4-Nitrophenol	mg/L		0.005	<0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	0.007	0.025
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	<0.0001	<0.0001
4,6-Dinitro-2-methylphenol	mg/L		0.005	<0.005	<0.005
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005	<0.005
Pentachlorophenol	mg/L		0.0005	<0.0005	<0.0005
Surrogate	**Unit**	**Acceptable Limits**			
2-Fluorophenol	%	50-150		114	117
2,4,6-Tribromophenol	%	50-150		110	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3117399-3117402 Results relate only to the items tested.

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 12V574297
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

British Columbia CSR- Schedule 6 Dissolved Metals

DATE SAMPLED: Feb 13, 2012 | DATE RECEIVED: Feb 13, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MV-11BH-12M 3117399	MV-11BH-13M 3117402
Aluminum Dissolved	µg/L		1	163	247
Antimony Dissolved	µg/L	200	0.05	0.31	0.21
Arsenic Dissolved	µg/L	50	0.1	3.1	11.6
Barium Dissolved	µg/L	10000	0.1	179	473
Beryllium Dissolved	µg/L	53	0.01	0.10	0.03
Boron Dissolved	µg/L	50000	1	29	24
Cadmium Dissolved	µg/L		0.01	0.24	0.01
Calcium Dissolved	mg/L		0.05	46.5	151
Chromium Dissolved	µg/L		0.5	2.8	3.4
Cobalt Dissolved	µg/L	40	0.05	13.1	29.3
Copper Dissolved	µg/L		0.2	3.2	0.4
Iron Dissolved	mg/L		0.01	23.8	153
Lead Dissolved	µg/L		0.01	0.61	<0.01
Lithium Dissolved	µg/L		0.1	7.1	1.4
Magnesium Dissolved	mg/L		0.05	14.8	38.5
Manganese Dissolved	mg/L		0.001	2.40	8.02
Mercury Dissolved	µg/L	1	0.003	<0.003	<0.003
Molybdenum Dissolved	µg/L	10000	0.05	2.64	0.57
Nickel Dissolved	µg/L		0.1	18.4	32.9
Selenium Dissolved	µg/L	10	0.1	0.9	1.0
Silver Dissolved	µg/L		0.01	<0.01	<0.01
Sodium Dissolved	mg/L		0.05	144	89.5
Thallium Dissolved	µg/L	3	0.002	0.087	<0.002
Titanium Dissolved	µg/L	1000	0.1	58.8	176
Uranium Dissolved	µg/L	3000	0.01	1.17	0.49
Vanadium Dissolved	µg/L		0.1	1.6	4.5
Zinc Dissolved	µg/L		1	40	30
Hardness (calc)	mg CaCO3/L		1	177	536

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

Certified By: Marie England

AGAT Laboratories

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3118213	<1	<1	0.0%	< 1	98%	80%	120%				107%	70%	130%
Styrene	1	3118213	<0.5	<0.5	0.0%	< 0.5	98%	80%	120%				108%	70%	130%
VPH	1	3118213	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.12	0.14	15.0%	< 0.05	100%	80%	120%				121%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				97%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				83%	50%	130%
Acenaphthene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				87%	50%	130%
Fluorene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				96%	50%	130%
Phenanthrene	1	W-MS	0.09	0.10	11.0%	< 0.05	99%	80%	120%				97%	60%	130%
Anthracene (Water)	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				72%	60%	130%
Acridine	1	W-MS	0.08	0.08	0.0%	< 0.05	99%	80%	120%				84%	50%	130%
Fluoranthene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				90%	60%	130%
Pyrene	1	W-MS	0.09	0.09	0.0%	< 0.02	99%	80%	120%				92%	60%	130%
Benzo(a)anthracene	1	W-MS	0.08	0.08	0.0%	< 0.05	101%	80%	120%				85%	60%	130%
Chrysene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	102%	80%	120%				98%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				90%	60%	130%
Benzo(a)pyrene	1	W-MS	0.07	0.07	0.0%	< 0.01	100%	80%	120%				76%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				91%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.08	0.09	12.0%	< 0.05	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.09	0.10	11.0%	< 0.05	101%	80%	120%				97%	60%	130%
Nitrobenzene - d5	1	W-MS	81	78	4.0%		99%	80%	120%				82%	50%	130%
Quinoline - d7	1	W-MS	93	90	3.0%		101%	80%	120%				93%	50%	130%
2-Fluorobiphenyl	1	W-MS	86	84	2.0%		100%	80%	120%				86%	50%	130%
P-Terphenyl - d14	1	W-MS	91	90	1.0%		101%	80%	120%				92%	60%	130%
Bromofluorobenzene	1	3118213	89	86	3.0%		107%	70%	130%				115%	70%	130%
Dibromofluoromethane	1	3118213	109	103	6.0%		100%	70%	130%				108%	70%	130%
Toluene - d8	1	3118213	104	98	6.0%		100%	70%	130%				111%	70%	130%
Phenolic Compounds in Water															
Phenol	136	3112960	<0.002	<0.002	NA	< 0.002	85%	80%	120%	96%	70%	130%	95%	60%	140%
4-Nitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	82%	80%	120%	90%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	95%	60%	140%
o-Cresol (2-methylphenol)	136	3112960	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
2-Chlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	82%	80%	120%	94%	70%	130%	90%	60%	140%
2,4-Dinitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	89%	80%	120%	93%	70%	130%	94%	60%	140%
2-Nitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	95%	80%	120%	106%	70%	130%	96%	60%	140%
2,4-Dimethylphenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	93%	70%	130%	92%	60%	140%
2,6-Dichlorophenol	136	3112960	<0.0001	<0.0001	NA	< 0.0001				94%	70%	130%	89%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
4-Chloro-3-methylphenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	81%	80%	120%	99%	70%	130%	103%	60%	140%
2,4-Dichlorophenol	136	3112960	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	91%	70%	130%	86%	60%	140%
4,6-Dinitro-2-methylphenol	136	3112960	<0.005	<0.005	NA	< 0.005	92%	80%	120%	104%	70%	130%	91%	60%	140%
2,3,6-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	96%	70%	130%	95%	60%	140%
2,4,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				96%	70%	130%	93%	60%	140%
2,3,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				98%	70%	130%	94%	60%	140%
3,4,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				102%	70%	130%	100%	60%	140%
2,3,5,6-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	99%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	136	3112960	<0.005	<0.005	NA	< 0.005				116%	70%	130%	120%	60%	140%
Pentachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	89%	80%	120%	108%	70%	130%	107%	60%	140%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	98%	70%	130%
Toluene	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	92%	80%	120%	95%	80%	120%	93%	70%	130%
Ethylbenzene	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	94%	80%	120%	96%	80%	120%	95%	70%	130%
Xylenes	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	92%	80%	120%	93%	80%	120%	90%	70%	130%
C6 - C10 (F1)	3471	3117404	<0.1	<0.1	NA	< 0.1	98%	80%	120%	100%	80%	120%	93%	70%	130%
C>10 - C16	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	89%	80%	120%	103%	70%	130%
C16 - C34	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	96%	80%	120%	104%	70%	130%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
British Columbia CSR- Schedule 6 Dissolved Metals															
Aluminum Dissolved	20120	3118219	< 1	< 1	0.0%	< 1	105%	90%	110%	111%	85%	115%			
Antimony Dissolved	20120	3118219	< 0.05	< 0.05	0.0%	< 0.05	100%	90%	110%	87%	85%	110%			
Arsenic Dissolved	20120	3118219	0.3	0.3	0.0%	< 0.1	95%	90%	110%	106%	90%	110%			
Barium Dissolved	20120	3118219	22.6	22.6	0.0%	< 0.1	104%	90%	110%	102%	90%	110%			
Beryllium Dissolved	20120	3118219	< 0.01	< 0.01	0.0%	< 0.01	109%	90%	110%	110%	90%	110%			
Boron Dissolved	20120	3118219	164	176	7.1%	< 1	108%	90%	110%	86%	80%	120%			
Cadmium Dissolved	20120	3118219	0.02	0.02	0.0%	< 0.01	98%	90%	110%	102%	90%	110%			
Calcium Dissolved	20120	3118219	57.3	56.9	0.7%	< 0.05	99%	90%	110%	102%	90%	110%			
Chromium Dissolved	20120	3118219	< 0.5	< 0.5	0.0%	< 0.5	101%	90%	110%	98%	90%	110%			
Cobalt Dissolved	20120	3118219	2.10	2.16	2.8%	< 0.05	93%	90%	110%	99%	90%	110%			
Copper Dissolved	20120	3118219	0.5	0.5	0.0%	< 0.2	94%	90%	110%	106%	90%	110%			
Iron Dissolved	20120	3118219	0.23	0.23	0.0%	< 0.01	104%	90%	110%	104%	90%	110%			
Lead Dissolved	20120	3118219	< 0.01	< 0.01	0.0%	< 0.01	98%	90%	110%	101%	90%	110%			
Lithium Dissolved	20120	3118219	38.9	39.9	2.5%	< 0.1				102%	90%	110%			
Magnesium Dissolved	20120	3118219	13.3	13.2	0.8%	< 0.05	99%	90%	110%	106%	90%	110%			
Manganese Dissolved	20120	3118219	0.872	0.877	0.6%	< 0.001	104%	90%	110%	103%	90%	110%			
Mercury Dissolved	20120	3118219	< 0.003	< 0.003	0.0%	< 0.003	102%	90%	110%	100%	90%	110%			
Molybdenum Dissolved	20120	3118219	8.71	8.90	2.2%	< 0.05	94%	90%	110%	100%	90%	110%			
Nickel Dissolved	20120	3118219	6.1	6.5	6.3%	< 0.1	101%	90%	110%	98%	90%	110%			
Selenium Dissolved	20120	3118219	< 0.1	< 0.1	0.0%	< 0.1	95%	90%	110%	99%	85%	115%			
Silver Dissolved	20120	3118219	< 0.01	< 0.01	0.0%	< 0.01				103%	90%	110%			
Sodium Dissolved	20120	3118219	144	143	0.7%	< 0.05	102%	90%	110%	107%	90%	110%			
Thallium Dissolved	20120	3118219	0.043	0.042	2.4%	< 0.002	91%	90%	110%	97%	90%	110%			
Titanium Dissolved	20120	3118219	66.9	68	1.6%	< 0.1				97%	90%	110%			
Uranium Dissolved	20120	3118219	9.18	9.43	2.7%	< 0.01		90%	110%	99%	90%	110%			
Vanadium Dissolved	20120	3118219	< 0.1	< 0.1	0.0%	< 0.1	97%	90%	110%	99%	90%	110%			
Zinc Dissolved	20120	3118219	4	5	NA	< 1	94%	90%	110%	106%	85%	115%			

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS

AGAT Laboratories

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Chain of Custody Record

Turnaround Time Required (TAT)

- Regular TAT: 5 to 7 working days [X]
- Rush TAT: 24 to 48 hours [ ]
- 48 to 72 hours [ ]

Date Required: _____

Please contact laboratory if Rush is required

Report To:

Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Report Information

1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdcote@franzbc.com

Report Format

- [ ] Single Sample per page
- [X] Multiple Samples per page
- [X] Excel Format Included

Laboratory Use Only

Arrival Temperature: 2° 3°
AGAT Job Number: 12V514297

Notes:
FEB 13 PM 5:10

Invoice To: Same as above Yes [X] No [ ]

Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Regulatory Requirements (Check):

- [ ] BC CSR – Soil
  - [ ] Agricultural
  - [ ] Industrial
  - [ ] Urban/Park
  - [ ] Commercial
- [X] BC CSR – Water
  - [ ] Drinking Water
  - [X] Aquatic Life
  - [ ] Irrigation
  - [ ] Livestock
- [X] CCME
  - [ ] Drinking Water
  - [ ] Residential/Park
  - [ ] Commercial
  - [ ] Industrial
  - [ ] Drinking Water
  - [X] FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability		CCME F1	CCME F2-F4	non-chlorinated phenols			Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3117392	MV-11BH-11M	groundwater	Feb 13, 2012 10:00		X	X						X	X				5			
391	MV-11BH-12M	↓	Feb 13, 2012 10:30				X							X			2			
402	MV-11BH-13M		Feb 13, 2012 11:00				X							X			2			
↓404	MW08-13	↓	Feb 13, 2012 13:00		X	X						X	X				5			

Samples Relinquished by (print name & sign):	Date: Feb 13, 2012	Samples Received by (Print name & sign):	5:10pm Date: Feb 13/12	Pink Copy - Client
Samples Relinquished by (print name & sign):	Date:	Samples Received by (Print name & sign):	Date:	Yellow Copy - AGAT
Samples Relinquished by (print name & sign):	Date:	Samples Received by (Print name & sign):	Date:	White Copy - AGAT

Page 1 of 1

NO: 000626

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V574297

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: Feb 13/12 5:10pm
Courier: n/a
Received by: Melissa Blues
Relinquished by: Amanda
Branch Received From: n/a
Company: Franz Env
Consultant: n/a
Client left without count verified: n/a

COC INFORMATION:
Received: Yes No Emailed to PM
Completed in full: Yes No If NO, why:
TURNAROUND TIME: Regular
COC Numbers: 000626

SAMPLE QUANTITIES:
Coolers: 2 Bottles/Jars: 14 Bags:

TIME SENSITIVE ISSUES:
Earliest Date Sampled: Feb 13/12
Microbiology: Test: n/a
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes No

ALREADY EXCEEDED? Yes (No)
Expiry:
Expiry: 21/Feb/12

SPECIALTY ISSUES:
Legal Samples: Yes No
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:

Precaution taken:

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing: (Yes) No
If No, explain:

Correct amount of sample for analysis: (Yes) No
If No, explain:

Are all samples labeled correctly: (Yes) No
If No, explain:

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 0 + 2 = 2 °C (2) 5 + 4 + 1 = 3 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1)
2)
3)

Account Project Manager: Have they been notified of the above issues: Yes No
Whom spoken to: Date and Time:

ADDITIONAL NOTES:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
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FAX (778)452-4074
http://www.agatlabs.com

CLIENT NAME: FRANZ ENVIRONMENTAL
308-108 MAINLAND STREET
VANCOUVER, BC V6B2T4

ATTENTION TO: Amanda Salway

PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V574477

TRACE ORGANICS REVIEWED BY: Craig Stehr, Organics Supervisor

DATE REPORTED: Mar 02, 2012

PAGES (INCLUDING COVER): 11

VERSION*: 2

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

*NOTES

VERSION 2:Amended to include VH and EPH results as per client.
Version 2 is an amendment to version 1.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 12V574477
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1) in Water

DATE SAMPLED: Feb 14, 2012 | DATE RECEIVED: Feb 14, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	3-BH11 3118467
Benzene	mg/L	0.37	0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1
Surrogate	Unit	Acceptable Limits		
Toluene-d8 (BTEX)	%	50-150		107

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3118467 The F1 (C6 - C10) fraction is determined by integrating the FID chromatogram from the beginning of the n-C6 peak to the apex of the last n-C10 peak.
The C6 - C10 fraction is calculated from the FID toluene response factor.
Quality control for the calibration follows the guidelines set out in the CCME Contaminated Sites Method for Soils.
The (F1 minus BTEX) has been calculated by subtracting the BTEX concentration from Fraction 1.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 12V574477
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons (BTEX/F1-F4) in Water

DATE SAMPLED: Feb 14, 2012 | DATE RECEIVED: Feb 14, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	3-BH10 3118464	MV-GWDUP5 3118469
Benzene	mg/L	0.37	0.0005	<0.0005	<0.0005
Toluene	mg/L	0.002	0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.09	0.0005	<0.0005	<0.0005
Xylenes	mg/L		0.0005	<0.0005	<0.0005
C6 - C10 (F1)	mg/L		0.1	<0.1	<0.1
C6 - C10 (F1 minus BTEX)	mg/L		0.1	<0.1	<0.1
C>10 - C16	mg/L		0.1	<0.1	<0.1
C16 - C34	mg/L		0.1	<0.1	<0.1
C>34 - C50	mg/L		0.1	<0.1	<0.1
Surrogate	Unit	Acceptable Limits			
Toluene-d8 (BTEX)	%	50-150		108	99
o-Terphenyl (F2-F4)	%	50-150		124	108

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to CCME (FWAL)

3118464-3118469 The C>6 - C10 fraction is calculated using the toluene response factor.
The C10 - C16 fraction is calculated using the average response factor for nC10, nC16 and nC34.
BTEX has NOT been subtracted from Fraction 1.
Sample is blank corrected.

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AGAT WORK ORDER: 12V574477
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 14, 2012 | DATE RECEIVED: Feb 14, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	3-BH10 3118464	3-BH11 3118467	MV-GWDUP5 3118469
Methyl tert-butyl ether (MTBE)	µg/L	34000	1	<1	<1	<1
Styrene	µg/L	720	0.5	<0.5	<0.5	<0.5
VPH	µg/L	1500	100	<100	<100	<100
VH	µg/L	15000	100	<100	<100	<100
Naphthalene	µg/L	10	0.05	<0.05		<0.05
Quinoline	µg/L	34	0.1	<0.1		<0.1
Acenaphthylene	µg/L		0.05	<0.05		<0.05
Acenaphthene	µg/L	60	0.05	<0.05		<0.05
Fluorene	µg/L	120	0.05	<0.05		<0.05
Phenanthrene	µg/L	3	0.05	<0.05		<0.05
Anthracene (Water)	µg/L	1	0.05	<0.05		<0.05
Acridine	µg/L	0.5	0.05	<0.05		<0.05
Fluoranthene	µg/L	2	0.05	<0.05		<0.05
Pyrene	µg/L	0.2	0.02	<0.02		<0.02
Benzo(a)anthracene	µg/L	1	0.05	<0.05		<0.05
Chrysene	µg/L	1	0.05	<0.05		<0.05
Benzo(b)fluoranthene	µg/L		0.05	<0.05		<0.05
Benzo(k)fluoranthene	µg/L		0.05	<0.05		<0.05
Benzo(a)pyrene	µg/L	0.1	0.01	<0.01		<0.01
Indeno(1,2,3-cd)pyrene	µg/L		0.05	<0.05		<0.05
Dibenzo(a,h)anthracene	µg/L		0.05	<0.05		<0.05
Benzo(g,h.i)perylene	µg/L		0.05	<0.05		<0.05
LEPH C10-C19	µg/L	500	100	<100		<100
HEPH C19-C32	µg/L		100	120		120
EPH C10-C19	µg/L	5000	100	<100		<100
EPH C19-C32	µg/L		100	120		120

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AGAT WORK ORDER: 12V574477
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Petroleum Hydrocarbons in Water

DATE SAMPLED: Feb 14, 2012 | DATE RECEIVED: Feb 14, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Surrogate	Unit	Acceptable Limits	3-BH10 3118464	3-BH11 3118467	MV-GWDUP5 3118469
Nitrobenzene - d5	%	50-130	72		81
Quinoline - d7	%	50-130	72		82
2-Fluorobiphenyl	%	50-130	62		71
P-Terphenyl - d14	%	60-130	89		90
Bromofluorobenzene	%	70-130	84	90	91
Dibromofluoromethane	%	70-130	105	116	114
Toluene - d8	%	70-130	101	107	104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BC CSR (AW-F) (Van)

3118464 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

3118467 VPH results have been corrected for BTEX contributions.

3118469 VPH results have been corrected for BTEX contributions.
LEPH & HEPH results have been corrected for PAH contributions.

Certified By:

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AGAT WORK ORDER: 12V574477
PROJECT NO: 2090-1103

CLIENT NAME: FRANZ ENVIRONMENTAL

ATTENTION TO: Amanda Salway

Phenolic Compounds in Water

DATE SAMPLED: Feb 14, 2012 | DATE RECEIVED: Feb 14, 2012 | DATE REPORTED: Mar 02, 2012 | SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	3-BH29 3118468
Phenol	mg/L		0.002	0.036
4-Nitrophenol	mg/L		0.005	<0.005
m&p-Cresol (3&4-methylphenol)	mg/L		0.0005	<0.0005
o-Cresol (2-methylphenol)	mg/L		0.0005	<0.0005
2-Chlorophenol	mg/L		0.0005	<0.0005
2,4-Dinitrophenol	mg/L		0.005	<0.005
2-Nitrophenol	mg/L		0.005	<0.005
2,4-Dimethylphenol	mg/L		0.0005	<0.0005
2,6-Dichlorophenol	mg/L		0.0001	<0.0001
4-Chloro-3-methylphenol	mg/L		0.0005	<0.0005
2,4-Dichlorophenol	mg/L		0.0001	0.008
4,6-Dinitro-2-methylphenol	mg/L		0.005	0.022
2,3,6-Trichlorophenol	mg/L		0.0005	<0.0005
2,3,4-Trichlorophenol	mg/L		0.0005	<0.0005
2,4,6-Trichlorophenol	mg/L		0.0005	<0.0005
2,4,5-Trichlorophenol	mg/L		0.0005	0.124
2,3,5-Trichlorophenol	mg/L		0.0005	<0.0005
3,4,5-Trichlorophenol	mg/L		0.0005	0.074
2,3,4,6-Tetrachlorophenol	mg/L		0.0005	0.613
2,3,5,6-Tetrachlorophenol	mg/L		0.0005	<0.0005
2,3,4,5-Tetrachlorophenol	mg/L		0.0005	0.189
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	mg/L		0.005	<0.005
Pentachlorophenol	mg/L		0.0005	0.767
Surrogate	**Unit**	**Acceptable Limits**		
2-Fluorophenol	%	50-150		113
2,4,6-Tribromophenol	%	50-150		110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard
3118468 Results relate only to the items tested.

Certified By:

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574477

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Petroleum Hydrocarbons in Water															
Methyl tert-butyl ether (MTBE)	1	3118213	<1	<1	0.0%	< 1	98%	80%	120%				107%	70%	130%
Styrene	1	3118213	<0.5	<0.5	0.0%	< 0.5	98%	80%	120%				108%	70%	130%
VPH	1	3118213	<100	<100	0.0%	< 100									
Naphthalene	1	W-MS	0.12	0.14	15.0%	< 0.05	100%	80%	120%				121%	50%	130%
Quinoline	1	W-MS	<0.1	<0.1	0.0%	< 0.1	100%	80%	120%				97%	50%	130%
Acenaphthylene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				83%	50%	130%
Acenaphthene	1	W-MS	0.08	0.08	0.0%	< 0.05	100%	80%	120%				87%	50%	130%
Fluorene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				96%	50%	130%
Phenanthrene	1	W-MS	0.09	0.10	11.0%	< 0.05	99%	80%	120%				97%	60%	130%
Anthracene (Water)	1	W-MS	0.07	0.07	0.0%	< 0.05	100%	80%	120%				72%	60%	130%
Acridine	1	W-MS	0.08	0.08	0.0%	< 0.05	99%	80%	120%				84%	50%	130%
Fluoranthene	1	W-MS	0.08	0.09	12.0%	< 0.05	100%	80%	120%				90%	60%	130%
Pyrene	1	W-MS	0.09	0.09	0.0%	< 0.02	99%	80%	120%				92%	60%	130%
Benzo(a)anthracene	1	W-MS	0.08	0.08	0.0%	< 0.05	101%	80%	120%				85%	60%	130%
Chrysene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				93%	60%	130%
Benzo(b)fluoranthene	1	W-MS	0.09	0.10	11.0%	< 0.05	102%	80%	120%				98%	60%	130%
Benzo(k)fluoranthene	1	W-MS	0.09	0.09	0.0%	< 0.05	99%	80%	120%				90%	60%	130%
Benzo(a)pyrene	1	W-MS	0.07	0.07	0.0%	< 0.01	100%	80%	120%				76%	60%	130%
Indeno(1,2,3-cd)pyrene	1	W-MS	0.09	0.09	0.0%	< 0.05	101%	80%	120%				91%	60%	130%
Dibenzo(a,h)anthracene	1	W-MS	0.08	0.09	12.0%	< 0.05	101%	80%	120%				88%	60%	130%
Benzo(g,h.i)perylene	1	W-MS	0.09	0.10	11.0%	< 0.05	101%	80%	120%				97%	60%	130%
Nitrobenzene - d5	1	W-MS	81	78	4.0%		99%	80%	120%				82%	50%	130%
Quinoline - d7	1	W-MS	93	90	3.0%		101%	80%	120%				93%	50%	130%
2-Fluorobiphenyl	1	W-MS	86	84	2.0%		100%	80%	120%				86%	50%	130%
P-Terphenyl - d14	1	W-MS	91	90	1.0%		101%	80%	120%				92%	60%	130%
Bromofluorobenzene	1	3118213	89	86	3.0%		107%	70%	130%				115%	70%	130%
Dibromofluoromethane	1	3118213	109	103	6.0%		100%	70%	130%				108%	70%	130%
Toluene - d8	1	3118213	104	98	6.0%		100%	70%	130%				111%	70%	130%
Petroleum Hydrocarbons (BTEX/F1-F4) in Water															
Benzene	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	100%	80%	120%	96%	80%	120%	98%	70%	130%
Toluene	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	92%	80%	120%	95%	80%	120%	93%	70%	130%
Ethylbenzene	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	94%	80%	120%	96%	80%	120%	95%	70%	130%
Xylenes	3471	3117404	<0.0005	<0.0005	NA	< 0.0005	92%	80%	120%	93%	80%	120%	90%	70%	130%
C6 - C10 (F1)	3471	3117404	<0.1	<0.1	NA	< 0.1	98%	80%	120%	100%	80%	120%	93%	70%	130%
C>10 - C16	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	89%	80%	120%	103%	70%	130%
C16 - C34	32	3118469	<0.1	<0.1	NA	< 0.1	103%	80%	120%	96%	80%	120%	104%	70%	130%
Phenolic Compounds in Water															
Phenol	136	3112960	<0.002	<0.002	NA	< 0.002	85%	80%	120%	96%	70%	130%	95%	60%	140%

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Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574477

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 02, 2012			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
4-Nitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	82%	80%	120%	90%	70%	130%	90%	60%	140%
m&p-Cresol (3&4-methylphenol)	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	95%	60%	140%
o-Cresol (2-methylphenol)	136	3112960	<0.0005	<0.0005	NA	< 0.0005				93%	70%	130%	93%	60%	140%
2-Chlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	82%	80%	120%	94%	70%	130%	90%	60%	140%
2,4-Dinitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	89%	80%	120%	93%	70%	130%	94%	60%	140%
2-Nitrophenol	136	3112960	<0.005	<0.005	NA	< 0.005	95%	80%	120%	106%	70%	130%	96%	60%	140%
2,4-Dimethylphenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	83%	80%	120%	93%	70%	130%	92%	60%	140%
2,6-Dichlorophenol	136	3112960	<0.0001	<0.0001	NA	< 0.0001				94%	70%	130%	89%	60%	140%
4-Chloro-3-methylphenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	81%	80%	120%	99%	70%	130%	103%	60%	140%
2,4-Dichlorophenol	136	3112960	<0.0001	<0.0001	NA	< 0.0001	85%	80%	120%	91%	70%	130%	86%	60%	140%
4,6-Dinitro-2-methylphenol	136	3112960	<0.005	<0.005	NA	< 0.005	92%	80%	120%	104%	70%	130%	91%	60%	140%
2,3,6-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,4-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				94%	70%	130%	92%	60%	140%
2,4,6-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	85%	80%	120%	96%	70%	130%	95%	60%	140%
2,4,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				96%	70%	130%	93%	60%	140%
2,3,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				98%	70%	130%	94%	60%	140%
3,4,5-Trichlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				95%	70%	130%	94%	60%	140%
2,3,4,6-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				102%	70%	130%	100%	60%	140%
2,3,5,6-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	100%	60%	140%
2,3,4,5-Tetrachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005				101%	70%	130%	99%	60%	140%
Dinoseb (2-sec-butyl-4, 6-dinitrophenol)	136	3112960	<0.005	<0.005	NA	< 0.005				116%	70%	130%	120%	60%	140%
Pentachlorophenol	136	3112960	<0.0005	<0.0005	NA	< 0.0005	89%	80%	120%	108%	70%	130%	107%	60%	140%

Certified By:

AGAT Laboratories

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
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Method Summary

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V574477

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	TO 0540	EPA SW-846 8260	GC/MS
Toluene	TO 0540	EPA SW-846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW-846 8260	GC/MS
Xylenes	TO 0540	EPA SW-846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0540	EPA SW-846 8260	GC/MS
Benzene	TO 0540	EPA SW846 8260	GC/MS
Toluene	TO 0540	EPA SW846 8260	GC/MS
Ethylbenzene	TO 0540	EPA SW846 8260	GC/MS
Xylenes	TO 0540	EPA SW846 8260	GC/MS
C6 - C10 (F1)	TO 0540	CCME Tier 1 Method	GC/FID
C6 - C10 (F1 minus BTEX)	TO 0540	CCME Tier 1 Method	GC/FID
C>10 - C16	TO 0511	CCME Tier 1 Method	GC/FID
C16 - C34	TO 0511	CCME Tier 1 Method	GC/FID
C>34 - C50	TO 0511	CCME Tier 1 Method	GC/FID
Toluene-d8 (BTEX)	TO 0340	EPA SW846 8260	GC/FID
o-Terphenyl (F2-F4)	TO 0511	CCME Tier 1 Method	GC/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Methyl tert-butyl ether (MTBE)	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Styrene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
VPH	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS/FID
VH	ORG-180-5130	Modified from BC MOE Lab Manual Section D	GC/MS/FID
Naphthalene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Bromofluorobenzene	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibromofluoromethane	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Toluene - d8	ORG-180-5130	modified from BC MOE Lab Manual Section D	GC/MS
Acenaphthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluorene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Phenanthrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Anthracene (Water)	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS

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AGAT WORK ORDER: 12V574477

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Acridine	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Chrysene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(b)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(k)fluoranthene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(a)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Dibenzo(a,h)anthracene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Benzo(g,h.i)perylene	ORG-180-5133	Modified from BC MOE Lab Manual Section D	GC/MS
Nitrobenzene - d5	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
Quinoline - d7	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
2-Fluorobiphenyl	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
P-Terphenyl - d14	ORG-180-5133	modified from BC MOE Lab Manual Section D	GC/MS
LEPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
HEPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
EPH C10-C19	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Toluene - d8	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
EPH C19-C32	ORG-180-5134	Modified from BC MOE Lab Manual Section D (EPH)	GC/FID
Bromofluorobenzene	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Dibromofluoromethane	ORG-180-5130	Modified from BC MOE Lab Manual Sec D (BTEX, VPH)	GC/MS
Phenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
m&p-Cresol (3&4-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
o-Cresol (2-methylphenol)	TO 1200	EPA SW-846 8321	HPLC/UV
2-Chlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dinitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Nitrophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dimethylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,6-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
4-Chloro-3-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4-Dichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
4,6-Dinitro-2-methylphenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
3,4,5-Trichlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,5,6-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,3,4,5-Tetrachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
Dinoseb (2-sec-butyl-4,6-dinitrophenol)	TO 1200	EPA SW-846 8321	HPLC/UV
Pentachlorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2-Fluorophenol	TO 1200	EPA SW-846 8321	HPLC/UV
2,4,6-Tribromophenol	TO 1200	EPA SW-846 8321	HPLC/UV

AGAT Laboratories

120 - 8600 Glenlyon Parkway
Burnaby, BC,
V5J 0B6
webearth.agatlabs.com

Chain of Custody Record

Ph.: 778.452.4000 · Fax: 778.452.7074

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days ☒
Rush TAT 24 to 48 hours ☐
48 to 72 hours ☐

Date Required: ______

Please contact laboratory if Rush is required

Laboratory Use Only
Arrival Temperature: 2°C
AGAT Job Number: 12V574477

Notes:
FEB 14 AM 11:54

Report To:
Company: Franz Environmental
Contact: Amanda Salway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD:
Client Project #: 2090-1103

Invoice To: Same as above Yes ☒ No ☐
Company:
Contact:
Address:
Phone: Fax:
PO/AFE #:

Report Information
1. Name: Amanda Salway
Email: asalway@franzbc.com
2. Name: Viviane Dubois-Coté
Email: vdcote@franzbc.com

Report Format
☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Regulatory Requirements (Check):

☐ **BC CSR – Soil**
☐ Agricultural
☐ Industrial
☐ Urban/Park
☐ Commercial

☒ **BC CSR – Water**
☐ Drinking Water
☒ Aquatic Life
☐ Irrigation
☐ Livestock

☒ **CCME**
☐ Drinking Water
☐ Residential/Park
☐ Commercial
☐ Industrial
☐ Drinking Water
☒ FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments – Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F1	CCME F2-F4	chlorinated and non-chlorinated phenols		Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
311846+	3-BH10	groundwater	Feb 14 2012 10:00		X	X					X	X			5			
467	3-BH11	↓	Feb 14, 2012 10:00		X						X				3			
468	3-BH29	↓	Feb 14, 2012 11:00										X		1			
469	MV-GWDUP5	↓	Feb 14, 2012 [illegible]:00		X	X					X	X			5			

Samples Relinquished by (print name & sign)	Date	Samples Received by (Print name & sign)	Date
[signature]	Feb 14, 2012	S. Carew [signature] 14-FEB-12 @ 11:54 AM	

Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT

Page 1 of 1

NO: 000162

Document ID: DIV-186-0811.001

Date revised: August 24, 2011

AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V574477

RECEIVING BASICS:
*Complete CoC as well where required
Date and Time: 14-FEB-12 @
Courier: _____
Received by: S. Courens
Relinquished by: Amanda
Branch Received From: _____
Company: Franz Env
Consultant: _____
Client left without count verified: No

COC INFORMATION:
Received (Yes) No Emailed to PM
Completed in full: (Yes) No If NO, why: _____
TURNAROUND TIME: Reg
COC Numbers: 000162

SAMPLE QUANTITIES:
Coolers: _____ Bottles/Jars: 14 Bags: _____

TIME SENSITIVE ISSUES:
Earliest Date Sampled: 14-FEB-12
Microbiology: Test: _____
Hydrocarbons: Test: BTEX
Samples are received >5 days after sampling: Yes (No)

ALREADY EXCEEDED? Yes (No)
Expiry: _____
Expiry: 21-FEB-11

SPECIALTY ISSUES:
Legal Samples: Yes No N/A
International Samples: Yes No
**Proper tape/labels applied: Yes No

Hazardous Samples:
Why hazardous:
_____
Precaution taken:
_____

SAMPLE REQUIREMENTS:
*Complete while logging in by login staff.

Correct bottles used for testing (Yes) No
If No, explain: _____

Correct amount of sample for analysis: (Yes) No
If No, explain: _____

Are all samples labeled correctly: (Yes) No
If No, explain: _____

NON-CONFORMANCES:
3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's)
(1) 3 + 2 + 1 = ___°C (2) ___+___+___=___°C (3) ___+___+___=___°C (4) ___+___+___=___°C
*Jars used when available

Additional integrity issues (note here and on CoC next to the sample ID):

1) _____
2) _____
3) _____

Account Project Manager: _____ Have they been notified of the above issues: Yes No
Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

_____

_____

_____

APPENDIX G

BC WATER RESOURCES ATLAS-
WATER WELL AND AQUIFER INFORMATION

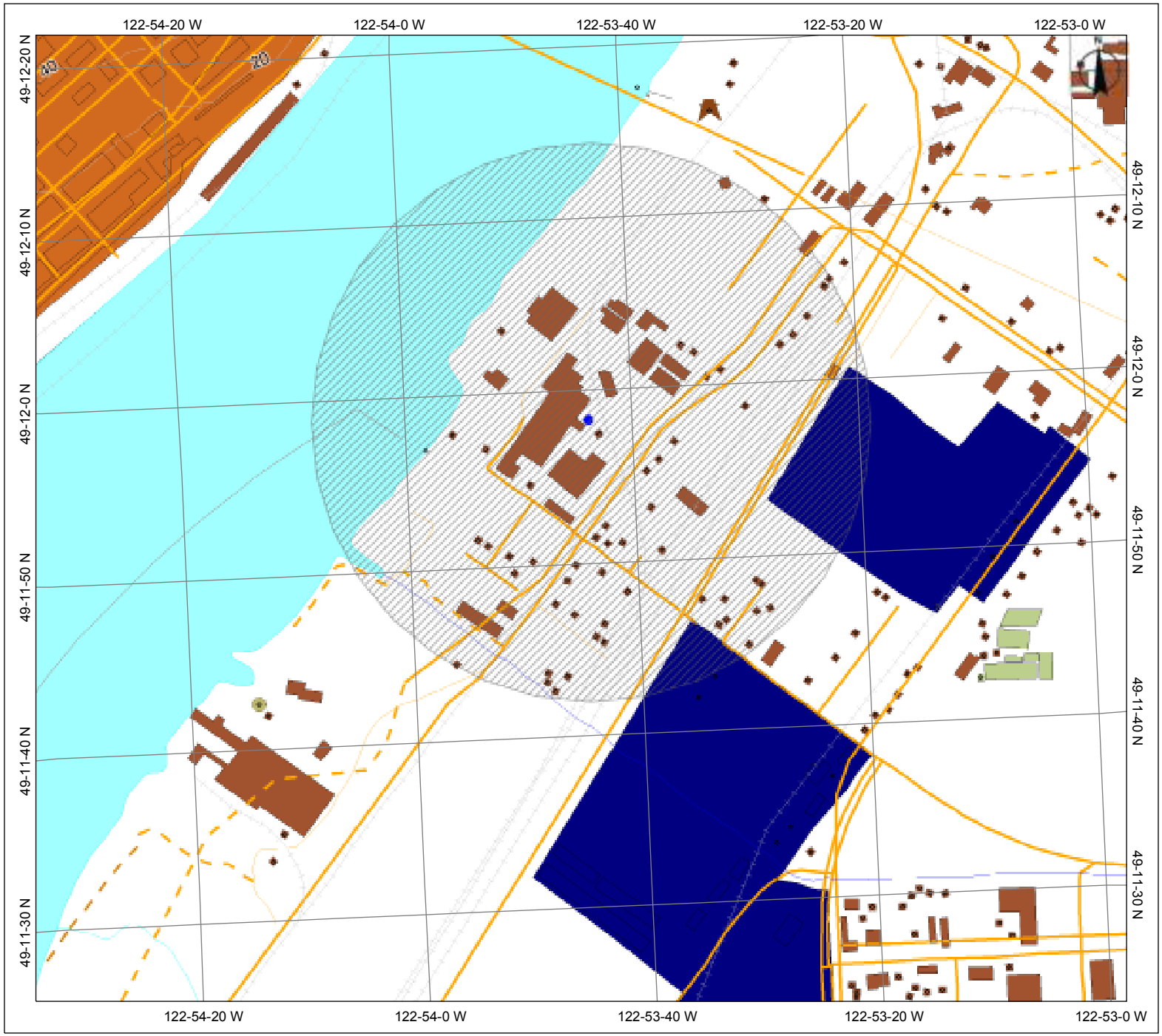
BC Water Resource Atlas-Identify Results- Aquifer

Coordinate Position

BC Albers: 1226602, 470055
Geographic: 49° 12' 7.4" N, 122° 53' 33.6" W
UTM 10N: 507818, 5449926

Aquifer Demand - Colour Themed

Area:	9030560
Perimeter:	25668.905
AQ Tag:	0048
Aquifer Number:	0048
Aquifer Materials:	Sand and Gravel
Aquifer Classification:	IIIB
Demand:	Low
Productivity:	Moderate
Vulnerability:	Moderate
Aquifer Ranking Value:	8
Descriptive Location:	Fraser River Junction
Size KM2:	9
Litho Stratographic Unit:	Fraser River Sediments
Type of Water Use:	Non-Drinking Water
AREA:	9030559.5734375
LEN:	25668.9032718472



BRITISH COLUMBIA

Water Well Search

Legend

0 140 280 m.

Scale: 1:10,000

Copyright/Disclaimer

Datum/Projection: NAD83, Albers Equal Area Conic

Key Map of British Columbia

BRITISH COLUMBIA

Report 1 - Detailed Well Record

Well Tag Number: 25982

Owner: CROWN

Address: TANNERY ROAD R/W AT DYKE ROAD

Area: SURREY

WELL LOCATION:
NEW WESTMINSTER Land District
District Lot: 7 Plan: 51036 Lot:
Township: Section: Range:
Indian Reserve: Meridian: Block:
Quarter:
Island:
BCGS Number (NAD 27): 092G016433 Well: 1

Class of Well:
Subclass of Well:
Orientation of Well:
Status of Well: New
Well Use: Abandoned
Observation Well Number:
Observation Well Status:
Construction Method: Drilled
Diameter: 0.0 inches
Casing drive shoe:
Well Depth: 105 feet
Elevation: 0 feet (ASL)
Final Casing Stick Up: inches
Well Cap Type:
Bedrock Depth: feet
Lithology Info Flag:
File Info Flag:
Sieve Info Flag:
Screen Info Flag:

Site Info Details:
Other Info Flag:
Other Info Details:

Construction Date: 1972-02-24 00:00:00.0

Driller: Rural Well Drillers
Well Identification Plate Number:
Plate Attached By:
Where Plate Attached:

PRODUCTION DATA AT TIME OF DRILLING:
Well Yield: 20 (Driller's Estimate) Gallons per Minute (U.S./Imperial)
Development Method:
Pump Test Info Flag:
Artesian Flow:
Artesian Pressure (ft):
Static Level: 13 feet

WATER QUALITY:
Character:
Colour:
Odour:
Well Disinfected: N
EMS ID:
Water Chemistry Info Flag:
Field Chemistry Info Flag:
Site Info (SEAM):

Water Utility:
Water Supply System Name:
Water Supply System Well Name:

SURFACE SEAL:
Flag:
Material:
Method:
Depth (ft): 0 feet
Thickness (in):
Liner from To: feet

WELL CLOSURE INFORMATION:
Reason For Closure:
Method of Closure:
Closure Sealant Material:
Closure Backfill Material:
Details of Closure:

Screen from	to feet	Type	Slot Size
0	0		0
0	0		0
0	0		0
0	0		0

Casing from	to feet	Diameter	Material	Drive Shoe
0	0	0	null	null

GENERAL REMARKS:
LOT CONTAINING WELL IS NOW IN ROAD RIGHT-OF-WAY

LITHOLOGY INFORMATION:

From	0	to	17	Ft. Clay silt
From	17	to	21	Ft. Fine sandy silt
From	21	to	30	Ft. Silty sand
From	30	to	105	Ft. Fine to medium grey water-bearing sand

- Return to Main
- Return to Search Options
- Return to Search Criteria

APPENDIX H

APPLICABLE REGULATION DETAILS

APPENDIX H –Applicable Regulations Details

Groundwater – Greater than 10m from Surface Water

1.1.1 *Federal Guidelines*

Environment Canada Federal Interim Groundwater Guidelines (FCSAP /FIGQG)

In May 2010, Environment Canada released Federal Interim Groundwater Quality Guidelines for use at federal contaminated sites. These guidelines are applicable to groundwater at federal sites greater than 10 m from a surface water body. The applicable federal interim guidelines are dependent both upon land use and a number of exposure pathways. The land use is classified as industrial and the applicable exposure pathways at the Site are as follows:

- Migration of contaminant vapours to indoor air and subsequent inhalation by humans;
- Soil organisms direct contact;
- Groundwater transport and exposure to surface water used for wildlife ingestion
- Groundwater transport and exposure to surface water freshwater aquatic life; and
- Groundwater transport and exposure to surface water marine aquatic life

Guidelines for protection of aquatic life cannot be excluded if a surface water body is present within 500 m of the Site. The Fraser River is adjacent to the Site; therefore, guidelines for the protection of aquatic life apply. Both freshwater and marine life were considered as at this location along the Fraser River, a transition zone between freshwater and marine/estuarine waters is present (see Section 3.1.2).

Irrigation water and livestock watering guidelines (CCME 1999, and FIGQG 2010) were ruled out as irrigation and livestock watering (agricultural land use) does not occur at the Site or adjacent properties.

Guidelines for Canadian Drinking Water Quality (Health Canada)

Canadian Drinking Water Quality Guidelines are applicable to groundwater at a federal Site where groundwater is currently being used as potable water source or where groundwater is defined as a potential potable water source by the province.

Currently groundwater is not used as a potable water resource onsite; drinking water is supplied to the Site from offsite sources (detailed in Section 2.4). A water well search of the BC WRA identified one abandoned water well (Well Tag # 25982) present onsite (Lot 3, South of the junction of Dyke Road and Tannery Road). This well was drilled in 1972 to a depth of 31 m bgs, and presumably screened in the water bearing sands identified between 9-31m bgs. Aside from this abandoned well, there are no other water use wells identified within a 500m radius of the Site.

Per Health Canada guidance (*Memorandum: Contaminated Sites Assessment – Aquifer Protection for Future Use, 2010*) and per BC CSR Technical Guidance 6, onsite groundwater will be considered as a potable water resource under a future use scenario unless detailed hydrogeological testing (assessment of aquifer thickness and hydraulic conductivity) is conducted onsite to disprove this assumption.

Detailed evaluation of the underlying aquifer has not yet been conducted at the Site; therefore Health Canada's Guidelines for Canadian Drinking Water Quality (2010) apply to the Site.

The most stringent guideline of the FCSAP or Health Canada guidelines was used to determine compliance or non-compliance.

1.1.2 *Provincial Standards*

BC CSR

Under the BC CSR, generic numerical water standards for groundwater are provided in Schedule 6 Schedule 10, and in Protocol 7, which regulates petroleum hydrocarbons covered in both the BC Hazardous Waste Regulation and BC CSR. The BC CSR designates four water-use categories including irrigation, livestock, drinking water, and aquatic life use. The application of these standards is defined in BC MOE Technical Guidance 6 (BC MOE TG06, 2010). Current and future water uses are to be evaluated separately.

BC MOE TG06 states that irrigation and livestock watering water uses apply to groundwater located at sites with agricultural land use or within a provincial Agricultural Land Reserve (ALR). These water uses also apply if irrigation or livestock watering wells or surface water intakes are within a distance of 500 m from the outer extent of a groundwater contamination source. The areas surrounding the Site are not currently used for agricultural purposes and no ALR is present within 500 m of the Site. Therefore, irrigation water (IW) and livestock water (LW) Standards are not applicable to groundwater on the Site or adjacent offsite properties (provincial jurisdiction).

As mentioned in section 3.1.1, drinking water is currently supplied to the Site and surrounding properties by a municipal distribution system drawing from offsite sources, and active drinking water wells have not been identified within 500m of the Site.

It is of note that BC MOE TG06 requires detailed hydrogeological investigations to be conducted onsite in order to rule out the potential for future drinking water use at the Site. Although potable water supply to the Site and area is expected to remain sourced from the municipality, and the underlying aquifer is currently listed as non-potable, yield observations during the 2011 SSI, and mean historical hydraulic conductivities identified in wells screened in the sand and sand/silt layers onsite (range: 1.0×10^{-5} m/s to 4.6×10^{-5} m/s, per Next Environmental Inc., 1998e-h) suggest that future drinking water use per BC MOE TG06 cannot be ruled out on the Site.

Detailed hydrological testing (measurement of seasonal saturated thickness in the unconfined shallow aquifer, hydraulic conductivity testing in wells screened in the underlying silt layer, and

determination of the presence of an underlying confining unit) is needed to rule out future drinking water use in the area. Therefore, the site specific factor for "protection of drinking water" is applicable to the Site boundary and adjacent lands with regards to protection of groundwater for potential future drinking water use.

BC MOE TDG06 states that aquatic life water use applies to all groundwater located within 500 m of a surface water body containing aquatic life. The Fraser River is adjacent to the Site; therefore, aquatic life water use Standards apply at the Site boundary and adjacent lands. According to BC MOE Q&A #17 (Standards – Water Use Evaluation), the salinity in the portion of the Fraser River between the Patullo Bridge and the George Massey Tunnel (south arm) and the western tip of Mitchell Island (north arm) may vary. The document states that salinity in an area can be confirmed through an onsite sampling program; referencing salinity analysis from a credible scientific authority; or, where salinity has not been determined, using the more conservative of the freshwater or marine/estuarine Standards. As FRANZ did not determine salinity at the Site during the SSI, we used the more conservative of the AW (freshwater or marine life) Standards to assess groundwater at the Site boundary and adjacent lands.

As a measure of conservatism, the most stringent of the DW and AW (freshwater and marine life) Standards was applied to groundwater samples.

Groundwater - Surface Water Transition Zone

1.1.3 *Federal Guidelines*

CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life

For groundwater located within 10 m of a water body and within the groundwater-surface water transition zone, the CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life were applied.

Therefore, the most stringent of the freshwater or marine life (see rationale provided in section 3.1.2) guideline was applied to selected samples.

1.1.4 *Provincial Guidelines*

BC Water Quality Guidelines

BC MOE (Environmental Protection Division) has produced the BC Approved Water Quality Guidelines as a means of evaluating surface water quality data. As approved guidelines have only been developed for select substances, in the absence of approved guidelines, BC Working Water Quality Guidelines were applied to parameters. BC MOE designates a number of water use categories; guidelines vary depending on the water use. The water use categories applicable to the Site area:

- Aquatic life (freshwater)
- Aquatic life (marine)

As a measure of conservatism, the most stringent guideline from each of the above pathways was applied to selected samples.

Soil

1.1.5 *Federal Guidelines*

CCME

The CCME Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health Summary Tables contain numerical soil quality criteria specific to land use. The land use for the Site is Industrial.

The CCME Canada-wide Standard (CWS) for Petroleum Hydrocarbons (PHC) in Soil Technical Supplement (January 2008) provides Tier 1 levels for PHCs (F1-F4 fractions), relative to exposure pathways, soil type and depth. At the Site, both fine-grained and coarse-grained soils are present, and samples have been collected from surface (0 – 3 m) and subsoil (>3 m) strata. Therefore, the appropriate Guideline was determined on a sample by sample basis, depending on collection depth and approximate grain size.

In 2010, CCME updated PAH soil quality guidelines so that both human health (carcinogenic effects) and environmental health exposure pathway (non-carcinogenic effects) must be considered when assessing soil quality (CCME, 2010). The following guidelines for PAHs are applicable to the Site:

- Direct Contact, based on an incremental cancer risk of one in 100,000 (human health);
- Protection of Potable Water (human health, Index of Additive Cancer Risk); and
- Environmental Health (non-carcinogenic effects).

1.1.6 *Provincial Standards*

BC CSR

The soil standards applicable to the Site (and immediately adjacent properties) are the Industrial Land Use (IL) soil standards. For each land use category, generic and matrix numerical soil standards have been developed.

The applicable soil standards are provided in:

- CSR Generic Numerical Soil Standards, Schedule 4
- CSR Matrix Numerical Soil Standards, Schedule 5; and
- CSR Generic Numerical Soil and Water Standards, Schedule 10.

Matrix numerical soil standards are developed to take site specific factors into account to determine the risk posed by a specific substance. The following “site-specific factors” are applicable at the site:

- Human health:

    - Groundwater used for drinking water
- Environmental protection:
    - Toxicity to soil invertebrates and plants
    - Groundwater flow to surface water used by aquatic life freshwater/marine

The lowest value of these four site-specific factors (i.e. the most stringent standard) was compared with the analytical data.

To consider a potential future scenario where impacted soil could be potentially excavated and relocated during site remediation, onsite and offsite soil results were also compared to BC CSR Schedule 7 Standards Triggering Contaminated Soil Relocation Agreements, and specifically against Standards for soil relocation to non-agricultural land.

Ditch Surficial Soil

During previous investigation on the Site, surface soil samples were collected from drainage ditches near the southwestern Site boundary (adjacent to Tannery Road and Dyke Road). These drainage ditches capture surface water runoff and have been determined during previous investigations onsite "to carry runoff westward to an offsite pump station" (SRK Robinson, 1994b). Based on observations made during the 2011 SSI, water in the identified ditches is expected be seasonally present and is therefore unlikely to support aquatic life. Drainage ditches at the Site are maintained and occasionally dredged by the City of Surrey, per guidance provided in the BC MOE Q&A Standards- Question #21, these ditches have been classified in the current investigation as terrestrial habitat. Based on the abovementioned information surficial soil samples collected from these ditches have been characterized according to federal (CCME IL) and provincial (BC CSR IL) Soil Quality Guidelines and Standards described in the preceding sections.

Soil Vapour

Soil vapour investigation was not conducted onsite as part of the 2011 SSI. Vapour is not a regulated media on sites under federal jurisdiction. To evaluate the vapour inhalation pathway in the subsequent risk assessment, concentrations of volatile substances in indoor air will be modelled from measured soil and groundwater concentrations onsite.

APPENDIX G

SELECT SITE VISIT PHOTOGRAPHS

Photo 1. Front view of the Site from Dyke Road, facing northwest.

Photo 2. View of south end of the Site, near the wood chipper, facing northwest.

Photo 3. Maintenance and storage room near the wood chipper in Parcel A.

Photo 4. Smallwood Sawmill's wood chipping and conveyer system.

Photo 5. Wood chip loading area, facing north.

Photo 6. View of Smallwood's wood chipping operation, facing west.

Photo 7. Former kiln (left) and a wooden storage shed (right) located in Parcel B, facing east.

Photo 8. Decommissioned above ground storage tank (AST) in the wooden storage shed. Formerly contained diesel emissions fluid.

Photo 9. Historical stains observed on the wooden floor of the AST storage shed.

Photo 10. An open diesel fuel jerry can in the AST storage shed.

Photo 11. Unlabelled drums located to the east of the distribution warehouse.

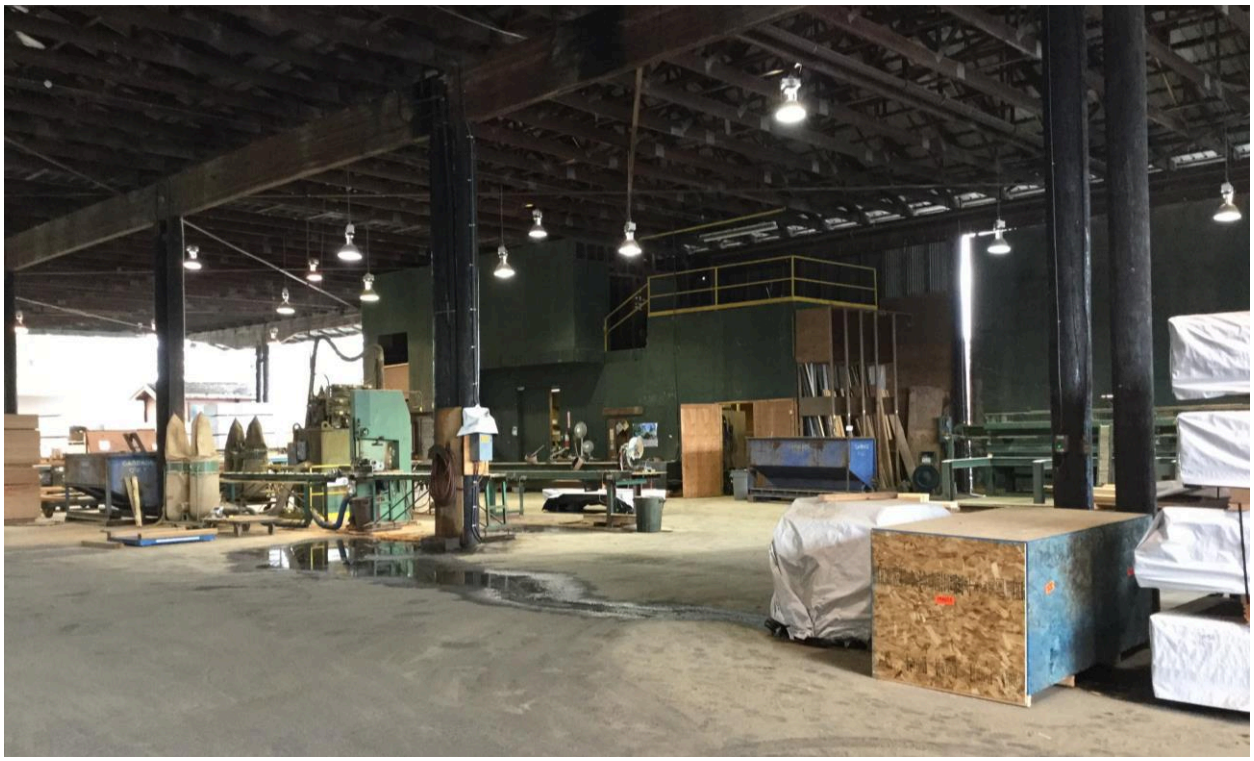


Photo 12. Panabode's wood processing operation in the distribution warehouse, facing southeast.

Photo 13. Electric powered machinery used by Panabode (a division of Mill & Timber).

Photo 14. Panabode's boiler room, consisting of an air compressor.

Photo 15. A second AST located at the south end of the distribution warehouse. This tank is double-walled and stores diesel fuel for Panabode's forklift. The tank has only been present for 1 year.

Photo 16. View of the northwest side of the warehouse building and evidence of ground repairs.

Photo 17. Diesel engine oil containers observed at the north end of the distribution warehouse.

Photo 18. Storage lot in the northeast northern portion of the Site, facing north-northwest.

Photo 19. Newly added Panabode office building along northwest edge of the Site, facing north.

Photo 20. Propane tanks used for heating of the Panabode office building.

Photo 21. Adjacent Property: Kwest Lumber located at the properties east/southeast of the Site.

Photo 22. Adjacent Property: Canadian National Railway located east of the Site.

Photo 23. Adjacent Property: Apex Terminals, located on the property southwest of the Site.

DRAFT

REVIEW OF ENVIRONMENTAL CONDITIONS / UPDATED GROUNDWATER QUALITY INVESTIGATION 10880 DYKE ROAD, SURREY, BC

Prepared for:
Mill & Timber Products Ltd.

Prepared by:
Envirochem Services Inc.

March 2019

ENVIROCHEM SERVICES INC.

REVIEW OF ENVIRONMENTAL CONDITIONS / UPDATED GROUNDWATER QUALITY INVESTIGATION 10880 DYKE ROAD, SURREY, BC

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March 3, 2019

EXECUTIVE SUMMARY

Envirochem Services Inc. (Envirochem) was retained by Mill & Timber Products Ltd. (Mill & Timber), the Client, to review the environmental conditions and complete an updated groundwater sampling program at the former Smallwood Sawmill site at 10880 Dyke Road in Surrey, BC (the Site). The primary goal of this program was to summarize and update groundwater quality at the Site using the existing groundwater monitoring well network, as a component of the lease exit assessment required by the Vancouver Fraser Port Authority (VFPA), the representative owner. However, this report also provides a summary of known soil quality and addresses the overall assessment at the Site relative to the Phase I ESA report prepared under separate cover.

Based on the historical soil quality data for the Site (from 2006 to 2012), it is apparent that petroleum hydrocarbon impacts are present in soil at the following areas:

- ESI-AEC-1 (offsite historical activities or spills or suspect former aboveground storage tank located outside the distribution warehouse); and
- ESI-AEC-2 (former oil storage shed / diesel storage tank).

The impacts are more well-defined and partially delineated at ESI-AEC-1 due to the amount of investigation completed at that location, but more well-understood in a historical context at ESI-AEC-2 due to there being better evidence of petroleum hydrocarbon sources at that location.

Based on the data review and latest groundwater quality data obtained at the Site, the following conclusions are made:

ESI-AEC-1 (Outside the Distribution Warehouse)

Review of Environmental Conditions:

- **The petroleum hydrocarbon impacts identified in soil and groundwater on-Site were identified at depth (approximately 1.35 m and deeper) and not immediately at the surface in the borehole logs reviewed.** The general surficial geology at ESI-AEC-1 appears to include a paved asphalt surface and approximately 1 m of 'clean' brown sand (fill) above a grey silt (native soil). Although there was no specific testing of the 'clean' brown sand by others, there was no indication of impact in this material (based on apparent low headspace readings, visual or olfactory observations, etc.).

Updated Groundwater Quality Investigation:

- **In groundwater monitoring wells able to be sampled, petroleum hydrocarbon impacts in groundwater were identified to still exist including LEPHw and various PAHs.** Although concentrations may vary (e.g. 8,170 µg/L LEPHw measured by Envirochem vs. up to 3,000 µg/L LEPHw measured by Hemmera at monitoring well MW06-2), and increased in some cases compared to 2012, this variance could be a result of various factors (water level fluctuations, etc.). Based on the findings of the Phase I ESA Update, there have been no sources of petroleum hydrocarbons at this location since the wells were last sampled in 2012, so increasing concentrations are not believed to be attributed to the addition of any new contamination in the past seven years.
- **Select dissolved metals concentrations in groundwater were also identified as impacts as they relate to some water uses.** Although groundwater quality concentrations of some select dissolved metals exceed some of the assessment tool criteria applied (which may or may not actually be applicable), these results appear to be representative of the historical infilling of the Site (as suspected by others as well).

ESI-AEC-2 (Former Oil Storage Shed / Diesel Storage Tank)

Review of Environmental Conditions:

- **Environmental investigations by others conducted in 2006, 2008, and 2012, confirmed the presence of petroleum hydrocarbon impacts in the area of the former oil storage shed (removed by Mill & Timber in 2010).** Impacts were identified in soil (PAHs) and groundwater (LEPHw and PAHs) to a known depth of 2 m below ground surface.

Updated Groundwater Quality Investigation:

- **In the one groundwater monitoring well at the former oil storage shed area (BV-11BH-07M), petroleum hydrocarbon impacts in groundwater were identified to still exist.** Envirochem identified impacts from LEPHw and pyrene in groundwater. Although concentrations may vary from historical concentrations measured, and increased in some cases compared to 2012, this variance could be a result of various factors (water level fluctuations, etc.). Based on the findings of the Phase I ESA Update, there have been no sources of petroleum hydrocarbons at this location since the well was last sampled in 2012, so increasing concentrations are not believed to be attributed to the addition of any new contamination in the past seven years.

- **Select dissolved metals concentrations in groundwater were also identified as impacts as they relate to some water uses.** Although groundwater quality concentrations of some select dissolved metals exceed some of the assessment tool criteria applied (which may or may not actually be applicable), these results appear to be representative of the historical infilling of the Site.

The future expectations for what could be required at each location, if anything at this time, would also be influenced by the goals of the VFPA and/or a future tenant's intended use of the Site, which has not been communicated to Envirochem.

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LIST OF ACRONYMS

AECs	Areas of Environmental Concern
APECs	Areas of Potential Environmental Concern
AST	Above Ground Storage Tank
AW	Aquatic Water Use
BCWQG	British Columbia Water Quality Guidelines
BTEXS	Benzene, Toluene, Ethylbenzene, Xylenes, Styrene
CCME	Canadian Council of Ministers of the Environment
CEQG	Canadian Environmental Quality Guidelines
COCs	Contaminants of Concern
CSR	Contaminated Sites Regulation
DW	Drinking Water Use
ESA	Environmental Site Assessment
FCSAP	Federal Contaminated Sites Action Plan
FIGQG	Federal Interim Groundwater Quality Guidelines
HDPE	High Density Polyethylene
IACR	Index of Additive Cancer Risk
LEPH/LEPHw	Light Extractable Petroleum Hydrocarbons
MOECCS / BC ENV	BC Ministry of Environment & Climate Change Strategy
NTU	Nephelometric Turbidity Units
PAHs	Polycyclic Aromatic Hydrocarbons
PCOCs	Potential Contaminants of Concern
TDS	Total Dissolved Solids
VFPA	Vancouver Fraser Port Authority
VPH/VPHw	Volatile Petroleum Hydrocarbons

1.0 INTRODUCTION

Envirochem Services Inc. (Envirochem) was retained by Mill & Timber Products Ltd. (Mill & Timber), the Client, to conduct a review of environmental conditions and updated groundwater monitoring investigation ("the investigation"), at 10880 Dyke Road in Surrey, BC (the Site). The Site is also known as the former Smallwood Sawmill site (or Smallwood site).

The primary goal of this environmental investigation program was to summarize and update groundwater quality at the Site using the existing groundwater monitoring well network (installed by others), as a component of the lease exit assessment required by the Vancouver Fraser Port Authority (VFPA dba the Port of Vancouver), responsible for stewardship of the federally owned property. Up until November 30, 2018, the Site was occupied by Smallwood Sawmill Ltd. and Panabode Homes International, both of which are part of the Aspen Planers Group of Companies, which also owns Mill & Timber. All on-site work documented in this report was completed prior to November 30, 2018, when Mill & Timber was still the lessee of the Site. Envirochem has not completed any physical work at the Site after November 30, 2018.

1.1 BACKGROUND

On April 13, 2018, Mill & Timber received a notice of a lease termination from the VFPA indicating they must exit the Site by September 30, 2018. This deadline was extended to November 30, 2018 based on the Client's request. Soil and groundwater quality were previously assessed at the Site between 2006 and 2012, prior to execution of the lease agreement between Mill & Timber and the VFPA on September 1, 2012. The leaseholder when the environmental assessment work began in 2006 was Lindal Cedar Homes (Lindal) though Mill & Timber was a tenant and was operating a wood chipping operation on a portion of the Site at that time. These previous investigations serve as the baseline assessment for the Site, though industrial activities have been occurring on-site for more than 50 years prior to the initiation of that assessment.

For a complete history of the Site, please review the Phase I ESA Update report completed by Envirochem under separate cover in March 2019.

1.2 OBJECTIVES

The objectives of this report and the limited ESA include the following:

- To provide updated groundwater quality results for comparison to the current regulatory criteria, some of which have changed since the historical data was originally reported;
- To compare current groundwater quality data with the data from the "baseline assessments" conducted between 2006 and 2012; and,
- To present the historical / baseline soil quality data to create a complete picture of the environmental assessment work that has been completed at the Site to date.

2.0 ENVIRONMENTAL FRAMEWORK

The Port of Vancouver has established guidelines (VFPA, 2016) ("the guidelines") for environmental baseline and exit assessments for tenants. However, it is understood that the lease agreement between the Port of Vancouver and Mill & Timber pre-dates the terms of these guidelines. This limited environmental site assessment has been prepared in general conformance with these guidelines even though it is understood that the guidelines were not established prior to Mill & Timber occupying the Site and that a formal "environmental baseline" was not required at the time.

In general conformance with the guidelines, the following regulatory criteria, as previously adopted for the Site by Franz Environmental in 2013 and agreed upon by Envirochem in 2018, have been used as an assessment tool for the evaluation of the historical soil quality results and the historical and updated groundwater quality results in this report.

2.1 SOIL QUALITY CRITERIA

- **Federal** Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQG) for the Protection of Environmental and Human Health – Industrial Land Use for Coarse and Fine-Grained Soils. This includes the CCME Canada-Wide Standards for petroleum hydrocarbons (F1 to F4).
- **Provincial** Contaminated Sites Regulation (CSR) criteria for Industrial Land Use for the Protection of Ecological and Human Health and in consideration of Drinking Water Use (DW) and Aquatic Water Use (AW) criteria.

2.2 GROUNDWATER QUALITY CRITERIA

- **Federal** Health Canada Guidelines for Canadian Drinking Water Quality.
- **Federal** Contaminated Site Action Plan (FCSAP) Federal Interim Groundwater Quality Guidelines (FIGQG) (apply at distances greater than 10 m from the high-water mark of surface water bodies, i.e. the Fraser River).
- **Federal** Canadian Council of Ministers (CCME) Canadian Water Quality Guidelines (CEQG) for the Protection of Aquatic Life (apply at distances within 10 m of the high-water mark of surface water bodies, i.e. the Fraser River).
- **Provincial** Contaminated Sites Regulation (CSR) criteria for Aquatic Water Use (AW) and Drinking Water Use (DW) (apply at distances greater than 10 m from the high-water mark of surface water bodies, i.e. the Fraser River).

- **Provincial** BC Water Quality Guidelines (BCWQG), Approved and Working, for protection of Aquatic Life (apply at distances within 10 m of the high-water mark of surface water bodies, i.e. the Fraser River).

Envirochem notes that where applicable, both freshwater and marine water criteria have been considered, as the Site is located near the Fraser River in an area identified as a transition zone between freshwater and marine conditions (as it is west of the Pattullo Bridge, see BC ENV Technical Guidance 15).

3.0 HISTORICAL ENVIRONMENTAL RESULTS

3.1 GENERAL BACKGROUND ON PREVIOUS REPORTS

The update Phase I ESA (Envirochem, 2019) provides detail on the historical reports for the Site that have been reviewed by Envirochem. For the purpose of this report, the following key documents are highlighted:

- Environmental Audit Report: Brownsville/Port Mann CN Land Swap, Surrey, BC, August 1996, prepared by Public Works & Government Services Canada, Environmental Services.
- Phase I Environmental Site Assessment, Brownsville Site, Surrey, BC, September 2006, prepared by Hemmera Envirochem Inc. for Fraser River Port Authority.
- Draft Supplemental Phase 2 Environmental Site Assessment, Brownsville Site, Surrey, BC, December 2008, prepared by Hemmera for Fraser River Port Authority.
- Supplemental Site Investigation, Surrey Brownsville Site (Lots 2,3,4,5,6), Surrey, BC, June 2013, prepared by Franz Environmental for Vancouver Fraser Port Authority.

As discussed in the updated Phase I ESA, it appears Mill & Timber occupied the Site at the earliest on December 22, 1998. As such, the 1996 audit conducted by Public Works & Government Services Canada (PW&GSC) is the only report of the four listed which was prepared prior to Mill & Timber occupying the Site. However, the Phase I ESA by Hemmera in 2006 and the Supplemental Phase II ESA by Hemmera in 2008 were conducted prior to Mill & Timber's lease agreement with the Port (Mill & Timber was a sub-lessee under Lindal Cedar Homes prior to 2012).

3.2 SOIL QUALITY

Envirochem re-tabulated all previous soil quality data provided by the VFPA for the Site, as previously contained in a Hemmera Draft Supplemental Phase 2 Environmental Site Assessment report dated December 2008 and in a Franz Environmental Supplemental Site Investigation report dated June 2013, and compared it to the criteria referenced above.

Due to changes in those criteria, especially the provincial CSR criteria as of the Stage 10/11 amendments on November 1, 2017, results requiring identification as impacts may vary compared to the previous environmental reports. Table 3-1, below, provides a high-level summary of the soil impacts known to be present at the Site in the baseline assessment, while the full results are chronicled in **Tables S1 to S3** in **Appendix A** and on **Figure 3** in **Appendix B.**

Table 3-1: Impacts Identified in Soil (Baseline Assessment)

APECs / AECs	Impacts in Soil
ESI-AEC-1 Offsite Historical Activities or Spills and Suspect Former Storage Tank	Volatile Petroleum Hydrocarbons (VPH) F1
ESI-AEC-2 Former Oil Storage Shed / Former Single-Walled Gravity-Fed Diesel Storage Tank	Naphthalene Phenanthrene
ESI-APEC-1 Former Sawmill Operations (Kiln)	None
ESI-APEC-2 Former Green Chain	Naphthalene
ESI-APEC-3 Imported Fill Materials	Naphthalene Phenanthrene Index of Additive Cancer Risk (IACR) Arsenic

With the exception of the impacts identified at AEC-1 and AEC-2, the identified impacts are suspected to be related to the quality of the historical fill materials at the Site, which are likely variable. This was the conclusion of Hemmera and Franz, and Envirochem agrees with this conclusion, in that the former green chain and imported fill materials have not been identified to have been impacted by historical site activities by the previous occupants of the Site.

3.3 GROUNDWATER QUALITY

Envirochem re-tabulated all previous groundwater quality data provided by the VFPA for the Site, as previously contained in a Hemmera Draft Supplemental Phase 2 Environmental Site Assessment report dated December 2008 and in a Franz Environmental Supplemental Site Investigation report dated June 2013, and compared it to the criteria referenced above.

Due to changes in those criteria, especially the provincial CSR standards as of the Stage 10/11 amendments on November 1, 2017, results requiring identification as impacts may vary compared to the previous environmental reports. Table 3-2, below, provides a high-level summary of the groundwater impacts known to be present at the Site at the time of the baseline assessment, while the full results are included in **Tables W1a to W3b** in **Appendix A** and on **Figure 4** in **Appendix B.**

Table 3-2: Impacts Identified in Groundwater (Baseline Assessment)

APECs / AECs	Impacts in Groundwater**
ESI-AEC-1 Offsite Historical Activities or Spills and Suspect Former Storage Tank	Benzene* VPHw* Light Extractable Petroleum Hydrocarbons (LEPHw) Acridine Anthracene Benz(a)anthracene Benzo(a)pyrene Fluoranthene Fluorene Phenanthrene Pyrene
ESI-AEC-2 Former Oil Storage Shed / Former Single-Walled Gravity-Fed Diesel Storage Tank	LEPHw
ESI-APEC-1 Former Sawmill Operations (Kiln)	None
ESI-APEC-2 Former Green Chain	Dissolved Arsenic Dissolved Titanium
ESI-APEC-3 Imported Fill Materials	Dissolved Arsenic Dissolved Zinc

*These impacts were historically identified in groundwater, but not in the most recent sampling event(s) prior to 2018 (typically 2012). Concentrations appeared to be decreasing due to natural attenuation.

**Dissolved iron and dissolved manganese have not been considered as impacts at the Site based on the provincial CSR Stage 8 Amendments, which illustrate that groundwater use standards for these substances only need to be applied if specific Schedule 2 site activities occurred on-Site, which is not the case for this property. Therefore, any impacts for those metals can be presumed to be due to natural background groundwater quality.

With the exception of the impacts identified at ESI-AEC-1 and ESI-AEC-2, the identified impacts are suspected to be related to the quality of the historical fill materials at the Site, which are likely variable, and due to the influence of the adjacent Fraser River. This was the conclusion of Hemmera and Franz, and Envirochem agrees with this conclusion, in that groundwater beneath the former green chain and imported fill materials has not been identified to have been impacted by historical site activities by the previous occupants of the Site.

4.0 METHODOLOGY AND FIELD OBSERVATIONS

On August 1, 2018, Mr. Steven Hait, EIT, and Mr. Michael Chao, EIT, of Envirochem visited the Site to search for the existing groundwater monitoring wells and assess their suitability for sampling. Based on this preliminary site visit, the status of all monitoring wells has been updated on **Figure 2 in Appendix B**, with wells that were destroyed or compromised (MW07-7 and BV-11BH-09M) and wells that could not be located (MW07-9, BV-11BH-01M, BV-11BH-03M, and BV-11BH-04M) shown as such. Originally, MW06-3 could not be located, but upon removal of infrastructure from the Site by the end of November 2018, it was found (though not opened to determine suitability for sampling). It was not added to the sampling program at that time as there were no historical concerns of note at that location.

Of the sixteen monitoring wells previously installed at the Site, Envirochem was able to locate twelve in August 2018. Two of the twelve monitoring wells were compromised (the well caps were damaged and as a result the well casings had filled with soil) so they could not be included in the sampling program. Envirochem measured the depth to water and depth to bottom of each accessible monitoring well, in order to determine the sampling viability of each well.

On September 11, 2018, Mr. Bryan Tsai, EIT, and Michael Chao, EIT, returned to site to conduct the groundwater sampling program.

Overall, the groundwater sampling program consisted of the following tasks:

1. Measuring the depth to water and depth to bottom in each monitoring well. This was completed to provide a current snapshot of the groundwater elevation at the Site and in order to calculate the volume of water in each well for Step #2.
2. Purging a volume of water from each well prior to sampling, to ensure that stagnant water trapped in the well was removed and that water representative of the groundwater surrounding each well was drawn into the well for sampling.
3. Sampling the groundwater from each well for the contaminants of concern (COCs) or potential contaminants of concern (PCOCs) identified by previous environmental consultants and re-stated in Envirochem's Phase I ESA report.

4.1 MEASURING GROUNDWATER DEPTHS

A Solinist Model 101 water level meter was used to measure the depth to water and the depth to bottom of each monitoring well. The water level meter was de-contaminated with an Alconox / distilled water mixture after use in each well in order to avoid potentially introducing contaminants from one well to the next well (i.e. cross-contamination).

A summary of the water level measurements is provided in Table 4-1, below.

Table 4-1: Depth Measurements

Well ID	Time	Depth to Water (m)	Depth to Bottom (m)	Comments
MW06-2	11:35	0.753	2.739	Hydrocarbon-like odour
MW07-6	12:07	0.815	2.970	Hydrocarbon-like odour
MW07-8	11:00	2.200	3.020	Poor recharge
MW08-10	19:03	1.880	3.840	
MW08-11	16:59	1.815	3.720	
MW08-13	12:52	1.610	3.962	
BV-11BH-02M	15:43	2.325	4.580	
BV-11BH-07M	15:35	0.930	2.850	Hydrocarbon-like odour, trace sheen, poor recharge
BV-11BH-08M	12:40	1.415	3.850	Poor recharge

Note: All depths measured relative to top of pipe using, where present, the existing markings left by previous environmental consultants.

Envirochem notes that all of the monitoring wells at the Site are flush-mount installations and thus, the top of pipe elevations are approximately 0.05 to 0.10 m below ground surface. Therefore, it can be concluded that the water table on this day ranged from approximately 0.8 m to 2.4 m below the ground surface.

4.2 PURGING

Each monitoring well was purged using a Spectra Field Pro II peristaltic pump equipped with 1/4" x 0.17" high-density polyethylene (HDPE) tubing. A short section of silicone masterflex tubing was placed within the jaws of the pump mechanism. All tubing used for a particular monitoring well was dedicated for use only with that well so that there would be no potential for cross-contamination between wells.

Each well was purged at a low-flow rate, ranging from approximately 0.1 to 0.4 L/min, until a minimum of three well volumes of water had been removed, or until groundwater geochemical

parameters had stabilized, which is indicative of groundwater from the formation entering the monitoring well. Wells with poor recharge which could not maintain a steady recharge rate, were allowed to recharge to a minimum of 50% of the original water column depth, prior to further purging. These particular wells were purged dry three times before sampling.

Geochemical parameters were monitored using either a YSI 63, or an Oakton PCTS Tester 50, for pH, specific conductance, and temperature. The turbidity of the groundwater was also monitored using a Hach 2100 turbidimeter. These parameters were measured approximately every litre of water removed. Where possible, purging was conducted until the measured turbidity was less than 5 Nephelometric Turbidity Units (NTU), and where not achievable, Envirochem considered turbidity stabilization as an indicator that sufficient purging had been conducted. Due to limited purge water volume from poor recharge in certain wells, turbidity levels would rise substantially near the bottom of some wells, as the wells ran dry. This however, was not representative of the groundwater turbidity levels once the wells recharged and were sampled.

Table 4-2, below, presents the calculated well volumes for each monitoring well, based on the depth measurements from Table 4-1, as well as the volumes of water purged and the final geochemical parameter measurements prior to sample collection.

Table 4-2: Purging Parameters

MW ID	Volume Purged (L)	pH	Specific Conductance (µS/cm)	Temperature (°C)	Turbidity (NTU)
MW06-2	2.0	6.07	518	16.6	67.5
MW07-6	2.0	6.36	611	15.7	31.2
MW07-8	2.0	5.90	430	16.3	485
MW08-10	5.0	6.98	326.3	15.9	2.53
MW08-11	6.0	7.07	293.9	16.1	2.82
MW08-13	17.0	6.12	253	15.5	789[1]
BV-11BH-02M	3.5	6.60	289	16.9	33.0
BV-11BH-07M	2.0	6.4	278	18.8	65.1
BV-11BH-08M	6.5	6.84	8.3[2]	19.8[2]	21.7

[1] Turbidity reading taken from bottom of well, biasing NTU readings higher. Reading taken at time of sampling yielded much lower field measurements (12.2 NTU).

[2] Readings may not be accurate due to potential equipment malfunction.

Purge water which did not show evidence of contamination was disposed on-site, while purge water that did show evidence of contamination (odour, sheen), was sealed in 5-gallon pails and taken off-site for disposal.

4.3 SAMPLING

Immediately following purging, each monitoring well was sampled using the same peristaltic pump and tubing used for purging. Due to high turbidity readings prior to purging completion for wells with poor recharge, 1/4" tubing was placed strategically approximately 0.75 m above the bottom of the well, to reduce potential turbidity in the samples. Visual observations taken during collection indicated no evidence of turbidity in the samples.

Groundwater samples were collected into laboratory supplied containers for the PCOCs previously sampled by Hemmera and Franz and adopted by Envirochem for this program. The samples for dissolved metals and dissolved hexavalent chromium were filtered in the field using 0.45 micron high-efficiency Waterra in-line filters (one per monitoring well). These filters were pre-rinsed with well water for approximately one minute prior to sample collection to ensure no cross-contamination from the product manufacturer. All samples were preserved in the field, if required, using the provided laboratory chemicals. Table 4-3, below, provides an outline of the sampling program completed at the Site.

Table 4-3: Groundwater Sampling Program

Monitoring Well	BTEXS/VPH	LEPH/HEPH & PAHs	LEPH/HEPH Silica Gel	Dissolved Metals	Dissolved Hexavalent Chromium	Total Dissolved Solids
MW06-2	x	x		x	x	x
MW07-6	x	x		x	x	x
MW07-8	x	x		x	x	x
MW08-10	x	x		x	x	x
MW18-1 (DUP)	x	x		x	x	x
MW08-11	x	x		x	x	x
MW08-13	x	x		x	x	x
BV-11BH-02M	x	x		x	x	x
BV-11BH-07M	x	x	x	x	x	x
BV-11BH-08M	x	x		x	x	x

Note: Samples for dissolved hexavalent chromium were collected from each monitoring well in the event that the reported dissolved chromium concentrations were above the criteria, but as this was not the case, laboratory analysis of these collected hexavalent chromium samples was not required.

Definitions:

- LEPH = light extractable petroleum hydrocarbons
- HEPH = heavy extractable petroleum hydrocarbons
- BTEXS = benzene, toluene, ethylbenzene, xylenes, styrene
- VPH = volatile petroleum hydrocarbons
- TDS = total dissolved solids

Following sampling, all groundwater samples were placed in a cooler with ice packs and delivered by Mr. Bryan Tsai to ALS Environmental in Burnaby, BC under chain of custody documentation. Samples were requested to be analyzed on regular turn-around-time (TAT), with the majority of analysis completed in Burnaby (hexavalent chromium analysis would have been completed in Edmonton had it been required).

A select number of photographs from this field program are presented in **Appendix C**.

5.0 UPDATED GROUNDWATER QUALITY RESULTS

5.1 CURRENT GROUNDWATER QUALITY

Envirochem tabulated the new groundwater quality data alongside the historical groundwater data in **Tables W1a to W2b** in **Appendix A**, and compared it to the criteria referenced herein. Table 5-1, below, provides a high-level summary of the groundwater impacts currently present at the Site**.** For wells that could not be sampled due to being compromised or no longer present, the "current" groundwater quality has been assessed as being equivalent to the most recent groundwater sampling data (mostly from 2012, except for MW06-3 from 2006). The "current" groundwater quality is visually depicted on **Figure 4** in **Appendix B;** only the most recent results for each monitoring well are presented in that figure, though all of the historical results are presented in the analytical tables**.**

Table 5-1: Impacts Identified in Groundwater (Current Assessment)

APECs / AECs	Impacts in Groundwater**
ESI-AEC-1 Offsite Historical Activities or Spills and Suspect Former Storage Tank Outside the Distribution Warehouse	Light Extractable Petroleum Hydrocarbons (LEPHw) Acridine Anthracene Benz(a)anthracene Benzo(a)pyrene **Benzo(b+j)fluoranthene*** **Benzo(g,h,i)perylene** **Dibenz(a,h)anthracene** Fluoranthene Fluorene **Indeno(1,2,3-cd)pyrene** Phenanthrene Pyrene **Dissolved Aluminum** **Dissolved Arsenic** **Dissolved Barium** **Dissolved Cadmium** **Dissolved Copper** **Dissolved Vanadium** **Dissolved Zinc**