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**Confirmed Tornado  
Gads Hill, Ontario  
May 22, 2004**

**Date- Local:** Saturday, May 22<sup>nd</sup>, 2004

**UTC:** Saturday, May 22<sup>nd</sup>, 2004

**Time- Local:** 18:30

**UTC:** 22:30

**Location:** Between Gads Hill and Seabringville along County Rd. 122 between 39 Line and 42 Line

**Region:** Huron-Perth

**Classification:** Confirmed Tornado

**Category:** A

**Casualties:** None

**Track Length:** 2.2km

**Width:** 30m

**Motion:** 235°

**Damage Estimate:** None available

**F-Scale Rating:** F2 (High End)

**Code:** AH

**Damage Survey:** Yes

**Spotter Reports:** Yes

**Other Documents:**

Storm Damage Survey done by Geoff Coulson, Randy Mawson, Paul Robertson, Marci Vanhoucke and Kelly Hobelman

CANWARN storm spotter and OPP reports of the tornado damage.

Photographic evidence of the damage.

Eyewitness report of the tornado.

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## **Tornado F-Scale Assessment**

Marci Vanhoucke

Tornado Data Production Assistant, Environment Canada

May 18<sup>th</sup>, 2005.

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**Classification:** Confirmed Tornado

**Date:** Saturday, May 22<sup>nd</sup>, 2004.

**Location:** Between Gads Hill and Seabringville, Stratford-Mitchell-Southern  
Perth

**Assessment:** F2

**F-Code:** AH/BS

**Explanation of Assessment:** An old two-story brick house lost its entire roof and part of the second story. As well, the barn and shed on the property were completely destroyed. The top quarter of each silo was also destroyed. Vehicles were moved 10-15m. Most of the property's trees were snapped, uprooted or debarked in some way.

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# Storm Damage Survey - 22 May 2004

## - Gads Hill/Seabringville Area -

### Investigators

Geoff Coulson, MSC Ontario Region  
Randy Mawson, MSC Ontario Region  
Paul Robertson, MSC Ontario Region  
Marci Vanhoucke, MSC Ontario Region  
Kelly Hobelman, MSC Ontario Region

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### Quick Facts

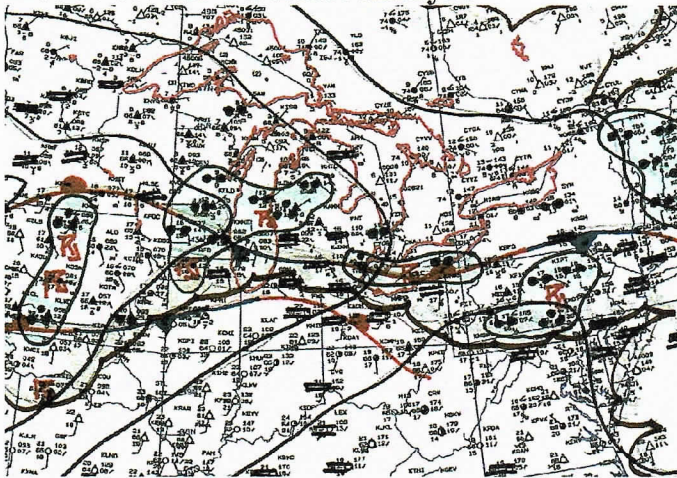
Severe Weather Type	Tornado
Location	Between Gads Hill and Seabringville along County Rd. 122 between 39 Line and 42 Line
Time	18:30 EDT
Lat / Long	43.24924, -80.58887(start) 43.25585, -80.57561(end)
Magnitude	F2 (High End)
Path Length	2.2km
Direction of Motion	235°
Max. Path Width	30m
Significant Damage	Brick house lost its roof and sustained damage to the back of the house and a wall. Barn, silo & large shed completely destroyed. Leaves and bark were ripped off trees and trunks were snapped off. Vehicles were moved 10-15m
Damage Estimate (Source)	?
Notes	Photo evidence of damage, witness accounts

## Overview

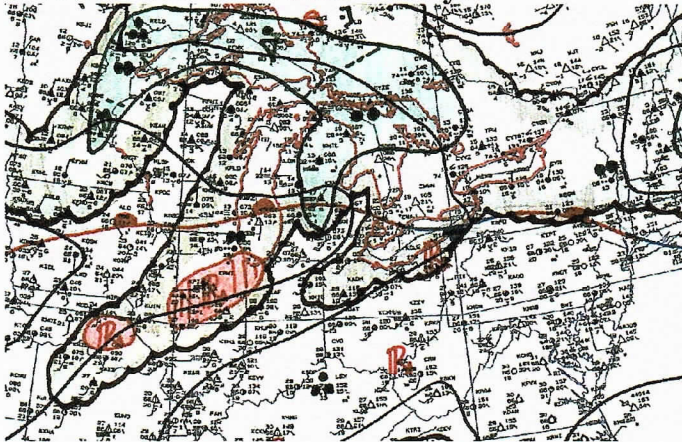
On May 22, 2004 near 6:30 EDT, a tornado touched down at #4485 along County Road 122 between 39 Line and 42 Line, between Gads Hill and Seabringville, Ontario. The tornado initially touched down just west of the intersection of 39 Line and Road 122 where a large tree branch was on the ground. The direction of motion was from  $235^{\circ}$  and the tornado had a length of about 2.2km and a width of 30m. Significant damage associated with this tornado was that a whole barn had been destroyed, a small workshop had been completely removed from its foundation, the roof had been removed completely from a 2-storey house, trees had been snapped off and bark was stripped from them. A 1/2 tonne pick up truck was also moved 10-15m from its original location, and debris was turned into large projectiles being thrown into the ground and surrounding buildings. Metal debris was found scattered towards the NE for more than 1km from the barn it came from. A portion of the triple-bricked wall was also removed from the 2-storey house. This was rated as a high-end F2 intensity tornado on the Fujita Scale (Fujita, 1981).

The following surface analysis maps show the motion of the surface fronts and lows which preceded the Gads Hill/Seabringville tornado rated as an F2. (Fujita, 1981)

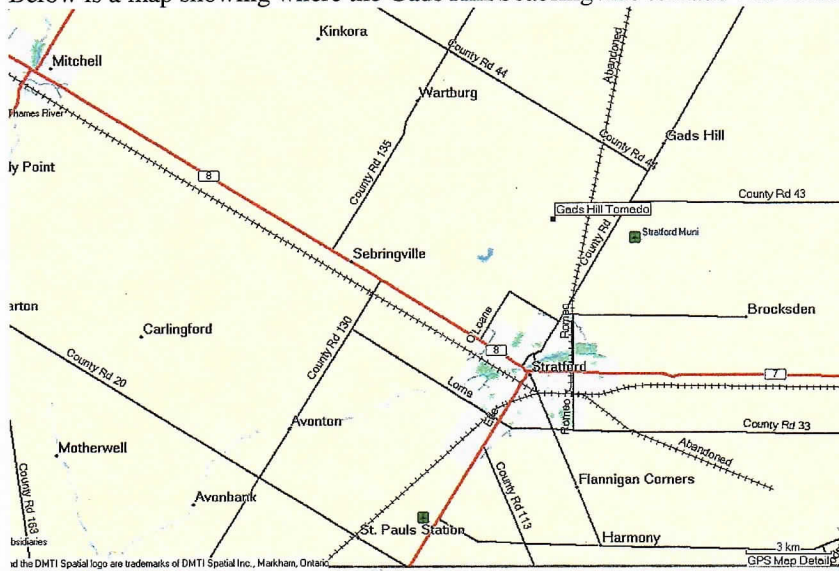
### **1200Z / 8:00EDT Surface Analysis**



### **1800Z / 14:00EDT Surface Analysis**



Below is a map showing where the Gads Hill/Seabringville tornado was located.



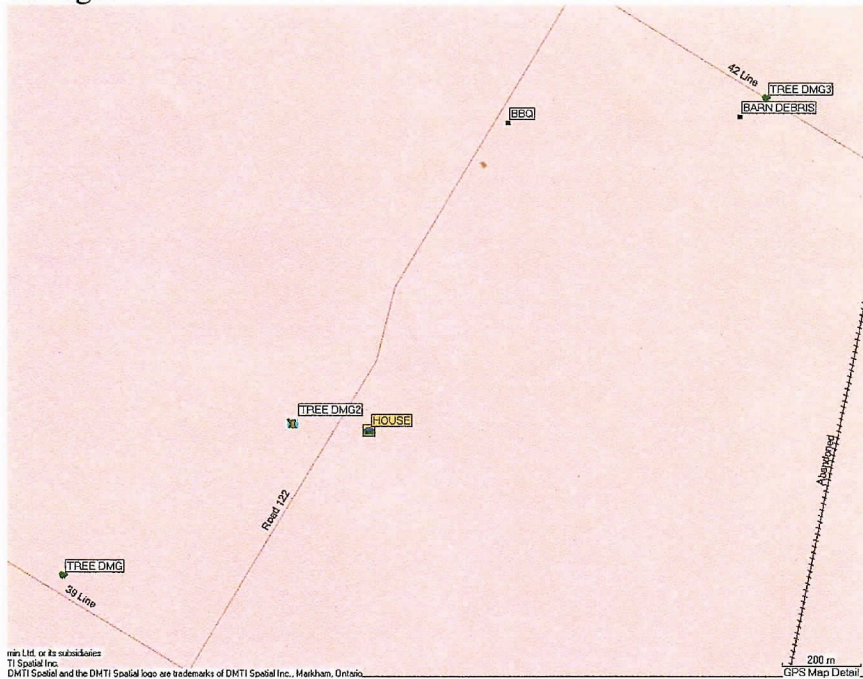
## Investigation

### **Gads Hill/Seabringville F2 Tornado**

On the evening of May 22nd 2004, a call from the London OPP COM Centre came in at 2243Z or 18:43EDT. At this time they reported that a 2-story brick house had been partially destroyed with the roof removed and the 2nd story partly gone. As firemen and officers reach the property, they could only go in by foot as there were trees and hydro lines down everywhere as well as debris from a fully destroyed barn and shed and part of the house.

When we arrived on scene the next day, it was obvious that the property had been severely damaged the previous night by a tornado. The 2-story house was mostly 2 bricks thick and in some places had walls that were 3 bricks thick. The back room which was completely gone had only been 1 brick thick. Many of the trees that lined the driveways were either snapped off or stripped of leaves and bark. The barn walls and roof were completely gone with only pieces found strewn across properties that lay to the NE. The only part of the barn still there was the thick cement foundation. In front of the barn had stood two identical silos. Both silos had their tops removed which were never identified in all the crumbled debris and one silo was significantly shorter (by about 3-5m) than the other. To the SE of the barn was a farm shed which had numerous punctures in it as a result of projectiles. The drive shed located directly behind the house was no longer there. A BBQ that had been in the shed was picked up and carried almost 1km away and dropped back down in a neighbour's field in near perfect condition. Also in front of the shed had been a 1/2 tonne truck which was picked up and moved 10-15m away. The truck had large dents in it and had the driver's window smashed in with debris now lying inside the truck. The house itself had significant damage done to the back. Many of the windows on the house were broken and the roof was ripped off. At the back, one of the rooms was gone on the ground floor (1-brick thick walls only). On the NE side of the

house, a large hole was made in the 2nd story wall. Here, the walls were at least 2 bricks thick and in some places 3 bricks thick. The damage was mainly concentrated on this property. The remainder of the damage was done to trees in the country-side between Gads Hill and Seabringville as there were no other houses or barns in the tornado path. The following is a map of the general area where the tornado went through. Clicking on certain areas will take you to a more detailed section including photos and text regarding damage.

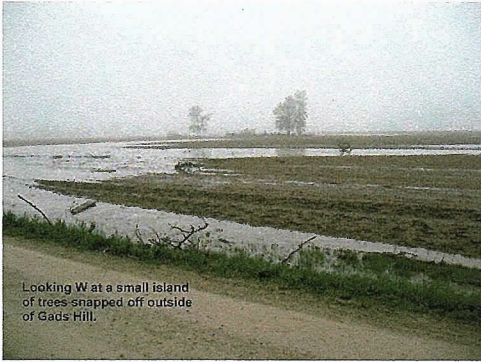


## Starting Point

This is the point where damage was first seen. It was a fairly large branch on the side of 39 Line just west of Road 122. No photo was taken.

## Tree Damage

The following is an island of trees just west of Road 122 approximately 600m north of 39 Line. You can see that there were at least 2 trees that were snapped or uprooted on the island.



Looking W at a small island of trees snapped off outside of Gads Hill.

### **Damage to the Property along County Road 122 between 39 Line and 42 Line**

The following is an aerial shot of the damaged property. This section can be navigated by scrolling through the images or by clicking on specific locations on this image will take you to a close up of photos taken on the ground along with descriptions.

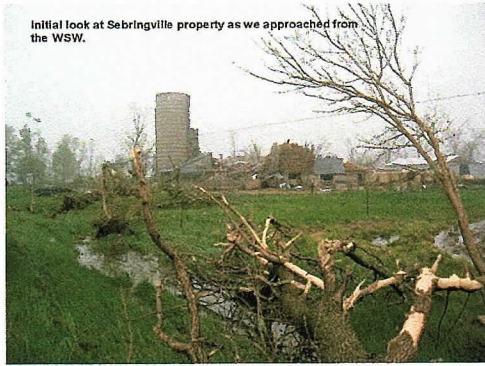


### **View from the Road**

This was the view from the side of the road where trees were uprooted and stripped of leaves. Power lines were down. The barn no longer existed and the silos were damaged. The shed in the background, although standing, was severely damaged as well.



Looking E at uprooted tree, powerlines toppled, destroyed barn, partially destroyed shed roof.

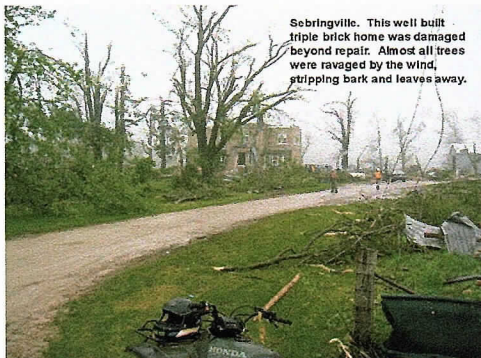


## End of Lane

The view from the end of the lane shows the silos which had the tops and parts of the cement layers removed. Debris from the barn was mangled and twisted about trees, thrown into surrounding barns and the house and crumpled and carried away for distances longer than 1km.



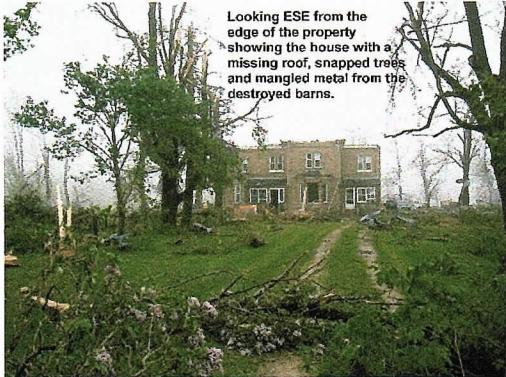
This photo shows the view of the house. To the left of the lane way many trees were stripped of leaves, branches and even bark. However, towards the end of the property at the road (to the left of the lane way) many trees still have branches remaining. A lilac bush was also left virtually untouched. The house in the distance is missing its roof, and power lines in the tornado's track were down.

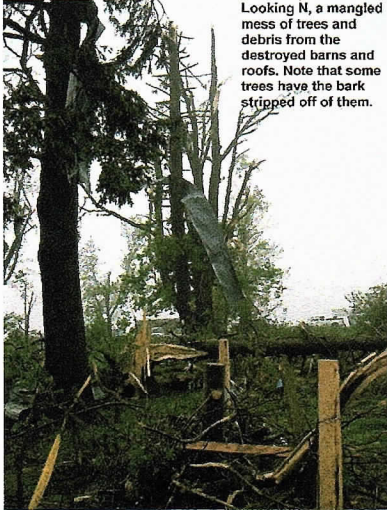




## The Front Yard

The following pictures show the destruction in the front yard and to the front of the house. Trees were destroyed along the pathway leading up to the house. Those trees that were still standing were without leaves. The house itself had the windows broken, the roof removed and the entrance severely damaged. There is a large gas tank that has also been moved from in front of the barn to the front lawn. In many of the pictures, it can be seen that the debris from the barn is strewn across the property.





Looking N, a mangled mess of trees and debris from the destroyed barns and roofs. Note that some trees have the bark stripped off of them.



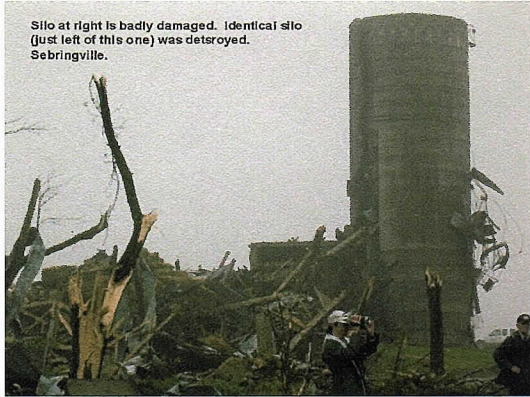
Facing north. Large beams lay west of the damaged home... carried some 10-15 metres. (Sebringville)

## Destroyed Barn and Silos

The barn was extensively damaged, with only the foundation remaining. Also, as seen in previous pictures, the silos were badly damaged as well.



Looking WSW, a large tree has all but large limbs removed with metal twisted around remaining limbs showing damage to the barn and silos in the background.



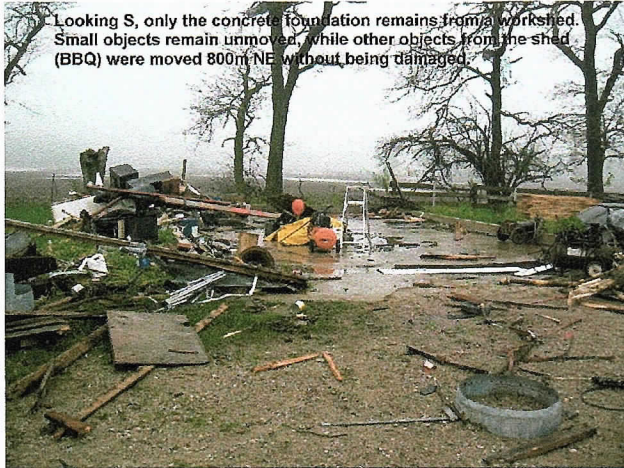
### Smaller Barn

From the view from the road and the aerial shot, it can be seen that the rear of the smaller barn had been damaged. There was a small silo at the back that was damaged. The damage shown in the following photograph is due to missiles created from debris from the barn, for the most part.



### Drive Shed

Behind the house used to stand a drive shed. The truck in these pictures was parked in front of the shed initially and came to rest about 10-15 m away. The truck itself was badly damaged. The contents of the shed were littered across the countryside, with a BBQ found in near perfect condition about 800m away.

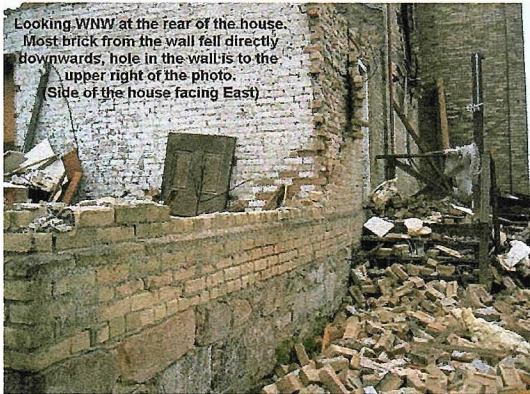


## House Rear

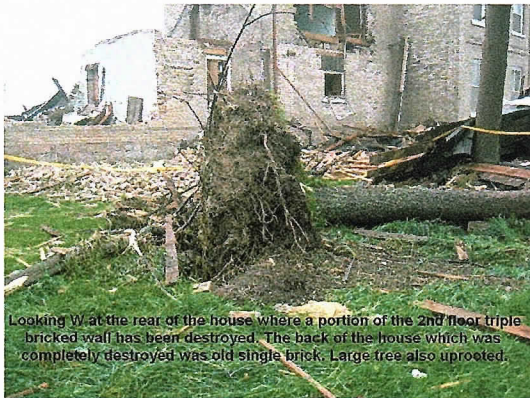
The rear (Northeast side) of the house received the worst damage. The windows are blown out. Large portions of brick wall have been torn away. One room at the back of the house has been completely destroyed. This was an addition and was single brick.



Looking NW at the rear of the house. The back section was only single brick and was easily destroyed, remainder of house was triple-bricked.



Looking WNW at the rear of the house. Most brick from the wall fell directly downwards, hole in the wall is to the upper right of the photo. (Side of the house facing East)

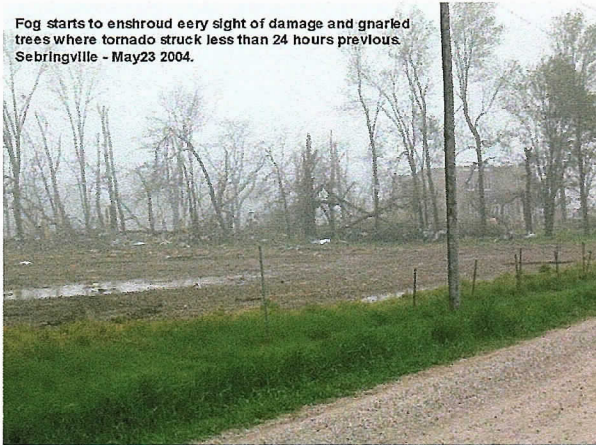


Looking W at the rear of the house where a portion of the 2nd floor triple bricked wall has been destroyed. The back of the house which was completely destroyed was old single brick. Large tree also uprooted.



## View of the House from the Northwest

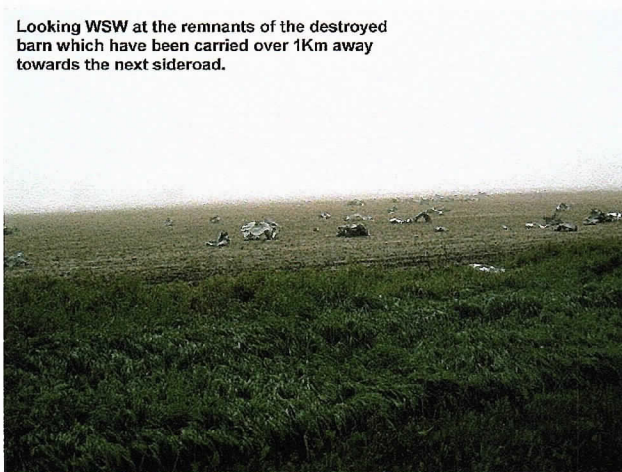
Fog starts to enshroud every sight of damage and gnarled trees where tornado struck less than 24 hours previous. Sebringville - May 23 2004.



## End of the Debris Path

This was the end of the debris track where parts of the destroyed barns and shed had been crumpled into balls and deposited over 1km away from its origin.

Looking WSW at the remnants of the destroyed barn which have been carried over 1km away towards the next sideroad.



Looking S, the last piece of debris from the Gads Hill barn. A snapped tree across the road from this photo was the furthest extent of damage.

## Conclusions

After analyzing the damage and witness accounts, it was concluded that a tornado with a high end F2 intensity had struck the region SW of Gads Hill, Ontario. The track began on 39 Line just west of Road 122 and moved NE from 235° and ended at 42 Line approximately 500m east of Road 122. This gave the tornado a track that was approximately 2.2km long and 30m in width. With this tornado the most significant damage was the roof removed from a house, a barn completely destroyed, a work shed completely removed from its foundation, a 1/2 tonne truck moved about 12m, large trees uprooted and twisted off and bark removed from them.

## Acknowledgements

London OPP for contacting the OSPC regarding reports of tornadic damage and for having us on the phone as they entered the property. The community surrounding Gads Hill and Seabringville for providing valuable information regarding this tornadic event. CANWARN spotters for calling in and reporting observations.

## Reference

Fujita, T.T. 1981. Tornadoes and Downbursts in the Context of Generalized Planetary Scales. *J. Atmos. Sci.* **38**: 1511-1534.

## Appendix A - Watch and Warning Chronology

- Severe Thunderstorm Watch issued for Stratford-Mitchell-Southern Perth County at 5:30 EDT
- Tornado Warning issued for Stratford-Mitchell-Southern Perth County at 6:06 EDT

## Appendix B - Abridged Entries from Severe Weather Log

SOURCE/WATCHER ID: CANWARN Spotter (# unknown)

EVENT TIME (UTC): 2206 UTC (1806 EDT)

EVENT LOCALE: Kirkton

DETAILED DESCRIPTION: Funnel cloud reported with rotation. Rotation on radar detected in the office.

SOURCE/WATCHER ID: OPP/CANWARN (Mark Rozigis)

EVENT TIME (UTC): 22:43 (18:43 EDT)

EVENT LOCALE: Seabringville/Gads Hill

DETAILED DESCRIPTION: Pos. Tornado touchdown. 2-story brick house with roof ripped off and part of 2nd story. Barn - 5 foot stone structure still there, metal barn on top is gone, gas tank tipped over, hydro poles down. trees down as fire dpt approached. (S. Perth on rd 122)

## Appendix C - Storm Summary

AWCN11 CWTO 232239

SPECIAL WEATHER SUMMARY FOR ALL OF SOUTHERN ONTARIO AND  
THE NATIONAL CAPITAL REGION

ISSUED BY ENVIRONMENT CANADA TORONTO

AT 6:40 PM EDT SUNDAY 23 MAY 2004.

AN ENVIRONMENT CANADA STORM INVESTIGATION TEAM CONFIRMED THIS  
AFTERNOON THAT A FUJITA SCALE TWO TORNADO OCCURRED IN MITCHELL..OR 20  
KM NORTHWEST OF STRATFORD..BETWEEN 6.30 PM AND 7.00 PM SATURDAY  
EVENING. A SECOND FUJITA SCALE TWO TORNADO..WAS CONFIRMED TO THE  
SOUTHWEST OF GADS HILL..OR 6 KM NORTH OF STRATFORD..AT 6.30 PM. A  
FUJITA SCALE TWO TORNADO CAN HAVE ASSOCIATED WINDS OF UP TO 251 KM/H.  
THE MITCHELL TORNADO TOUCHED DOWN CREATING A PATH OF DAMAGE  
APPROXIMATELY 5 KILOMETRES LONG AND ABOUT 20 METRES WIDE. DAMAGE  
FROM THIS TORNADO INCLUDED THE ROOF REMOVED FROM A BUNGALOW AND A  
PICKUP TRUCK MOVED 10 METRES. A BARN JUST WEST OF MITCHELL WAS  
SEVERELY DAMAGED AND TWO CALVES INSIDE THE BARN WERE INJURED AND HAD  
TO BE PUT DOWN. AT A DAIRY FARM JUST EAST OF MITCHELL A BARN WAS  
DESTROYED WITH JUST ONE WALL REMAINING AND ANOTHER BARN WAS DAMAGED  
BUT THE CATTLE INSIDE WERE UNHURT.

THE GADS HILL TORNADO TOUCHED DOWN CREATING A PATH OF DAMAGE  
APPROXIMATELY 1 KILOMETRE LONG AND ABOUT 30 METRES WIDE. THE MAIN  
DAMAGE WAS TO A BRICK HOUSE WHICH LOST ITS ROOF AND SUSTAINED DAMAGE  
TO THE BACK OF THE HOUSE. LEAVES WERE RIPPED OFF TREES AND TRUNKS  
WERE SNAPPED OFF. VEHICLES WERE MOVED 10 TO 15 METRES.

NO HUMAN INJURIES OR FATALIES WERE REPORTED WITH THESE TORNADOES.  
ENVIRONMENT CANADA WISHES TO ACKNOWLEDGE THE INVALUABLE INFORMATION  
PROVIDED TO THE ONTARIO STORM PREDICTION CENTRE BY THE ONTARIO  
PROVINCIAL POLICE AND THE CANWARM STORM SPOTTER NETWORK WHILE THIS  
EVENT WAS OCCURRING SATURDAY EVENING.

THIS IS THE SECOND CONFIRMED TORNADO EVENT IN ONTARIO FOR THE 2004  
SEASON. THE SUMMER SEVERE WEATHER SEASON IN ONTARIO RUNS FROM LATE  
APRIL TO EARLY OCTOBER EACH YEAR.

END/ALSEN/COULSON