

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	09:39
Reach ID (use map):	1	Weather (current):	Overcast,
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)                |
| <input type="checkbox"/> Standing Water  | <input checked="" type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input checked="" type="checkbox"/> No Defined Feature   | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

Upstream section traverses through a mix of manicured grass and a pasture like area. This area has no defined feature and flows appear surficial from recent rains. Substrate is mainly grass, with some deposited silt. Water flows north through a 0.5 m plastic corrugated pipe under Uppers Lane. The feature becomes wider with minor definition but continues to exhibit shallow, swale-like features. The swale is cropped through. The swale is in a flooded state due to recent and ongoing heavy rains with moderate flows of approximately 0.3 m/s. Average wetted width in the downstream section is 0.85 m and feature width is 0.95 on average. Water depths are approximately 10.5 cm and substrate is made up of mainly clay with lesser amounts of silt and sand.



## Unconstrained Headwater Drainage Feature Assessment Field Form

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**Photos:** 3206, 3205, 3220, 3224

This image shows a full page of blank graph paper. It features a uniform grid of thin, light gray lines on a white background. The grid consists of 12 columns and 12 rows of squares, providing a structured space for drawing or writing.

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	10:19
Reach ID (use map):	2	Weather (current):	Overcast
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input checked="" type="checkbox"/> No Defined Feature   | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

No defined banks observed at the upstream section of this reach. Minor flows observed throughout. Substrate is comprised of clay and silt with lesser amounts of sand. Could not measure upstream wetted and feature width due to lack of definition. Reach became more defined in the downstream section near the property line to the north due to surficial runoff from agricultural field. Flows increased in the downstream section (~0.10 m/s). Wetted width is 0.5 m wide and feature width is 0.75 m wide.



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**Photos:** 3231, 3234, 3235

A full-page view of a blank sheet of graph paper. The grid consists of thin, light gray horizontal and vertical lines forming a uniform square pattern across the entire page. There are no margins, text, or other markings present.

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	10:20
Reach ID (use map):	3	Weather (current):	Overcast,
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input checked="" type="checkbox"/> No Defined Feature   | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

No defined feature found in the upstream section. Minor surficial flows (~ 0.08 m/s) through a planted agricultural field. Water depths ranged from 0.05 to 0.08 m. Substrate is comprised mainly of clay, with lesser amounts of silt and sand. Feature becomes a poorly defined swale downstream, in which the landowner has attempted to plant. Feature is experiencing erosion due to increased water velocity and becomes more defined. Average wetted width in the downstream section is 1.0 m and feature width is approximately 1.15 m. Water depth is approximately 0.15 m. Substrate is comprised of mainly clay, sand and silt.

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**Photos:** 3226, 3232, 3238, 3242

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	11:04
Reach ID (use map):	4	Weather (current):	Overcast,
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

The survey started at the upstream section near an active farm and presumed pasture. It appears to originate in a large, pooled area of standing water due to runoff. No defined feature located. Very minimal flows observed in this area. Traversing northwest, the feature exhibits swale-like characteristics. Average wetted width ranges from 0.075 m to 0.85 m and the feature width ranges from 0.08 m to 1.0 m. Water depth ranges from 0.05 to 0.07 m and water velocity is estimated at 0.05 m/s. Substrate is mainly clay and silt with some patches of sand, gravel and cobble deposited on the surface of the underlying clay.



## Unconstrained Headwater Drainage Feature Assessment Field Form

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**Photos:** 3251-3271

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	11:30
Reach ID (use map):	5	Weather (current):	Overcast
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

Minor definition of swale through field. The upstream wetted width is approximately 0.5 m wide and the feature width is approximately 0.6 m. Minimal flows. Moving downstream, the feature widens to approximately 0.6 m wetted width and 0.7 feature width. Flows were estimated at 0.04 m/s throughout this feature. Substrate is mostly silt and clay with sparse areas of cobble. The entire swale-like feature traverses through an active agricultural field that the farmer has planted with winter wheat.

**Photos:** 3272-3280

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	11:42
Reach ID (use map):	6	Weather (current):	Overcast,
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

In the upstream section of this swale, wetted width ranges from 1.0 m to 1.2 m and feature width ranges from 1.0 m to 1.5 m. Average water depth is 0.13 m and water velocity was estimated at 0.10 m/s. Little definition throughout this feature. Substrate in this feature is comprised mainly of clay with lesser amounts of silt with sparse pockets of cobble. Similar wetted width and feature width consistent between the upstream section and downstream section.

**Photos:** 3282, 3285, 3289

A full-page view of a blank sheet of graph paper. The grid consists of thin, light gray horizontal and vertical lines forming a uniform square pattern across the entire page. There are no margins, text, or other markings present.

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	13:49
Reach ID (use map):	7	Weather (current):	Overcast,
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m                                      | 1.5m-10m                                     | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                | <input type="checkbox"/> None                | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                | <input type="checkbox"/> Lawn                | <input type="checkbox"/> Lawn                    |
| <input type="checkbox"/> Cropped Land        | <input type="checkbox"/> Cropped Land        | <input checked="" type="checkbox"/> Cropped Land |
| <input checked="" type="checkbox"/> Meadow   | <input checked="" type="checkbox"/> Meadow   | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket | <input type="checkbox"/> Scrubland / Thicket | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest              | <input type="checkbox"/> Forest              | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

Feature originates in lands upstream of Thorold Townline Road but the survey started at the road. Minimal flows (0.06 m/s) through a 0.5 m plastic corrugated pipe under Thorold Townline Road. This section flows through a small meadow before traversing through a planted agricultural field. Upstream wetted width ranges from 0.75 m and 0.85 m and feature width ranges from 0.75 m to 0.95 m. The downstream section widens slightly with feature widths ranging from 0.95 m to 1.1 m. Throughout, substrate is comprised mainly of clay and silt with sparse sand and small amounts of cobble.



## Unconstrained Headwater Drainage Feature Assessment Field Form

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**Photos:** 3384, 3386, 3380

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	12:55
Reach ID (use map):	8	Weather (current):	Overcast
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

The survey started at Thorold Townline Road at a 0.5 m corrugated steel pipe. The upstream section exhibits a swale-like appearance, with very minimal definition, in which the farmer has planted winter wheat. Wetted and feature width ranges from 0.6 m to 0.7 m. Water depth ranges from 0.08 m to 0.10 m and velocities are estimated at 0.06 m/s. This feature gains minimal definition as it drains into the main channel to the southeast.



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**Photos:** 3337, 3339, 3347, 3353

This image shows a full page of blank graph paper. It features a uniform grid of thin, light gray lines forming small squares across the entire surface. There are no margins, text, or other markings present.

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	13:12
Reach ID (use map):	9	Weather (current):	Overcast,
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input checked="" type="checkbox"/> No Defined Feature   | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

The upstream section of this feature originates as a ponded area from recent rains. It outflows through a very ill-defined swale feature in a planted agricultural field where wetted width is approximately 0.20 m wide. Minimal velocities observed at the time of the survey. Moving downstream (southeast), the swale gains minimal definition prior to the confluence with the main channel. In the downstream section, wetted width ranges from 0.65 to 0.75 and feature width ranges from 0.75 m to 0.85 m. Throughout, substrate is comprised of silt and clay.

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**Photos:** 3355, 3358, 3363

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	12:26
Reach ID (use map):	10	Weather (current):	Overcast,
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

The survey started at Thorold Townline Road and continued northeast to the main channel. Flow into the subject lands is conveyed through a 0.6 m corrugated plastic culvert. The upstream section is considered a swale that has been cropped through. Minimal flow velocities of approximately 0.10 m/s. Wetted width ranges from 0.85 m to 1.10 m and the feature width ranges from 0.85 m to 1.2 m. Water depth ranges from 0.05 m to 0.11 m. The widest section of this feature is located near the confluence with the main channel which is flooded. Substrate is comprised mainly of silt and clay.



## Unconstrained Headwater Drainage Feature Assessment Field Form

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**Photos:** 3307, 3309, 3313, 3321

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	12:47
Reach ID (use map):	11	Weather (current):	Overcast,
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Defined Natural Channel  | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m                                      | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input type="checkbox"/> Cropped Land        | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow              | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input checked="" type="checkbox"/> Forest   | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

Flow is generated on lands to the west of Thorold Townline Road. The upstream section of the survey starts in a hardwood woodlot at Thorold Townline Road. The feature in the upstream section is approximately 0.53 m wide (wetted width) with a feature width of 1.75 m. Water depths ranged from 0.05 to 0.7 m with water velocities estimated at 0.07 m/s. Moving downstream, the feature is an unvegetated swale that has been cropped through with an average wetted width of 1.0 m. Substrate is comprised of silt and clay.



## Unconstrained Headwater Drainage Feature Assessment Field Form

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**Photos:** 3335, 3332, 3326

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	13:44
Reach ID (use map):	12	Weather (current):	Overcast
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input checked="" type="checkbox"/> Wetland |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m                                      | 1.5m-10m                                     | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                | <input type="checkbox"/> None                | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                | <input type="checkbox"/> Lawn                | <input type="checkbox"/> Lawn                    |
| <input type="checkbox"/> Cropped Land        | <input type="checkbox"/> Cropped Land        | <input checked="" type="checkbox"/> Cropped Land |
| <input checked="" type="checkbox"/> Meadow   | <input checked="" type="checkbox"/> Meadow   | <input checked="" type="checkbox"/> Meadow       |
| <input type="checkbox"/> Scrubland / Thicket | <input type="checkbox"/> Scrubland / Thicket | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest              | <input type="checkbox"/> Forest              | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature originates from a wetland feature in the southwest area of the subject lands. The riparian vegetation is scrubland/meadow species and the swale has moderate definition. Average wetted width is approximately 0.5 m with water depth ranging from 0.05 m to 0.08 m. Moving downstream (north), the feature becomes a cropped swale with no definition with wetted widths ranging from 0.75 m to 0.85 m and depths ranging from 0.05 m to 0.07 m. Substrate is comprised mainly of silt and clay.

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**Photos:** 3371, 3373, 3376

Project Number:	160961352	Date:	April 4, 2017
Staff Name:	Uskov, Faiella	Time:	14:22
Reach ID (use map):	13	Weather (current):	Overcast,
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |   |
|--|---|
| <input type="checkbox"/> No Surface Water (dry)  | <input checked="" type="checkbox"/> Surface Flow Minimal (<0.5 l/s) |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s)        |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |   |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

The survey started at Uppers Lane where water flows through a 0.5 m plastic corrugated pipe into the feature. The entire reach is considered a cropped swale with minimal definition. The feature is 0.9 m wide and water depth is 0.07 m. Velocity is estimated at 0.05 m/s. Substrate is clay and silt with some sparse gravel overlying the clay surface.



## Unconstrained Headwater Drainage Feature Assessment Field Form

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**Photos:** 3388, 3390, 3391

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	10:25
Reach ID (use map):	14	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature is considered an agricultural swale with no defined banks that conveys water during spring runoff. The feature is 0.15 m wide and has been recently tilled and will most likely be planted. The substrate is comprised of silt and clay. One small section of standing water associated with the main channel was observed during the survey.

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**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	10:51
Reach ID (use map):	15	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

## Flow Condition

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

## Feature Type

- |   |   |
|---|---|
| <input type="checkbox"/> Defined Natural Channel  | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized  | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)  | <input type="checkbox"/> Roadside Ditch     |
| <input checked="" type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

## Riparian Classification

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature is considered an agricultural swale with no defined banks that conveys water during spring runoff. The swale has been tilled and has previously been planted with soybeans. Substrate is silt and clay.

**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

This image shows a full page of blank graph paper. It features a uniform grid of thin, light gray lines forming small squares across the entire surface. There are no margins, text, or other markings present.

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	11:00
Reach ID (use map):	16	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature is considered an agricultural swale with no defined banks that conveys water during spring runoff. The swale has been tilled and has previously been planted with soy beans. Substrate is silt and clay.

**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

[illegible]

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	11:00
Reach ID (use map):	17	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

## Flow Condition

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

## Feature Type

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

## Riparian Classification

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature is considered an agricultural swale with no defined banks that conveys water during spring runoff. The swale has been tilled and has previously been planted with soybeans near Beechwood Road. Substrate is silt and clay.

**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

This image shows a full page of blank graph paper. It features a uniform grid of thin, light gray lines on a white background. The grid consists of 10 columns and 10 rows of squares, creating a total of 100 small square units. There are no margins, text, or other markings on the page.

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	11:00
Reach ID (use map):	18	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature is considered an agricultural swale with no defined banks that conveys water during spring runoff. The swale has been tilled and has previously been planted with soybeans. Substrate is silt and clay. A 0.4 m plastic corrugated culvert is located at Uppers Lane.

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**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	11:47
Reach ID (use map):	19	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature is considered an agricultural swale with no defined banks that conveys water during spring runoff. The swale has been tilled and has previously been planted with soybeans. Substrate is silt and clay.

**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

This image shows a full page of blank graph paper. It features a uniform grid of thin, light gray lines forming small squares across the entire surface. There are no margins, text, or other markings present.

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	12:25
Reach ID (use map):	20	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature is considered an agricultural swale with no defined banks that conveys water during spring runoff. The swale has been tilled and has previously been planted with soybeans. Substrate is silt and clay.

**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

This image shows a full page of blank graph paper. It features a uniform grid of thin, light gray lines forming small squares across the entire surface. There are no margins, text, or other markings present.

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	12:45
Reach ID (use map):	21	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature is considered an agricultural swale with no defined banks that conveys water during spring runoff. The swale has been tilled and has previously been planted with soybeans. Substrate is silt and clay.

**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

[illegible]

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	12:42
Reach ID (use map):	22	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m  | 1.5m-10m   | 10m-30m  |
|--|--|--|
| <input type="checkbox"/> None                    | <input type="checkbox"/> None                    | <input type="checkbox"/> None                    |
| <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    | <input type="checkbox"/> Lawn                    |
| <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land | <input checked="" type="checkbox"/> Cropped Land |
| <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  | <input type="checkbox"/> Meadow                  |
| <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     | <input type="checkbox"/> Scrubland / Thicket     |
| <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  | <input type="checkbox"/> Forest                  |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature is considered an agricultural swale with no defined banks that conveys water during spring runoff. The swale has been tilled and has previously been planted with soybeans. Substrate is silt and clay.

**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

[illegible]

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	13:04
Reach ID (use map):	23	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m                                      | 1.5m-10m  | 10m-30m   |
|--|---|---|
| <input type="checkbox"/> None                | <input type="checkbox"/> None                           | <input type="checkbox"/> None                           |
| <input type="checkbox"/> Lawn                | <input type="checkbox"/> Lawn                           | <input type="checkbox"/> Lawn                           |
| <input type="checkbox"/> Cropped Land        | <input type="checkbox"/> Cropped Land                   | <input type="checkbox"/> Cropped Land                   |
| <input checked="" type="checkbox"/> Meadow   | <input checked="" type="checkbox"/> Meadow              | <input checked="" type="checkbox"/> Meadow              |
| <input type="checkbox"/> Scrubland / Thicket | <input checked="" type="checkbox"/> Scrubland / Thicket | <input checked="" type="checkbox"/> Scrubland / Thicket |
| <input type="checkbox"/> Forest              | <input type="checkbox"/> Forest                         | <input type="checkbox"/> Forest                         |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

Feature is outside of project lands but conveys flow to Feature 11. Feature is dry. A 0.5 m corrugated steel pipe is located at the road and conveys feature drainage as well as roadside ditch drainage. The east side culvert opening is dry and the west side of the culvert has a very small, shallow pool of standing water.

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**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	13:20
Reach ID (use map):	24	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input type="checkbox"/> Wetland            |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m                                      | 1.5m-10m                                     | 10m-30m                                      |
|--|--|--|
| <input type="checkbox"/> None                | <input type="checkbox"/> None                | <input type="checkbox"/> None                |
| <input type="checkbox"/> Lawn                | <input type="checkbox"/> Lawn                | <input type="checkbox"/> Lawn                |
| <input type="checkbox"/> Cropped Land        | <input type="checkbox"/> Cropped Land        | <input type="checkbox"/> Cropped Land        |
| <input checked="" type="checkbox"/> Meadow   | <input checked="" type="checkbox"/> Meadow   | <input checked="" type="checkbox"/> Meadow   |
| <input type="checkbox"/> Scrubland / Thicket | <input type="checkbox"/> Scrubland / Thicket | <input type="checkbox"/> Scrubland / Thicket |
| <input type="checkbox"/> Forest              | <input type="checkbox"/> Forest              | <input type="checkbox"/> Forest              |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature was surveyed at the southwest corner of the property. It is considered a meadow swale that was dry during the survey. No defined banks were observed. Grassed throughout feature. The roadside ditch was dry during the survey.

**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

A full-page view of a blank sheet of graph paper. The grid consists of thin, light gray horizontal and vertical lines forming a uniform square pattern across the entire page. There are no margins, text, or other markings present.

Project Number:	160961352	Date:	April 9, 2021
Staff Name:	Burnett, Faiella	Time:	13:42
Reach ID (use map):	25	Weather (current):	Sun, cloud
(Sub)Watershed:		Rainfall (72 hours prior):	
Location:	Uppers Quarry (Thorold, ON)		

**Flow Condition**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> No Surface Water (dry)                                       | <input type="checkbox"/> Surface Flow Minimal (<0.5 l/s)     |
| <input type="checkbox"/> Standing Water  | <input type="checkbox"/> Surface Flow Substantial (>0.5 l/s) |
| <input type="checkbox"/> Interstitial Flow (subsurface water in the voids of a coarse substrate) |  |

**Feature Type**

- |  |   |
|--|---|
| <input type="checkbox"/> Defined Natural Channel   | <input checked="" type="checkbox"/> Wetland |
| <input type="checkbox"/> Channelized   | <input type="checkbox"/> Online pond outlet |
| <input type="checkbox"/> Multi-Thread (>1 Channel)   | <input type="checkbox"/> Roadside Ditch     |
| <input type="checkbox"/> No Defined Feature  | <input type="checkbox"/> Tiled Drainage     |
| <input checked="" type="checkbox"/> Swale (a shallow trough-like depression that carries water mainly during rainstorms or snow melts) |   |

**Riparian Classification**

- | 0m-1.5m                                      | 1.5m-10m                                     | 10m-30m                                      |
|--|--|--|
| <input type="checkbox"/> None                | <input type="checkbox"/> None                | <input type="checkbox"/> None                |
| <input type="checkbox"/> Lawn                | <input type="checkbox"/> Lawn                | <input type="checkbox"/> Lawn                |
| <input type="checkbox"/> Cropped Land        | <input type="checkbox"/> Cropped Land        | <input type="checkbox"/> Cropped Land        |
| <input checked="" type="checkbox"/> Meadow   | <input checked="" type="checkbox"/> Meadow   | <input checked="" type="checkbox"/> Meadow   |
| <input type="checkbox"/> Scrubland / Thicket | <input type="checkbox"/> Scrubland / Thicket | <input type="checkbox"/> Scrubland / Thicket |
| <input type="checkbox"/> Forest              | <input type="checkbox"/> Forest              | <input type="checkbox"/> Forest              |

**Notes:** (include o.a.: water & air temp.; defined banks?; feature width; wetted width; culverts? (measurements); barriers to fish migration; seeps; ponds; amphibians; terrestrial crayfish; etc.)

This feature was surveyed at the southwest corner of the property. It originates in a wetland that was dry during the survey. No defined banks were observed. Evidence of previous water pooling observed and marked by a patch of cracked earth.

**Photos:** Photos of this feature are saved in a geo referenced format in the Stantec Arc GIS platform.

[illegible]



70 Southgate Drive, Suite 1, Guelph ON N1G 4P5

## Photograph Log

Project Number: 160960948

Date: June 22/17

Project Name: Upper's Long Quarry

Field Personnel: N. Burnett, M. Karpel

**Weather Conditions:**  
(current)

220C

TEMP (°C)

None.

## PRECIPITATION

Photo No.	Time Site.	Photo Description & Comments
3558	A 2	view dis
3559	↓	" u/s
3560	↓	channel
3561	A 1	view dis
3562	↓	view u/s
3563	↓	channel view
3564	↓	back and channel
3565-66	confluence/dis of feature 3 + 4 at field edge - dry.	
3567-73	feature 11 - dry.	
3578	feature 8 - lower end - dry.	
3579	feature 9 - into field - dry.	
3580-3581	feature 10.	view from road - dry. - u/s view, dis, view.
3567	A3	view u/s
3568	↓	" dis
3569	↓	channel view
3570	↓	back and channel
3571	↓	overview habitat.
3574	A4	view u/s
3575	↓	view dis
3576	↓	channel view.
3577	↓	back and overview.
3582-3583	feature 7	dry culvert. (feature 1a is dry as a result)
3584	feature 6 - dry - as noted from A4 - planted field	
3585-86	feature 8 - at road - dry.	
3587-3588	feature 2 - u/s, dis - dry.	
3589.	feature 13 - u/s, dis - dry.	
3590	feature 4 - from road - planted field - dry.	
3591-3592	feature 5 - taken near u/s end of 4, into field - dry.	
	feature 4 - u/s end near barn/used structure - dry.	

☐ check box if log is continued on reverse side of this form

PAGE 1 OF 1

**Print Name & Initial:**

N. Burnett

(field notes author)

### Quality Control:

This form is complete ☐ & legible ☐

**Print Name & Initial:**

(field notes QA/QC personnel)



Photo 1: April 4, 2017 - Feature 1. Upstream location facing upstream of Uppers Lane (south)



Photo 2: April 4, 2017 - Feature 1. At Uppers Lane facing downstream (north)



Photo 3: April 4, 2017 - Feature 1. Downstream location at north property boundary facing downstream (north)



Photo 4: April 4, 2017 - Feature 1. Downstream location at north property boundary facing downstream (north)



Photo 5: April 4, 2017 - Feature 2. Upstream location facing upstream (south)



Photo 6: April 4, 2017 - Feature 2. Upstream location facing upstream (south)

Client/Project

April 2024r  
160961352

Walker Aggregates Inc.  
Uppers Lane Quarry HDFA

Appendix

Page

A

1 of 16

Title

PHOTOGRAPHIC RECORD





Photo 7: April 4, 2017 - Feature 2. Downstream location at north property boundary facing downstream (north)



Photo 8: April 4, 2017 - Feature 3. Upstream location facing upstream (east)



Photo 9: April 4, 2017 - Feature 3. Mid-section facing upstream (east)



Photo 10: April 4, 2017 - Feature 3. Downstream section at confluence with Feature 4.



Photo 11: April 4, 2017 - Feature 3. Downstream section.



Photo 12: April 4, 2017 - Feature 4. Upstream location facing upstream (southeast)

Client/Project

April 2024r  
160961352

Walker Aggregates Inc.  
Uppers Lane Quarry HDFA

Appendix

Page

A

2 of 16

Title

PHOTOGRAPHIC RECORD





Photo 133: April 4, 2017 - Feature 4. Upstream location facing downstream (northwest)



Photo 14: April 4, 2017 - Feature 4. Exposed tile drain. Facing downstream (northwest) at field crossover



Photo 15: April 4, 2017 - Feature 4. At downstream section facing downstream (northwest)



Photo 16: April 4, 2017 - Feature 5. At upstream location facing downstream (west)



Photo 17: April 4, 2017 - Feature 5. Downstream location near main channel, facing downstream (west)



Photo 18: April 4, 2017 - Feature 5. Downstream location near main channel facing upstream (east)

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A photograph showing a landscape with a foreground of tall, dry, brown grass and a background of a green field under a cloudy sky. A small stream or ditch runs through the middle ground. In the distance, there are some trees and a tall utility pole.

A photograph showing a roadside ditch filled with murky, brown water. The ditch is bordered by a gravel shoulder on the left and a grassy area on the right. A white plastic cup is floating in the water. In the background, a paved road runs horizontally, and a white car is visible in the distance. The overall scene suggests a water quality issue or pollution near a road.





Photo 25: April 4, 2017 - Feature 8. At Thorold Townline Road.



Photo 26: April 4, 2017 - Feature 8. At upstream section facing downstream (east)



Photo 27: April 4, 2017 - Feature 8. At mid-section facing downstream (southeast)



Photo 28: April 4, 2017 - Feature 8. At confluence with main channel



Photo 29: April 4, 2017 - Feature 9. At upstream location facing upstream (northeast)



Photo 30: April 4, 2017 - Feature 9. At downstream location at confluence with main channel

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Photo 31: April 4, 2017 - Feature 9. At mid-section facing upstream (northwest)



Photo 32: April 4, 2017 - Feature 10. At Thorold Townline Road.



Photo 33: April 4, 2017 - Feature 10. At upstream section facing upstream (west)



Photo 34: April 4, 2017 - Feature 10. At upstream section facing downstream (east)



Photo 35: April 4, 2017 - Feature 10. Downstream section facing upstream (west)



Photo 36: April 4, 2017 - Feature 11. At Thorold Townline Road

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Photo 37: April 4, 2017 - Feature 11. Upstream section in woodlot facing downstream (east)



Photo 38: April 4, 2017 - Feature 11. Mid-section looking upstream (west) at woodlot



Photo 39: April 4, 2017 - Feature 12. At confluence with Feature 7 facing upstream (north)



Photo 40: April 4, 2017 - Feature 12. At mid-section



Photo 41: April 4, 2017 - Feature 12. At mid-section



Photo 42: April 4, 2017 - Feature 13. Immediately upstream of Uppers Lane facing upstream (south)

A wide field of mature, golden-yellow grain, likely wheat or barley, stretching to a line of trees under a grey sky. Several tall, thin structures, possibly wind turbines or power line towers, are visible in the distance behind the trees.





Photo 49: June 22, 2017 – Feature 4. Upstream section facing downstream (west)



Photo 50: June 22, 2017 – Feature 4. Upstream section facing downstream (northwest)



Photo 51: June 22, 2017 – Feature 5. Mid-section



Photo 52: June 22, 2017 – Feature 7. At Thorold Townline Road



Photo 53: June 22, 2017 – Feature 7. At Thorold Townline Road, looking east



Photo 54: June 22, 2017 – Feature 8. Main channel area looking upstream (west) at feature location

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Photo 55: June 22, 2017 – Feature 8. At Thorold Townline Road facing downstream (east)



Photo 56: June 22, 2017 – Feature 9. Mid-section facing north



Photo 57: June 22, 2017 – Feature 10. Looking at east side of Thorold Townline Road facing upstream (west)



Photo 58: June 22, 2017 – Feature 10. At Thorold Townline Road facing downstream (east)



Photo 59: June 22, 2017 – Feature 11. Mid-section facing upstream (west) into woodlot



Photo 60: June 22, 2017 – Feature 11. Mid-section facing downstream (east)

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Photo 61: June 22, 2017 – Feature 13. At Uppers Lane facing upstream (south) of road



Photo 62: June 22, 2017 – Feature 13. At Uppers Lane facing downstream (north) of road



Photo 63: April 9, 2021 – Feature 14. Facing upstream (east)



Photo 64: April 9, 2021 – Feature 14. Feature 14. Looking upstream (east) from edge of field near main channel



Photo 65: April 9, 2021 – Feature 14 looking west near main channel.



Photo 66: April 9, 2021 – Feature 15, which is upstream end of Feature 16, facing east.

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Photo 67: April 9, 2021 – Feature 15 end Facing upstream (west)



Photo 68: April 9, 2021 – Feature 16. Downstream section facing upstream (west)



Photo 69: April 9, 2021 – Feature 16. Upstream section facing downstream (east)



Photo 70: April 9, 2021 – Feature 16. At confluence with Feature 1



Photo 71: April 9, 2021 – Feature 17. Looking downstream at Uppers Lane from south of road



Photo 72: April 9, 2021 – Feature 17. Approximately 100 m downstream (west) of Beechwood Road, facing downstream (north)

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A wide-angle photograph of a large, flat, brown field, likely a plowed agricultural field. The field is covered in dry, brown grass and soil. In the background, there is a line of trees and utility poles under a cloudy sky. The field appears to be a mix of different soil types, with some areas being darker and more textured than others.

A wide-angle photograph of a vast, flat, brown field, likely a dry lake bed or a harvested agricultural field. The ground is covered in a layer of dry, light-brown material, possibly straw or soil. A distinct, darker, and more textured path or depression runs diagonally across the foreground. In the background, a line of dark green trees and shrubs is visible against a pale, overcast sky. The overall scene is desolate and open.

A wide-angle photograph of a vast, flat, brown field, likely a dry lake bed or a harvested agricultural field. The ground is covered in dry, clumpy soil and some sparse, dry vegetation. In the distance, a low line of trees and some structures are visible against a cloudy, overcast sky. A power line tower is visible on the right side of the horizon.

A wide-angle photograph of a vast, flat, brown, cracked field, likely a dry lake bed or a heavily eroded agricultural field. The ground is covered in a dense network of fine, irregular cracks, creating a textured, mosaic-like appearance. In the far distance, a dark, low-lying treeline or horizon line is visible against a pale, overcast sky. A single, tall, thin tower, possibly a power line tower, stands out on the right side of the horizon. The overall scene conveys a sense of desolation and environmental hardship.





Photo 79: April 9, 2021 – Feature 19. At upstream location facing upstream (east)



Photo 80: April 9, 2021 – Feature 20. At upstream location facing east



Photo 81: April 9, 2021 – Feature 20. At upstream location facing west



Photo 82: April 9, 2021 – Feature 20. Downstream end looking east at main channel



Photo 83: April 9, 2021 – Feature 21. At downstream section facing west



Photo 84: April 9, 2021 – Feature 21. Facing east towards confluence with Feature 20

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Photo 85: April 9, 2021 – Feature 21. Facing upstream (southwest)



Photo 86: April 9, 2021 – Feature 22. At downstream section near main channel, facing upstream (west)



Photo 87: April 9, 2021 – Feature 22. Facing upstream (northwest)



Photo 88: April 9, 2021 – Feature 22. At downstream section looking down stream (east) at main channel



Photo 89: April 9, 2021 – Feature 23. Upstream (west) side of Thorold Townline Road



Photo 90: April 9, 2021 – Feature 23. Looking upstream (west) of Thorold Townline Road

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Photo 91: April 9, 2021 – Feature 24. From Thorold Townline Road, facing downstream (northeast)



Photo 92: April 9, 2021 – Feature 24. At upstream section looking upstream (southwest) at Thorold Townline Road



Photo 93: April 9, 2021 – Feature 24. At middle section facing downstream (northeast)



Photo 94: April 9, 2021 – Feature 25. At downstream location looking east across )



Photo 95: April 9, 2021 – Feature 25. Downstream section looking upstream (south)



Photo 96: April 9, 2021 – Feature 25. Upstream (south) end.

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