

APPENDICES

APPENDIX A
MINERAL RIGHTS - QUARRY LEASES



QUARRY LEASE

First Renewal

Quarry
Lease No. **QL-1291**

THIS LEASE made in duplicate this 20th day of September, 2006

BETWEEN:

Her Majesty the Queen in right of the
Province of Manitoba, represented by the
Minister of Industry, Economic Development
and Mines

(the "Minister")

of the First Part

- and -

SUNTERRA HORTICULTURE (CANADA)
INC.
2590 HICKORY LANE
ABBOTSFORD BC V3G 2Z9

(the "Lessee")

of the Second Part

The parties agree as follows:

1. In this Lease:

(a) "Act" means The Mines and Minerals Act, Cap. M162 C.C.S.M., as amended, revised or substituted from time to time;

(b) "regulations" means regulations made pursuant to the Act, and as amended, revised or substituted from time to time;

2. Subject and pursuant to the Act and regulations, the Minister conveys to the lessee the exclusive right to explore for, develop, and produce the following quarry minerals, namely

PEAT AND PEAT MOSS-----

that are the property of the Crown and are found on or under the land described as:

**ALL THAT PORTION OF THE PROVINCE OF MANITOBA CONTAINED WITHIN THE
FOLLOWING LIMITS, NAMELY; COMMENCING AT GEOGRAPHICAL CO-ORDINATES**



51°40'04.56" NORTH AND 96°51'20.6" WEST; THENCE SLY TO GEOGRAPHICAL CO-ORDINATES 51°39'25.09" NORTH AND 96°51'22.04" WEST; THENCE WLY TO GEOGRAPHICAL CO-ORDINATES 51°39'25.22" NORTH AND 96°51'42.41" WEST; THENCE NLY TO GEOGRAPHICAL CO-ORDINATES 51°39'51.11" NORTH AND 96°51'41.81" WEST; THENCE NLY TO GEOGRAPHICAL CO-ORDINATES 51°40'04.28" NORTH AND 96°51'41.46"; THENCE ELY TO THE POINT OF COMMENCEMENT.

(the "Lands") and being 48.1 hectares, more or less, for a term of 10 years, commencing the 20th day of September, 2006 renewable in accordance with the Act.

3. The Lessee shall comply with the Act and regulations; including, without restricting the generality of the foregoing, the payment of rent, royalty and rehabilitation levy prescribed thereunder.
4. The Lessee shall and does hereby indemnify and save harmless the Minister against any and all actions, suits, claims or demands that may be brought or made against the Minister for or by reason of any act or thing done or omitted to be done by the Lessee or its agents with respect to the Lands.
5. To be effective and binding, any waiver by the Minister of a breach by the Lessee of any term or condition of this Lease, the Act or the regulations must be in writing. Any such waiver shall extend only to the events of breach enumerated therein and shall not limit or affect the Minister's rights with respect to any other breach.
6. If the Lessee defaults, breaches, fails to perform or observe any term or condition of this Lease, the Act or the regulations, and any such event is not remedied within such notice period as the Minister may give, the Minister may cancel this Lease. Notwithstanding any such cancellation by the Minister, the rights of the Minister against the Lessee shall not be prejudiced and the Minister shall have the full remedies against the Lessee as if the Lease remained in full force and effect.
7. Any notice to a party hereto shall be in writing and may be delivered personally, sent by telegram, telex, telecopier or other means of electronic communication, or may be forwarded by mail subject to Canada Post confirmation of delivery to that party at the following address:

To the Minister:

Industry, Economic Development and Mines
Unit 360-1395 Ellice Avenue
Winnipeg, Manitoba
R3G 3P2

To the Lessee:

SUNTERRA HORTICULTURE (CANADA)
INC.
2590 HICKORY LANE
ABBOTSFORD BC V3G 2Z9

8. This lease shall be interpreted in accordance with the laws of Manitoba.



In witness whereof the Minister and the Lessee have executed this Lease on the dates shown below their respective signatures.

Signed, sealed and delivered
in the presence of:

Her Majesty the Queen in right of the Province Of
Manitoba

Witness

Minister of Industry, Economic Development and Mines

Authorized Signing Authority
Ernest Armit, P. Eng.
Director of Mines

Oct 11 2006

Date

Witness

Lessee SUNTERRA HORTICULTURE (CANADA)
INC.

October 10, 2006

Date

IN ACCORDANCE WITH SECTION 141(3) OF
THE MINES AND MINERALS ACT THIS
QUARRY LEASE IS HEREBY RECORDED AND
THIS STAMP SHALL CONSTITUTE A
CERTIFICATE OF FILING AND RECORDING.

Dec 5/06 Mining Recorder



QUARRY LEASE

First Renewal

Quarry
Lease No. QL-1134

THIS LEASE made in duplicate this 19th day of July, 2006

BETWEEN:

Her Majesty the Queen in right of the
Province of Manitoba, represented by the
Minister of Industry, Economic Development
and Mines

(the "Minister")

of the First Part

- and -

SUNTERRA HORTICULTURE (CANADA)
INC.
2590 HICKORY LANE
ABBOTSFORD BC V3G 2Z9

(the "Lessee")

of the Second Part

The parties agree as follows:

1. In this Lease:

- (a) "Act" means The Mines and Minerals Act, Cap. M162 C.C.S.M., as amended, revised or substituted from time to time;
- (b) "regulations" means regulations made pursuant to the Act, and as amended, revised or substituted from time to time;

2. Subject and pursuant to the Act and regulations, the Minister conveys to the lessee the exclusive right to explore for, develop, and produce the following quarry minerals, namely

PEAT AND PEAT MOSS-----

that are the property of the Crown and are found on or under the land described as:

**ALL THAT PORTION OF THE PROVINCE OF MANITOBA CONTAINED WITHIN THE
FOLLOWING LIMITS, NAMELY COMMENCING AT GEOGRAPHICAL CO-ORDINATES**



51°40'56.76" NORTH AND 96°51'39.54" WEST; THENCE SLY TO GEOGRAPHICAL CO-ORDINATES 51°40'43.09" NORTH AND 96°51'39.88" WEST; THENCE ELY TO GEOGRAPHICAL CO-ORDINATES 51°40'43.08" NORTH AND 96°51'20.34" WEST; THENCE SLY TO GEOGRAPHICAL CO-ORDINATES 51°40'04.56" NORTH AND 96°51'20.60" WEST; THENCE WLY TO GEOGRAPHICAL CO-ORDINATES 51°40'04.28" NORTH AND 96°51'41.46" WEST; THENCE SLY TO GEOGRAPHICAL CO-ORDINATES 51°39'51.11" NORTH AND 96°51'41.81" WEST; THENCE WLY TO GEOGRAPHICAL CO-ORDINATES 51°39'51.68" NORTH AND 96°52'46.46" WEST; THENCE NLY TO GEOGRAPHICAL CO-ORDINATES 51°40'30.86" NORTH AND 96°52'46.16" WEST; THENCE ELY TO GEOGRAPHICAL CO-ORDINATES 51°40'30.69" NORTH AND 96°52'25.29" WEST; THENCE NLY TO GEOGRAPHICAL CO-ORDINATES 51°40'43.20" NORTH AND 96°52'25.40" WEST; THENCE ELY TO GEOGRAPHICAL CO-ORDINATES 51°40'42.79" NORTH AND 96°52'03.20" WEST; THENCE NLY TO GEOGRAPHICAL CO-ORDINATES 51°40'57.08" NORTH AND 96°52'02.14" WEST; THENCE ELY TO THE POINT OF COMMENCEMENT.

(the "Lands") and being **250.53** hectares, more or less, for a term of 10 years, commencing the **5th day of March, 2006** renewable in accordance with the Act.

3. The Lessee shall comply with the Act and regulations; including, without restricting the generality of the foregoing, the payment of rent, royalty and rehabilitation levy prescribed thereunder.
4. The Lessee shall and does hereby indemnify and save harmless the Minister against any and all actions, suits, claims or demands that may be brought or made against the Minister for or by reason of any act or thing done or omitted to be done by the Lessee or its agents with respect to the Lands.
5. To be effective and binding, any waiver by the Minister of a breach by the Lessee of any term or condition of this Lease, the Act or the regulations must be in writing. Any such waiver shall extend only to the events of breach enumerated therein and shall not limit or affect the Minister's rights with respect to any other breach.
6. If the Lessee defaults, breaches, fails to perform or observe any term or condition of this Lease, the Act or the regulations, and any such event is not remedied within such notice period as the Minister may give, the Minister may cancel this Lease. Notwithstanding any such cancellation by the Minister, the rights of the Minister against the Lessee shall not be prejudiced and the Minister shall have the full remedies against the Lessee as if the Lease remained in full force and effect.
7. Any notice to a party hereto shall be in writing and may be delivered personally, sent by telegram, telex, telecopier or other means of electronic communication, or may be forwarded by mail subject to Canada Post confirmation of delivery to that party at the following address:



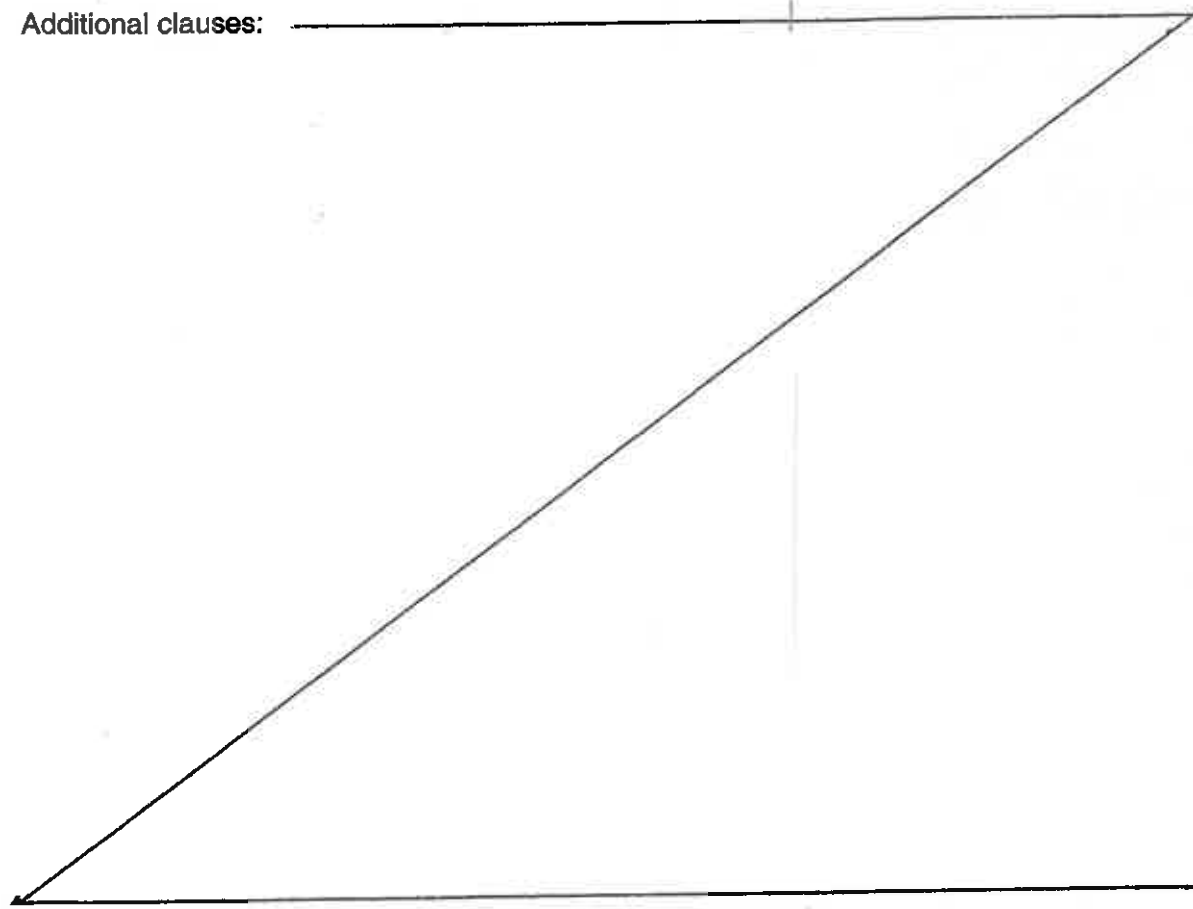
To the Minister:

Industry, Economic Development and Mines
Unit 360-1395 Ellice Avenue
Winnipeg, Manitoba
R3G 3P2

To the Lessee:

SUNTERRA HORTICULTURE (CANADA)
INC.
2590 HICKORY LANE
ABBOTSFORD BC V3G 2Z9

8. This lease shall be interpreted in accordance with the laws of Manitoba.
9. Any amendments to this Lease shall be in writing and signed by both parties.
10. The Lessee shall not assign this lease except with the prior written consent of the Minister which shall not be unreasonably withheld. Any obligations of the Lessee outstanding at the date of any assignment shall remain the responsibility of the Lessee, to the extent the obligations are not performed by the permitted assignee.
11. This Lease shall enure to the benefit of and be binding upon the heirs, executors, administrators, successors and permitted assigns of the parties.
12. Additional clauses: _____







In witness whereof the Minister and the Lessee have executed this Lease on the dates shown below their respective signatures.

Signed, sealed and delivered
in the presence of:

Her Majesty the Queen in right of the Province Of
Manitoba


Witness


Minister of Industry, Economic Development and Mines

Authorized Signing Authority Ernest Armitt, P.Eng. Director of Mines
--


Aug 16 2006
Date


Witness


Lessee SUNTERRA HORTICULTURE (CANADA)
INC.

August 09, 2006
Date

IN ACCORDANCE WITH SECTION 141(3) OF
THE MINES AND MINERALS ACT THIS
QUARRY LEASE IS HEREBY RECORDED AND
THIS STAMP SHALL CONSTITUTE A
CERTIFICATE OF FILING AND RECORDING.

Aug 23 2006 
Dated Mining Recorder

GIS TECHNICAL FLOWSHEET FOR QUARRY LEASES & QUARRY EXPLORATION PERMITS

PENDING QL NO. ...*QL-2401*

PENDING QP NO. PEND

AREA OF QUARRY EXPLORATION PERMIT OR QUARRY LEASE.....

IF UNSURVEYED

FIRST NATIONS CONCERNS (Within 30 E. of Reserve, CIZ, TLE, RZA)

PEGUIS TREATY ENTITLEMENT AREA

OTHER LAND USE CONCERNS CONCERNS (RANK1 SITES/WA/PARKS)

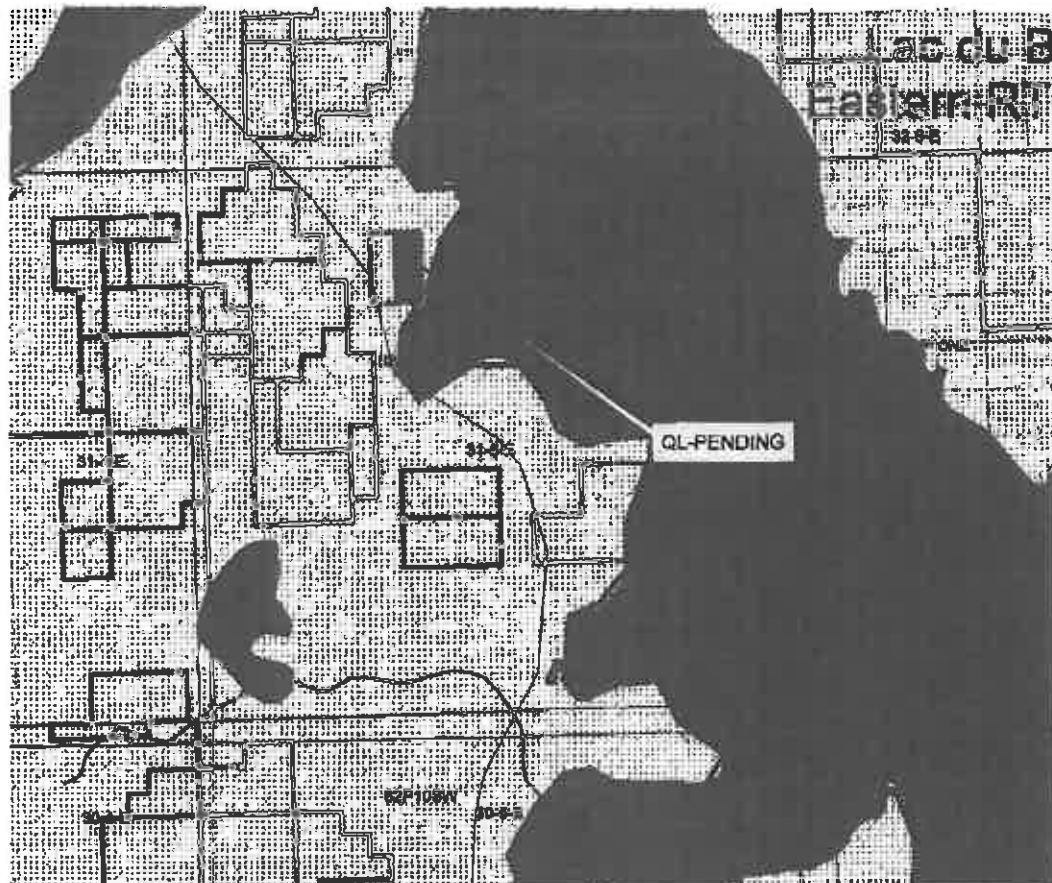
None

Coordinates (If in Unsurveyed Territory):

NE 5 729 605N 649 135E
SE 5 728 408N 649 161E
SW 5 728 382N 648 739E
NW 5 729 593N 648 704^E
NAD 83 Z14

NTS SHEET...

Apr. 21/2010 *OK*
[Signature]



GIS TECHNICAL FLOWSHEET FOR QUARRY LEASES & QUARRY EXPLORATION PERMITS

PENDING QL NO. ... *QL-2402*

PENDING QP NO. PEND

AREA OF QUARRY EXPLORATION PERMIT OR QUARRY LEASE.....

IF UNSURVEYED

FIRST NATIONS CONCERNS (Within 30 k of Reserves, CZ, TLE, RHA)

PEGUIS TREATY ENTITLEMENT AREA

OTHER LAND USE CONCERNS CONCERNS (RANK1 SITES/WCA/PARKS)

None

Coordinates (if in Unsurveyed Territory):

NE 5 729 593N 648 704E
SE 5 728 382N 648 739E
SW 5 728 364N 648 342E
NW 5 729 582N 648 298^E
NAD83 UTM Z14

NTS SHEET..

APR 22/2010 OK
[Signature]



Date Plotted : APR 12, 2010

By: MF

QUARRY LEASE

First Renewal

Quarry
Lease No. **QL-1323**

THIS LEASE made in duplicate this 28th day of February, 2007

BETWEEN:

Her Majesty the Queen in right of the
Province of Manitoba, represented by the
Minister of Science, Technology, Energy
and Mines

(the "Minister")

of the First Part

- and -

SUNTERRA HORTICULTURE (CANADA)
INC.
2590 HICKORY LANE
ABBOTSFORD BC V3G 2Z9

(the "Lessee")

of the Second Part

The parties agree as follows:

1. In this Lease:

(a) "Act" means The Mines and Minerals Act, Cap. M162 C.C.S.M., as amended, revised or substituted from time to time;

(b) "regulations" means regulations made pursuant to the Act, and as amended, revised or substituted from time to time;

2. Subject and pursuant to the Act and regulations, the Minister conveys to the lessee the exclusive right to explore for, develop, and produce the following quarry minerals, namely

PEAT AND PEAT MOSS-----

that are the property of the Crown and are found on or under the land described as:

ALL THAT PORTION OF THE PROVINCE OF MANITOBA CONTAINED WITHIN THE

FOLLOWING LIMITS, NAMELY; COMMENCING AT GEOGRAPHICAL CO-ORDINATES 51°34'11.87" NORTH AND 96°47'11.48" WEST; THENCE SLY TO GEOGRAPHICAL CO-ORDINATES 51°33'33.93" NORTH AND 96°47'11.31" WEST; THENCE ELY TO GEOGRAPHICAL CO-ORDINATES 51°33'33.49" NORTH AND 96°46'49.30" WEST; THENCE SLY TO GEOGRAPHICAL CO-ORDINATES 51°33'20.31" NORTH AND 96°46'49.49" WEST; THENCE WLY TO GEOGRAPHICAL CO-ORDINATES 51°33'20.50" NORTH AND 96°47'54.59" WEST; THENCE SLY TO GEOGRAPHICAL CO-ORDINATES 51°33'07.03" NORTH AND 96°47'55.10" WEST; THENCE WLY TO GEOGRAPHICAL CO-ORDINATES 51°33'06.54" NORTH AND 96°48'36.27" WEST; THENCE NLY TO GEOGRAPHICAL CO-ORDINATES 51°33'46.25" NORTH AND 96°48'35.87" WEST; THENCE ELY TO GEOGRAPHICAL CO-ORDINATES 51°33'45.86" NORTH AND 96°48'15.24" WEST; THENCE NLY TO GEOGRAPHICAL CO-ORDINATES 51°33'58.75" NORTH AND 96°48'15.20" WEST; THENCE ELY TO GEOGRAPHICAL CO-ORDINATES 51°33'58.90" NORTH AND 96°47'54.24" WEST; THENCE NLY TO GEOGRAPHICAL CO-ORDINATES 51°34'11.71" NORTH AND 96°47'54.52" WEST; THENCE ELY TO THE POINT OF COMMENCEMENT.

(the "Lands") and being **261.8** hectares, more or less, for a term of 10 years, commencing the **11th day of February, 2007** renewable in accordance with the Act.

3. The Lessee shall comply with the Act and regulations; including, without restricting the generality of the foregoing, the payment of rent, royalty and rehabilitation levy prescribed thereunder.
4. The Lessee shall and does hereby indemnify and save harmless the Minister against any and all actions, suits, claims or demands that may be brought or made against the Minister for or by reason of any act or thing done or omitted to be done by the Lessee or its agents with respect to the Lands.
5. To be effective and binding, any waiver by the Minister of a breach by the Lessee of any term or condition of this Lease, the Act or the regulations must be in writing. Any such waiver shall extend only to the events of breach enumerated therein and shall not limit or affect the Minister's rights with respect to any other breach.
6. If the Lessee defaults, breaches, fails to perform or observe any term or condition of this Lease, the Act or the regulations, and any such event is not remedied within such notice period as the Minister may give, the Minister may cancel this Lease. Notwithstanding any such cancellation by the Minister, the rights of the Minister against the Lessee shall not be prejudiced and the Minister shall have the full remedies against the Lessee as if the Lease remained in full force and effect.
7. Any notice to a party hereto shall be in writing and may be delivered personally, sent by telegram, telex, telecopier or other means of electronic communication, or may be forwarded by mail subject to Canada Post confirmation of delivery to that party at the following address:

To the Minister:

To the Lessee:

Science, Technology, Energy and Mines
Unit 360-1395 Ellice Avenue
Winnipeg, Manitoba
R3G 3P2

SUNTERRA HORTICULTURE (CANADA)
INC.
2590 HICKORY LANE
ABBOTSFORD BC V3G 2Z9

8. This lease shall be interpreted in accordance with the laws of Manitoba.
9. Any amendments to this Lease shall be in writing and signed by both parties.
10. The Lessee shall not assign this lease except with the prior written consent of the Minister which shall not be unreasonably withheld. Any obligations of the Lessee outstanding at the date of any assignment shall remain the responsibility of the Lessee, to the extent the obligations are not performed by the permitted assignee.
11. This Lease shall enure to the benefit of and be binding upon the heirs, executors, administrators, successors and permitted assigns of the parties.
12. Additional clauses: _____

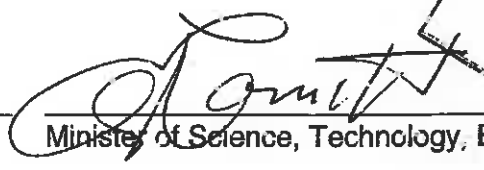
In witness whereof the Minister and the Lessee have executed this Lease on the dates shown below their respective signatures.

Signed, sealed and delivered
in the presence of:

Her Majesty the Queen in right of the Province Of
Manitoba




Witness



Minister of Science, Technology, Energy and Mines

Authorized Signing Authority
Ernest Armit, P. Eng.
Director of Mines

March 20 2007
Date




Witness



Lessee SUNTERRA HORTICULTURE (CANADA)
INC.

March 13, 2007
Date

**IN ACCORDANCE WITH SECTION 141(3) OF
THE MINES AND MINERALS ACT THIS
QUARRY LEASE IS HEREBY RECORDED AND
THIS STAMP SHALL CONSTITUTE A
CERTIFICATE OF FILING AND RECORDING.**



Mining Recorder

March 21/07
Date

QUARRY LEASE
First Renewal

Quarry
Lease No. QL-1406

THIS LEASE made in duplicate this 10th day of November, 2008

BETWEEN:

Her Majesty the Queen in right of the
Province of Manitoba, represented by the
Minister of Science, Technology, Energy
and Mines

(the "Minister")

of the First Part

- and -

SUNTERRA HORTICULTURE (CANADA)
INC.
2590 HICKORY LANE
ABBOTSFORD BC V3G 2Z9

(the "Lessee")

of the Second Part

The parties agree as follows:

1. In this Lease:

- (a) "Act" means The Mines and Minerals Act, Cap. M162 C.C.S.M., as amended, revised or substituted from time to time;
- (b) "regulations" means regulations made pursuant to the Act, and as amended, revised or substituted from time to time;

2. Subject and pursuant to the Act and regulations, the Minister conveys to the lessee the exclusive right to explore for, develop, and produce the following quarry minerals, namely

PEAT AND PEAT MOSS -----

that are the property of the Crown and are found on or under the land described as:

ALL THAT PORTION OF THE PROVINCE OF MANITOBA CONTAINED WITHIN THE

FOLLOWING LIMITS, NAMELY; COMMENCING AT GEOGRAPHICAL CO-ORDINATES 51°33'46.25" NORTH AND 96°48'35.87" WEST; THENCE S'LY TO GEOGRAPHICAL CO-ORDINATES 51°33'06.54" NORTH AND 96°48'36.27" WEST; THENCE W'LY TO GEOGRAPHICAL CO-ORDINATES 51°33'06.92" NORTH AND 96°49'15.71" WEST; THENCE N'LY TO GEOGRAPHICAL CO-ORDINATES 51°33'46.28" NORTH AND 96°49'14.97" WEST; THENCE E'LY TO THE POINT OF COMMENCEMENT. LEGAL DESCRIPTION IS BASED ON NAD83 GEOGRAPHICAL CO-ORDINATES.

(the "Lands") and being **93.455** hectares, more or less, for a term of 10 years, commencing the **19th day of November, 2008** renewable in accordance with the Act.

3. The Lessee shall comply with the Act and regulations; including, without restricting the generality of the foregoing, the payment of rent, royalty and rehabilitation levy prescribed thereunder.
4. The Lessee shall and does hereby indemnify and save harmless the Minister against any and all actions, suits, claims or demands that may be brought or made against the Minister for or by reason of any act or thing done or omitted to be done by the Lessee or its agents with respect to the Lands.
5. To be effective and binding, any waiver by the Minister of a breach by the Lessee of any term or condition of this Lease, the Act or the regulations must be in writing. Any such waiver shall extend only to the events of breach enumerated therein and shall not limit or affect the Minister's rights with respect to any other breach.
6. If the Lessee defaults, breaches, fails to perform or observe any term or condition of this Lease, the Act or the regulations, and any such event is not remedied within such notice period as the Minister may give, the Minister may cancel this Lease. Notwithstanding any such cancellation by the Minister, the rights of the Minister against the Lessee shall not be prejudiced and the Minister shall have the full remedies against the Lessee as if the Lease remained in full force and effect.
7. Any notice to a party hereto shall be in writing and may be delivered personally, sent by telegram, telex, telecopier or other means of electronic communication, or may be forwarded by mail subject to Canada Post confirmation of delivery to that party at the following address:

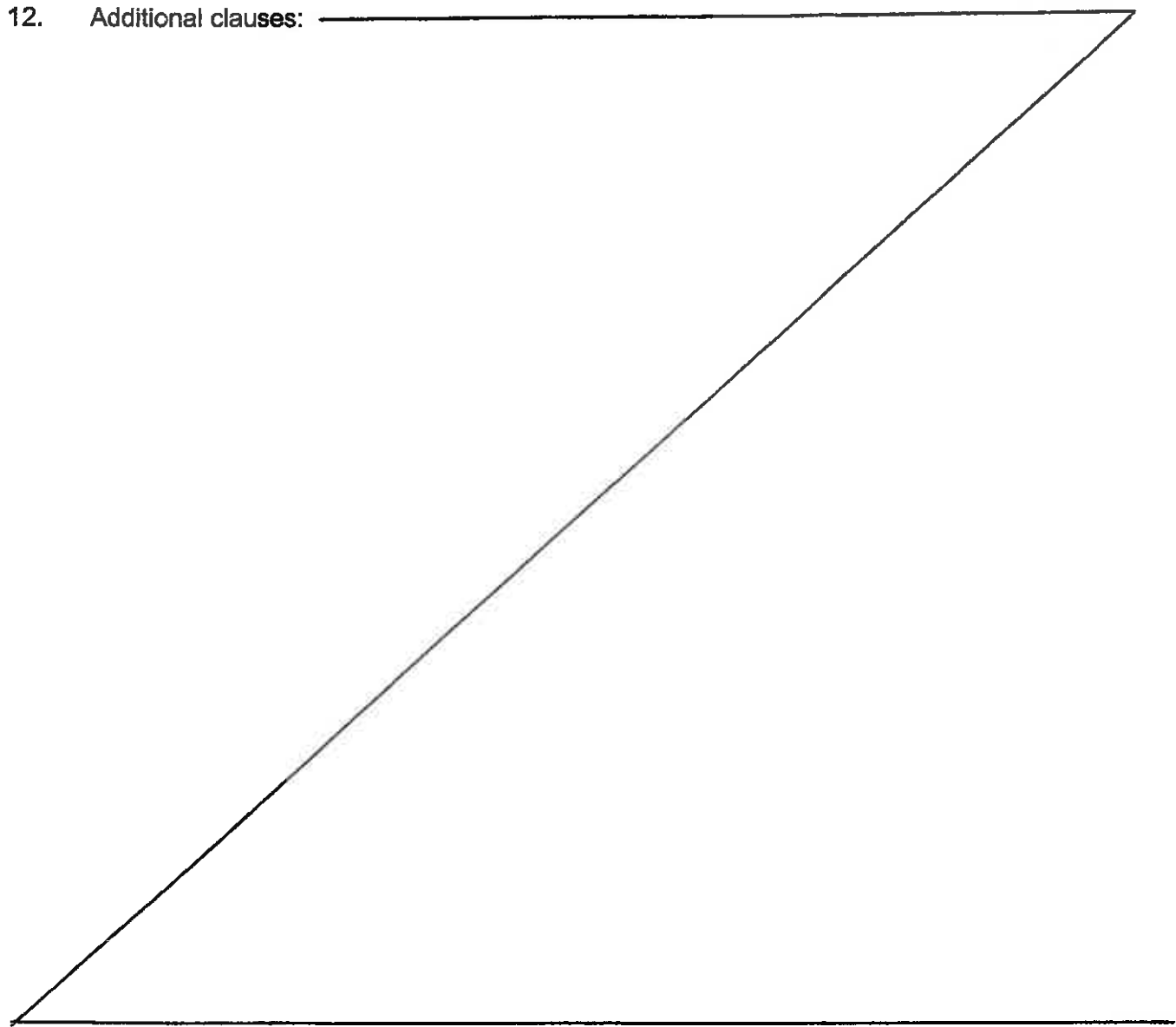
To the Minister:

Science, Technology, Energy and Mines
Unit 360-1395 Ellice Avenue
Winnipeg, Manitoba
R3G 3P2

To the Lessee:

SUNTERRA HORTICULTURE (CANADA)
INC.
2590 HICKORY LANE
ABBOTSFORD BC V3G 2Z9

8. This lease shall be interpreted in accordance with the laws of Manitoba.
9. Any amendments to this Lease shall be in writing and signed by both parties.
10. The Lessee shall not assign this lease except with the prior written consent of the Minister which shall not be unreasonably withheld. Any obligations of the Lessee outstanding at the date of any assignment shall remain the responsibility of the Lessee, to the extent the obligations are not performed by the permitted assignee.
11. This Lease shall enure to the benefit of and be binding upon the heirs, executors, administrators, successors and permitted assigns of the parties.
12. Additional clauses: _____

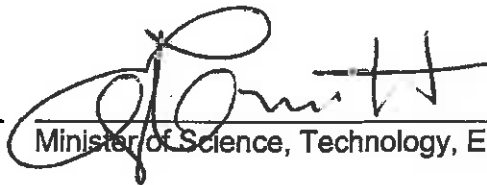


In witness whereof the Minister and the Lessee have executed this Lease on the dates shown below their respective signatures.

Signed, sealed and delivered
in the presence of:

Her Majesty the Queen in right of the Province Of
Manitoba

Witness



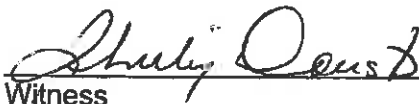
Minister of Science, Technology, Energy and Mines

Authorized Signing Authority
Ernest Armitt, P.Eng.
Director of Mines

Date

Dec 3 2008

Witness



Lessee SUNTERRA HORTICULTURE (CANADA)
INC.

Date

NOVember 24, 2008

GIS TECHNICAL FLOWSHEET
FOR QUARRY LEASES & QUARRY EXPLORATION PERMITS

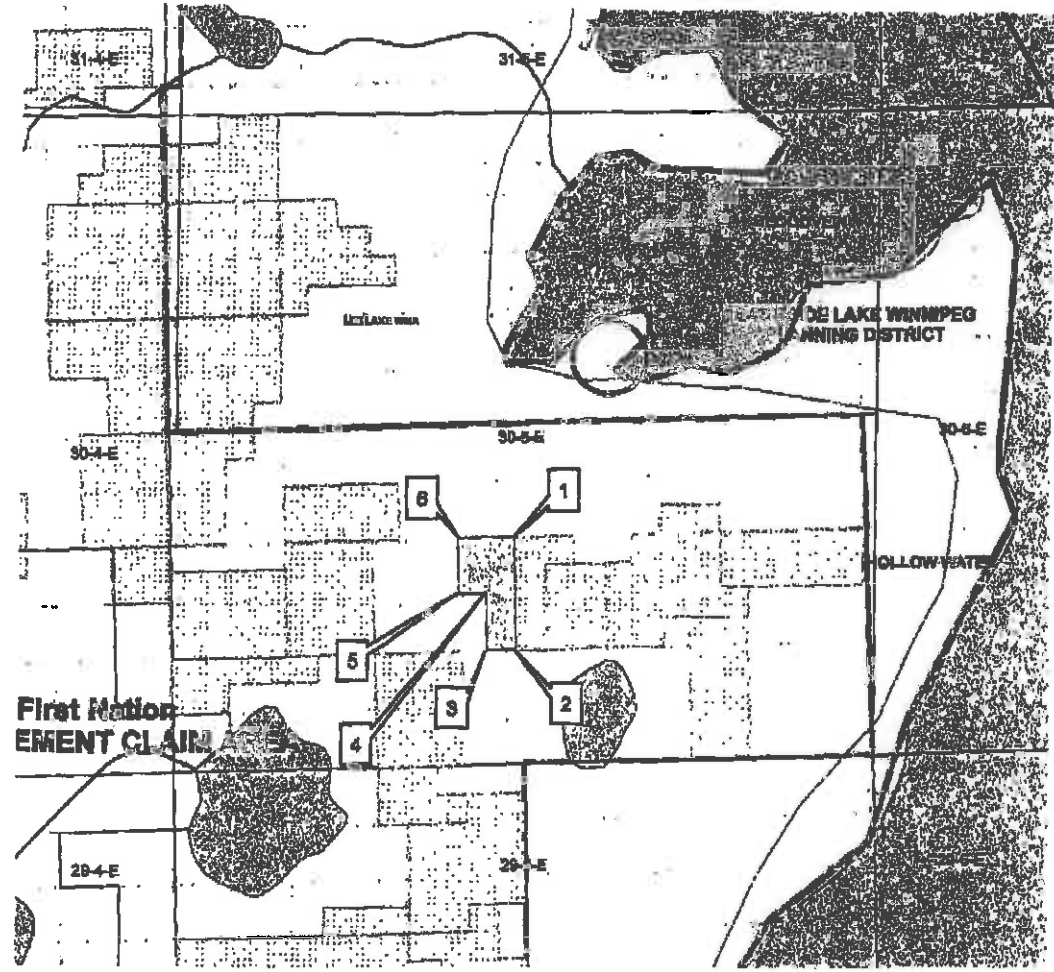
008/008

PENDING QL NO. 2390
PENDING QP NO.

AREA OF QUARRY EXPLORATION PERMIT OR QUARRY LEASE.....

IF UNSURVEYED - SECT TWP RGE
NTS SHEET
FIRST NATIONS CONCERNS (Within 30 k of Reserve,CIZ,TLE,RMA)
PEGUIS TREATY ENTITLEMENT CLAIM AREA
OTHER LAND USE CONCERNS (RANK1 SITES/WMA/PARKS)
NONE

Coordinates (if in Unsurveyed Territory):
1 5 71 5034N 650 423E
2 5 71 3429N 650 469E
3 5 71 3414N 650 051E
4 5 714 217N 650 031E
5 5 714 213N 649 645E
6 5 71 5015N 649 616E
NAD 83 Z14



OK *[Signature]*

Date Plotted : MAR 23, 2010

By: MF

GIS TECHNICAL FLOWSHEET FOR QUARRY LEASES & QUARRY EXPLORATION PERMITS

PENDING QL NO. 2391

PENDING QP NO.

AREA OF QUARRY EXPLORATION PERMIT OR QUARRY LEASE.....

IF UNSURVEYED - SECT TWP RGE
NTS SHEET

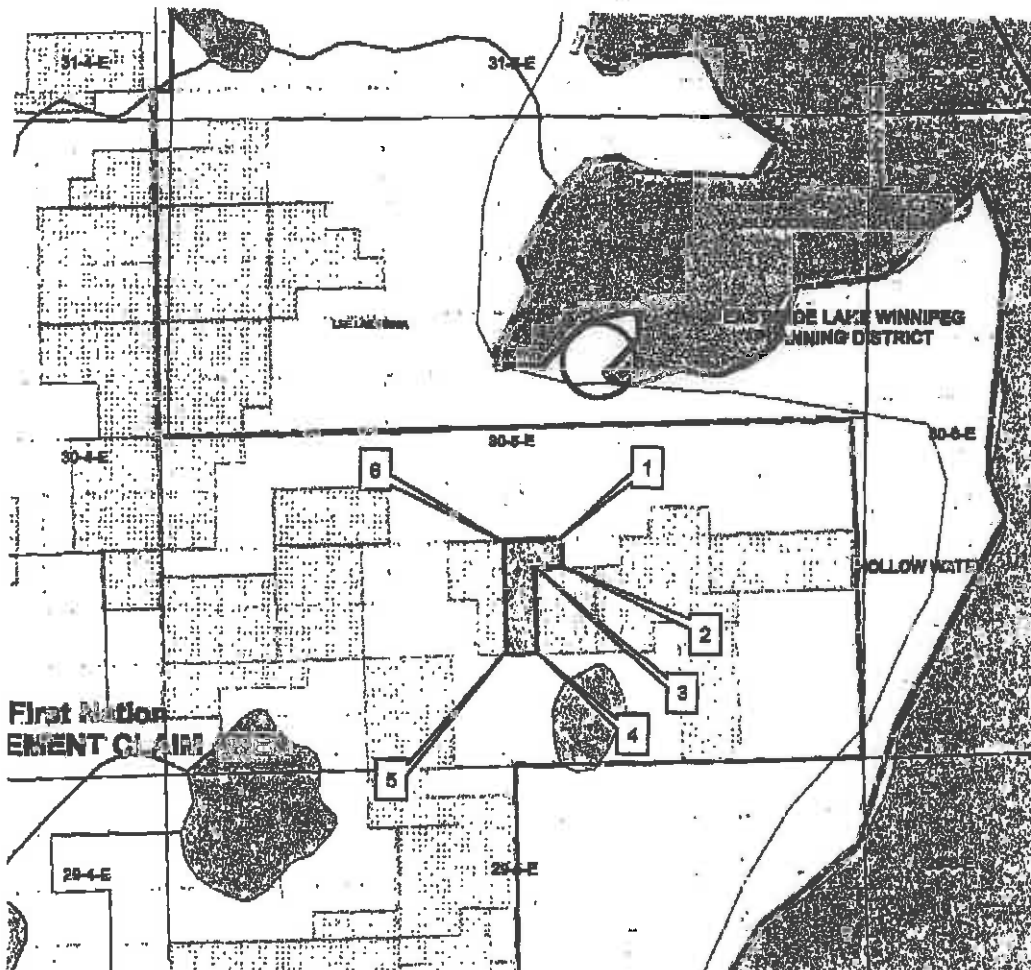
FIRST NATIONS CONCERNS (Within 30 k of Reserves, GZ, TLE, RMA)

PEGUIS TREATY ENTITLEMENT CLAIM AREA

OTHER LAND USE CONCERNS CONCERNS (RANK1 SITES/WCA/PARKS)
NONE

Coordinates (if in Unsurveyed Territory):

- 1 5 715 064N 651 244E
 - 2 5 714 672N 651 261E
 - 3 5 714 658N 650 861E
 - 4 5 713 443N 650 905E
 - 5 5 713 429N 650 469E
 - 6 5 715 034N 650 423E
- NAD83Z14



OK *[Signature]*

Date Plotted : MAR 23, 2010

By: MF

DL-2409

(A)



APPLICATION FOR QUARRY LEASE
(In accordance with subsection 139(1) of The Mines and Minerals Act)

Name of Applicant: Synterra Horticulture (Canada) Inc Contact: ALBERT Dorish

Address: 2590 Hickory Lane

City: Abbotsford Province: BC Postal Code: V3G 2Z9 Telephone No.: 604-556-2562

Name of resident agent: GLEN AGAR (Thompson, Dorrman, Swadman)
(if applicant is not resident in Manitoba)

Address: 2200-201 PORTAGE Avenue

City: Winnipeg Province: MANITOBA Postal Code: R3B 3L3 Telephone No.: 204-974-2590

1. Describe area applied for:
(a) Surveyed Territory L.S. PARTS 1/4² OF Sec 27+28 - 27-4E PARTS 1/2 OF Sec 33+34 - 27-4E Rge. WPM/EPM

or (b) Unsurveyed Territory, latitude and longitude of corners.

	Latitude	Longitude
NE	<u>See Schedule "A"</u>	
SE		
SW		
NW		

364604-10 MAY 05 12 45
MFG MB MINES RECORDING OFFICE

2. Attach plan or map showing location of area applied for and location and description of any structure, road, trail, etc., in the area.

3. Describe the method to be used to mark the boundaries of the lease Cutlines

4. State area in hectares 128 ha

5. State the quarry mineral(s) applied for PEAT MOSS

6. State disposition numbers if these lands or portions thereof are presently under disposition

7. GST Registration Number B804 9117 or payment of GST.

I certify that the goods or services applied for will be used solely for commercial use/activity.

NOTE: The following should be submitted with this application:

- (a) Application Fee of \$60.00 (plus GST where applicable)
- (b) First year's rental of \$24.00 per hectare or fraction thereof (except for Peat at \$6.50 per hectare).

Dated this 6th day of May 20 10
Signature of Applicant

Application to be filed at the Office of the Recorder:

Unit 360 - 1395 Ellice Ave. Winnipeg, MB R3G 3P2 Telephone: (204) 948-3152 Fax: (204) 948-2578	Barrow Building 143 Main Street Flin Flon, MB R8A 1K2 Telephone: (204) 887-1630
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OFFICIAL USE ONLY

QL-24110

(B)

APPLICATION FOR QUARRY LEASE (In accordance with subsection 139(1) of The Mines and Minerals Act)

Name of Applicant: Sunterra Horticulture (Canada) Inc Contact: ALBERT DORISH

Address 2590 Hickory Lane

City Winnipeg Province BC Postal Code V3G 2Z9 Telephone No. 604-556-2562

Name of resident agent GLEN AGAR (Thompson-Dorffman-Sewardman) (if applicant is not resident in Manitoba)

Address 2200-201 PORTAGE AVENUE

City Winnipeg Province MANITOBA Postal Code R3B 3L3 Telephone No. 204-934-2590

1. Describe area applied for: PARTS of W 1/2 Sec 27, E 1/2 of Sec 28 Twp 27 Rge 4E

(a) Surveyed Territory L.S. Sec. Twp. Rge. WPM/EPM

or (b) Unsurveyed Territory, latitude and longitude of corners.

Table with columns for Latitude and Longitude, and rows for NE, SE, SW, NW corners. NE corner is noted as 'See schedule "B"'. A vertical stamp on the right reads '36508 10 MAY 05 12:45' and 'OFFICE OF THE RECORDER'.

2. Attach plan or map showing location of area applied for and location and description of any structure, road trail, etc., in the area.

3. Describe the method to be used to mark the boundaries of the lease Curt lines

4. State area in hectares 247 ha

5. State the quarry mineral(s) applied for Peat Moss

6. State disposition numbers if these lands or portions thereof are presently under disposition

7. GST Registration Number B8014-9117 or payment of GST.

I certify that the goods or services applied for will be used solely for commercial use/activity.

NOTE: The following should be submitted with this application:

- (a) Application Fee of \$60.00 (plus GST where applicable)
(b) First year's rental of \$24.00 per hectare or fraction thereof (except for Peat at \$6.50 per hectare).

Dated this 6th day of May 2010

Signature of Applicant

Application to be filed at the Office of the Recorder:

Unit 360 - 1395 Ellice Ave. Winnipeg, MB R3G 3P2 Telephone: (204) 945-3152 Fax: (204)948-2578

Barrow Building 143 Main Street Flin Flon, MB R8A 1K2 Telephone:(204)887-1630

APPENDIX B
SITE PHOTOGRAPHS

**SUNTERRA HORTICULTURE (CANADA) INC. PEAT MINE DEVELOPMENT
Manitoba Environment Act Proposal**



Photo 1. Typical view of PR 234 roadside ditch requiring a culvert for proposed access road.



Photo 2. High point along PR 234 at proposed Little Deer Lake access road.

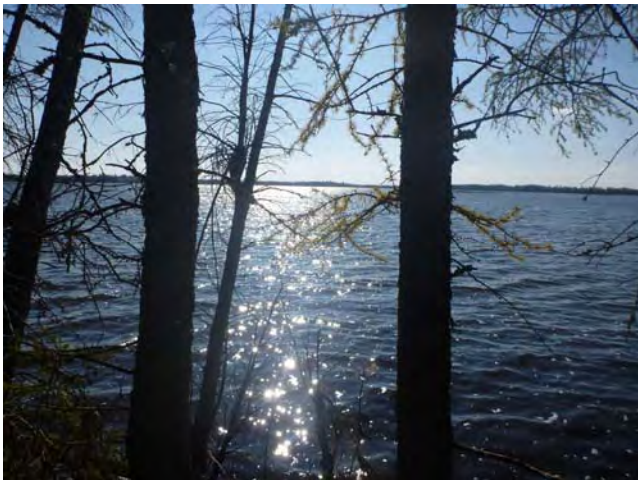


Photo 3. South view of Little Deer Lake from the north shoreline.



Photo 4. Example of peat disturbance required to access peat water for sampling.

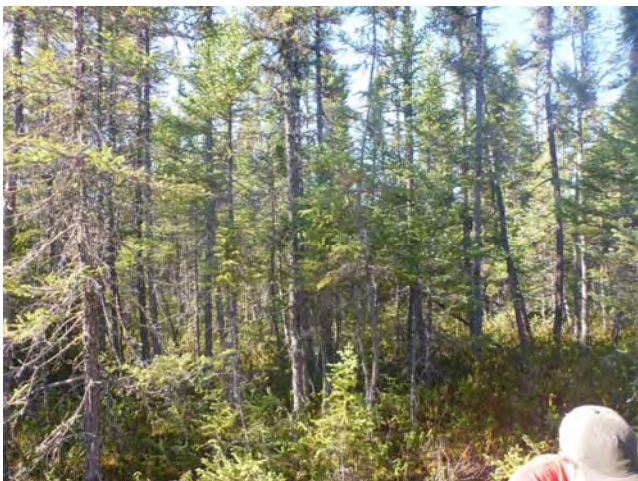


Photo 5. Typical black spruce and tamarack forest with sphagnum and herbaceous species understory for plant communities categorized as V31.



Photo 6. Typical black spruce and tamarack open canopied forest for plant communities categorized as V33.

**SUNTERRA HORTICULTURE (CANADA) INC. PEAT MINE DEVELOPMENT
Manitoba Environment Act Proposal**



Photo 7. Typical mixedwood forest and more diverse understorey for plant communities categorized as V21.



Photo 8. Southwest view of the shoreline on the pothole style bog lake making up the South Ranger Lakes.



Photo 9. Northern Pike captured from gill net #2, set in the lake north of the South Ranger Lake (See Figure 11).



Photo 10. Perch encountered (dead) on channel heading south from the North Ranger Lake on route to South Ranger Lake.



Photo 11. Foreground- South view of the top of the large beaver dam on the unnamed tributary flowing from the Ranger Lakes; Background - downstream view of the channel bed.



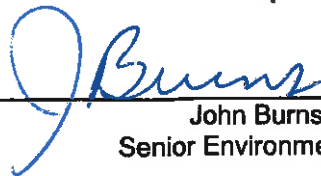
Photo 12. North view of the wetland that feeds/chokes out the channel flowing south from the Ranger Lakes.

APPENDIX C
MINE CLOSURE PLAN

SUNTERRA HORTICULTURE (CANADA) INC.

Sunterra Peat Mine Development Bullhead, Little Deer Lake and Ramsay Point Bogs Mine Closure Plan FINAL REPORT December 2011

Prepared By



John Burns, P.Geo.
Senior Environmental Geologist

Reviewed By



Shaun Moffatt, M.Sc.
Senior Environmental Scientist

Approved By



J. Bert Smith, P.Eng.
Principal

KGS Group
Winnipeg, Manitoba

Kontzamanis Graumann Smith MacMillan Inc.



December 8, 2011

File No. 11-1996-01

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Manitoba Innovation, Energy and Mines
Mines Branch
Unit 360 – 1395 Ellice Avenue
Winnipeg, Manitoba
R3G 3P2

ATTENTION: Mr. Ernie Armitt, P.Eng.
Director

RE: Sunterra Peat Mine Development
Mine Closure Plan - Final

Dear Mr. Armitt:

On behalf of Sunterra Horticulture (Canada) Inc. (Sunterra), KGS Group is pleased to submit a paper and electronic copy of the Mine Closure Plan for your review and approval as part of the licence application for the proposed Peat Mine Development at Bullhead, Little Deer Lake and Ramsay Point Bogs. A copy of this Mine Closure Plan has also been included as an appendix within the Environment Act Proposal submitted to Manitoba Conservation.

Please do not hesitate to contact Mr. Shaun Moffatt or the undersigned if you have any questions or require additional information.

Yours truly,


for J. Bert Smith, P.Eng.
Principal

SFM/jr
Enclosure

cc: Al Dorish

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4.	General Site Development Area – Ramsay Point Bog

1.0 INTRODUCTION

Kontzamanis Graumann Smith MacMillan Inc. (KGS Group) was retained by Sunterra Horticulture (Canada) Inc. (Sunterra) to prepare a mine closure plan for the proposed expansion of their existing operation to include the existing and pending Sunterra Quarry Leases (QL) at the Bullhead, Little Deer Lake and Ramsay Point Bogs.

This mine closure plan only covers the proposed Bullhead, Little Deer Lake and Ramsay Point Bog development areas as the closure activities for the existing Sunterra harvesting and peat processing facility at the Beaver Point Bog were outlined in an existing mine closure plan “Beaver Point Bog Project” dated January 2002.

KGS Group prepared the following Mine Closure Plan to comply with section 9 of the Mine Closure Regulation 67/99. The purpose of the closure plan is to define a program for the protection of the environment over the duration of peat harvesting activities and for site rehabilitation during the life of the development and after closure. The plan describes the stages of closure (progressive and final), closure activities, closure costs, and outlines operational and post operational monitoring.

2.0 CLOSURE PLAN REQUIREMENTS

- A)** Proponent: Sunterra Horticulture (Canada) Inc.
2590 Hickory Lane
Abbotsford, B.C.
V3G 2Z9
Contact: Albert M. Dorish
Phone: 646-745-6290
Fax: 888-893-8775
e-mail: al@sunterrahorticulture.com
- B)** Name of Project: Sunterra Peat Mine Development (Bullhead, Little Deer Lake and Ramsay Point Bogs).
- C)** Legal Description of Project Site: The locations of the three bogs are shown on Figure 1 and described as follows;
- Bullhead Bog is located approximately 4 kilometers northwest of Pine Dock, Manitoba. within an un-sectioned area of Township 31, Range 5 E1.
 - Little Deer Lake Bog is located approximately 8 kilometers south of Pine Dock, Manitoba on parts of Sections 9 to 11 and 14, Township 30, Range 5 E1.
 - Ramsay Point Bog is located approximately 34 kilometers south-southwest of Pine Dock, Manitoba on parts of Sections 27, 28, 33, and 34 of Township 27, Range 4 E1.
- D)** N/A
- E)** Mineral rights for the Project are held by Sunterra under the existing and pending Quarry Leases (QL) as follows;
- Bullhead Bog – Existing QL-1291 and QL-1134 and pending QL-2401 and QL-2402 (Figure 2).
 - Little Deer Lake Bog – Existing QL-1323 and QL-1406 and pending QL-2390 and QL-2391 (Figure 3).
 - Ramsay Point Bog – Pending QL-2409 and QL-2410 (Figure 4).
- F)** The proposed peat development is located on undeveloped Crown Land in an unorganized area within Division No. 19 in the Interlake Region of Manitoba, between approximately 40 and 80 km north of Riverton. As the entire development area is located within the Peguis First Nation Community Interest Zone (CIZ) the project site may have

been previously used for hunting and trapping. Additionally the Ranger Lakes within the Ramsay Point Bog are used for recreational fishing.

- G) There have been no previous disturbances or other activities on the properties that could have resulted in contamination of the project site or adjacent lands.
- H) The Bullhead, Little Deer Lake and Ramsay Point Bogs can be described as lightly to moderately treed raised bog areas with open areas of *Sphagnum* moss. The vegetation types observed during vegetation surveys at the site consist primarily of black spruce with some tamarack and occasional white cedar as the overstory species. Ground cover for these vegetation types is comprised of a continuous cover of sphagnum and feather moss over a range of poorly drained organic soils to wet peat deposits. None of the species observed at the sites are classified as being provincially very rare (S1) or rare (S2), listed under Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or federally protected under the *Species at Risk Act* (SARA). As noted above, these are undeveloped sites with no current activities other than the potential for hunting, trapping and fishing. As the site is undeveloped, currently there are no security measures employed. At each site Sunterra will install gates which will be locked whenever Sunterra is not active at the site.
- I) On-site facilities and equipment storage for the proposed development site will be contained in three 10 ha staging areas located at each of the bog development areas and there will also be a 1 ha parking area located at the Bullhead Bog north area as shown in Figures 2, 3 and 4. These areas will be cleared, graded for drainage to match the surrounding topography and will have gravel placed over top of a geo-textile material to stabilize the underlying existing materials. The staging areas will be utilized throughout the life of the bog harvesting operations and rehabilitated after the peat harvesting operations cease.

At Bullhead Bog, the proposed staging and parking areas are located near the northeast corner of QL-1134 and near the southwest corner of proposed QL-2401, respectively (Figure 2). At Little Deer Lake Bog, the proposed staging area is situated along the north boundary of QL-1323 (Figure 3). At Ramsay Point Bog, the proposed staging area

is located at the northeast corner of QL-2409. The staging areas will be used for employee parking, fuel storage, peat stockpiling, as locations for a site trailer and garage, and to park harvesting equipment. Typical site machinery may include:

- farm tractors to haul and power the different types of peat harvesting operation equipment, including vacuum harvesters, rotary harrows, meri crushers, ditchers, etc.;
- a portable screening system to perform a preliminary screening of harvested peat prior to transportation;
- front end loaders to push stacks and load trucks; and
- bulldozers and excavators for bog maintenance purposes.

The staging areas will be managed in such a way as to minimize the potential for adverse environment effects. If the soils in the staging area become impacted or contaminated, the soils will be remediated to the applicable soil quality guidelines. Soil remediation methods may include excavation and transportation to a licensed soil remediation facility, or other remediation technologies acceptable to the Manitoba Conservation.

Sunterra has an existing peat processing, packaging and storage facility at their Beaver Point Bog operation. Peat harvested from the three proposed bogs will be processed, bagged, placed on pallets and stored at the Beaver Point Bog facility before transport to markets.

J) Not applicable to operations

K) Sunterra operations follow the best practices developed by the Canadian Sphagnum Peat Moss Association (CSPMA), of which Sunterra's management is on the Board of Directors. During the harvesting season, weather permitting, operational activities will occur seven days a week from sunrise to sunset. Operational activities for the proposed development will start during the spring following tree clearing and will include the following:

- **Construction of Bog Drainage System** (refer to Section N below).
Equipment used: backhoe, screw ditcher, tractor

- **Field Preparation:** The peat surface is prepared for harvesting by drawing down the water table through constructed main drainage ditches, field ditches, sedimentation ponds and outlet ditches. The areas located between the field ditches (i.e., the peat fields) are then rotivated or milled and shaped to crown the surface between the field ditches and left to dry by the sun and wind until the moisture content is reduced to the desired level for harvesting.
- **Field Harrowing:** Following field preparation, the surface is repeatedly harrowed to a depth of 2 to 3 cm using a tooth rake to break capillary flow and enhance the drying process. The top layer is then turned over to allow the peat particles and fibers to dry by the sun and wind until the moisture content is reduced to the desired level for harvesting.
- **Peat Harvesting:** Peat is harvested using a vacuum machine once the peat is sufficiently dry (about 40% to 55% moisture content). Harvesting is weather dependant and, when the moisture content of the peat moss is acceptable, all efforts are made to maximize the amount of harvest during optimal weather patterns. The amount of peat harvested will depend upon the weather, but typically Sunterra would expect about 50-55 harvest days each season, with approximately 14 cm of the peat surface being harvested during the season.
- **Peat Stockpiling:** Harvested peat is unloaded at designated peat stockpile areas at the field end adjacent to the bog roads, on the bog roads or within the 10 ha staging area. The peat is pushed up by a front-end-loader into windrow shaped stockpiles with an approximate volume of 1,500 m³.
- **Transporting:** Excavators or front-end loaders will load stockpiled peat into open-box trailers with a capacity of approximately 170 m³ of peat for transporting. The trailers will be covered by a tarp to prevent peat particles from escaping and minimize financial losses for Sunterra. Harvested peat will be transported from the stockpiles along the access road and along PR 234 to Sunterra's existing processing and packaging facility at the Beaver Point Bog. Approximately 8 truckloads are required to transport each hectare of peat under development.
- **Maintenance:** Maintenance activities will be undertaken at regular intervals, including when the weather conditions are not conducive to harvesting, such as frost, high winds, or heavy rainfall. Field maintenance activities include cleaning and deepening the drainage ditches, profiling the fields for harvesting and weed control. Maintenance of the drainage ditches is done throughout the harvest season. Sunterra will be responsible for the maintenance and repair of all the drainage works involved with the bog operation until its restoration activities are completed. This includes the correction of any erosion or silting problems, the correction of any icing problems, the cleaning of the ditches should the capacity become reduced due to vegetative growth, the removal of debris that interferes with the passage of water and the removal of any beaver dams (if required) that cause flow problems. Weed control is done manually without the use of any chemicals. Maintenance of sedimentation ponds includes inspecting them once a week to verify the overall functioning capacity of the pond, the position of the floating wooden boom, and the bank of the pond. The ponds will be cleaned on a

regular basis to maintain optimal efficiency with sediments removed before 25% of the pond is filled with sediments. Excavated sediments will be transported to, and spread on the fields for harvesting. Sedimentation ponds will also be cleaned prior to cleaning field ditches.

The QLs at Bullhead, Little Deer Lake and Ramsay Point Bogs cover an area of 398 ha, 551 ha and 375 ha, respectively for a total area of 1324 ha. However, only 715 ha of the total QL area are proposed to be harvested. The pending QLs were applied for by Sunterra prior to the introduction of Bill 46 "Save Lake Winnipeg Act" in June 2011, however a decision on these will not be made until at least the end of the two year moratorium. The order in which Sunterra will develop the three bog areas will depend on when the pending QLs are approved. The general peat harvesting schedule will consist of site preparation of an area during the winter months, with peat harvesting to start the following spring and typically continuing until October.

Should the pending QLs be issued before Sunterra proposes to begin site preparation during the winter of 2013/2014 then they will initiate development at Ramsay Point Bog followed by Little Deer Lake Bog and finish with the Bullhead Bog. However, if the pending QLs are not issued before the winter of 2013/2014, then Sunterra will initiate development at the Little Deer Lake Bog followed by Ramsay Point bog and finish with the Bullhead Bog.

Regardless of which bog area is developed first, the proposed development schedule consists of clearing and preparing approximately 25 ha of land for peat harvesting beginning in 2014 (Table 1). The proposed peat harvesting operations at the Bullhead, Little Deer Lake and Ramsay Point Bogs will occur between 2014 and 2052. Sunterra anticipates harvesting an average of approximately 1,410 m³ of peat moss each year per ha of land being harvested. Harvesting of peat will continue until the remaining peat layer is between 0.5 to 1 m thick.

Progressive reclamation operations will start in the year 2026, with approximately 25 ha closed per year, and continue until the year 2053 when harvesting operations have ceased. Restoration is scheduled to begin once commercial grade peat has been removed or exhausted from the development. Fully harvested areas will be restored

based on the experience gained by Sunterra through the guidance of CSPMA and restoration research and following the requirements of The Preservation and Reclamation Policy of the CSPMA.

- L) **Expected Life of Project:** The existing Beaver Point Bog is nearing the end of its production lifespan, with progressive restoration starting in 2014 under their existing mine closure plan with closure of all existing licences harvesting areas completed by 2025. The proposed development of the existing and pending QLs at Bullhead, Little Deer Lake and Ramsay Point Bogs is estimated to extend the production lifespan up to an additional 30 years with final site rehabilitation completed in approximately 2053. If, however, the pending QLs are not approved, or if the moratorium is not lifted, Sunterra's existing leases on a stand-alone basis are expected to have a productive capacity that would extend the production lifespan up to only 18 years.

- M) **Not applicable to operations**

- N) **Drainage Control Structures:** The overland flow from the proposed development generally drains east into Lake Winnipeg. There are a number of intermittent stream and land drainage crossings along PR 234 that convey the runoff from the Bullhead Bog and the Ramsay Point Bog to the Lake. The exception to this predominant drainage pattern is the Little Deer Lake Bog. Although there are a number of culvert crossings along PR 234 in the vicinity of the Little Deer Lake Bog, the project area is contained within a single sub-basin that drains exclusively into the Little Deer Lake which does not have a natural outlet.

As part of developing the QLs for peat harvesting, the proposed development requires a controlled drainage plan that allows the surface water to be directed off site, and subsequently lower the water table within the peat moss to be harvested. The drainage plan will include field drainage ditches flowing to main drainage ditches connected to sedimentation ponds that discharge to the existing natural drainage pattern through outlet ditches. The sedimentation ponds will be constructed before starting main drainage ditch and field drainage ditch construction for peat harvesting areas.

With the constructed drainage system, water will drain at an accelerated rate from the bog during the initial drainage. This will occur during a period of approximately three weeks and the average discharge will be 0.04 m³/s for each 25 ha area. After the initial drainage period, surface water flow leaving the site will closely resemble the existing rates although there will be a slight lag compared to undrained areas and the rate at which water drains will depend on the amount of precipitation. Water will continue to drain from the bog until the arrival of frost.

The components of the drainage system are described in the following sections and the drainage plan proposed for each bog area is shown in Figures 2, 3 and 4.

Field Drainage Ditches - Field drainage ditches are used to remove interstitial surface water and prepare the peat surface for harvesting after clearing. A network of parallel ditches will be cut through the bog using a screw ditcher. Field drainage ditches will be constructed at 90° angles to the main drainage ditches. Each field ditch is excavated to approximately 1.2 m deep and 1.3 m wide and spaced approximately 30 m apart. Therefore, approximately 333 m lengths of field ditches are required for each hectare of land developed. To handle drainage at peak operation with 282 ha being harvested, there will be a total length of approximately 93,900 m of field ditches.

It takes approximately 1 day to cut a 400 m length of field ditch and therefore it will take approximately 3 weeks to cut the 8,325 m of field ditches required for each 25 ha area. Field ditch construction is completed during the winter when the peat is frozen. Therefore, initial site drainage for each 25 ha area will take approximately 3 weeks during the spring runoff period.

Main Drainage (Perimeter) Ditches - Main drainage ditches will be excavated around the perimeter of the active harvesting area approximately 2 m wide and 3 m deep after the completion of the sedimentation ponds. The main drainage ditches are designed with a low gradient to maintain a slow flow so that they will be more conducive to settlement of suspended solids. These main drainage ditches connect the field ditches to the sedimentation ponds. Drainage water from the field ditches flows into the main ditches

around the harvesting area where water will then flow to the sedimentation ponds at the edge of the proposed development site.

Sedimentation Ponds - Sedimentation ponds retain surface water to maximize the settlement of suspended peat particles prior to directing the water off-site. The sedimentation ponds are constructed to meet or exceed the following typical design criteria:

- Minimum basin volume of 25 m³ per ha of peatland area drained;
- Minimum depth at outlet of 1.5 m;
- Optimum length to width ratio of 6.5:1 to 12:1;
- Minimum retention time of two hours to allow for settling of sediments;
- Locating a boom at a distance of 25% of the pond length upstream of the pond outlet to contain floating debris; and
- Five year maximum instantaneous discharge of 0.75 m³/sec/km² resulting in a peak five-year flow of 0.148 m³/sec.

Based on Sunterra's existing operations, each sedimentation pond cell will be approximately 8 m wide by 91 m long and 3 m deep to handle the drainage from an estimated 60 ha of operational peat harvesting. The total sedimentation pond volume of approximately 2,184 m³ provides a basin volume of approximately 36.4 m³/ha of drained peatland. Sunterra has found that monitoring results for total suspended solids (TSS) at their existing Beaver Creek Bog area are typically 7 mg/L or less, because a larger basin volume than the design standard of 25 m³/ha of drained peatland was used.

Based on the required drainage volume for the peak operation of 282 ha, the project could need up to five sedimentation cells. In order to maintain the existing drainage pattern, a total of 8 sedimentation pond locations have been identified, as shown in Figures 2, 3 and 4. The total number of sedimentation cells that form the sedimentation pond at each of these locations will depend on the production area flowing to that location. The sedimentation ponds will typically be arranged in groups of 2 to 4 cells.

The sedimentation ponds will be constructed such that the main drainage ditches flow to the ponds for a period of retention (minimum of two hours) prior to being discharged to the surrounding environment via an outlet ditch. A control culvert with a sliding gate will

be placed in the inlet ditch upstream of the pond. The gate will be used to regulate water levels in the peat layer within the harvesting area. The gate can also be used to reduce or stop inflow to the sediment pond in the event of a major precipitation event, which exceeds the design flow criteria. As a first step, the control culvert will be installed in the upper portion of the drain to limit the flow of water toward the pond location during construction. The control gate will remain closed until the pond construction is complete and the drain blocks have been removed. Excavation of ditches in the harvest area will not begin until the sediment pond is complete and functioning.

Each sedimentation pond will be equipped with a floating boom situated near the outlet to prevent floating debris from escaping. The sedimentation ponds will be cleaned periodically to ensure that the accumulated sediment volume does not exceed 25% of the total basin volume. Water levels will be monitored during periods of normal operation to ensure that there is always at least a 1 m depth of free water over a minimum 10 m distance from the pond outlet. Cleaning will take place before and after any substantial ditch cleaning or cutting takes place within the upstream catchment area. Solids will be excavated from the pond with a backhoe and be reapplied to the harvest area.

During cleaning operations, the water level will be maintained below the bottom of the outlet culvert to ensure that sediment is not released into the outlet ditch. If required, the control gate on the inlet ditch will be closed before cleaning operations to ensure that additional flow does not raise the water level. Cleaning will not take place during periods of heavy precipitation which could also raise the water level. The control gate would remain closed until the cleaning operation is complete and remaining disturbed sediment has an opportunity to settle.

Water quality will be monitored immediately downstream of the outlet culvert. Water samples will be taken on a weekly basis for analyses of TSS and pH. Additional samples may be taken on an as required basis or as directed by Manitoba Conservation.

Outlet Ditches - The outlet ditches convey the discharge from the sedimentation ponds for conveyance to the surrounding environment. The flow will be directed by the ditches

to natural discharge points in order to best integrate the drainage into the existing natural drainage system, and cause minimal change to the water regime.

For the Bullhead Bog development, the outlet ditch from the sedimentation pond within QL 2401 will discharge into the proposed access road ditch and direct drainage to the existing PR 234 roadside ditch for conveyance through the PR 234 crossing to Lake Winnipeg. Likewise, the outlet ditch from the sedimentation pond within QL 1291 will extend to the northeast beyond the QL boundary and towards the existing PR 234 roadside ditch for conveyance through PR 234 to Lake Winnipeg. The outlet ditch from the sedimentation pond within QL 1134 will discharge to the unnamed stream that flows east from the project area through a PR 234 crossing to Lake Winnipeg.

The outlet ditches from the sedimentation ponds for the Little Deer Lake Bog development will extend beyond the QL boundaries towards Little Deer Lake and tie into the existing drainage. The outlet ditches from the two sedimentation pond locations within QL 1406 will intersect to form a single discharge point to Little Deer Lake. Unless these ditches are tied into an existing drainage swale, the outlet ditches will extend to within approximately 30 m of Deer Lake to maintain positive drainage away from the sedimentation ponds. The 30 m buffer around the lake will be maintained as an additional environmental protection measure to prevent sediments from entering the lake.

The Ramsay Point Bog outlet ditch from the sedimentation ponds within QL 2410 will discharge to the existing unnamed stream that flows east to the existing PR 234 roadside ditch. The existing roadside ditch conveys the stream discharge south along PR 234 to a culvert crossing for outlet to Lake Winnipeg.

Maintenance of Drainage Ditches - Sunterra will be responsible for the maintenance of the drainage ditches throughout site operations until reclamation works have been completed. The maintenance of the drainage ditches is done throughout the peat harvest season and will include:

- Repair of any slope failures or slumps and removal of any debris or siltation in the drainage ditches and sedimentation ponds that may obstruct water flow

- Removal of vegetation growth that may restrict flows
 - Removal of ice blockages that may restrict flows
 - Removal of any debris that may interfere with water flow
 - annual inspection and maintenance on all culverts and culvert gates to insure proper function of these drain components.
 - Removal of beaver dams if required
- O) Not applicable to operations
- P) Not applicable to operations
- Q) Not applicable to operations
- R) The peat harvesting process generates minimal waste due to the limited scope of activity. Sunterra will continue to manage waste at the on-site facilities as they currently do at their existing Beaver Point Bog operation. Petroleum, oils, lubricants and other hazardous wastes will continue to be managed by the equipment suppliers, who also maintain the equipment. The machinery being utilized by Sunterra is presently being maintained and serviced by Enns Brothers Ltd. (John Deere) and Caterpillar. The long-term storage of fuel products is in the staging area. During harvesting operations, the use of fuel products for equipment will adhere to all applicable Provincial and Federal Regulations. Fuel, lubricants and other potentially hazardous materials shall be stored and handled within dedicated areas in full compliance with *The Dangerous Goods Handling and Transportation Act* and other regulatory requirements. Spill clean-up equipment and materials will be available at the work area for use in the event of a spill.

Domestic sewage from the on-site facilities at the Bullhead, Little Deer Lake and Ramsay Point Bogs will be retained in holding tanks and pumped out on a regular basis by a local licensed contractor. Currently Sunterra has a contract with J.J's Septic Services out of Arnes, Manitoba. Solid wastes such as paper, organics, plastics, packaging materials, etc. are stored in bins located in the staging areas and removed by a local licensed contractor. All site waste will be cleaned up daily to minimize the potential for wildlife being attracted to the work site. Sunterra currently contracts Simpson's Transfer and Feed Ltd. out of Winnipeg, Manitoba for disposal or recycling as appropriate at the Winnipeg Brady Landfill.

- S) Following permanent closure and rehabilitation of the Bullhead, Little Deer Lake and Ramsay Point Bogs, the disturbed areas will be returned to their natural state as functioning bogs. The restoration activities will comply with the requirements of The Preservation and Reclamation Policy of the Canadian Sphagnum Peat Moss Association. The Manitoba Peat Industry is committed to a policy of restoring the harvested bogs back to the wetland inventory. However, as the land is managed by the Crown, they will specify the goal of reclamation and determine the final end use of the land, in particular the access roads and drainage ditches at the site. All site buildings, utilities, concrete pads and gravel parking areas will be removed from the site to return the area to a natural state. The end goal of the site reclamation work will be to return the peat land to a maintenance-free functioning wetland ecosystem.
- T) Fully harvested areas will be restored based on the experience gained by Sunterra through the guidance of CSPMA and restoration research, and following the requirements of The Preservation and Reclamation Policy of the CSPMA. The areas that have been harvested down to their final depth will no longer be utilized for peat harvesting, and restoration of these areas will begin. These areas will undergo restoration while other portions of the bog are still being harvested, a process referred to as progressive restoration. The first parcels of land developed for production in 2014 will undergo progressive restoration starting in 2026 and activities will include:
- Backfilling the field ditches and leveling the field using a Profiler drawn by a tractor.
 - Perimeter ditching will be backfilled whenever that section of perimeter ditch is no longer required for site drainage.
 - When all production from a bog is complete, all drainage ditches and sedimentation ponds will be backfilled, leveled, and prepared for revegetation.
 - Water levels will be allowed to rise and flood the surface due to the backfilling of the drainage ditches.
 - Topspit (Sphagnum Moss mulch) will be spread over the leveled field to promote natural revegetation on the bog surface. Within 7 to 10 years, the bog surface will return to a functioning wetland ecosystem.

Final site closure will be initiated and completed after all phases of the bog have been fully harvested by approximately 2053. In compliance with the Manitoba Mine Closure Regulation 67/99 and under provincial Mines and Minerals Act, Subsection 115, Sunterra will provide the Director of Mines written notice of closure no less than 90 days prior to any permanent closure activities. Similarly, Sunterra will provide the Director of Mines written notice at least 90 days prior to any potential temporary suspension of harvesting operations whereby the development would be placed in a “moth balled” state or “care and maintenance” for greater than 90 days for re-opening in the foreseeable future. The final site closure activities of the development will include:

- Decommissioning of all remaining drainage ditches, drainage flow control weirs, and drainage settling ponds constructed for the development.
- Removal/Decommissioning, reclamation and restoration of the affected operations area including parking facilities, office/lunchroom facility, chemical toilet/washrooms, septic storage tank, groundwater well (if installed), fuel storage and fuel transfer facility, equipment maintenance areas, generator, and any additional site infrastructure, concrete, and electrical services.
- Decommissioning of the site access roads and stream crossings from PR 234, unless Manitoba Conservation wants to retain this access.
- All waste material from decommissioning activities will be removed from the site and taken to a licensed waste disposal ground.
- Soil testing and remediation (if required) of pollutants from the harvesting operations of the development to the satisfaction of Manitoba Conservation Authorities.
- Restoration of any wildlife habitat disturbed as per the requirements of the Environment Act Licence.
- Seeding or transplanting with higher plant species will be completed in areas that may not revegetate naturally to Sphagnum if needed and as directed by Manitoba Conservation.

Once all site closure activities have been completed, the site is anticipated to regenerate to a healthy peat bog in similar condition and appearance to the pre-development conditions. The site closure plans are designed to re-establish the wetland ecosystem. It is expected that wildlife and waterfowl species and populations will return to pre-development levels once the wetland ecosystem has been re-established.

U) Following submission of the Environment Act Proposal for the proposed project, if Manitoba Conservation approves the major alteration, the Environmental Act Licence will be revised. Operational monitoring and post operational monitoring requirements will be specified in the Environmental Act Licence. Sunterra proposes to conduct the following operational and post operational monitoring activities:

- Sunterra will comply with all operational and post operational monitoring requirements specified by the Environment Act Licence for the peat harvesting development.
- Sunterra will revegetate fully harvested plots in accordance with the Peatland Restoration Guide and conduct annual revegetation surveys at each revegetated plot in compliance with the Environment Act Licence. The annual vegetation survey will consist of estimating the percentage of soil that is covered by mosses and re-established plants with the estimated percentage of plant coverage compared to previous annual surveys to verify the progression of the vegetation carpet. If no progression is observed, a specialist in peatland restoration will be consulted to correct the situation.
- During the peat harvesting activity period, normally from April to October of each year, monitoring of the effluent from sedimentation ponds will include taking a 1 L water sample for analysis of total suspended solids (TSS) and pH every week per outlet, or 24 hours after heavy rainfall (10 mm/hr for 6 consecutive hours) or after heavy wind with average wind speeds of 50 km/h or more.
- Surface water quality monitoring stations that were established during baseline environmental studies on Little Deer Lake, the unnamed stream draining east from the Bullhead Bog and the unnamed stream draining the Ranger Lakes, which outlet to Lake Winnipeg, will be utilized along with the sedimentation pond discharge points (when actively draining), to monitor the surface water quality for potential effects of effluent from the peat bog development. Unless otherwise directed by Manitoba Conservation, sampling at these locations will be conducted three times per year; once during the spring freshet, again in mid-summer and finally in late fall. These annual monitoring requirements (frequency and analytical parameters to be analyzed) should be discussed with Manitoba Conservation and adjusted as seen appropriate.
- Records of the surface water monitoring results will be reported to Manitoba Conservation in an annual report to be submitted to the Director of Environmental Licencing by March 31st of each year. Any TSS concentration or pH level that exceeds the acceptable levels established in the Environment Act Licence for the peat harvesting development will be reported to Manitoba Conservation in writing within one week after receiving the monitoring results. Corrective actions will be agreed upon and implemented in a time frame agreed upon by Sunterra and Manitoba Conservation.

After closure, the frequency of surface water monitoring and groundwater monitoring will be determined by the terms and conditions identified by Manitoba Conservation and the Mines Branch. The historical environmental monitoring results can be used to establish the appropriate frequency of post closure monitoring and determine the parameters to be analyzed.

- V) Procedures to be used to evaluate and verify compliance with the plan during the life of the project and each stage of closure are as follows;
- inclusion of closure plan status during the annual budgeting process; and
 - assignment of an Environmental Safety Officer who will be responsible for reviewing the closure progress quarterly with the board of directors.

- W) The closure costs for the peat harvesting development have been estimated in accordance with the Province of Manitoba Mine Closure Guidelines – Financial Assurance. The closure costs reflect input from Sunterra and have been divided into Progressive Closure and Final Closure costs.

The development will be progressively closed as plots have been fully harvested to the final planned depth as previously noted. The development schedule plans for progressive closure at the Bullhead, Little Deer Lake and Ramsay Point Bogs to commence in 2026, with approximately 25 ha closed per year, and continue until the year 2053 one year after the final harvesting year. Based on the estimated closure costs for backfilling of ditches, regrading of field surfaces, rehabilitation of bog roads and revegetation, the total estimated cost for progressive closure on the 715 ha is approximately \$219,400 (2011 dollars) as summarized in Table 2.

**TABLE 2
 ESTIMATED PROGRESSIVE CLOSURE COSTS**

DESCRIPTION	PRICE/HA	TOTAL COST (715 HA)
Backfill Field Ditches	\$45	\$32,175
Level Peat Fields	\$65	\$46,475
Backfill Main (Perimeter) Ditches and Contour Bank	\$9	\$6,435
Revegetation of Fields and Drains (Topspit/Seeding)	\$135	\$96,525
Rehabilitation of Stacklines and Bog Roads	\$25	\$17,875
Contingency (10%)		\$19,949
Total Estimated Progressive Closure Cost (2011 dollars)		\$219,434

The estimated cost to permanently close the development includes costs for decommissioning and restoration site infrastructure such as the buildings, power supply, staging and parking areas as well as the access roads. The development schedule plans for final closure in 2053 following the closure of the remaining 22 ha of peat harvesting area. Final closure activities and the estimated total cost of approximately \$371,400 are summarized in Table 3.

**TABLE 3
 ESTIMATED FINAL CLOSURE COSTS**

DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL AMOUNT
Remove Staging Area Buildings - lunchroom and garage - includes labour, transportation and disposal	Lump Sum	3	\$8,000	\$24,000
Remove Electrical Services - remove generator and poles - includes labour, transportation and disposal	Lump Sum	3	\$3,500	\$10,500
Remove Fuel Tanks and Hazardous Materials	Tank	3	\$2,200	\$6,600
Site Assessment and Soil Testing of Staging Areas	Lump Sum	3	\$6,000	\$18,000
Remove Concrete Stockpile Pad - includes labour, transportation and disposal/recycling - this assumes local disposal (e.g. Riverton)	Tonnes	4300	\$31	\$133,000
Remove and Restore Access Roads	km	2.5	\$20,000	\$50,000
Remove and Restore Staging/Parking Areas	ha	31	\$2,500	\$77,500
Backfill Settling Ponds - includes labour and disposal of control gate and culvert	Location	8	\$1,500	\$12,000
Install Signage and Gates	Site	4	\$1,500	\$6,000
Contingency (10%)				\$33,760
Total Estimated Progressive Closure Cost (2011 dollars)				\$371,360

The combined cost for the estimated progressive closure and final closure costs results in a total cost for Closure at the end of the operation of approximately \$590,800 (2011 dollars). This total closure cost of \$604,600 has been adjusted upwards to account for an estimated 2.5% annual inflation rate to an equivalent 2026 dollars when the scheduled closure activities will commence. Sunterra commits to posting financial assurance for the adjusted approximate total closure cost of \$855,645 in accordance with the Manitoba Mine Closure Regulation 67/99; Mine Closure Guidelines Financial Assurance (2) - Recommended Schedule of Annual Amounts to be Provided. As the proposed peat development will extend the production life span by approximately 30

years, the recommended payment schedule for mines with an expected life of 15 or more years will be used. As noted in the regulation, the actual amounts are subject to approval by the director of the mines branch; however, Sunterra proposes a payment schedule as summarized in Table 4.

**TABLE 4
 FINANCIAL ASSURANCE PAYMENT SCHEDULE**

CALENDAR YEAR	OPERATIONAL YEAR	FINANCIAL ASSURANCE REQUIRED PER ANNUM (% of total)	PROPOSED ANNUAL FINANCIAL ASSURANCE AMOUNT
2014	1	0	\$0
2015	2	0	\$0
2016	3	0	\$0
2017	4	1	\$8,556
2018	5	1	\$8,556
2019	6	2	\$17,113
2020	7	5	\$42,782
2021	8	6.3	\$53,906
2022	9	8	\$68,452
2023	10	10	\$85,565
2024	11	13	\$111,234
2025	12	15	\$128,347
2026	13	18	\$154,016
2027	14	20.7	\$177,119
Total Financial Assurance Provided (2028 dollars)			\$855,645

TABLES

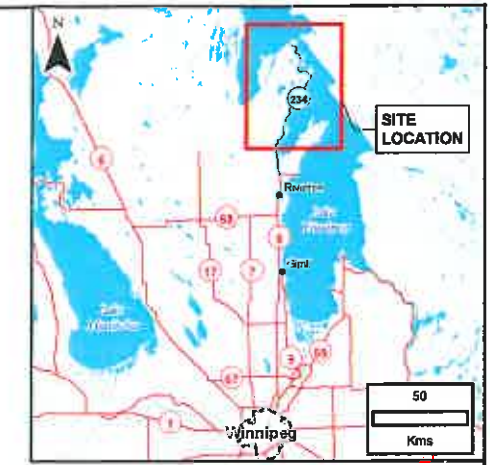
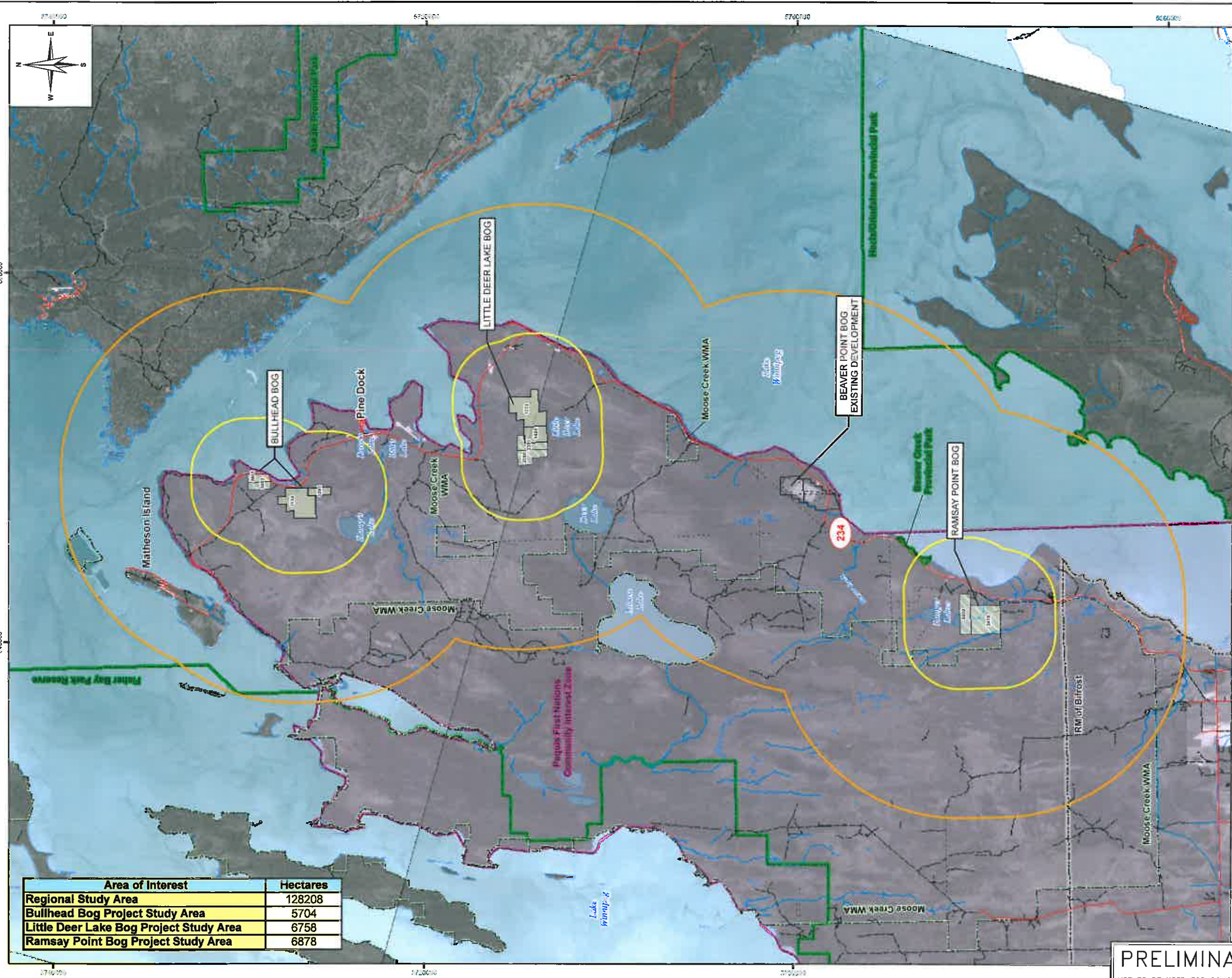
**TABLE 1
ESTIMATED PEAT PRODUCTION SCHEDULE
SUNTERRA PEAT MINE DEVELOPMENT**

Year	Area Opened (ha)	Total Area Disturbed (ha)	Area Closed (ha)	Area Harvesting (ha)	Total Volume (m³) Harvested/Year
Existing Beaver Point Bog Development					
2013	0	232	0	232	327,120
Proposed Bog Development					
2014	25	25	0	257	362,370
2015	25	50	0	282	397,620
2016	25	75	25	282	397,620
2017	25	100	25	282	397,620
2018	25	125	25	282	397,620
2019	25	150	25	282	397,620
2020	25	175	25	282	397,620
2021	25	200	25	282	397,620
2022	25	225	25	282	397,620
2023	25	250	25	282	397,620
2024	25	275	25	282	397,620
2025	25	300	25	282	397,620
2026	25	325	25	282	397,620
2027	25	350	25	282	397,620
2028	25	375	25	282	397,620
2029	25	400	25	282	397,620
2030	25	425	25	282	397,620
2031	25	450	25	282	397,620
2032	25	475	25	282	397,620
2033	25	500	25	282	397,620
2034	25	525	25	282	397,620
2035	25	550	25	282	397,620
2036	25	575	25	282	397,620
2037	25	600	25	282	397,620
2038	25	625	25	282	397,620
2039	25	650	25	282	397,620
2040	25	675	25	282	397,620
2041	25	700	25	282	397,620
2042	15	715	25	272	383,520
2043	0	715	25	247	348,270
2044	0	715	25	222	313,020
2045	0	715	25	197	277,770
2046	0	715	25	172	242,520
2047	0	715	25	147	207,270
2048	0	715	25	122	172,020
2049	0	715	25	97	136,770
2050	0	715	25	72	101,520
2051	0	715	25	47	66,270
2052	0	715	25	22	31,020
2053	0	715	22	0	0

Note: The *italicized* numbers indicate area closed at the existing Beaver Point Bog and harvesting areas and volumes that include peat from Beaver Point Bog

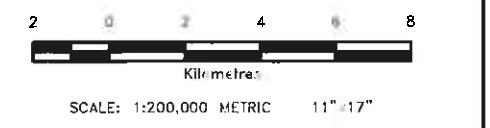
FIGURES

File Name: P:\Projects\11-158-01\11-158-01\11-158-01_Visual_Closure\11-158-01_F01_REV0.mxd
 11/17/11 11:17 AM
 Part of this data presented are owned by the Province of Manitoba and are included under the license agreement with the Province of Manitoba 2011 Queen's Printer.



- LEGEND:**
- Project Study Area
 - Regional Study Area
 - Existing Development Area
 - Pending By Lease Owner
 - Proposed Development AREA
 - Provincial Park Boundary
 - Wildlife Management Area (WMA)
 - Pequis FN Community Interest Zone
 - RM Boundary
 - Road
 - Trail
 - Existing Outline
 - River
 - Lake

- Notes:**
1. Imagery is Spot 5, from NRCAN (Natural Resources Canada), September 3, 2006.
 2. All units are metric and in metre unless otherwise specified. Universal Transverse Mercator Projection, NAD 1983, Zone 14. Elevations are in metres above sea level (MSL).



Area of Interest	Hectares
Regional Study Area	128208
Bullhead Bog Project Study Area	5704
Little Deer Lake Bog Project Study Area	6758
Ramsay Point Bog Project Study Area	6878

0	11/12/01	ISSUED WITH MINE CLOSURE REPORT	JFM
NO.	YY/MM/DD	DESCRIPTION	BY
REVISIONS / ISSUE			
KGS GROUP		SUNTERRA HORTICULTURE (CANADA) INC.	
CONSULTING ENGINEERS			
PROPOSED PEAT MINE DEVELOPMENT			
REGIONAL SITE LOCATION OF PROPOSED DEVELOPMENT			
PRELIMINARY			
NOT TO BE USED FOR CONSTRUCTION			
DECEMBER 2011		FIGURE 01	
		0	

APPENDIX D
GOVERNMENT CORRESPONDENCE

Shaun Moffatt

From: Loni Andres [LAndres@kgsgroup.com]
Sent: Thursday, September 30, 2010 1:34 PM
To: 'Shaun Moffatt'
Subject: FW: Lake Winnipeg - Water Quality Data Request
Attachments: Map of Stations near Grindstone Point.jpg; LakeWpgChemData.2010.LAndres_2010.09.10.xls; LAndres.September 10 2010.doc

From: Page, Elaine (WSD) [mailto:Elaine.Page@gov.mb.ca]
Sent: Friday, September 10, 2010 4:20 PM
To: Loni Andres
Subject: RE: Lake Winnipeg - Water Quality Data Request

Hi Loni. Please see attached for your data request. I have also attached a quick map of the sampling locations, and the station coordinates are also included in the data file. I have included the two most recent years of data (2008 and 2009) for four stations in the vicinity of Grindstone Point. Station 13B is the closest to your site of interest. However, if you are interested in looking at metals and ions data, your next best bet would be Station W13. An extended suite of chemistry variables are collected at this station, as it is a part of our long term water quality monitoring network on Lake Winnipeg.

We have very little data from the 1970s on Lake Winnipeg – much of the chemistry data has been collected intensively since 1999. The reference to the 1970s relates to a trend analysis on nutrient concentrations collected from 1978 to 1999 in rivers that are tributary to Lake Winnipeg. Interim nutrient reductions for Lake Winnipeg are based on the finding that nutrient levels have increased in the major tributary rivers from 1978 to 1999.

I hope these data will be helpful. Please give me a call or send an email if I can help out with anything else.

Thanks,

Elaine

Elaine Page (Shiple) [mailto:Elaine.Page@gov.mb.ca]
Water Quality Modelling Specialist
Manitoba Water Stewardship
Suite 160, 123 Main Street
Winnipeg, Manitoba R3C 1A5
Phone: (204) 945-5344
Fax: (204) 948-2357

From: Loni Andres [mailto:LAndres@kgsgroup.com]
Sent: Friday, September 10, 2010 1:46 PM
To: Page, Elaine (WSD)
Subject: RE: Lake Winnipeg - Water Quality Data Request

Hi Elaine,

I think the most recent lab data and maybe 1970 (1970 levels are the targets for Lake Winnipeg right?)
The routine chemistry, nutrients, major ions, and metals are the results that I am looking for, thanks. The area is west of Grindstone, near Beaver Creek provincial park.

10/5/2010

Loni

From: Page, Elaine (WSD) [mailto:Elaine.Page@gov.mb.ca]
Sent: Friday, September 10, 2010 1:29 PM
To: LAndres@kgsgroup.com
Subject: Lake Winnipeg - Water Quality Data Request

Hi Loni. Thanks for your email. Nicole has asked me to respond on her behalf. We do have stations located near Grindstone Point. What years are you looking at? I just wanted to clarify that you would be interested in routine chemistry, nutrients, major ions, and metals. Is this correct?

Thanks,

Elaine

Elaine Page (Shiplay)
Water Quality Modelling Specialist
Manitoba Water Stewardship
Suite 160, 123 Main Street
Winnipeg, Manitoba R3C 1A5
Phone: (204) 945-5344
Fax: (204) 948-2357

From: Loni Andres [mailto:LAndres@kgsgroup.com]
Sent: Friday, September 10, 2010 1:00 PM
To: Armstrong, Nicole (WSD)
Subject: Lake Winnipeg Water Quality

Hi Nicole,

I am currently writing an EAP for a proposed peat mine near the south basin of Lake Winnipeg. We are looking for water quality results for Lake Winnipeg, including general parameters and metal analyses, specifically of the surface water quality west of Grindstone Point. If you don't have any within that exact region I will take whatever you have for the south basin.

Regards,

Loni

Loni Andres
Geo-Environmental Scientist
KGS Group
(204) 896-1209 ext.299

10/5/2010



Proposed
Bullhead Bog

Proposed
Little Deer
Lake Bog

Proposed
Ramsay
Point Bog

W13

13B

49S

44S

**GENERAL WATER QUALITY
LAKE WINNIPEG**

Sample No.	Date	Parameters ⁽¹⁾																		
		pH (units)	E.C. (µS/cm)	Alkalinity as CaCO ₃	Bicarbonate as CaCO ₃	Carbonate as CaCO ₃	Hydroxide as CaCO ₃	Hardness as CaCO ₃	Sulphate	Ortho-phosphate as P	Ammonia	Nitrate & Nitrite (as N)	B.O.D.	Total Phosphorus	Total Dissolved Phosphorus	Total Pariculate Phosphorus	T.D.S.	T.S.S.	T.K.N.	Acidity
W13	3-Mar-08	7.81	250	83	-	-	-	105	28.8	-	<0.01	0.22	<1	0.095	0.067	0.028	168	1	0.4	-
	3-Mar-08	7.80	269	88	-	-	-	112	33	-	<0.01	0.23	-	0.109	0.08	0.029	184	2	0.5	-
	12-Jun-08	8.08	159	58	-	-	-	70	14	-	0.01	<0.01	-	0.032	0.011	0.021	118	6	0.6	-
	12-Jun-08	8.07	159	58	-	-	-	70	13.9	-	0.01	<0.01	1	0.032	0.013	0.019	99	6	0.6	-
	1-Aug-08	7.77	208	70	-	-	-	91	21.3	-	0.02	0.15	-	0.105	0.047	0.058	154	11	0.7	-
	1-Aug-08	7.79	207	70	-	-	-	91	21.3	-	0.03	0.09	<1	0.102	0.044	0.058	151	10	0.6	-
	28-Sep-08	7.86	192	67.9	-	-	-	83	18	-	0.02	0.11	-	0.091	0.047	0.044	134	10	0.3	-
	28-Sep-08	7.89	192	67.9	-	-	-	83	18.1	-	0.02	0.1	<1	0.099	0.046	0.053	139	10	0.3	-
	2-Feb-09	7.62	227	81.8	-	-	-	97	24.5	-	0.02	0.11	-	0.086	0.056	0.03	160	4	0.4	-
	2-Feb-09	7.64	216	79.8	-	-	-	92	21.8	-	0.02	0.09	<1	0.073	0.049	0.024	156	4	0.5	-
	4-Jun-09	7.98	218	78.5	-	-	-	91.6	27	0.0234	0.072	-	2.3	0.081	0.048	0.033	152	14	0.71	-
	4-Jun-09	8.08	216	78.8	-	-	-	97.3	26.3	0.0315	0.036	-	-	0.0674	0.0668	<0.001	154	16	0.64	-
	23-Jul-09	8.17	266	96.3	-	-	-	137	36.9	0.0815	0.0083	-	-	0.11	0.107	0.003	196	8	0.63	-
	23-Jul-09	8.17	277	96.6	-	-	-	131	37.5	0.0835	0.008	-	<1	0.108	0.0967	0.0113	190	8	0.74	-
	26-Sep-09	8.17	248	89.5	-	-	-	125	31.4	0.123	0.012	-	<1	0.136	0.0914	0.0446	188	12	0.67	-
26-Sep-09	8.16	248	89.3	-	-	-	124	28.9	0.087	0.0048	-	-	0.13	0.092	0.024	188	12	0.52	-	
13B	12-Jun-08	8.27	203	-	-	-	-	-	-	-	0.03	<0.01	1	0.044	0.016	0.028	-	7	0.6	-
	1-Aug-08	7.81	194	-	-	-	-	-	-	-	0.03	0.08	2	0.095	0.044	0.051	-	7	0.7	-
	28-Sep-08	8.11	234	-	-	-	-	-	-	-	0.02	0.07	<1	0.1	0.05	0.05	-	9	0.4	-
	6-Jun-09	8.22	250	-	-	-	-	-	-	0.0808	0.017	-	2.1	0.13	0.0851	-	-	11	0.55	-
	23-Jul-09	8.16	291	-	-	-	-	-	-	0.0867	0.0089	-	1	0.105	0.0912	-	-	<5	0.62	-
	26-Sep-09	8.14	212	-	-	-	-	-	-	0.114	0.006	-	<1	0.121	0.0756	-	-	14	0.54	-

**GENERAL WATER QUALITY
LAKE WINNIPEG**

Sample No.	Date	Parameters ⁽¹⁾																			
		pH (units)	E.C. (µS/cm)	Alkalinity as CaCO ₃	Bicarbonate as CaCO ₃	Carbonate as CaCO ₃	Hydroxide as CaCO ₃	Hardness as CaCO ₃	Sulphate	Ortho-phosphate as P	Ammonia	Nitrate & Nitrite (as N)	B.O.D.	Total Phosphorus	Total Dissolved Phosphorus	Total Pariculate Phosphorus	T.D.S.	T.S.S.	T.K.N.	Acidity	
49S	11-Jun-08	8.53	196	-	-	-	-	-	-	-	0.09	<0.01	2	0.037	0.015	0.022	-	4	0.8	-	
	11-Jun-08	8.52	196	-	-	-	-	-	-	-	0.03	<0.01	1	0.033	0.018	0.015	-	4	0.9	-	
	1-Aug-08	7.85	201	-	-	-	-	-	-	-	0.02	0.07	2	0.087	0.042	0.045	-	4	0.6	-	
	1-Aug-08	7.89	201	-	-	-	-	-	-	-	0.02	0.07	1	0.091	0.043	0.048	-	6	0.6	-	
	28-Sep-08	8.07	251	-	-	-	-	-	-	-	0.02	0.06	<1	0.083	0.053	0.03	-	6	0.2	-	
	28-Sep-08	8.06	246	-	-	-	-	-	-	-	0.02	0.06	<1	0.088	0.053	0.035	-	5	0.3	-	
	5-Jun-09	8.06	245	-	-	-	-	-	-	-	0.0732	0.036	-	2.2	0.101	0.0803	-	-	19	0.55	-
	5-Jun-09	7.53	244	-	-	-	-	-	-	-	0.073	0.024	-	2.5	0.102	0.0766	-	-	15	0.58	-
	26-Sep-09	8.11	200	-	-	-	-	-	-	-	0.0808	0.0068	-	1	0.113	0.0781	-	-	17	0.52	-
	26-Sep-09	8.10	187	-	-	-	-	-	-	-	0.113	<0.003	-	1	0.124	0.0747	-	-	18	0.56	-
44S	11-Jun-08	7.99	170	-	-	-	-	-	-	-	0.02	<0.01	<1	0.016	0.01	0.006	-	5	0.6	-	
	1-Aug-08	7.88	199	-	-	-	-	-	-	-	0.02	0.07	2	0.107	0.045	0.062	-	6	0.7	-	
	28-Sep-08	8.04	236	-	-	-	-	-	-	-	0.04	0.07	<1	0.137	0.048	0.089	-	14	0.4	-	
	5-Jun-09	7.99	257	-	-	-	-	-	-	-	0.0863	0.03	-	1.9	0.107	0.0915	-	-	11	0.62	-
	26-Sep-09	8.17	227	-	-	-	-	-	-	-	0.123	0.015	-	<1	0.123	0.0731	-	-	20	0.6	-

Notes:

Data Summary prepared using data provided by Manitoba Water Stewardship

"-" = No Data

E.C. = Electrical Conductivity

B.O.D. = Biochemical Oxygen Demand

T.K.N. = Total Kjeldahl Nitrogen

T.D.S. = Total Dissolved Solids

T.S.S. = Total Suspended Solids

1. All values are expressed in milligrams per litre (mg/L) unless indicated otherwise.

**METALS IN WATER
LAKE WINNIPEG**

Sample No.	Date	Parameter ⁽¹⁾																		
		Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Cesium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Molybdenum
W13	3-Mar-08	0.4400	0.0005	0.00160	0.02300	<0.0002	-	0.02	<0.00004	-	<0.0001	0.0004	0.0002	0.0023	0.410	0.000200	0.009	10.400	0.01300	0.001
	3-Mar-08	0.5000	0.0004	0.00180	0.02500	<0.0002	-	0.03	<0.00004	-	<0.0001	0.0006	0.0002	0.003	0.470	0.000300	0.01	11.200	0.01600	0.001
	12-Jun-08	0.1400	0.0003	0.00100	0.01400	<0.0002	-	<0.01	0.000040	-	<0.0001	0.0004	<0.0002	0.0016	0.220	<0.0002	0.0048	6.570	0.01300	0.000
	12-Jun-08	0.1400	0.0004	0.00090	0.01300	<0.0002	-	0.01	<0.00004	-	<0.0001	0.0003	<0.0002	0.0014	0.200	<0.0002	0.0048	6.580	0.01300	0.000
	1-Aug-08	0.5300	0.0004	0.00170	0.02200	<0.0002	-	0.02	<0.00004	-	0.0001	0.0011	0.0005	0.0026	0.800	0.000500	0.0074	9.010	0.04400	0.001
	1-Aug-08	0.5400	0.0004	0.00170	0.02200	<0.0002	-	0.02	<0.00004	-	<0.0001	0.0012	0.0005	0.0026	0.800	0.000500	0.0073	8.990	0.04400	0.001
	28-Sep-08	0.4900	0.0004	0.00180	0.02200	<0.0002	-	0.01	<0.00004	-	<0.0001	0.0008	0.0003	0.0024	0.610	0.000400	0.0062	8.230	0.04700	0.001
	28-Sep-08	0.4900	0.0004	0.00170	0.02200	<0.0002	-	0.01	<0.00004	-	<0.0001	0.0009	0.0003	0.0023	0.620	0.000500	0.0063	8.240	0.05100	0.001
	2-Feb-09	0.4100	0.0003	0.00180	0.02200	<0.0002	-	0.02	<0.00004	-	<0.0001	0.0009	0.0003	0.0025	0.560	0.000300	0.0075	9.700	0.02000	0.001
	2-Feb-09	0.3500	0.0003	0.00170	0.02100	<0.0002	-	0.02	<0.00004	-	<0.0001	0.0007	0.0002	0.004	0.420	0.000400	0.0069	9.100	0.01300	0.001
	4-Jun-09	0.4080	<0.0002	0.00144	0.02630	<0.0002	-	0.018	0.000020	-	<0.0001	<0.001	0.00055	0.0023	0.411	0.000340	0.0082	9.240	0.02180	0.001
	4-Jun-09	0.3920	<0.0002	0.00148	0.02320	<0.0002	-	0.019	<0.00001	-	<0.0001	<0.001	0.00054	0.0021	0.371	0.000250	0.0083	9.910	0.02600	0.001
	23-Jul-09	1.0800	<0.0002	0.00166	0.03160	<0.0002	-	0.017	0.000020	-	0.00013	0.002	0.00049	0.003	1.130	0.000540	0.0107	13.700	0.04830	0.001
	23-Jul-09	0.7500	<0.0002	0.00158	0.02930	<0.0002	-	0.017	0.000010	-	<0.0001	0.0016	0.00041	0.0028	0.873	0.000530	0.011	13.200	0.04270	0.001
	26-Sep-09	1.1300	<0.0002	0.00212	0.04020	<0.0002	-	0.045	0.000040	-	0.00013	0.0015	0.00077	0.0043	1.060	0.000850	0.0166	12.300	0.07380	0.001
26-Sep-09	2.3100	<0.0002	0.00205	0.04370	<0.0002	-	0.036	<0.00001	-	0.00026	0.0032	0.00093	0.0036	1.800	0.000850	0.0221	12.500	0.07880	0.001	

Sample No.	Date	Parameter ⁽¹⁾																		
		Nickel	Phosphorus	Potassium	Rubidium	Selenium	Silicon	Silver	Sodium	Strontium	Tellurium	Thallium	Thorium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc	Zirconium
W13	3-Mar-08	0.0018	-	2.68	0.00220	<0.0004	-	<0.00002	9.30	-	<0.0002	<0.00002	<0.0001	<0.0002	0.012	-	0.0007	0.002	0.00300	<0.002
	3-Mar-08	0.0018	-	2.95	0.00240	<0.0004	3.81	<0.00002	10.20	0.07	<0.0002	<0.00002	<0.0001	0.0009	0.015	-	0.0007	0.003	0.00400	<0.002
	12-Jun-08	0.0010	-	1.50	0.00130	0.0006	0.58	<0.00002	5.20	0.05	<0.0002	<0.00002	<0.0001	<0.0002	0.006	-	0.0003	0.001	0.00500	<0.002
	12-Jun-08	0.0010	-	1.52	0.00130	<0.0004	0.57	<0.00002	5.20	-	<0.0002	<0.00002	<0.0001	<0.0002	0.005	-	0.0003	0.001	0.00300	<0.002
	1-Aug-08	0.0024	-	2.21	0.00290	0.0009	2.79	<0.00002	7.80	0.06	<0.0002	<0.00002	<0.0001	<0.0002	0.024	-	0.0005	0.002	0.00500	<0.002
	1-Aug-08	0.0023	-	2.17	0.00300	0.0009	2.83	<0.00002	7.80	-	<0.0002	<0.00002	<0.0001	<0.0002	0.025	-	0.0006	0.002	0.00600	<0.002
	28-Sep-08	0.0020	-	1.97	0.00270	0.0005	3.31	<0.00002	6.80	0.06	<0.0002	<0.00002	<0.0001	<0.0002	0.019	-	0.0005	0.002	0.00300	<0.002
	28-Sep-08	0.0020	-	1.96	0.00280	<0.0004	3.3	0.00014	6.80	-	<0.0002	<0.00002	<0.0001	<0.0002	0.021	-	0.0005	0.002	0.00300	<0.002
	2-Feb-09	0.0018	-	2.23	0.00230	<0.0004	3.79	<0.00002	7.90	0.06	<0.0002	<0.00002	0.0001	0.0005	0.017	-	0.0006	0.002	0.00300	<0.002
	2-Feb-09	0.0016	-	2.03	0.00200	<0.0004	3.44	<0.00002	7.40	0.06	<0.0002	<0.00002	0.0001	<0.0002	0.014	-	0.0006	0.002	0.00500	<0.002
	4-Jun-09	0.0023	-	3.57	0.00197	<0.001	-	0.0001	7.53	0.06	<0.0002	<0.0001	0.00029	<0.0006	0.015	<0.0002	0.00104	0.002	0.00510	0.001
	4-Jun-09	0.0024	-	3.75	0.00194	<0.001	4.89	<0.0001	8.02	0.06	<0.0002	<0.0001	0.00022	<0.0006	0.017	<0.0002	0.00112	0.003	<0.005	0.001
	23-Jul-09	0.0034	-	4.74	0.00385	<0.001	4.89	<0.0001	11.50	0.09	<0.0002	<0.0001	0.00033	<0.0006	0.039	<0.0002	0.00142	0.005	<0.005	0.001
	23-Jul-09	0.0031	-	4.49	0.00320	<0.001	-	<0.0001	11.00	0.09	<0.0002	<0.0001	0.00022	<0.0006	0.027	<0.0002	0.00136	0.004	<0.005	0.001
	26-Sep-09	0.0029	-	3.97	0.00410	<0.001	-	<0.0001	9.68	0.10	<0.0002	<0.0001	0.00034	<0.0006	0.045	<0.0002	0.00134	0.005	0.00660	0.002
26-Sep-09	0.0034	-	4.16	0.00609	<0.001	10.7	<0.0001	9.83	0.09	<0.0002	0.00017	0.00062	<0.0006	0.091	<0.0002	0.00137	0.007	0.00600	0.002	

Notes:

1. All values are expressed in milligrams per litre (mg/L).
Data Summary prepared using data provided by Manitoba Water Stewardship



Manitoba Conservation Data Centre

Occurrence of Species by Ecoregion

[Return to Map](#)

Mid-Boreal Lowland

Animal Assemblage			
<i>Bat Colony</i>	GNR		SNR
<i>Snake Hibernaculum</i>	GNR		SNR
Invertebrate Animal			
<i>Strophitus undulatus</i>	G5		SNR
Terrestrial Community - Other Classification			
Boreal inland alkaline cliff sparse vegetation	GNR	Boreal Inland Alkaline Cliff SparseVegetation	S2
<i>Distichlis stricta-hordeum jubatum-puccinellia nuttalliana-plantago maritima saline herbaceous vegetation</i>	GNR	Alkali Grass-wild Barley-nuttall's Salt Meadow Grass-seaside Plantain SalineHerbaceous Vegetation	S2
<i>Inland lake cobble-gravel shore sparse vegetation</i>	GNR	Inland Lake Cobble-gravel Shore Sparse Vegetation	S3
<i>Thuja occidentalis-(picea mariana, abies balsamea)/alnus rugosa wetland forest</i>	GNR	Eastern White Cedar-(Black Spruce, Balsam Fir)/speckled Alder Wetland Forest	S2
Vascular Plant			
<i>Arethusa bulbosa</i>	G4	Arethusa	S2
<i>Botrychium multifidum</i>	G5	Leathery Grape-fern	S3
<i>Calopogon tuberosus</i>	G5	Swamp-pink	S2
<i>Carex communis</i>	G5	Fibrous-rooted Sedge	SNR
<i>Carex flava</i>	G5	Yellow Sedge	S2S3
<i>Carex garberi</i>	G5	Elk Sedge	S1?
<i>Carex hystericina</i>	G5	Porcupine Sedge	S3?
<i>Carex pedunculata</i>	G5	Stalked Sedge	S3?
<i>Carex projecta</i>	G5	Necklace Sedge	S2?
<i>Carex vulpinoidea</i>	G5	Fox Sedge	S3?
<i>Cypripedium arietinum</i>	G3	Ram's Head Lady's-slipper	S2S3
<i>Drosera anglica</i>	G5	Oblong-leaved Sundew	S3
<i>Drosera linearis</i>	G4	Slender-leaved Sundew	S2
<i>Dulichium arundinaceum</i>	G5	Three-way Sedge	S2
<i>Eleocharis engelmannii</i>	G4G5Q	Engelmann's Spike-rush	S1
<i>Eriophorum callitrix</i>	G5	Beautiful Cotton-grass	S2
<i>Galium aparine</i>	G5	Cleavers	SU
<i>Goodyera tessellata</i>	G5	Tesselated Rattlesnake Plantain	S2
<i>Gymnocarpium jessoense</i>	G5	Northern Oak Fern	S3S4
<i>Gymnocarpium robertianum</i>	G5	Limestone Oak Fern	S1
<i>Heteranthera dubia</i>	G5	Water Star-grass	S2
<i>Leucophysalis grandiflora</i>	G4?	Large White-flowered Ground-cherry	S3
<i>Liparis loeselii</i>	G5	Yellow Twayblade	S3S4

<i>Listera auriculata</i>	G3G4	Auricled Twayblade	S1
<i>Malaxis monophyllos</i>	G5	White Adder's-mouth	S2?
<i>Malaxis unifolia</i>	G5	Green Adder's-mouth	S2?
<i>Nymphaea odorata</i>	G5	Fragrant Water-lily	S2
<i>Onoclea sensibilis</i>	G5	Sensitive Fern	S3S4
<i>Parietaria pensylvanica</i>	G5	American Pellitory	S4
<i>Pellaea glabella</i> ssp. <i>occidentalis</i>	G5T4	Cliff-brake	S2
<i>Plantago maritima</i>	G5	Seaside Plantain	S2
<i>Platanthera lacera</i>	G5	Fringed Orchid	S2
<i>Platanthera orbiculata</i>	G5	Round-leaved Bog Orchid	S3
<i>Potamogeton strictifolius</i>	G5	Straightleaf Pondweed	S3
<i>Pyrola americana</i>	G5	Round-leaved Pyrola	S2
<i>Rhynchospora alba</i>	G5	White Beakrush	S3?
<i>Rhynchospora capillacea</i>	G4	Horned Beakrush	S2
<i>Taxus canadensis</i>	G5	Canada Yew	S3
<i>Thalictrum sparsiflorum</i>	G5	Few-flowered Meadow-rue	S2S3
<i>Vaccinium caespitosum</i>	G5	Dwarf Bilberry	S2
<i>Viola selkirkii</i>	G5?	Long-spurred Violet	S2
<i>Woodsia glabella</i>	G5	Smooth Woodsia	S2
Vertebrate Animal			
<i>Aechmophorus occidentalis</i>	G5	Western Grebe	S4B
<i>Ardea herodias</i>	G5	Great Blue Heron	S4S5B
<i>Aythya marila</i>	G5	Greater Scaup	S5B
<i>Charadrius melodus</i>	G3	Piping Plover	S1B
<i>Coregonus zenithicus</i>	G3	Shortjaw Cisco	S3
<i>Haliaeetus leucocephalus</i>	G5	Bald Eagle	S4S5B
<i>Ichthyomyzon castaneus</i>	G4	Chestnut Lamprey	S3S4
<i>Macrhybopsis storeriana</i>	G5	Silver Chub	S3
<i>Myotis lucifugus</i>	G5	Little Brown Myotis	S2N,S5B
<i>Nycticorax nycticorax</i>	G5	Black-crowned Night-heron	S3S4B
<i>Pelecanus erythrorhynchos</i>	G3	American White Pelican	S3S4B
<i>Phalacrocorax auritus</i>	G5	Double-crested Cormorant	S5B
<i>Rangifer tarandus caribou</i>	G5T4	Caribou	S4
<i>Sterna caspia</i>	G5	Caspian Tern	S3S4B
<i>Sterna forsteri</i>	G5	Forster's Tern	S4B
<i>Strix varia</i>	G5	Barred Owl	S3S4

[▲ Top of Page](#)

Shaun Moffatt

From: Friesen, Chris (CON) [Chris.Friesen@gov.mb.ca]
Sent: Monday, May 16, 2011 10:55 AM
To: 'fkarcha@kgsgroup.com'
Cc: Firlotte, Nicole (CON)
Subject: KGS-Peat Mine Development Expansion

Attachments: kgs_peat mine development.xls



kgs_peat mine
development.xls

Foster

Thank you for your information request. I completed a search of the Manitoba Conservation Data Centre's rare species database for your area of interest.

I am attaching an excel table summarizing these occurrences. The table includes scientific and common names, the global (GRank) and provincial (SRank) rankings for each species as well as MB Endangered Species Act, COSEWIC and SARA designations. Further information on these ranking systems can be found on our website at <http://www.gov.mb.ca/conservation/cdc/constranks.html> and these designations can be found at <http://web2.gov.mb.ca/laws/statutes/ccsm/e111e.php>, <http://www.cosewic.gc.ca/> and http://www.sararegistry.gc.ca/default_e.cfm. We do not normally provide shapefiles unless a data-sharing agreement has been signed.

The information provided in this letter is based on existing data known to the Manitoba Conservation Data Centre of the Wildlife and Ecosystem Protection Branch at the time of the request. These data are dependent on the research and observations of our scientists and reflects our current state of knowledge. An absence of data does not confirm the absence of any rare or endangered species. Many areas of the province have never been thoroughly surveyed, therefore, the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information should not be regarded as a final statement on the occurrence of any species of concern, nor should it substitute for on-site surveys for species or environmental assessments. Also, because our Biotics database is continually updated and because information requests are evaluated by type of action, any given response is only appropriate for its respective request. We would be very interested in receiving a copy of any survey results you may undertake of the area to update our database.

Please contact the Manitoba CDC for an update on this natural heritage information if more than six months passes before it is utilised.

Third party requests for products wholly or partially derived from our Biotics database must be approved by the Manitoba CDC before information is released. Once approved, the primary user will identify the Manitoba CDC as data contributors on any map or publication using data from our database, as the Manitoba Conservation Data Centre; Wildlife and Ecosystem Protection Branch, Manitoba Conservation.

If you have any questions or require further information contact Nicole Firlotte directly at (204) 945-6998; Nicole.Firlotte@gov.mb.ca. If you are conducting ground surveys within the area and encounter any rare species please provide us with this information to add to our data base.

Regards

Chris Friesen
Project Botanist
Manitoba Conservation Data Centre
204-945-7747

chris.friesen@gov.mb.ca
http://www.gov.mb.ca/conservation/cdc/

From:
Sent: Tuesday, May 10, 2011 9:45:10 AM
To: +WPG1212 - CDC_Wildlife (CON)
Subject: WWW Form Submission
Auto forwarded by a Rule

Below is the result of your feedback form. It was submitted by WWW Information Request ()
on Tuesday, May 10, 2011 at 09:45:10

DocumentID: Manitoba_Conservation

Project Title: Peat Mine Development Expansion

Date Needed: 2011/05/27

Name: Foster Karcha

Company/Organization: KGS Group

Address: 3rd floor - 865 Waverley St.

City: Winnipeg

Province/State: Manitoba

Phone: (204) 896-1209

Email: fkarcha@kgsgroup.com

Project Description: Environmental Act Proposal and associated work to obtain a required major alteration to existing Environmental Act License 2288R. The major alteration is a proposed expansion of the existing Beaver Point Bog development to include existing and pending Sunterra quarry leases (QL) in the vicinity of Bullhead, Little Deer Lake, Beaver Point, and Ramsay Point bogs.

Information will be used to identify Valued Ecosystem Components (VECs), the potential effects of the proposed project on VECs, and possible mitigation and follow-up measures needed.

Information Requested: KGS Group requires the species and reporting location of species of concern known or suspected to be in the area, within a radius of 3km of the proposed project areas.

Format Requested: A MS Word document, ESRI Shapefile, and map sent by email should suffice for our information needs.

Location: Bullhead Bog - 398 ha (QL's 1134, 1291, 2401 and 2402) located in Township 31, Range 5 E1 (note section have not been surveyed this far north so not available).

* Little Deer Lake Bog - 551 ha (QL's 1323, 1406, 2390 and 2391) located on parts of Sections 9 to 11 and 14, Township 30, Range 5 E1.

* Beaver Point Bog - 356 ha (West - QL's 2387 and 2388; East - QL's 2257, 2398 to 2400 and 2504 to 2506) located on parts of Sections 5 and 6, Township 29, Range 5 E1; and on parts of Sections 28, 29, 32 and 33, Township 28, Range 5 E1.

* Ramsay Point Bog - 375 ha (QL's 2409 and 2410) located on parts of Sections 27, 28, 33 and 34, Township 27, Range 4 E1.

SCIENTIFIC_NAME	COMMON_NAME	NAME_CATEGORY	S_RANK	#OCCURRENCES	MB ESA	SARA	COSEWIC
Ambystoma laterale	Blue-spotted Salamander	Vertebrate Animal	S3S4	1	none	none	none
Calopogon tuberosus	Swamp-pink	Vascular Plant	S2	3	none	none	none
Carex vulpinoidea	Fox Sedge	Vascular Plant	S3	1	none	none	none
Coregonus zenithicus	Shortjaw Cisco	Vertebrate Animal	S3	1	none	Threatened	Threatened
Drosera anglica	Oblong-leaved Sundew	Vascular Plant	S3	1	none	none	none
Heteranthera dubia	Water Star-grass	Vascular Plant	S2	1	none	none	none
Ichthyomyzon castaneus	Chestnut Lamprey	Vertebrate Animal	S3S4	1	none	Special Concern	none
Platanthera lacera	Fringed Orchid	Vascular Plant	S2	1	none	none	none
Platanthera orbiculata	Round-leaved Bog Orchid	Vascular Plant	S3	1	none	none	none
Pogonia ophioglossoides	Rose Pogonia	Vascular Plant	S1	1	none	none	none
Rhynchospora alba	White Beakrush	Vascular Plant	S3	1	none	none	none

From: Jason Sorenson [JSorenson@kgsgroup.com]
Sent: Monday, August 30, 2010 10:53 AM
To: 'Loni Andres'
Cc: 'Shaun Moffatt'
Subject: FW: Peat Bog Development

From: Schwartz, Todd [mailto:Todd.Schwartz@dfo-mpo.gc.ca]
Sent: Tuesday, January 05, 2010 5:33 PM
To: Jason Sorenson
Subject: RE: Peat Bog Development

Hi Jason,

I have quickly looked at our database, and there is essentially no fisheries information for these areas. Because of this all streams, lakes and wetlands that are potentially impacted should be assessed for habitat quality and fish use. This means that proper fisheries assessments by qualified fisheries consultants should be done. Assessments of seasonal (spawning) and year round fish use should be made.

Concerns with peat mining are the same as most mines and includes linear developments (roads, pipelines, cables or overhead lines), water management (increases or decreases in flow), physical disruption or destruction of existing habitat etc.... Constructing and sizing stream crossings for flows is often difficult in these bog watersheds. Controlling sediment from mining operations.

This is a project in an area where lots of background field data will have to be collected.

That's about all I can offer at this point. If you have specific questions I may be able to provide more specific answers.

Todd Schwartz

Telephone/ Téléphone: 204 983-4231
 Facsimile / Télécopieur: 204 984-2402
 Email / Courriel: Todd.Schwartz@dfo-mpo.gc.ca

Fish Habitat Biologist.	Biologiste, Habitat du poisson
Manitoba District.	District du Manitoba
Winnipeg Office.	Bureau de Winnipeg
Central and Arctic Region.	Région du Centre et de l'Arctique
Fisheries and Oceans Canada.	Pêches et Océans Canada
501 University Crescent.	501 University Crescent
Winnipeg, MB R3T 2N6.	Winnipeg (Manitoba) R3T 2N6
Government of Canada.	Gouvernement du Canada

For more information on Fish and Fish Habitat and DFO Reviews Visit our Website
Oceans and Fish Habitat http://www.dfo-mpo.gc.ca/oceans-habitat/index_e.asp

From: Jason Sorenson [mailto:JSorenson@kgsgroup.com]

Sent: January 5, 2010 4:39 PM
To: Schwartz, Todd
Cc: Shaun Moffatt
Subject: Peat Bog Development

Hi Todd

I was hoping you could give me some general DFO perspectives on a peat bog development proposed for the areas known as Hay Point and Ramsay Point. These locations, depicted on the attached figures, are located along the west side of Lake Winnipeg within the Hecla/Grindstone Provincial Park. Each of the proposed sites has what is believed to be significant peat sources. Each site also has bodies of water that drain through the site towards Lake Winnipeg.

Currently, our client is investigating the feasibility of developing these areas for peat, and is trying to determine the processes and issues that will be involved in attaining all environmental approvals associated with this. We have acknowledged that DFO, MWS and Manitoba Conservation will all need to be involved, and a full EA will be part of the process, along with a DFO application and approval process.

To hit the ground running and provide to the client a rough idea of what may be some of DFO's concerns, any input you can provide would be much appreciated.

Thanks in advance.

Jason

Jason Sorenson, EIT
Water Resources Engineer

KGS Group Consulting Engineers
3rd Floor - 865 Waverley St.
Winnipeg, MB, Canada
R3T 5P4

ph: (204) 896-1209 (ext. 253)
fax: (204) 896-0754

e-mail: jsorenson@ksgsgroup.com

 *Please consider the environment before printing this email*

2002 Manitoba Fish Stocking Final Report



Region	Waterbody	Date	Species	Size	Number	Description	
Interlake	Bell Pond	May 14	Rainbow Trout	18+ cm	1,000	0.5 km north of Hecla Village off Hwy 8	
	Chitek Lake	May 27	Walleye	Fry	4,000,000	35 km air miles north of Skownan	
	Clandeboye Pond	May 14	Rainbow Trout	18+ cm	1,000	First north gravel road west of Clandeboye on PR 515	
	Fort Whyte (Lake Cargill)	May 15	Rainbow Trout	18+ cm	1,500	At Fort Whyte Centre	
		May 15	Brook Trout	18+ cm	2,000		
	Gull Pond	May 14	Rainbow Trout	18+ cm	250	4 km north of Camp Morton on east side of PTH 8	
	Inland Lake	May 27	Walleye	Fry	4,000,000	About 35 km north of Skownan	
		Lake Manitoba	May 24	Walleye	Fry	21,551,000	Distributed to various locations around Lake Manitoba
	Lake St. Andrews	May 22	Walleye	Fry	17,600,000		
		May 22	Sauger	Eyed eggs	400,000		
		May 31	Walleye	Fry	250,000	12 km south of Jackhead Indian Reserve	
		Lake St. George	May 24	Walleye	Fry	500,000	1.5 km north of Fire Tower at Lake St. George
		Lake St. George's Pond	June 4	Brook Trout	18+ cm	250	1.5 km north of Fire Tower at Lake St. George
			June 4	Rainbow Trout	18+ cm	300	
		Lake St. Martin	May 22	Walleye	Fry	150,000	About 10 km east of the town of Fairford
			May 28	Walleye	Fry	1,000,000	
		Lake Winnipeg	May 28	Walleye	Fry	3,000,000	At town of Grand Rapids
			May 7	Lake Whitefish	fry	480,000	
	Limestone Pond	May 14	Rainbow Trout	18+ cm	375	10.7 km north of PR 233 on road into Grindstone Provincial Recreation Park	
	Mantago Lake	May 28	Walleye	Fry	250,000	2.4 Km west of the junction of PR 233 and PR 325; then north on municipal road to Mantagao Lake	
	Quartz Pond	May 14	Rainbow Trout	18+ cm	375	7.2 km north of PR 233 on road into Grindstone Provincial Recreation Park	
	Ranger Lakes	May 31	Walleye	Fry	100,000	Lat. 51° 21'N, Long. 96° 58'W	
	Saskatchewan River	May 13	Walleye	Green eggs	200,000	At Grand Rapids Fish Hatchery	
May 20		Walleye	Eyed eggs	1,000,000			
	May 30	Walleye	Fry	12,850,000			

Shaun Moffatt

From: Docking, Heather (CHT) [Heather.Docking@gov.mb.ca]
Sent: Friday, May 13, 2011 10:54 AM
To: 'Foster Karcha'
Cc: Dickson, Gary A (CHT); Smith, Brian (CHT)
Subject: RE: Historic resources inquires for Interlake area development

Hello Foster – I took a look at the areas mentioned below and there are no historical/heritage resources located within those regions.

If you have any further questions, please feel free to contact me.

Thank you.

Heather Docking

Heritage Resources Registrar
 Provincial Heritage Registry Services
 Historic Resources Branch
 MB Culture, Heritage and Tourism
 Main Floor, 213 Notre Dame Avenue
 Winnipeg MB R3B 1N3
Heather.Docking@gov.mb.ca
 Phone: (204) 945-7146
 Fax: (204) 948-2384

From: Foster Karcha [mailto:FKarcha@kgsgroup.com]
Sent: May-11-11 10:22 AM
To: Docking, Heather (CHT)
Subject: Historic resources inquires for Interlake area development

Ms. Heather Docking,

KGS Group, on behalf of Sunterra Horticulture (Canada) Inc, is preparing an Environmental Act Proposal for submission to Manitoba Conservation. In preparation of this document we require information regarding known or suspected historical/heritage resources of all types which may be impacted by project activities, which may include removal of peat, drainage of wetlands, construction of bog roads, and the use of heavy machinery. We request that locations of known or suspected resources to be provided in a spreadsheet format.

The location of the proposed development is available in the attached PDF document map, and as below:

- Bullhead Bog – 398 ha (QL's 1134, 1291, 2401 and 2402) located in Township 31, Range 5 E1 (note section have not been surveyed this far north so not available).
- Little Deer Lake Bog – 551 ha (QL's 1323, 1406, 2390 and 2391) located on parts of Sections 9 to 11 and 14, Township 30, Range 5 E1.
- Beaver Point Bog – 356 ha (West – QL's 2387 and 2388; East – QL's 2257, 2398 to 2400 and 2504 to 2506) located on parts of Sections 5 and 6, Township 29, Range 5 E1; and on parts of Sections 28, 29, 32 and 33, Township 28, Range 5 E1.
- Ramsay Point Bog – 375 ha (QL's 2409 and 2410) located on parts of Sections 27, 28, 33 and 34, Township 27, Range 4 E1.

Thank you for your efforts in obtaining this information.

Sincerely,

Foster Karcha
Environmental Scientist
KGS Group Inc.
865 Waverley St.
Winnipeg, MB
R3T 5P4
Ph: (204) 896-1209 ext.363
Email: fkarcha@ksgroup.com

No virus found in this message.

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Version: 10.0.1321 / Virus Database: 1500/3630 - Release Date: 05/11/11

APPENDIX E
PUBLIC CONSULTATION

**CONSULTATION CONTACT LIST
SUNTERRA PEAT MINE DEVELOPMENT**

Organization or Community Name	Contact Person
Beaver Creek Bible Camp	Mr. Eric Dueck
Beaver Creek Cottage Association	Mr. Rick Heuchert
Manitoba Conservation - Conservation Programs - Land Management and Planning	Mr. Lyle Campbell, Regional Lands Manager
Manitoba Conservation - Regional Services and Parks - Central Region	Mr. Jim Fisher, District Park Supervisor
Manitoba Trappers Association	Ms. Cherry White
Manitoba Trappers Association	Mr. Carl Monkman, Area Director
Matheson Island Community Council	Mr. Kevin Mowat, Deputy Mayor
Matheson Island Fur Council	Mr. John Mowat, President
Pebblestone Beach Cottagers	Mr. Ken Buechler
Peguis First Nation	Chief Glenn Hudson and council
Pine Dock Community Council	Ms. Jean Simundson
RM of Bifrost	Reeve Harold Foster
Village of Riverton	Mayor Colin Bjarnason

Kontzamanis Graumann Smith MacMillan Inc.

September 22nd, 2011

File No. 11-1996-01



Manitoba Conservation
P.O. Box 70
Gimli, Manitoba
R0C 2R0

ATTENTION: Mr. Jim Fisher

RE: Sunterra Horticulture (Canada) Inc.
Environment Act Proposal, Peatland Development

3rd Floor
865 Waverley Street
Winnipeg,
Manitoba
R3T 5P4
204.896.1209
fax: 204.896.0754
www.ksgroup.com

Dear Mr. Fisher:

KGS Group is submitting this letter on behalf of Sunterra Horticulture (Canada) Inc. (Sunterra) as part of an Environment Act Proposal (EAP) to obtain the required major alteration to Sunterra's existing Environmental Act Licence 2288R. The major alteration is for the proposed amendment of the existing peat mine development at the Beaver Point Bog to include Sunterra's existing and pending quarry leases at the Bullhead, Little Deer Lake and Ramsay Point Bogs as shown in Figure 1. The primary purpose of this amendment is to replace those portions of Sunterra's Beaver Point Bog that will be taken out of production and restored over the course of the next several years. Sunterra does not anticipate a material increase in the scope of its operations in the Interlake region. Instead, the alteration to Sunterra's existing Licence is being pursued to enable Sunterra to continue to operate in a manner that is consistent with its past practice.

Your organization has been identified as potentially having interest in the proposed project and as such, KGS Group is issuing this letter to provide a brief description of the project and potential environmental concerns that will be considered during the Environment Act Proposal process.

The Environmental Assessment process will be carried out based on project information provided by Sunterra and advice documents from Manitoba Conservation. Additional considerations will include environmental information acquired from literature and internet searches, publications by the peat industry and environmental organizations, contacts with federal and provincial government representatives, consultation with the public, and site investigations which have been conducted by the project team.

The Bullhead, Little Deer Lake and Ramsay Point Bogs proposed to be developed are located west of Hwy 234 and approximately 25 km north, 15 km north and 10 km southwest, respectively, of the existing Beaver Point Bog development (Figure 1). The spatial boundary of the environmental assessment will consist of the regional study area (128,208 ha) which includes the area within a 10 km radius of the quarry lease boundary and the project study area which covers a 3 km radius surrounding the quarry lease boundary (Figure 1).

The scope of the project will include planning, designing, developing, operating, maintaining and eventual decommissioning and restoration of the proposed peatland development at the three bog areas. As well, the project will include development of access roads, site drainage, on-site facilities and on-site stockpiling areas. Major project activities will include providing access, clearing vegetation and surface soils, stockpiling unprocessed peat, excavating and trenching, transporting and restoring and reclaiming harvested peatland.

The proposed expansion is estimated to extend the peak operation by approximately 30 years. Peat harvesting is planned to begin first at Little Deer Lake Bog in 2014 once all licensing and permitting requirements have been fulfilled. This would be followed by the expansion into the Bullhead Bog by approximately 2028 followed by Ramsay Point Bog by approximately 2033.

The assessment for the proposed development will include identification, assessment and mitigation of adverse environmental effects of the project, and evaluation of the significance of residual environmental effects. This will consist of both direct and indirect biophysical and socio-economic effects, including cumulative environmental effects. The need for the project, alternatives, to the project and requirements for a follow-up will be considered in the assessment.

Potential environmental concerns being considered in the Environmental Act Proposal include air quality, soil integrity and quality, surface water quality, wetland health, groundwater quality, aquatic and terrestrial vegetation (with special emphasis on species of conservation concern), wildlife (with special emphasis on species of conservation concern), fish and fish habitat, and social and economic conditions associated with the proposed development.

KGS Group would like to offer your organization the opportunity to provide any comments or concerns regarding the proposed development so that they can be addressed and incorporated into the EAP. We would appreciate any comments to be made available on or before October, 24, 2011 (30 day period) for inclusion in the draft EAP. Any comments received after that date would be included into the EAP submission to Manitoba Conservation, if received prior to submission. Manitoba Conservation will then post the EAP on the Public Registry for a 30-day public review period.

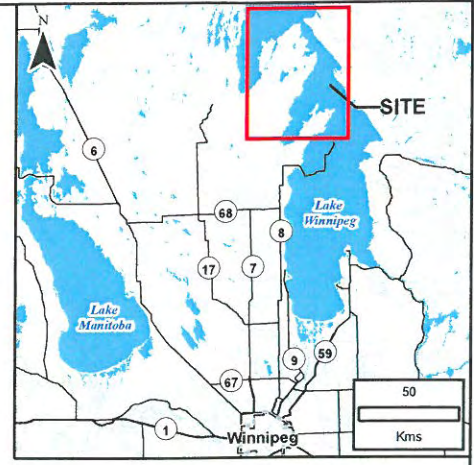
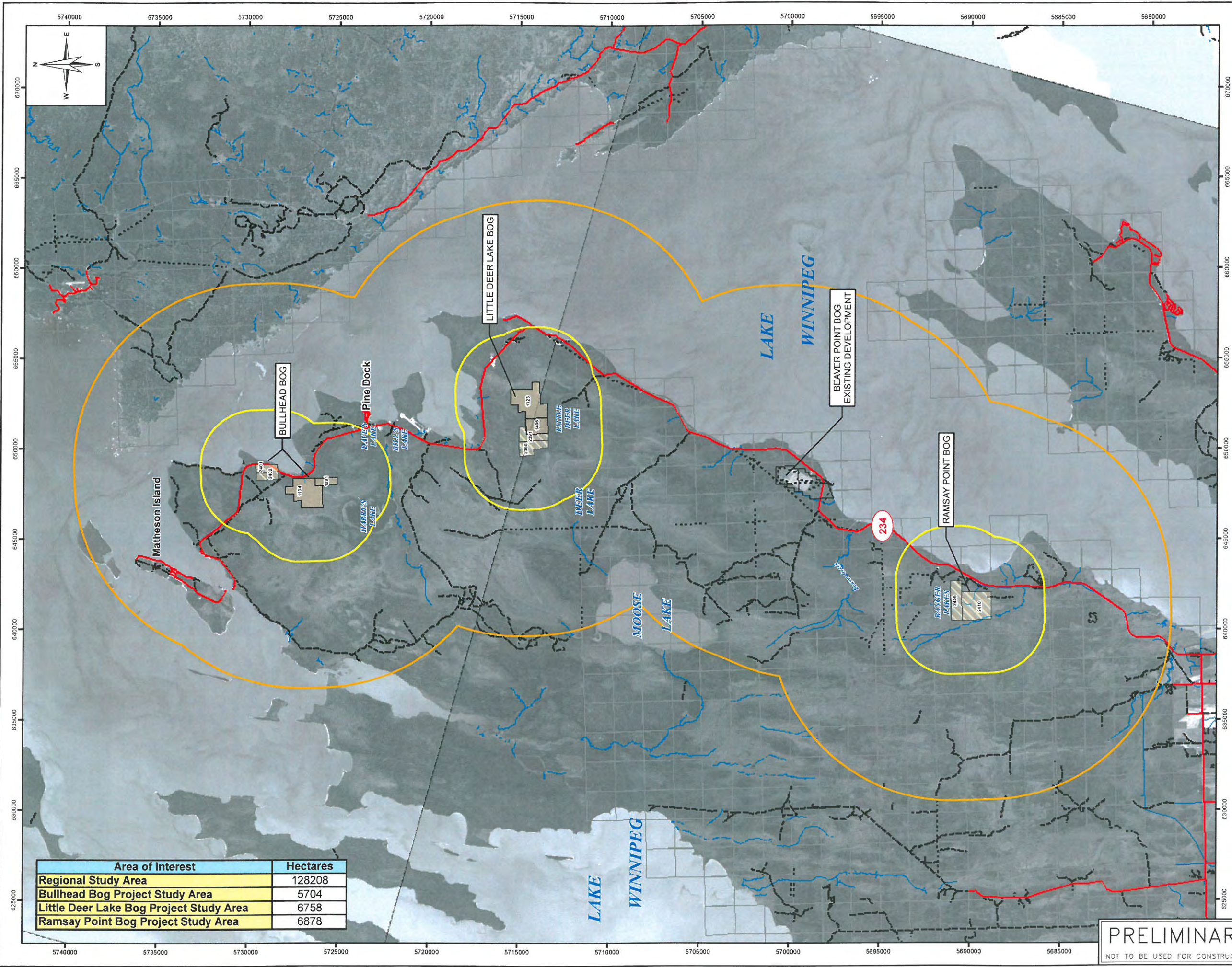
Should you have any questions, comments or concerns, please do not hesitate to contact the undersigned at (204) 896-1209, via e-mail at smoffatt@kgsgroup.com, or by mail.

Yours truly,



Shaun Moffatt, M.Sc.
Senior Environmental Scientist

SFM/jr
Attachment



- LEGEND:**
- REGIONAL STUDY AREA
 - PROJECT STUDY AREA
 - EXISTING DEVELOPMENT AREA
 - PENDING BY LEASE OWNER
 - PROPOSED DEVELOPMENT AREA
 - ROAD
 - TRAIL
 - CUTLINE
 - RIVER
 - LAKE

- NOTES:**
1. IMAGERY IS SPOT 5, SUPPLIED BY GEOBASE, AND DATED SEPTEMBER 3, 2006.
 2. ALL UNITS ARE METRIC AND IN METRES UNLESS OTHERWISE SPECIFIED. TRANSVERSE MERCATOR PROJECTION, NAD 1983, ZONE 14. ELEVATIONS ARE IN METRES ABOVE SEA LEVEL (MSL)

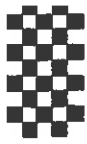
DRAFT



SCALE: 1:200,000 METRIC 11"x17"

Area of Interest	Hectares
Regional Study Area	128208
Bullhead Bog Project Study Area	5704
Little Deer Lake Bog Project Study Area	6758
Ramsay Point Bog Project Study Area	6878

A	11/09/21	ISSUED FOR INFORMATION	CRS
NO.	YY/MM/DD	DESCRIPTION	BY
REVISIONS / ISSUE			
KGS GROUP		SUNTERRA HORTICULTURE (CANADA) INC.	
CONSULTING ENGINEERS		PEAT MINE DEVELOPMENT	
SITE DEVELOPMENT AREA			
PRELIMINARY			
NOT TO BE USED FOR CONSTRUCTION			
SEPTEMBER 2011		FIGURE 01 A	



Village Of Riverton

P.O. Box 250, Riverton, MB R0G 2R0 • Phone (204) 378-2281 • Fax (204) 378-5616

October 20, 2011

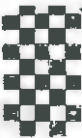
To Whom It May Concern,

The Village of Riverton is pleased to submit this letter of support for the proposed expansion of the peatland development operation north of Riverton by Sunterra Horticulture (Canada) Inc.

Sunterra has become a major employer in our community and surrounding area and the proposed expansion would provide the employment opportunities and continue to support the economy for the long term.

Yours truly,

Mayor Colin Bjarnason



PO Box 518, 11 Park Avenue
 Lac du Bonnet, MB
 R0E 1A0
 Phone: 204-345-9107
 Fax: 204-345-9170 e-mail: mta@mts.net



Fax

To: K.G. S GROUP Shaun Moffatt From: Shirley White
 Fax: 896-0754 Date: Sept 23 / 11
 Phone: _____ Pages: 2
 Re: PROSECT 11-1996-01 CC: _____

Urgent For Review Please Comment Please Reply Please Recycle

WOULD IT BE POSSIBLE TO SEND A COPY OF
 THE LETTER & MAP TO OUR ~~DE~~ DIRECTOR FOR
 THAT AREA -

MR. CARL MONKMAN
 PO Box 338
 PINE FALLS, MB
 R0E 1M0

(204) 276 2325
 LOON STRAITS

Thank you

November 7, 2011

Hand Delivered

Mr. Shaun Moffat
Senior Environmental Scientist
KGS Group
3rd Floor – 865 Waverly Street
Winnipeg, MB
R3T 5P4

Subject: Initial Comments and Concerns regarding the Proposed Sunterra Peat Development Expansion into Ramsey Point, Deer Lake and Bull Head Bogs

Reference: Sunterra Horticulture (Canada) Inc. Environmental Act Proposal Peatland Development letter from Shaun Moffat to the Pebblestone Beach Cottagers dated October 6, 2011.

Dear Shaun,

The Pebblestone Beach Cottagers are a group of new cottage lot owners in the Pebblestone Beach area, which is a new cottage development along Lake Winnipeg established by Manitoba Conservation. The Pebblestone Beach Cottage Development is approximately 1 km east of the proposed Ramsey Point Bog development and will be directly impacted by the socio-economic and cumulative effects of the proposed development.

The Pebblestone Beach Cottagers are strongly opposed to this Proposed Sunterra Peat Development Expansion and any other Peat Mine Development along PR 234 including the Sun Gro Ramsey Point Peat Mine and Berger Peat Moss Peat Mine developments.

The following outlines our initial comments and concerns on the environment effects and the environmental assessment methods:

Environmental Effects Comments and Concerns:

These comments and concerns are based on the high level information provide in the referenced letter. More specific comments and concerns will be provided once the Environmental Act Proposal (EAP) for the Sunterra expansion is available for review.

- **Traffic** – The proposed mine will further increase truck traffic on gravel PR 234 beyond the peak 50 truckloads or 100 truck trips from Sun Gro and Berger Peat mine developments. These increased truck traffic volumes will further impact on the local and regional community in terms of dust, noise, vibration and safety. It will also further degrade the condition of the gravel highway, which has a further impact on community safety. Although previous EAPs expressed support for road upgrades there is no clear commitment by either the peat mining community or Manitoba Infrastructure and Transportation (MIT) on what specifically will be done, when it will be done and who will do it. Most of the other proposed measures are already in place today and do not effectively mitigate the impacts caused by the existing Sunterra truck volumes of 30 truck trips per day. A more effective solution would be to black top the road, install a separate mine road and move peat mine access away from the local or regional communities.
- **Air Quality** - We are very concerned that the increased fugitive dust from the mine operation may affect the breathing of the local inhabitants. Several individuals in the local cottage areas have dust allergies and asthma. Increased fugitive dust can cause breathing difficulties and trigger asthma attacks. The air quality effect will be further increased by the existing, proposed and potential peat mines. A quantitative air quality analysis should be done to truly understand this potentially significant local and regional human health risk
- **Surface Water** – We are concerned that the run-off flow, suspended sediments and chemistry of surface water in the receiving water, particularly Lake Winnipeg, will be altered and believe no incremental increase is acceptable or should be tolerated - especially in view of the Save Lake Winnipeg Act and the government's objective to reduce Lake Winnipeg nutrients by 50%. We have a sick Lake and adding anything to the Lake would make it sicker. Mitigating measures should ensure that nothing is added to Lake Winnipeg.
- **Soil** – We are concerned about the extent of soil loss and the time it will take to restore the land to its original condition. This expansion represents another 1300 hectares or 16M cubic meters of soil lost to peat mining. When you add this to the Ramsey Point and Deer Lake peat mine developments, approximately 5500 hectares or 82M cubic meters of soil will be lost to peat mines. When you add the remaining proposed or potential peat mine developments a total of 15,000 hectares or 210M cubic meters of soil will be lost to peat mines. This is a significant portion of the Washow-Fisher Peninsula. When viewed from the air it will look like the surface of the moon.
- **Wildlife Habitat** – We are concerned with the extent of loss and disturbance of wildlife habitat. This habitat is home to some rare species such as the leopard frog, which will likely be lost. The extent of the loss and disturbance will also drive wildlife onto PR 234 and local communities increasing the likelihood of vehicular incidents and negative human interactions.
- **Vegetation** – We are concerned with the extent of loss and disturbance of vegetation. This habitat is home to some rare species such as the Manitoba

Orchid. Transplanting has proven not to be effective. Attempts have failed in the past. Other mitigating measures need to be identified.

- **Economic Conditions** - We believe that there is a decrease in economic conditions related recreation and residential property values. The value of the recreational and residential property in the area are sure to decrease when potential buyers learn that they are located within one (1) kilometer of a major peat mine facility with all it's negative environmental effects. The recreational and residential property value will drop further if the other proposed and potential peat mines in the regional area proceed. The peat mine will economically benefit from the increased revenue and profits. The provincial government will economically benefit from increased taxes, jobs, lease revenues and peat royalties. Why should the recreational and residential property owners suffer? This needs to be addressed.
- **Business Opportunities** – While there will be business opportunities for local contractors related to peat mine construction and operation, we also believe that there is going to be an equal and opposite effect on business opportunities for local contractors related to recreation and residential construction and operation. The construction and operation of the proposed peat mine will affect the expected quality of recreational life and make the area less desirable for recreational and residential users. This will likely result in fewer smaller cottages and eliminate any possibility for larger permanent residents, which in turn will reduce the construction and operation opportunities for local contractors. This situation will further worsen if the other proposed and potential peat mines in the regional area are allowed to proceed. This needs to be addressed.
- **Noise and Vibration** – The noise and vibration generated within the mine site will be slightly buffered by the buffer zone of trees between the mine and the cottage development areas and your typical noise muffling techniques. However, we are concerned that the noise and vibration generated by the transport trucks driving on PR 234 and entering/exiting the mine access will be significant. The majority of the noise generated by transport trucks driving on PR 234 is caused by the gravel hitting the undercarriage of the truck. The noise generated by the trucks entering the mine access is primarily caused by brake and engine noise when they stop and accelerate at the mine access. Mitigation measures such as black topping PR 234, erecting sound barriers, installing separate mine roads, moving mine access away from cottager, recreational and residential areas need to be considered.
- **Fires and Explosions** – We are concerned that the fire hazard and mitigation approach will address workplace hazards and not hazards that the mine imposes on the local communities. The Riverton fire department is 1 hour away – a peat fire at the mine site could quickly overtake our community within that time frame. The Pebblestone Beach community only has one road out of the development. Extreme diligence is therefore required to monitor and assess the risk of fire to the community. Who will be on-site to monitor for fires in the mining area on evenings and weekends when mining staff have gone home for the day/weekend? We also note that the proposed size of the mine is 1300 Hectares once in full operation. What mitigation will be in place

for fires that threaten an area greater than what regular fire suppression will be able to address? The impact of potential fires and explosions to the local communities like Pebblestone Beach needs to be included in any assessment. As well, the cumulative effect of the entire area under all the local mining proposals needs to be included in any assessments.

Environmental Assessment Methods Comments and Concerns:

These comments and concerns are provided based on our experience with the environmental assessment methods used in recent peat mine EAPs. More specific comments and concerns will be provided once the EAP for the Sunterra expansion is available for review.



- Not all key stakeholders within the proposed peat mine study area were advised, consulted nor involved in previous assessments. All key stakeholders should be identified, contacted and involved so their comments and concerns can be included and addressed.
- It is not clear how effectively the proposed mitigating measures will reduce the impact. The mitigating measures should be evaluated to ensure they adequately reduce the impact to an acceptable level by comparing the inherent adversity rating (before mitigating measures) with the residual (after mitigating measures) using the same rating scheme.
- Most of the environmental effects are stated in qualitative terms. The inherent and residual environmental effects should be quantified so it is not clear from the proposal what the true environmental impact is or how effective the proposed mitigation measures will be.
- The significance of the environmental effects is evaluated in terms of high-level global environmental long term impacts. The rating scheme used to evaluate the significance of the environmental effects should be adjusted to consider regional or local short and long term effects.
- The cumulative environmental impacts were not quantified and only included 37% (5,500 hectares of 15,000 hectares) of the existing, proposed and potential peat mines in the entire region along PR234. The environmental assessment should identify, quantify and address the cumulative environmental impact of all 15,000 hectares of existing, proposed and potential peat mines in the entire region along PR234.

We thank you for the opportunity to provide our comments and concerns and look forward to receiving the EAP so we can provide more detailed and specific comments and concerns.

We request that you keep us advised on the status on the EAP for the proposed development and specifically ask that you advise us when you submit your proposal to the Environmental License Branch.

Please contact Ken Buechler (204)-895-7766 if you have questions or require further clarification regarding these comments and concerns or potential mitigating measures.

Respectfully yours,

<p><i>BH for</i> Mercedes Alcock Pebblestone Beach Lot 12</p>	<p> Ken Buechler Pebblestone Beach Lot 5</p>
<p> Brock Huebner Pebblestone Beach Lot 6</p>	<p><i>BH for</i> Ralph Kamieniarz Pebblestone Beach Lot 11</p>
<p><i>BH for</i> Ajay Kaushal Pebblestone Beach Lot 4</p>	<p><i>BH for</i> Geraldine & Keith Selkirk Pebblestone Beach Lot 2 & 9</p>

MATHESON ISLAND COMMUNITY COUNCIL
General Delivery, Matheson Island, Manitoba R0C 2A0
PH (204) 276-2150 Fax (204) 276-2196

October 19th, 2011

KGS GROUP CONSULTING ENGINEERS
SHAUN MOFFAT, M.Sc.
3RD FLOOR- 865 WAVERLEY STREET
WINNIPEG, MANITOBA
R3T 5P4

Dear Shaun:

RE: Sunterra Horticulture (Canada) Inc.
Environment Act Proposal, Peatland Development

We are writing in regards to Sunterra Horticulture's proposal to extend their Development area. Our Councils concerns are as follows and we would like a reply to the questions:

- 1) PR234 - has the Department of Manitoba & Infrastructure made commitments to improving this road due to the increase in traffic that would occur?

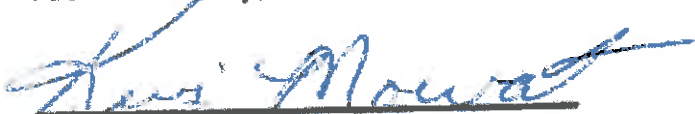
We feel that the increased traffic due to the Cottage Developments and existing Peat Moss Plant is already a major problem, which is only going to get worse if this new proposal goes through. There hasn't been any major upgrades done to 234 since the existing Peat Moss Plant opened.

- 2) Lake Winnipeg- what adverse effects will it have on Lake Winnipeg? Our main livelihood is Commercial Fishing, along with the many residents along Lake Winnipeg.
- 3) Trapping -Our Council is in support of Little Bullhead Trappers which is in this area.
- 4) Community Boundaries- has the Department of Aboriginal & Northern Affairs been notified of this proposal? Because it looks like the Study Areas come within our Community and the Community of Pine Dock, in which our Communities are under Aboriginal & Northern Affairs jurisdictions.

We acknowledge the job opportunities that would occur, but in the meantime we hesitate to support this project until we know what Environmental effects this will have on trapping, logging and fishing.

We are in the process of setting up a meeting with the Interlake MLA, Tom Nevakshonoff to voice our concerns of PR234 and these other issues mentioned above. You are welcome to attend this meeting to discuss this matter. We will inform you of the date and time once the date is set.

Yours Sincerely,

A handwritten signature in blue ink that reads "Kevin Mowat". The signature is written in a cursive style and is positioned above a horizontal line.

**Kevin Mowat/ Deputy Mayor
Matheson Island Community Council**

c.c. **MLA Tom Nevakshonoff
Aboriginal & Northern Affairs
Pine Dock Community Council**

October 25, 2011

File No. 11-1996-01



Matheson Island Community Council
General Delivery
Matheson Island, Manitoba
R0C 2A0

ATTENTION: Mr. Kevin Mowat, Deputy Mayor

RE: Sunterra Horticulture (Canada) Inc.
Environment Act Proposal, Peatland Development

3rd Floor
865 Waverley Street
Winnipeg,
Manitoba
R3T 5P4
204.896.1209
fax: 204.896.0754
www.ksgroup.com

Dear Mr. Mowat:

KGS Group, on behalf of Sunterra Horticulture (Canada) Inc. (Sunterra), would like to thank you for the comments received in your letter dated October 19, 2011 regarding the Environment Act Proposal (EAP) to obtain the required major alteration to Sunterra's existing Environmental Act Licence 2288R. As requested, in response to the concerns presented by the Matheson Island Community Council, KGS Group would like to offer the following comments and solutions:

- **PR 234** – We are not aware if Manitoba Infrastructure and Transportation (MIT) has made any commitments to improving this road in response to increased traffic. However, Sunterra has indicated they will contact MIT to discuss the concerns outlined and express their support that MIT upgrade PR 234 to accommodate increased traffic. Additionally, proposed measures to mitigate potential effects associated with the increased truck traffic include, using an approved dust suppressant such as water on roads and directing all traffic associated with the development to drive according to road conditions and adhere to the posted speed limits. Sunterra are in the process of installing signs near the existing facility that instructs drivers that they are approaching the facility, that they should slow down and observe speed limits and refrain from using engine brakes.
- **Lake Winnipeg** – The potential adverse effects of the proposed project on Lake Winnipeg and the associated commercial fishing will be mitigated. The drainage plan for the proposed development areas has been developed to follow the existing drainage which already generally drains east into Lake Winnipeg. The discharge from within the project area will pass through sedimentation ponds prior to its outlet to the surrounding environment. The sedimentation ponds will control the rate of discharge allowing for the settlement of suspended solids, and floating booms will collect any surface debris to ensure complete treatment of all project discharge. The volume of water discharged during the initial drainage is minimal in comparison to the drainage area within the watershed and the volume of the receiving water body. Therefore the receiving waterbodies and the fish will show no noticeable affect from the project drainage.

- **Trapping** – The Manitoba Trappers Association has been contacted, and they have indicated they have no concerns with the proposed project. We have been contacted by the Matheson Island Fur Council and will be following up with them to discuss their concerns. The areas proposed to be developed are generally very wet making them difficult to access for trapping purposes. The total area within the Quarry Leases proposed to be developed is approximately 1,324 ha, however only 619 ha of this is proposed to be harvested. The 619 ha area proposed to be developed is approximately 3% of the project study area, and only a fraction of a percent of the regional study area in which there is abundant undisturbed habitat as this is a relatively undeveloped region. Additionally, restoration will begin on areas of the development prior to all 619 ha being opened. Restoration of a site often results in a wider diversity of flora which will result in a wider variety of wildlife and habitats.
- **Community Boundaries** – Aboriginal Affairs and Northern Development Canada (AANDC) will be notified of the proposed development as part of the licensing review process. As discussed above the development will be restricted to the Quarry Lease boundaries with only 619 ha harvested. The project study area and regional study area boundaries that were shown in the figure previously provided are a tool used to define the area included in the environmental effects analysis.

Your October 19th letter concluded by acknowledging the job opportunities that would occur, but hesitating to support the project until the environmental effects the project will have on trapping, logging and fishing are known. The above bullets outlined the potential effects with trapping and fishing, as for logging, most of the areas proposed to be developed will likely not contain any merchantable timber. Sunterra will, however, be required to have Manitoba Conservation complete an assessment of merchantability and pay for the removal of any merchantable timber.

All of the concerns put forth by the Matheson Island Community Council along with the mitigative measures presented by KGS Group will be incorporated into the EAP to be submitted to Manitoba Conservation as part of the licensing process. Following submission of the EAP Manitoba Conservation will assess whether further consultation in Matheson Island will be necessary for the proposed project.

Once again KGS Group would like to thank the Matheson Island Community Council for their input. Should you have any additional questions, comments or concerns, please do not hesitate to contact the undersigned at (204) 896-1209, via e-mail at smoffatt@ksgsgroup.com, or by mail.

Yours truly,



Shaun Moffatt, M.Sc.
Senior Environmental Scientist

SFM/jr

**Matheson Island Fur Council
General Delivery, Matheson Island, Manitoba R0C 2A0
PH (204) 276-2394**

October 21st, 2011

**KGS GROUP CONSULTING ENGINEERS
SHAUN MOFFAT, M.Sc.
3RD FLOOR- 865 WAVERLEY STREET
WINNIPEG, MANITOBA
R3T 5P4**

Dear Shaun:

RE: Appeal Against Peat Moss Mines

We are appealing the applications from all parties applying for Peat Moss Removal for the following reasons:

- 1) The Matheson Island Fur Council has not been included in any consultation with any of the applicants for Peat Moss Mining.**
- 2) The Fur Council has already lost a large part of their RTL to Cottage Lots in the Little Deer Area, again with no consulting with our organization of Local Trappers or the Communities.**
- 3) Any harvesting of peat moss will destroy our livelihood and our way of life. The Matheson Island fur Council represents the trappers and is made up of Matheson Island residents, many of whom are Aboriginal or Metis.**

Therefore, we are not in support of any Peat Moss Plants within our trapping areas.

Sincerely,



**John Mowat
President**

**c.c. MLA Tom Nevakshonoff
Aboriginal & Northern Affairs**

October 24, 2011

Beaver Creek Cottagers' Association
463 Sly Drive
Winnipeg, MB
R2V 2H3

KGS Group
3rd Floor
865 Waverly Street
Winnipeg, MB
R3T 5P4

ATTENTION: Mr. Shaun Moffatt

SENT VIA FAX

RE: Sunterra Horticulture (Canada) Inc.
Environment Act Proposal, Peatland Development

Dear Sir:

KGS Group has advised the Beaver Creek Cottagers' Association (BCCA) that Sunterra plans to modify their existing licence at Beaver Point in order to expand their operation. While some of your "buzz words" contained in the last two sentences of the first paragraph are not specific we understand that your client wants to expand their operation at Beaver Point, along with their anticipated operation at the Deer Lake and the Bullhead bogs.

It is the position of the BCCA that, in our opinion, your proposal is contrary to Bill 46, The Save Lake Winnipeg Act. As with the Ramsay Point and Deer Lake licences, it is our understanding that the Province of Manitoba failed to comply with Section 35 of the Constitution Act, 1982.

Further, in our opinion, under Part 3 of The Save Lake Winnipeg Act, Section 128.1 (1) states: "© no application to enlarge the area covered by an existing quarry lease for peat or peat moss may be approved under subsection 139(2.1)."

Our organization has serious concerns regarding the loss of wetlands due to the harvesting of peat from the boreal forest. The peat acts as the lungs for our air and as the kidneys for Lake Winnipeg. These concerns have been addressed to the Minister of Conservation in our Section 127 appeals against the issuing of the licences at Ramsay Point and Deer Lake.

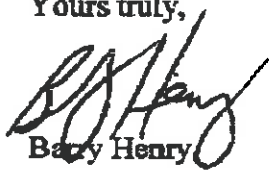
We wish to advise your client that we are prepared this time around in the event that they decide to advertise their intentions in the Interlake Spectator during the Christmas/New Year holiday season. We have taken out a subscription to said weekly paper and have alerted permanent residents at Beaver Creek, Little Deer, Pine Dock and Matheson Island to peruse the legal announcements in each addition for any announcements forthcoming regarding any application to apply for a peat harvesting licence. We also have several organizations this time around that are prepared to intervene. We also will be requesting a full Hearing into this serious matter once the Province receives the request from your client for a licence to develop under the Environment Act.

Lastly, while reading the Summary and Licence for the original licence, we note that Ms. Alice Chambers and Mr. C.Hugh Arklie raised concerns. Unfortunately Ms. Chambers has passed away but Mr. Arklie is still available to contribute concerns. Their previous concerns were not satisfactorily addressed by the proponent nor, in our opinion, covered off in the licence. This issue will have to be addressed this time around. Ms. Chambers was a respected member of the Manitoba ECO NETWORK, which is interested in this proposal by your client.

This then is our position to your notification. We reserve the right to further expand on these reasons as well as introduce other concerns at the appropriate time and place.

In the event our position is unclear we repeat we are opposed to any licence to harvest peat moss.

Yours truly,



Barry Henry

For Rick Heuchert, President

Cc: Heather McIntosh, Secretary, BCCA

John MacDonald, Vice President, BCCA

APPENDIX F
INTERACTION MATRIX

