




APPENDIX A


SITE VISIT PHOTOGRAPHS


Client Name: Vancouver Fraser Port Authority	Site Location: Brownsville/Mountainview	Project No. 2090-1103
Photo No. 1		
Date: December 12, 2011		
Direction Photo taken: East		
Description: Drilling borehole MV-11BH-06		


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

Client Name: Vancouver Fraser Port Authority	Site Location: Brownsville/Mountainview	Project No. 2090-1103
Photo No. 3		
Date: December 14, 2011		
Direction Photo taken: Northwest		
Description: Drilling borehole BV-11BH-09M		

Client Name: Vancouver Fraser Port Authority	Site Location: Brownsville/Mountainview	Project No. 2090-1103
Photo No. 4		
Date: December 15, 2011		
Direction Photo taken: Southwest		
Description: Drilling borehole BV-11BH-03M		

Client Name: Vancouver Fraser Port Authority	Site Location: Brownsville/Mountainview	Project No. 2090-1103
Photo No. 5		
Date: December 17, 2011		
Direction Photo taken: West		
Description: Drilling borehole BV-11BH-05M		

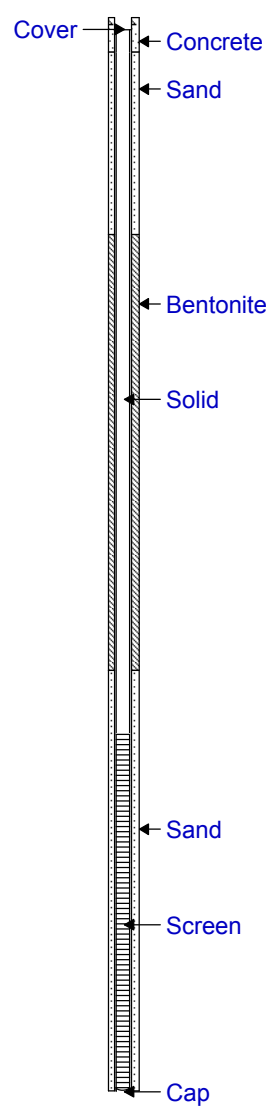
Client Name: Vancouver Fraser Port Authority	Site Location: Brownsville/Mountainview	Project No. 2090-1103
Photo No. 6		
Date: February 10, 2011		
Direction Photo taken: n/a		
Description: Groundwater sampling at MV-11BH-15M		

Client Name: Vancouver Fraser Port Authority	Site Location: Brownsville/Mountainview	Project No. 2090-1103
Photo No. 7		
Date: February 14, 2011		
Direction Photo taken: n/a		
Description: Groundwater sampling at 3-BH10		

APPENDIX B

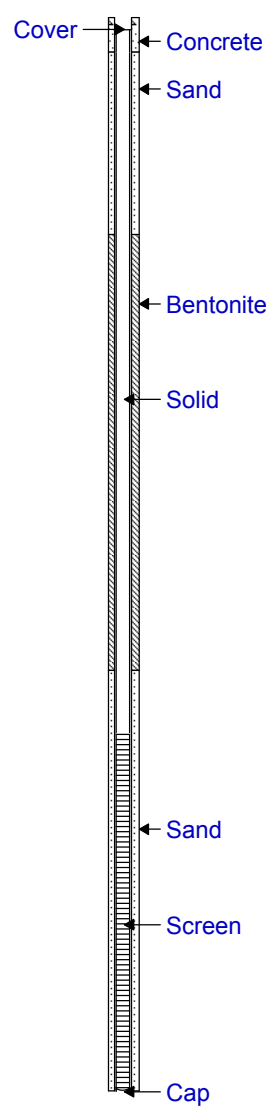
BOREHOLE LOGS

SUBSURFACE PROFILE				SAMPLE					Well Completion Details												
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm														
							200	600		1000	1400	1800									
0		Ground Surface	0.0																		
0	[Symbol: Dotted pattern]	Fine to Medium Sand grey, medium dense, dry to moist		1		G															
1				2		G	50	x													
2				3																	
3																					
4																					
5																					
6			2.0	3		G	65	x													
7	[Symbol: Dotted pattern]	Silty Sand grey, medium dense, moist		4		G	55	x													
8																					
9																					
10			3.0																		
11	[Symbol: Dotted pattern]	Sandy Silt grey, medium dense, moist to wet		5	BV-DUP5	G	50	x													
12																					
13																					
14			4.5																		
15		End of Borehole																			


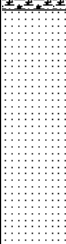
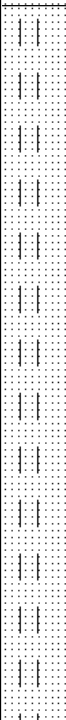


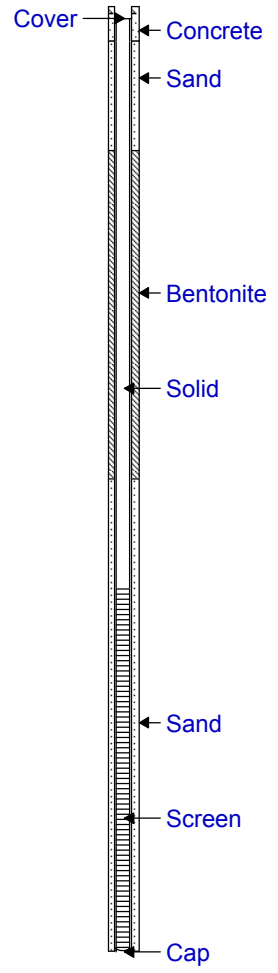
Drilled By: Rocky Mountain Soil Sampling	Hole Diameter: 6"
Drill Method: Solid Stem Auger	Well Diameter: 2"
Drill Date: December 14, 2011	Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details										
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm												
							200	600		1000	1400	1800							
0		Ground Surface	0.0																
0	■	Asphalt	0.15																
1	□	Medium Sand dark brown, loose, dry to moist		1		G	30												
2				2		G	30												
3																			
4			1.5																
5	□	Silty Sand grey, medium dense, moist to wet		3		G	65												
6																			
7																			
8				4		G	40												
9																			
10			3.0																
11	□	Sandy Silt grey, medium dense, wet		5		G	35												
12																			
13				6		G	35												
14			4.5																
15		End of Borehole																	

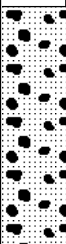
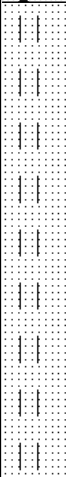
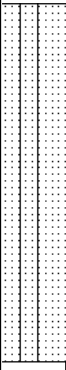


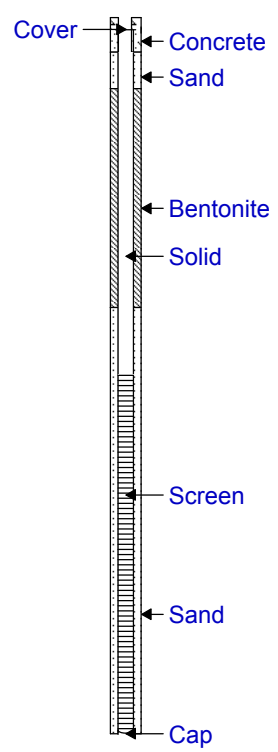
Drilled By: Rocky Mountain Soil Sampling	Hole Diameter: 6"
Drill Method: Solid Stem Auger	Well Diameter: 2"
Drill Date: December 16, 2011	Sheet: 1 of 1

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



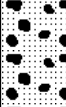
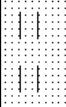
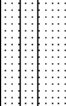
Drilled By: Rocky Mountain Soil Sampling	Hole Diameter: 6"
Drill Method: Solid Stem Auger	Well Diameter: 2"
Drill Date: December 15, 2011	Sheet: 1 of 1

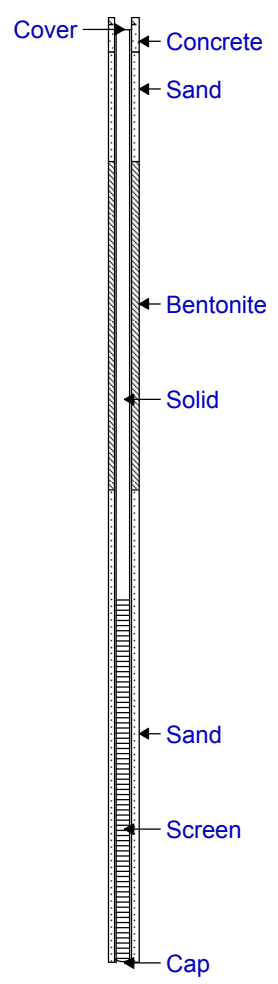
SUBSURFACE PROFILE				SAMPLE					Well Completion Details										
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm												
							200	600		1000	1400	1800							
0		Ground Surface	0.0																
0		Sand and Gravel brown, loose, dry		1		G													
1				2															
2																			
3		Silty Sand grey, medium dense, moist 1.5m - 3m: wet		3	BV-DUP9	G		65											
4				4															
5																			
6																			
7																			
8																			
9																			
10		Sandy Silt grey, medium dense, wet		5		G		50											
11				6															
12																			
13																			
14																			
15		End of Borehole																	



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

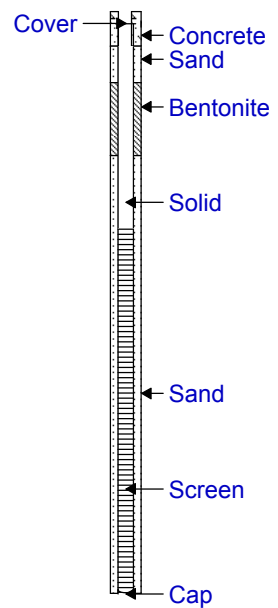
SUBSURFACE PROFILE				SAMPLE					Well Completion Details										
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm												
							200	600		1000	1400	1800							
0		Ground Surface	0.0																
0		Sand and Gravel trace silt, brown, loose, dry	0.5	1		G													
1		Silty Sand brown, medium dense, moist		2		G	35												
2																			
3																			
4																			
5																			
6				3		G	45												
7																			
8				4		G	60												
9		3.0m: wet																	
10			3.0																
11		Sandy Silt grey, medium dense, wet		5	BV-DUP10	G	70												
12																			
13																			
14				6		G	30												
15		End of Borehole	4.5																



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

SUBSURFACE PROFILE				SAMPLE					Well Completion Details										
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm												
							200	600		1000	1400	1800							
0		Ground Surface	0.0																
0		Medium Sand trace gravel, grey, loose, dry to moist, slight hydrocarbon odour		1	BV-DUP8	G	40												
1				2		G	55												
2																			
3			1.5																
5		Silty Sand trace wood debris, dark grey, medium dense, wet		3		G	35												
6			2.0																
7		Wood Fragments		4		G													
8																			
9			3.0																
10		Silt grey, medium dense, moist to wet		5		G	15												
11																			
12			4.0																
13		End of Borehole																	
14																			
15																			



Drilled By: Rocky Mountain Soil Sampling


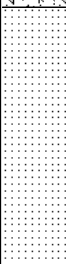
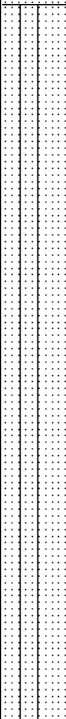
Drill Method: Solid Stem Auger

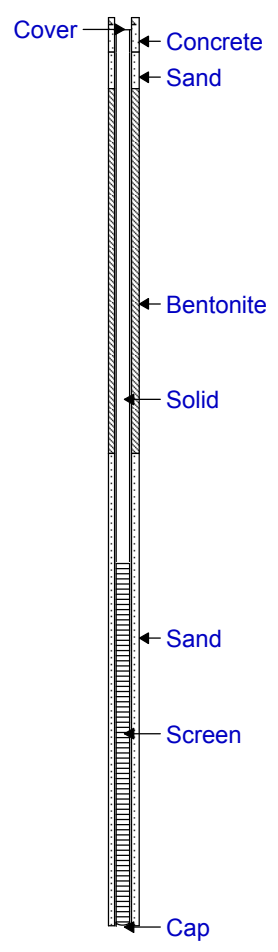
Drill Date: December 17, 2011

Hole Diameter: 6"

Well Diameter: 2"


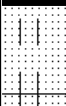
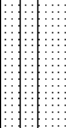


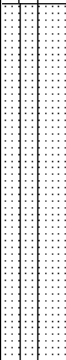
Sheet: 1 of 1

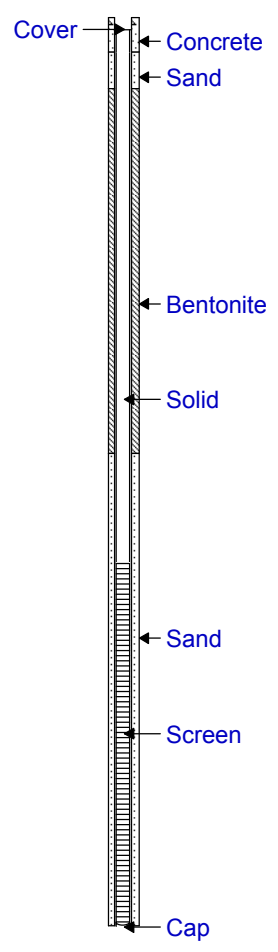
SUBSURFACE PROFILE				SAMPLE				Well Completion Details										
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm											
							200		600	1000	1400	1800						
0		Ground Surface	0.0															
0		Concrete																
0.36																		
1		Medium Sand dark grey,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



Drilled By: Rocky Mountain Soil Sampling
 Drill Method: Solid Stem Auger
 Drill Date: December 16, 2011

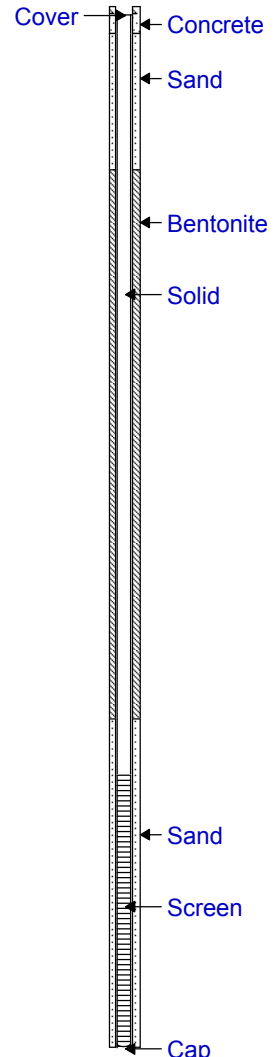





Hole Diameter: 6"
 Well Diameter: 2"
 Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details										
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm												
							200	600		1000	1400	1800							
0		Ground Surface	0.0																
0		Asphalt																	
1		Silty Sand some organics, black, medium dense, moist	0.5	1		G	60												
2		Sandy Silt wood fragments throughout, black, medium dense, moist		2		G	65												
3			1.5																
5		Wood Fragments some silt, brown, medium dense, moist		3		G	100												
6			2.0																
7		Silt some organics, brownish grey, medium dense, moist		4		G	65												
8																			
10		Sandy Silt grey, medium dense, wet		5		G	55												
11																			
13				6		G													
14																			
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

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

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

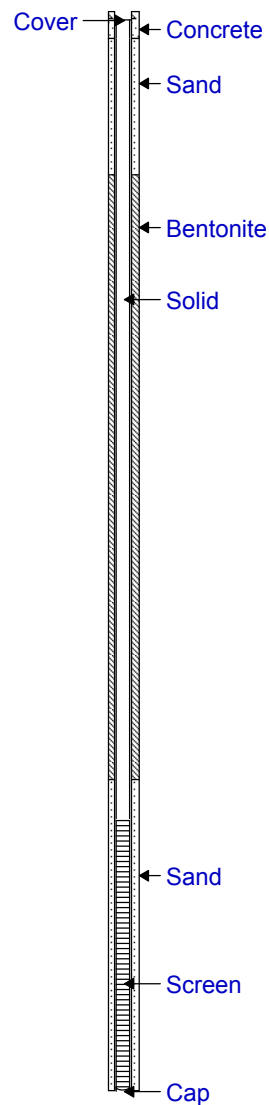
Drill Date: December 15, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details											
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm													
							200	600		1000	1400	1800								
0		Ground Surface	0.0																	
0		Medium Sand some gravel, brown, loose, dry																		
1				1		G														
2		0m - 0.5m: little to no recovery																		
3																				
4																				
5																				
6			2.0	2		G	15													
7		Silty Sand trace organics, brown, medium dense, dry to moist																		
8				3		G	30													
9																				
10																				
11																				
12				4		G	130													
13																				
14																				
15		4.5m - 6m: wet																		
16				5		G	35													
17																				
18				6		G	35													
19																				
20		End of Borehole	6.0																	



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

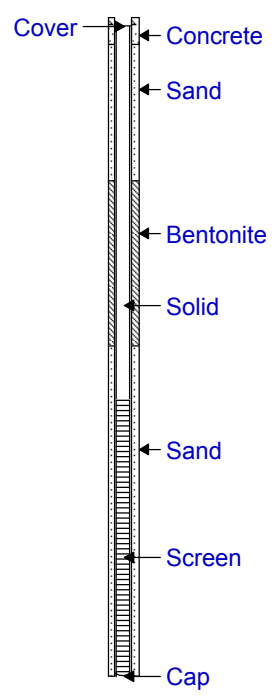
Drill Date: December 16, 2011

Hole Diameter: 6"

Well Diameter: 2"

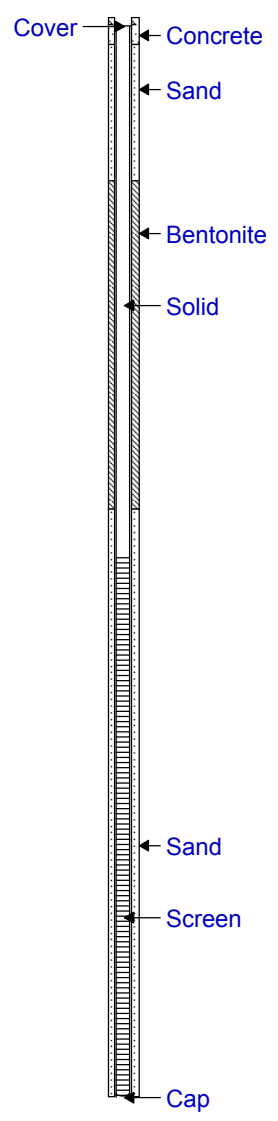
Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details										
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm												
							200	600		1000	1400	1800							
0		Ground Surface	0.0																
0	[Dotted Pattern]	Medium Sand brown, loose, dry		1		G													
1																			
2																			
3																			
4			1.5	2		G													
5	[Dotted Pattern]	Silty Sand grey, medium dense, moist																	
6																			
7																			
8																			
9		3.0m: wet		3		G	50	x											
10			3.0																
11	[Dotted Pattern]	Silt grey, medium dense, moist to wet		4		G	40	x											
12																			
13																			
14																			
15																			
16				5		G	60	x											
17																			
18																			
19				6		G													
20			6.0																
		End of Borehole																	



Drilled By: Rocky Mountain Soil Sampling	Hole Diameter: 6"
Drill Method: Solid Stem Auger	Well Diameter: 2"
Drill Date: December 16, 2011	Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details											
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm													
							200	600		1000	1400	1800								
0		Ground Surface	0.0																	
0	■	Asphalt																		
1	●	Road Base																		
2	●	sand and gravel, some cobbles, brown, medium dense, moist																		
3	●																			
4	●		1.5	1		G														
5	■	Silt																		
6	■	trace organics, grey, medium dense, moist		2		G														
7	■																			
8	■			3		G														
9	■																			
10	■																			
11	■			4		G														
12	■																			
13	■																			
14	■			5		G														
15	■	4.5m to 5m: wood fragments																		
16	■																			
17	■			6		G														
18	■																			
19	■																			
20	■	End of Borehole	6.0																	



Drilled By: Rocky Mountain Soil Sampling Hole Diameter: 6"
 Drill Method: Solid Stem Auger Well Diameter: 2"
 Drill Date: December 16, 2011 Sheet: 1 of 1

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

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

Borehole Log: MV-11BH-06


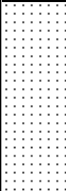


Project No: 2090-1103

Project: Mountainview Reload and Brownsville Site

Client: Port Metro Vancouver

Apec: 9

Logged By: AS

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

Drilled By: Rocky Mountain Soil Sampling

Hole Diameter: 6"

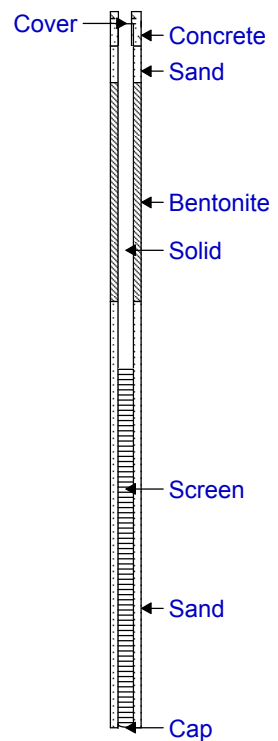
Drill Method: Solid Stem Auger

Well Diameter: n/a

Drill Date: December 12, 2011

Sheet: 1 of 1

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		Ground Surface	0.0																
0		Asphalt																	
1		Medium Sand grey, loose, moist, hydrocarbon odour																	
2		0.1m - 0.5m: no recovery		1		G													
3																			
4				2		G													
5			1.5																
6		Silt some organics and wood waste, brown, medium dense, moist		3		G													
7		1.5m - 3.0m: wet																	
8				4		G													
9																			
10																			
11				5		G													
12																			
13																			
14				6		G													
15			4.5																
		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

SUBSURFACE PROFILE				SAMPLE				Well Completion Details
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm 200 600 1000 1400 1800	
0		Ground Surface	0.0					
0		Asphalt						
1		Silt some sand and clay, greyish brown, medium dense, moist		1	MV-DUP1	G		
2				2		G		
3								
4								
5		Silt some clay, grey, medium dense, moist to wet	1.5	3		G		
6								
7		wood fragments throughout						
8				4		G		
9								
10								
11				5		G		
12								
13								
14								
15		End of Borehole	4.5					

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

Drill Date: December 12, 2011

Hole Diameter: 6"




Well Diameter: n/a

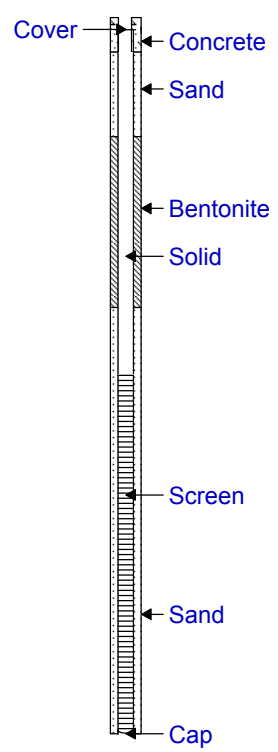
Sheet: 1 of 1

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

Drilled By: Rocky Mountain Soil Sampling
 Drill Method: Solid Stem Auger
 Drill Date: December 13, 2011

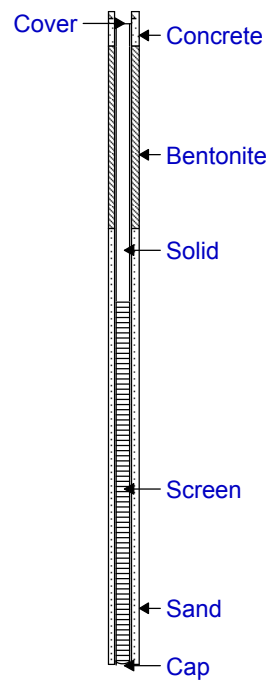
Hole Diameter: 6"
 Well Diameter: n/a
 Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details										
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm												
							200	600		1000	1400	1800							
0		Ground Surface	0.0																
0		Asphalt																	
0		Concrete Debris																	
0.75			0.75																
1		Medium Sand grey, loose, moist		1															
1.5			1.5	2															
2.0		Silt trace sand, brownish grey, medium dense, moist to wet	2.0	3															
2.5		Silt wood debris, brown, medium dense, moist		4															
3.0				5															
4.5			4.5																
15		End of Borehole																	



Drilled By: Rocky Mountain Soil Sampling	Hole Diameter: 6"
Drill Method: Solid Stem Auger	Well Diameter: 2"
Drill Date: December 12, 2011	Sheet: 1 of 1

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		Ground Surface	0.0																
0		Sandy Silt some organics, brownish grey, loose, moist																	
1				1	MV-DUP4	G	60	x											
2																			
3																			
4			1.5																
5		Silt some organics, brownish grey, medium dense, moist to wet		2		G	60	x											
6																			
7																			
8				3		G	60	x											
9																			
10																			
11				4		G	100	x											
12																			
13																			
14			4.5																
15		End of Borehole																	



Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

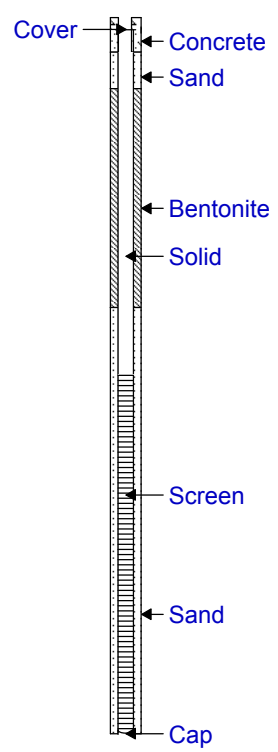
Drill Date: December 14, 2011

Hole Diameter: 6"

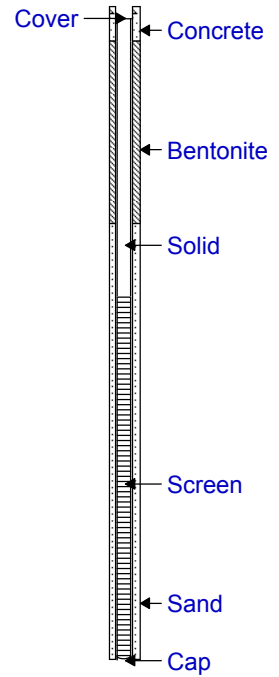
Well Diameter: 2"

Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details											
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm													
							200	600		1000	1400	1800								
0		Ground Surface	0.0																	
0		Silt and Wood Fragments brown, medium dense, moist																		
1																				
2				1		G	70													
3																				
4		1.5m - 4.5m: moist to wet																		
5																				
6				2		G	80													
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15		End of Borehole	4.5																	



Drilled By: Rocky Mountain Soil Sampling	Hole Diameter: 6"
Drill Method: Solid Stem Auger	Well Diameter: 2"
Drill Date: December 14, 2011	Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details											
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm													
							200	600		1000	1400	1800								
0		Ground Surface	0.0																	
0	[Symbol: Wood Fragments]	Wood Fragments trace sand, brown, loose, moist																	 <p>Cover Concrete Bentonite Solid Screen Sand Cap</p>	
1				1		G	65	x												
2																				
3				1.5																
4	[Symbol: Silt]	Silt some wood waste, brown, medium dense, wet																		
5				2		G	55	x												
6																				
7					3		G	55	x											
8																				
9		3.0m -4.5m: moist																		
10				4		G	100	x												
11																				
12																				
13																				
14			4.5																	
15		End of Borehole																		

Drilled By: Rocky Mountain Soil Sampling


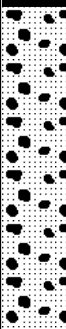
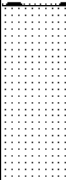

Drill Method: Solid Stem Auger

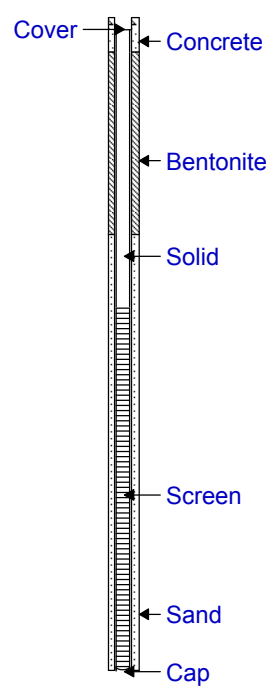
Drill Date: December 14, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details										
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm												
							200	600		1000	1400	1800							
0		Ground Surface	0.0																
0		Asphalt																	
1		Medium Sand and Gravel greyish brown, loose, dry to moist																	
2		little to no recovery to 0.5m		1		G	35												
3																			
4			1.5	2		G	30												
5		Medium Sand some silt, gravel and organics, greyish brown, loose, wet																	
6				3		G	50												
7			2.25																
8		Silt some organics and wood debris, brown, medium dense, moist																	
9				4		G	45												
10																			
11																			
12				5		G	35												
13																			
14																			
15		End of Borehole	4.5																



Drilled By: Rocky Mountain Soil Sampling

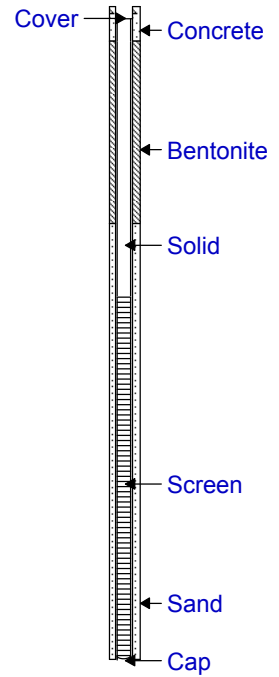
Drill Method: Solid Stem Auger

Drill Date: December 13, 2011

Hole Diameter: 6"

Well Diameter: 2"

Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details					
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm 200 600 1000 1400 1800							
0		Ground Surface	0.0											
0	■	Asphalt												
1	●	Medium Sand grey, loose, moist												
2				1		G								
3														
4				2		G								
5			1.5											
6		Silt some organics and wood debris, grey, medium dense, moist to wet		3	MV-DUP3	G								
7														
8				4		G								
9														
10														
11		3.0 - 4.5m: some clay		5		G								
12														
13														
14			4.5											
15		End of Borehole												

Drilled By: Rocky Mountain Soil Sampling

Drill Method: Solid Stem Auger

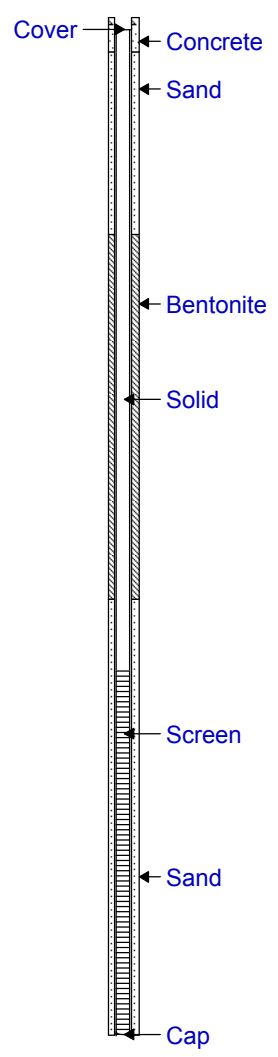
Drill Date: December 13, 2011

Hole Diameter: 6"

Well Diameter: 2"

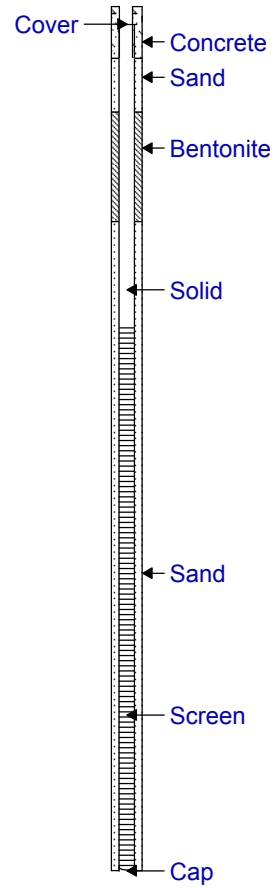
Sheet: 1 of 1

SUBSURFACE PROFILE				SAMPLE					Well Completion Details										
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm												
							200	600		1000	1400	1800							
0		Ground Surface	0.0																
0	■	Asphalt																	
1	●	Medium Sand grey, loose, dry to moist																	
2		very little recovery to 0.5m		1	MV-DUP2	G	50												
3	■	Sandy Silt grey, medium dense, moist	1.0																
4		10% recovery																	
5	■	Silt some clay, grey, dense, moist	1.5	2		G	70												
6																			
7																			
8				3		G	30												
9																			
10	■	Silt grey, dense, wet	3.0																
11				4		G	55												
12																			
13																			
14				5		G	130												
15		End of Borehole	4.5																



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

SUBSURFACE PROFILE			SAMPLE					Well Completion Details
Depth	Symbol	Description	Depth/Elev.	Sample No.	Duplicate	Type	Vapour ppm 200 600 1000 1400 1800	
0		Ground Surface						
0	■	Asphalt	0.15					
1	■	Concrete Debris some sand, grey, dry to moist						
2				1		G 15 x		
3								
4			1.22	2		G 45 x		
5		Silt grey, medium dense, moist						
6				3		G 30 x		
7								
8				4		G 0 x		
9								
10		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		BV-11BH-07M	BV-11BH-07M		MV-11BH-02M	MV-11BH-02M		MV-11BH-11M	MV-11BH-11M	
Field label	RDL	BV-11BH-07M-2	BV-DUP8	RPD	MV-11BH-02M-5	MV-Dup	RPD	MV-11BH-11M-1	MV-Dup4	RPD
Duplicate ID		BV-DUP8	BV-11BH-07M-2		MV-Dup	MV-11BH-02M-5		MV-11BH-11M-1	MV-Dup4	
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.

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

Station ID		BV-11BH-07M	BV-11BH-07M		MV-11BH-11M	MV-11BH-11M		MV-11BH-16M	MV-11BH-16M	
Field label	RDL	BV-11BH-07M-2	BV-DUP8	RPD	MV-11BH-11M-1	MV-Dup4	RPD	MV-11BH-16M-1	MV-Dup 2	RPD
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
Dibenz[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	1.60	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		MV-11BH-17M	MV-11BH-17M	
Field label	RDL	MV-11BH-17M-3	MV-DUP7	RPD
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
Dibenz[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

All units in ug/g.

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

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

All units in ug/g.

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APPENDIX D

DUPLICATE ANALYSIS (QA/QC) - GROUNDWATER

Station ID		BV-11BH-02M	BV-11BH-02M		MV-11BH-14M	MV-11BH-14M		3-BH10	3-BH10	
Field label	RD	BV-GWDUP1	BV-GWDUP1	RPD	MV-11BH-14M	MV-GWDUP3	RPD	3-BH10	MV-GWDUP5	RPD
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

All units in ug/L, unless otherwise noted.

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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

All units in ug/L.

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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	RPD	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

Notes

All units in ug/L.

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

Station ID	RPD	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

Notes

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Station ID	RDL	BV-11BH-02M	BV-11BH-02M	RD	MV-11BH-03M	MV-11BH-03M	RPD	MV-11BH-14M	MV-11BH-14M	RPD	3-BH10	3-BH10	RPD
Field label		BV-11BH-02M	BV-GWDUP1		MV-11BH-03M	MV-GWDUP2		MV-11BH-14M	MV-GWDUP3		3-BH10	MV-GWDUP5	
Duplicate ID		BV-GWDUP1	BV-11BH-02M		MV-GWDUP2	MV-11BH-03M		MV-GWDUP3	MV-11BH-14M		3-BH10	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	-	-	-	-	-	-
Chlorobromomethane	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	-	-	-	-	-	-
1,1,1-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	-	-	-	-	-	-
1,1,1,2-Tetrachloroethene	1	-	-	-	<1	<1	NC	-	-	-	-	-	-
Tetrachloroethane	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

All units in ug/L, unless otherwise noted.

"-" indicates that there is no applicable standard 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		BV-11BH-02M	BV-11BH-02M		MV-11BH-03M	MV-11BH-03M		MV-11BH-14M	MV-11BH-14M	
Field label	RDL	BV-11BH-02M	BV-GWDUP1	RPD	MV-11BH-03M	MV-GWDUP2	RPD	MV-11BH-14M	MV-GWDUP3	RPD
Duplicate ID		BV-GWDUP1	BV-11BH-02M		MV-GWDUP2	MV-11BH-03M		MV-GWDUP3	MV-11BH-14M	
Date		2/Febr/12	2/Febr/12		6/Febr/12	6/Febr/12		7/Febr/12	7/Febr/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		3-BH10	3-BH10	
Field label	RDL	3-BH10	MV-GWDUP5	RPD
Duplicate ID		MV-GWDUP5	3-BH10	
Date		14/Febr/12	14/Febr/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

Notes

All units in ug/L.

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

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	-	-

Notes

All units in ug/L, unless otherwise noted.

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

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 Canadian 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

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.



Certificate of Analysis

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

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

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	MV-11BH-10M-3	MV-11BH-08-2	MV-11BH-08-3	MV-Dup1	MV-11BH-06-1	MV-11BH-06-3	MV-11BH-05-2
				3008313	3008316	3008321	3008322	3008326	3008327	3008329	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

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

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 MV-11BH-10M-2	
				3008313	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

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

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 MV-11BH-10M-2	
				3008313	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:

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 11V559211
 ATTENTION TO: Amanda Salway

Soil Analysis																
RPT Date: Dec 19, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: 

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 11V559211
 ATTENTION TO: Amanda Salway

Trace Organics Analysis

RPT Date: Dec 19, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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

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

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

Chain of Custody Record

Report To:

Company: FRANZ ENVIRONMENTAL
Contact: AMANDA SALWAY
Address: 308-1080 MOUNTAIN ST
VANCOUVER, BC V6B 2T4
Phone: 604 682-9941 Fax: 604 682-9941
LSD:
Client Project #: 2090-1103

Invoice To:

Same as above Yes No
Company:
Contact:
Address:
Phone:
PO/A/E #:

Report Information

1. Name: AMANDA SALWAY
Email: ASALWAY@FRANZBC.COM
2. Name: VIVIANE DUBOIS-CÔTE
Email: VDCOTE@FRANZBC.COM

Regulatory Requirements (Check):

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

Report Format

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

Date Required: _____
Please contact laboratory if Rush is required

Laboratory Use Only

Arrival Temperature: 10°C / 50°C
AGAT Job Number: _____

Notes:

DEC 12 PM 5:52

Turnaround Time Required (TAT)

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

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	CCME OVER COME METALS	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1-YEAR
308313	MV-11BK-10M-1	SOIL	12/12/2011		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
315	MV-11BK-10M-2										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
316	MV-11BK-10M-3										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
317	MV-11BK-10M-4										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
318	MV-11BK-10M-5										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
319	MV-11BK-08-1										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
321	MV-11BK-08-2										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
322	MV-11BK-08-3										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
324	MV-11BK-08-4										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
325	MV-11BK-08-5										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
326	MV-DUP1										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
327	MV-11BK-06-1										<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>

Samples Relinquished by (print name & sign): AMANDA SALWAY Date: 12/12/2011
 Samples Relinquished by (print name & sign): AMANDA SALWAY Date: 12/12/2011
 Samples Relinquished by (print name & sign): AMANDA SALWAY Date: 12/12/2011
 Samples Received by (Print name & sign): AMANDA SALWAY Date: 12/11/11 17:52
 Samples Received by (Print name & sign): AMANDA SALWAY Date: 12/11/11 17:52
 Samples Received by (Print name & sign): AMANDA SALWAY Date: 12/11/11 17:52

Page 1 of 2
NO: 000286

Chain of Custody Record Ph.: 778.452.4000 - Fax: 778.452.7074

Report To:
Company: SAME AS PREVIOUS
Contact: _____
Address: _____
Phone: _____ Fax: _____
LSD: _____
Client Project #: 2010-1103

Report Information
1. Name: SAME AS PREVIOUS
Email: _____
2. Name: _____
Email: _____

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

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

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: 12°C / 5°C
 AGAT Job Number: 11V559211
 Notes: DEC 12 PM 5:52

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment	BC CSR BTEX/PH	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-11BK-06-2	SOIL	12/12/2011								X				X
3329	MV-11BK-06-3										X				X
331	MV-11BK-06-4										X				X
332	MV-11BK-06-5										X				X
333	MV-11BK-06-6										X				X
334	MV-11BK-05-1										X				X
335	MV-11BK-05-2										X				X
336	MV-11BK-05-3										X				X
338	MV-11BK-05-4										X				X
339	MV-11BK-05-5										X				X



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/a
 Received by: AB
 Relinquished by: Amanda S.
 Branch Received From: ald
 Company: Franz Environmental
 Consultant: ald
 Client left without count verified: no

CoC INFORMATION:

Received Yes No Emailed to PM
 Completed in full: Yes No If NO, why: _____
 TURNAROUND TIME: 2ag
 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 # 11V59211

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# 11V59211

SAMPLE QUANTITIES:
 Coolers: 1 Bottles/Jars: 2 Bags: 0

TIME SENSITIVE ISSUES:
 Earliest Date Sampled: DEC. 12, 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 °C (2) _____ + _____ + _____ = _____ °C (3) _____ + _____ + _____ = _____ °C (4) _____ + _____ + _____ = _____ °C
 *Jars used when available
JAN 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

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

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	MV-11BH-10M-3	MV-11BH-08-2	MV-11BH-08-3	MV-Dup1	MV-11BH-06-1	MV-11BH-06-3	MV-11BH-05-2
				3008313	3008316	3008321	3008322	3008326	3008327	3008329	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

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

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 MV-11BH-10M-2	
				3008313	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559211

PROJECT NO: 2090-1103

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

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 MV-11BH-10M-2	
				3008313	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:

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 11V559211
 ATTENTION TO: Amanda Salway

Soil Analysis															
RPT Date: Dec 19, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: 

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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

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

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

Chain of Custody Record

Report To:

Company: FRANZ ENVIRONMENTAL
Contact: AMANDA SALWAY
Address: 308-1080 MOUNTAIN ST
VANCOUVER, BC V6B 2T4
Phone: 604 682-9941 Fax: 604 682-9941
LSD:
Client Project #: 2090-1103

Invoice To:

Same as above Yes No
Company:
Contact:
Address:
Phone:
PO/A/E #:

Report Information

1. Name: AMANDA SALWAY
Email: ASALWAY@FRANZBC.COM
2. Name: VIVIANE DUBOIS-CÔTE
Email: VDUBOIS@FRANZBC.COM

Regulatory Requirements (Check):

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

Report Format

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

Date Required:

Please contact laboratory if Rush is required

Laboratory Use Only

Arrival Temperature: 10°C / 50°C
AGAT Job Number:

Notes:

DEC 12 PM 5:52

Turnaround Time Required (TAT)

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

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	CCME OVER COME METALS	CCME PAVS	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1-YEAR
308313	MV-11BK-10M-1	SOIL	12/12/2011			X					X	X	X				X
315	MV-11BK-10M-2										X	X	X				X
316	MV-11BK-10M-3										X	X	X				X
317	MV-11BK-10M-4										X	X	X				X
318	MV-11BK-10M-5										X	X	X				X
319	MV-11BK-08-1										X	X	X				X
321	MV-11BK-08-2										X	X	X				X
322	MV-11BK-08-3										X	X	X				X
324	MV-11BK-08-4										X	X	X				X
325	MV-11BK-08-5										X	X	X				X
326	MV-DUP1										X	X	X				X
327	MV-11BK-06-1										X	X	X				X

Samples Relinquished by (print name & sign): AMANDA SALWAY Date: 12/12/2011
 Samples Relinquished by (print name & sign): AMANDA SALWAY Date: 12/12/2011
 Samples Received by (Print name & sign): AMANDA SALWAY Date: 12/11/11 17:52
 Samples Received by (Print name & sign): AMANDA SALWAY Date: 12/11/11 17:52

Page 1 of 2
 NO: 000286

Chain of Custody Record Ph.: 778.452.4000 - Fax: 778.452.7074

Report To:
Company: SAME AS PREVIOUS
Contact: _____
Address: _____
Phone: _____ Fax: _____
LSD: _____
Client Project #: 2010-1103

Report Information
1. Name: SAME AS PREVIOUS
Email: _____
2. Name: _____
Email: _____

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

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

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: 12°C / 5°C
 AGAT Job Number: 11V559211
 Notes: DEC 12 PM 5:52

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment	BC CSR BTEX/PH	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-11BK-06-2	SOIL	12/12/2011								X				X
3329	MV-11BK-06-3										X				X
331	MV-11BK-06-4										X				X
332	MV-11BK-06-5										X				X
333	MV-11BK-06-6										X				X
334	MV-11BK-05-1										X				X
335	MV-11BK-05-2										X				X
336	MV-11BK-05-3										X				X
338	MV-11BK-05-4										X				X
339	MV-11BK-05-5										X				X

Samples Relinquished by (print name & sign): ANANDA SAINI Date: 12/12/2011
 Samples Relinquished by (print name & sign): _____ Date: _____
 Samples Relinquished by (print name & sign): _____ Date: _____

Samples Received by (Print name & sign): *Arnold Bond* Date: 12/11/11 17:52
 Samples Received by (Print name & sign): _____ Date: _____
 Samples Received by (Print name & sign): _____ Date: _____

Page 2 of 2
 NO: 000287
 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/a
 Received by: AB
 Relinquished by: Amanda S.
 Branch Received From: ald
 Company: Franz Environmental
 Consultant: ald
 Client left without count verified: no

CoC INFORMATION:

Received Yes No Emailed to PM
 Completed in full: Yes No If NO, why: _____
 TURNAROUND TIME: 2ag
 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 # 11V59211

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# 11V59211

SAMPLE QUANTITIES:
 Coolers: 1 Bottles/Jars: 2 Bags: 0

TIME SENSITIVE ISSUES:
 Earliest Date Sampled: DEC. 12, 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 °C (2) _____ + _____ + _____ = _____ °C (3) _____ + _____ + _____ = _____ °C (4) _____ + _____ + _____ = _____ °C
 *Jars used when available
JAN 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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

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	MV-11BH-09-2	MV-11BH-07M-1	MV-11BH-07M-3
				3008714	3008722	3008753	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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

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		MV-11BH-15M-3		MV-Dup 3
				3008734	RDL	3008736	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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

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		MV-11BH-14M-4	
				3008762	RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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

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	MV-11BH-14M-4
			3008762	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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

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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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

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	MV-11BH-16M-5	MV-Dup 2	MV-11BH-07M-2	RDL	MV-11BH-07M-4
				3008727	3008731	3008732	3008754		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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
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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	MV-11BH-16M-5	MV-Dup 2	MV-11BH-07M-2	MV-11BH-07M-4
			3008727	3008731	3008732	3008754	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:



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V559248
ATTENTION TO: Amanda Salway

Soil Analysis																
RPT Date: Dec 23, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

Mari England

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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:



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

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

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

Method Summary

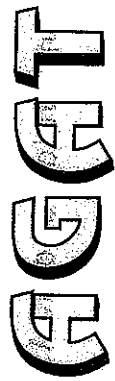
CLIENT NAME: FRANZ ENVIRONMENTAL

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



Laboratories

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

Chain of Custody Record

Report To:
 Company: Franz Environmental
 Contact: Amanda Salway
 Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
 Phone: 604 652-9941 Fax: 604 652-9947
 LSD:
 Client Project #: 2090-1103

Invoice To: Same as above Yes No
 Company: Send copy of SRC
 Contact: to valcok@franzbc.com
 Address:
 Phone:
 PO/A/E #:

Report Information
 1. Name: Amanda Salway
 Email: asalway@franzbc.com
 2. Name: Viviane Dubois-Cox
 Email: valcok@franzbc.com

Regulatory Requirements (Check):
 BC CSR - Soil BC CSR - Water
 Agricultural Drinking Water
 Industrial Aquatic Life
 Urban/Park Irrigation
 Commercial Livestock
 CCME
 Drinking Water Industrial
 Residential/Park Drinking Water
 Commercial 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
 Rush TAT 48 to 72 hours
 Date Required:
 Please contact laboratory if Rush is required

Laboratory Use Only
 Arrival Temperature: 2°C
 AGAT Job Number: IN559248
 Notes: DEC 14 AMB:02

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 YEAR - 60 days
3005714	MV-118M-09-1	Soil	13/12/2011								X						
722	MV-118M-09-2										X						
723	MV-118M-09-3										X						
724	MV-118M-09-4										X						
725	MV-118M-09-5										X						
726	MV-118M-09-6										X						
727	MV-118M-16M-1										X						
728	MV-118M-16M-2										X						
729	MV-118M-16M-3										X						
730	MV-118M-16M-4										X						
731	MV-118M-16M-5										X						
732	MV-DUPZ										X						

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



Laboratories

120 - 8600 Gleniyon 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: _____
 LSD: _____
 Client Project #: _____

Report Information
 1. Name: Same as previous
 Email: _____
 2. Name: _____
 Email: _____

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

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

Laboratory Use Only
 Arrival Temperature: _____
 AGAT Job Number: 11V539248
 Notes: DEC 14 AM 8:03

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

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

Comments - Site/Sample Info.
 Sample Containment

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability	CS2 and CCME Metals	Phenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 4-year 60 days
300874	MV-118A-15M-1	Soil	13/12/2011												
735	MV-118A-15M-2														
736	MV-118A-15M-3														
740	MV-118A-15M-4														
743	MV-118A-15M-5														
750	MV-DUP3														
753	MV-118A-07M-1														
754	MV-118A-07M-2														
755	MV-118A-07M-3														
756	MV-118A-07M-4														
757	MV-118A-07M-5														
758	MV-118A-07M-6														

Chain of Custody

Samples Relinquished by (print name & sign): Mona Lisa Date: 13/12/2011
 Samples Relinquished by (print name & sign): S. Cordus Date: 14-DEC-11 e 8:02 AM
 Samples Relinquished by (print name & sign): _____ Date: _____
 Samples Relinquished by (print name & sign): _____ Date: _____

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

Page 2 of 3
 NO: 000289



AGAT Laboratories

120 - 8600 Glenlyon Parkway
Burnaby, BC,
V5J 0B6
webearth.agat@abs.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: _____
 AGAT Job Number: 11V559248

Notes: DEC 14 AM 8:03

Report Information
 1. Name: SAME AS PREVIOUS
 Email: _____
 2. Name: _____
 Email: _____

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

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

Report To:
 Company: SAME AS PREVIOUS
 Contact: _____
 Address: _____
 Phone: _____
 LSD: _____
 Client Project #: _____

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

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	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1-YEAR <u>60 days</u>
3058759	MV-118K-14M-1	Soil	13/12/2011		X									
1761	MV-118K-14M-2	↓	↓		X									
1762	MV-118K-14M-3	↓	↓		X									
1764	MV-118K-14M-4	↓	↓		X									
1766	MV-118K-14M-5	↓	↓		X									

Chain of Custody:

Sample Relinquished by (print name & sign):	Date	Sample Received by (print name & sign):	Date
<u>S. Collins</u>	13/12/2011	<u>S. Collins</u>	14-DEC-11 @ 8:02 AM

Page 3 of 3
 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. COUZANS

Relinquished by: Amarda 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: _____
 Consultant: FRANZ ENVIRONMENTAL
 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 with 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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

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	MV-11BH-09-2	MV-11BH-07M-1	MV-11BH-07M-3
				3008714	3008722	3008753	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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

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	RDL	MV-11BH-15M-3	MV-Dup 3
				3008734		3008736	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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

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		MV-11BH-14M-4	
				3008762	RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
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<http://www.agatlabs.com>

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	MV-11BH-14M-4
			3008762	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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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	MV-11BH-16M-5	MV-Dup 2	MV-11BH-14M-3	MV-11BH-14M-4
				3008727	3008731	3008732	3008762	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
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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	MV-11BH-16M-5	MV-Dup 2	MV-11BH-07M-2	RDL	MV-11BH-07M-4
				3008727	3008731	3008732	3008754		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:



Certificate of Analysis

AGAT WORK ORDER: 11V559248

PROJECT NO: 2090-1103

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<http://www.agatlabs.com>

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	MV-11BH-16M-5	MV-Dup 2	MV-11BH-07M-2	MV-11BH-07M-4
			3008727	3008731	3008732	3008754	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:



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V559248
ATTENTION TO: Amanda Salway

Soil Analysis															
RPT Date: Dec 23, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

Mari England

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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:



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

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

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

Method Summary

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PROJECT NO: 2090-1103

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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

AGAT Laboratories

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

Turnaround Time Required (TAT)
Regular TAT 5 to 7 working days
Rush TAT 24 to 48 hours
 48 to 72 hours

Report Information
 1. Name: Amanda Salway
 Email: amanda@franzbc.com
 2. Name: Viviane Dubois-Cox
 Email: vdcoke@franzbc.com

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

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

Chain of Custody Record
Report To:
 Company: FRANZ Environmental
 Contact: Amanda Salway
 Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
 Phone: 604 652-9941 Fax: 604 652-9947
 LSD: _____
 Client Project #: 2090-1103

Report Information
 1. Name: Amanda Salway
 Email: amanda@franzbc.com
 2. Name: Viviane Dubois-Cox
 Email: vdcoke@franzbc.com

Invoice To:
 Same as above Yes No
 Company: Send copy of SRC
 Contact: to vdcoke@franzbc.com
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

Regulatory Requirements (Check):
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 Commercial FWAL

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment
3005714	MV-118M-09-1	Soil	13/12/2011	
722	MV-118M-09-2			
723	MV-118M-09-3			
724	MV-118M-09-4			
725	MV-118M-09-5			
726	MV-118M-09-6			
727	MV-118M-16M-1			
728	MV-118M-16M-2			
729	MV-118M-16M-3			
730	MV-118M-16M-4			
731	MV-118M-16M-5			
732	MV-DUPZ			

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Turnaround Time Required (TAT)
Regular TAT 5 to 7 working days
Rush TAT 24 to 48 hours
 48 to 72 hours

Report Information
 1. Name: Amanda Salway
 Email: amanda@franzbc.com
 2. Name: Viviane Dubois-Cox
 Email: vdcoke@franzbc.com

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Report Information
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 Agricultural Drinking Water
 Industrial Aquatic Life
 Urban/Park Irrigation
 Commercial Livestock
 CCME Industrial
 Drinking Water Residential/Park Drinking Water
 Commercial FWAL



Laboratories

120 - 8600 Gleniyon 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: _____
 LSD: _____
 Client Project #: _____

Report Information

1. Name: Same as previous
 Email: _____
 2. Name: _____
 Email: _____

Regulatory Requirements (Check):

BC CSR - Soil BC CSR - Water

Agricultural Drinking Water

Industrial Aquatic Life

Urban/Park Irrigation

Commercial Livestock

CCME

Drinking Water Industrial

Residential/Park Drinking Water

Commercial FWAL

Report Format

Single Sample per page

Multiple Samples per page

Excel Format Included

Laboratory Use Only

Arrival Temperature: _____
 AGAT Job Number: 11V539248

Notes: DEC 14 AM 8:03

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

Invoice To: Same as above Yes No

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

Comments - Site/Sample Info.

Sample Containment _____

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability	CS2 and CCME Metals	Phenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 4-year 60 days
300874	MV-118A-15M-1	Soil	13/12/2011												
735	MV-118A-15M-2														
736	MV-118A-15M-3														
740	MV-118A-15M-4														
743	MV-118A-15M-5														
750	MV-DUP3														
753	MV-118A-07M-1														
754	MV-118A-07M-2														
755	MV-118A-07M-3														
756	MV-118A-07M-4														
757	MV-118A-07M-5														
758	MV-118A-07M-6														

Samples Relinquished by (print name & sign): Mona Lisa Date: 13/12/2011

Samples Relinquished by (print name & sign): S. Cordus Date: 14-DEC-11 e 8:02 AM

Samples Received by (print name & sign): _____ Date: _____

Samples Received by (print name & sign): _____ Date: _____

Page 2 **of** 3

Pink Copy - Client

Yellow Copy - AGAT

White Copy - AGAT

NO: 000289

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

Report To:
Company: same as previous
Contact: previous
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

Turnaround Time Required (TAT)

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

Date Required: _____
Please contact laboratory if Rush is required

Laboratory Use Only

Arrival Temperature: _____
AGAT Job Number: 11V559248

Notes: _____
DEC 14 AMB:03

Invoice To: Same as above Yes No

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

Regulatory Requirements (Check):

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

BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/> 60 days
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F2-F4			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				CGME F1			<input checked="" type="checkbox"/>

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info
3088759	MV-118A-14M-1	Soil	13/12/2011	
1761	MV-118A-14M-2	↓		
1762	MV-118A-14M-3	↓		
1764	MV-118A-14M-4	↓		
1766	MV-118A-14M-5	↓		

Samples Relinquished by (print name & sign)	Date	Samples Received by (Print name & sign)	Date
<u>[Signature]</u>	13/12/2011	<u>S. Cowans</u>	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	Yellow Copy - AGAT	White Copy - AGAT
Page 3 of 3		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. COUZANS
 Relinquished by: Amara 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, 289290

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: _____

Consultant: FRANZ ENVIRONMENTAL

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 with 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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

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	MV-11BH-13M-3	MV-11BH-12M-1	MV-11BH-12M-2	MV-11BH-11M-1	MV-11BH-11M-4	BV-11BH-09M-1	BV-11BH-09M-5
				3011798	3011800	3011803	3011805	3011812	3011820	3011831	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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 CANADA V5J 0B6
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 FAX (778)452-4074
<http://www.agatlabs.com>

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	BV-11BH-01M-5	BV-Dup5
				3011850	3011858	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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

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	MV-11BH-13M-3	MV-11BH-12M-1	MV-11BH-12M-2	MV-11BH-11M-1	MV-11BH-11M-4	MV-Dup4	BV-11BH-01M-2
				3011798	3011800	3011803	3011805	3011812	3011820	3011830	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
BV-11BH-01M-5											
Parameter	Unit	G / S	RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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

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:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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

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 BV-11BH-09M-5	
				3011831	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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

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		MV-11BH-13M-3		MV-11BH-12M-1		MV-11BH-12M-2		MV-11BH-11M-1	
				3011798	3011800	RDL	3011803	RDL	3011805	RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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 MV-11BH-13M-3		MV-11BH-12M-1	MV-11BH-12M-2	MV-11BH-11M-1
			3011798	3011800	3011803	3011805	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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DATE REPORTED: Dec 21, 2011

SAMPLE TYPE: Soil

Parameter	Unit	G / S	MV-11BH-11M-4		MV-Dup4		BV-11BH-09M-1	BV-11BH-09M-5	BV-11BH-01M-2		
			RDL	3011820	RDL	3011830	RDL	3011831	3011841	RDL	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

Certified By:



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AGAT WORK ORDER: 11V559640

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Petroleum Hydrocarbons in Soil

DATE SAMPLED: Dec 14, 2011

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DATE REPORTED: Dec 21, 2011

SAMPLE TYPE: Soil

Surrogate	Unit	Acceptable Limits	MV-11BH-11M-4	MV-Dup4	BV-11BH-09M-1	BV-11BH-09M-5	BV-11BH-01M-2
			3011820	3011830	3011831	3011841	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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DATE REPORTED: Dec 21, 2011

SAMPLE TYPE: Soil

Parameter	Unit	BV-11BH-01M-5		
		G / S	RDL	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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SAMPLE TYPE: Soil

BV-11BH-01M-5

Surrogate	Unit	Acceptable Limits	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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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	MV-11BH-13M-3	MV-11BH-12M-1	MV-11BH-12M-2	MV-11BH-11M-1	MV-11BH-11M-4	BV-11BH-09M-1	BV-11BH-09M-5
				3011798	3011800	3011803	3011805	3011812	3011820	3011831	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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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	BV-11BH-01M-5	BV-Dup5
				3011850	3011858	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:

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 11V559640
 ATTENTION TO: Amanda Salway

Soil Analysis																
RPT Date: Dec 21, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

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			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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%

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 11V559640
 ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 21, 2011			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		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:





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

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

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

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

120 - 8600 Glenlyon Parkway
Burnaby, BC,
V5J 0B6
webeath.agatiabs.com

Chain of Custody Record

Ph.: 778.452.4000 • Fax: 778.452.7074

Report To:
 Company: Franz Environmental
 Contact: Amanda Sullivan
 Address: 108-1080 Mountainview St.
Vancouver, BC V6B 2T4
 Phone: 604 652-9744 Fax: 604 652-9742
 LSD: _____
 Client Project #: 2090-1103

Report Information
 1. Name: Amanda Sullivan
 Email: asullivan@franzbc.com
 2. Name: Viviane Dubois-Cote
 Email: vdco@cfranzbc.com

Regulatory Requirements (Check):
 BC CSR - Soil BC CSR - Water
 Agricultural Drinking Water
 Industrial Aquatic Life
 Urban/Park Irrigation
 Commercial Livestock
 CCME
 Drinking Water Industrial
 Residential/Park Drinking Water
 Commercial 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: 11N5591640

Notes: DEC 15 AM 8:03

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

BC CSR BTEX/VPH **BC CSR LPH/HEPH** **BC CSR Metals + CCME Metals** **VOCs** **BC CSR Schedule II** **Routine Potability** **CCME F2-F4** **CCME F1** **PAM** **Non-Chlorinated Aromatics**

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment	BC CSR BTEX/VPH	BC CSR LPH/HEPH	BC CSR Metals + CCME Metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F2-F4	CCME F1	PAM	Non-Chlorinated Aromatics	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3011783	MN-118K-13M-1	SOIL	14/12/2011		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
798	MN-118K-13M-2				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
800	MN-118K-13M-3				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
802	MN-118K-13M-4				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
803	MN-118M-12M-1				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
805	MN-118M-12M-2				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
807	MN-118M-12M-3				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
810	MN-118M-12M-4				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
812	MN-118M-11M-1				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
816	MN-118M-11M-2				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
817	MN-118M-11M-3				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
V820	MN-118M-11M-4				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Samples Relinquished by (print name & sign): M. Sullivan Date: 14/12/2011
 Samples Relinquished by (print name & sign): S. Cote Date: 15-DEC-11
 Samples Relinquished by (print name & sign): _____ Date: _____
 Samples Relinquished by (print name & sign): _____ Date: _____

Page 1 of 3
 NO: 000291



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

Report To:
 Company: SAME AS PREVIOUS
 Contact: _____
 Address: _____
 Phone: _____
 LSD: _____
 Client Project #: _____

Report Information
 1. Name: SAME AS PREVIOUS
 Email: _____
 2. Name: _____
 Email: _____

Regulatory Requirements (Check):

BC CSR - Soil **BC CSR - Water**

Agricultural Drinking Water
 Industrial Aquatic Life
 Urban/Park Irrigation
 Commercial Livestock

CCME

Drinking Water Industrial
 Residential/Park Drinking Water
 Commercial FWAL

Report Format

Single Sample per page
 Multiple Samples per page
 Excel Format Included

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

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

Invoice To: Same as above Yes No

Company: _____
 Contact: _____
 Address: _____
 Phone: _____
 PO/A/E #: _____

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	CMET 1-PM	CMET 2-PM	CMET 3-PM	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
301830	MV-DUP24	SOIL	14/12/2011		X	X					X	X	X	2			
831	BV-11BK-09M-1				X	X					X	X	X	3			
833	BV-11BK-09M-2				X	X					X	X	X	3			
834	BV-11BK-09M-3				X	X					X	X	X	3			
838	BV-11BK-09M-4				X	X					X	X	X	3			
841	BV-11BK-09M-5				X	X					X	X	X	3			
842	BV-11BK-09M-6				X	X					X	X	X	3			
845	BV-11BK-01M-1				X	X					X	X	X	4			
850	BV-11BK-01M-2				X	X					X	X	X	4			
851	BV-11BK-01M-3				X	X					X	X	X	4			
855	BV-11BK-01M-4				X	X					X	X	X	4			
858	BV-11BK-01M-5				X	X					X	X	X	4			

Samples Relinquished by (print name & sign): Angela Date: 14/12/2011

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Received by (Print name & sign): _____ Date: _____

Samples Received by (Print name & sign): _____ Date: _____

Samples Received by (Print name & sign): _____ Date: _____

Pink Copy - Client Page 2 of 3
 Yellow Copy - AGAT
 White Copy - AGAT

NO: 000292



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, 2011 / 8:10 AM
 Courier: DAL
 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: 000291 WOH# 11V559640

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

TIME SENSITIVE ISSUES:
 Earliest Date Sampled: Dec. 14, 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) 0 + 0 + 0 = 0 °C (2) _____ + _____ + _____ = _____ °C (3) _____ + _____ + _____ = _____ °C (4) _____ + _____ + _____ = _____ °C
 *Jars used when available
JAN 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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

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	MV-11BH-13M-3	MV-11BH-12M-1	MV-11BH-12M-2	MV-11BH-11M-1	MV-11BH-11M-4	BV-11BH-09M-1	BV-11BH-09M-5
				3011798	3011800	3011803	3011805	3011812	3011820	3011831	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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

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	BV-11BH-01M-5	BV-Dup5
				3011850	3011858	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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

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	MV-11BH-13M-3	MV-11BH-12M-1	MV-11BH-12M-2	MV-11BH-11M-1	MV-11BH-11M-4	MV-Dup4	BV-11BH-01M-2
				3011798	3011800	3011803	3011805	3011812	3011820	3011830	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

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 (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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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 BV-11BH-09M-5	
				3011831	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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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		MV-11BH-13M-3		MV-11BH-12M-1		MV-11BH-12M-2		MV-11BH-11M-1	
				3011798	3011800	RDL	3011803	RDL	3011805	RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

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<http://www.agatlabs.com>

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 MV-11BH-13M-3		MV-11BH-12M-1	MV-11BH-12M-2	MV-11BH-11M-1
			3011798	3011800	3011803	3011805	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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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	MV-11BH-11M-4		MV-Dup4		BV-11BH-09M-1	BV-11BH-09M-5	BV-11BH-01M-2		
			RDL	3011820	RDL	3011830	RDL	3011831	3011841	RDL	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

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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	MV-Dup4	BV-11BH-09M-1	BV-11BH-09M-5	BV-11BH-01M-2
			3011820	3011830	3011831	3011841	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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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	BV-11BH-01M-5		
		G / S	RDL	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

Certified By:



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AGAT WORK ORDER: 11V559640

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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	BV-11BH-01M-5	
		Acceptable Limits	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

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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	MV-11BH-13M-3	MV-11BH-12M-1	MV-11BH-12M-2	MV-11BH-11M-1	MV-11BH-11M-4	BV-11BH-09M-1	BV-11BH-09M-5
				3011798	3011800	3011803	3011805	3011812	3011820	3011831	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V559640

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
 CANADA V5J 0B6
 TEL (778)452-4000
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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	BV-11BH-01M-5	BV-Dup5
				3011850	3011858	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:

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 11V559640
 ATTENTION TO: Amanda Salway

Soil Analysis																
RPT Date: Dec 21, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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%

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 11V559640
 ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Dec 21, 2011			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		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%

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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

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

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

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

120 - 8600 Glenlyon Parkway
Burnaby, BC,
V5J 0B6
webeath.agatiabs.com

Chain of Custody Record

Ph.: 778.452.4000 • Fax: 778.452.7074

Report To:
 Company: Franz Environmental
 Contact: Amanda Sullivan
 Address: 108-1080 Mountainview St.
Vancouver, BC V6B 2T4
 Phone: 604 652-9747 Fax: 604 652-9742
 LSD: _____
 Client Project #: 2090-1103

Report Information
 1. Name: Amanda Sullivan
 Email: asullivan@franzbc.com
 2. Name: Viviane Dubois-Cote
 Email: vdco@franzbc.com

Regulatory Requirements (Check):
 BC CSR - Soil **BC CSR - Water**
 Agricultural Drinking Water
 Industrial Aquatic Life
 Urban/Park Irrigation
 Commercial Livestock
 CCME
 Drinking Water Industrial
 Residential/Park Drinking Water
 Commercial 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
 Rush TAT 48 to 72 hours

Date Required: _____
 Please contact laboratory if Rush is required

Laboratory Use Only
 Arrival Temperature: 3°C
 AGAT Job Number: 11V559640

Notes: DEC 15 AM 8:03

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

BC CSR BTEX/VPH	BC CSR LPH/HEPH	BC CSR Metals + CCME Metals	VOCs	BC CSR Schedule II	Routine Potability	CCME F2-F4	CCME F1	PAM	Non-Chlorinated	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
X	X	X	X	X	X	X	X	X	X	4			X
X	X	X	X	X	X	X	X	X	X	4			X
X	X	X	X	X	X	X	X	X	X	3			X
X	X	X	X	X	X	X	X	X	X	4			X
X	X	X	X	X	X	X	X	X	X	4			X
X	X	X	X	X	X	X	X	X	X	3			X
X	X	X	X	X	X	X	X	X	X	4			X
X	X	X	X	X	X	X	X	X	X	4			X
X	X	X	X	X	X	X	X	X	X	4			X
X	X	X	X	X	X	X	X	X	X	4			X

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment
3011783	MV-118K-13M-1	SOIL	14/12/2011	
798	MV-118K-13M-2			
800	MV-118K-13M-3			
802	MV-118K-13M-4			
803	MV-118M-12M-1			
805	MV-118M-12M-2			
807	MV-118M-12M-3			
810	MV-118M-12M-4			
812	MV-118M-11M-1			
816	MV-118M-11M-2			
817	MV-118M-11M-3			
V820	MV-118M-11M-4			

Samples Relinquished by (print name & sign): M. Sullivan Date: 14/12/2011
 Samples Relinquished by (print name & sign): S. Cote Date: 15-DEC-11
 Samples Relinquished by (print name & sign): _____ Date: _____
 Samples Relinquished by (print name & sign): _____ Date: _____

Page 1 of 3
 Pink Copy - Client
 Yellow Copy - AGAT
 White Copy - AGAT
 NO: 000291



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

Report To:
 Company: SAME AS PREVIOUS
 Contact: _____
 Address: _____
 Phone: _____
 LSD: _____
 Client Project #: _____

Report Information
 1. Name: SAME AS PREVIOUS
 Email: _____
 2. Name: _____
 Email: _____

Regulatory Requirements (Check):

BC CSR - Soil **BC CSR - Water**

Agricultural Drinking Water
 Industrial Aquatic Life
 Urban/Park Irrigation
 Commercial Livestock

CCME

Drinking Water Industrial
 Residential/Park Drinking Water
 Commercial FWAL

Report Format

Single Sample per page
 Multiple Samples per page
 Excel Format Included

Invoice To: Same as above Yes No

Company: _____
 Contact: _____
 Address: _____
 Phone: _____
 PO/A/E #: _____

Date Required: _____
 Please contact laboratory if Rush is required

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

Turnaround Time Required (TAT)

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

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	CMET 1-PM	CMET 2-PM	CMET 3-PM	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
301830	MV-DUP24	SOIL	14/12/2011		X	X					X	X	X	2			
831	BV-11BK-09M-1				X	X					X	X	X	3			
833	BV-11BK-09M-2				X	X					X	X	X	3			
834	BV-11BK-09M-3				X	X					X	X	X	3			
838	BV-11BK-09M-4				X	X					X	X	X	3			
841	BV-11BK-09M-5				X	X					X	X	X	3			
842	BV-11BK-09M-6				X	X					X	X	X	3			
845	BV-11BK-01M-1				X	X					X	X	X	4			
850	BV-11BK-01M-2				X	X					X	X	X	4			
851	BV-11BK-01M-3				X	X					X	X	X	4			
855	BV-11BK-01M-4				X	X					X	X	X	4			
858	BV-11BK-01M-5				X	X					X	X	X	4			

Samples Relinquished by (print name & sign): Angela Date: 14/12/2011

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Received by (Print name & sign): _____ Date: _____

Samples Received by (Print name & sign): _____ Date: _____

Samples Received by (Print name & sign): _____ Date: _____

Pink Copy - Client Page 2 of 3
 Yellow Copy - AGAT
 White Copy - AGAT

NO: 000292



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, 2011 / 8:10 AM
 Courier: DAL
 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: 000291 WOH# 11V559640

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

TIME SENSITIVE ISSUES:
 Earliest Date Sampled: Dec. 14, 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) 0 + 0 + 0 = 0 °C (2) _____ + _____ + _____ = _____ °C (3) _____ + _____ + _____ = _____ °C (4) _____ + _____ + _____ = _____ °C
 *Jars used when available
JAN 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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	MV-11BH-01M-3	MV-11BH-01M-4	BV-11BH-03M-1	BV-11BH-03M-3
				3017390	3017392	3017393	3017398	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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	MV-11BH-01M-4	
			RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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 BV-11BH-03M-3	
				3017398	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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	MV-11BH-17M-3	MV-DUP7
				3017445	3017448	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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	BV-11BH-03M-3	MV-11BH-17M-1	MV-11BH-17M-3	MV-DUP7
				3017398	3017432	3017445	3017448	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
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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	BV-11BH-03M-3	MV-11BH-17M-1	MV-11BH-17M-3	MV-DUP7
			3017398	3017432	3017445	3017448	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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 BV-11BH-03M-3	
				3017398	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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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	MV-Dup
				3017393	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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	MV-Dup
				3017393	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560293
 ATTENTION TO: Amanda Salway

Soil Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

Certified By: _____

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:





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

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

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

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

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

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

Chain of Custody Record

Ph.: 778.452.4000 • Fax: 778.452.7074

Report To:
 Company: Franz Environmental
 Contact: Amanda Salway
 Address: 308-1080 Munton Rd St.
Vancouver, BC V6B 2T4
 Phone: 604 632-9944 Fax: 604-632-9944
 LSD: _____
 Client Project #: 2090-1103

Report Information
 1. Name: Amanda Salway
 Email: asalway@franzbc.com
 2. Name: Vivian Dupois-COPE
 Email: vdcope@franzbc.com

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

Date Required: _____
 Please contact laboratory if Rush is required

Notes: DEC 15 AM 7:56

Turnaround Time Required (TAT)
 Regular TAT 5 to 7 working days
 Rush TAT 24 to 48 hours
 48 to 72 hours

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

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 COME work	VOCs	BC CSR Schedule II	Routine Potability	Sulfides	Salts	F1-F4	PAH	Phonols/Chlorinated/Other Non-halogenated	CMF F2-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
17586	MV-118A-O1M-1	Soil	15/12/2011														1			X
390	MV-118A-O1M-2																3			X
392	MV-118A-O1M-3																1			X
393	MV-118A-O1M-4																3			X
394	MV-118A-O1M-5																3			X
396	MV-DUP6																1			X
398	BV-118A-O3M-1																4			X
400	BV-118A-O3M-2																4			X
432	BV-118A-O3M-3																4			X
443	BV-118A-O3M-4																4			X
444	BV-118A-O3M-5																4			X
445	MV-118A-O1M-1																2			X

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

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

Page 1 of 2
 No: 000294



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

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

Report Information
 1. Name: Same as previous
 Email: _____
 2. Name: _____
 Email: _____

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

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

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

Laboratory Use Only 3°C
 Arrival Temperature: _____
 AGAT Job Number: 1N560293

Notes: DEC 15 AM 7:55

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

BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability	CCME P2-P4	PAH	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment
3017446	MV-118M-17M-2	SOIL	15/12/2011	
7448	MV-118M-17M-3	↓		
7449	MV-118M-17M-4	↓		
7451	MV-DUP1	↓		

Samples Relinquished by (print name & sign): Andrew Ramsay Date: 15/12/2011

Samples Relinquished by (print name & sign): S. Collins Date: 16-DEC-11 @ 7:56 AM

Samples Relinquished by (print name & sign): _____ Date: _____

Page 2 **of** 2

NO: 000295

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



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. Collins
 Relinquished by: In dropoff Area
 Branch Received From: _____
 Company: FranzEW
 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 Bhees Have they been notified of the above issues: Yes No
 Whom spoken to: Melissa Bhees Date and Time: 16-DEC-11 @ 10:00AM

ADDITIONAL NOTES:

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.



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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	MV-11BH-01M-3	MV-11BH-01M-4	BV-11BH-03M-1	BV-11BH-03M-3
				3017390	3017392	3017393	3017398	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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	MV-11BH-01M-4	
			RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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 BV-11BH-03M-3	
				3017398	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			
Ethylbenzene-d10 (BTEX)	%	50-150			
o-Terphenyl (F2-F4)	%	50-150			

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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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	MV-11BH-17M-3	MV-DUP7
				3017445	3017448	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

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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	BV-11BH-03M-3	MV-11BH-17M-1	MV-11BH-17M-3	MV-DUP7
				3017398	3017432	3017445	3017448	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	BV-11BH-03M-3	MV-11BH-17M-1	MV-11BH-17M-3	MV-DUP7
			3017398	3017432	3017445	3017448	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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 BV-11BH-03M-3	
				3017398	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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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	MV-Dup
				3017393	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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	MV-Dup
				3017393	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560293
 ATTENTION TO: Amanda Salway

Soil Analysis (Continued)

RPT Date: Dec 23, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

Certified By: _____

Mari England

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE	
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:





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

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

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

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

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

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

Chain of Custody Record

Ph.: 778.452.4000 • Fax: 778.452.7074

Report To:
 Company: Franz Environmental
 Contact: Amanda Salway
 Address: 308-1080 Munton Rd St.
Vancouver, BC V6B 2T4
 Phone: 604 632-9944 Fax: 604-632-9944
 LSD: _____
 Client Project #: 2090-1103

Report Information
 1. Name: Amanda Salway
 Email: asalway@franzbc.com
 2. Name: Vivian Dupois-COPE
 Email: vdcope@franzbc.com

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

Date Required: _____
 Please contact laboratory if Rush is required

Notes: DEC 15 AM 7:56

Turnaround Time Required (TAT)
 Regular TAT 5 to 7 working days
 Rush TAT 24 to 48 hours
 48 to 72 hours

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

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 COME work	VOCs	BC CSR Schedule II	Routine Potability	Sulfides	Salts	PAH	Phonols/Chlorinated/Other non-halogenated	CMF F2-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
17386	MV-118A-O1M-1	Soil	15/12/2011													1			X
390	MV-118A-O1M-2															3			X
392	MV-118A-O1M-3															1			X
393	MV-118A-O1M-4															3			X
394	MV-118A-O1M-5															3			X
396	MV-DUP6															1			X
398	BV-118A-O3M-1															4			X
400	BV-118A-O3M-2															4			X
432	BV-118A-O3M-3															4			X
443	BV-118A-O3M-4															4			X
444	BV-118A-O3M-5															4			X
445	MV-118A-O1M-1															2			X

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

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

Page 1 of 2
 No: 000294



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

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

Report Information
 1. Name: Same as previous
 Email: _____
 2. Name: _____
 Email: _____

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

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

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

Laboratory Use Only 3°C
 Arrival Temperature: _____
 AGAT Job Number: 1N560293

Notes: DEC 15 AM 7:55

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

BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability	CCME P2-P4	PAH	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment
3017446	MV-118M-17M-2	SOIL	15/12/2011	
7448	MV-118M-17M-3	↓		
7449	MV-118M-17M-4	↓		
7451	MV-DUP1	↓		

Samples Relinquished by (print name & sign): Andrew Ramsay Date: 15/12/2011

Samples Relinquished by (print name & sign): S. Collins Date: 16-DEC-11 @ 7:56 AM

Samples Relinquished by (print name & sign): _____ Date: _____

Page 2 **of** 2

NO: 000295

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



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. Collins
 Relinquished by: In dropoff Area
 Branch Received From: _____
 Company: FranzEW
 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 Bhees Have they been notified of the above issues: Yes No
 Whom spoken to: Melissa Bhees Date and Time: 16-DEC-11 @ 10:00AM

ADDITIONAL NOTES:

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.



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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	MV-11BH-01M-3	MV-11BH-01M-4	BV-11BH-03M-1	BV-11BH-03M-3
				3017390	3017392	3017393	3017398	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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	MV-11BH-01M-4	
			RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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

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	BV-11BH-03M-1 BV-11BH-03M-3		
			RDL	3017398	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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	MV-11BH-17M-3	MV-DUP7
				3017445	3017448	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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	BV-11BH-03M-3	MV-11BH-17M-1	MV-11BH-17M-3	MV-DUP7
				3017398	3017432	3017445	3017448	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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	BV-11BH-03M-3	MV-11BH-17M-1	MV-11BH-17M-3	MV-DUP7
			3017398	3017432	3017445	3017448	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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 BV-11BH-03M-3	
				3017398	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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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	MV-Dup
				3017393	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V560293

PROJECT NO: 2090-1103

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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	MV-Dup
				3017393	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560293
 ATTENTION TO: Amanda Salway

Soil Analysis (Continued)

RPT Date: Dec 23, 2011		DUPLICATE					Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

Certified By: _____

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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 Sulfide	INOR-181-6031	BC MOE Lab Manual	PH METER 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

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

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

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

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

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

Chain of Custody Record

Ph.: 778.452.4000 • Fax: 778.452.7074

Report To:
 Company: Franz Environmental
 Contact: Amanda Salway
 Address: 308-1080 Munton Rd St.
Vancouver, BC V6B 2T4
 Phone: 604 632-9944 Fax: 604-632-9944
 LSD: _____
 Client Project #: 2090-1103

Report Information
 1. Name: Amanda Salway
 Email: asalway@franzbc.com
 2. Name: Vivian Dupois-COPE
 Email: vdcope@franzbc.com

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

Date Required: _____
 Please contact laboratory if Rush is required

Notes: DEC 15 AM 7:56

Turnaround Time Required (TAT)
 Regular TAT 5 to 7 working days
 Rush TAT 24 to 48 hours
 48 to 72 hours

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals and COME work	VOCs	BC CSR Schedule II	Routine Potability	Sulfides	Salts	PAH	Phonols/Chlorophenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
										1			X
										3			
										1			
										3			
										3			
										1			
										4			
										4			
										4			
										4			
										4			
										2			

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 COME work	VOCs	BC CSR Schedule II	Routine Potability	Sulfides	Salts	PAH	Phonols/Chlorophenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
17586	MV-1181-O1M-1	Soil	15/12/2011												1			X
390	MV-1181-O1M-2														3			
392	MV-1181-O1M-3														1			
393	MV-1181-O1M-4														3			
394	MV-1181-O1M-5														3			
396	MV-DUP6														1			
398	BV-1181-O3M-1														4			
400	BV-1181-O3M-2														4			
432	BV-1181-O3M-3														4			
443	BV-1181-O3M-4														4			
444	BV-1181-O3M-5														4			
445	MV-1181-O1M-1														2			

Report Information
 1. Name: Amanda Salway
 Email: asalway@franzbc.com
 2. Name: Vivian Dupois-COPE
 Email: vdcope@franzbc.com

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

Date Required: _____
 Please contact laboratory if Rush is required

Notes: DEC 15 AM 7:56

Chain of Custody
 Samples Relinquished by (print name & sign): S. COUERS Date: 15/12/2011
 Samples Relinquished by (print name & sign): S. COUERS Date: 16-DEC-11 @ 7:56 AM
 Samples Relinquished by (print name & sign): _____ Date: _____

Page	of
1	2

No: **000294**



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

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

Report Information
 1. Name: Same as previous
 Email: _____
 2. Name: _____
 Email: _____

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

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

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

Laboratory Use Only 3°C
 Arrival Temperature: _____
 AGAT Job Number: 1N560293

Notes: DEC 15 AM 7:55

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

BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals	VOCs	BC CSR Schedule II	Routine Potability	CCME P2-P4	PAH	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment
3017446	MV-118M-17M-2	SOIL	15/12/2011	
7448	MV-118M-17M-3	↓		
7449	MV-118M-17M-4	↓		
7451	MV-DUP1	↓		

Samples Relinquished by (print name & sign): Andrew Ramsay Date: 15/12/2011

Samples Relinquished by (print name & sign): S. Collins Date: 16-DEC-11 @ 7:56 AM

Samples Relinquished by (print name & sign): _____ Date: _____

Page 2 **of** 2

NO: 000295

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



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. Collins
 Relinquished by: In dropoff Area
 Branch Received From: _____
 Company: FranzEW
 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 Bhee Have they been notified of the above issues: Yes No
 Whom spoken to: Melissa Bhee Date and Time: 16-DEC-11 @ 10:00AM

ADDITIONAL NOTES:



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 reprepared 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.



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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	MV-11BH-04M-4	MV-11BH-04M-5	MV-11BH-03M-3	MV-11BH-03M-4	MV-11BH-03M-5	MV-11BH-02M-3	MV-11BH-02M-4
				3020034	3020035	3020036	3020046	3020047	3020049	3020054	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:



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AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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 BV-11BH-02M-2 BV-11BH-02M-3		
				3020056	3020066	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

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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 MV-11BH-02M-5	
				3020046	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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Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-02M-2	BV-11BH-02M-3
				3020046	3020047	3020056	3020057	3020066	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
Ethylbenzene-d10 (BTEX)	%	50-150			107	98	108	113	101
o-Terphenyl (F2-F4)	%	50-150			115	100	103	100	98

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:



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AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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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 BV-11BH-08M-4	
				3020058	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-08M-1	BV-11BH-08M-4	BV-11BH-02M-2	BV-11BH-02M-3
				3020046	3020047	3020056	3020057	3020058	3020062	3020066	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

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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-08M-1	BV-11BH-08M-4	BV-11BH-02M-2	BV-11BH-02M-3
			3020046	3020047	3020056	3020057	3020058	3020062	3020066	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

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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-02M-2	BV-11BH-02M-3
				3020046	3020047	3020056	3020057	3020066	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:



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AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6
				3020046	3020047	3020056	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6
				3020046	3020047	3020056	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:

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 11V560614
 ATTENTION TO: Amanda Salway

Soil Analysis																
RPT Date: Dec 30, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: 

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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	22.2%	< 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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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

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

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

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

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
1,1,1,2-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

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

Chain of Custody Record

Report To:
 Company: FAM2 Environmental
 Contact: Amanda Salway
 Address: 308-1080 Mannings 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/A/E #: _____

Report Information
 1. Name: Amanda Salway
 Email: asalway@francbe.com
 2. Name: Viviane Dubois-Cole
 Email: vdcois@francbe.com

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

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

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

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	CMF F1-F4	PAN	Sulfides	Sodium and chloride <u>Chloride and Chlorine</u>	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 year - 60 days
3020032	MV-11B1-04M-1	Soil	16/12/2011												1			
033	MV-11B1-04M-2														1			
034	MV-11B1-04M-3														1			
035	MV-11B1-04M-4														1			
036	MV-11B1-04M-5														1			
037	MV-11B1-04M-6														1			
038	MV-11B1-03M-1														1			
043	MV-11B1-03M-2														1			
046	MV-11B1-03M-3														5			
047	MV-11B1-03M-4														5			
049	MV-11B1-03M-5														5			
051	MV-11B1-03M-6														1			

for samples with 5 jars and only metal analysis, hold the remaining 4 jars

Samples Relinquished by (print name & sign): S. Coles Date: 17-DEC-11 @ 8:04 AM
 Samples Relinquished by (print name & sign): _____ Date: _____
 Samples Relinquished by (print name & sign): _____ Date: _____

Page 1 of 3
 NO: 000296



AGAT Laboratories

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

Turnaround Time Required (TAT)

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

Report To:

Company: Franz Environmental
Contact: _____
Address: Same as previous
Phone: _____ Fax: _____
LSD: _____
Client Project #: _____

Invoice To:

Same as above Yes No
Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/A/E #: _____

Report Information

1. Name: _____
Email: Same as previous
2. Name: _____
Email: _____

Regulatory Requirements (Check):

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

Report Format

Single Sample per page
 Multiple Samples per page
 Excel Format Included

Ph: 778.452.4000 - Fax: 778.452.7074

Date Required: _____
Please contact laboratory if Rush is required

Laboratory Use Only

Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614

Notes: DEC 17 8:04

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	CGME FI-F4	PAN	Switches	Sodium and chloride	PROMIS (Chloride and non-chloride)	CGME FI-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR - 60 days
3020052	MV-11BM-02M-1	soil	16/12/2011	for samples with 5 jars and only metals analysis, hold the other 4 jars													1			
053	MV-11BM-02M-2																5			
054	MV-11BM-02M-3																5			
055	MV-11BM-02M-4																5			
056	MV-11BM-02M-5																5			
057	MV-11BM-02M-6																5			
058	BV-11BM-08M-1																2			
059	BV-11BM-08M-2																2			
060	BV-11BM-08M-3																2			
062	BV-11BM-08M-4																2			
063	BV-11BM-08M-5																2			
066	BV-11BM-08M-6																2			
Samples Relinquished by (print name & sign): _____																				
Date: <u>16/12/2011</u>																				
Samples Relinquished by (print name & sign): <u>S. COVENS</u>																				
Date: <u>17-DEC-11 @ 8:04 AM</u>																				
Samples Relinquished by (print name & sign): _____																				
Date: _____																				
Samples Relinquished by (print name & sign): _____																				
Date: _____																				

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

Page 2 of 3
NO: 000297



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

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

Report Information
 1. Name: Same as previous
 Email: _____
 2. Name: _____
 Email: _____

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

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

Date Required: _____
 Please contact laboratory if Rush is required

Notes: DEC 17 AM 8:04

Turnaround Time Required (TAT)
 Regular TAT 5 to 7 working days
 Rush TAT 24 to 48 hours
 48 to 72 hours

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

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	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3020065	BV-11B1-02M-1	Soil	16/12/2011		X	X	X				4			X
1066	BV-11B1-02M-2				X	X	X				4			X
1067	BV-11B1-02M-3				X	X	X				4			X
1068	BV-11B1-02M-4				X	X	X				4			X
1069	BV-11B1-02M-5				X	X	X				4			X
1070	BV-11B1-02M-6				X	X	X				4			X

Chain of Custody:

Samples Relinquished by (print name & sign): <u>[Signature]</u>	Date: <u>16/12/2011</u>	Samples Received by (Print name & sign): <u>[Signature]</u>	Date: <u>17-DEC-11 @ 8:04 AM</u>
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: _____

Page 3 of 3
 NO: 000298



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11560614

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: 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: 00296, 297, 298

SAMPLE QUANTITIES:

Coolers: _____ Bottles/Jars: 86 Bags: _____

TIME SENSITIVE ISSUES:

Earliest Date Sampled: 16-DEC-11 ALREADY EXCEEDED? Yes No
 Microbiology: Test: _____ Expiry: _____
 Hydrocarbons: Test: BTEX Expiry: 23-DEC-11
 Samples are received >5 days after sampling: Yes No

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:



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 reprepared 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.



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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	MV-11BH-04M-4	MV-11BH-04M-5	MV-11BH-03M-3	MV-11BH-03M-4	MV-11BH-03M-5	MV-11BH-02M-3	MV-11BH-02M-4
				3020034	3020035	3020036	3020046	3020047	3020049	3020054	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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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 BV-11BH-02M-2 BV-11BH-02M-3		
				3020056	3020066	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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<http://www.agatlabs.com>

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 MV-11BH-02M-5	
				3020046	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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Burnaby, British Columbia
CANADA V5J 0B6
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<http://www.agatlabs.com>

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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-02M-2	BV-11BH-02M-3
				3020046	3020047	3020056	3020057	3020066	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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 BV-11BH-08M-4	
				3020058	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-08M-1	BV-11BH-08M-4	BV-11BH-02M-2	BV-11BH-02M-3
				3020046	3020047	3020056	3020057	3020058	3020062	3020066	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-02M-2	BV-11BH-02M-3
				3020046	3020047	3020056	3020057	3020066	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6
				3020046	3020047	3020056	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6
				3020046	3020047	3020056	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:

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 11V560614
 ATTENTION TO: Amanda Salway

Soil Analysis																
RPT Date: Dec 30, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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	22.2%	< 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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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

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

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

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

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
1,1,1,2-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

120 - 8600 Glenlyon Parkway
Burnaby, BC,
V5J 0B6
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Chain of Custody Record

Report To:
 Company: FAMZ Environmental
 Contact: Amanda Salway
 Address: 308-1080 Mannings 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/A/E #: _____

Report Information
 1. Name: Amanda Salway
 Email: asalway@franze.com
 2. Name: Viviane Dubois-Cole
 Email: vdcois@franze.com

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

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

Date Required: _____
 Please contact laboratory if Rush is required
Laboratory Use Only
 Arrival Temperature: 2.5°C
 AGAT Job Number: 11V560614
 Notes: DEC 17 AM 8:04

Turnaround Time Required (TAT)
 Regular TAT 5 to 7 working days
 Rush TAT 24 to 48 hours
 48 to 72 hours

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	CMF F-174	PAN	Sulfides	Sodium and chloride <u>chlorinated and non-chlorinated</u>	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 year - 60 days
3020032	MV-11B1-04M-1	soil	16/12/2011												1			
033	MV-11B1-04M-2														1			
034	MV-11B1-04M-3														1			
035	MV-11B1-04M-4														1			
036	MV-11B1-04M-5														1			
037	MV-11B1-04M-6														1			
038	MV-11B1-03M-1														1			
043	MV-11B1-03M-2														1			
046	MV-11B1-03M-3														5			
047	MV-11B1-03M-4														5			
049	MV-11B1-03M-5														5			
051	MV-11B1-03M-6														1			
Samples Relinquished by (print name & sign): <u>Amanda Salway</u> Date: <u>16/12/2011</u>				Samples Received by (print name & sign): <u>S. Coles</u> Date: <u>17-DEC-11 @ 8:04 AM</u>				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: _____				Samples Relinquished by (print name & sign): _____ Date: _____				Samples Received by (print name & sign): _____ Date: _____						

Page 1 of 3
 NO: 000296



AGAT Laboratories

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

Turnaround Time Required (TAT)

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

Report To:

Company: Franz Environmental
Contact: _____
Address: Same as previous
Phone: _____ Fax: _____
LSD: _____
Client Project #: _____

Invoice To:

Same as above Yes No
Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/A/E #: _____

Report Information

1. Name: _____
Email: Same as previous
2. Name: _____
Email: _____

Regulatory Requirements (Check):

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

Report Format

Single Sample per page
 Multiple Samples per page
 Excel Format Included

Ph: 778.452.4000 - Fax: 778.452.7074

Date Required: _____
Please contact laboratory if Rush is required

Laboratory Use Only

Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614

Notes: DEC 17 8:04

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	CGME FI-F4	PAN	Switches	Sodium and chloride	PROMIS (Chloride and non-chloride)	CGME FI-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR - 60 days
3020052	MV-11BM-02M-1	soil	16/12/2011	for samples with 5 jars and only metals analysis, hold the other 4 jars													1			
053	MV-11BM-02M-2																5			
054	MV-11BM-02M-3																5			
055	MV-11BM-02M-4																5			
056	MV-11BM-02M-5																5			
057	MV-11BM-02M-6																5			
058	BV-11BM-08M-1																2			
059	BV-11BM-08M-2																2			
060	BV-11BM-08M-3																2			
062	BV-11BM-08M-4																2			
063	BV-11BM-08M-5																2			
066	BV-11BM-08M-6																2			
Samples Relinquished by (print name & sign): _____																				
Samples Relinquished by (print name & sign): _____																				
Samples Relinquished by (print name & sign): _____																				

Page 2 of 3
Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT
NO: 000297



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

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

Report Information
 1. Name: Same as previous
 Email: _____
 2. Name: _____
 Email: _____

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

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

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

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

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	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3020065	BV-11B1-02M-1	Soil	16/12/2011		X	X	X				4			X
1066	BV-11B1-02M-2				X	X	X				4			X
1067	BV-11B1-02M-3				X	X	X				4			X
1068	BV-11B1-02M-4				X	X	X				4			X
1069	BV-11B1-02M-5				X	X	X				4			X
1070	BV-11B1-02M-6				X	X	X				4			X

Chain of Custody:

Samples Relinquished by (print name & sign):	Date: <u>16/12/2011</u>	Samples Received by (Print name & sign):	Date: <u>17-DEC-11 @ 8:04 AM</u>
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



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11560614

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: 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: 00296, 297, 298

SAMPLE QUANTITIES:

Coolers: _____ Bottles/Jars: 86 Bags: _____

TIME SENSITIVE ISSUES:

Earliest Date Sampled: 16-DEC-11 ALREADY EXCEEDED? Yes No
 Microbiology: Test: _____ Expiry: _____
 Hydrocarbons: Test: BTEX Expiry: 23-DEC-11
 Samples are received >5 days after sampling: Yes No

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:

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 reprepared 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.



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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	MV-11BH-04M-4	MV-11BH-04M-5	MV-11BH-03M-3	MV-11BH-03M-4	MV-11BH-03M-5	MV-11BH-02M-3	MV-11BH-02M-4
				3020034	3020035	3020036	3020046	3020047	3020049	3020054	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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 BV-11BH-02M-2 BV-11BH-02M-3		
				3020056	3020066	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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

MV-11BH-03M-3 MV-11BH-02M-5

Parameter	Unit	G / S	RDL	3020046	3020056
Sulfide	%		0.01	<0.01	0.11

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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 MV-11BH-02M-5	
				3020046	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-02M-2	BV-11BH-02M-3
				3020046	3020047	3020056	3020057	3020066	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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 BV-11BH-08M-4	
				3020058	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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

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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-08M-1	BV-11BH-08M-4	BV-11BH-02M-2	BV-11BH-02M-3
				3020046	3020047	3020056	3020057	3020058	3020062	3020066	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-08M-1	BV-11BH-08M-4	BV-11BH-02M-2	BV-11BH-02M-3
			3020046	3020047	3020056	3020057	3020058	3020062	3020066	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6	BV-11BH-02M-2	BV-11BH-02M-3
				3020046	3020047	3020056	3020057	3020066	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6
				3020046	3020047	3020056	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560614

PROJECT NO: 2090-1103

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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	MV-11BH-03M-4	MV-11BH-02M-5	MV-11BH-02M-6
				3020046	3020047	3020056	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:

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 11V560614
 ATTENTION TO: Amanda Salway

Soil Analysis																
RPT Date: Dec 30, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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	22.2%	< 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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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 Sulfide	INOR-181-6031	BC MOE Lab Manual	PH METER 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

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

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

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

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
1,1,1,2-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

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

Chain of Custody Record

Report To:

Company: FAM2 Environmental
Contact: Amanda Salway
Address: 308-1080 Mannings
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/A/E #: _____

Report Information

1. Name: Amanda Salway
Email: asalway@franze.com
2. Name: Viviane Dubois-Cole
Email: vdcoie@franze.com

Regulatory Requirements (Check):

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

Report Format

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

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
- Rush TAT 48 to 72 hours

Date Required: _____

Please contact laboratory if Rush is required.

Laboratory Use Only

Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614

Notes: DEC 17 AM 8:04

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	PCME F1-F4	PAN	Sulfides	<u>Chloride and Chloride (non-chloride)</u>	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR - 60 days
3020032	MV-11B1-04M-1	Soil	16/12/2011												1			
033	MV-11B1-04M-2														1			
034	MV-11B1-04M-3														1			
035	MV-11B1-04M-4														1			
036	MV-11B1-04M-5														1			
037	MV-11B1-04M-6														1			
038	MV-11B1-03M-1														1			
043	MV-11B1-03M-2														1			
046	MV-11B1-03M-3														5			
047	MV-11B1-03M-4														5			
049	MV-11B1-03M-5														5			
051	MV-11B1-03M-6														1			
Samples Relinquished by (print name & sign): <u>M. Salway</u> Date: <u>16/12/2011</u>				Samples Received by (Print name & sign): <u>S. Coles</u> Date: <u>17-DEC-11 @ 8:04 AM</u>				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: _____				Samples Relinquished by (print name & sign): _____ Date: _____				Samples Received by (Print name & sign): _____ Date: _____						

for samples with 5 jars and only metals analysis, hold the remaining 4 jars

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

Page 1 of 3
NO: 000296



AGAT Laboratories

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

Turnaround Time Required (TAT)

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

Report To:

Company: Franz Environmental
Contact: _____
Address: Same as previous
Phone: _____ Fax: _____
LSD: _____
Client Project #: _____

Invoice To:

Same as above Yes No
Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/A/E #: _____

Report Information

1. Name: _____
Email: Same as previous
2. Name: _____
Email: _____

Regulatory Requirements (Check):

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

Report Format

Single Sample per page
 Multiple Samples per page
 Excel Format Included

Ph: 778.452.4000 - Fax: 778.452.7074

Date Required: _____
Please contact laboratory if Rush is required

Laboratory Use Only

Arrival Temperature: 2.5°C
AGAT Job Number: 11V560614

Notes: DEC 17 08:04

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	CGME FI-F4	PAN	Switches	Sodium and chloride	PROMIS (Chloride and non-chloride)	CGME FI-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR - 60 days
3020052	MV-11BM-02M-1	soil	16/12/2011	for samples with 5 jars and only metals analysis, hold the other 4 jars													1			
053	MV-11BM-02M-2																5			
054	MV-11BM-02M-3																5			
055	MV-11BM-02M-4																5			
056	MV-11BM-02M-5																5			
057	MV-11BM-02M-6																5			
058	BV-11BM-08M-1																2			
059	BV-11BM-08M-2																2			
060	BV-11BM-08M-3																2			
062	BV-11BM-08M-4																2			
063	BV-11BM-08M-5																2			
066	BV-11BM-08M-6																2			
Samples Relinquished by (print name & sign): _____ Date: 16/12/2011																				
Samples Relinquished by (print name & sign): <u>S. CORENS</u> Date: 17-DEC-11 @ 8:04 AM																				
Samples Relinquished by (print name & sign): _____ Date: _____																				

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

Page 2 of 3
NO: 000297



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

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

Report Information
 1. Name: Same as previous
 Email: _____
 2. Name: _____
 Email: _____

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

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

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

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

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	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3020065	BV-11B1-02M-1	Soil	16/12/2011		X	X	X				4			X
1066	BV-11B1-02M-2				X	X	X				4			X
1067	BV-11B1-02M-3				X	X	X				4			X
1068	BV-11B1-02M-4				X	X	X				4			X
1069	BV-11B1-02M-5				X	X	X				4			X
1070	BV-11B1-02M-6				X	X	X				4			X

Chain of Custody:
 Samples Relinquished by (print name & sign): [Signature] Date: 16/12/2011
 Samples Relinquished by (print name & sign): S. Courtois Date: 17-DEC-11 @ 8:04 AM
 Samples Relinquished by (print name & sign): _____ Date: _____



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 11560614

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: 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: 00296, 297, 298

SAMPLE QUANTITIES:

Coolers: _____ Bottles/Jars: 86 Bags: _____

TIME SENSITIVE ISSUES:

Earliest Date Sampled: 16-DEC-11 ALREADY EXCEEDED? Yes No
 Microbiology: Test: _____ Expiry: _____
 Hydrocarbons: Test: BTEX Expiry: 23-DEC-11
 Samples are received >5 days after sampling: Yes No

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:

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.



Certificate of Analysis

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

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

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	BV-11BH-04M-3	BV-Dup9	BV-11BH-05M-1	BV-11BH-05M-5	BV-Dup10
				3021236	3021240	3021245	3021246	3021252	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

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

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	BV-11BH-07M-3	BV-DUP8	BV-11BH-04M-1	BV-11BH-04M-3	BV-11BH-05M-1	BV-11BH-05M-5	
				3021230	3021231	3021234	3021236	3021240	3021246	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)	%				100	99	98	99	98	98	98
Ethylbenzene-d10 (BTEX)	%				104	76	101	100	98	98	99
o-Terphenyl (F2-F4)	%				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:



Certificate of Analysis

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

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

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	BV-11BH-07M-3	BV-DUP8	BV-11BH-04M-1	BV-11BH-04M-3	BV-11BH-05M-1	BV-11BH-05M-5
				3021230	3021231	3021234	3021236	3021240	3021246	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	BV-11BH-07M-3	BV-DUP8	BV-11BH-04M-1	BV-11BH-04M-3	BV-11BH-05M-1	BV-11BH-05M-5
			3021230	3021231	3021234	3021236	3021240	3021246	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

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TEL (778)452-4000
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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	BV-11BH-04M-3	BV-Dup9	BV-11BH-05M-1	BV-11BH-05M-5
				3021236	3021240	3021245	3021246	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:



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560784
ATTENTION TO: Amanda Salway

Soil Analysis																
RPT Date: Dec 23, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: 

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			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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

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

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

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

Chain of Custody Record

Report To:
 Company: FRANZ Environmental
 Contact: Amanda Salway
 Address: 308-1080 Mountain St
Vancouver, BC V6R 2T4
 Phone: 604 652-9944 Fax: 604 652-9942
 LSD: _____
 Client Project #: 2090-103

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____
 PO/A/E #: _____
 Fax: _____

Report Information
 1. Name: Amanda Salway
 Email: asalway@franzbc.com
 2. Name: Viviane Dupois-Côté
 Email: vdcois@franzbc.com

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

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

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

Turnaround Time Required (TAT)
 Regular TAT 5 to 7 working days
 Rush TAT 24 to 48 hours
 48 to 72 hours

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 P1-P4	PAN	phenols (chlorinated)	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 year 60 days
201228	BV-118M-07M-1	Soil	17/12/2011											2			
230	BV-118M-07M-2													2			
231	BV-118M-07M-3													2			
232	BV-118M-07M-4													2			
233	BV-118M-07M-5													2			
234	BV-118M-07M-5 BV-DUPR													2			
236	BV-118M-04M-1													2			
237	BV-118M-04M-2													2			
240	BV-118M-04M-3													2			
242	BV-118M-04M-4													2			
243	BV-118M-04M-5													2			

Samples Relinquished by (print name & sign): S.C. OROS Date: 17/12/2011
 Samples Relinquished by (print name & sign): S.C. OROS Date: 19-DEC-11 @ 8:58pm
 Samples Relinquished by (print name & sign): _____ Date: _____
 Samples Relinquished by (print name & sign): _____ Date: _____



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

Report To:

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

Report Information

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

Regulatory Requirements (Check):

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

Invoice To:

Same as above Yes No
Company: _____
Contact: _____
Address: _____
Phone: _____
PO/A/E #: _____

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

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

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 FI-FL	PAH	PCPNs (and non-PCPNs)	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3021244	BV-1181-04M-6	Soil	17/12/2011		X	X	X				X	X	X	4			X
1245	BV-DUP9										X	X	X	2			X
246	BV-1181-05M-1				X	X	X				X	X	X	4			X
249	BV-1181-05M-2				X	X	X				X	X	X	4			X
250	BV-1181-05M-3				X	X	X				X	X	X	4			X
251	BV-1181-05M-4				X	X	X				X	X	X	4			X
252	BV-1181-05M-5				X	X	X				X	X	X	4			X
253	BV-1181-05M-6				X	X	X				X	X	X	4			X
1254	BV-DUP10													1			X

Page 2 of 2
NO: 000143

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

Date
Date
Date

Samples Relinquished by (print name & sign):
Date: 17/12/2011

Samples Relinquished by (print name & sign):
Date: 19-DEC-11

Samples Relinquished by (print name & sign):
Date: _____

Samples Relinquished by (print name & sign):
Date: _____

Samples Relinquished by (print name & sign):
Date: _____

Samples Relinquished by (print name & sign):
Date: _____

Samples Relinquished by (print name & sign):
Date: _____



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. Covens

Relinquished by: Amanda Selway

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: 000299, 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

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

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	BV-11BH-04M-3	BV-Dup9	BV-11BH-05M-1	BV-11BH-05M-5	BV-Dup10
				3021236	3021240	3021245	3021246	3021252	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

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

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	BV-11BH-07M-3	BV-DUP8	BV-11BH-04M-1	BV-11BH-04M-3	BV-11BH-05M-1	BV-11BH-05M-5
				3021230	3021231	3021234	3021236	3021240	3021246	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	BV-11BH-07M-3	BV-DUP8	BV-11BH-04M-1	BV-11BH-04M-3	BV-11BH-05M-1	BV-11BH-05M-5
				3021230	3021231	3021234	3021236	3021240	3021246	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	BV-11BH-07M-3	BV-DUP8	BV-11BH-04M-1	BV-11BH-04M-3	BV-11BH-05M-1	BV-11BH-05M-5
			3021230	3021231	3021234	3021236	3021240	3021246	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:



Certificate of Analysis

AGAT WORK ORDER: 11V560784

PROJECT NO: 2090-1103

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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	BV-11BH-04M-3	BV-Dup9	BV-11BH-05M-1	BV-11BH-05M-5
				3021236	3021240	3021245	3021246	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:



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
PROJECT NO: 2090-1103

AGAT WORK ORDER: 11V560784
ATTENTION TO: Amanda Salway

Soil Analysis																
RPT Date: Dec 23, 2011			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: 

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			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

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

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

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

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

Chain of Custody Record

Report To:

Company: FRANZ Environmental
 Contact: Amanda Salway
 Address: 308-1080 Mountain St
Vancouver, BC V6R 2T4
 Phone: 604 652-9944 Fax: 604 652-9942
 LSD: _____
 Client Project #: 2090-103

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____
 PO/APE #: _____

Report Information

1. Name: Amanda Salway
 Email: asalway@franzbc.com
 2. Name: Viviane Dupois-Côté
 Email: vdcois@franzbc.com

Regulatory Requirements (Check):

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

Report Format

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

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: 11V560784

Notes: _____

DEC 19 AM 8:58

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment
230	BV-118M-07M-1	Soil	17/12/2011	
231	BV-118M-07M-2			
232	BV-118M-07M-3			
233	BV-118M-07M-4			
234	BV-118M-07M-5			
234	BV-DUPR			
236	BV-118M-04M-1			
237	BV-118M-04M-2			
240	BV-118M-04M-3			
242	BV-118M-04M-4			
243	BV-118M-04M-5			

Samples Relinquished by (print name & sign): _____ Date: 17/12/2011

Samples Relinquished by (print name & sign): _____ Date: 19-DEC-11 @ 8:58pm

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Received by (Print name & sign): S. CARLOS Date: 19-DEC-11 @ 8:58pm

Samples Received by (Print name & sign): _____ Date: _____

Samples Received by (Print name & sign): _____ Date: _____

BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	CCME P1-P4	PAN	Phenols (chlorinated)	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 year 60 days
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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

Report To:

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

Report Information

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

Regulatory Requirements (Check):

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

Invoice To:

Same as above Yes No
Company: _____
Contact: _____
Address: _____
Phone: _____
PO/AFE #: _____

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

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

BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
X	X	X				4			X
X	X	X				2			X
X	X	X				4			X
X	X	X				4			X
X	X	X				4			X
X	X	X				4			X
X	X	X				4			X
X	X	X				1			X

CCME FI-F4
PAA
PROMIS (and non-promis)

Page <u>2</u> of <u>2</u>
Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT
NO: 000143

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment
3021244	BV-118K-04M-6	Soil	17/12/2011	
1245	BV-DUP9			
246	BV-118K-05M-1			
249	BV-118K-05M-2			
250	BV-118K-05M-3			
251	BV-118K-05M-4			
252	BV-118K-05M-5			
253	BV-118K-05M-6			
1254	BV-DUP10			

Samples Relinquished by (print name & sign):	Date	Samples Received by (Print name & sign):	Date
<i>[Signature]</i>	17/12/2011	<i>[Signature]</i>	19-DEC-11 @ 8:58A
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



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. Covens

Relinquished by: Amanda Selway

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: 000299, 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

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.



Certificate of Analysis

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

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

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	BV-11BH-05M	BV-11BH-03M
				3091736	3091778	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



Certificate of Analysis

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

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 CANADA V5J 0B6
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 FAX (778)452-4074
<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

Parameter	Unit	G / S	RDL	BV-11BH-04M	BV-11BH-05M	BV-11BH-03M
				3091736	3091778	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

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Burnaby, British Columbia
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FAX (778)452-4074
<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



Certificate of Analysis

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

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

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	BV-11BH-05M	BV-11BH-03M
				3091736	3091778	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



Certificate of Analysis

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

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

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	BV-11BH-05M	BV-11BH-03M
				3091736	3091778	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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*

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V570940
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Feb 08, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

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

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

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

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

Chain of Custody Record

Report To:

Company: FRANZ Environmental
Contact: Amanda Sainway
Address: 308-1080 Mountain St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD: _____
Client Project #: 2010-1103

Invoice To: Same as above Yes No
Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/A/E #: _____

Report Information

1. Name: Amanda Sainway
Email: asainway@franzlab.com
2. Name: Viviane Dubois-Côté
Email: vdubois@franzlab.com

Regulatory Requirements (Check):

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

Report Format

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

Notes: _____

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: 4°C
AGAT Job Number: 12510940

Notes: FEB 1 PM 5:52

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 + CCMETALS	VOCs	BC CSR Schedule II	Routine Potability	CCME FI	CCME F2-F4	Chlorinated + non-chlorinated	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3091736	BV-1181-04M	WATER	FEB 1 ST 2012		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1			
1778	BV-1181-05M	WATER	FEB 1 ST 2012		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1			
1782	BV-1181-03M	WATER	FEB 1 ST 2012		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1			

Samples Relinquished by (print name & sign): [Signature]
Date: Feb 1, 2012
Samples Relinquished by (print name & sign): _____
Date: _____
Samples Relinquished by (print name & sign): _____
Date: _____

Samples Received by (Print name & sign): AMIEZ P. F. Feb 1, 2012 5:52 PM
Date: _____
Samples Received by (Print name & sign): _____
Date: _____
Samples Received by (Print name & sign): _____
Date: _____

Page 1 of 1
Pink Copy - Client
Yellow Copy - AGAT
White Copy - AGAT
NO: **000629**



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

ALREADY EXCEEDED? Yes No

Microbiology: Test: _____

Expiry: _____

Hydrocarbons: Test: BTEX

Expiry: 08-FEB-12

Samples are received >5 days after sampling: Yes No

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 + 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:



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.



Certificate of Analysis

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

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

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	BV-11BH-05M	BV-11BH-03M
				3091736	3091778	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				
o-Terphenyl (F2-F4)	%	50-150				

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: _____



Certificate of Analysis

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

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

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	BV-11BH-05M	BV-11BH-03M
				3091736	3091778	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:



Certificate of Analysis

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

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

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	BV-11BH-05M	BV-11BH-03M
			3091736	3091778	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:



Certificate of Analysis

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

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

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	BV-11BH-05M	BV-11BH-03M
				3091736	3091778	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:



Certificate of Analysis

AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

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

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	BV-11BH-05M	BV-11BH-03M
				3091736	3091778	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V570940
 ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 02, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

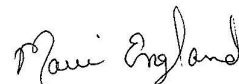
AGAT WORK ORDER: 12V570940

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Mar 02, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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

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

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

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

Chain of Custody Record

Report To:

Company: FRANZ Environmental
Contact: Amanda Sawney
Address: 308-1080 Mountain St.
Vancouver, BC V6B 2T4
Phone: 604 632-9941 Fax: 604 632-9942
LSD: _____
Client Project #: 2010-1103

Invoice To: Same as above Yes No
Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/A/E #: _____

Report Information

1. Name: Amanda Sawney
Email: asawney@franzbc.com
2. Name: Viviane Dubois-Côté
Email: vdubois@franzbc.com

Regulatory Requirements (Check):

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

Date/Time Sampled
Feb 1st 2012
Feb 1st 2012
Feb 1st 2012

Sample Matrix
Water
Water
Water

Sample Identification
BV-118A-04M
BV-118A-05M
BV-118A-03M

Sample Relinquished by (print name & sign):
[Signature]

Date: Feb 1, 2012

Samples Relinquished by (print name & sign):
[Signature]

Date: Feb 1, 2012

Samples Relinquished by (print name & sign):
[Signature]

Date: Feb 1, 2012

Samples Relinquished by (print name & sign):
[Signature]

Date: Feb 1, 2012

Report Format

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

Date Required: _____
 Please contact laboratory if Rush is required

Laboratory Use Only
 Arrival Temperature: 4°C
 AGAT Job Number: BV510940

Notes: FEEL PW:52

Turnaround Time Required (TAT)

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

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 + CCMetals	VOCs	BC CSR Schedule II	Routine Potability	CCME FI	CCME F2-F4	Chlorinated + non-chlorinated	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 <u>60 days</u>
3091736	BV-118A-04M	Water	Feb 1st 2012		X	X	X				X	X	X	1			
1778	BV-118A-05M	Water	Feb 1st 2012		X	X	X				X	X	X	1			
1782	BV-118A-03M	Water	Feb 1st 2012		X	X	X				X	X	X	1			

Page 1 of 1
 NO: 000629

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



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

ALREADY EXCEEDED? Yes No

Microbiology: Test: _____

Expiry: _____

Hydrocarbons: Test: BTEX

Expiry: 08-FEB-12

Samples are received >5 days after sampling: Yes No

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 + 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

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

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	BV-GWDUP1	MW06-2	MW07-6	BV-11BH-07M	
				3094046	3094049	3094050	3094051	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:



Certificate of Analysis

AGAT WORK ORDER: 12V571329

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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	BV-GWDUP1	MW06-2	MW07-6	MW08-10	BV-11BH-07M
				3094046	3094049	3094050	3094051	3094052	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:



Certificate of Analysis

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

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

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	BV-GWDUP1	MW06-2	MW07-6	MW08-10	BV-11BH-07M
			3094046	3094049	3094050	3094051	3094052	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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

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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

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	BV-GWDUP1
				3094046	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:



Certificate of Analysis

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

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

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	BV-GWDUP1
				3094046	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V571329
 ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 09, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

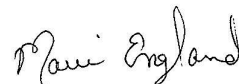
AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Feb 09, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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

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

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
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

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

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

Chain of Custody Record

Report To:
 Company: Franz Environmental
 Contact: Amanda Salway
 Address: 308-1080 Mathland St.
Vancouver, BC V6S 2T4
 Phone: 604 652-9941 Fax: 604 652-9942
 LSD: _____
 Client Project #: 2010-1103

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____
 PO/A/E #: _____ Fax: _____

Report Information
 1. Name: Amanda Salway
 Email: asalway@franzbc.com
 2. Name: Viviane Dubois-Cote
 Email: vdco@cfranzbc.com

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

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

Date Required: _____
 Please contact laboratory if Rush is required
Laboratory Use Only
 Arrival Temperature: 3.5°C
 AGAT Job Number: 12V571329
 Notes: FEB 2 PM 5:49

Turnaround Time Required (TAT)
 Regular TAT 5 to 7 working days
 Rush TAT 24 to 48 hours
 48 to 72 hours

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	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3094046	BV-11BK-02M	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			
049	BV-GINDUP1	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			
050	MND0-2	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			
051	MND7-0	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			
052	MND8-10	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			
053	BV-11BK-07M	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			

Samples Relinquished by (print name & sign): [Signature] Date: 02/02/2012
 Samples Relinquished by (print name & sign): AMIELE BAW Date: 2 FEB 2012 5:49pm
 Samples Relinquished by (print name & sign): _____ Date: _____
 Pink Copy - Client
 Yellow Copy - AGAT
 White Copy - AGAT
 Page 1 of 1
 NO: 000630



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V571329

RECEIVING BASICS:

*Complete CoC as well where required

Date and Time: 02-FEB-12@3:49 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

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

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	BV-GWDUP1	MW06-2	MW07-6	BV-11BH-07M
				3094046	3094049	3094050	3094051	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:



Certificate of Analysis

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	BV-GWDUP1	MW06-2	MW07-6	MW08-10	BV-11BH-07M
				3094046	3094049	3094050	3094051	3094052	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

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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	BV-GWDUP1	MW06-2	MW07-6	MW08-10	BV-11BH-07M
			3094046	3094049	3094050	3094051	3094052	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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

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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	BV-GWDUP1		
				3094046	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:



Certificate of Analysis

AGAT WORK ORDER: 12V571329

PROJECT NO: 2090-1103

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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	BV-GWDUP1
				3094046	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V571329
 ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 05, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V571329
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Mar 05, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

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

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

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
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



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

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

Chain of Custody Record

Report To:
 Company: Franz Environmental
 Contact: Amanda Salway
 Address: 308-1080 Mathland St.
Vancouver, BC V6S 2T4
 Phone: 604 652-9941 Fax: 604 652-9942
 LSD: _____
 Client Project #: 2010-1103

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____
 PO/A/E #: _____ Fax: _____

Report Information
 1. Name: Amanda Salway
 Email: asalway@franzbc.com
 2. Name: Viviane Dubois-Cote
 Email: vdco@cfranzbc.com

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

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

Ph.: 778.452.4000 • Fax: 778.452.7074

Laboratory Use Only
 Arrival Temperature: 3.5°C
 AGAT Job Number: 12V571329
 Notes: FEB 2 PM 5:49

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

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	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR 60 days
3094046	BV-118K-02M	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			
049	BV-GINDUP1	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			
050	MND0-2	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			
051	MND7-0	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			
052	MND8-10	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			
053	BV-118K-07M	WATW	Feb 2 / 2012		X	X	X				X	X	X	5			

Samples Relinquished by (print name & sign): [Signature] Date: 02/02/2012
 Samples Relinquished by (print name & sign): AMIELE BOW Date: 2 FEB 2012 5:49pm
 Samples Relinquished by (print name & sign): _____ Date: _____
 Pink Copy - Client
 Yellow Copy - AGAT
 White Copy - AGAT
 Page 1 of 1
 NO: 000630



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 12V571329

RECEIVING BASICS:

*Complete CoC as well where required

Date and Time: 02-FEB-12@3:49 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

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

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	MW07-8	MW07-7
				3095663	3095682	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:



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

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

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	BV-11BH-09M
				3095674	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:



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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CANADA V5J 0B6
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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	BV-11BH-08M	BV-11BH-09M	MW07-8	MW07-9	MW07-7
				3095663	3095674	3095680	3095682	3095683	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

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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	BV-11BH-08M	BV-11BH-09M	MW07-8	MW07-9	MW07-7
			3095663	3095674	3095680	3095682	3095683	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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
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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	BV-11BH-09M
				3095663	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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

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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	BV-11BH-09M
				3095663	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V571615
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Feb 13, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

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

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

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
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

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

120 - 8600 Glenlyon Parkway
Burnaby, BC,
V5J 0B6
webeath.h.agatiabs.com

Chain of Custody Record

Report To:
 Company: FRANZ ENVIRONMENTAL
 Contact: AMANDA SALWAY
 Address: 308-1080 MAINTENANCE ST
VANCOUVER, BC V6B 2T4
 Phone: 604-652-9944 Fax: 604-652-9942
 LSD: _____
 Client Project #: 7090-1103

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-COTE
 Email: VD@COTE@FRANZBC.COM

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

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

Date Required: _____
 Please contact laboratory if Rush is required
Laboratory Use Only
 Arrival Temperature: 4°
 AGAT Job Number: 12V571615
 Notes: FEB 3 PM 4:29

Turnaround Time Required (TAT)
 Regular TAT 5 to 7 working days
 Rush TAT 24 to 48 hours
 48 to 72 hours

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 + CCMETALS	VOCs	BC CSR Schedule II	Routine Potability	CCME F1	CCME F2-F4	CCME F3-F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 4 YEAR <u>60 days</u>
3095663																	
3095674	BV-118X-01M	WAL	FEB 3, 2012											7			
3095680	BV-118X-08M													5			
682	MW07-8													2			
683	MW07-9													2			
684	MW07-7													2			

Samples Relinquished by (print name & sign): [Signature] Date: FEB 3, 2012
 Samples Relinquished by (print name & sign): AMIEI Ocampo Date: 3 FEB 2012
 Samples Relinquished by (print name & sign): _____ Date: _____
 Samples Relinquished by (print name & sign): _____ Date: _____



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 ENVY

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/VDH & 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

Company: FRANZ ENVIRONMENTAL

Work Order #: 12V 571615

Bin #: FW-12

Branch: Vancouver

Date Required: 10-FEB-2012

Contact: Amanda Salway

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			

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.



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

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

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	MW07-8	MW07-7
				3095663	3095682	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:



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

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

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	BV-11BH-09M
				3095674	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:



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

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

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	BV-11BH-08M	BV-11BH-09M	MW07-8	MW07-9	MW07-7	
				3095663	3095674	3095680	3095682	3095683	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	

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
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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	BV-11BH-08M	BV-11BH-09M	MW07-8	MW07-9	MW07-7
			3095663	3095674	3095680	3095682	3095683	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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	BV-11BH-09M
				3095663	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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V571615

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
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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	BV-11BH-09M
				3095663	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V571615
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Mar 05, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

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

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

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

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

120 - 8600 Glenlyon Parkway
 Burnaby, BC,
 V5J 0B6
 webeath.h.agatiabs.com

Chain of Custody Record

Report To:
 Company: FRANZ ENVIRONMENTAL
 Contact: AMARIE SALWAY
 Address: 308-1080 MAINTENANCE ST
VANCOUVER, BC V6B 2T4
 Phone: 604 652-9944 Fax: 604-652-9942
 LSD: _____
 Client Project #: 7090-1103

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

Report Information
 1. Name: AMARIE SALWAY
 Email: ASALWAY@FRANZBC.COM
 2. Name: VIVIANE DUBOIS-COPE
 Email: VDCOPE@FRANZBC.COM

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

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

Laboratory Use Only
 Arrival Temperature: 4°
 AGAT Job Number: 12V571615
 Notes: FEB 3 PM 4:29

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

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	CCME F3	CCME F4	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR <u>60 days</u>
3095663	BV-118X-01M	WAL	FEB 3, 2012		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7			
3095674	BV-118X-08M				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5			
3095680	BV-118X-09M				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5			
682	MW07-8				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2			
683	MW07-9				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2			
684	MW07-7				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2			

Samples Relinquished by (print name & sign): [Signature] Date: FEB 3, 2012
 Samples Relinquished by (print name & sign): AMIE SALWAY Date: 3 FEB 2012
 Samples Relinquished by (print name & sign): _____ Date: _____
 Samples Relinquished by (print name & sign): _____ Date: _____



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 ENVY

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/VDH & 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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

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	MV-11BH-03M
				3100893	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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

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	MV-11BH-03M	MV-11BH-07M
				3100893	3100904	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	

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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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

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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	MV-11BH-03M
				3100893	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

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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	MV-11BH-03M	MV-GWDUP2
				3100893	3100904	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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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	MV-11BH-03M	MV-GWDUP2	
				3100893	3100904	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	MV-11BH-03M	2-BH17	MV-11BH-07M
				3100893	3100904	3100912	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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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	MV-11BH-03M	MV-GWDUP2
				3100893	3100904	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	MV-11BH-03M
				3100893	3100904
Sulphide	mg/L		0.1	<0.1	<0.1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%		

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V572231
 ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 14, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V572231
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Feb 14, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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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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

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
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

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
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

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

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
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



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

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

Chain of Custody Record

PH: 778.452.4000 • Fax: 778.452.7074

Report To:
 Company: FRANZ ENVIRONMENTAL
 Contact: AMANDA SALWAY
 Address: 308-1080 MAINTLAND ST.
VANCOUVER, BC V6B 7T9
 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-CÔRÉ
 Email: VDUBOIS@FRANZBC.COM

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

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

Laboratory Use Only
 Arrival Temperature: 30C
 AGAT Job Number: 12V5TR231

Date Required: _____
 Please contact laboratory if Rush is required

Notes: FEB 6 PM 5:24

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

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 + CME Metals	VOCs	BC CSR Schedule II	Routine Potability	Sulfides	Sodium + Chloride	CME F1	CME F2-4	Chloride and non-chloride	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3100893	MV-115K-02M	WATER	Feb 6 2012		X	X	X	X	X	X	X	X	X	X	X	12			
1904	MV-115K-03M				X	X	X	X	X	X	X	X	X	X	X	12			
910	MV-CHDUP 2				X	X	X	X	X	X	X	X	X	X	X	4			
912	Z-BHIF				X	X	X	X	X	X	X	X	X	X	X	1			
913	MV-115K-07M				X	X	X	X	X	X	X	X	X	X	X	2			

Chain of Custody

Samples Relinquished by (print name & sign): _____ Date: 06/02/2012

Samples Relinquished by (print name & sign): _____ Date: Feb 6/12 c 5:24pm

Samples Relinquished by (print name & sign): _____ Date: _____

Page 1 of 1

Yellow Copy - AGAT NO: 000621

White Copy - AGAT



SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 121572231

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: 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: 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: Logans
 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: Rel
 COC Numbers: 621

SAMPLE QUANTITIES:
 Coolers: _____
 Bottles/Jars: 2 Bags: _____

TIME SENSITIVE ISSUES:
 Earliest Date Sampled: Feb 06/12
 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 + 1 = 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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

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	MV-11BH-03M
				3100893	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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 FAX (778)452-4074
<http://www.agatlabs.com>

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	MV-11BH-03M	MV-11BH-07M
				3100893	3100904	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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

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	MV-11BH-03M	MV-11BH-07M
			3100893	3100904	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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

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	MV-11BH-03M
				3100893	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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

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	MV-11BH-03M	MV-GWDUP2
				3100893	3100904	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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

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	MV-11BH-03M	MV-GWDUP2
				3100893	3100904	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)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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

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	MV-11BH-03M	2-BH17	MV-11BH-07M
				3100893	3100904	3100912	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)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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

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	MV-11BH-03M	MV-GWDUP2
				3100893	3100904	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572231

PROJECT NO: 2090-1103

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

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	MV-11BH-03M
				3100893	3100904
Sulphide	mg/L		0.01	<0.01	<0.01

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

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			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V572231
 ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 06, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____



Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V572231
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Mar 06, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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

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
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

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
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

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
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

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
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



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

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

Chain of Custody Record

PH: 778.452.4000 • Fax: 778.452.7074

Report To:
 Company: FRANZ ENVIRONMENTAL
 Contact: AMANDA SALWAY
 Address: 308-1080 MAINTLAND ST.
VANCOUVER, BC V6B 7T9
 Phone: 604 652-9941 Fax: 604 632-9942
 LSD:
 Client Project #: 2090-1103

Report Information
 1. Name: AMANDA SALWAY
 Email: ASALWAY@FRANZBC.COM
 2. Name: VIVIANE DUBOIS-COKE
 Email: VDUBOIS@FRANZBC.COM

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

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

Laboratory Use Only
 Arrival Temperature: 30C
 AGAT Job Number: 12V5TR231

Date Required: _____
 Please contact laboratory if Rush is required

Notes: FEB 6 PM 5:24

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

Comments - Site/Sample Info.
 Sample Containment

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CME Metals	VOCs	BC CSR Schedule II	Routine Potability	Sulfides	Sodium + Chloride	CME F1	CME F2-4	Chloride and Nitrate	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3100893	MV-115K-02M	Water	Feb 6 2012	X	X	X	X	X	X	X	X	X	X	X	12			
1904	MV-115K-03M	Water	Feb 6 2012	X	X	X	X	X	X	X	X	X	X	X	12			
910	MV-CHDUP 2	Water	Feb 6 2012	X	X	X	X	X	X	X	X	X	X	X	4			
912	Z-BH1F	Water	Feb 6 2012	X	X	X	X	X	X	X	X	X	X	X	1			
913	MV-115K-07M	Water	Feb 6 2012	X	X	X	X	X	X	X	X	X	X	X	2			

Samples Relinquished by (print name & sign): _____ Date: 06/02/2012

Samples Relinquished by (print name & sign): _____ Date: Feb 6/12 c 5:24pm

Samples Relinquished by (print name & sign): _____ Date: _____

Client: AGAT Page 1 of 1

NO: 000621



SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 121572231

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: 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: 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: Logans
 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: Rel
 COC Numbers: 621

SAMPLE QUANTITIES:
 Coolers: _____
 Bottles/Jars: 2 Bags: _____

TIME SENSITIVE ISSUES:
 Earliest Date Sampled: Feb 06/12
 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 + 1 = 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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

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	MV-GWDUP3	MW2-29	
				3103279	3103284	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: _____



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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

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:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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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	5-BH23	MV-GWDUP3	MV-11BH-10M	MW2-29	MV-11BH-17M
				3103279	3103281	3103284	3103285	3103286	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	

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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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.

Certified By:



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AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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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	MW2-29	MV-11BH-01M
				3103281	3103286	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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AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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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	MV-11BH-01M
				3103286	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	MV-11BH-01M
				3103286	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

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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	MW2-29	MV-11BH-01M
				3103285	3103286	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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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	MV-11BH-01M
				3103286	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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<http://www.agatlabs.com>

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:

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			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%		

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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

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			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		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%

Certified By:



Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V572681
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Feb 14, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

British Columbia CSR- Schedule 6 Dissolved Metals

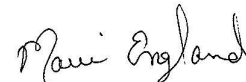
Aluminum Dissolved	20120	3100893	3	2	NA	< 1	107%	90%	110%	105%	85%	115%		
Antimony Dissolved	20120	3100893	<0.05	<0.05	0.0%	< 0.05	104%	90%	110%	98%	85%	110%		
Arsenic Dissolved	20120	3100893	21.8	21.5	1.0%	< 0.1	101%	90%	110%	109%	90%	110%		
Barium Dissolved	20120	3100893	101	98.4	3.0%	< 0.1	98%	90%	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%
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Water Analysis - Sulphide

Sulphide	5846	5657	< 0.1	< 0.1	0.0%	< 0.1	105%	80%	120%				104%	80%	120%
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Certified By:


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

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

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

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

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



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

Chain of Custody Record

Ph.: 778.452.4000 - Fax: 778.452.7074

Report To:
 Company: FRANZ Environmental
 Contact: Amadee Salway
 Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
 Phone: 604 652-9941 Fax: 604 652-9942
 LSD: _____
 Client Project #: 2090-1103

Report Information
 1. Name: Amadee Salway
 Email: asalway@franzbc.com
 2. Name: Viviane Dubois-Cote
 Email: vdubois@franzbc.com

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

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

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 5:45

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

BC CSR BTEX/VPH	BC CSR LEPH/HEPH	BC CSR Metals + CCME metals	VOCs	BC CSR Schedule II	Routine Potability	Sulfide	CCME FI	CCME F2-F4	Sodium + Chloride	Chloride or non-chloride phenol	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
X	X	X	X	X	X	X	X	X	X	X	2			
X	X	X	X	X	X	X	X	X	X	X	2			
X	X	X	X	X	X	X	X	X	X	X	2			
X	X	X	X	X	X	X	X	X	X	X	2			

Lab ID #	Sample Identification	Sample Matrix	Date/Time Sampled	Comments - Site/Sample Info. Sample Containment
08279	MV-118M-14M	Water	Feb 7, 2012	
281	5-BK23			
284	MV-GW20P3			
285	MV-118M-10M			
286	MN2-29			
287	MV-118M-01M			
288	MV-118M-17M			

Samples Relinquished by (print name & sign): _____ Date: Feb 7, 2012

Samples Relinquished by (print name & sign): Amiel Campo Date: 5:46 pm 7 FEB 2012

Samples Relinquished by (print name & sign): _____ Date: _____

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

Page 1 of 1

NO: **000622**



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: Amiel Occampe

Relinquished by: Amanda

Branch Received From: _____

Company: Franz Env

Consultant: _____

Client left without count verified: No

COI INFORMATION:

Received: Yes No Emailed to PM

Completed in full: Yes No If NO, why: _____

TURNAROUND TIME: Reg

COI 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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

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	MV-GWDUP3	MW2-29
				3103279	3103284	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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 CANADA V5J 0B6
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<http://www.agatlabs.com>

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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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<http://www.agatlabs.com>

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	5-BH23	MV-GWDUP3	MV-11BH-10M	MW2-29	MV-11BH-17M
				3103279	3103281	3103284	3103285	3103286	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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 FAX (778)452-4074
<http://www.agatlabs.com>

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	5-BH23	MV-GWDUP3	MV-11BH-10M	MW2-29	MV-11BH-17M
			3103279	3103281	3103284	3103285	3103286	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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
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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	MW2-29	MV-11BH-01M
				3103281	3103286	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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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	MV-11BH-01M
				3103286	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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<http://www.agatlabs.com>

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	MV-11BH-01M
				3103286	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	<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:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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<http://www.agatlabs.com>

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	MW2-29	MV-11BH-01M
				3103285	3103286	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

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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	MV-11BH-01M
				3103286	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:



Certificate of Analysis

AGAT WORK ORDER: 12V572681

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%		

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		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%

Certified By:



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V572681
ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Mar 06, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%
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Water Analysis - Sulphide

Sulphide	5846	5657	< 0.1	< 0.1	0.0%	< 0.1	105%	80%	120%				104%	80%	120%
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Certified By: _____



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

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

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

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
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

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

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

Chain of Custody Record

Ph.: 778.452.4000 - Fax: 778.452.7074

Report To:
 Company: FRANZ Environmental
 Contact: Amadee Salway
 Address: 308-1080 Mainland St.
Vancouver, BC V6B 2T4
 Phone: 604 652-9941 Fax: 604 652-9942
 LSD: _____
 Client Project #: 2090-1103

Report Information
 1. Name: Amadee Salway
 Email: asalway@franzbc.com
 2. Name: Viviane Dubois-Cote
 Email: vdubois@franzbc.com

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

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____ Fax: _____
 PO/A/E #: _____

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 5:45

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

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 FI	CCME F2-F4	Sodium + Chloride	Chloride or non-chloride phenol	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
08279	MV-118M-14M	Water	Feb 7, 2012		X	X						X	X			2			
281	5-BK23				X	X						X	X			1			
284	MV-GW20P3				X	X						X	X			1			
285	MV-118M-10M				X	X						X	X			1			
286	MN2-29				X	X						X	X			1			
287	MV-118M-01M				X	X						X	X			1			
288	MV-118M-17M				X	X						X	X			1			

Samples Relinquished by (print name & sign): _____ Date: Feb 7, 2012
Samples Relinquished by (print name & sign): Amiel Campo Date: 5:46 PM 7 FEB 2012
Samples Relinquished by (print name & sign): _____ Date: _____
 Pink Copy - Client _____
 Yellow Copy - AGAT _____
 White Copy - AGAT _____
 Page 1 of 1
 NO: 000622



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: Amiel Occampo

Relinquished by: Amanda

Branch Received From: _____

Company: Franz Env

Consultant: _____

Client left without count verified: No

COI INFORMATION:

Received: Yes No Emailed to PM

Completed in full: Yes No If NO, why: _____

TURNAROUND TIME: Reg

COI 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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

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	3-BH31
				3109059	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:



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 (BTEX/F2-F4) in Water				
DATE SAMPLED: Feb 09, 2012		DATE RECEIVED: Feb 09, 2012		DATE REPORTED: Feb 17, 2012
		SAMPLE TYPE: Water		
MV-11BH-16M				
Parameter	Unit	G / S	RDL	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:



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

Parameter	Unit	G / S	RDL	MW2-30	MV-11BH-16M	3-BH31
				3109059	3109081	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

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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

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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

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

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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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

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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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

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)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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

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	MW2-30	
			RDL	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)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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: 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)

Certified By:

Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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Trace Organics Analysis

RPT Date: Feb 17, 2012			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		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	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%

Quality Assurance

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ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 17, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V573478
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Feb 17, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%


 Certified By: _____

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
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

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
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

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
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



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
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

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

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:

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 NA

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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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

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:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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<http://www.agatlabs.com>

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
MV-11BH-16M				
Parameter	Unit	G / S	RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

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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: Mar 02, 2012

SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	MW2-30	MV-11BH-16M	3-BH31
				3109059	3109081	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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

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	MV-11BH-16M	3-BH31
			3109059	3109081	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:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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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

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:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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

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:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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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:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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 TEL (778)452-4000
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<http://www.agatlabs.com>

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	MW2-30	
			RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 12V573478

PROJECT NO: 2090-1103

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

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:

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			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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	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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V573478
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Mar 02, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%


 Certified By: _____

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

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

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

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

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

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:

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 NA

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:



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.



Certificate of Analysis

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

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

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		

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:



Certificate of Analysis

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

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

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:



Certificate of Analysis

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
 CANADA V5J 0B6
 TEL (778)452-4000
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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	MV-11BH-15M	MV-GWDUP4
				3112958	3112960	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:



Certificate of Analysis

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

Unit 120, 8600 Glenlyon Parkway
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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	3-BH31	
			RDL	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V573781
 ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 20, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V573781
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Feb 20, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

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

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
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

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

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

Chain of Custody Record

Ph.: 778.452.4000 • Fax: 778.452.7074

Report To:
 Company: Franz Environmental
 Contact: Amanda Sawney
 Address: 308-1080 Mainland St
Vancouver, BC V6B 2Y1
 Phone: 604 632-8944
 LSD: 7090-1103
 Client Project #: 7090-1103

Report Information
 1. Name: Amanda Sawney
 Email: asawney@franzenv.com
 2. Name: Vincent Pinboir-Cote
 Email: vdcote@franzenv.com

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

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

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

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: 12V513781

Notes: FEB 10 PM 3:57

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	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3112958	OWS	GROUNDWATER	FEB 10, 2012 10:00								3			
1960	MN-115K-15M		FEB 10, 2012 13:00								1			
1961	MN-CNDUPH4		FEB 10, 2012 13:00								1			
1962	3-BK31		FEB 10, 2012 14:30											

Chain of Custody Signatures:

Samples Relinquished by (print name & sign): [Signature] Date: FEB 10, 2012

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Received by (Print name & sign): S. Couras Date: 10-FEB-11 @ 3:57pm

Samples Received 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: 000624



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 ALREADY EXCEEDED? Yes No
 Microbiology: Test: _____ Expiry: _____
 Hydrocarbons: Test: LEPH/HEPH Expiry: 17-FEB-12
 Samples are received >5 days after sampling: Yes No

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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

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

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:



Certificate of Analysis

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

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

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:



Certificate of Analysis

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

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

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	MV-11BH-15M	MV-GWDUP4
				3112958	3112960	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:



Certificate of Analysis

AGAT WORK ORDER: 12V573781

PROJECT NO: 2090-1103

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

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	3-BH31	
			RDL	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V573781
 ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Mar 05, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____



Quality Assurance

CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

AGAT WORK ORDER: 12V573781
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Mar 05, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

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

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



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



Laboratories

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

Chain of Custody Record

Report To:
 Company: Frame Environmental
 Contact: Amanda Salway
 Address: 308-1080 Mainland St
Vancouver, BC V6B 2Y1
 Phone: 604 652-9944 Fax: 604 652-9944
 LSD: _____
 Client Project #: 7090-1107

Invoice To: Same as above Yes No
 Company: _____
 Contact: _____
 Address: _____
 Phone: _____
 PO/A/E #: _____

Report Information
 1. Name: Amanda Salway
 Email: asalway@frame.com
 2. Name: Vincent Poirier-Cote
 Email: vpoirier@frame.com

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

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

Laboratory Use Only
 Arrival Temperature: 3°C
 AGAT Job Number: 12N513781
 Notes: _____
FEB 10 PM 8:57

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

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	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3112958	OWS	GROUNDWATER	Feb 10, 2012 10:00		X		X				3			
1960	MN-115K-ISM		Feb 10, 2012 13:00								1			
1961	MV-GNDUP4		Feb 10, 2012 13:00								1			
1962	3-BK31		Feb 10, 2012 14:30								1			

Chain of Custody Signatures:
 Samples Delivered by (print name & sign): _____
 Samples Acquired by (print name & sign): S. COUGAS Date: 10-FEB-11 @ 3:57 PM
 Samples Relinquished by (print name & sign): _____ Date: _____
 Samples Relinquished by (print name & sign): _____ Date: 0742

Page 1 of 1
 NO: 000624
 Date revised: August 24, 2012



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

SAMPLE INTEGRITY RECEIPT FORM Work order # 12V573781

RECEIVING BASICS:
 *Complete CoC as well where required
 Date and Time: FEB 14/12 0942
 Courier: LEONICS
 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: RET
 COC Numbers: 624

SAMPLE QUANTITIES:
 Coolers: 1 Bottles/Jars: 4 Bags: —

TIME SENSITIVE ISSUES:
 Earliest Date Sampled: FEB 06/12 1000 ALREADY EXCEEDED? Yes No
 Microbiology: Test: _____ Expiry: _____
 Hydrocarbons: Test: BTEX Expiry: FEB 17/12
 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) 2 + 4 + 4 = 3 °C (2) _____ + _____ + _____ = _____ °C (3) _____ + _____ + _____ = _____ °C (4) _____ + _____ + _____ = _____ °C
 *Jars used when available
flcc
 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

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

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	MW08-13
				3117392	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



Certificate of Analysis

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

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

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	MW08-13
				3117392	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



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

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

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



Certificate of Analysis

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

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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	MV-11BH-13M
				3117399	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



Certificate of Analysis

AGAT WORK ORDER: 12V574297

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

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	MV-11BH-13M
				3117399	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V574297
 ATTENTION TO: Amanda Salway

Trace Organics Analysis (Continued)

RPT Date: Feb 21, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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*

Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V574297
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Feb 21, 2012			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		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: _____

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

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

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

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

Chain of Custody Record

Report To:

Company: FAME Environmental
Contact: Amanda Selway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2E4
Phone: 604 682-9941 Fax: 604 682-9942
LSD: _____
Client Project #: 2090-1103

Invoice To:

Company: _____
Contact: _____
Address: _____
Phone: _____
PO/A/E #: _____
Same as above Yes No

Report Information

1. Name: Amanda Selway
Email: aselway@famebc.com
2. Name: Viviane Dubois-Cole
Email: vdcole@famebc.com

Regulatory Requirements (Check):

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

Report Format

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

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° 3°
AGAT Job Number: 12N514297

Notes: _____

FEB 13 PM 5:10

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	CME F1	CME P2-P4	non-chlorinated phenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3117392	MV-118X-11M	↓	Feb 13, 2012 10:00		X	X	X				X	X		5			
399	MV-118X-12M	↓	Feb 13, 2012 10:30		X	X	X				X	X		5			
402	MV-118X-13M	↓	Feb 13, 2012 11:00		X	X	X				X	X		5			
404	MV08-13	↓	Feb 13, 2012 13:00		X	X	X				X	X		5			

Samples Relinquished by (print name & sign): _____ Date: Feb 13, 2012

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Received by (Print name & sign): msm Date: Feb 13/12

Samples Received by (Print name & sign): _____ Date: _____

Samples Received by (Print name & sign): _____ Date: _____

Page 1 of 1

NO: 000626

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: Frang 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

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

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	MW08-13
				3117392	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:



Certificate of Analysis

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

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<http://www.agatlabs.com>

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	MW08-13
				3117392	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:



Certificate of Analysis

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

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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

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	MW08-13
			3117392	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:



Certificate of Analysis

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

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

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	MV-11BH-13M
				3117399	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:



Certificate of Analysis

AGAT WORK ORDER: 12V574297

PROJECT NO: 2090-1103

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

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	MV-11BH-13M
				3117399	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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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%	

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



Quality Assurance

 CLIENT NAME: FRANZ ENVIRONMENTAL
 PROJECT NO: 2090-1103

 AGAT WORK ORDER: 12V574297
 ATTENTION TO: Amanda Salway

Water Analysis															
RPT Date: Mar 02, 2012			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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: _____

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

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

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

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

Chain of Custody Record

Report To:

Company: FAME Environmental
Contact: Amanda Selway
Address: 308-1080 Mainland St
Vancouver, BC V6B 2E4
Phone: 604 682-9941 Fax: 604 682-9942
LSD: _____
Client Project #: 2090-1103

Invoice To:

Company: _____
Contact: _____
Address: _____
Phone: _____
PO/A/E #: _____
Same as above Yes No

Report Information

1. Name: Amanda Selway
Email: aselway@famebc.com
2. Name: Viviane Dubois-Cole
Email: vdcole@famebc.com

Regulatory Requirements (Check):

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

Report Format

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

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° 3°
AGAT Job Number: 12N514297

Notes: _____

FEB 13 PM 5:10

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	CME F1	CME P2-P4	non-chlorinated phenols	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3117392	MV-118X-11M	↓	Feb 13, 2012 10:00		X	X	X				X	X		5			
399	MV-118X-12M	↓	Feb 13, 2012 10:30		X	X	X				X	X		5			
402	MV-118X-13M	↓	Feb 13, 2012 11:00		X	X	X				X	X		5			
404	MV08-13	↓	Feb 13, 2012 13:00		X	X	X				X	X		5			

Samples Relinquished by (print name & sign): _____ Date: Feb 13, 2012

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Received by (Print name & sign): msm Date: Feb 13/12

Samples Received by (Print name & sign): _____ Date: _____

Samples Received by (Print name & sign): _____ Date: _____

Page 1 of 1
NO: 000626



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: Frang 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:

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.



Certificate of Analysis

AGAT WORK ORDER: 12V574477

PROJECT NO: 2090-1103

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

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
				3-BH11
Parameter	Unit	G / S	RDL	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:



Certificate of Analysis

AGAT WORK ORDER: 12V574477

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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.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V574477

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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	3-BH11	MV-GWDUP5
				3118464	3118467	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

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 12V574477

PROJECT NO: 2090-1103

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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

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	3-BH11	MV-GWDUP5
			3118464	3118467	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:



Certificate of Analysis

AGAT WORK ORDER: 12V574477

PROJECT NO: 2090-1103

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 CANADA V5J 0B6
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<http://www.agatlabs.com>

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:

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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	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:



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

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
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

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
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
webeath.agatlabs.com

Chain of Custody Record

Report To:
 Company: Frans Environmental
 Contact: Amanda Sallway
 Address: 308-1080 Mountainview
Vancouver, BC V6B 2T4
 Phone: 604 652-9941 Fax: 604 652-9941
 LSD: _____
 Client Project #: 2090-1103

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

Report Information
 1. Name: Amanda Sallway
 Email: asallway@franzlab.com
 2. Name: Viviane Dubois-Côté
 Email: vdubois@franzlab.com

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

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

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

Turnaround Time Required (TAT)
 Regular TAT 5 to 7 working days
 Rush TAT 24 to 48 hours
 48 to 72 hours

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	Number of Containers	Preserved (Y/N)	Hazardous (Y/N)	Hold for 1 YEAR
3118464	3-BK10	Groundwater	FEB 14 2012 10:00		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					5		<input checked="" type="checkbox"/>	
1467	3-BK11		FEB 14 2012 10:00		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					3			
1468	3-BK29		FEB 14 2012 11:00		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					1			
1469	MV-GWDUPS		FEB 14 2012 11:00		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					5			

Chain of Custody Signatures:

Samples Relinquished by (print name & sign): [Signature] Date: Feb 14, 2012

Samples Relinquished by (print name & sign): S. COSBY Date: 14-FEB-12 11:54 AM

Samples Relinquished by (print name & sign): _____ Date: _____

Samples Relinquished by (print name & sign): _____ Date: _____

Page 1 of 1
 NO: 000162



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. Couzens

Relinquished by: Amada

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

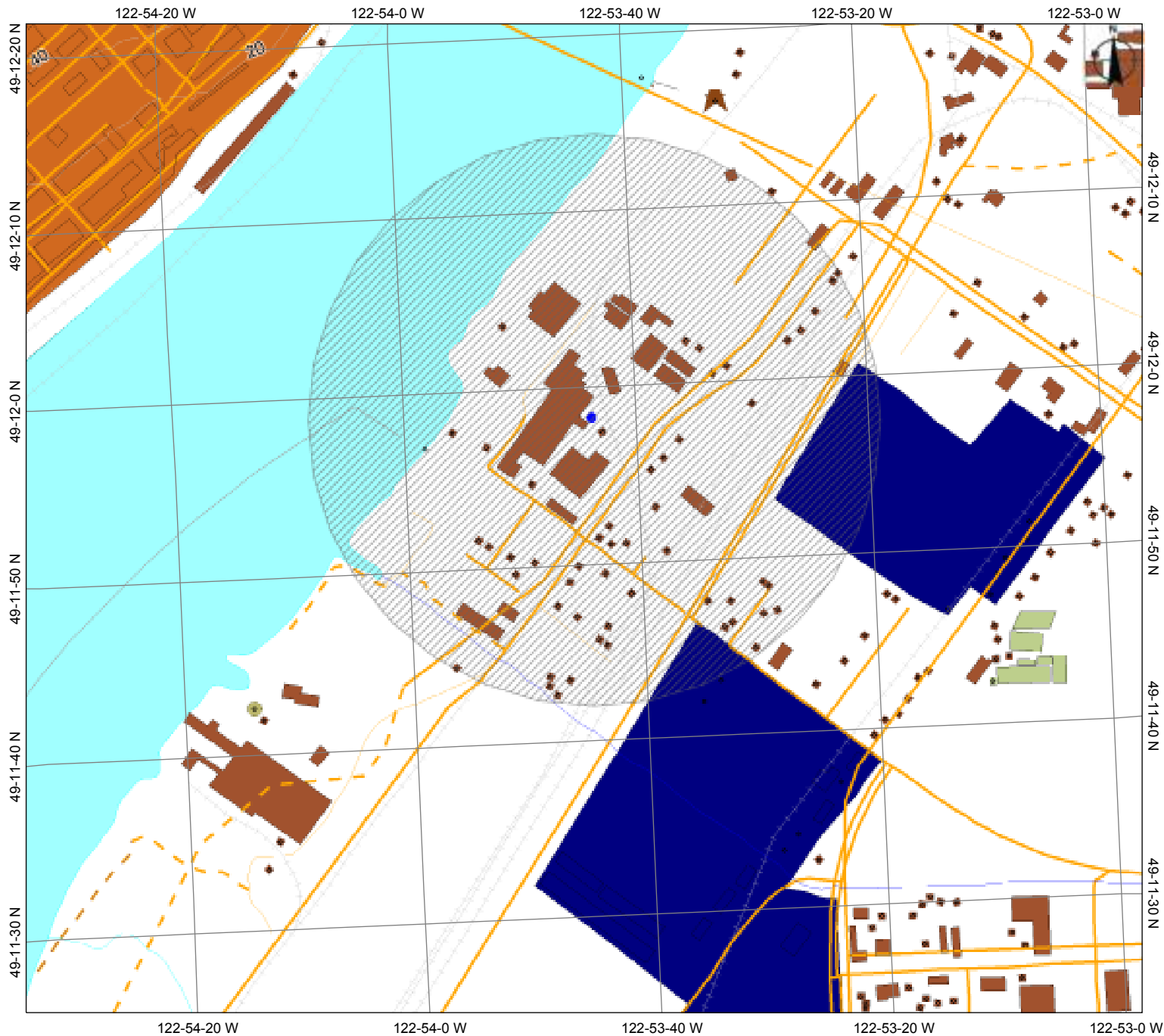
Size KM2: 9

Litho Stratographic Unit: Fraser River Sediments

Type of Water Use: Non-Drinking Water

AREA: 9030559.5734375

LEN: 25668.9032718472



Water Well Search

Legend

Water - Rivers, Creeks, Shorelines, etc. (1:25,000)

- Gleaser
- Infield
- Canal
- Dam
- Dam - Beaver
- Drain
- Falls
- Flume
- Rapids
- River or Stream - Definite
- River or Stream - Dry
- River or Stream - Indefinite
- River or Stream - Left Bank
- River or Stream - Right Bank
- Dam - section Base
- Flooded Land - Inundated
- Lake - Definite
- Lake - Indefinite
- Reservoir - Definite
- Reservoir - Indefinite
- Reservoir - Intermittent
- Marsh
- Swamp
- Breakoff or Breakwater - Large
- Dyke or Levee
- Island - Definite
- Sand Bar

0 140 280 m.

Scale: 1:10,000

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CAUTION: Maps obtained using this site are not designed to assist in navigation. These maps may be generalized and may not reflect current conditions. Uncharted hazards may exist. DO NOT USE THESE MAPS FOR NAVIGATIONAL PURPOSES.

Datum/Projection: NAD83, Albers Equal Area Conic

Key Map of British Columbia



Report 1 - Detailed Well Record

<p>Well Tag Number: 25982</p> <p>Owner: CROWN</p> <p>Address: TANNERY ROAD R/W AT DYKE ROAD</p> <p>Area: SURREY</p> <p>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</p> <p>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:</p> <p>Site Info Details: Other Info Flag: Other Info Details:</p>	<p>Construction Date: 1972-02-24 00:00:00.0</p> <p>Driller: Rural Well Drillers Well Identification Plate Number: Plate Attached By: Where Plate Attached:</p> <p>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</p> <p>WATER QUALITY: Character: Colour: Odour: Well Disinfected: N EMS ID: Water Chemistry Info Flag: Field Chemistry Info Flag: Site Info (SEAM):</p> <p>Water Utility: Water Supply System Name: Water Supply System Well Name:</p> <p>SURFACE SEAL: Flag: Material: Method: Depth (ft): 0 feet Thickness (in): Liner from To: feet</p> <p>WELL CLOSURE INFORMATION: Reason For Closure: Method of Closure: Closure Sealant Material: Closure Backfill Material: Details of Closure:</p>																				
<table border="1"> <thead> <tr> <th>Screen from</th> <th>to feet</th> <th>Type</th> <th>Slot Size</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td></td><td>0</td></tr> <tr><td>0</td><td>0</td><td></td><td>0</td></tr> <tr><td>0</td><td>0</td><td></td><td>0</td></tr> <tr><td>0</td><td>0</td><td></td><td>0</td></tr> </tbody> </table>		Screen from	to feet	Type	Slot Size	0	0		0	0	0		0	0	0		0	0	0		0
Screen from	to feet	Type	Slot Size																		
0	0		0																		
0	0		0																		
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0	0		0																		
<table border="1"> <thead> <tr> <th>Casing from</th> <th>to feet</th> <th>Diameter</th> <th>Material</th> <th>Drive Shoe</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> <td>null</td> <td>null</td> </tr> </tbody> </table>		Casing from	to feet	Diameter	Material	Drive Shoe	0	0	0	null	null										
Casing from	to feet	Diameter	Material	Drive Shoe																	
0	0	0	null	null																	
<p>GENERAL REMARKS: LOT CONTAINING WELL IS NOW IN ROAD RIGHT-OF-WAY</p> <p>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</p>																					

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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 to 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.



HEMMERA

**Phase I Environmental Site Assessment
Fraser River Port Authority
Brownsville Site, Surrey, BC**

Prepared for:
FRASER RIVER PORT AUTHORITY

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405-003.02
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EXECUTIVE SUMMARY

Hemmera was retained by the Fraser River Port Authority (FRPA) to complete a Phase I Environmental Site Assessment (ESA) for the Brownsville Site in Surrey, BC. This Phase I ESA program was conducted in support of a proposed property transfer from the Canadian National Railway (CNR) Company to the Government of Canada, to be administered by the FRPA.

The Brownsville Site (“the Site”) is a 1.43-hectare property owned by CNR that is currently zoned IL-1 (light impact industrial zone). The subject property is comprised of six (6) parcels (from southwest to northeast: Parcel A, B, C, Rem-C, 9 and 7) that are situated between the Fraser River and the CNR line southwest of the Patullo Bridge.

Parcel A is occupied by Smallwood Sawmills, which carries out wood chipping activities on Site. Parcels B, C and the southwest portion of Rem-C are occupied by Lindal Cedar Homes, which uses the site for wood storage (i.e., warehousing) and distribution activities. Parcels 7, 8 and the northeast portion of Rem-C are occupied by Lyndowana Lumber Ltd, a private log salvage operation.

The land use on-Site has been light industrial (wood manufacturing and processing) from at least 1932 to present day. Wood manufacturing and processing operations occupied the northeast side of the Site (Parcels 7 and 8) from the early 1930’s, and this area of the site has been predominately used for wood storage since the early 1960’s. Small house sized buildings were evident in the southwest part of the Site (Parcels A, B and C) from the early 1930’s to the early 1950’s (likely part of the fishing community). The house-sized buildings were removed by 1952 at which time the Parcels were overgrown with vegetation. By 1963, the vegetation was removed from Parcels A, B and C, and Brown Lee Mills was constructed in this area. Also by 1963, Parcels Rem-C, 7 and 8 were occupied by Brownsville Mills and were primarily used for wood storage. The Brown Lee Mill occupied Parcels A, B and C until the late 1970’s when the current Site buildings were built. The Brownsville Mill occupied Parcels Rem-C, 7 and 8 until the early 1980’s when multiple buildings were removed, vegetation began to grow, and the area was used for storage purposes. Smallwood Sawmills and Lindal Cedar Homes have occupied the Site from the early 1980’s to present day.

The land use surrounding the Site has been predominantly light industrial and commercial since at least 1952, with some residential areas prior to approximately 1980. Before 1952, the surrounding

and up gradient properties were woodland and/or farmland. From 1952 to present day, the surrounding industrial and commercial operations consisted of wood manufacturing and processing, with increasing numbers of automobile and truck service-type commercial operations after approximately 1980.

Based on records review, interviews and Site visit information; it was concluded there are four (4) on-Site APECs and three (3) off-Site APECs that could potentially impact soil and/or groundwater on-Site. The APECs and their COPCs are summarized in **Table ES1** and **Table ES2** below.

Table ES1: Summary On-Site APECs and COPCs

APEC No.	APEC Description	Media	COPCs	Investigation Rationale	Proposed Investigation Locations
1	Oil Storage Shed	Soil and Groundwater	Petroleum Hydrocarbons	<ul style="list-style-type: none"> • Extensive staining inside and outside of storage shed and unprotected drums stored outside shed, as observed by PWGSC in 1996, by FRPA in July 2000, and by Hemmera during 2006 Site visit. • No secondary containment for drums in use inside shed. • Smallwood Sawmill Ltd reportedly removed outside drums and oil-stained soil in September 2000, but extent of soil removal is unknown and many outside drums and staining are still present. 	MW06-1
2	Sawmill operations located on-Site (Parcels A, B, C, Rem-C, 7, and 8) from approximately 1932 to present	Soil and Groundwater	Petroleum Hydrocarbons, Metals, Chlorophenols	<ul style="list-style-type: none"> • Specific sawmill activities/locations are not known. 	MW06-1, MW06-2, MW06-3, MW06-4, MW06-5
3	Oil stains/odours observed beneath the green chain	Soil and Potentially Groundwater	Petroleum Hydrocarbons	<ul style="list-style-type: none"> • Petroleum hydrocarbon odours and potential staining were observed beneath the green chain during 2006 Site visit. • The ground surface beneath green chain is concrete of unknown condition. 	SS06-1
4	Historic fill materials of unknown origin, within top 2 to 3 m below ground surface (bgs) across the Site	Soil and Potentially Groundwater	Petroleum Hydrocarbons, Metals (particularly Zinc)	<ul style="list-style-type: none"> • The age and origin of the fill materials is unknown, though the materials were likely placed on the site prior to 1932. • Historic soil samples within the Site fill materials indicated levels of zinc above the CSR standards. • Site fill materials have never been sampled for petroleum hydrocarbons, the primary site COPC. 	MW06-1, MW06-2, MW06-3, MW06-4, MW06-5

Table ES2: Summary Off-Site APECs and COPCs

APEC No.	APEC Description	Media	COPCs	Investigation Rationale	Proposed Investigation Locations
5	Former pentachlorophenol (PCP) spraying tank reportedly located immediately southeast of Parcel 7 (near railroad tracks). PCP-treated wood was also stored adjacent to the Site for drying.	Soil and Groundwater	Petroleum Hydrocarbons, Chlorophenols	<ul style="list-style-type: none"> Identified during 1996 investigation by PWGSC, and discussed in 2000 FRPA report and 2002 Keystone report. Stacked wood reportedly placed on supports and hand-sprayed with PCP pumped from a tank. Surface below tank was apparently asphalt paved, but the extent and condition of the historic paving is unknown. Treated products were then reportedly stored south of the railroad tracks. 	MW06-4
6	Adjacent and up gradient historical industrial activities and Brownsville rail spur adjacent to Parcels A, B and C, Rem-C, 7 and 8.	Soil and Groundwater	Petroleum Hydrocarbons, Metals, Chlorophenols	<ul style="list-style-type: none"> Milling operations or related industries have been adjacent to the Site since at least 1932, and the rail spur has been present since 1891. A metal depot was operated adjacent (northwest of the Site) from 1970 to 1985. Historical light industrial operations, including auto body repair shops, shingle production, and concrete production were located within 300 m of the Site. 	MW06-1, MW06-2, MW06-3, MW06-4, MW06-5
7	RV Park Diesel Spill	Soil and Groundwater	Petroleum Hydrocarbons	<ul style="list-style-type: none"> BC Site registry search indicated a diesel spill occurred at 11940 Old Yale Road (RV Park) in 1999. The site is currently "ACTIVE UNDER ASSESSMENT" according to BC MOE. 	MW06-4, MW06-5

Based on the APECs identified during the Phase 1 ESA and outlined above, Hemmera has concluded that additional investigation through a Phase II ESA process is warranted to confirm or refute if soil and/or groundwater contamination is present at the identified APECs. Five (5) monitoring well locations and one (1) surface sample are proposed as part of a Phase 2 ESA program. These proposed investigation locations are illustrated on Figure 2 and described in **Tables ES1** and **ES2** (above) in relation to each APEC.

It is also recommended that prior to the proposed property transfer, FRPA should identify and quantify the on-Site waste materials (e.g. small pieces of abandoned machinery, tires, wood pallets, scrap wood, etc.) in order to assess future disposal costs. These waste materials would not likely result in Site contamination and do not represent an immediate environmental concern, but the assumption of a property with waste materials could represent a liability to FRPA, since the cost and responsibility associated with the appropriate off-site disposal of these materials would also be assumed.

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1.0 INTRODUCTION

Hemmera was retained by the Fraser River Port Authority (FRPA) to complete a Phase I Environmental Site Assessment (ESA) for the Brownsville Site in Surrey, BC (**Figure 1**).

The Brownsville Site (“the Site”) is a 1.43-hectare property owned by the Canadian National Railway (CNR) Company that is currently zoned IL-1 (light impact industrial zone). The subject property is comprised of six (6) parcels (Parcel A, B, C, Rem-C, 7 and 8) (**Figure 2**) that are situated between the Fraser River and the CNR line southwest of the Patullo Bridge.

Parcel A is occupied by Smallwood Sawmills; Parcels B, C and the southwest portion of Rem-C are occupied by Lindal Cedar Homes; and Parcels 7, 8 and the northeast portion of Rem-C are occupied by Lyndowana Lumber Ltd. Industrial wood processing and wood manufacturing mills have operated on-Site from at least 1932 to present.

This Phase I ESA program was conducted in support of a proposed property transfer from CNR to the Government of Canada, to be administered by the FRPA.

2.0 OBJECTIVES AND SCOPE OF WORK

The objective of the Phase I Environmental Site Assessment (ESA) was to identify areas of potential environmental concern (APECs) and constituents of potential concern (COPCs) associated with the current and/or historical operations at the Site. In order to complete the Phase I ESA, the following work was undertaken:

- Searches were performed to obtain information of environmental significance from the municipality, the province and the federal government;
- Interviews were conducted with persons knowledgeable about current and historical activities on and in the vicinity of the Site; and
- A Site visit was conducted to assess the conditions on the Site.

The Phase I ESA was conducted in accordance with the guidelines as set forth in the *Canadian Standards Association (CSA) Standard Z768-01, Phase I Environmental Site Assessment (November 2001)*. The information and reporting also satisfies the requirements of a Preliminary Site Investigation as prescribed in the *BC Environmental Management Act* and *Contaminated Sites Regulation*.

In accordance with the FRPA's requested scope of work, this Phase I ESA does not include an assessment of the potential impacts from the Brownsville Site to the downgradient water lots owned by the Government of Canada and administered by the FRPA.

3.0 PHASE I ENVIRONMENTAL SITE ASSESSMENT

3.1 SITE DESCRIPTION

The Brownsville Site is a 1.43-hectare property owned by the Canadian National (CN) Railway Company. The property is comprised of six (6) parcels (Parcel A, B, C, Rem-C, 7 and 8) (Figure 2).

Parcel A is occupied by Smallwood Sawmills, which carries out wood chipping activities on Site. Parcels B, C and the southwest portion of Rem-C are occupied by Lindal Cedar Homes, which uses the site for wood storage (i.e., warehousing) and distribution activities. Parcels 7, 8 and the northeast portion of Rem-C are occupied by Lyndowana Lumber Ltd, a private log salvage operation.

The Site is currently zoned IL-1 (light impact industrial zone). Site information is summarized in Table 1.

Table 1: Summary of Site Information

Common Name of Property	Brownsville Site	
Civic Address	Along Dyke Road, between Tannery Road and Old Yale Road, Surrey, BC	
Legal Description <i>(Note: the Site is not a separate legal property)</i>	Parcel A	(PARCEL BOOK 12 FOLIO 75, No.4114F) DISTRICT LOT 6 GROUP 2 NEW WESTMINSTER
	Parcel B	(PARCEL BOOK 12 FOLIO 75, No.4113F) DISTRICT LOT 6 GROUP 2 NEW WESTMINSTER
	Parcel C	(PARCEL BOOK 12 FOLIO 93, No.4222F) DISTRICT LOT 6 GROUP 2 NEW WESTMINSTER
	Parcel Rem-C	(PARCEL BOOK 12 FOLIO 78, No.4128F) DISTRICT LOT 5 GROUP 2 NEW WESTMINSTER
	Parcel 7	LOT 7 DISTRICT LOT 4 GROUP 2 PLAN 2620
	Parcel 8	LOT 8 DISTRICT LOT 4 GROUP 2 PLAN 2620
Parcel Identifier Number (PID)	Parcel A	012-878-260
	Parcel B	012-878-278
	Parcel C	012-878-286
	Parcel Rem-C	012-878-308
	Parcel 7	000-732-770
	Parcel 8	000-732-664

Latitude and Longitude	49°/ 12' / 56" N, 122°/ 53'/ 43" W			
Area	Parcel A	0.2 hectares		
	Parcel B	0.2 hectares		
	Parcel C	0.2 hectares		
	Parcel Rem-C	0.6 hectares		
	Parcel 7	0.2 hectares		
	Parcel 8	0.03 hectares		
	Total	1.43 hectares		
Registered Land Owner	CN Railway Company			
Zoning	IL- 1 (Light impact industrial zone)			
% Site Coverage	Parcel A	15% structures	85% asphalt	0% vegetation/bare
	Parcel B	10% structures	90% asphalt	0% vegetation/bare
	Parcel C	80% structures	20% asphalt	0% vegetation/bare
	Parcel Rem-C	0% structures	25% gravel	75% vegetation/bare
	Parcel 7	0% structures	0% asphalt	100% vegetation/bare
	Parcel 8	0% structures	0% asphalt	100% vegetation/bare
	Total	15% structures	35% asphalt/gravel	50% vegetation/bare

There are currently six (6) buildings on-Site (**Figure 2**), as follows:

1. Sawmill;
2. Green Chain;
3. Oil Storage Shed;
4. Storage Bunker (for hog-fuel);
5. Former Kiln (current warehouse); and
6. Warehouse/Distribution Building

Four (4) of the buildings (sawmill, oil storage shed, former kiln, warehouse/distribution) are currently active. The green chain and storage bunker are no longer in use. The on-Site buildings are discussed in more detail in **Section 3.3.1** of this report.

3.2 RECORDS REVIEW

Records were reviewed for items of environmental significance including historical facility locations, industrial/commercial activities on the Site, and concerns associated with the current and historical use of adjacent properties. Information sources reviewed as part of the records search were:

1. BC Water Well Database;
2. Topographical and geological maps;
3. The Green Lane, Environment Canada's World Wide Web Site;
4. Land title records (including a historical title search);
5. Aerial photograph library;
6. City of Surrey Street Directories;
7. Provincial Regulatory Requests
8. Insurers' Advisory Organization (IAO) records;
9. UBC Special Collections;
10. BC Heritage Resource Inventory;
11. BC Conservation Data Centre;
12. Previous environmental reports;
13. City of Surrey;
14. City of Surrey Fire Department;
15. Environment Canada records; and
16. Federal Contaminated Sites Inventory (FCSI).

3.2.1 Groundwater Wells

A search of the BC groundwater well database did not identify any on-Site groundwater wells. The provincial database search indicated that two (2) off-Site groundwater wells are located within 2.5 km of the Site. One well is located approximately 1.5 km to the southeast and up gradient of the Site, and the second well is located 2.5 km to the northeast and cross gradient of the Site. The current use of the groundwater wells is domestic. The groundwater well data is attached as **Appendix A**.

3.2.2 Geology, Topography and Drainage

A Geological Survey of Canada map “1484A, *Surficial Geology, New Westminster*” described the surficial geology for the Site as: Post-glacial Salish sediments, bog, swamp and shallow lake deposits, consisting of lowland peat up to 14 m thick, in part overlying Fraser River Sediments (overbank sandy to silt loam, and overbank silty to silt clay loam up to 2 m thick, overlying deltaic and distributary channel fill, sandy to silt loam, 10 m to 40 m thick).

In the previous Klohn-Crippen environmental report (Klohn, 1995), Site stratigraphy was described as: “variable fill 2.0 to 3.0 m thick (consisting of 1.0 to 3.0 m sand or sand and gravel overlying 1.0 to 1.2 m wood waste including hog-fuel) overlying a native silt stratum 1.2 to 3.7 m thick. The silt is underlain by variable thickness of sand and silt layers. Peat layers (0.3 m thick) are also identified at depths ranging from 7.0 to 8.0 m”.

The Site does not have municipal storm sewer services. Parcels A, B and C have an engineered water conveyance system that includes a series of catch-basins and underground drainage lines that discharge directly into the Fraser River. Parcels Rem-C, 7 and 8, drain directly into and over the exposed grass, gravel and/or soil matrix.

The topography of the Site and surrounding area is generally flat lying. The flood potential of the Site is considered high as its elevation is at or near sea level.

3.2.3 Hydrogeology

In the previous environmental site investigation completed Klohn-Crippen in April 1995, the water table was encountered at depths ranging from 1.2 to 1.5 m below surface. The groundwater flow direction in water-bearing zone was inferred to be to the northwest (towards the Fraser River).

3.2.4 Precipitation Data

Environment Canada records indicated that the average annual precipitation reported at the Surrey Kwantlen Park station (approximately 2 km southeast of the Site) is 631.1 mm, based on data from 1971 to 2000. The monthly historic averages are provided in **Table 2**.

Table 2: Precipitation Values for Surrey Kwantlen Park Station

Month	Average Precipitation (mm)	Month	Average Precipitation (mm)	Month	Average Precipitation (mm)
January	202.2	May	92.3	September	71.7
February	158.5	June	73.6	October	152.5
March	146.3	July	52.9	November	239.9
April	116.4	August	50.7	December	228.9

3.2.5 Land Titles

A historical land title search for the Site, conducted through BC Online, indicated that the CNR Company is the current registered owner of the Site. The land title searches were conducted on the six (6) parcels that comprise the Brownsville Site (A, B, C, Rem-C, 7 and 8). The results of the title search are included in **Appendix B** and are summarized in **Table 3** below.

Table 3: Historical and Current Land Titles for the Brownsville Site

Parcel	Parcel Identifier (PID)	Registered Owner	Title Registration Received	Title Registration Entered	Title Cancelled
A	012-878-260	CNR Company	January 14, 1989	January 27, 1989	Current
B	012-878-278	CNR Company	January 14, 1989	January 27, 1989	Current
C	012-878-286	CNR Company	January 14, 1989	January 27, 1989	Current
Rem-C	012-878-308	CNR Company	January 14, 1989	January 27, 1989	April 15, 1991
Rem-C	012-878-308	CNR Company	April 15, 1991	April 15, 1991	Current
7	000-732-770	CNR Company	March 12, 1968	September 24, 1984	Current
8	000-732-664	CNR Company	May 9, 1983	May 9, 1983	October 19, 1984
8	000-732-664	CNR Company	September 13, 1984	October 19, 1984	Current

3.2.6 City Directory Search

The purpose of the directory search is to obtain an indication of past land use activities which may have resulted in the generation of constituents of potential concern (COPCs) on the Site, or on neighbouring properties with the potential for migration to the Site.

Hemmera conducted a search of the Greater Vancouver city directories at the Vancouver Public Library for addresses along Dyke Rd, Old Yale Road, Olsen Road, Tannery Road and Timberland Road within 300 m of the Site. The directories consulted were dated 2001, 1997, 1994, 1990, 1985, 1980, 1975, 1970, 1966 and 1959. Directories with listings for the Site were not available at the Vancouver Public Library. Directories with listings for the surrounding area were also not available for the period prior to 1959.

Within the time period (1959 to 2001) and the city blocks researched, the surrounding land use was predominantly industrial and commercial since 1959, with some residential listings present prior to approximately 1980 (no residential listing were observed after 1980). The surrounding land uses considered to potentially pose potential environmental concerns to the Site are presented in **Tables 4, 5, 6, 7 and 8**. These locations were selected based on their addresses being within 300 m of the Site, and on whether the names of historical occupants suggested possible industrial (or unknown, non-residential) activities. Where the name of a commercial business listed was ambiguous with respect to property use (e.g., it could be an office location rather than a servicing facility), this business may conservatively have been included in the tables below, based on other historical industrial occupants at the same address.

Table 4: Dyke Road Directory Search

Address	Occupants	Comments
10880 Dyke Road	Lindal Cedar Homes Ltd (1990 – 2001)	Approximately 50 m southwest of the Site
10862 Dyke Road	Supreme Shingle Manufacturers (1959) Brownlee Industrial Kiln Drying (1959)	Approximately 50 m southwest of the Site

Table 5: Old Yale Road Directory Search

Address	Occupants	Comments
11918 Old Yale Road	Capilano Timber Co Ltd (1980) Bridgeview Cedar Ltd (1966 - 1975) Brownsville Sawmills Ltd (1959 - 1975)	Approximately 50 m northeast of the Site
11919 Old Yale Road	Fraser River Metals Depot Inc (1970 - 1985) Stewart Hector Ltd (1970 - 1980)	Approximately 100 m northeast of the Site
11940 Old Yale Road	Brownsville Pub and RV Park (2001)	Approximately 25 m southeast of the Site

Address	Occupants	Comments
	Fraser River RV Park (1997)	
11975 Old Yale Road	Canwest Tanks Ecological Systems Ltd (2001). Whitewater Sewage Treatment (2001)	Approximately 180 m east of the Site
11987 Old Yale Road	New Horizons Autobody Ltd (1994 - 2001)	Approximately 250 m east of the Site
11999 Old Yale Road	Brownsville Auto Body (1990) J D S Automotive Ltd (1985)	Approximately 275 m east of the Site
12003 Old Yale Road	Amtrack Autobody Repairs Ltd (2001) Gerrys Auto Repair Mobile Mechanic (1997 - 2001) First Class Engine Servicing (1994 - 2001) First Class Truck Servicing (1990 - 2001) Zarin Construction Ltd (1997 - 2001) Surrey Frame and Alignment (1997) Transformers Auto Body Ltd (1990) Can Do Service (1990) Westcoast Neon Corp (1990) Marque Restorations (1985)	Approximately 300 m east of the Site

Table 6: Olsen Road Directory Search

Address	Occupants	Comments
10979 Olsen Road	Walrus Truck and Crane Service Ltd (1990 - 2001)	160 m southeast of the Site

Table 7: Tannery Road Directory Search

Address	Occupants	Comments
11691 Tannery Road	Leckie J Co Ltd (1966 - 1970) Imperial Lumber Wholesale (1959) Western Wood Mldg (1959)	Approximately 25 m to 75 m southwest of the Site
11715 Tannery Road	Apex Terminals Inc. (2001) Landucci Industries (2001) Protrux Systems Inc (2001) Imperial Lumber Ltd (1980 - 1997) Mcilveen Lumber Industries (1985 - 1997)	Approximately 20 m east of the Site

Address	Occupants	Comments
	Imp-Pac Trucking Ltd (1985 - 1990)	
No Address	Pacific Shore Lumber Products Ltd (1990) Alwood Manufacturers Ltd (1975) Canwood Lumber Manufacturing (1975) Lindal Cedar Homes Ltd (1975) Simplex Roofing & Sidewall Ltd (1975) Superior Shingles Ltd (1966 - 1975) Imperial Lumber Ltd (1966 - 1970) Brownlee Industries Co (1966 - 1970)	These directory listings did not contain any addresses, therefore the locations of these listings relative to the Site is unknown. As such there is a potential that any number of these industries may have been present within 300 m of the Site.

Table 8: Timberland Road Directory Search

Address	Occupants	Comments
10897 Timberland Road	A Q Timber Inc (1997) Coast Clear Wood Ltd (1990 - 1997) Triad Forest Products Ltd (1990 - 1997) BC Crossarm Co (1959 - 1985) Everwood Trading Ltd (1985) Kleysen Transport Ltd (1985) Orchardson forest Products Ltd (1970 - 1985) Bomanite Concrete Specialties (1975) C B M Enterprises Ltd (1975) Multi Lease Ltd (1975) Poucher H K Ltd (1975) Rapco-Foam Division of Bomanite Concrete Specialties (1975) Alden Developments (1970)	Approximately 25 m to 250 m southeast of the Site
10917 Timberland Road	David & Kwai Jade Arts Ltd (1980 - 1997) Spectrum Sailcraft Ltd (1975)	Approximately 260 m southeast of the Site
10985 Timberland Road	Arjay Industries Ltd (1990 - 2001)	Approximately 270 m southeast of the Site

Although the exact nature of the operations on the surrounding properties is not known, many of the business names imply historic industrial activities, including mill operations, auto repair and auto body shops, concrete manufacturing and a metals depot. Therefore, the nearby current and historic industrial activities up gradient of the Site have been conservatively identified as an APEC.

A copy of the city directory search is provided in **Appendix C**.

3.2.7 Provincial Regulatory Requests

The BC Online Site Registry is a database of sites having submitted information to the British Columbia Ministry Of Environment (BC MOE) with respect to the *Environmental Management Act*. A Site Registry search was conducted by using a 0.5 km search radius around the Site. The search of the registry produced four (4) records, the locations of which are illustrated on **Figure 3**. The results of the Site registry search are included in **Appendix D** and are summarized in **Table 9** below.

Table 9: Site Registry Search (0.5 km search radius)

Site ID	Last Updated	Address	Fee Category	Record Status	Notations
5440	March 12, 2004	10761 Dyke Road	Medium Site – Complex Contamination	Active – Remediation Complete	Conditional Certificate of Compliance (CCOC) issued
6114	February 13, 2002	11940 Old Yale Road	Unranked	Active – Under Assessment	Diesel spill reported on-site at RV site 44
2767	March 9, 2001	Underneath Skytrain and Patullo Bridge	Not Applicable	Active – Under Assessment	No activities reported
3722	February 21, 2003	125 Columbia Street, New Westminster	Medium Site – Simple Contamination	Active – Remediation Complete	CCOC issued

Site Record 5440 at 10761 Dyke Road and Site Record 3722 at 125 Columbia Street were not identified as APECs for the Brownsville Site, since CCOCs were issued by the MOE for each site and since Site Record 3722 is located across the Fraser River from the Site. Site record 2767, situated underneath the Skytrain and the Patullo bridges, was not considered an APEC since it is located cross gradient of the Site.

Site Record 6114 at 11940 Old Yale Road was identified as an APEC for the Brownsville Site due to its location (up gradient of the Site) and because the record status is “Active-Under Assessment”. This record status indicates that the diesel spill reported for that site is currently under assessment, but a CCOC has not been issued (i.e., the site may not be compliant with the BC Contaminated Sites Regulation).

3.2.8 Insurers’ Advisory Organization (IAO) Records;

No Fire Insurance Plans (FIPs) or IAO inspection reports concerning the Site were found during a search on the Brownsville Site conducted by Eva Michielutti of CGI Insurance Business Services. Refer to **Appendix E** for the response from CGI.

3.2.9 UBC Special Collections

A search of UBC Special Collections was also completed for fire insurance plans and historical land use plans for the Site. No fire insurance records were found for the Brownsville Site.

Land use plans were found for 1964 and 1980. The land use plans are included in **Appendix F** and were used to aid in the interpretation of the historical aerial photographs and historical and current information for adjoining properties.

The land use plan from 1964 indicates that at that time, Parcels A, B and C were occupied by Brown Lee Mills (wood processing and manufacturing), Parcels 7 and 8 were occupied by Brownsville Mills (wood processing and manufacturing) and Parcel Rem-C was vacant.

The land use plan for 1980 indicates that at that time, the land use for the Site (all parcels) was for manufacturing and processing wood. Specific company names were not identified.

3.2.10 Aerial Photographs

Aerial photographs were reviewed in order to log the progressive changes in the condition and land use patterns on the Site and adjacent properties.

Aerial photographs for 2004, 1994, 1984, 1979, 1971, 1963, 1952, 1948, and 1932 were reviewed with observations detailed below in **Table 10**. Copies of the aerial photographs are included in **Appendix G**.

Table 10: Aerial Photograph Summary

Year	Photograph#	Observation	
1932	A4508.5	Site	There are numerous house-sized buildings in Parcels B and C, likely homes or storage facilities for the fishing community. A light industrial area is evident with some larger warehouse sized buildings on Parcels 7 and 8.
		Northwest	Log booms are stored near the subject property on the Fraser River indicating that some milling operations could be present.
		Southwest	Woodland and/or agricultural land observed immediately adjacent to the Site. An industrial operation (likely wood processing and/or manufacturing) observed approximately 1 km to southwest.
		Southeast	Woodland and/or agricultural land.
		Northeast	Numerous house-sized and warehouse-sized buildings observed immediately to the northeast of Parcel 7, indicating industrial operations.
1948	BC 483:29	Site	Poor image quality due to shade from cloud cover. More development has occurred on Parcels 7 and 8.
		Northwest	No significant changes observed.
		Southwest	No significant changes observed.
		Southeast	No significant changes observed.
		Northeast	No significant changes observed.
1952	BC 1672:21	Site	Parcels A, B, C and Rem-C appear to be overgrown with vegetation; the house-sized buildings were removed. Some buildings appear to exist between the vegetation and the Brownsville Rail Spur. The light industrial area in Parcels 7 and 8 appears to be unchanged. Woods and farmland still exist inland from the Site.
		Northwest	No significant changes observed.
		Southwest	No significant changes observed.
		Southeast	A few buildings (likely Imperial Lumber) have been constructed on the opposite (southeast) side of the Rail Spur from the Site.
		Northeast	No significant changes observed.
1963	BC 5063:26	Site	Most of the vegetation has been removed from Parcels A, B and C. Large buildings appear to occupy these parcels to accommodate the mill operations (Brown Lee Mills). The mill appears to be in full production based on new building construction and wood storage. Several buildings exist in Parcels Rem-C, 7, and 8 with most of this area used for log and lumber storage (Brownsville Mills). Another new operation (BC Crossarm Ltd.) has appeared directly east (across the CN railway) of Imperial Lumber. Log booms continue to be stored adjacent to the Site on the Fraser River.
		Northwest	No significant changes observed.
		Southwest	Additional construction evident.
		Southeast	The mill opposite the Brownsville Rail Spur (Imperial Lumber) is still in production. New construction is visible inland, resulting in decreased woodland, vegetation and/or agricultural land.
		Northeast	More construction observed immediately adjacent to the Site to the northeast and newly constructed buildings are evident across Old Yale Road.

Year	Photograph#	Observation	
1971	BC 5406:180	Site	The large building on Parcel C has been removed. A large narrow building has appeared adjacent to where the Rail Spur and the CN Rail intersect (possibly the first phase of the current storage warehouse). The mills (Brown Lee Mills and the Brownsville Mill) appear in to be in full production based on smoke generation and Site activity (wood storage etc.). Log booms are stored near the Site on the Fraser River.
		Northwest	A smoke stack is active between the Rem-C Parcel and the Fraser River, indicating industrial activities.
		Southwest	No significant changes observed.
		Southeast	Mill operations (smoke, vehicles) observed, indicating the mills are in production. The inland area that is being used for woodland and/or agricultural purposes is largely unchanged.
		Northeast	No significant changes observed.
1979	BC 790/1:220	Site	The current storage facility for the mill is present on the Site (partially located on Parcel C). Parcels A and B have been converted into open lots for mill activities. New buildings have been constructed on Parcels A and B including the current sawmill (which includes the cut-off saw in-feet conveyor, side log lift and chipper) the chip fuel and hog fuel bunkers, the green chain, the oil shed and the kiln. Activities in Parcels Rem-C, 7, and 8 appear unchanged from previous photo.
		Northwest	New buildings that span the northwest property boundary of Parcels A, B and C are described above.
		Southwest	Vegetation has been cleared from the property southwest of the Site (adjacent to the Fraser River) and is being used as an open lot for industrial purposes.
		Southeast	The mills adjacent to the Site still appear to be in full production. Additional construction further inland observed.
		Northeast	No significant changes observed.
1984	BC 84013:197	Site	Vegetation has grown on half of the open lot south of the Site. The other half appears to be used for storage for the mill on Site. The activity on Parcels Rem-C, 7 and 8 appear to have slowed down as vegetation is beginning to grow in the area.
		Northwest	No significant changes observed.
		Southwest	Vegetation has grown on half of the open lot south of the Site. The other half appears to be used for storage for the mill on Site.
		Southeast	Industrial activity appears to have slowed down or halted adjacent to the Site. Additional construction further inland observed.
		Northeast	No significant changes observed.
1994	FFC 94#167	Site	Activity on Parcels Rem-C, 7 and 8 appears to have halted, as additional vegetation is present. The remaining areas on the Site appear unchanged from the previous photo.
		Northwest	No significant changes observed.
		Southwest	No significant changes observed.
		Southeast	The RV Park has appeared to the southeast of Parcel 7.
		Northeast	No significant changes observed.
2004	SRS 6912, 422	Activities appear unchanged from previous photos.	

Based on the aerial photographs reviewed, industrial wood processing and wood manufacturing mills have operated on-Site from at least 1932 to present. The exact nature and locations of historic mill operations is unknown, therefore historic on-Site industrial operations were identified as an APEC. The current and historic surrounding land uses described above are also outlined on **Figure 3**.

3.2.11 BC Heritage Resource Investigation

A search by the Archaeological Information Services of the BC Ministry of Sustainable Resource Management indicated no archaeological site records in the area of the Site. The correspondence from the Archaeological Information Services of the Ministry of Sustainable Resource Management is attached in **Appendix H**.

3.2.12 BC Conservation Data Centre

A search of the provincial database indicated that three (3) element occurrences on the blue-list were mapped in the area of the Site. The results of the Conservation Data Centre search are attached in **Appendix I** and are summarized in **Table 11** below.

Table 11: CDC Element Occurrences (EO)

Element Occurrence Record	Species	Location	Status
3010	Elatine Rubella (Three-flowered Waterwort)	Patullo Bridge, East side of Fraser River	Blue list
3412	Carex scoparia (Pointed Broom Sedge)	Patullo Bridge, East side of Fraser River	Blue list
3276	Lindernia dubia var. anagallidea (False-pimpernal)	Fraser-Surrey Docks	Blue list

The blue-list includes any ecological community, and indigenous species and subspecies considered to be of special concern (formerly vulnerable) in British Columbia. The elements are of special concern because of characteristics that make them particularly sensitive to human activities or natural events. Blue-listed elements are at risk, but are not extirpated; endangered or threatened,

and therefore do not require investigation. The three (3) element occurrences in the area of the Site would not effect future land use decisions.

3.2.13 Previous Environmental Reports

The following reports were provided by the Fraser River Port Authority and reviewed by Hemmera (a brief summary is provided below):

1. Keystone Environmental Ltd., *Evaluation of Environmental Investigation Status - Brownsville / Port Mann CN Land Swap, Surrey, BC*. September 16, 2002.

The Keystone report (2002) evaluates the potential land swap between the Fraser River Port Authority and CN Railway. The report identified eight (8) areas of potential environmental concern (APECs) on-Site including; the former sawmill (located on-Site since 1926), the green-chain, fill present on-Site (including pre-load fill, oil stained soils and metal debris), former pentachlorophenol (PCP) praying tank and storage, fuel storage shed, petroleum hydrocarbon soil contamination identified in Klohn-Crippen report (1995), surface oil staining identified in PWGSC report (1996) and adjacent rail spur and industrial up gradient properties.

2. Fraser River Port Authority, *Environmental Audit, On-Site Inspection Report – Generic*. July 31, 2000.

The Fraser River Port Authority report (2000) is an environmental audit/on-Site inspection of Parcels A, B and C of the Brownsville Site. The report resembles a Phase 1 ESA, but does not meet the requirements of a CSA Phase 1 ESA. The report provides a description of Site operations, a Site inventory, and results of a Site inspection. The report identified a UST (septic tank), an AST (diesel), fuel storage (oil drums), and oil staining under the cut-off saw in-feet conveyor.

3. Public Works and Government Services Environmental Services (PWGSC), *Environmental Audit Report - Brownsville/Port Mann CN Land Swap, Surrey BC*. August 23, 1996.

The PWGSC report (1996) is an environmental audit of the Brownsville Site and the Port Mann site as part of the proposed CN land swap. PWGSC identified potential environmental issues on-Site including an oil stain near the Brownsville spur and the oil storage shed. A PCP dip-tank was

also identified immediately outside the boundaries of Parcels 7 and 8. PWGSC stated that there was no reason to suspect PCP contamination because the base of the tank was concrete. Also discussed were previous soil samples collected by Klohn-Crippen (1995) and BC Research Corporation (1991).

4. Klohn-Crippen Consultants Ltd., *Fraser River Harbour Commission, Lindal Cedar Homes Sawmill Expansion, Surrey BC - Preliminary Geotechnical and Environmental Assessments*. April 1995.

The Klohn-Crippen report (1995) presented preliminary geotechnical and environmental assessments for a proposed sawmill expansion at Lindal Cedar Homes Ltd. Five (5) test-holes were drilled and (3) monitoring wells were advanced as part of the investigation. Of the eight (8) investigation locations, one (1) monitoring well and one (1) test-hole were located on the Brownsville Site. Klohn-Crippen identified potential environmental issues including the presence of hog-fuel (particularly within the northwest portion of the Site), and one (1) mineral oil and grease soil sample that exceeded provincial environmental criteria (located off-Site, down gradient and to the north of Parcel 7).

5. British Columbia Research (BCR) Corporation, *Follow-Up Phenols Testing for Brownsville Site*. May 30, 1991 and *CNR Brownsville Site Soils Assessment Program*. April 12, 1991

During their 1991 investigation on the Site, the British Columbia Research Corporation (BCR) drilled one shallow borehole into the fill materials on each Site Parcel (a total of six boreholes, each up to 1.5 m bgs). Two (2) samples were collected from each location and analyzed for metals, total phenols, and polycyclic aromatic hydrocarbons (PAHs). The PAH and total phenols numbers were compared to the current Contaminated Sites Regulation (CSR) standards and one sample (collected from Parcel A) exceeded the current CSR standards for phenols. The exceedance was historically addressed by submitting eight (8) additional samples from Parcel A for phenols analysis. Given that the additional samples had phenols concentrations below CSR standards, it is likely that the original sample that exceeded was a very localized situation or possibly a laboratory error. Therefore, phenols do not appear to be a COPC in the site fill materials.

The BCR 1991 metals analysis could not be directly compared to the CSR since the current CSR Standards for soil require pH measurements to interpret metals concentrations in soils and BCR did not collect pH measurements during their investigation. However, a conservative review of the historic data was possible considering the lowest pH as a conservative measure. Using this approach, zinc concentrations exceeded CSR standards in samples collected from Parcels A and C, but no other metals concentrations exceeded the CSR standards.

3.2.14 Federal Contaminated Sites Inventory (FCSI)

A search of the Federal Contaminated Sites Inventory (FCSI) on the Treasury Board of Canada Secretariat website was conducted by Hemmera. No federal contaminated sites were found within a 1.0 km radius of the Brownsville Site. A map of federal contaminated sites search is provided in **Appendix J**.

3.2.15 Adjacent Areas

The Site is bounded by water-lots to the northeast and northwest (situated between the Site and the Fraser River, owned by the Government of Canada and administered by the FRPA). The Site is also bounded by the Brownsville Rail Spur and the CN Rail Line to the southeast, residentially – zoned lands intended for subdivision development to the southwest of Parcel A, and a vacant asphalted lot immediately to the northeast of Parcel 7. Additional industrial, commercial and residential properties lie beyond the rail lines, to the southwest and northeast.

A Recreational Vehicle (RV) park is located to the southeast of Parcel 7 and 8 at 11940 Old Yale Road (up gradient of the site). A Site registry search indicated a diesel spill had occurred at the RV Park in 1999. The current environmental record status is “Active-Under Assessment”. Due to the location of the RV Park (adjacent and up gradient of the Brownsville Site), and lack of information with respect to the status of the assessment, the RV Park was conservatively identified as an APEC.

Reportedly, the area immediately to the southeast of Parcels 7 and 8 historically contained a PCP spray-tank and treated wood storage. According to the 1996 PWGSC report (and also discussed in 2002 Keystone report), these activities were carried out immediately to the southeast (i.e., up gradient) of Parcels 7 and 8 (between the Site property boundaries and the CN rail line). The exact

location and nature of the PCP spray-tank is unknown, therefore this has been conservatively identified as an APEC.

In general, the up gradient industrial activities to the south and southeast of the Brownsville Site have been conservatively identified as an APEC, as discussed in **Section 3.2.6** of this report.

An environmental record was identified during the Site registry search for 10761 Dyke Road (cross gradient of the Site with respect to groundwater flow direction). A detailed site investigation was conducted at 10761 Dyke Road and a certificate of compliance (COC) was issued in 1998. Therefore, this site is not considered an APEC for the Brownsville Site.

Historical and current information for the adjacent properties is summarized in **Table 12** and on **Figure 3**.

Table 12: Historical and Current Information for the Adjacent Properties

Orientation	Property	Approximate Distance from Site	Activity	Years Present	Information Sources Used
Northwest (down gradient) of Site between the Brownsville Site and the Fraser River	Government of Canada owned water lots – administered by the FRPA	Immediately adjacent to the Site	Mill Operations	At least 1932 to present	Records review, Site visit
Northwest of Parcel A (down gradient)	Smallwood Mills Sawmill (subsidiary of Mill and Timber Products Ltd.)	Immediately adjacent to Parcel A and spanning the northwest property boundary along Parcel A	Sawmill - various equipment and auxiliary operations including: cut-off saw in-feet conveyor, side log lift, chipper, chip fuel and hog fuel bunkers, green chain and office trailers.	At least 1979 to 2001	Records review, Site visit
			Chipping, chip fuel bunker and office trailers continue to be used. Remaining sawmill functions no longer operating although buildings and machinery still present.	2001 to present	
			Diesel AST	Early 1990's to present	

Orientation	Property	Approximate Distance from Site	Activity	Years Present	Information Sources Used
Northwest of Parcels B, C and the southern portion of Rem-C (down gradient)	Lindal Cedar	Immediately adjacent to Parcels B, C, and the southern portion of Rem-C (also occupies large portion of Parcels B and C)	Wood warehousing and distribution	At least 1971 to present	Records review, Site visit
Northwest of Parcels 7, 8 and the northern portion of Rem-C (down gradient)	Government of Canada owned water lots – administered by the FRPA	Immediately adjacent to Parcels 7, 8 and the northern portion of Rem-C	Mill operations	At least 1932 to approximately 1984	Records review, Site visit
			Wood and log storage	At least 1932 to present	Records review, Site visit
Northeast of Parcel 7	Vacant lot	Immediately adjacent to Parcel 7	Vacant asphalted	At least 1996 to present	Records review, Site visit
Southeast of the Site (up gradient)	CN Rail	Immediately adjacent to the Site	Railway	At least 1932 to present	Records review, Site visit
	Brownsville Rail Spur	Immediately adjacent to the Site	Railway	1891 to present (active from 1891 to 1930)	Records review, Site visit
	CN Rail Property	Adjacent to the Site, between the property boundaries of Parcels 7 and 8, and the CN railway	PCP spray tank	At least 1979 to 1980	Records review
Southeast of Parcels 7 and 8 (up gradient)	RV park	Adjacent to Site, across CN railway	RV park/campground	At least 1989 to present	Records review, Site visit
Southwest of Parcel A	Light Industrial	Immediately adjacent to Parcel A	Wood processing, manufacturing and shingle manufacturing	At least 1932 to 1990	Records review
	Subdivision	Immediately adjacent to Parcel A	Proposed subdivision – residentially zoned	Approximately 1990 to present	
South, southeast and southwest of all Site Parcels, across railways (up gradient)	Light Industrial Zones, Residential	Across railways, within 0.5 km of Site	Mill operations, lumber storage, auto repair and auto-body shops, concrete manufacturing, metals depot, some residential	At least 1952 to present	Records review, Site visit

3.2.16 Municipal Regulatory Requests

City of Surrey

Hemmera contacted the City of Surrey regarding the following information for the Site:

- Building, lease and property use records;
- UST and above ground storage tank (AST) information;
- Bylaw and/or environmental legislation infractions;
- Dredged materials or other soils used as fill on-Site;
- Records of responses by the Fire Department;
- Permits of an environmental nature;
- Records of hazardous materials storage or spills;
- Any other environmental concerns; and
- Copies of services connections to the Site.

A copy of the response from the City of Surrey is provided in **Appendix K**. The City of Surrey indicated that information pertaining Parcels 7 and 8 was found during the course of the file review (Parcel A, B, C and Rem-C information was not found). The City of Surrey provided the following information:

- Parcels 7 and 8 are currently zoned “Light-Impact Industrial Zone-1 (IL-1)”. The city zoning by-law was included within the response; and
- A search of the City Engineering File Registry (from 1985 to present) indicated that no file records were found.

3.2.17 City of Surrey Fire Department Records

The Surrey Fire Department was contacted by Hemmera to conduct an environmental records search for the Site. The following information was requested:

- Underground and aboveground storage tank installation and decommissioning;

- Records of any responses by the Fire Department to the site (i.e. fires, explosions, etc.);
- Records of any historical hazardous materials storage, or spills; and
- Other environmental concerns.

A copy of the response from the Surrey Fire Department is provided in **Appendix L**. A number of fire incidents were reported at the property over the past 15 years, but there is no record that these fires involved hazardous material spills or underground storage tanks for flammable and combustible liquids.

3.2.18 Environment Canada Records

The Environmental Protection Branch of Environment Canada (EC) was contacted to inquire whether EC had any information on file regarding spills or any other federal violations pertaining to the Site. A copy of the response from EC is provided in **Appendix M**.

Specifically, the EC search included:

- Company notification to Environment Canada of PCB storage in British Columbia; and
- Inspections records in BC of non-compliance with the acts and regulations administered by Environment Canada (*C.E.P.A.* and the pollution provisions of the *Fisheries Act*).

The EC records in the Pacific and Yukon Region indicated no problems in the above areas, though the database includes reports of PCB's in use on-Site. This is discussed in more detail in Section 3.3.14 of this report.

3.2.19 Site Lease Agreements/Permits

CNR was contacted to provide information concerning current and historical Site lease agreements. Copies of the lease agreements provided by CNR are provided in **Appendix N** and include:

- Lease 1 (CNR 10787) – Lindal Cedar Homes – Lumber/Forest Products, Mill/Plant;

- Lease 2 (CNR 5077-A) – Lindal Cedar Homes - Lumber/Forest Products, Mill/Plant;
- Lease 3 (MR 161) – BC Hydro – Wire Crossing;
- Lease 4 (MR 4227) – Telus – Wire Crossing;
- Lease 5 (820/1202-C-1-A) – Fraser River Harbour; and
- Lease 6 – (820/1202-C) – FRPA.

The FRPA provided Hemmera with a copy of a permit that granted permission to Lyndowana Lumber Ltd. to use and occupy a portion of the foreshore, the bed of the Fraser River, and Parcels 7 and 8. The permit was issued for the following portion of the foreshore:

- Permit – 0.4046 ha. (1 ac.). Foreshore fronting portion of Parcel C, D.L. 5, Gp. 2, N.W.D. and Lot 7 and 8, D.L. Gp 2, Plan 2620.

The agreement is dated March 11, 2003 and was issued for a period of two (2) years. According to FRPA staff, Lyndowana Lumber Ltd. has been asked to vacate the area by September 2006. A copy of this permit is provided in **Appendix N**.

3.3 SITE VISIT

Hemmera representatives conducted a Site visit on April 13, 2006 accompanied by Mr. Nures Kara of the Fraser River Port Authority. Mr. Kara is currently the manager of Environmental Services for the Fraser River Port Authority and has approximately eight (8) years of direct Site knowledge.

The Site visit included a review of the Site buildings for evidence of chemical handling, spills, storage tanks, the presence of PCBs, asbestos-containing materials, lead-based paint, and ozone-depleting substances, as well as other potential environmental concerns (i.e. site proximity to sensitive areas, potable water supply, activities on adjacent properties). During the Site visit, Site conditions were documented as well as activities on adjacent off-Site properties. Photographs taken during the April 13, 2006 Site visit are attached in **Appendix O** and a description/summary of the photographs are provided in **Table 13**.

Table 13: Site Visit Photograph Summary

Photo #	Location	Description
1	Parcel A	Sawmill – looking SE
2	Parcel A	Sawmill – looking NW
3	Parcel A	Oil storage shed – looking SE
4	Parcel A	Oil storage shed - interior
5	Parcel A	Hog-fuel bunker – looking SW
6	Parcel A	Green chain – looking SW
7	Parcel B	Kiln (current warehouse) – looking SW
8	Parcel C	Distribution warehouse – looking SE
9	Rem-C	Rem-C – looking NE
10	Parcels 7, 8	Salvage log storage
11	Off-Site	Office trailers
12	Off-Site	Chip fuel bunker
13	Off-Site	RV Park
14	Off-Site	AST (diesel) – down gradient
15	Parcel A	Oxygen/Acetylene canisters
16	Parcel A	Chemical storage - oil
17	Off-Site	Drain out fall – bank of Fraser River
18	Parcel A	Pole-mounted transformer
19	Parcel A	Mill electrical building

3.3.1 On-Site Features and Buildings

The following on-Site features and buildings were identified during the Site visit (locations of features and buildings are presented in **Figure 2** and Site photographs are presented in **Appendix O**).

Table 14: On-Site Features and Buildings

Parcel	Feature/ Building	Construction/Condition	Current Use	Historic Use	Photo #
A	Portion of Saw mill (includes cut-off saw in-feet conveyor, side log lift, chipper)	Concrete slab-on-grade construction with logs as vertical support posts (potentially treated with phenols and/or creosote), metal siding, metal roofing, and open to the elements. The concrete floor is in fair condition (no obvious large cracks) and is also open to the outside.	Chipping operations	Saw mill, industrial mill operations	1, 2
	Oil storage shed	The building is constructed of a wood timber floor and wood roof (with some shingles). The shed is in poor condition and is open to the elements.	Oil/fuel storage	Oil/fuel storage, industrial mill operations	3, 4
	Storage Bunker (hog fuel)	Constructed of steel (rust observed on exterior).	Not in use	Hog fuel storage, industrial mill operations	5
	Portion of Green Chain	The building is constructed of a wood roof, and logs as vertical support posts (potentially treated with phenols and/or creosote). The area directly beneath the chain mechanism is concrete of unknown condition, is covered with sawdust and woodchips, and is at a lower elevation than the surrounding asphalt.	Not in use	Industrial mill operations	6
B	Kiln	The building has a concrete slab-on-grade floor, brick-wall construction, a metal roof, and is open to the elements.	Storage Facility	Kiln, Industrial mill operations	7
C	Portion of distribution Warehouse	The warehouse is wood framed, metal-roofed, has a concrete slab-on-grade floor, and is open to the elements.	Mill warehouse and distribution	Mill warehouse and distribution, Industrial mill operations	8
Rem-C	Log Storage	Currently vacant of buildings.	Lumber/Log storage	Lumber/log storage, Industrial mill operations	9
7	Log Storage	Currently vacant of buildings.	Lumber/Log storage	Industrial mill operations and wood/log storage	10
8	Log Storage	Currently vacant of buildings.	Lumber/Log storage	Industrial mill operations and wood/log storage	10

* These logs reportedly in the process of being removed.

The Oil Storage Shed was identified as an APEC because extensive staining was observed inside and outside of storage shed, unprotected drums are stored outside of the shed, there is no secondary containment for drums inside the shed, and the shed building is in poor condition and is open to the elements. The Green Chain was also identified as an APEC because petroleum hydrocarbon odours

and potential staining were observed beneath the green chain during Hemmera’s 2006 Site visit, and the condition of the concrete floor beneath the Green chain is unknown.

3.3.2 Off-Site Features and Buildings

Various off-Site features and buildings in the vicinity of the Brownsville were identified during the Site visit. The locations of features and buildings are presented in **Figure 2** and Site photographs are presented in **Appendix O**. The identified off-Site buildings are summarized in **Table 15** below:

Table 15: Off-Site Features and Buildings

Location	Feature/Building	Current Use	Historic Use	Photo #
Northwest of Parcels A, B, C	Portion of Saw mill (includes cut-off saw in-feet conveyor, side log lift, chipper)	Chipping operations	Saw mill	1, 2
	Portion of distribution warehouse	Mill warehouse and distribution	Mill warehouse and distribution	8
	Portion of Green Chain	Not in use	Milling	6
	Operations trailers	Mill operations (offices, washroom)	Mill operations (offices, washroom)	11
	Storage Bunker (likely chip fuel)	Chip fuel storage	Chip fuel storage	12

3.3.3 Above Ground Storage Tanks (ASTs) and Underground Storage Tanks (USTs)

One (1) on-Site AST (propane), one (1) off-Site AST (diesel) and one (1) off-Site UST (septic) were identified during the Site visit. Details of the ASTs and USTs are provided below.

ASTs

Table 16 below summarizes the on-Site AST information collected during the Site visit and the records review. One (1) on-Site AST was identified.

Table 16: On-Site AST

Location	Type of Tank	Volume	Age	Comments
Parcel C	Propane	500 gallons	5-7 years	AST is in good condition

Table 17 below summarizes the off-Site AST information collected during the Site visit and the records review. One (1) off-Site AST was identified:

Table 17: Off-Site AST

Location	Type of Tank	Volume	Age	Comments	Photo #
Northwest of Parcel A (down gradient)	Diesel	500 gallons	12-15 years	This AST is located down gradient of Site. The AST is covered and has a containment basin. It is located approximately 1.5 m above the ground and the ground surface beneath the tank is bare (no asphalt or concrete base). Diesel odours were observed within soil and woodchips beneath the AST. A spill kit was observed near the tank. Minor tank rust was noted on the AST.	14

USTs

The off-Site UST (septic) located down gradient of Parcels A and B is not considered a potential environmental concern to the Site (because of its down gradient location from the Site). This septic tank is currently used by the Lindal Cedar Homes and Smallwood Sawmills trailer offices.

3.3.4 Chemicals and Fuel Handling and Storage

Based on the Site visit and records review various chemicals are currently and were historically used and stored on the Site. These chemicals include diesel, fuel oil, lubricants, engine oil, and oxygen canisters. Details of chemical storage and use on the Site are summarized in the sections below. According to FRPA and Smallwood Sawmills, PCP was never used on the Site (although it was reportedly used immediately up gradient of Parcels 7 and 8, as discussed in Section 3.2.15 of this report).

Sawmill (Parcel A)

During Hemmera's Site visit, six (6) pressurized gas cylinders were observed within the footprint of the sawmill. The cylinders were stored in well-ventilated areas and were observed to be upright and in fair condition. Four (4) of six (6) cylinders were labelled oxygen (according to Smallwood Mills staff, these are used for welding purposes). The remaining two (2) cylinders contain unknown pressurized gases (Smallwood Sawmills staff indicated that they likely contain acetylene) (**Photo 15 in Appendix O**). No current or historic welding shops or specific welding areas were observed or reported at the Site.

In addition, six (6) partially filled five (5)-gallon plastic buckets/metal cans of engine oil were located within the footprint of the mill. The buckets/cans were observed to be in good condition, had sealed covers and were situated on an asphalt surface. No obvious oil staining was observed on the surface of the asphalt (**Photo 16 in Appendix O**).

Oil was historically used for the cut-off saw operations and lubrication. Oil stains were noted in the vicinity of the cut-off saw by the FRPA in 2000, but were not observed during Hemmera's 2006 Site visit. According to FRPA staff, the historic oil stains were situated off-Site and down gradient of Parcel A. Therefore, these are not considered an APEC for the Brownsville site.

Oil Storage Shed (Parcel A)

The current and historic use of the oil storage shed is for oil and diesel fuel storage. There are currently 20 partially filled 55-gallon drums of diesel fuel and oil stored in the area of the shed. The shed interior contains 15 drums, five (5) of which are arranged horizontally on wooden cradles, with a steel drip tray located beneath the dispensing mechanisms of these drums. The other ten (10) drums are positioned vertically on the wood floor of the shed, with sealed covers and/or lids. The remaining five (5) drums are located at the northwest exterior of the shed.

Oil staining was observed on the shed floor (interior) and on the soil ground surface (exterior) immediately surrounding the shed. The shed does not have secondary containment for the drums. Due to the extensive staining observed, the lack of secondary containment, and the poor condition of the building, the oil shed was identified as an APEC for the Brownsville Site.

Hog Fuel Storage Bunker (Parcel A)

The storage bunker is currently not in use, but was historically used for hog fuel storage. No chemicals are known to be currently or have been historically stored in the bunker.

Green Chain (Parcel A and B)

The green chain is currently inactive, and was historically used for milling operations. The green chain building has a wood roof, and treated logs (potentially phenols and creosote) as vertical support posts (**Photo 6 in Appendix O**). The area directly beneath the chain mechanism is concrete of unknown condition, is covered with sawdust and woodchips and is at a lower elevation

than the surrounding asphalt. A catch basin (part of the Site drainage system) is located one (1) metre northwest of the green chain.

No chemicals are currently or were historically stored in the green chain area. Oil was historically used for the green chain operations and lubrication. The sawdust, wood chips and soil directly beneath the chain are stained and potentially impacted with petroleum hydrocarbons (based on petroleum hydrocarbon odours observed during Hemmera's Site visit). Because the condition of the concrete floor beneath the green chain is unknown and may contain cracks or holes that could permit potential contaminants to migrate to the subsurface soils, the green chain was conservatively identified as an APEC.

Kiln (Parcel B)

The kiln is currently used as a lumber/wood storage area, and was historically used as natural gas-fired kiln to dry green lumber prior to planing and packing (**Photo 7** in **Appendix O**). No chemicals are known to be currently or were historically stored in the kiln.

Distribution Warehouse (Block C)

The warehouse is currently and was historically used as a warehouse, for distribution and planing. No chemicals are known to be currently or were historically stored in the warehouse.

3.3.5 Historic Landfills, Dumpsites and General Waste Management Practices

General Waste Management Practices

Solid waste generated on-Site is disposed into garbage bins, which are supplied by BFI. BFI empties the bins regularly for off-Site disposal. Wood waste and other materials not suitable for regular garbage disposal are disposed into bins supplied by Bullet Disposal Company. Bullet Disposal Company regularly empties the bins for off-Site disposal.

During Hemmera's 2006 Site visit, various discarded materials were observed around the Site (e.g. small pieces of abandoned machinery, tires, wood pallets, scrap wood, etc.) particularly on Parcel A (in the vicinity of the sawmill). The assumption of a property with waste materials could represent a liability to FRPA, since the cost and responsibility associated with the appropriate off-site disposal of these materials would also be assumed. These waste materials would not likely

result in Site contamination and do not represent an immediate environmental concern, but could result in minor surficial staining or soil impacts (which could be removed in conjunction with the waste materials removal). Prior to the proposed property transfer, it is recommended that FRPA identify and quantify the on-Site waste materials in order to assess future disposal costs.

Site Fill Materials

Based on historic boreholes completed on and near the Site by others, it is expected that the top 2 to 3 metres of the Site soils consist of fill materials, including wood waste and sand fill. The age and origin of these fill materials is unknown, therefore it is possible that they could have been imported from an industrial site. As such, the potential presence of extractable petroleum hydrocarbons (EPH), phenols and metals within these fill materials is a possible concern.

During their 1991 investigation on the Site, the British Columbia Research Corporation (BCR) drilled one shallow borehole into the fill materials on each Site Parcel (a total of six boreholes, each up to 1.5 m bgs). Two (2) samples were collected from each location and analyzed for metals, total phenols, and polycyclic aromatic hydrocarbons (PAHs). The PAH and total phenols numbers were compared to the current Contaminated Sites Regulation (CSR) standards and one sample (collected from Parcel A) exceeded the current CSR standards for phenols. The exceedance was historically addressed by submitting eight (8) additional samples from Parcel A for phenols analysis. Given that the additional samples had phenols concentrations below CSR standards, it is likely that the original sample that exceeded was a very localized situation or possibly a laboratory error. Therefore, phenols do not appear to be a COPC in the site fill materials.

The BCR 1991 metals analysis could not be directly compared to the CSR since the current CSR Standards for soil require pH measurements to interpret metals concentrations in soils and BCR did not collect pH measurements during their investigation. However, a conservative review of the historic data was possible considering the lowest pH as a conservative measure. Using this approach, zinc concentrations exceeded CSR standards in samples collected from Parcels A and C, but no other metals concentrations exceeded the CSR standards.

Neither BCR nor Klohn analyzed any soil or groundwater samples for extractable petroleum hydrocarbons (the primary Site COPC) during their historic Site investigations. Therefore, given

the possible zinc exceedances on Parcels A and C, the unknown origin of the site fill materials, and the fact that the Site fill materials have never been sampled for petroleum hydrocarbons, the on-Site fill materials have conservatively been identified as an APEC, and further investigation and analysis for petroleum hydrocarbons and metals (especially zinc) is warranted.

Sand Piles

Piles of sand fill were identified within or immediately down gradient of Parcel Rem-C in the PWGSC 1996 report (their exact location is not clear). The content and origin of the fill was unknown. The fill was again referred to in the 2002 Keystone report, however, these fill piles were not observed during Hemmera's 2006 Site visit. Based on historic shallow soil sampling conducted in the vicinity of the sand fill piles (which did not indicate any impacts above applicable standards), and on the fact that the fill piles were not observed during Hemmera's 2006 Site visit, the historic sand fill piles are not considered an APEC for the Brownsville Site. No other dumpsites were identified during the Phase I ESA program.

3.3.6 Spill and Stain Areas

David Gray (Mill and Timber Products Ltd.) indicated that no spills or environmental incidents have occurred on the Site during their occupation of the Site.

However, the following potential spill and stain areas were identified by Hemmera during the 2006 site visit:

- Interior floor of the oil storage shed and exterior ground surface in the immediate vicinity of the shed; and
- Ground surface and wood debris directly beneath green chain.

As previously discussed, both stained areas were identified as APECs for the Brownsville Site.

3.3.7 Lead and/or Lead-based Paint

Based on the age of the buildings on-Site, lead and/or lead-based paint may be present including, but not limited to the structural steel components of the sawmill.

A hazardous materials survey was not performed as part of the Phase I ESA program, therefore the presence of lead and/or lead based paint cannot be confirmed or refuted.

3.3.8 Wastewater Discharges

According to Smallwood Sawmill staff, the sawmill that is currently on Site does not and did not historically produce any wastewater discharges. No liquid industrial waste is currently generated on-Site and there is no evidence of historical liquid industrial waste discharges from the Site.

However, sanitary sewage is generated immediately down gradient of the Site by the office trailers to the northwest of Parcel A, as described further below.

3.3.9 Septic System

No septic systems were identified on the Brownsville Site during the Phase I ESA program.

The Smallwood Mills office trailer and lunchroom/washroom trailers (occupied by Smallwood Mills and Lindal Cedar) are located off-Site and northwest of Parcel A and are connected to a septic tank, which empties into a septic drain field. According to Fraser River Port Authority staff, the septic field is located approximately 40 m down gradient of the Site, near the chip fuel hopper to the southwest of the trailers. The underground storage septic tank and septic field are serviced by Newton.

3.3.10 Air Emissions

Smallwood Sawmill staff indicated that the mill does not and historically did not produce air emissions.

3.3.11 Stressed Vegetation

No evidence of stressed vegetation was observed during Hemmera's 2006 Site visit.

3.3.12 Elevators, Hoists and Lifts

The Smallwood Sawmill operation on Parcel A included a log lift. No potential environmental concerns were identified with respect to the log lift.

3.3.13 Sumps, Separators, Ponds, Pit's and Lagoons

No sumps, separators, ponds, pits or lagoons were identified as part of the Phase I ESA program.

3.3.14 Polychlorinated Biphenyls (PCBs)

A search of the EC (Environment Canada) database indicated reports of PCB's in use on-Site (see **Section 3.2.18**). EC did not provide specific information regarding PCB usage or location. Based on the Site visit and records review, the most likely location of PCB's are the electrical transformers described below.

One (1) pole mounted transformer unit was observed on-Site (Parcel A) during the Site visit (**Photo 18** in **Appendix O**). It is not known if this transformer contains PCBs. Given that the transformer is pole-mounted, appeared to be in good condition and no surface staining was observed, it is not considered to be of environmental concern with respect to soil and groundwater at the Site.

According to Smallwood Sawmill staff, electrical components of the mill (including a transformer) are housed in a grey-brick building southeast of the mill on Parcel A (**Photo 19** in **Appendix O**). Smallwood Mills staff indicated that the building contents were inspected in 2003 at which time the transformer oil was replaced. The building was inaccessible at the time of Hemmera's Site visit; therefore the interior could not be inspected.

Additional inquiries were made to Mill and Timber Products Ltd. (owner of Smallwood Sawmills) staff (David Gray) regarding the history of the electrical building. According to Mr. Gray, there are no PCBs in the Site transformers.

3.3.15 Asbestos-Containing Material (ACM)

Based on the records review and Site visit, ACM is not likely present on-Site. The holding tank for the sawmill air compressor did not contain any pipe-wrap insulation or elbows.

A hazardous materials survey was not performed as part of the Phase I ESA program; therefore the absence of ACM cannot be confirmed or refuted.

3.3.16 Ozone Depleting Substances (ODSs)

Based on the records review and Site visit, no sources of ODSs were identified.

3.4 INTERVIEWS

Interviews were conducted with persons knowledgeable of the current and historical activities at the Site. The following interviews were conducted:

- Mr. Nures Kara of the FRPA was interviewed to obtain information pertaining to the Site history during the Site visit on April 13, 2006. Mr. Kara is currently the manager of Environmental Services for the Fraser River Port Authority and has approximately eight (8) years of Site knowledge.
- Mr. Gordon Fleming of Lindal Cedar Homes was interviewed to obtain information pertaining to Site history. Mr. Fleming is currently the shipping supervisor for Lindal Cedar Homes and has approximately eight (8) years of direct Site knowledge.
- Mr. Dan Jones of Smallwood Sawmills was interviewed to obtain information pertaining to Site history. Mr. Jones is currently a Smallwood Sawmill manager and has approximately three (3) years of direct Site knowledge.
- Mr. Brian Pimblett of CNR Company was interviewed to obtain information pertaining to any records of spills or incidents related to CNR activity near the Site location. Mr. Pimblett (P.Eng./MBA) is an environmental engineer for the pacific division of CNR.
- Mr. David Gray of Mill and Timber Products Ltd. (parent company of Smallwood Sawmills) was given a list of interview questions to obtain additional information pertaining to Site history and Smallwood Sawmill activities. Mr. Gray indicated that Mill and Timber Products have not had any spills or environmental incidents at the Smallwood Sawmills site.

Documentation of the interviews is provided in **Appendix P**, and interview findings are reflected throughout this report.

3.5 CONCLUSIONS AND RECOMMENDATIONS

Based on the records review, interviews and Site visit information; it was concluded that there are four (4) on-Site APECs, and three (3) off-Site APECs that could potentially impact soil and/or groundwater on-Site (**Figure 2**). The APECs and their constituents of potential concern (COPCs) are summarized in **Table 18** and **Table 19** below.

Table 18: Summary On-Site APECs and COPCs

APEC No.	APEC Description	Media	COPCs	Investigation Rationale	Proposed Investigation Locations
1	Oil Storage Shed	Soil and Groundwater	Petroleum Hydrocarbons	<ul style="list-style-type: none"> • Extensive staining inside and outside of storage shed and unprotected drums stored outside shed, as observed by PWGSC in 1996, by FRPA in July 2000, and by Hemmera during 2006 Site visit. • No secondary containment for drums in use inside shed. • Smallwood Sawmill Ltd reportedly removed outside drums and oil-stained soil in September 2000, but extent of soil removal is unknown and many outside drums and staining are still present. 	MW06-1
2	Sawmill operations located on-Site (Parcels A, B, C, Rem-C, 7, and 8) from approximately 1932 to present	Soil and Groundwater	Petroleum Hydrocarbons, Metals, Chlorophenols	<ul style="list-style-type: none"> • Specific sawmill activities/locations are not known. 	MW06-1, MW06-2, MW06-3, MW06-4, MW06-5
3	Oil stains/odours observed beneath the green chain	Soil and Potentially Groundwater	Petroleum Hydrocarbons	<ul style="list-style-type: none"> • Petroleum hydrocarbon odours and potential staining were observed beneath the green chain during 2006 Site visit. • The ground surface beneath green chain is concrete of unknown condition. 	SS06-1
4	Historic fill materials of unknown origin, within top 2 to 3 m below ground surface (bgs) across the Site	Soil and Potentially Groundwater	Petroleum Hydrocarbons, Metals (particularly Zinc)	<ul style="list-style-type: none"> • The age and origin of the fill materials is unknown, though the materials were likely placed on the site prior to 1932. • Historic soil samples within the Site fill materials indicated levels of zinc above the CSR standards. • Site fill materials have never been sampled for petroleum hydrocarbons, the primary site COPC. 	MW06-1, MW06-2, MW06-3, MW06-4, MW06-5

Table 19: Summary Off-Site APECs and COPCs

APEC No.	APEC Description	Media	COPCs	Investigation Rationale	Proposed Investigation Locations
5	Former pentachlorophenol (PCP) spraying tank reportedly located immediately southeast of Parcel 7 (near railroad tracks). PCP-treated wood was also stored adjacent to the Site for drying.	Soil and Groundwater	Petroleum Hydrocarbons, Chlorophenols	<ul style="list-style-type: none"> Identified during 1996 investigation by PWGSC, and discussed in 2000 FRPA report and 2002 Keystone report. Stacked wood reportedly placed on supports and hand-sprayed with PCP pumped from a tank. Surface below tank was apparently asphalt paved, but the extent and condition of the historic paving is unknown. Treated products were then reportedly stored south of the railroad tracks. 	MW06-4
6	Adjacent and up gradient historical industrial activities and Brownsville rail spur adjacent to Parcels A, B and C, Rem-C, 7 and 8.	Soil and Groundwater	Petroleum Hydrocarbons, Metals, Chlorophenols	<ul style="list-style-type: none"> Milling operations or related industries have been adjacent to the Site since at least 1932, and the rail spur has been present since 1891. A metal depot was operated adjacent (northwest of the Site) from 1970 to 1985. Historical light industrial operations, including auto body repair shops, shingle production, and concrete production were located within 300 m of the Site. 	MW06-1, MW06-2, MW06-3, MW06-4, MW06-5
7	RV Park Diesel Spill	Soil and Groundwater	Petroleum Hydrocarbons	<ul style="list-style-type: none"> BC Site registry search indicated a diesel spill occurred at 11940 Old Yale Road (RV Park) in 1999. The site is currently "ACTIVE UNDER ASSESSMENT" according to BC MOE. 	MW06-4, MW06-5

Based on the APECs identified during the Phase 1 ESA and outlined above, Hemmera has concluded that additional investigation through a Phase II ESA process is warranted to confirm or refute if soil and/or groundwater contamination is present at identified APECs. Five (5) monitoring well locations and one (1) surface sample location are proposed as part of a Phase 2 ESA program.

These proposed investigation locations are illustrated on **Figure 2** and described in **Tables 18** and **19** (above) in relation to each APEC.

It is also recommended that prior to the proposed property transfer, FRPA should identify and quantify the on-Site waste materials (e.g. small pieces of abandoned machinery, tires, wood pallets, scrap wood, etc.) in order to assess future disposal costs. These waste materials would not likely result in Site contamination and do not represent an immediate environmental concern, but the assumption of a property with waste materials could represent a liability to FRPA, since the cost and responsibility associated with the appropriate off-site disposal of these materials would also be assumed.

Report prepared by:
HEMMERA



Seth Kingsbury, B.Sc., AScT
Environmental Scientist

Report reviewed by:
HEMMERA



Claire Lewis, P.Eng.
Project Engineer/Project Manager



John R. Taylor, P.Eng.
Senior Environmental Engineer

4.0 STATEMENT OF LIMITATIONS

This report (“Report”) was prepared by Hemmera Envirochem Inc. (“Hemmera”), for the sole benefit and exclusive use of the Fraser River Port Authority (“FRPA”). The material in it reflects Hemmera’s best judgement in light of the information available to them at the time of preparing the Report. Any use that a third party makes of this Report, or any reliance on or decision made based on it, are the responsibility of such third parties. Hemmera accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this Report.

Hemmera has performed the work as described in the Scope of Work and, made the findings and conclusions set out in this Report in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession practising under similar conditions at the time the work was performed.

This Report was prepared by Hemmera for FRPA, and represents a reasonable review of the information available to Hemmera within the established Scope of Work, work schedule and budgetary constraints. It is therefore possible that currently unrecognised contamination or potentially hazardous materials may exist at the site(s) and that the levels of contamination or hazardous materials may vary across the site(s). No warranty, expressed or implied, is given concerning the presence or level of contamination on the site. The conclusions and recommendations contained in this Report are based upon applicable legislation existing at the time the Report was drafted and changes in the legislation may alter the conclusions and/or recommendations. Further, any discussion of regulatory implications is based on the applicable legislation existing at time of drafting the Report.

In preparing this Report, Hemmera has relied in good faith on information provided by others as noted in this Report, and has assumed the information provided by those individuals is both factual and accurate. Hemmera accept no responsibility for any deficiency, misstatement or inaccuracy in this Report resulting from the information provided by those individuals.

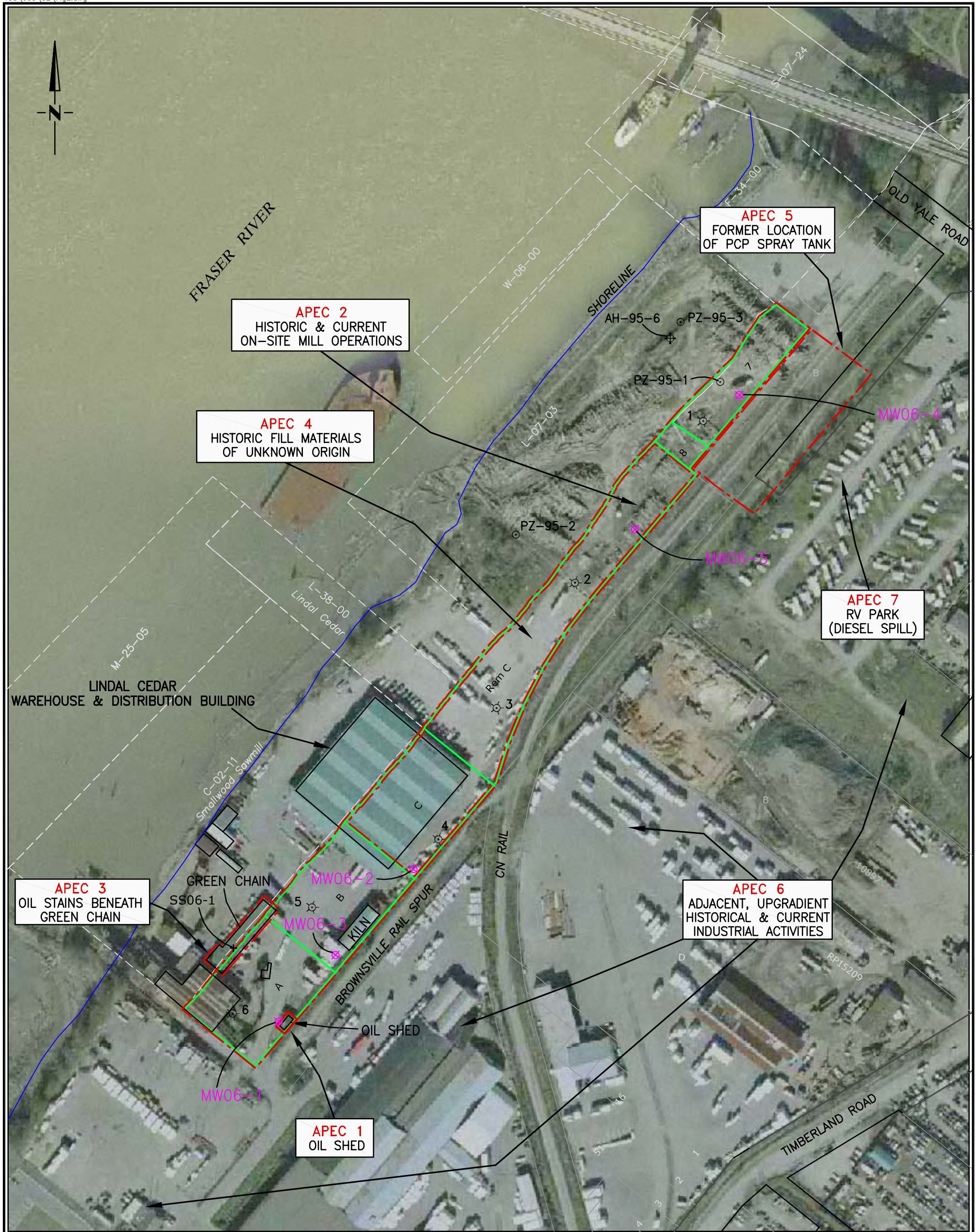
The liability of Hemmera to FRPA shall be limited to injury or loss caused by the negligent acts of Hemmera. The total aggregate liability of Hemmera related to this agreement shall not exceed the lesser of the actual damages incurred, or the total fee of Hemmera for their services rendered on this project.

5.0 QUALIFICATIONS OF ASSESSOR

This report was prepared by Mr. Seth Kingsbury, B.Sc., AScT, of Hemmera. Mr. Kingsbury is an environmental scientist with four years of environmental consulting experience in British Columbia, Nova Scotia, New Brunswick, P.E.I and Newfoundland and has conducted numerous Stage/Phase 1 PSI projects.

This report was managed and reviewed by Ms. Claire Lewis, P.Eng., of Hemmera. Ms. Lewis is an environmental engineer with over eight years of environmental experience in Ontario and British Columbia. Ms. Lewis has conducted numerous preliminary investigations and Phase 1 ESA projects and has a range of experience in contaminated site assessment, solid waste management, engineering design, remediation, project management and reporting.

Mr. John Taylor is the project director for this assignment, and responsible for senior report review and oversight. Mr. Taylor is a registered professional engineer and a member of the British Columbia Contaminated Site Regulation Expert Roster with 16 years of progressive experience in environmental consulting service in management and mentorship roles. His ability to adapt quickly to new situations, providing clear concise solutions, has contributed to a strong record of project management and remedial planning on contaminated sites. He has designed and managed many projects on industrial, manufacturing and chemical plant sites and within the transportation sector, and has dealt with such contaminants as metals, hydrocarbons, chlorophenols, and various other industrial by-products, in a variety of mediums; air, soils, groundwater, surface water and sediments. In the areas of remedial planning, remediation, Mr. Taylor has extensive experience in various settings and clients, including large-scale public and private sector projects.





LEGEND

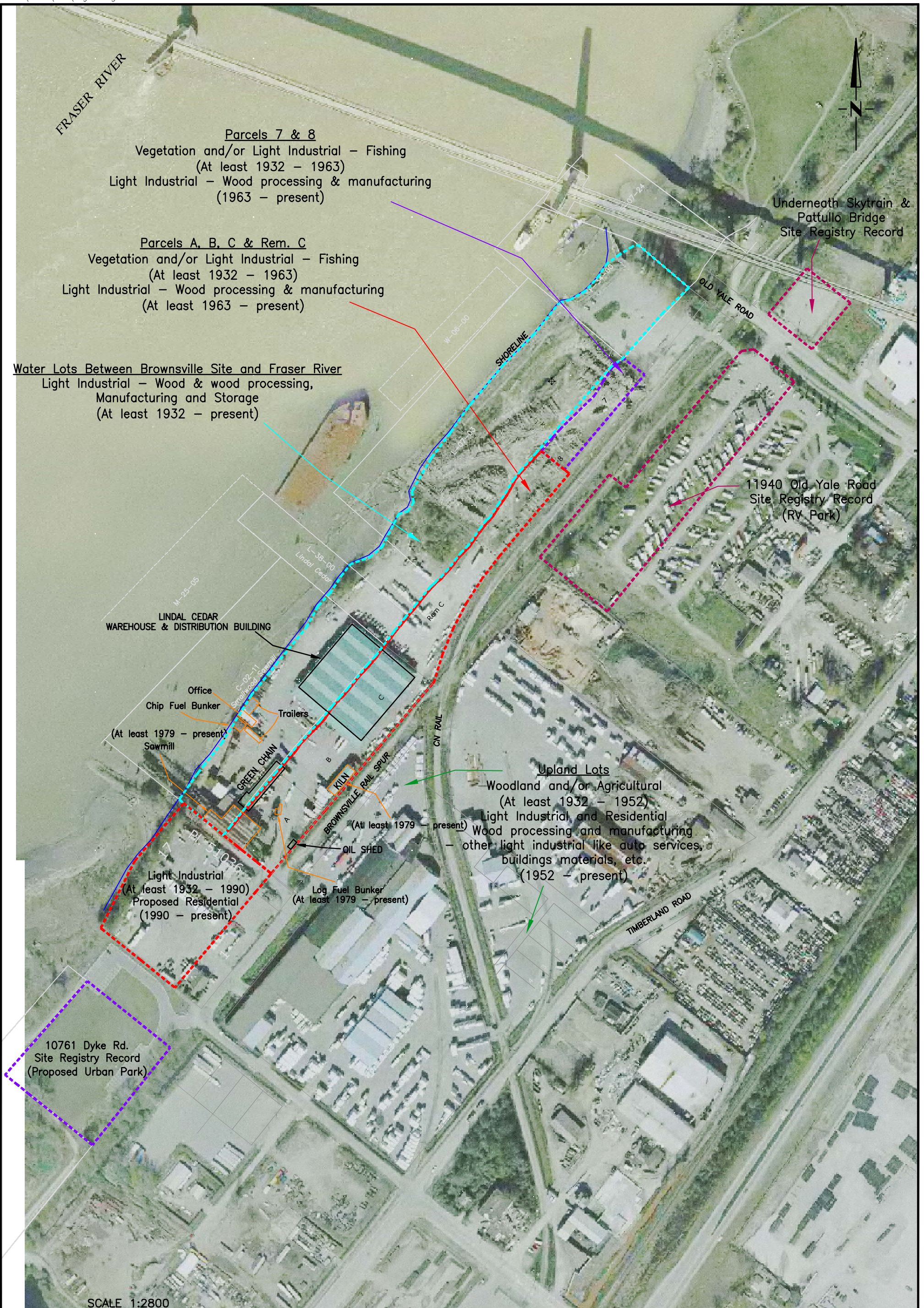
- ⊙ Piezometer (Klohn-Crippen, 1995)
- ⊕ Auger Test Hole (Klohn-Crippen, 1995)
- ⊗ Borehole (BC Research, 1991)

- Parcel & Property Boundaries
- ⊕ Proposed Borehole/Monitoring Well Location
- + Proposed Surface Soil Sample
- - - Areas of Potential Environmental Concern (APEC)





 HEMMERA
CLIENT:  FRASER RIVER PORT AUTHORITY

PHASE I ESA BROWNSVILLE SITE, SURREY, BC		
SITE PLAN SHOWING ON-SITE & OFF-SITE FEATURES, APECS AND PROPOSED INVESTIGATION LOCATIONS		
PROJECT No.	405-003.02	September 2006
		Figure 2



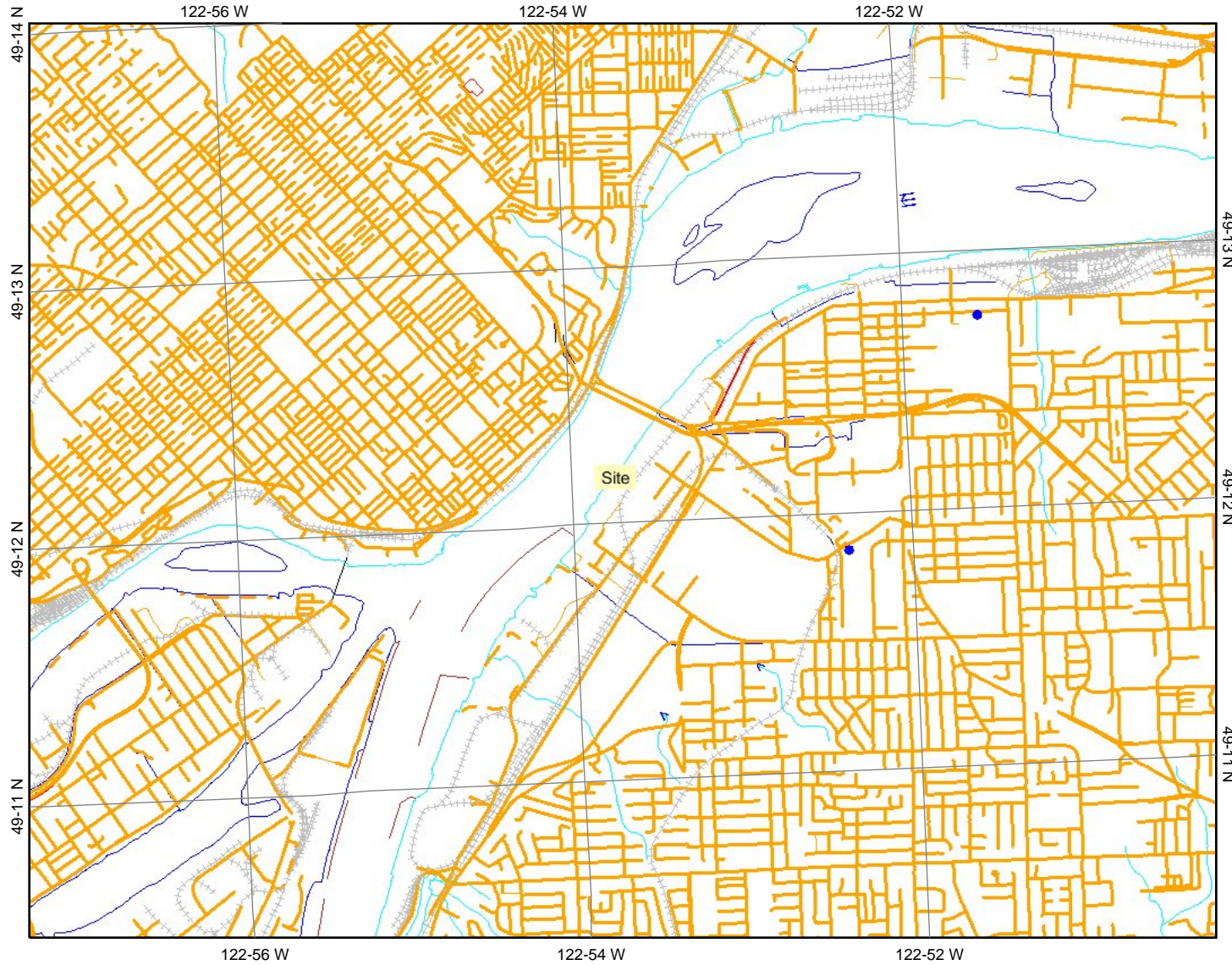
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metres
0 56 112

 HEMMERA	PHASE I ESA BROWNSVILLE SITE, SURREY, BC		
	HISTORICAL SITE AND SURROUNDING LAND USE PLAN AND SITE REGISTRY SEARCH RESULTS		
CLIENT:  FRASER RIVER PORT AUTHORITY	PROJECT No. 405-003.02	September 2006	Figure 3

APPENDIX A

Groundwater Well Search Results

Groundwater Well Search



Map center: 49° 12' 10" N, 122° 53' 42" W



Legend

- WDIC - Waterbody Poly
- Domestic Well Use
- Transportation - Points (TRIM)
- Helipad
- Transportation - Lines (TRIM)
- / Airfield
- / Airport
- / Airstrip
- / Airport.Abandoned
- / Ferry Route
- / Road (Gravel Undivided) - 1 Lane
- / Road (Gravel Undivided) - 2 Lane
- / Road (Gravel Undivided) - U/C - 1 Lane
- / Road (Gravel Undivided) - U/C - 2 Lanes
- / Road (Paved Divided) - Not Elevated - 1 Lane Each Way
- / Road (Paved Divided) - Not Elevated - 2 Lanes Each Way
- / Road (Paved Divided) - U/C - Not Elevated - 2 Lanes Each Way
- / Road (Paved Undivided) - Not Elevated - 1 Lane
- / Road (Paved Undivided) - Not Elevated - 2 Lanes
- / Road (Paved Undivided) - Not Elevated - 4 Lanes
- / Road (Paved Undivided) - U/C - Not Elevated - 4 Lanes
- / Road (Unimproved)
- / Cut (Roadway)
- / Embankment/Fill (Roadway)
- / Trail
- / Bridge - Foot
- / Bridge - Trestle
- / Tunnel
- / Bridge
- / Rail Line (Double Track)
- / Rail Line (Multiple Tracks)



Scale: 1:46,067

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

APPENDIX B

Land Titles Search Results

Date: 06/04/07 TITLE SEARCH PRINT - VANCOUVER
Requestor: (PK66793) HEMMERA ENVIROCHEM
 TITLE - AC7143

Time: 16:04:43
Page: 001

NEW WESTMINSTER LAND TITLE OFFICE TITLE NO: AC7143
 FROM TITLE NO: D9652
 626291E

APPLICATION FOR REGISTRATION RECEIVED ON: 14 JANUARY, 1989
 ENTERED: 27 JANUARY, 1989

REGISTERED OWNER IN FEE SIMPLE:
CANADIAN NATIONAL RAILWAY COMPANY
1150 STATION STREET,
VANCOUVER, B.C.

TAXATION AUTHORITY:
CITY OF SURREY

DESCRIPTION OF LAND:
PARCEL IDENTIFIER: 012-878-278
PARCEL "B" (PLAN IN ABSOLUTE FEES PARCEL BOOK 12 FOLIO 75
NO. 4113F) DISTRICT LOT 6 GROUP 2 NEW WESTMINSTER DISTRICT

LEGAL NOTATIONS:

NOTICE UNDER SALE OF GOODS ON CONDITIONAL ACT, NO. 3798

CHARGES, LIENS AND INTERESTS: NONE

DUPLICATE INDEFEASIBLE TITLE: NONE OUTSTANDING

TRANSFERS: NONE

PENDING APPLICATIONS: NONE

CORRECTIONS: NONE

Date: 06/04/07 TITLE SEARCH PRINT - VANCOUVER
Requestor: (PK66793) HEMMERA ENVIROCHEM
 TITLE - AC7142

Time: 16:01:52
Page: 001

NEW WESTMINSTER LAND TITLE OFFICE TITLE NO: AC7142
 FROM TITLE NO: D9652
 626291E

APPLICATION FOR REGISTRATION RECEIVED ON: 14 JANUARY, 1989
 ENTERED: 27 JANUARY, 1989

REGISTERED OWNER IN FEE SIMPLE:
CANADIAN NATIONAL RAILWAY COMPANY
1150 STATION STREET,
VANCOUVER, B.C.

TAXATION AUTHORITY:
CITY OF SURREY

DESCRIPTION OF LAND:
PARCEL IDENTIFIER: 012-878-260
PARCEL "A" (PLAN IN ABSOLUTE FEES PARCEL BOOK 12 FOLIO 75
NO. 4114F) DISTRICT LOT 6 GROUP 2 NEW WESTMINSTER DISTRICT

LEGAL NOTATIONS:

NOTICE UNDER SALE OF GOODS ON CONDITIONAL ACT, NO. 3798

CHARGES, LIENS AND INTERESTS: NONE

DUPLICATE INDEFEASIBLE TITLE: NONE OUTSTANDING

TRANSFERS: NONE

PENDING APPLICATIONS: NONE

*** CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN ***

Date: 06/04/07 TITLE SEARCH PRINT - VANCOUVER
Requestor: (PK66793) HEMMERA ENVIROCHEM
 TITLE - AC7144

Time: 16:05:07
Page: 001

NEW WESTMINSTER LAND TITLE OFFICE TITLE NO: AC7144
 FROM TITLE NO: D9652
 626291E

APPLICATION FOR REGISTRATION RECEIVED ON: 14 JANUARY, 1989
 ENTERED: 27 JANUARY, 1989

REGISTERED OWNER IN FEE SIMPLE:
CANADIAN NATIONAL RAILWAY COMPANY
1150 STATION STREET,
VANCOUVER, B.C.

TAXATION AUTHORITY:
CITY OF SURREY

DESCRIPTION OF LAND:
PARCEL IDENTIFIER: 012-878-286
PARCEL "C" (PLAN IN ABSOLUTE FEES PARCEL BOOK 12 FOLIO 93
NO. 4222F) DISTRICT LOT 6 GROUP 2 NEW WESTMINSTER DISTRICT

LEGAL NOTATIONS:

NOTICE UNDER SALE OF GOODS ON CONDITIONAL ACT, NO. 3798

CHARGES, LIENS AND INTERESTS: NONE

DUPLICATE INDEFEASIBLE TITLE: NONE OUTSTANDING

TRANSFERS: NONE

PENDING APPLICATIONS: NONE

*** CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN ***

Date: 06/04/07 TITLE SEARCH PRINT - VANCOUVER
Requestor: (PK66793) HEMMERA ENVIROCHEM
TITLE - AC7145

Time: 16:15:37
Page: 001

NEW WESTMINSTER LAND TITLE OFFICE TITLE NO: AC7145
FROM TITLE NO: D9652
626291E

APPLICATION FOR REGISTRATION RECEIVED ON: 14 JANUARY, 1989
ENTERED: 27 JANUARY, 1989

TITLE CANCELLED: 15 APRIL, 1991

REGISTERED OWNER IN FEE SIMPLE:
CANADIAN NATIONAL RAILWAY COMPANY
1150 STATION STREET,
VANCOUVER, B.C.

TAXATION AUTHORITY:
CITY OF SURREY

DESCRIPTION OF LAND:
PARCEL IDENTIFIER: 012-878-308
PARCEL "C" (PLAN IN ABSOLUTE FEES PARCEL BOOK 12 FOLIO 78
NO. 4128F) DISTRICT LOT 5 GROUP 2 NEW WESTMINSTER DISTRICT

LEGAL NOTATIONS: NONE

CHARGES, LIENS AND INTERESTS: NONE

DUPLICATE INDEFEASIBLE TITLE: NONE OUTSTANDING

TRANSFERS:
1991-04-15
PARCEL ONE (SRW PLAN NWP88158)AE41600
1991-04-15
ALL (SECTION 185)AE42371

*** CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN ***

Date: 06/04/07 TITLE SEARCH PRINT - VANCOUVER
Requestor: (PK66793) HEMMERA ENVIROCHEM
TITLE - W67575E

Time: 16:06:23
Page: 001

NEW WESTMINSTER LAND TITLE OFFICE TITLE NO: W67575E
FROM TITLE NO: 148307E

APPLICATION FOR REGISTRATION RECEIVED ON: 09 MAY, 1983
ENTERED: 22 JULY, 1983

TITLE CANCELLED: 19 OCTOBER, 1984

REGISTERED OWNER IN FEE SIMPLE:
HECTOR STEWART HOLDINGS LTD., (INCORPORATION NO. 35072)
13741 - 56B AVENUE
SURREY, B.C.

TAXATION AUTHORITY:
CITY OF SURREY

DESCRIPTION OF LAND:
PARCEL IDENTIFIER: 000-732-664
LOT 8 DISTRICT LOT 4 GROUP 2 PLAN 2620

LEGAL NOTATIONS: NONE

CHARGES, LIENS AND INTERESTS: NONE

DUPLICATE INDEFEASIBLE TITLE: NONE OUTSTANDING

TRANSFERS:
1984-10-19
ALLX104608E

*** CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN ***

6.0 REFERENCES

Canadian Standards Association, 2003. *Z768-01 Phase I Environmental Site Assessment*.

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/Port Mann CN Land Swap, Surrey, BC*. September 16, 2002.

Klohn-Crippen Consultants Ltd., *Fraser River Harbour Commission, Lindal Cedar Homes
Sawmill Expansion, Surrey BC - Preliminary Geotechnical and Environmental
Assessments*. April 1995.

Public Works and Government Services Environmental Services (PWGSC), *Environmental
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Figures