SITE OBSERVATION FORM: **DNV Landslide Risk Assessment** 

1535 Lennox Street LOCATION:

**INSPECTION DATE:** (mm/dd/yy) 11/03/05

Rain, heavy rain for several days WEATHER:

prior to visit.



**BGC ENGINEERING INC.** AN APPLIED EARTH SCIENCES COMPANY

500 - 1045 Howe Street Vancouver, BC Canada V6Z 2A9

THICKNESS OF LOOSE MATERIALS	<1 m	1-2 m	2-3 m	>3 m
FENCE LINE			N	
4 m DOWNSLOPE FROM SLOPE CREST		$\checkmark$		

		SLOPE = 39°		
SLOPE BELOW FENCE/ RETAINING STRUCTURE	CRACKS SLIDES EROS		EROSION	
OBSERVATIONS: Loose organic material on surface of slope (branches and leaves).				

TREES BELOW FENCE/ RETAINING STRUCTURE **STRAIGHT** PISTOL-BUTT **LEANING** PERCENT CONIFER: 50%  $\checkmark$ OBSERVATIONS: Leaning tree at crest immediately below the crib wall. Some leaning trees observed, however generally straight.

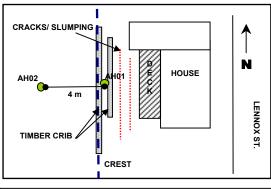
RETAINING STRUCTURES		YES 🗹	NO	<b>HEIGHT=</b> 1.90 m
TYPE	BLOCKS	CONCRETE	TIMBER CRIB	OTHER:
			<b>⊿</b>	
DEFORMATION	UNDEFORMED	CRACKED	SETTLED	BULGING
		✓	✓	✓

OBSERVATIONS: A small crib wall by patio is slumping. Bulging wall down slope is breaking apart. Wall being pressed against a tree at the crest causing the tree to lean.

DEFORMATION IN BACKYARD	YES 🗹	NO		
LOCATION: Immediately behind crib wall.  DESCRIPTION: Backyard is settling, and slumping in the down slope direction.  Displacement on large crack is approximately 40 cm.				
POOLS	YES	NO 🗹		

SEEPAGE/ SPRINGS IN OR BELOW FILL	YES	NO☑

OBSERVATIONS: None observed.



HOUSE DISTANCE TO CREST = 3.2 m

RECEIVES SURFACE RUNOFF FROM	BACKYARD	½ ROOF	FULL ROOF	FRONT YARD	STREET			
RECEIVES SURFACE RUNOFF FROM	✓	V	✓	K	✓			
OBSERVATIONS: Potential for storm water from street to drain onto property.								

CONNECTED TO STORM SEWER	YES	NO ☑	UNSURE		
OWNERS COMMENTS: DNV reports that this property is not connected to the storm sewer.					

### **GENERAL OBSERVATIONS**

**DESCRIPTION**: None

- House is 3.2 m from the crest at the closest point.
- Corrugated pipe runs onto slope at the south edge of the property.
- A concrete block wall between this yard and the neighbouring property (1557) is cracked and tilted down slope.



Figure 1. 1535 Lennox Street – Front of the house





Figure 3. 1535 Lennox Street – View looking north of settling/slumping backyard

# INSPECTION LOCATION # 1535 Lennox

Project : DNV Landslide Risk Assessment Project No. : 0404-002-01

Page 1 of 1

**Location**: 1535 Lennox **Drill Method**: Dutch Hand Auger **Inspection Date**: 03 Nov 05

AN APPLIED EARTH SCIENCES COMPANY

Phone: (604) 684 5900

Vancouver, BC

**Logged by** : MB/ES **Reviewed by** : MJP

SAND (SM) Silty, some fine to medium gravel, poorly graded, loose, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation, trace rootlets [TOPSOIL] SAND (SW) Trace silt, gravel sized silt clasts, well graded, loose, max particle size = 1 mm, sub-rounded, brown, odourless, moist, homogeneous, no cementation, trace rootlets [TOPSOIL] SAND (SW) Trace silt, trace gravel, well graded, loose, max particle size = 1 mm, sub-angular, light brown with orange mottling, no odour, moist, homogeneous, no cementation [FILL]  SAND (SW) Trace silt, trace gravel, well graded, loose, max particle size = 15 mm, sub-angular, light brown with orange mottling, no odour, moist, homogeneous, no cementation [FILL]  SAND (SW) Some silt, trace fine gravel, well graded, loose, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation [FILL]  SAND (SW) Some silt, trace fine gravel, well graded, loose, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation [FILL]  SAND (SW) Some silt, trace fine gravel, well graded, loose, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation [FILL]  SAND (SW) Some silt, trace fine gravel, well graded, loose, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation [FILL]  SAND (SP) Fine to medium sand, trace coarse gravel, poorly graded, compact, max particle size = 10 mm, light brown, no odour, moist, homogeneous, no cementation [Weathered GLACIOMARINE]  SAND (SP) Fine to medium sand, trace coarse gravel, poorly graded, compact, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation [Weathered GLACIOMARINE]  2.0  SAND (SP) Fine to medium sand, trace coarse gravel, poorly graded, compact, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation [Veathered GLACIOMARINE]  2.0  SAND (SP) Fine to medium sand, trace coarse gravel	(1	AUGERHOLE: BGC05-1535LEN-AH01 1m Back From Slope Crest FINAL DEPTH OF AUGERHOLE: 2.60 m THICKNESS OF LOOSE MATERIALS: 2.20 m	r Table	2	AUGERHOLE: BGC05-1535LEN-AH02 4 m Downslope FINAL DEPTH OF AUGERHOLE: 2.00 m THICKNESS OF LOOSE MATERIALS: 1.50 m	:
SAND (SM) Silty, some fine to medium gravel, poorly graded, loose, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation, trace rootlets [TOPSOIL] SAND (SW) Trace silt, gravel sized silt clasts, well graded, loose, max particle size = 1 mm, sub-rounded, brown, odourless, moist, homogeneous, no cementation, trace rootlets [FILL]  SAND (SW) Trace silt, trace gravel, well graded, loose, max particle size = 15 mm, sub-angular, light brown with orange mottling, no odour, moist, homogeneous, no cementation [FILL]  SAND (SW) SanD (SW) Trace silt, trace gravel, well graded, loose, max particle size = 15 mm, sub-angular, light brown with orange mottling, no odour, moist, homogeneous, no cementation [FILL]  SAND (SW) Some silt, trace fine gravel, well graded, loose, max particle size = 10 mm, sub-nounded, dark brown, no odour, moist, homogeneous, no cementation [FILL]  SAND (SW) Some silt, trace fine gravel, well graded, loose, max particle size = 10 mm, sub-nounded, dark brown, no odour, moist, homogeneous, no cementation [FILL]  SAND (SW) Some silt, trace fine gravel, well graded, loose, max particle size = 10 mm, sub-nounded, dark brown, no odour, moist, homogeneous, no cementation [FILL]  SAND (SW) Some silt, trace fine gravel, well graded, loose, max particle size = 10 mm, sub-nounded, dark brown, no odour, moist, homogeneous, no cementation [FILL]  SAND (SP) Fine to medium sand, silty, trace clay, gravel sized silt clast clas	Depth (m	Lithologic Description	Depth To Water Table	Depth (m)	Lithologic Description	
SAND (SW) Some silt, trace fine gravel, well graded, loose, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation, roots, rootlets, wood fragments [FILL]  SAND (SP) Fine to medium sand, trace coarse gravel, poorly graded, compact, max particle = 20 mm, light brown, no odour, moist, homogeneous, no cementation [Weathered GLACIOMARINE]  2.00 m: EOH - Refusal as material is too stiff to auger thro No water table encountered.	1.5	Silty, some fine to medium gravel, poorly graded, loose, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation, trace rootlets  [TOPSOIL]  SAND (SW)  Trace silt, gravel sized silt clasts, well graded, loose, max particle size = 1 mm, sub-rounded, brown, odourless, moist, homogeneous, no cementation, trace rootlets  [FILL]  SAND (SW)  Trace silt, trace gravel, well graded, loose, max particle size = 15 mm, sub-angular, light brown with orange mottling, no odour, moist, homogeneous, no cementation		- - - - 0.5 - -	Silty, some fine to medium gravel, well graded, loose, max particle = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation, trace rootlets  [TOPSOIL]  SAND (SM)  Fine to medium sand, silty, trace gravel, trace gravel sized silt clasts, poorly graded, loose, max particle size = 10 mm, sub-rounded, brown, no odour, moist, homogeneous, no cementation  [FILL]  SAND (SM)  Fine to medium sand, silty, trace clay, gravel sized silt clasts, poorly graded, loose, max particle size = 1 mm, light brown to brown with some orange mottling, no odour, moist, homogeneous, no cementation	
Fine sand, silty, gravel sized silt clasts, poorly graded, loose to compact, max particle size = <1 mm, light brown with orange mottling, moist, homogeneous, no cementation [COLLUVIUM]  5		Some silt, trace fine gravel, well graded, loose, max particle size = 10 mm, sub-rounded, dark brown, no odour, moist, homogeneous, no cementation, roots, rootlets, wood fragments		  -  -  -	Fine to medium sand, trace coarse gravel, poorly graded, compact, max particle = 20 mm, light brown, no odour, moist, homogeneous, no cementation [Weathered GLACIOMARINE]  2.00 m: EOH - Refusal as material is too stiff to auger through.	
through. No water table encountered.	.5	Fine sand, silty, gravel sized silt clasts, poorly graded, loose to compact, max particle size = <1 mm, light brown with orange mottling, moist, homogeneous, no cementation [COLLUVIUM]  2.60 m: EOH - Refusal as material is too stiff to auger through.		- - - 2.5 - -		
.0 - 3.0	.0			- - 3.0		

SITE OBSERVATION FORM: **DNV Landslide Risk Assessment** 

LOCATION: 1557 Lennox Street

**INSPECTION DATE:** (mm/dd/yy) 11/03/05

Rain, heavy rain for several days WEATHER:

prior to visit.



#### **BGC ENGINEERING INC.** AN APPLIED EARTH SCIENCES COMPANY

500 - 1045 Howe Street Vancouver, BC Canada V6Z 2A9

THICKNESS OF LOOSE MATERIALS	<1 m	1-2 m	2-3 m	>3 m
FENCE LINE				<u> </u>
10 m DOWNSLOPE FROM SLOPE CREST		$\checkmark$		

		<b>SLOPE</b> = 35°		
SLOPE BELOW FENCE/ RETAINING STRUCTURE	CRACKS	SLIDES	EROSION	
			K	
OBSERVATIONS: Slope wash observed. Assorted rubbish and roof tiles below slope crest. Large granite boulder. ~1.5 m diameter.				

adjacent to second auger hole.

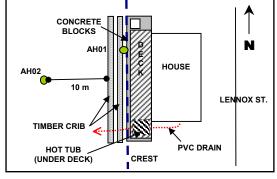
TREES BELOW FENCE/ RETAINING STRUCTURE		STRAIGHT	PISTOL-BUTT	LEANING	
PERCENT CONIFER:	✓				
OBSERVATIONS: Heavily vegetated, few trees.					

RETAINING STRUCTURES		YES 🗹	NO	<b>HEIGHT=</b> 0.75-1.5 m
TYPE	BLOCKS	CONCRETE	TIMBER CRIB	OTHER:
	✓	✓	✓	
DEFORMATION	UNDEFORMED	CRACKED	SETTLED	BULGING
		✓		

OBSERVATIONS: 3 retaining walls on slope. Lowest wall is timber crib (0.75 m high) and undeformed. Middle retaining wall is 1.5m high with concrete patio on top (covered by brush), appears competent, undeformed except for top 0.5 m near trail access (leaning 10° down slope). Top retaining wall is 1.5 m high concrete blocks and mortar, beneath deck, cracking observed beneath deck and at south east corner of property.

NO

DEFORMATION IN BACKYARD	YES 🗹		CONCRETE	$ \uparrow$
LOCATION:		1	BLOCKS	
<b>DESCRIPTION:</b> Entire backyard is covered by wall. Cracking observed in concrete retaining		te retaining	AH01 HOUSE	N
	1		10 m	
POOLS	YES 🗹	NO	LEN	NOX
<b>DESCRIPTION</b> : Tile/Concrete hot tub not curr rainwater. Unable to view walls of hot tub to cl	TIMBER CRIB  HOT TUB  PVC DRAIN			
SEEPAGE/ SPRINGS IN OR	VEO		(UNDER DECK) CREST	
BELOW FILL	YES	ΝΟ☑		
OBSERVATIONS: None observed.			HOUSE DISTANCE TO CREST = 5 -	7m



RECEIVES SURFACE RUNOFF FROM	BACKYARD	½ ROOF	FULL ROOF	FRONT YARD	STREET	
RECEIVES SURFACE RUNOFF FROM	V	Ŋ	K	V		

OBSERVATIONS: PVC pipe captures roof drainage and directs it through the wood deck and retaining walls discharging down the slope. Exact location of end of pipe unknown.

**CONNECTED TO STORM SEWER UNSURE** YES ио ₩ OWNERS COMMENTS: DNV reports that this property is connected to the storm sewer, however site observations confirm that some roof drainage is diverted down slope by a PVC pipe.

#### GENERAL OBSERVATIONS

- Owner reports that this site has been monitored by a geotechnical engineer
- Various cracks (maximum displacement approx. 5 cm) were observed in upper retaining wall below wood deck.



Figure 1. 1557 Lennox Street – Front of the house



Figure 2. 1557 Lennox Street – Drainage pipe exiting house, draining downslope



Figure 3. 1557 Lennox Street – Crack in concrete retaining wall



Figure 4. 1557 Lennox Street – View looking south along crest

# INSPECTION LOCATION # 1557 Lennox

Page 1 of 1

Project : DNV Landslide Risk Assessment Project No. : 0404-002-01

**Location**: 1557 Lennox **Drill Method**: Dutch Hand Auger **Inspection Date**: 03 Nov 05

**Logged by**: SF/JB **Reviewed by**: MJP

	AUGERHOLE: BGC05-1557LEN-AH01 0.6m Back From Slope Crest FINAL DEPTH OF AUGERHOLE: 3.00 m THICKNESS OF LOOSE MATERIALS: 3.00 m minimum	Fable		AUGERHOLE: BGC05-1557LEN-AH02 4 m Downslope FINAL DEPTH OF AUGERHOLE: 1.85 m THICKNESS OF LOOSE MATERIALS: 1.60 m	
	Lithologic Description	Depth To Water Table	Depth (m)	Lithologic Description	
	SAND (SP) Fine to coarse sand, silty, some fine to medium gravel, poorly graded, very loose, max particle size = 15 mm, sub-rounded, brown with light brown zones, concrete fragments, trace organics [FILL]		0.0 - - - -	SILT (ML) Some fine sand, fine to medium gravel, fine gravel sized silt clasts, non plastic, soft, grey brown, moist, homogeneous, organics [FILL / COLLUVIUM]  SILT (ML)	
	SILT (ML) Trace fine to coarse sand, gravelly, fine to coarse gravel, non plastic, soft, max particle size = 50 mm, rounded, moist to wet [FILL]		- 0.5 - - -	Some sand, non plastic, very soft, dark brown, no odour, moist, homogeneous, bark, organic matter [FILL]  SAND (SP)  Fine to medium sand, trace fine to medium gravel sized sand clasts, poorly graded, loose to compact, light orange brown, moist, homogeneous [COLLUVIUM]	
)			- 1.0 - -	1.10 m: Material is becoming silty	
5			- - 1.5	1.35 m: Silt content increases to SILT (ML)	
)	1.65 m: ORGANICS layer, material becoming siltier SILT (ML) Trace fine to coarse sand, some fine to medium gravel, gravel sized silt clasts, low plastic, soft, light brown, moist, homogeneous, trace organics [COLLUVIUM or FILL]		- - - - 2.0 -	SAND (SP) Fine to medium sand, trace coarse sand, trace silt, trace fine gravel, poorly graded, loose to compact, light yellow brown, moist, homogeneous [Weathered GLACIOMARINE]  1.85 m: EOH - Refusal as material is too stiff to auger through.	J
5	SAND (SP) Fine to medium sand, trace coarse sand, trace fine gravel, loose to compact, poorly graded, max particle size = 5 mm, sub-rounded, light yellow brown, dry to moist, homogeneous [Weathered GLACIOMARINE]		- - 2.5 - -		
)	3.00 m: EOH - Extent of auger	-	- - 3.0		

BGC

**BGC ENGINEERING INC.** 

AN APPLIED EARTH SCIENCES COMPANY

Vancouver, BC Phone: (604) 684 5900

SITE OBSERVATION FORM:

**DNV Landslide Risk Assessment** 

1583 Lennox Street

INSPECTION DATE: (mm/dd/yy)

**WEATHER:** 

LOCATION:

Raining, heavy rain for several days

prior to visit.

11/02/05



#### **BGC ENGINEERING INC.** AN APPLIED EARTH SCIENCES COMPANY

**LENNOX ST.** 

500 - 1045 Howe Street Vancouver, BC Canada V6Z 2A9

THICKNESS OF LOOSE MATERIALS	<1 m	1-2 m	2-3 m	>3 m
FENCE LINE			N	
12 m DOWNSLOPE FROM SLOPE CREST		$\checkmark$		

	<b>SLOPE</b> = 35 to 36					
SLOPE BELOW FENCE/ RETAINING STRUCTURE	CRACKS	SLIDES	EROSION			
OBSERVATIONS: No slope deformation was observed. Slope is heavily vegetated.						

TREES BELOW FENCE/ RETAINING STRUCTURE		STRAIGHT	PISTOL-BUTT	LEANING				
PERCENT CONIFER:	20%	✓						
OBSERVATIONS: Slope appears to be clear of trees for 75 – 100 m down slope from crest.								

RETAINING STRUCTU	JRES	YES 🗹	NO	<b>HEIGHT =</b> 2.0 m		
TYPE BLOCKS		CONCRETE	TIMBER CRIB	OTHER:		
	✓	✓	✓			
DEFORMATION UNDEFORMED		CRACKED	SETTLED	BULGING		
		✓				

**OBSERVATIONS:** Retaining wall at south end of property consists of 3 adjacent parts: 2m high timber crib, 0.5m high cinder blocks, 0.75m high stone and mortar segment. All parts are slightly cracked but are somewhat supported by two 2' diameter straight conifers.

DEFORMATION IN BACKYARD	YES	№ М	
LOCATION:  DESCRIPTION: None observed. Backyard ale deck.	most completely c	ccupied by	AH02 AH01 HOUSE
POOLS	YES	ΝΟ☑	DRAINAGE
DESCRIPTION: None observed.		I	TREES RETAINING WALLS
SEEPAGE/ SPRINGS IN OR BELOW FILL OBSERVATIONS: None observed.	YES	NO 🗹	HOUSE DISTANCE TO CREST = 2.0 m

RECEIVES SURFACE RUNOFF FROM	BACKYARD	½ ROOF	FULL ROOF	FRONT YARD	STREET				
RECEIVES SURFACE RUNOFF FROM	K	V	V						
OBSERVATIONS: Unsure of where roof drainage exits.									

L	CONNECTED TO STORM SEWER	YES	NO 🔽	UNSURE
ſ	OWNERS COMMENTS: Drain exits at back of house from beneath the house	. DNV reports that th	e property is not o	connected to the storm
	sewer.			

### **GENERAL OBSERVATIONS**

- Large conifers support the retaining wall.
- Retaining walls support garden and not house.



Figure 1. 1583 Lennox Street – Front of the house



Figure 2. 1583 Lennox Street - View of slope crest looking south



Figure 3. 1583 Lennox Street - View of slope crest looking north

# INSPECTION LOCATION # 1583 Lennox

Page 1 of 1

Project : DNV Landslide Risk AssessmentProject No. : 0404-002-01

Location: 1583 Lennox
Drill Method: Dutch Hand Auger
Inspection Date: 02 Nov 05

AN APPLIED EARTH SCIENCES COMPANY

Phone: (604) 684 5900

Vancouver, BC

**Logged by**: SF/JB **Reviewed by**: MJP

	AUGERHOLE: BGC05-1583LEN-AH01 on Slope Crest FINAL DEPTH OF AUGERHOLE: 2.30 m THICKNESS OF LOOSE MATERIALS: 2.30 m	able		AUGERHOLE: BGC05-1583LEN-AH02 12 m Downslope FINAL DEPTH OF AUGERHOLE: 1.35 m THICKNESS OF LOOSE MATERIALS: 1.35 m minimum	
Depth (m)	Lithologic Description	Depth To Water Table	Depth (m)	Lithologic Description	
.5	ORGANICS Bark, roots, conifer needles, very loose [ORGANIC MATERIAL] SAND (SP) Fine to medium sand, silty, trace gravel sized sand clasts, poorly graded, very loose, max particle size = 15 mm, dark brown, moist, homogeneous, roots, max particle size = 15 mm [TOPSOIL] GRAVEL (GP) Fine to coarse, sandy, fine to coarse, some silt, poorly graded, loose, dark grey brown, moist, homogeneous [FILL] SAND (SP) Fine to medium sand, trace fine to medium gravel, gravel sized silt and sand clasts, poorly graded, loose, grey, moist, homogeneous [FILL] 0.80 m: Disturbed layer with some organics		0.0 - - - - 0.5 - - - - 1.0	ORGANICS SAND (SP) Fine to medium sand, trace coarse sand to fine gravel sized silt clasts, poorly graded, very loose, brown, dry, homogeneous [FILL]  0.50 m: Decomposed tree 4 cm thick SAND (SP) Fine to medium sand, some silt, poorly graded, very loose, dark brown, moist, homogeneous [FILL]  SAND (SP) Fine to medium sand, trace medium gravel, poorly graded, loose to compact, light brown with orange mottling, moist, homogeneous, tree roots	+,
5	1.35 m: Organic lense or layer 1.45 m: Becoming wet		- - - 1.5	[COLLUVIUM]  1.35 m: EOH - Refusal on a tree root	_
)	SAND (SP) Fine to medium sand, trace coarse sand to fine gravel, poorly graded, loose, light golden brown with orange brown mottles, moist, homogeneous, trace organics [Weathered GLACIOMARINE]		- - - - 2.0		
5	2.20 m: Loose to compact 2.30 m: Compact 2.30 m: EOH - Refusal in compact material		- - - - 2.5		
-			- - -		
0			- 3.0		

SITE OBSERVATION FORM: DNV Landslide Risk Assessment

LOCATION: 1593 Lennox Street

INSPECTION DATE: (mm/dd/yy) 11/02/05

WEATHER: Light rain, heavy rain for several days

prior to visit.



BGC ENGINEERING INC.
AN APPLIED EARTH SCIENCES COM PANY

500 - 1045 Howe Street Vancouver, BC Canada V6Z 2A9

THICKNESS OF LOOSE MATERIALS	<1 m	1-2 m	2-3 m	>3 m
FENCE LINE				V
15 m DOWNSLOPE FROM SLOPE CREST			V	

	<b>SLOPE =</b> 34° - 36°			
SLOPE BELOW FENCE/ RETAINING STRUCTURE	CRACKS	SLIDES	EROSION	
			$\checkmark$	
OBSERVATIONS: Slope is 34 to 36 helow concrete wall and 29 heside concrete wall. Frosion observed at base of concrete wall				

TREES BELOW FENCE/ R	ETAINING STRUCTURE	STRAIGHT	PISTOL-BUTT	LEANING
PERCENT CONIFER:	90%	✓	✓	✓
OBSERVATIONS: Some leaning a	and pistol butt are present, but in gene	eral trees are straight.	-	

RETAINING STRU	ICTURES	YES 🗹	NO	HEIGHT= 3 m concrete; 3 m timber
TYPE	BLOCKS	CONCRETE	TIMBER CRIB	OTHER:
		✓	V	✓
DEFORMATION	UNDEFORMED	CRACKED	SETTLED	BULGING
		<b>√</b>	<b>✓</b>	✓

**OBSERVATIONS:** Concrete and timber crib walls overlap by 1.5 m. Concrete wall is constructed with concrete blocks above the timber crib wall. Concrete wall is cracking in several places. Timber crib wall is bulging (1m horizontal bulge from original placement).

DEFORMATION IN BACKYARD	YES 🗹	NO	PLAN		CREST	LENNOX
LOCATION: Backyard above concrete block v	vall.		AH02	AH01 A		
<b>DESCRIPTION:</b> Slumping observed in the down slope direction.				15 m ~ 5 m		N STREET
POOLS	YES	ио ☑	PROFILE	EXCAVATED	HOUSE	
<b>DESCRIPTION</b> : None. Hot tub removed.			]	3 m	CONCRET	E WALL
SEEPAGE/ SPRINGS IN OR BELOW FILL	YES 🗹	NO	AH02	AH01	CRIB WAI	L .
OBSERVATIONS: Seepage through the timber	er crib wall observe	ed.	HOUSE	DISTANCE TO	CREST =	0 m

RECEIVES SURFACE RUNOFF FROM	BACKYARD ½ ROOF		FULL ROOF	FRONT YARD	STREET	
RECEIVES SURFACE RUNOFF FROM	✓	K	V	K	K	
OBSERVATIONS: Front driveway and yard dip toward the house and the slope. Runoff appears to be pumped off site to street, unsure						
where water is being pumped from.						

CONNECTED TO STORM SEWER	YES	ио ✓	UNSURE
<b>OWNERS COMMENTS:</b> DNV reports that this property is not connected to the	storm sewer.		

### **GENERAL OBSERVATIONS**

- House is constructed on the crest of the slope at west side of property.
- DNV geotech. eng. Brian Thompson has been working at this site; dug test pits.
- Backyard is fill behind concrete retaining wall; most of fill was removed after Jan. 2005 event; patio tiles dipping down slope



Figure 1. 1593 Lennox Street - Front of the house



Figure 2. 1593 Lennox Street – Test pit excavated for a previous investigation used in conjunction with AH#1



Figure 3. 1593 Lennox Street – Concrete retaining wall built on top of old timber crib wall (timber crib wall is bulging and concrete wall is cracking)



Figure 4. 1593 Lennox Street – Cracking on the west side of the concrete retaining wall



Figure 5. 1593 Lennox Street – Crack on the north side of the concrete retaining wall

# INSPECTION LOCATION # 1593 Lennox

Page 1 of 1

Project : DNV Landslide Risk Assessment Project No. : 0404-002-01

Location: 1593 Lennox

Drill Method: Dutch Hand Auger
Inspection Date: 02 Nov 05

**Logged by** : MB/ES **Reviewed by** : MJP

	AUGERHOLE: BGC05-1593LEN-AH01 3 m below Slope Crest FINAL DEPTH OF AUGERHOLE: 2.70 m THICKNESS OF LOOSE MATERIALS: 3.00 m minimum	Table		AUGERHOLE: BGC05-1593LEN-AH02 15 m Downslope FINAL DEPTH OF AUGERHOLE: 2.10 m THICKNESS OF LOOSE MATERIALS: 2.10 m minimum	
Depth (m)	Lithologic Description	Depth To Water Table	Depth (m)	Lithologic Description	
0.0— 0.5 1.0 2.0	SAND (SW) Fine sand, silty, trace fine gravel, poorly graded, loose, max particle size = 4 mm, sub-angular, dark brown, no odour, moist, homogeneous, no cementation [ORGANICS/TOPSOIL] SAND (SP) Fine to medium sand, trace to some silt, gravel sized silt clasts, poorly graded, loose, max particle size = <1 mm, grey to brown, moist, homogeneous, no cementation [FILL] 0.40 - 0.50 m: Some cobbles, soil grading to brown colour SAND (SM) Fine to medium sand, silty, trace fine to medium gravel, poorly graded sand, loose, max particle size = 4 mm, rounded, brown with dark brown organic seams, no odour, moist, homogeneous, no cementation [FILL] SAND (SP) Fine to medium sand, trace silt, trace fine to coarse gravel, gravel sized fine sand clasts, poorly graded, loose, max particle size = <1 mm, light brown with orange mottling, moist, homogeneous, no cementation [COLLUVIUM]		0.0	SAND (SM) Fine sand, silty, trace fine gravel, poorly graded, loose, max particle size = 10 mm, sub-angular, dark brown, no odour, moist, homogeneous, no cementation, rootlets [FILL] SAND (SP) Fine to medium sand, trace silt, gravel sized fine sand clasts, poorly graded, light brown with orange mottling, moist, homogeneous, no cementation, rootlets [FILL] 0.5 - 0.55 m: Organic layer, wood fragments and organic rich silt SAND (SP) Fine to medium sand, trace silt, trace cobbles, gravel sized clasts of fine to medium sand, poorly graded, loose, max particle size = 100 mm, brown to light brown with some orange mottling, moist, homogeneous, no cementation, some rootlets [FILL/COLLUVIUM]  2.00 m: Trace fine to coarse gravel 2.10 m: EOH - Refusal on gravels No water table encountered	

BGC ENGINEERING INC.
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