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1.0 Introduction

Loyalist Solar LP, a limited partnership between Mohawks of the Bay of Quinte and BluEarth Renewables Inc., (together the "Proponent"), proposes to develop a non-rooftop solar facility with a maximum name plate capacity of 54 megawatts alternating current ("MW Ac."), located in the Township of Stone Mills, County of Lennox & Addington, Ontario (**Figure 1**). The renewable energy facility will be known as the Loyalist Solar Project (the "Project").

The Proponent submitted a proposal to the Independent Electricity System Operator ("IESO") under the Large Renewable Procurement I ("LRP") process and was subsequently awarded a LRP contract by the IESO to generate electricity. The Project will now be subject to a number of approvals including, among others, including *Ontario Regulation 359/09* – Renewable Energy Approval ("REA") under Part V.0.1 of the Ontario *Environmental Protection Act*.

Ontario Regulation 359/09 requires that all renewable energy projects conduct a records review and site investigation for water bodies that fall within the Project Location or the prescribed setback area (Section 29 of Ontario Regulation 359/09). This Water Assessment Report was completed in partial fulfillment of the regulatory requirements for the REA process, outlined in **Table 1**. Additional details regarding the potential impacts and mitigation measures required to protect these features will be provided in a separate *Water Body Report*. These reports will be submitted to the Ministry of Environment and Climate Change ("MOECC") for review and comment, as required in Ontario Regulation 359/09, and will provide for the protection of water bodies within and adjacent to the Project Location.

| Required Documentation | Location in Water Assessment Report | |
|--|--|--|
| Search for and analysis of the records set out in Column 1 of the Table in section 30 of <i>Ontario Regulation 359/09</i> was conducted in respect of the Project Location for the purpose of making the determinations set out opposite the records in Column 2 of the Table. | Section 5, Figure 3 Table 3 | |
| Report was prepared setting out a summary of the records searched and the results of the analysis conducted above. | Sections 4, 5 and 6 | |
| An investigation of the land and water within 120 metres of the Project Location is conducted, either by visiting the site or by an alternative nvestigation of the site | Sections 7, 8 and 9 | |
| Prepare a report setting out the following with respect to the land and water in respect of which any site investigation was conducted: A summary of corrections and the determinations made as a result of conducting the site investigation | Section 10 | |
| Information relating to each water body identified in the records review and in the site investigation | Section 9 Figure 4 | |

Table 1: Checklist for Requirements under Ontario Regulation 359/09 – Water Assessment



| Required Documentation | Location in Water Assessment Report |
|--|--|
| • A map | Section 8 |
| A summary of the methods used to make observations for the purposes of | |
| the site investigation | Section 8.1 |
| The names and qualifications of any person conducting the site | Section 8, Table 4, Appendix C |
| investigation | |
| Information and field notes related to the site investigation | |

2.0 The Proponent

The Proponent is coordinating and managing the approvals process for the Project. The contact is:

| Full Name of Company: | Loyalist Solar LP, c/o BluEarth Renewables Inc. | |
|-----------------------|---|--|
| Prime Contact: | Tom Bird, Director, Regulatory | |
| Address: | 34 Harvard Road, Guelph, ON, N1G 4V8 | |
| Telephone: | 1-844-214-2578 | |
| Email: | projects@bluearth.ca | |

Dillon Consulting Limited ("Dillon") has been retained by the Proponent to prepare the REA application for the Project. The contact at Dillon is:

| Full Name of Company: | Dillon Consulting Limited | |
|-----------------------|---|--|
| Prime Contact: | Megan Bellamy, Project Manager | |
| Address: | 235 Yorkland Boulevard, Suite 800, Toronto, ON, M2J 4Y8 | |
| Telephone: | (416) 229-4646 ext. 2423 | |
| Fax: | (416) 229-4692 | |
| Email: | MBellamy@dillon.ca | |



3.0 **Project Location**

The proposed Class 3 Solar Facility is to be located within the Township of Stone Mills, in the County of Lennox and Addington, approximately nine kilometres north of Napanee, Ontario. The proposed Project Location consists of approximately 200 hectares (494 acres) and is contained within an area generally bounded on the north by Howes Road, Craigen Road to the south, County Road 27 and Murphy Road to the east, and County Road 41 to the west (described as the Project Location on **Figure 1** and **2**). It has an approximate centroid at the following geographic coordinates:

- Latitude: 44°22'3.382" N
- Longitude: 76°58'19.543" W

Figure 1 shows the general location of the Project in Ontario. **Figure 2** shows the Project Location as defined by *Ontario Regulation 359/09*. The Project Location is defined in *Ontario Regulation 359/09* to be "a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the Project and any air space in which a person is engaging in or proposes to engage in the Project location will be provided in the Water Body Report. Project components, including solar photovoltaic ("PV") panels and electrical facilities such as inverter stations, transformers, a substation and Project access roads will be located on private land. Some Project components, such as electrical collector lines and the connection line route to the substation will be located in open and un-opened road rights-of-way (ROWs) or on private lands.

Figure 2 also includes the prescribed 120 m and 300 m setback areas from the Project Location. As per *Ontario Regulation 359/09*, the 120 m setback area was required to be assessed for lakes, permanent and intermittent streams and seepage areas and the 300 m setback area was required to be assessed for Lake Trout lakes. Setback development prohibitions for solar facilities are outlined in Part V, Sections 39 and 40 of *Ontario Regulation 359/09* (last amended May 1, 2016).





FILE LOCATION: I:\GIS\163674 - Loyalist Solar\mxd\EOS\Figure 1 General Project Location.mxd





4.0 **Records Review Purpose**

As detailed in **Table 2**, a records review was completed in accordance with Section 30 of *Ontario Regulation 359/09* using secondary source information.

Section 30 of *Ontario Regulation 359/09* states a water assessment for a renewable energy facility includes a records review to search for and determine whether the Project Location is:

- a) In a water body
- b) Within 120 m of the average annual high water mark of a lake, other than a Lake Trout lake that is at or above development capacity
- c) Within 300 m of the average annual high water mark of a Lake Trout lake that is at or above development capacity
- d) Within 120 m of the average annual high water mark of a permanent or intermittent stream
- e) Within 120 m of a seepage area

Under *Ontario Regulation 359/09*, the definition of a water body includes lakes, permanent and intermittent streams and seepage areas, but does not include:

- a) Grassed waterways
- b) Temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through
- c) Rock chutes and spillways
- d) Roadside ditches that do not contain a permanent or intermittent stream
- e) Temporary ponded areas that are normally farmed
- f) Dugout ponds
- g) Artificial bodies of water intended for the storage, treatment or recirculation of runoff from farm animal yards, manure storage facilities and site and outdoor confinement areas

 Table 2 outlines the secondary sources of information used to conduct the water assessment records review.



| Record Source | | Records Requested and/or Reviewed | | |
|--|---|---|--|--|
| Ministry of Natural Resources and Forestry | | | | |
| District Office: Peterborough Date of Data Receipt: May 18, 2016 May 27, 2016 | | Main Contact: Julie Formsma, A/ Fish and Wildlife Technical Records an Todd Norris, Management Biologist. Records received from MNRF Peterborough District relating to provincia parks, conservation reserves, natural features, wildlife species, and Species at Risk. | | |
| Manuals/Guidelin | ies | Ecological Land Classification for Southern Ontario, First Approximatio (1998) and (1998) | | |
| | | Natural Heritage Reference Manual, Second Edition, March 2010 | | |
| | | Natural Heritage Assessment Guide for Renewable Energy Projects, Second Edition, November 2012 | | |
| | | Ontario Wetland Evaluation System, Southern Manual, Third Edition, August 2014 | | |
| | | Significant Wildlife Habitat Technical Guide (2000), Appendices and Decision Support Tool | | |
| | | Significant Wildlife Habitat 6E Ecoregion Criterion Schedule, July 2015 | | |
| | | Significant Wildlife Habitat Mitigation Support Tool. Version 2014. | | |
| | | Applicable PSW Evaluations and relevant reports on alvars in the genera area (see references) | | |
| Land Information | Ontario (LIO), data | Interactive Online Mapping Tool | | |
| requested/access | ed May 2016 | Warehouse Data (see <i>Appendix A</i> for data layers obtained) | | |
| Ontario Crown La online data acces | nd Use Policy Atlas, sed May 2016 | Crown Land areas | | |
| Federal Governm | ent | | | |
| Canadian Wildlife Environment Cana | Service/ ada | Contact: Burke Korol, Environmental Assessment Coordinator, via ema Records relating to natural features and wildlife species. Mr. Korol | | |
| Date of Request: May 16, 2016 | Date of Data Receipt: N/A . CWS has previously noted it does not have files of relevance | referred request to the SARA and The Migratory Birds Conventior Act. He noted that the remainder of items in this request do not f under the mandate of the CWS and should be directed to MNRF mail communication May 16, 2016). | | |
| Fisheries and Oceans Canada online mapping | | Distribution of Fish Species at Risk mapping for Quinte Conservation Authority (valid May 2015- May 2016) | | |
| Conservation Aut | thority | | | |
| Quinte Conservation Authority | | Contact: Paul McCoy, Manager, Planning and Regulations | | |
| Date of Meeting: Date of Data June 9, 2016 Receipt: N/A | | QCA did not have records relevant to the NHA or water reports. | | |

Table 2: Records and Resources Searched and Analyzed During Records Review



| Record Source | Records Requested and/or Reviewed | | |
|---|---|--|--|
| Municipality | | | |
| Upper-Tier Municipality: Lennox and Addington County (2016) | Official Plan and mapping Schedules reviewed | | |
| Lower-Tier Municipality: Township of Stone Mills (2014) | Official Plan and mapping Schedules reviewed | | |
| Planning Authorities and Local Boards | | | |
| Municipal Planning Authority | See above | | |
| Local Planning Board | Not applicable in Project Location | | |
| Local Roads Board | Not applicable in Project Location | | |
| Local Services Board | Not applicable in Project Location | | |
| Other Resources | | | |
| Great Lakes Conservation Blueprint for Aquatic Biodiversity. Volume 2: Tertiary Watershed Summaries; Napanee Tertiary Watershed 2HM (Phair <i>et al.,</i> 2005) | Produced by the Nature Conservancy of Canada. A summary of statistics and land use relating to water bodies in the tertiary watershed. | | |
| Provincial Plan Area Records | | | |
| Niagara Escarpment Plan, 2014. (Niagara Escarpment Commission, June 2014) | Project Location does not fall within the Niagara Escarpment Plan Area | | |
| Oak Ridges Moiraine Conservation Plan, 2001. (Ontario Ministry of Municipal Affairs and Housing, 2001) | Project Location does not fall within the Oak Ridges Conservation Plan Area | | |
| Greenbelt Plan, 2005. (Ontario Ministry of Municipal Affairs and Housing, 2005) | Project Location does not fall within the Greenbelt Plan Area | | |
| Lake Simcoe Protection Plan, 2009. (Ontario Ministry of the Environment, July 2009) | Project Location does not fall within the Lake Simcoe Protection Plan Area | | |



5.0 **Records Review Results**

The Project Location is near the community of Napanee, within Ecodistrict 6E-9 (Madoc) and was summarized as part of the Great Lakes Conservation Blueprint for Terrestrial Biodiversity (Henson and Brodribb, 2005). The majority of land in this Ecodistrict is privately owned and approximately 69% of this land exists as natural cover, primarily forest. Of this natural cover, till moraine forest complexes comprise 27%, with limestone plain forest complexes covering an additional 27%, followed by swamp at 19%.

The Project Location is within the Quinte Region watershed, as defined by the jurisdictional boundaries of the Quinte Conservation Authority (QCA). Specifically, the Project falls within the Napanee Tertiary Watershed 2HM, as defined by the Great Lakes Conservation Blueprint for Aquatic Biodiversity (Phair *et al.*, 2005). Aquatic areas within this tertiary watershed are dominantly stream systems (242,981 ha), followed by wetland systems (39,100 ha), which are mostly deciduous and coniferous swamps (Phair *et al.*, 2005).

5.1 Water Bodies

Based on our review and analysis of the records and resources outlined in **Table 2**, and in accordance with *Ontario Regulation 359/09*, determinations were made whether the Project Location is in a water body or within 120 m of the average annual high water mark of a water body (see **Figure 3**). All mapping used for the records review is based on agency data (see *Appendix A*) and is not necessarily reflective of site conditions. In consideration of potential Lake Trout lakes and to meet the requirements of the *Construction Plan Report*, water bodies within 300 m are also noted. The *Construction Plan Report* will be included as part of the REA Application. Following completion of the review of records and resources outlined in **Table 2**, a site investigation was completed to confirm the presence or absence of identified water bodies associated with the Project Location.

5.1.1 Average Annual High Water Mark Determination

For the purposes of REA reporting, the average annual high water mark for streams and lakes is defined as the usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing waters, this refers to the "active channel/bankfull level" which is often the one- to two-year flood flow return level (MOECC 2013).

5.1.2 Lakes

A search and analysis of the records and resources outlined in **Table 2** identified one lake as defined by *Ontario Regulation 359/09*, in the Project Location or within the surrounding 300 m (see **Figure 3**). Perry's Lake has been mapped by the MNRF as a permanent water body approximately 160 m west of the project boundary near the intersection of Centreville Road and County Road 27. Additionally, three small potential water bodies were identified through the records review within 120 m of the Project Location (see **Figure 3**).



Given the rural nature of the landscape, it is expected that some or all of these potential water bodies are either stormwater ponds or livestock ponds. These features were characterized during the water body site investigation to assess if they met the definition of water body as defined under *Ontario Regulation 359/09*.

5.1.3 Lake Trout Lakes

A search and analysis of the records and resources outlined in **Table 2** did not identify any mapped Lake Trout lakes under management by the MNRF (2006), in the Project Location or within the surrounding 300 m.

5.1.4 Permanents and/or Intermittent Streams

A search and analysis of records and resources outlined in **Table 2** identified 14 mapped streams within 120 m of the Project Location (**Figure 3**). Mud Creek is mapped within the Project Location, south of Centreville Road. Black Creek and Salmon River are both located within the general area of the Project, north and south of County Road 4 (respectively). These features intersect with the Project Location where potential connection lines are proposed.

Pennell's Creek is located near Sheffield Bridge Road. The remaining mapped streams were identified as tributaries to the above-mentioned watercourses and were the subject of a site investigation to assess if they met the definition of water body as defined under *Ontario Regulation 359/09*.

5.1.5 Seepage Areas

A search and analysis of the records and resources outlined in **Table 2** did not identify any mapped seepage areas in the Project Location or within the surrounding 300 m.









LOYALIST SOLAR LP





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FILE LOCATION: I:\GIS\163674 - Loyalist Solar\mxd\Water Assessment\Figure 3 Records Review.mxd

5.2 Aquatic Species at Risk

Species at Risk listed under the federal *Species at Risk Act* and provincial *Endangered Species Act, 2007*, with the potential to occur within the Project Location and/or adjacent lands, are being considered in consultation with the appropriate agency. Reporting related to the protection of Species at Risk will be provided to the appropriate agency under separate cover as required. This reporting format meets the requirements as set out in *Ontario Regulation 359/09*, and is consistent with the direction provided by the MNRF and the MOECC.

5.3 Fish and Fish Habitat

Fish and fish habitat with the potential to occur within the Project Location and/or adjacent lands are being considered in consultation with the appropriate agency. This includes the Quinte Conservation Authority ("QCA"), Fisheries and Oceans Canada and the MNRF. No in-water work is proposed to occur as part of the Project. Should in-water work be required, the Proponent will consult with the appropriate agency and relevant permitting/approvals obtained if required. An overview of the potential permit and approval requirements is also further outlined in the *Project Description Report*.

5.4 Provincial Plan Areas

Under Ontario Regulation 359/09, if any part of the Project Location falls within a provincial plan area the Project may be subject to different criteria to evaluate the applicable water bodies. In addition, should development occur within the prescribed setback area of a water body, it may be subject to a different set of prohibitions under Ontario Regulation 359/09. **Table 3** outlines the provincial plan areas that should be considered when planning a renewable energy project and indicates that no provincial plan areas are applicable to the Project Location.

| Provincial Plan Area | Applicability to Project |
|---|--------------------------|
| Oak Ridges Moraine Conservation Plan Area | None |
| Niagara Escarpment Plan Area | None |
| Greenbelt - Natural Heritage System | None |
| Greenbelt – Protected Countryside | None |
| Lake Simcoe Protection Plan | None |

Table 3: Summary of Provincial Plan Areas and Applicability to the Project Location



5.5 Regulated Areas

Portions of the lands within the Project Location are regulated by the QCA under *Ontario Regulation 319/09* of the *Conservation Authorities Act* (Quinte Conservation Authority: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses). Where required, applicable permitting from the QCA will be obtained prior to the commencement of construction. Consultation with the QCA has been ongoing throughout the duration of the Project to date. For more information regarding this consultation, please see the *Consultation Report*. An overview of the potential permit and approval requirements is also further outlined in the *Project Description Report*.



6.0 Summary of Records Review

This report is intended to fulfill the requirements for the water assessment records review under Section 30 of *Ontario Regulation 359/09*. **Table 4** summarizes the determinations made during this records review. All previously mapped features that may be potential water bodies are outlined on **Figure 3**.

Table 4: Summary of the Water Assessment Records Review

| Water Body ID | Source of Information | Distance Relative to Project Location | |
|--|--------------------------|--|--|
| Lakes | | | |
| Water body 1 | MNRF LIO Data | Within 120 m | |
| Water body 2 | MNRF LIO Data | Within 120 m | |
| Water body 3 | MNRF LIO Data | Within 120 m | |
| Lake Trout Lakes | | | |
| No known features identified within th | e Project Location or a | adjacent lands within 300 m | |
| Permanent and/or Intermittent Stream | ns | | |
| Pennell's Creek | MNRF LIO Data | Within 120 m, crosses Project Location | |
| Tributary 1 to Pennell's Creek | MNRF LIO Data | Within 120 m s, crosses Project Location | |
| Salmon River | MNRF LIO Data | Within 120 m, crosses Project Location | |
| Tributary 1 to the Salmon River | MNRF LIO Data | Within 120 m, crosses Project Location | |
| Tributary 2 to the Salmon River | MNRF LIO Data | Within 120 m, crosses Project Location | |
| Tributary 2.1 to the Salmon River | MNRF LIO Data | Within 120 m, crosses Project Location | |
| Tributary 2.2 to the Salmon River | MNRF LIO Data | Within 120 m, crosses Project Location | |
| Tributary 2.3 to the Salmon River | MNRF LIO Data | Within 120 m , crosses Project Location | |
| Tributary 2.4 to the Salmon River | MNRF LIO Data | Within 120 m | |
| Tributary 3 to the Salmon River | MNRF LIO Data | Within 120 m, crosses Project Location | |
| Mud Creek | MNRF LIO Data | Within 120 m, crosses Project Location | |
| Tributary 1 to Mud Creek | MNRF LIO Data | Within 120 m, crosses Project Location | |
| Tributary 2 to Mud Creek | MNRF LIO Data | Within 120 m, crosses Project Location | |
| Black Creek (tributary to Mud Creek) | MNRF LIO Data | Within 120 m, crosses Project Location | |

Seepage Areas

No known features identified within the Project Location or adjacent lands within 300 m

Provincial Plan Areas

None applicable within the Project Location or adjacent lands within 300 m



7.0 Site Investigation Purpose

The water body site investigation was completed to verify the accuracy of the determinations made during the water body records review. It is consistent with Section 31 of *Ontario Regulation 359/09*, which states that a person who proposes to engage in a renewable energy project shall ensure that a physical investigation of the land and water within 120 m of the Project Location is conducted for the purpose of determining:

- Whether the results of the analysis summarized in the [records review] report are correct or require correction, and identifying any required corrections.
- Whether any additional water bodies exist, other than those identified in the records review.
- The boundaries, located within 120 m of the Project Location, of any water body that was identified in the records review or the site investigation.
- The distance from the Project Location to the boundaries of the water body.

8.0 Site Investigation Methodology

Based on the determinations made during the records review, water bodies that were mapped within the Project Location and surrounding 120 m were the subject of a site investigation. The Project Location was assessed by site investigators in order to document the presence of applicable water bodies within the Project Location. The Project Location was traversed on foot to search for applicable water bodies. Documentation of applicable and accessible water bodies included a record of qualitative and quantitative observations including type and location of water body, average annual high water mark, habitat types, surrounding riparian composition and taking of representative photographs. Efforts were co-ordinated with the team of site investigators conducting the natural heritage assessment of the Project Location to locate any potential water bodies not identified during the records review, and streams were marked using GPS devices in the field to verify locations on mapping.

8.1 Names and Qualifications of Site Investigators

The names and qualifications of all site investigators that participated in the water body assessment field work are outlined in **Table 5** below. The site investigators listed below have been involved with the Project since it began and are working as part of a larger Project team that collectively worked to identify natural heritage features such as water bodies (see *Natural Heritage Assessment Site Investigation Report*).

| Name | Degrees and Professional Designations | Years of Experience | Certifications | | |
|-----------------|---|------------------------|---|--|--|
| Kelly McLean | M.Sc. Geography and Environmental Management B.Sc. Environmental Biology and Technology | 4 | OMNR Class 1 Electrofishing Royal Ontario Museum Fish Identification Certification | | |
| Jonathan Harris | Fish and Wildlife Technician Diploma Fish and Wildlife Technology Advanced Diploma International Society of Arboriculture (ISA) Certified Arborist (member- Ontario Chapter) Affiliated with Ontario Field Ornithologists, Ontario Invasive Plant Council, Ontario Field Botanists, Toronto Field Naturalists, and Ontario | | Ecological Land Classification for Southern Ontario Ontario Wetland Evaluation System Certification MNRF Bat Maternity Colony Training Butternut Health Assessor Certification | | |
| Dayna LeClair | M.Sc. University of Guelph, 2012 B.Sc. (Hons), Trent University, 2010 Fish and Wildlife Technology Advanced Diploma, 2008 Fish and Wildlife Technician Diploma, 2007 | 6 | Ecological Land Classification for Southern Ontario (2009) | | |

Table 5: Names and Qualifications of Site Investigators



| Name | Degrees and Professional Designations | Years of Experience | Certifications | |
|---------------|---|------------------------|--|--|
| Cale Hartin | B.Sc. Biology/Environmental & Resources Sciences Fish and Wildlife Technician Diploma Fish and Wildlife Technology Advanced Diploma Affiliated with American Fisheries Society | 4 | Level 2 Backpack E-fishing crew leader, 2014 Ontario Benthic Bio-monitoring Network | |
| Sean Robinson | B.Sc. University of Guelph, 2008 Certificate of Environmental Conservation, University of Guelph, 2010 | 6 | Certified Inspector of Sediment and Erosion Control (CISEC) | |

8.2 Site Investigation Dates, Time, Duration and Weather Conditions

As outlined below, site investigations of the Project Location were undertaken over a period of approximately 4 months. The details of each site investigation completed in accordance with REA Section 26(3) are provided in **Table 6**.

| Table 6: | Site Investigation Dates, Times, Duration and Weather Conditions |
|----------|--|
| | |

| | Site Investigator | Start Time | Duration (hours) | Weather Conditions (Field Observations) | | | Weather Conditions (EC* Station) | | |
|---------------------------|--------------------------------|---------------|------------------|--|--------------------------|-----------------|--|---|-----------------------|
| Date (2016) | | | | Air Temp. (°C) | Wind (Beaufort Scale) | Cloud Cover (%) | Average Air Temp. (°C) | Wind Direction/speed (degrees/km/h) | Precipitation (mm) |
| April 28 | Kelly McLean | 10:00 | 4 | 7 | 0 | 0 | 3.3 | 7/32 | 0 |
| April 29 | Kelly McLean | 12:30 | 4 | 11 | 0 | 0 | 7 | 5/37 | 0 |
| June 7 | Cale Hartin & Dayna LeClair | 11:07 | 4 | 20.5 | 0-1 | 90 | 15.8 | 27/44 | 1.4 |
| June 8 | Cale Hartin & Dayna LeClair | 12:54 | 4.5 | 20 | 1 | 100 | 12.5 | 29/41 | 0.8 |
| June 20 | Cale Hartin | 13:50 | 4.5 | 28.5 | 0-1 | 20 | 23.3 | 27/69 | 25.2 |
| August 23 | Cale Hartin & Sean Robinson | 9:02 | 9.5 | 25 | 0-1 | 25 | 17.8 | 22/41 | 0 |
| Total Field Work Duration | | | 48.5 | | | | - | | |

* Closest Environment Canada (EC) Weather Station is in Centreville, Ontario. Wind Speed/direction data was taken from EC Weather Station in Kingston, Ontario. All EC Data refers to daily values.

Site investigations for the Water Assessment Report were performed in conjunction with other field work required to complete the Natural Heritage Assessment ("NHA") for the Project. The Project Location area was studied for a total of over 590 hours over a period spanning 7 months. Information and data relevant to the assessment of water bodies in the Project Location and surrounding area that was acquired during these studies was recorded and included in this report, as needed.

8.3 Access to Adjacent Lands

As outlined in Ontario Regulation 359/09, all lands within 120 m of the Project Location must be assessed for water bodies. Access was not granted by nine of the landowners to some lands located within 120 m of the Project Location boundary; however, all landowners participating in the Project did grant access to facilitate field investigations (*Appendix B*). Water bodies located on adjacent lands where access was not available were assessed through the use of aerial photography/satellite imagery and in the field from property lines and road rights-of-way, where applicable. Alternative site investigations using aerial photography/satellite imagery and in the field from property lines and road rights for water bodies as indicated in **Table 6**. This alternative site investigation was conducted in accordance with Ontario Regulation 359/09.



9.0 Site Investigation Results

Based on the site investigation, the occurrence of water bodies within the Project Location or within 120 m of the Project Location is documented below and confirmed water bodies are mapped on **Figure 4**. In addition, to assess if the results of the records review were correct or required corrections and/or amendments, information related to each water body within the Project Location and surrounding 120 m was collected. This included the type of water body, plant and animal composition and the ecosystem of the land and water investigation. Field notes from the site investigation are available in *Appendix C* and *Appendix D* contains representative site photographs.

In consideration of potential Lake Trout lakes and to meet the requirements of the *Construction Plan Report*, water bodies within 300 m of the Project Location were also noted. The *Construction Plan Report* will be included as part of the REA Application.

9.1 Lakes

As outlined in **Table 3**, a search and analysis of the records and resources did not identify any named lakes in the Project Location or within the surrounding 120 m. Based on the alternative site investigation, Perry's Lake was determined to be greater than 120 m from the Project Location.

During the site investigation, the three potential water bodies that were identified during the records review (**Figure 3**) were investigated. The results of the site investigation determined that two of these potential water bodies did not meet the definition of an applicable water body as per *Ontario Regulation 359/09*. Each is discussed in the following sections.

9.1.1 Potential Water Body 1

The site investigation found Potential Water Body 1 occurred as mapped by the MNRF and presented in the records review (**Figure 3**). The water body was determined to be a small pond on a residential property at 894 Hinch Road, approximately 105 m south of the Project Location on Hinch Road (see **Photograph 1** in *Appendix D*; Figure 4a).

Roughly 65 m x 25 m in area, the pond is located on the edge of a cow pasture/meadow habitat and mown lawn area. The shoreline was well-vegetated with grass and shrub species and sloped gradually (10% grade) towards the pond. Minor erosion around the banks was observed, presumed to be a direct result of cattle grazing and/or cattle accessing the pond. Overall, the shoreline of the pond was well-vegetated. Shoreline substrates were found to be predominantly silt with smaller amounts of muck and detritus, while bottom substrates was found to be predominantly muck and detritus. Along the banks of the pond there were small areas with accumulated woody and organic debris. Underwater cover consisted of pre-dominantly organic debris with sparse cover from vegetation. Vegetation noted comprised of mostly species from the Characeae family and Broad-leaved Cattail (*Typha latifolia*). Contributory water flow appears to originate from a grassed swale adjacent to the pond, flowing southeast across the pasture area from the roadside ditch adjacent to Hinch Road.



Based on the above description, this feature was sufficiently naturalized and had little disturbance resulting from cattle pasturing. For the purposes of the REA, this pond will be treated as an applicable water body.

9.1.2 Potential Water Body 2

Potential Water Body 2 was determined during the site investigation to be a dugout pond (see **Photograph 2** in *Appendix D*). The land surrounding the dugout pond consisted of disturbed pasture lands and the water feature lacked characteristics of a naturalized water body. As such, this feature does not meet the definition of an applicable water body based on the definition in *Ontario Regulation* 359/09.

9.1.3 Potential Water Body 3

Potential Water Body 3 was determined during the site investigation to be an area of open water that is associated with the surrounding wetland (see **Photograph 3** in *Appendix D*) and discharges into Tributary 2 of the Salmon River (see **Section 9.3.7**). This water body will therefore be considered to be an area of open water associated with the surrounding wetland and does not meet the definition of an applicable water body based on the definition in *Ontario Regulation 359/09*.

9.2 Lake Trout Lakes

As outlined in **Table 3**, a search and analysis of the records and resources did not identify any lakes that had potential to support a managed population of Lake Trout in the Project Location or within the surrounding 300 m. The results of the site investigation confirmed this determination for lands within 300 m of the Project Location.

9.3 Permanent and/or Intermittent Streams

As outlined in **Table 3**, a search and analysis of the records and resources identified 14 potential streams mapped within the 120 m of the Project (**Figure 3**). The results of the site investigation confirmed that of these 14 watercourses, 11 were confirmed to be permanent or intermittent and occurred generally as mapped by the MNRF, while three were confirmed as being non-existent or not meeting the requirements of a water body as defined by *Ontario Regulation 359/09*.

The site investigation also found that two additional previously unmapped streams occurred within the Project Location. Each of these was found to meet the definition of a "permanent or intermittent stream" and therefore met the definition of an applicable water body. Each applicable stream is described in further detail below.



9.3.1 Mud Creek

The site investigation found that Mud Creek occurred as mapped by the MNRF and as presented in the records review. The watercourse was found to be a permanent natural stream within an associated wetland complex and as such met the description of a water body as defined by *Ontario Regulation* 359/09 (see Figure 4a).

Mud Creek was assessed where it crosses Centreville Road (see **Photograph 4** in *Appendix D*; Figure 4e), Lockridge Road (see Figure 4d) and Rattie Road (see **Photograph 5** in *Appendix D*; Figure 4a). Due to the surrounding wetland habitat, variable terrain, depth of organic substrate and water depth, access to the watercourse east of Rattie Road and west of Lockridge Road was deemed a health and safety concern at the time of the inspection.

Mud Creek originates from Perry's Lake and flows southward into the 120 m setback of the Project Location to the north of Centreville Road. Prior to flowing through a double culvert under Centreville Road, Mud Creek flows in a westerly direction for approximately 35 m in a channel that functions as a vegetated roadside drainage ditch (see **Photographs 4 and 6** in *Appendix D*). The riparian area to the north of Centreville Road consists of maintained residential lawn. After flowing through the culvert under Centreville Road, the watercourse continues flowing south into a reed canary grass mineral meadow marsh located on the south side of Centreville Road (see **Photograph 7** in *Appendix D*).

Upstream of Centreville Road, the aquatic habitat morphology was observed as flat, transitioning into a pool area at the downstream/south end of the culvert. Substrate in this stretch of Mud Creek was predominantly gravel, muck and detritus with a small amount of sand. Both upstream and downstream of Centreville Road, the mean wetted width was 1.6 m, mean wetted depth was 0.3 m, mean bankfull width was 1.9 m and mean bankfull depth was 0.6 m. Cover within this area of Mud Creek was provided mostly by vegetation composed overhanging terrestrial grasses from the banks, with additional cover provided by woody debris (in-stream and overhanging), organic debris, cobble, undercut banks and overhanging vegetation within the area south of the culvert. Additional in-stream vegetation observed included a mix of submergent, floating and emergent species observed downstream of Centreville Road in the marsh area.

Evidence of groundwater was not observed in this area of Mud Creek. Of note, a concrete "gate" was observed in the watercourse to the north of Centreville Road that could provide limitations to fish migration (see **Photograph 6** in *Appendix D*).

As Mud Creek crosses Lockridge Road, it becomes associated with the Mud Creek Provincially Significant Wetland (within a willow mineral deciduous thicket swamp area). This section of Mud Creek did not occur within the Project Location or within 120 m, but was included in the assessment area to provide additional field observations of the water body. In the area of Lockridge Road, Mud Creek is of varying width and determining the average annual high water mark is difficult due to the wetland association. Where Mud Creek is mapped, the area generally consisted of an open water channel within the wetland. In general, the open water channel had a wetted width of approximately 2.5 m.

Immediately downstream of Lockridge Road was a pool habitat and from aerial imagery, it appears that the channel is braided as it becomes associated with the wetland.

As Mud Creek continues to flow in a generally west direction toward the Project Location, the area of associated marsh widens. Mud Creek was again assessed from Rattie Road. Where Mud Creek occurs in association with the wetland in this area, the habitat was observed as flat morphology with limited surface water movement. Substrates were predominantly muck and detritus, with a small amount of gravel observed. Evidence of erosion of the roadside gravel from Rattie Road was observed, which is likely the source of the gravel observed in the creek at the Rattie Road assessment location. Mean wetted width was approximately 23.0 m and mean wetted depth was greater than 1.5 m. Mean bankfull width and mean bankfull depth were unable to be determined at the time of assessment due to the variation of topography and thick vegetative cover found in the associated wetland area adjacent to Mud Creek. It is assumed that the area of open water represented the average annual high water mark for Mud Creek, with the limits of the associated wetland as the approximate floodplain. Based on consultation with QCA, floodplain mapping of this feature is not available.

The riparian vegetation community associated with Mud Creek was identified to be a cattail organic shallow marsh wetland to the north and south of the open water channel. The Creek surface was approximately 1-30% shaded by shore cover. In-stream cover was pre-dominantly from woody debris, organic debris, overhanging shoreline vegetation and vegetation composed of a mix of submergent, floating and emergent vegetation. Large Yellow Pond Lily (*Nuphar advena*) was observed as the dominant species of floating vegetation in the assessment area and is listed as a species of conservation concern. No obstructions to fish migration or evidence of groundwater were observed.

9.3.2 Tributary 1 to Mud Creek

The location where Tributary 1 to Mud Creek was mapped as part of the records review (see **Figure 3**) was assessed during the site investigation. The site investigation found that Tributary 1 to Mud Creek did not meet the definition of a water body as per *Ontario Regulation 359/09* in the area where it intersected the Project Location along Centreville Road (see **Figure 3**). Observations made during the site investigation revealed a shallow grassed spillway without a defined channel. This area was determined to likely drain surface water from the surrounding pasture area (see **Photograph 8** in *Appendix D*). At this time of the site investigation, no pooling or flowing water was observed within the assessment area.

9.3.3 Tributary 2 to Mud Creek

The site investigation found that Tributary 2 to Mud Creek occurred as mapped by the MNRF and as presented in the records review. The watercourse was found to be a natural intermittent stream and as such meets the definition of a water body under *Ontario Regulation 359/09*. The tributary intersects the Project Location where there is an existing culvert under Centreville Road approximately 440 m west of Lockridge Road (see **Photograph 9** in *Appendix D*; see **Figure 4d**).

Immediately upstream of Centreville Road, an in-line open water area was observed from the road rightof-way and can be viewed via aerial imagery. From the open water area, the stream flows in a westerly direction and then south through a culvert under Centreville Road. This open water area and the stream channel was surrounded by white cedar coniferous forest to the north and south of Centreville Road before becoming associated with a willow mineral deciduous thicket swamp. The habitat type was observed as flat morphology with minimal observable flow at the time of assessment. Substrates were pre-dominantly cobble, gravel and boulders, with a small amount of detritus observed (see **Photograph 10** in **Appendix D**). Mean wetted width was 1.8 m, mean wetted depth was 0.15 m, mean bankfull width was 2.4 m and the mean bankfull depth was 0.5 m. Evidence of erosion was not observed. The watercourse surface was approximately 60-90% shaded by shore cover. In-stream cover was provided mostly by overhanging vegetation, with sparse cover provided by undercut banks, boulders, cobble, overhanging woody debris, organic debris and in-stream vegetation comprised of terrestrial grasses. Obstructions to fish migration were not observed; however, seasonally low water levels may limit access to upstream habitat.

A conversation with the landowner revealed the potential presence of a groundwater seep located upstream of the 120 m assessment area as a potential input to the watercourse. Mean water temperature was recorded as 18°C at the assessment location, with no changes in temperature upstream or downstream of Centreville Road. Further, no evidence of groundwater was noted in the area available for direct assessment along Centreville Road. Based on this, no applicable seepage areas were observed within 120 m of the Project Location.

9.3.4 Tributary 2.1 to Mud Creek

Tributary 2.1 to Mud Creek was not shown on the reviewed records. It was found during the site investigation to intersect the Project Location at a culvert on Centreville Road, approximately 680 m west of Lockridge Road and was assessed at this location (see **Photographs 11 and 12** in *Appendix D*). The watercourse was observed to be a natural permanent stream (with a defined channel) connecting two willow mineral deciduous thicket swamp units bisected by Centreville Road and as such met the definition of a water body under *Ontario Regulation 359/09*.

Based on an interpretation of aerial photography, the watercourse appears to originate in the swamp habitat located north of Centreville Road, flow southward through the culvert and ultimately join with Tributary 2 to Mud Creek (see **Section 9.3.3**). The habitat was found to be flat morphology with minimal observable flow at the time of assessment. Substrates were a mix of cobble, muck and gravel. Mean wetted width was 1.4 m, mean wetted depth was 0.1 m, mean bankfull width was 1.4 m and mean bankfull depth was 0.3 m. In-stream cover was provided primarily from overhanging vegetation, with sparse cover provided by undercut banks, boulders, organic debris and woody debris (in-stream and overhanging). In-stream vegetation was sparse. No obstructions to fish migration were observed and no evidence of groundwater was noted.



9.3.5 Salmon River

The site investigation found that Salmon River occurred as mapped by the MNRF and as presented in the records review. The watercourse intersects the Project Location in three locations where connection line routes are proposed and flows within 120 m of the Project Location at a fourth location (see **Photographs 13 to 16** in *Appendix D*; Figures 4f, 4g and 4h). The Salmon River originates to the north of the Project Location and generally flows in a southwest direction towards Napanee and the Bay of Quinte. For the purposes of the REA, the Salmon River is defined as a natural permanent stream and therefore meets the description of a water body as defined by *Ontario Regulation 359/09*.

The Salmon River was assessed at each of the various points where it intersects with the Project Location. In these areas, the overall habitat was observed as being pre-dominantly flat morphology, with occasional areas of runs and riffles. A range of substrates was observed including silt, muck, boulders, cobble, bedrock, sand, gravel and detritus. Mean wetted width ranged between 22 m and 34 m, mean wetted depth at crossing locations was measured between 0.6 m and 1.0 m, mean bankfull width ranged between 23.7 m and 38.3 m and mean bankfull depth ranged between 0.9 m and 1.9 m (widths and depths are approximate).

Erosion or signs of vulnerability to erosion were observed on both banks for the majority of the assessment locations. In-stream cover was found to be predominantly provided by boulders, cobble, woody and organic debris, and in-stream vegetation. In-stream vegetation included a range of submergent, floating and emergent species that varied in composition and abundance between each assessment area. In-stream impediments or barriers to fish movement were not observed. Potential fish spawning habitat was observed, but may be limited in some reaches of the river due to areas of sediment deposition. Evidence of groundwater was not observed at any of the assessment locations.

Riparian communities varied between assessment locations, but generally included deciduous forest and swamp. The watercourse surface was typically 1-60% shaded by shore cover. Specific details for each of the assessment locations have been summarized below in **Table 7**.

| | Assessment Location | | | | | |
|--|--|---|--|---|--|--|
| | Sheffield Bridge Road, east of Miller Road. | Sheffield Bridge Road, 740 m west of Murphy Road. | Haggerty Road, 690 m west of Murphy Road | Teskey Road, 345 m north of Bawn Road | | |
| Does the watercourse intersect the Project Location? (Y/N) | Y | Ν | Y | Y | | |
| Existing structure (if any) | Bridge | N/A | N/A | Bridge | | |
| Habitat type (Run, Pool, Riffle, Flat) | Flat upstream of bridge, run downstream of bridge. | Flat | Flat | Flat | | |

Table 7: Salmon River Stream Assessment



| | | Assessment Location | | | | |
|---|----------------------------------|---|---|---|--|--|
| | | Sheffield Bridge Road, east of Miller Road. | Sheffield Bridge Road, 740 m west of Murphy Road. | Haggerty Road, 690 m west of Murphy Road | Teskey Road, 345 m north of Bawn Road | |
| - | Substrate(s) | Predominantly cobble and sand, occasional boulders and detritus observed. | Muck, silt, cobble and detritus with occasional sand observed. | Predominantly cobble, boulders, sand and gravel with occasional detritus silt and muck observed downstream | Predominantly silt and muck, with areas of sand, gravel, boulders, cobble and detritus observed. | |
| | Mean Wetted Width (m) | 24 | 26 | 34 | 22 | |
| | Mean Wetted Depth (m) | 0.63 | 0.9 | 1 | 0.7 | |
| | Mean Bankfull Width (m) | 26.7 | 30 | 38.3 | 23.7 | |
| | Mean Bankfull Depth (m) | 0.86 | 1.9 | 1.43 | 1.43 | |
| | Bank Stability | Erosion or vulnerability to erosion observed upstream of bridge. Downstream banks were observed as protected. | Both banks showed signs of vulnerability to erosion with no visible erosion scars or other signs of active erosion. | Erosion was observed on both banks | Both banks showed signs of erosion. | |
| | In-stream Cover | Boulders, cobble, woody debris (in-stream and overhanging) and organic debris. | Predominantly overhanging vegetation and cobble, with sparse cover from boulders, woody and organic debris and in-stream vegetation | Predominantly overhanging vegetation, with sparse cover from boulders, cobble, woody and organic debris and in-stream vegetation | Boulders, cobble, woody and organic debris, in-stream and overhanging vegetation. | |
| | Shore Cover (% stream shaded) | 30 - 60 | 1-30 | 30 | 1-30 | |
| | Vegetation Type | Small amounts of aquatic vegetation (primarily pondweed species) observed upstream of bridge location. | A mix of submergent, floating and emergent species | A mix of submergent, floating and emergent species | Primarily emergent vegetation, with submergent species observed upstream of the bridge location. | |
| | Barriers to Fish Movement | No migratory obstructions observed. | No migratory obstructions observed | No migratory obstructions observed | No migratory obstructions were observed. Deposition of muck substrate observed could be a potential deterrence to fish spawning. | |



| | Assessment Location | | | | |
|-----------------------------|--|--|---|---|--|
| | Sheffield Bridge Road, east of Miller Road. | Sheffield Bridge Road, 740 m west of Murphy Road. | Haggerty Road, 690 m west of Murphy Road | Teskey Road, 345 m north of Bawn Road | |
| Riparian Communities | Green Ash –Hardwood Lowland Deciduous Forest upstream of bridge. Green Ash –Hardwood Lowland Deciduous Forest and mixed meadow community downstream of bridge | Popular Deciduous Forest was observed along both banks of the River. Along the eastern bank, the Sheffield Bridge Road right-of-way is less than 10 m from the bank in most locations. | The western and eastern banks included Swamp Maple Mineral Deciduous Swamp (north of Haggerty Road West) and Sugar Maple Deciduous Forest (south of Haggerty Road West) | Upstream of Teskey Road, mixed meadow and perennial cover crops were located to the south and north, respectively. Downstream of Teskey Road, the north and south riparian area consisted of Green Ash Deciduous Mineral Swamp. | |
| Evidence of Groundwater? | Ν | Ν | Ν | Ν | |
| (Y/N) | 1) | | | | |
| Other Comments | A small amount of gravel was observed in the river around the bridge location. The assessment area appears to be suitable spawning habitat for Walleye and Cyprinids. | Approximately 25 bait fish were observed in the river during the assessment. The area appears to be a popular fishing location. | The assessed area appears to be suitable spawning habitat for Walleye, Northern Pike and Cyprinids | Approximately 10-20 cyprinids observed at the bridge location. | |

9.3.6 Tributary 1 to the Salmon River

The site investigation found that Tributary 1 to the Salmon River occurred as mapped by the MNRF and as presented in the records review. The watercourse intersects the Project Location at a culvert location along a proposed connection line route along Teskey Road, approximately 45 m north of Bawn Road and was assessed at this location (see **Photographs 17 and 18** in *Appendix D*; Figure 4f). The watercourse was found to be an intermittent stream and as such meets the definition of a water body under *Ontario Regulation 359/09*.

The habitat type was run morphology transitioning to flat around the culvert location. Substrates were predominantly muck, with lesser amounts of detritus, clay and silt observed. Mean wetted width was 0.8 m, mean wetted depth was 0.3 m, mean bankfull width was 1.6 m and mean bankfull depth was 0.5 m (widths and depths are approximate). Banks showed vulnerability to erosion around the culvert location and signs of erosion were observed on both banks upstream of the culvert.

In-stream cover was provided from overhanging vegetation, woody debris (in-stream and overhanging) and organic debris. In-stream vegetation was composed primarily of emergent terrestrial grasses (indicating the streams classification as intermittent) with a small amount of floating duckweed species observed around the culvert location where water was pooled.



The dominant riparian vegetation community upstream of Teskey Road was residential and mixed meadow. Downstream of Teskey Road, the riparian vegetation communities consisted of mixed meadow and some deciduous shrub thicket. The watercourse surface was approximately 1-30% shaded by shore cover.

A conversation held with the landowner during the assessment indicated the potential presence of a nearby groundwater seep. Although no visible evidence of a seep was observed, water temperatures taken at both the culvert location at Teskey Road (20°C) and approximately 50 m upstream (16°C) noted a difference of approximately 4°C in water temperature and was indicative of the seep mentioned by the landowner to the west of Teskey Road (see Seep 1 in **Section 9.4.1**).

9.3.7 Tributary 2 to the Salmon River

Tributary 2 to the Salmon River occurred as mapped by the MNRF and as presented in the records review. The watercourse intersects the Project Location along a proposed connection line route on Edges Road, approximately 70 m north of Marlin Road and was assessed in this location (see **Photographs 19 and 20** in *Appendix D; Figure 4g*). The watercourse was found to be a natural permanent stream and as such meets the definition of a water body under *Ontario Regulation 359/09*.

The watercourse appears to run in a westward direction, draining the adjacent cattail graminoid mineral meadow marsh east of Edges Road, through a culvert under the road toward a confluence with other tributaries to the Salmon River west of this location. Downstream of Edges Road the tributary is bordered by a residential property and an agricultural field. Habitat type of the tributary was run morphology upstream of the culvert, transitioning to flat morphology downstream of the culvert. Substrates were observed as being pre-dominantly gravel, with smaller amounts of detritus and sand observed upstream of the culvert, while downstream the substrates were observed as pre-dominantly detritus with small amounts of silt and muck. Mean wetted width was 2.3 m, mean wetted depth was 0.8 m, mean bankfull width was 3.4 m and mean bankfull depth was 1.2 m. Stream cover was provided primarily by vegetation consisting of in-stream aquatic species such as duckweed and overhanging terrestrial grasses. Additional cover was provided by cobble, organic debris and woody debris (in-stream and overhanging). The watercourse surface was approximately 30-60% shaded by shore cover. Potential obstructions to fish movement were not observed, however, a metal gate installed across the culvert could provide potential obstructions to fish migration (see Photograph 21 in Appendix D). Lower water temperature readings taken at the culvert location and within the water draining from the roadside ditch into the tributary (12°C and 9°C respectively) indicate the potential presence of a nearby groundwater input to the south of the tributary (identified as Seep 3, see Section 9.4.3).



9.3.8 Tributary 2.1 to the Salmon River

The site investigation found that Tributary 2.1 to the Salmon River occurred as mapped by the MNRF and as presented in the records review. Based on an interpretation of aerial photography the watercourse appears to originate from a wetland complex east of County Road 27 and flows northwest until it converges with Tributary 2 to the Salmon River (see **Section 9.3.7**). The watercourse was found to have reaches that were dry and is therefore classified as an intermittent natural stream. Based on this, the tributary meets the description of a water body as defined by *Ontario Regulation 359/09*. The watercourse intersects the Project Location where there are proposed connection line routes in two locations.

The watercourse was assessed where it crosses County Road 27 through a culvert and intersects with the Project Location; approximately 670 m south of Marlin Road (see **Photographs 23 and 24** in **Appendix D**). Based on aerial photography, the watercourse appears to originate from a mineral deciduous swamp area east of County Road 27, flowing west to a small pool area adjacent to the road (see **Photograph 25** in **Appendix D**; **Figure 4e**) before continuing north for approximately 50 m to the culvert location. The watercourse was observed as dry upstream and downstream of the pool area at the culvert, indicating the watercourse is intermittent. Substrates were muck and detritus. Mean wetted width of the pool was 2.7 m and mean wetted depth was 0.30 m. For the overall channel, the mean bankfull width was 4.1 m and mean bankfull depth was 0.8 m (widths and depths are approximate). Both banks showed signs of erosion. In-stream cover was predominantly from overhanging shoreline vegetation with sparse cover from undercut banks, organic and woody debris (in-stream and overhanging), and in-stream vegetation consisted of a small amount of emergent Burreed species (*Sparganium sp*). The watercourse surface was approximately 1-30% shaded by shore cover. No obstructions to fish movement or evidence of groundwater were observed, however, the intermittent nature of the watercourse in this location could lead to seasonal migratory impediments for fish.

The watercourse was then assessed where it intersects the Project Location at County Road 27, approximately 210 m east of Teskey Road (see **Photograph 22** in *Appendix D*; Figure 4g). The habitat type was observed as run morphology, with minimal but steady water flow observed in a northward direction. Substrates were comprised of a mix of gravel, sand, muck, detritus and cobble. Mean wetted width was 0.8 m, mean wetted depth was 0.4 m, mean bankfull width was 1.3 m and mean bankfull depth was 0.9 m (widths and depths are approximate). The surrounding riparian community consisted of Green Ash-hardwood Lowland Deciduous Forest. The watercourse surface was approximately 60% shaded by shore cover. Upstream and downstream water temperature readings were taken as 13°C and 11°C (respectively) and upwelling water with a slight sheen was observed on the upstream end of the assessment area, indicating the potential presence of groundwater input (Seep 2, see Section 9.4.2).



9.3.9 Tributary 2.2 to the Salmon River

The site investigation found that Tributary 2.2 to the Salmon River occurred as mapped by the MNRF and as presented in the records review. The watercourse intersects the Project Location where there is a proposed connection line route on Edges Road, approximately 630 m north of Marlin Road (see **Photographs 26 and 27** in *Appendix D*; Figure 4g). The watercourse was found to be dry at the time of assessment in this location and was thereby classified as an intermittent stream under *Ontario Regulation 359/09*.

The watercourse appears to flow between two willow mineral deciduous thicket swamp areas bisected by Edges Road. Habitat type, mean wetted width and mean wetted depth were unable to be determined at the time of the assessment due to a lack of water. Mean bankfull width was 0.7 m and mean bankfull depth was 0.4 m. Signs of erosion or vulnerability to erosion were not observed on either of the banks. Substrates were pre-dominantly muck and detritus.

In-stream cover was provided primarily by vegetation composed of grasses, as well as by undercut banks and organic and woody debris (in-stream and overhanging). The watercourse channel was approximately 60-90% shaded by shore cover. No obstructions to fish movement or evidence of groundwater were observed, however, the dry state of the watercourse during the assessment indicates there may be seasonal impediment to fish migration.

9.3.10 Tributary 2.3 to the Salmon River

Potential Tributary 2.3 to the Salmon River identified during the records review (see **Figure 3**) was observed during the site investigation to be an area of open water associated with a wetland and as such does not meet the definition of a permanent or intermittent stream as defined by *Ontario Regulation 359/09*.

Pooling surface water was observed within a cattail graminoid mineral meadow marsh southeast of the assessment location on Marlin Road (see **Photograph 28** in *Appendix D*) and is suspected of entering the adjacent culvert installed under the road during periods of extended high precipitation, however, no evidence of a defined watercourse channel was observed at the downstream end of the culvert northwest of the road (see **Photograph 29** in *Appendix D*).

9.3.11 Tributary 2.4 to the Salmon River

Tributary 2.4 to the Salmon River falls within the 120 m setback of a proposed connection line route northwest of the intersection of Edges Road and Marlin Road (see **Figure 4g**). At the time of assessment, access to the property where Tributary 2.4 to the Salmon River is located was not granted and an alternative area of site investigation was conducted from Marlin Road and using aerial photography. Based on an interpretation of aerial photography, the watercourse appears to be an intermittent tributary to the Salmon River. The stream appears to drain the surrounding cattail graminoid mineral meadow marsh at the streams origin and travels through a lowland deciduous forest community closer to the confluence with Tributary 2 to the Salmon River.



9.3.12 Tributary 3 to the Salmon River

Tributary 3 to the Salmon River occurred as mapped by the MNRF and as presented in the records review. The watercourse intersects the Project Location where there is a proposed connection line route on Haggerty Road, approximately 17 m east of Miller Road and was assessed in this location (see **Photographs 30 and 31** in *Appendix D*; Figure 4h). The watercourse was found to be a natural intermittent stream associated with a nearby wetland and as such meets the definition of a water body under *Ontario Regulation 359/09*.

The stream originates from a willow mineral deciduous thicket swamp and discharges into the Salmon River. Where the stream crosses Haggerty Road, a culvert was observed connecting the two swamp communities north and south of the road. The watercourse was dry at the time of assessment. Substrates were predominantly muck and detritus, with occasional boulders. Mean bankfull width was 14.4 m and mean bankfull depth of the channel was 0.8 m (widths and depths were approximate). The banks showed no evidence of or vulnerability to erosion. In-stream cover was predominantly from organic and woody debris (both in-stream and overhanging) with sparse cover provided by boulders. In-stream vegetation consisted of emergent species such as Broadfruited Burreed (*Sparganium eurycarpum*) and European Common Reed (*Phragmites australis*).

The surface of the watercourse was approximately 1-30% shaded by shore cover. No obstructions to fish movement (other than the seasonal restrictions related to low/no water flow) or evidence of groundwater was observed in the assessment area.

9.3.13 Tributary 3.1 to the Salmon River

Tributary 3.1 to the Salmon River was not shown on the reviewed records. It was found during the site investigation to intersect the Project Location approximately 30 m northeast of the intersection of Miller Road and Haggerty Road West and was assessed at this location (see **Photographs 32 and 33** in *Appendix D*; Figure 4h). The watercourse was found to be a permanent natural stream associated with a wetland community and as such meets the description of a water body as defined by *Ontario Regulation 359/09*.

The watercourse originates in a willow mineral deciduous thicket swamp complex west of Miller Road and flows eastward through a culvert under Miller Road before converging with Tributary 3 to the Salmon River (see **Section 9.3.12**). The habitat type was determined as flat morphology with pool characteristics upstream and downstream of the culvert crossing. Substrates were pre-dominantly detritus with a small amount of muck. In the area east and west of Miller Road, the mean wetted width of the stream was 3.5 m, mean wetted depth was greater than 1.0 m, mean bankfull width was greater than 5.0 m and mean bankfull depth was greater than 1.0 m (widths and depths are approximate). For the purposes of this water assessment, the average annual high water mark was determined to be approximately 3.0 m of each side of the centreline of the stream as mapped on **Figure 4h**. This was determined based on topography of the area downstream of the culvert, where the road right-of-way was at a higher elevation than the wetland on the west bank and an area of more dense willow vegetation was observed on the east bank.



The extent of the wetland area is assumed to be the limits of the floodplain. In-stream cover was predominantly from vegetation, with sparse cover provided by woody and organic debris. No evidence of groundwater was observed in the assessment area.

9.3.14 Black Creek

The site investigation found that Black Creek occurred as mapped by the MNRF and as presented in the records review. The Creek intersects the Project Location at a box culvert where there is a proposed connection line route on Murphy Road, approximately 477 m north of County Road 14 and was assessed in this location (see **Photographs 34 and 35** in *Appendix D; Figure 4g*). The Creek was found to be a natural permanent stream and as such meets the definition of a water body under *Ontario Regulation 359/09*.

Where Black Creek crosses Murphy Road, the north and south riparian areas along the stream consisted of green ash-hardwood lowland deciduous forest, with open pasture areas adjacent to that community. The habitat type was pool morphology upstream of the intersection of the Creek with Murphy Road, transitioning into flat morphology around the box culvert and ultimately transitioning into a run downstream of the culvert. Water flow was observed as being slow but steady in a westward direction during the time of assessment. Substrates were found to be primarily boulders, cobble and sand with occasional detritus. Mean wetted width was 8.0 m, mean wetted depth was 0.5 m, mean bankfull width was 8.7 m and mean bankfull depth was 0.8 m (widths and depths are approximate). Both banks had no visible signs of erosion. In-stream cover was provided by a mix of boulders, cobble, undercut banks, woody debris (both in-stream and overhanging), organic debris and vegetation (both in-stream and overhanging). In-stream vegetation as composed of a mix of submergent, floating and emergent vegetation, including Large Yellow Pond Lily. The Creek was observed as being suitable habitat for fish, however, boulders and log jams present in the Creek may be obstructions to fish migration. No evidence of groundwater was observed in the assessment area.

9.3.15 Pennell's Creek

The site investigation found that Pennell's Creek occurred as mapped by the MNRF and as presented in the records review. The watercourse intersects the Project Location where there is a proposed connection line route on Miller Road, south of Howes Road and was assessed in this location (see **Photographs 36 and 37** in *Appendix D*; Figure 4h). The Creek was found to be a natural permanent stream and as such meets the definition of a water body under *Ontario Regulation 359/09*.

Based on an interpretation of aerial photography, the watercourse flows through deciduous swamp and forest communities, a residential property and a meadow marsh as it flows eastward and converges with the Salmon River. Habitat type was observed as run morphology throughout the assessment location. Substrates west/upstream of the intersection were primarily composed of silt, clay, gravel and sand. East/downstream of the intersection, substrates were pre-dominantly boulders, gravel and sand, with smaller amounts of muck, cobble and detritus observed.
Mean wetted width was 6.5 m, mean wetted depth was 0.4 m, mean bankfull width was 8.2 m and mean bankfull depth was 0.7 m (widths and depths are approximate). Signs of erosion were observed on both banks where the stream crosses Miller Road. In-stream cover was predominantly from overhanging shoreline vegetation, with sparse cover provided by woody and organic debris. The Creek surface was approximately 30% shaded by shore cover. In-stream vegetation was composed of a mix of submergent, floating and emergent species including Wild Celery, Broad-leaf Arrowhead, Common Cattail and Large Yellow Pond Lily. No obstructions to fish migration were observed and no evidence of groundwater was noted in the assessment area.

9.3.16 Tributary to Pennell's Creek

The tributary to Pennell's Creek, identified during the records review to the north of the Project Location and crossing Miller Road south of Sheffield Bridge Road prior to discharging into Pennell's Creek (see **Figure 3**), was not observed during the site investigation. No defined channel was observed and the mapped watercourse is presumed to be a combination of temporary drainage swales in the adjacent agricultural fields and surface water flow through the vegetated/grassed roadside ditches (see **Photograph 38** in *Appendix D*; **Figure 4h**). As such, this watercourse was determined not to meet requirements for definition as a water body under *Ontario Regulation 359/09*.

9.4 Seepage Area

As indicated in **Table 3**, a search and analysis of applicable records and resources did not identify any seepage areas in the Project Location or within the surrounding 120 m. However, five seepage areas were noted during the site investigation, either by field investigators or by landowners/third-parties. Each seepage area is described in the sections below.

9.4.1 Seepage Area 1

Seep 1 was estimated to occur within the 120 m setback near the intersection of Tributary 1 to the Salmon River with the Project Location on Teskey Road (see Section 9.3.6; Figure 4f). The potential location of the seep was estimated to be west of Teskey Road based on a conversation held with the landowner and a difference of 4°C between water temperature readings taken at the intersection of the watercourse with the Project Location and readings taken approximately 50 m upstream. The source of the cold water input was not located in the area accessible for investigation. No other indicators of groundwater seepage were observed. The dominant riparian vegetation community upstream of Teskey Road was residential and mixed meadow.



9.4.2 Seepage Area 2

Seep 2 was estimated to occur within the 120 m setback near the intersection of Tributary 2.1 to the Salmon River with the Project Location on County Road 27 (see **Section 9.3.8**; **Figure 4g**). The presence of the seep was determined based on observations of upwelling water with a slight sheen at the intersection of the watercourse with the Project Location (upstream of County Road 27). Additionally, a difference in water temperature of 2°C was observed downstream of the estimated location of the seep. No other indicators of a groundwater seep were observed. The lands surrounding this area included a municipal road, residential property and deciduous forest and hayfield.

9.4.3 Seepage Area 3

Seep 3 was estimated to occur within the eastern 120 m setback south of the intersection of Tributary 2 to the Salmon River with the Project Location on Edges Road (see **Section 9.3.7; Figure 4g**). The presence and location of the seep was estimated based on a drop in water temperature when measurements were taken upstream of the culvert at the intersection of the watercourse with the Project Location (12°C) and readings taken south of the culvert on the east side of Edges Road from water in the roadside ditch/ marsh wetland area (9°C). As water moved downstream from the wetland, there was a 3°C drop in temperature. It is assumed that the seepage area is associated with the cattail graminoid mineral meadow marsh wetland east of the road right-of-way. This wetland has an area of open water (Water Body 3 on **Figure 3**) that drains into Tributary 2 to the Salmon River. No other indicators of a groundwater seep were observed.

9.4.4 Seepage Area 4

Seep 4 was reported to occur at the edge of a fresh-moist mixed meadow community within the 120 m setback (see **Figure 4a**). The presence and location of the seep was provided by the landowner to a third-party, who subsequently forwarded the information to Dillon. When Dillon site investigators returned to the area to document the seep, evidence of the feature was not observed. Given that the landowner has provided the information on the seep, the seep has been mapped and will be carried forward to the *Water Body Report*.

9.4.5 Seepage Area 5

Seep 5 was reported to occur at the edge of a red cedar calcareous treed rock barren community within the 120 m setback (see **Figure 4c**). The presence and location of the seep was provided by the landowner to a third-party, who subsequently forwarded the information to Dillon. When Dillon site investigators returned to the area to document the seep, evidence of the feature was not observed. Given that the landowner has provided the information on the seep, the seep has been mapped and will be carried forward to the *Water Body Report*.





























FILE LOCATION: I:\GIS\163674 - Loyalist Solar\mxd\Water Assessment\Figure 4 Site Investigation.mxd









10.0 Summary of Amendments to the Records Review

As required by *Ontario Regulation 359/09*, the potential water bodies identified during the records review were the subject of a site investigation. The sections below document the amendments to that records review.

10.1 Lakes

Of the three potential "lakes" identified during the records review, one was confirmed as present while the remaining two were confirmed as being a dug-out pond and open water associated with a wetland.

10.2 Permanent and Intermittent Streams

Fourteen potential "streams" were identified during the records review. Based on the results of the site investigations, 11 of these 14 were confirmed as present. The remaining three were found to not meet the definition of a water body under *Ontario Regulation 359/09*.

In addition to the six permanent and five intermittent streams confirmed as present from the records review, two previously unidentified permanent streams were documented during the site investigation as intersecting the Project Location along proposed connection line routes.

In total, there are 13 applicable streams associated with the Project Location.

10.3 Seeps

Five previously unidentified seepage areas were identified within 120 m of the Project Location.



11.0 Conclusions

This report is intended to fulfill the requirements for the *Water Assessment Report* under *Ontario Regulation 359/09*. Based on the results of the site investigations, there are a total of 19 applicable water bodies associated with the Project, either occurring within the Project Location or the surrounding 120 m. Based on this, an Environmental Impact Study (i.e., a *Water Body Report*) as outlined under Sections 39 and 40 of *Ontario Regulation 359/09* is required for this project.

Table 8 summarizes the results of the site investigation for water bodies.

Table 8: Summary of the Water Assessment Site Investigation Report

| Waterbody ID | Does the Project Location overlap the water body? | Is the Project Location within 120 m of the water body? | Distance to Project Location (m) | EIS required? |
|---|---|--|--|---------------|
| Lakes | | | | |
| Perry's Lake | No | No | 234 | No |
| Water body 1 | No | Yes | 105 | Yes |
| Lake Trout Lakes | | | | |
| None identified within the Project Location o | r adjacent lands wit | hin 300 m | | |
| Permanent and/or Intermittent Streams | | | | |
| Mud Creek (permanent) | Yes | Yes | Within | Yes |
| Tributary 2 to Mud Creek (intermittent) | Yes | Yes | Within | Yes |
| Tributary 2.1 to Mud Creek (permanent) | Yes | Yes | Within | Yes |
| Salmon River (permanent) | Yes | Yes | Within | Yes |
| Tributary 1 to Salmon River (intermittent) | Yes | Yes | Within | Yes |
| Tributary 2 to Salmon River (permanent) | Yes | Yes | Within | Yes |
| Tributary 2.1 to Salmon River (intermittent) | Yes | Yes | Within | Yes |
| Tributary 2.2 to Salmon River (intermittent) | Yes | Yes | Within | Yes |
| Tributary 2.4 to Salmon River (intermittent) | No | Yes | 55* | Yes |
| Tributary 3 to Salmon River (intermittent) | Yes | Yes | Within | Yes |
| Tributary 3.1 to Salmon River (permanent) | Yes | Yes | Within | Yes |
| Black Creek (permanent) | Yes | Yes | Within | Yes |
| Pennell's Creek (permanent) | Yes | Yes | Within | Yes |
| Seepage Areas | | | | |
| Seep 1 | No | Yes | 0 | Yes |
| Seep 2 | No | Yes | 0 | Yes |
| Seep 3 | No | Yes | 0 | Yes |
| Seep 4 | No | Yes | 119 | Yes |
| Seep 5 | No | Yes | 26 | Yes |

*Distance calculated based on an interpretation of aerial photography



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Appendix A

GIS Data Layer Information



Loyalist Solar LP *Water Assessment Report February 2017 – 16-3674*

Table A1: GIS Data Table

February 2017 – 16-3674

| Title of Data Set | Data Layers | Vintage of Data or Date Info Searched/ Collected | Ownership of Information |
|----------------------------|--|---|-----------------------------|
| Wetland | Wetlands | 2016 | MNRF |
| BluEarth_NAP_Parcel | Parcel Boundaries | 2016 | CanAcre |
| Wooded_Area | Woodlands | 2016 | MNRF |
| Ohn_Watercourse | Watercourse Features | 2016 | MNRF |
| Orwn_Track | Railway centrelines | 2016 | MNRF |
| Orn_Segment_With_Address | Hwy/Local/Secondary/ Primary Roads | 2016 | MNRF |
| Utility_Line | Utility Lines | 2016 | MNRF |
| Ohn_Water body | Ontario Water Bodies | 2016 | MNRF |
| Ansi | Area of Natural and Scientific Interest | 2016 | MNRF |
| Munic_Bnd_Lower_And_Single | Municipal Boundaries | 2016 | MNRF |
| ANSI | Area of Natural or Scientific Interest | 2016 | MNRF |
| WINTERING_AREA | Wintering Areas | 2016 | MNRF |
| Alvar_MNRF | Alvar Vegetation Community | 2016 | MNRF |



Appendix B

Access to Adjacent Lands



Loyalist Solar LP *Water Assessment Report February 2017 – 16-3674*



Appendix C

Field Notes



Loyalist Solar LP *Water Assessment Report February 2017 – 16-3674*



| GENERAL INFORMATION | N | | | | | |
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| PROJECT #: 171 21 | 74 NAME OF PE | OJECT: | TIME STARTED: | 11:07 | IME FINISHED: | 11:67 |
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| Bedrock Boulder Br Bo | Cobble Gr | avel Sand | Silt | Clay | Muck | Detritus |
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| | soil, undercut o | r soil, no sign o | of recent | material/soil | fine | grained sediments |
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| BANK STABILI | ΙY | Eroding | | Vulnera | hle | - | Protected | 1.2 | Depos | ation Zone |
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| | | soil, underc | ut or so | il, no sign c | of recent | | material/soil | | fine grain | ed sediments |
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| VEGETATIC (D for dom | ON TYPE ninant): | Su | bmergent | | Floati | ng | | Emergent | | None |
| Pre | edominant Species | mie | aler | M | yellow | p. lile | 4 | · | | |
| | ONS: | None | / | 4 | Seasonal/Te | mporary | | Permane | nt | |
| POTENTIAL RITICAL HA | BITAT | Spawning Cyprinid | [| | Evidence of | Groundwa | ter | Other | - | |
| RIPARIAN | COMMU | NITY | | | | The other Designation | - | | į. | |
| | | | | | Dominant | Vegetation | n Type | | | |
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F. 3



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| - Kener Herry | Hal | | | -04 | out thun | off | | | |
| Actica Geo | | | | - 6 | 14(10)000 | 10-010 | | | |
| EXISTING STR | | PE (IF ANT) | | | 101 | 000 0 | | | |
| Bridge C |) | Box CulvertO | Op | en Foot Culv | vert V | CSP O | | N/A O | |
| Other O Descr | ribe: Da | nu chree | \sim | | | Size (w x h | n) m ² | | |
| SECTION TYPE | E AND MORE | PHOLOGY | | | | | | | |
| TYPE: Strea | m / river | Channelized | Permanent | Intermi | ttent Ephe | emeral ASSC | | ETLAND: | |
| | | 0 | 6 | 0 | | 0 | | _ | |
| HYDRAULIC HI | EAD (mm): | D | | | | | | | |
| Habitat T | уре | Substrate | Mea | n width | Mean depth | Mean | Me | an | Other |
| Run, Pool, Rif | fle, Flat? | | wett | ed (m) | wetted (m) | bankfull | ban | kfull | |
| 0 | | CHAST-Level | 1-315 | - | P. | width (m) | dept | th(m) | |
| Ku | - | and sal | 0-1 | 2 | 0.40 | 7 | 0.7 | 0 | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Silt | Clay | Muck | Det | tritus |
| Br | Во | Co | Gr | Sa | Si | CI | Mu | 1:55 | D |
| BANK STABILI | ΤY | | | | | | | | |
| | | | rodible | Vulnera | ble Arodible | Protected | odible A | Deposition | Zone ual slone) |
| | | soil, underc | ut or s | soil, no sign c | of recent | material/soil | | fine grained se | diments |
| 1 611 | | bare so | | erosio | n | | | | |
| | stream Ban | K | | 0 | | 0 | | 0 | |
| Right Up | ostream Ban | K O | | 0 | | 0 | | 0 | - |
| | Lindara 4 | Davidant | Cabble | Mandu | abria | Organia | Veestiles | Inorophyter | Nore |
| COVER | banks | Boulders | Sobbie | woody D | edris | debris | vascular | nacrophytes | None |
| (check all | 1. | | | Instream | V | / | Instream | V | |
| that apply; D | | | X | Overheit | ning) (| | Quarhar | ing / | |
| dominant | | | 7. | Overnang | gingV | | Overnang | ing | |
| cover): | | | | | | | | | |

| % stream s | shaded): | 100 – 90 O | % | 90 – 60 ⁴ O | % | | 60-30% | | 30 - 1% | | None |
|----------------------------------|---------------------|---|-----------|---------------------------|--------|----------|------------|------------|----------|----------------------|-------|
| EGETATIO | ON TYPE ninant): | Sub | omergent | T | | Floatin | g | | Emergent | - | None |
| Pre | edominan Species | D-Kely | gers) ut | as F | bro | thed | | Com | m Chta | / . | |
| GRATORY SSTRUCTIC | ONS: | None | / | | Seaso | onal/Ter | nporary | and a | Permaner | nt | |
| TENTIAL | BITAT | Spawning | pounds | | Evide | nce of (| Groundwat | er | Other | _ | |
| RIPARIAN | COMMU | NITY | | | | | | | | | |
| | | | | | Dor | minant | Vegetation | Туре | | | |
| Riparian Zone | None | Cultivated | Meadow | Scrubl | and | Forest | None | Cultivated | Meadow | am Bank Scrubland | Fore |
| 1.5-10 m | | | | 3.3 | 1 : | / | | | | 5 | 1. 1. |
| 10-30 m | | | | | | / | Rosidatal | | | | |
| 30+ m | | | | | | ~ | Restand | | | | |
| OTOGRAP | HIC REC | ORD: | | | -10 | | | | | | |
| OTDE AND | HOTO # | | | | | LIEST | LIDETDEA | M BANK PH | IOTO #· | | |
| SIKEAM F | | 0.4 | | | | DICI | | | | | |
| WNSTREAM F | M PHOTO TO #S: | O #: | | | | RIGH | IT UPSTRE | AM BANK P | HOTO #: | | |
| MMENTS, | INCLUDI | D #: NG POTENTIAL | - ENHANCE | MENT OF | PPORTL | RIGH | | AM BANK P | ното #: | | |
| STREAM F WNSTREA HER PHOT | INCLUDI | D #: NG POTENTIAL | - ENHANCE | MENT OF | PPORTL | RIG | | AM BANK P | 4 | | |
| STREAM F WNSTREA HER PHOT | | O #: NG POTENTIAL | - ENHANCE | MENT OF | PPORTL | RIGH | | AM BANK P | 4 | | |
| STREAM F WNSTREA HER PHOT | TO #S: INCLUDI | o#: NG POTENTIAL OBSO POSSONON | - ENHANCE | MENT OF | PPORTL | RIGH | | AM BANK P | 4 | | |
| DIREAM F DWNSTREA HER PHOT | Fish Dec | o#: NG POTENTIAL OBSO POSSONON | - ENHANCE | MENT OF | PPORTU | INITIES | | AM BANK P | 4 | | |
| STREAM F WNSTREA HER PHOT | TINCLUDI | o #: NG POTENTIAL Obsor Possovan | - ENHANCE | MENT OF | PPORTU | RIGH | | AM BANK P | 4 | | |
| STREAM F WNSTREA HER PHOT | - 210 | o #: NG POTENTIAL Obsor POSSON | - ENHANCE | MENT OF | PPORTL | JNITIES | | AM BANK P | 4 | | |

-



| GENERAL INF | ORMATION | | | | | | | | |
|---------------------|---------------|-----------------------|--------------|---------------------------|--------------|-------------------|-------------|----------------------|----------------|
| PROJECT #: | 431-74 | NAME C | FPROJE | ст: т | IME START | EP: | TIME FI | NISHED: CI : C | 13 |
| COLLECTORS: | | Loge | 0 | histo | STREA | MID#: | DAT | E: | 0.)3 |
| WEATHER: | CAR 116 | ettin I UC | Cr MO | DINION | Jai | mon never | _ | XOID 0 | 0.01) |
| | Sunny | 2/10 | (c) | loc | | | _ | | |
| LOCATION | ERRODY | GENER | | OF PROJECT I | OCATION | | | | |
| Salunda | Pule- | South | | Shallal | d latike | - could | title h | ides ho Ti | 10- |
| CHAINAGE OR | OTHER IDE | INTIFYING ATT | RIBUTE: | Overlein | i ping | CIOUN IL | 20 1 0 | 111192 07 10 | Un |
| Lacted | South | nest of | She | field bud | de roc | ad | | | |
| GPS COORDIN | ATES (UTM) | 18T | 301 | 298.57 | FU | 9711295, | 68 N | | |
| LAND USE AND | |)N | 5,011 | | | 1.00-3-03- | | | |
| SURROUNDING | G LAND USE | : | | SOU | RCES OF PO | LLUTION: | | | 1.1 |
| _ | | | | -10 | ed IRUN | C.d. | | | |
| EXISTING STR | UCTURE TY | PE (IF ANY) | | | | | | | |
| Bridge C |) | Box Culvert |) | Open Foot Cul | vert O | CSP O | | N/A | C |
| Other O Descr | ibe: | | | | | Size (w | $(x h) m^2$ | | |
| SECTION TYPE | AND MORE | PHOLOGY | | | | | | | |
| TYPE: Stream | m / river | Channelized | Perman | ent Interm | ittent E | ohemeral A | | WETLAND: | |
| | 0 | 0 | 0 | 0 | | 0 | UNK | noun | |
| HYDRAULIC HE | EAD (mm): | 0 | | | | | | | |
| Habitat T | уре | Substrate | N | lean width | Mean dep | oth Mea | n | Mean | Other |
| Run, Pool, Rif | fle, Flat? | - 6 | | verreg (III) | wetted (r | n) banki width | full (m) | bankfull depth(m) | |
| TIL | 2 | SIPA BOCO | 225 | γ | 100 | 30 | | 9 | |
| +/61 | | saloped | | 26 | 0.9 | 50 | | | |
| Bedrock Br | Boulder Bo | Cobble Co | Gravel Gr | Sand Sand | Silt Si | Clay Cl | M | uck Nu | Detritus D |
| BANK STABILI | ТҮ | | | | | | | | |
| | | Erodi | ng | Vulnera | ble | Protect | ed | Deposit | on Zone |
| | | Angle>45°, | erodible | Angle>45°, (| erodible | Angle>45°, nor | n-erodible | Angle<45° (g | radual slope), |
| | | soil, under bare s | rcut or | soil, no sign o erosio | n recent | material/ | SOII | tine graine | sealments |
| Left Up | stream Ban | k O | | 0 | - | 0 | | (|) |
| Right Up | stream Ban | k O | | ø | | 0 | | (|) |
| HABITAT | | - A | | | | diam. | 10 | | |
| IN-STREAM | Undercut | Boulders | Cobb | ole Woody D | ebris 🗸 | Organic | Vascu | lar Macrophyte | s None |
| COVER (check all | banks | 1 | | Instream | \checkmark | debris | Instre | | |
| that apply; D | | | V | linsuedin | • | | | . / | |
| is for | | | | Overhan | ging 🕌 | | Overh | anging V | |
| dominant | | | | | | - | | | |
| cover): | | | | | | | | | |

| SHORE Co (% stream s | OVER haded): | 100 – 90 ° O | % | 90 – 60 O | % | 60- 30% O | | 30 - 1% | N | lone O |
|-------------------------|---------------------|--------------------------|----------|--------------|----------------|--------------|------------|---------------|-----------|-----------|
| VEGETATIO (D for dom | N TYPE inant): | Subi | mergent | | Floatin | g | hildou | Emergent | | None |
| Pre | dominant Species | Canala we | smeet | H | on a voascar c | \sim | Broulter | telarron | hec) | |
| IGRATORY DBSTRUCTIO | NS: | None | ~ | | Seasonal/Ter | nporary | | Permane | nt | |
| OTENTIAL RITICAL HA | BITAT | Spawning (YPLIND | | | Evidence of | Groundwa | ater | Other | | _ |
| RIPARIAN | COMMUN | NITY | | | | | | * | | |
| | | Loft | Instrant | lank | Dominant | Vegetatio | n Type | light Lington | am Bank | |
| Riparian Zone | None | Cultivated | Meadow | Scrubi | and Forest | None | Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | | | V | | | | | | | |
| 10-30 m | | | | | V | | | | | / |
| 30+ m | | | | | | | | | | V |
| HOTOGRAP | HIC RECO | ORD: | | | | | | | | 4.1. |
| | HOTO #: | N.#. | | | LEFT | UPSTRE | | | | |
| DMMENTS, $\frac{1}{2}$ | | ig potential f fist c | ENHANCE | MENT OF | PPORTUNITIES | ŧ | | | | |
| - Fresh | Lector | mussels | | | | | | | | |
| Fishing | local | 10n | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | ton A | stad 2 dat | 0 Y | | | | DESODIE | | | |



| GENERAL INFORM | MATION | | | | | | | | | |
|-------------------|-------------|----------------|---------|------------------------|--------------|--------|--|------------------|--------------|--------------------|
| PROJECT #: | 36:14 | NAME OF | PROJEC | CT: T | IME STAR | TED: | | TIME FI | | |
| COLLECTORS: | | 1 Dyn | 101 - | 0100 | STRE | AM ID | #: | DAT | E: 2 (/ | .] |
| (| ale fl | artin | | | Sal | mon | River-U/S | | 2016- | 06-20 |
| WEATHER: | SUGAL | DILOCC | 29 | °C | | | | | | |
| LOCATION | | anod | Q I | | The second | | | | | |
| NAME OF WATER | BODY: | GENERAL | AREA | OF PROJECT L | OCATION | : | i | | _ | |
| SalMon Ri | ver | Dut | SKIR | is of 1 | and | 36-36 | - Octar | ·ID | | |
| | | | BUTE: | 1 | | \ \ | `````````````````````````````````````` | | | <u><u></u></u> |
| South on | Tesk | ey Kd | unti | 1 YOU | hita | per | due cros | sing t | he solv | non River |
| GPS COORDINATE | ES (UTM): | 1873 | 54-21 | 127.891 | E 40 | 2199 | SU. 59 N | 1 | | |
| LAND USE AND PO | OLLUTION | | | - | | | | | | |
| SURROUNDING LA | AND USE: | initial | | SOUF | RCES OF P | OLLUI | | | | |
| Agriconor | Kco | | | R | Jan Rul | 101 | 1 | | | |
| EXISTING STRUCT | URE TYPE | (IF ANY) | T | -t- | 1 | | | 1 | | |
| Bridge O | - | Box CulvertO | | Open Foot Culv | vert O | _ | CSP O | | N/. | A O |
| Other O Describe: | Dawn | stream | | | | | Size (w x h |) m ² | 19.X | I.GM |
| SECTION TYPE AN | D MORPH | OLOGY | | - | | | T.con | | | |
| TYPE: Stream / | fiver Ch | annelized I | Permane | nt Intermi | ttent I | Epheme | eral ASSC | | D WETLAND | |
| |) (mm): | 0 | Ø | 0 | | 0 | Un | Krim | n | |
| | | L | | | | | | _ | _ | |
| Habitat Type | Su Su | ubstrate | M | ean width etted (m) | Mean de | epth | Mean | 1 | Mean | Other |
| Run, Pool, Rime, | Flatr | | | , | wetted | (m) | width (m) | | depth(m) | |
| FI I | 5 | w206110 | Dis . | 771- | 710 | | JAIA | 1 | 1m | |
| Flat | 5 | 135Mudo | | xan | | | 210 | 1 | . / • C | |
| Bedrock Bol | uider Bo | Cobble | Gravel | Sand | S | i | Clay | N | lu Iu | Detritus |
| BANK STABILITY | | | | | | | | | | |
| | | Eroding | | Vulneral | ble | | Protected | | Depo | sition Zone |
| | | Angle>45°, ero | odible | Angle>45°, e | erodible | Angle | e>45°, non-ero | odible | Angle<45° | ' (gradual slope), |
| | | bare soil | | erosior | 1 Iecent | | material/solf | | ine gra | neu seuments |
| Left Upstre | eam Bank | ø | , | 0 | | | 0 | | | 0 |
| Right Upstre | am Bank | 0 | | 0 | | | 0 | | | 0 |
| HABITAT | | - Y | | | | | | | | |
| IN-STREAM U | Indercut | Boulders | Cobbl | e Woody D | ebris | | Organic | Vascu | lar Macrophy | ytes None |
| (check all | DALIAS | | | Instream | \checkmark | | aedfis | Instrea | m 🔾 | |
| that apply; D | | | | | / | | C | | | |
| is for | | | | Overhang | ging 🗸 | | | Overha | anging 🦯 | |
| cover): | | | | | | _ | | | | - |

| VEGETATION TYPE Submargent Floating Emergent None Predeminant Species wild (clery Shift filow had None NORATORY Species None Seasonal/Temporary Permanent OTENTIAL RITICAL HABITAT Spawning Publishing Curptule Evidence of Groundwater Other RITICAL HABITAT Spawning Publishing Evidence of Groundwater Other RITICAL HABITAT Dominant Vegetation Type Dominant Vegetation Type RIPARIAN COMMUNITY Dominant Vegetation Type Evidence of Groundwater RIPARIAN COMMUNITY Dominant Vegetation Type Evidence of Groundwater RIPARIAN COMMUNITY Dominant Vegetation Type Evidence of Groundwater Riparian None Cultivated Meadow Som Left Upstream Bank Right Upstream Bank Forest None Cultivated Meadow Scrubland Forest <td< th=""><th>SHORE CO (% stream sha</th><th>VER aded):</th><th colspan="2">100 – 90 % 90 – 60%</th><th>)%</th><th colspan="3">% 60- 30% O</th><th>No</th><th colspan="2">None</th></td<> | SHORE CO (% stream sha | VER aded): | 100 – 90 % 90 – 60% | |)% | % 60- 30% O | | | No | None | | | | |
|--|----------------------------|--------------------|--------------------------------|----------|---------------|----------------|------------|--------------|-----------|-------|--|--|--|--|
| Predominant Species Wild (dery None Sessonal/Temporary Permanent IGRATORY None Sessonal/Temporary Permanent OTENTIAL IMITING: Spawning Dull with Grather Evidence of Groundwater Other RIPARIAN COMMUNITY Dominant Vegetation Type Imiting: Riperian None Cultivated Meadow Some Left Upstream Bank Right Upstream Bank Right Upstream Bank Riperian None Cultivated Meadow Scrubland 16-30 m Imitian Imitian Imitian Imitian 10-30 m Imitian Imitian Imitian Imitian Imitian 10-30 m Imitian Imitian Imitian Imitian Imitian Imitian 10-30 m Imitian Imitian Imitian Imitian Imitian Imitian 10-30 m Imitian | VEGETATION (D for domin | I TYPE nant): | Submerger | nt | Floatin | g | | Emergent | | None | | | | |
| IGRATORY None Seasonal/Temporary Permanent OTENTIAL Spawning Evidence of Groundwater Other RIPARIAN COMMUNITY Dominant Vegetation Type Image: Community of the co | Prede | ominant Species | wild celery | | | | | | troubed | | | | | |
| DTENTIAL HABITAT RITICAL HABITAT RIPARIAN COMMUNITY RIPARIAN COMMUNITY Dominant Vegetation Type Left Upstream Bank Right Upstream | IGRATORY BSTRUCTION | IS: | None | | Seasonal/Ten | nporary | - | Permane | nt | | | | | |
| RIPARIAN COMMUNITY Dominant Vegetation Type Right Upstream Bank Right in None Cuttivated Meadow Scrubland Forest 10-30 m | DTENTIAL RITICAL HAB | ITAT | Spawning Portexticity Cy | prindae | Evidence of C | Broundwa | ater | Other | | | | | | |
| Dominant Vegetation type None Right Upstream Bank Riparian None Cultivated Meadow Scrubland 20ne Cultivated Meadow Scrubland Forest None Cultivated Meadow 11.5-10 m Image: Cultivated Meadow Scrubland Forest None Cultivated Meadow 10-30 m Image: Cultivated Meadow Scrubland Forest None Cultivated Meadow 10-30 m Image: Cultivated Meadow Scrubland Forest None Cultivated Meadow 10-30 m Image: Cultivated Meadow Scrubland Forest None Cultivated Meadow 10-30 m Image: Cultivated Image: Cultivated Image: Cultivated Image: Cultivated Image: Cultivated 10-30 m Image: Cultivated Image: Cultivated Image: Cultivated Image: Cultivated Image: Cultivated 10-30 m Image: Cultivated Image: Cultivated Image: Cultivated Image: Cultivated Image: Cultivated Image: Cultivated 10-30 m Image: Cultivated Image: Cultivated Image: Cultivated Image: Cultivated Image: Cultivated <tr< td=""><td>RIPARIAN C</td><td>OMMUN</td><td>NITY</td><td></td><td></td><td></td><td>-</td><td>1</td><td></td><td></td></tr<> | RIPARIAN C | OMMUN | NITY | | | | - | 1 | | | | | | |
| Riparian None Cultivated Meadow Scrubland Forest None Cultivated Meadow Scrubland Fr 1.5-10 m | | _ | Left Unstre | am Bank | Dominant | /egetatio | n Type | Right Upstre | am Bank | _ | | | | |
| 1.5-10 m 1.5-10 m 10-30 m 30* m 10-30 m 30* m 10-20 CRCCORD: PSTREAM PHOTO #: IMGPG320 PSTREAM PHOTO #: IMGPG324 RIGHT UPSTREAM BANK PHOTO #: IMGPG327 RIGHT UPSTREAM BANK PHOTO #: IMGPG327 NUMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: - JAPC - JAPC - Japc John Sobserved to be schooldy - Very low flow observed. | Riparian Zone | None | Cultivated Mead | ow Scrub | land Forest | None | Cultivated | Meadow | Scrubland | Fores | | | | |
| 10-30 m 30+ m 30+ m OTOGRAPHIC RECORD: ISTREAM PHOTO #: IMGPG320 ILEFT UPSTREAM BANK PHOTO #: IMGPG327 RIGHT UPSTREAM BANK PHOTO #: IMGPG327 INGENTS: INGLODING POTENTIAL ENHANCEMENT OPPORTUNITIES: - JAPC - Japc - Japc - Japc - Japc Job Served to be schooling - Very low flow observed. | 1.5-10 m | | | ~ | - | | | | | V | | | | |
| 30+m IOTOGRAPHIC RECORD: ISTREAM PHOTO #: IMGPG320 ILEFT UPSTREAM BANK PHOTO #: IMGPG327 RIGHT UPSTREAM BANK PHOTO #: IMGPG327 RIG | 10-30 m | | | | / | | | | | - | | | | |
| DOTOGRAPHIC RECORD: STREAM PHOTO #: IMGPG324 WINSTREAM PHOTO #: IMGPG324 HER PHOTO #S: JMGPG328 (Bridge) DAMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: -JAPC -JERCHWARE CLAINSOBSERVED -JERCHWARE CLAINSOBSERVED TO be schooldry -Very low flow observed. | 30+ m | | | | / | | | | | | | | | |
| - 24°C Frechweder dansobserved - 10-20 Cyprimids observed do be schooling - Very Ion flow observed. | HER PHOTO MMENTS, IN | | -MGP 6328 IG POTENTIAL ENHA | C Bridg | C) | 1 | | | | | | | | |
| -Frechunder dainsobserved -To-20 Cyprinids observed to be schooling -Very ION flow observed. | 7100 | | | | | | | | | | | | | |
| -Frechnider dansobserved - 10-20 Cyprinides observed do be schooling - Very low flow observed. | - 24 C | / | 1 | | | | | | | | | | | |
| - 10-20 cyprinids observed do be schooling - Very Ion flow observed. | 6 jest | ind | er dansob: | perved | | | | | | | | | | |
| - Very low flow observed. | - fleer | | . Jank | Served | de be | 50 | hooldad | | | | | | | |
| - Very low flow observed. | - 10-9 | 00 | PERMON DO | Jerven | | _ ~ | |) | | | | | | |
| | - Very | low | flow obse | rved. | | | | | | | | | | |
| | / | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |



| GENERAL INFO | ORMATION | - | | | | | | | |
|-----------------|--------------------|----------------|---------|----------------|------------|----------------------------------|------------------------|---------------------------------|------------------------|
| PROJECT #: | 6367 | H LOYCLIS | PROJEC | T: T | Din F | ED: | TIME FINISHE | D: | |
| COLLECTORS: | Clal | - Jons | 10010 | | STREAT | NID #: | DATE: | 11-06- | 20 |
| WEATHER: | Cally | | 0. | | -DELIVINO | River Dr) | A | 10 | |
| S | L YAN | 1000 0 | 29°C | | | | | | |
| LOCATION | | | | | | | | | |
| NAME OF WATE | ERBODY: | GENERAL | AREA C | OF PROJECT L | OCATION: | Dt - | | | |
| CHAINAGE OR | RIVER OTHER IDE | NTIFYING ATTRI | BUTE: | of lan | worth | ONGIO | | | |
| Sadler | Tes | Ver Par | | | 1 | heid or | second 11 | slu | . b. |
| GPS COORDINA | ATES (UTM) | NOT - | 2Uni | 145G | LIF G | aller (|) JSING OL | e Schuc | DARive |
| | BOLLUTIO | 1010 | 510 | 2101 | . 1 | 11936 | 6 | | |
| SURROUNDING | LAND USE | | | SOUF | RCES OF PO | LLUTION: | | | |
| Acciente | cal / Re | sidenticl | | -Ro | ad Run | 066 | | | |
| 121.0011 | | | | 110 | | | | | |
| EXISTING STRU | JCTURE TYP | PE (IF ANY) | - r | | | | | | |
| Bridge O | | Box CulvertO | 0 | Open Foot Culv | vert O | CSP O | - | N/A O | |
| Other O Descri | be: Dou | -n stren | | | | Size (w x | h) m ² 19 X | 1.614: | |
| SECTION TYPE | AND MORP | HOLOGY | | | 1 | 11-200 | | | |
| TYPE: Stream | n/river C | Channelized | Permane | nt Intermi | ttent Ep | hemeral ASS | OCIATED WE | TLAND: | |
| | 0 | 0 | 0 | 0 | | 0 0 | n (num | | |
| HYDRAULIC HE | :AD (mm): | \bigcirc | | | | | | | |
| Habitat Ty | /pe | Substrate | Me | ean width | Mean dep | th Mean | Mea | n | Other |
| Run, Pool, Riff | le, Flat? | | we | etted (m) | wetted (r | n) bankfull | bank | full | |
| | < | (125(0)0) | | - 1 | | width (m | | (m) | |
| FLA | t là | 1412010 | | 2117 | > $ $ M | 22 | 1.4 | | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Silt | Clay | Muck | Det | ritus |
| Br | Во | Co | Gr | Sa | Si | CI | Mu | N | D |
| BANK STABILIT | ſΥ | | | | | | | | |
| | | Eroding | 3 | Vulnera | ble | Protected | | Deposition | Zone |
| | | Angle>45°, er | odible | Angle>45°, e | erodible | Angle>45°, non-e material/soi | rodible An | gle<45° (grad ine grained se | ual slope), diments |
| | | bare so | | erosio | n | materialiser | | ino granica co | |
| Left Up: | stream Banl | (Ø | 1 | 0 | | 0 | | 0 | |
| Right Up: | stream Banl | | | 0 | | 0 | - | 0 | |
| HABITAT | | | | | | | - | | |
| IN-STREAM | Undercut | Boulders | Cobbl | e Woody D | ebris | Organic | Vascular Ma | acrophytes | None |
| (check all | Danks | | | Instream | | debris | Instream | | |
| that apply; D | | | | maycam | . / | | in our our in | | |
| is for | | | | Overhang | ging 🗸 | | Overhangin | g / | |
| dominant | | 1 · | | | | | | | |
| cover): | | | | | | | | | |

1.1.1

| SHORE COVER (% stream shaded): | | 100 - 90 % 90 - 60 O O | | | | 60- 30% O | | 30-1% | | None | |
|--------------------------------------|----------|---------------------------|--------------|--------------|---------------|--------------|------------|-------------|--|--------|--|
| VEGETATION TYPE (D for dominant): | | Submergent | | | Floating | | | Emergent N | | | |
| Pre | Species | | | | | | largetro | idel Ber | reed | | |
| IGRATORY BSTRUCTIC | DNS: | None | | | Seasonal/Tem | porary | - | Permanent | | | |
| OTENTIAL RITICAL HA MITING: | BITAT | Spawning Low poted | ILCMU | h | Evidence of G | iroundwa | ater | Other | | | |
| RIPARIAN | COMMUN | NITY | | * | | | | * | | | |
| | | 1.041 | Instrant D | lamb | Dominant \ | /egetatio | n Type | Cabt Upster | om Book | | |
| Riparian Zone | None | Cultivated | Meadow | Scrublan | d Forest | None | Cultivated | Meadow | Scrubland | Forest | |
| 1.5-10 m | | | \times | \checkmark | | | | • | V | | |
| 10-30 m | | | \checkmark | | | | | V | | | |
| 30+ m | | | \checkmark | | | | | | | | |
| IOTOGRAP | HIC RECO | DRD: | 623 | | LEFT | UPSTRE | | HOTO #: (2 | 322 | | |
| OWNSTREA | | #: IMGP | 6324 | 1 | RIGH | T UPSTR | | HOTO #: | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | |
| THER PHOT | TO #S: | Bridge - | LMGP. | (2- |)(| | | | | | |
| OMMENTS, | INCLUDIN | IG POTENTIAL | ENHANCE | MENT OPP | ORTUNITIES: | | | | | | |
| | | | | | | | | | | | |
| -2400 | | | | | | | | | | | |
| AT the | fre | these (| each o | of wc | -10-D15 | 100 | dion t | h sdi | mon Ri | ve | |
| 1.1 | 1 . | 141 | 1 | 17 . | and a | | Suba | | s de | | |
| 10110W | 5 51 | ightly w' | and we | Die AI | 000 000 | served | . 2008 | licte | 12 01 20 | | |
| Xiddere | tche | active to | beavel | and Co | bld | | | | | | |
| | 1 | ~) | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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| | | | | | | | | | | | |
| | | | | | | | | | | | |



| GENERAL INFORMATION | 10 | | | | | |
|--------------------------|-------------------|-----------------|----------------|----------------|-----------------|----------------|
| PROJECT #: 163674 | NAME OF PRO | DJECT: T | IME STARTED: | TIMI | E FINISHED: | |
| COLLECTORS: | colu | | STREAM ID | #: NPC- T | DATE: 2011 | -06-2D |
| WEATHER: | Dilleree | 2900 | Junion, R | | | |
| JOATION | LIOCC | all | | | | |
| NAME OF WATERBODY: | GENERAL AR | EA OF PROJECT I | OCATION: | | | |
| Schies River | O. Astin | Kat Tam | North Dr | taio | | |
| CHAINAGE OR OTHER IDE! | NTIFYING ATTRIBUT | E: | othe of | VIIIO | | |
| South on Tesk | iey Round us | til you hi | ta bildye | Crossing di | e Schon | River |
| GPS COORDINATES (UTM): | 187034 | 2411 4 | 1919551 |) . | | |
| LAND USE AND POLLUTIO | N | 1000 | and the second | | | |
| SURROUNDING LAND USE | 1.1 | sou | RCES OF POLLU | | | |
| Agricultural / Kesin | 0.101 | - KC | and man or | | | |
| EXISTING STRUCTURE TYP | PE (IF ANY) | | | | | |
| Bridge Ø | Box CulvertO | Open Foot Cul | vert O | CSP O | N/ | A O |
| Other O Describe: | | | | Size (w x h) m | 2 19nx1.61 | 1- |
| SECTION TYPE AND MORP | HOLOGY | | | - Y | | |
| TYPE: Stream / river C | Channelized Perm | nanent Interm | ittent Ephem | eral ASSOCI | ATED WETLAND | : |
| Ø | 0 1 | 0 0 | 0 | | | |
| HYDRAULIC HEAD (mm): | D | | | | | |
| Habitat Type | Substrate | Mean width | Mean depth | Mean | Mean | Other |
| Run, Pool, Riffle, Flat? | | wetted (m) | wetted (m) | bankfull | bankfull | |
| | 525 (m) n | 22.4 | 1 | width (m) | depth(m) | |
| Flat | MUSERDID | JSM | 0.7 | asm | Ø7.13 . 2 | |
| Bedrock Boulder | Cobble Gra | vel Sand | Silt | Clay | Muck | Detritus |
| Br Bo | Co G | ir Sa | Si | CI | Mu | D |
| BANK STABILITY | 1 | - P | | | | |
| | Eroding | | | Protected | | osition Zone |
| | soil. undercut or | soil, no sign o | of recent | material/soil | fine gra | ined sediments |
| | bare soil | erosio | n | | | |
| Left Upstream Bank | < 0 | 0 | | 0 | | 0 |
| Right Upstream Bank | < o/ | 0 | | 0 | | 0 |
| HABITAT | | | | | | |
| IN-STREAM Undercut | Boulders C | obble Woody E | Debris | Organic Va | ascular Macroph | ytes None |
| COVER banks | | Instream | | aepris | stream | |
| that apply; D | v | | , , | | | |
| | | | . / / | | | |
| is for | | Overhan | ging 🗸 🛛 | 0 | vernanging y | |

| SHORE COVER (% stream shaded): VEGETATION TYPE (D for dominant): | | 100 – 90 % 90 – 60 O O | | 90 – 60% O | 60- 30% O | | | 30-1% | N | None | |
|---|---------------------|---------------------------|-----------------|---------------|---------------|-----------|------------|--------------|-----------|-------|--|
| | | Submergent | | | Floating | | | Emergent | | None | |
| Pre | dominant Species | | | | | | Burre | ed Pr | terchired | | |
| GRATORY SSTRUCTIC | DNS: | None | | - 1 | Seasonal/Ter | nporary | | Permane | nt | | |
| DTENTIAL RITICAL HA MITING: | BITAT | Spawning Low paler | I.J. (Muc | (K) 1 | Evidence of (| Groundwa | ater | Other | | | |
| RIPARIAN | COMMUN | IITY | | , A | | | | | | | |
| | - | Left | Upstream E | Bank | Dominant | Vegetatio | n Type | Right Upstre | am Bank | _ | |
| Riparian Zone | None | Cultivated | Meadow | Scrublan | Forest | None | Cultivated | Meadow | Scrubland | Fores | |
| 1.5-10 m | | | \checkmark | | | | 1. | \checkmark | | | |
| 10-30 m | | | \checkmark | | | | | \checkmark | | | |
| 30+ m | | | \checkmark | | | | | V | | | |
| WNSTREA HER PHOT MMENTS, | M PHOTO | Bridge Bridge | LMG ENHANCEI | P-G | RIGH | TUPSTR | EAM BANK F | чното #: | | 214 | |
| - Ter | perct | rure 2 | 4°C | | | | | | | | |
| - Bri | idge | nppea | -5 70 | Rov | ide con | rer d | for (| Ablivid | LS | | |
| 1 | | | | | | | | | | | |
| | | | | | | | | | | | |
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| | | | | | | | | | | | |



| GENERAL INFORM | NOITAN | | | | | | |
|--|---|--|---|--|---|---|---|
| PROJECT #: 1 (| - 36 | 14 NAME OF PI | ROJECT: | IME STARTED: | BY399 TIM | E FINISHED: | and a |
| COLLECTORS: | | 1 LOYA | ist Joier | STREAM ID | <u>1021901 1-</u> | DATE: | ingn - I |
| Ca | ale Ha | rtint Dar | ia Leclair | Salman | River - U/S | 201 | 6-06-01 |
| WEATHER: | | cc cll- | 2100 | | | | |
| LOCATION | JANYI | LC 6110 | and | | _ | | |
| NAME OF WATER | BODY: | GENERAL A | REA OF PROJECT | OCATION: | | | |
| Salmon R | ire | Duterli | mils of Fam | worth Dates | to Ho cli | she field | bridge Rd |
| CHAINAGE OR OT | HER IDEN | TIFYING ATTRIBL | JTE: | and a conten | | SITE TOTAL | or year |
| Approy 1 | kne | ast From | MillerRd | and shaffi. | ald bridge | Rel | |
| GPS ¹ COORDINATE | S (UTM): | 185T 314 | 1438.71 F | 11921112 | 993 NI | | |
| LAND USE AND PO | DLLUTION | 101 54 | 901010 | 41241 | 1.00 10 | | |
| SURROUNDING LA | ND USE: | | sour | RCES OF POLLUT | ION: | | |
| -Ascimord | | | 2 | uch run of | F off | | |
| EXISTING STRUCT | | | | residencil | TON OF P | | |
| Bridge | | Box CulvertO | Open Foot Cub | vert O | CSP () | N | 4.0 |
| Dhage O | | Box Culverto | | | | | A U |
| Other O Describe: | | | | | Size (w x h) m | 2 13×7 | |
| SECTION TYPE AN | D MORPH | OLOGY | | - | | | |
| TYPE: Stream / r | river Ch | annelized Pe | rmanent Interm | ittent Epheme | eral ASSOCI | | : |
| | (mm): | 0 | ØO | 0 | 00 | trow~ | |
| HTORAOLIC HEAD | (mm). | 7 | | | | | |
| Habitat Type | S | ubstrate | Mean width | Mean depth | Mean | Mean | Other |
| Run, Pool, Riffle, I | Flat? | | wetted (iii) | wetted (m) | bankfull width (m) | bankfuli depth(m) | 21 |
| Do FIN | Co | 265-8010 | 25 | 1 |) -1 | | |
| The FICT | - / | | | 4 (| // | | |
| | 50 | SKV10 | | 0.00 | 2.17 | 0.00 | |
| Bedrock Bou | ulder | Cobble G | ravel Sand | Silt | Clay | Muck | Detritus |
| Bedrock Bou Br E | ulder Bo | Cobble G | ravel Sand Gr Sa | Silt Si | Clay Cl | Muck Mu | Detritus D |
| Bedrock Bou Br E BANK STABILITY | ulder 30 | Cobble G Co | ravel Sand Gr Sa | Silt Si | Clay Cl | | Detritus D |
| Bedrock Bou Br E BANK STABILITY | ulder 30 | Cobble G Co Eroding Angle≥45°, erod | ravel Sand Gr Sa Vulnera | Silt Si ble erodible Angle | Clay Cl Protected 2>45°, non-erodit | Muck Mu Depu | Detritus D Dosition Zone |
| Bedrock Bou Br E BANK STABILITY | Jailder Bo | Cobble G Co Eroding Angle>45°, erodi soil, undercut d | ravel Sand Gr Sa Vulnera ible Angle>45°, e or soil, no sign c | ble erodible of recent | Clay Cl Protected e>45°, non-erodit material/soil | Muck Mu Depute Depute Angle<45 fine gra | Detritus D D osition Zone ° (gradual slope), ined sediments |
| Bedrock Bou Br E BANK STABILITY | 30 Som Book | Cobble G Co Eroding Angle>45°, erodi soil, undercut o bare soil | ravel Sand Gr Sa ible Angle>45°, d soil, no sign c erosio | ble erodible n | Clay Cl Protected e>45°, non-erodit material/soil | Muck Mu Depu Angle<45 fine gra | Detritus D position Zone ° (gradual slope), ined sediments |
| Bedrock Bou Br E BANK STABILITY | am Bank | Cobble G Co Eroding Angle>45°, erodi soil, undercut o bare soil | iravel Sand Gr Sa ible Angle>45°, o soil, no sign o erosio O | ble erodible of recent n | Clay Cl Protected a>45°, non-erodit material/soil | Muck Mu Depo De Angle<45 fine gra | Detritus D Desition Zone ° (gradual slope), ined sediments |
| Bedrock Bou Br E BANK STABILITY Left Upstre Right Upstre | aam Bank | Cobble G Co Eroding Angle>45°, erodi soil, undercut o bare soil | iravel Sand Gr Sa ible Angle>45°, o soil, no sign o erosio O | ble erodible n | Clay Cl Protected e>45°, non-erodit material/soil O O | Muck Mu Deproble Angle<45 fine gra | Detritus D Dosition Zone ° (gradual slope), ined sediments O O |
| Bedrock Bou Br B BANK STABILITY Left Upstre Right Upstre HABITAT | eam Bank | Cobble Co Eroding Angle>45°, erod soil, undercut o bare soil O | iravel Sand Gr Sa ible Angle>45°, o soil, no sign o erosio O | ble erodible of recent n | Clay Cl Protected =>45°, non-erodit material/soil O | Muck Mu Depo De Angle<45 fine gra | Detritus D D D D D D D D D D D D D D D D D D D |
| Bedrock Bor Br E BANK STABILITY Left Upstre Right Upstre HABITAT IN-STREAM U COVER | bam Bank eam Bank lindercut banks | Cobble Co Eroding Angle>45°, erod soil, undercut o bare soil O Boulders | iravel Sand Gr Sa ible Angle>45°, d or soil, no sign o erosio O Cobble Woody D | ble erodible of recent n | Clay Cl Protected =>45°, non-erodit material/soil O O O Organic debris | Muck Mu Depu Angle<45 fine gra | Detritus D Desition Zone ° (gradual slope), ined sediments O O O Vtes None |
| Bedrock Box Br BANK STABILITY | eam Bank eam Bank eam Bank | Cobble Co Eroding Angle>45°, erod soil, undercut bare soil O Boulders | iravel Sand Gr Sa Vulnera Angle>45°, o soil, no sign o erosio O Cobble Woody D Instream | ble erodible of recent n | Clay Cl Protected =>45°, non-erodit material/soil O O O Organic debris | Muck Mu Depo Angle<45 fine gra | Detritus D D D D D D D D D D D D D D D D D D D |
| Bedrock Bou Br E BANK STABILITY Left Upstre Right Upstre HABITAT IN-STREAM U COVER (check all that apply; D is far | eam Bank eam Bank eam Bank | Cobble Co Eroding Angle>45°, erod soil, undercut o bare soil O Boulders | iravel Sand Gr Sa ible Angle>45°, o soil, no sign c erosio O Cobble Woody D Instream | ble erodible of recent n | Clay Cl Protected a>45°, non-erodit material/soil O O O O O O O C G O C I In | Muck Mu Depu Angle<45 fine gra | Detritus D Desition Zone ° (gradual slope), ined sediments O O Vtes None |
| Bedrock Bor Br B BANK STABILITY Left Upstree Right Upstree HABITAT IN-STREAM U COVER (check all that apply; D is for dominant | aam Bank aam Bank aam Bank Indercut banks | Cobble Co Eroding Angle>45°, erod soil, undercut o bare soil O Boulders | iravel Sand Gr Sa ible Vulnera Angle>45°, e or soil, no sign o erosio O Cobble Woody D Instream Overhang | ble erodible of recent n ebris | Clay Cl Protected =>45°, non-erodit material/soil O O Organic debris In O | Muck Mu Depu Dele Angle<45 fine gra ascular Macroph astream verhanging | Detritus D Desition Zone ° (gradual slope), ined sediments O O Vtes None |

| SHORE COVER (% stream shaded): VEGETATION TYPE (D for dominant): | | 100 - 90 % 90 - 6 O O | | 90 – 60% O | 0% 60- 30% O | | | 30 – 1% O | N | None O | | |
|---|---------------------|-----------------------------------|------------|---------------------------------------|-----------------|----------|------------|---------------------|-----------|-----------|--|--|
| | | Submergent | | | Floating | | | Emergent | | None | | |
| Pre | dominant Species | Pordwee | lst | | · | | - | | | | | |
| MIGRATORY | NS: | None | _ | | Seasonal/Tem | porary | | Permaner | nt | | | |
| POTENTIAL CRITICAL HA LIMITING: | BITAT | Spawning - clare s - cypiln | perny | Evidence of Groundwater Other | | | | | | | | |
| RIPARIAN | COMMUN | NITY | | | | | | | | | | |
| - | | Left L | Jostream B | ank | Dominant V | egetatio | n Type | Right Upstre | am Bank | | | |
| Riparian Zone | None | Cultivated | Meadow | Scrublan | d Forest | None | Cultivated | Meadow | Scrubland | Forest | | |
| 1.5-10 m | | | | | / | | | | | | | |
| 10-30 m | | | | | / | | | | | - | | |
| 30+ m | | | | | / | | | | | | | |
| HOTOGRAP | HIC REC | ORD: | mr | | | | | | | - | | |
| DOWNSTREAM P | ното #: М РНОТ(| D#: TMED | 61610 | - | RIGH | UPSTRE | EAM BANK P | HOTO #: PHOTO #: | | | | |
| THER PHOT | 0 #S: | Charles 1 | ere - | | | | | | | | | |
| COMMENTS, | INCLUDI | NG POTENTIAL | ENHANCEN | IENT OPP | ORTUNITIES: | | | | | | | |
| - P | tesb | vole | AUSSE | 28 | | | | | | | | |
| - A | edere | te flow | | | | | | | | | | |
| - Su | fioble | : Spawn | is h | ebital | r for | Well | leye; C | yprinid | LMba | 255 | | |
| - F(c | owis | hecting | 500 | thw | iest | | | | | | | |
| - 01 |)serve | lore | angle | ir at | - this | loce | tion | | | | | |
| | | 1 | | | | | | | | | | |
| dditional No | tes Appe | nded? | O Yes | nu | mber of page | 5 | DESCRIP | TION | | | | |



| GENERAL INF | ORMATION | | | | _ | | | | | |
|--------------------|--------------|--------------|--------------|---------------------------|-------------|----------|--|----------------------|-------------|-----------------|
| PROJECT #: | 6-3674 | NAME O | F PROJEC | T: 1 | TIME STAR | TEPE | 04 1 | | ISHED: | |
| COLLECTORS | C.I.H | chu t | 1) | La cha | STRE | AM ID | | DATE | 14 | |
| WEATHER: | Caren | write T | Nana | bellair | Dall | non is | iver - DIS | | 2010 | 0-06-0 |
| 2 | JURNY (| C 611 | 0 | | | | | | | - |
| LOCATION | ERBODY | GENERA | | E PROJECT | OCATION | | | | | |
| Salmon | RUE | Dede | limi | S of To | - Church | thi | atario | offo | Feled | Rieldback |
| CHAINAGE OR | OTHER IDEN | TIFYING ATTR | RIBUTE: | 10110 | 11001 | 1.00 | | Un U | Sher | vicia pringi |
| Approx | 1 RM e | cat from | ~ Mill | ler Rd | Gal | che | field | brid | se Rd | |
| SPS COORDIN | ATES (UTM): | 14T | 3411138 | DIE | 197114 | 39 9 | 3 N | | 0 | |
| AND USE ANI | D POLLUTION | 101 | 0119 00 | 1.612 | TICAT | DIT | <i>,</i> , , , , , , , , , , , , , , , , , , | | | |
| URROUNDING | GLAND USE: | | | sou | RCES OF P | OLLUT | ION: | | | |
| Sig | All | | | -6 | Decided | LIC | Sun off | 5 | | |
| XISTING STR | UCTURE TYPE | E (IF ANY) | | | ce s le ori | ict p | Conto | | | |
| Bridge 🔇 | V | Box CulvertO | 0 | pen Foot Culv | vert O | | CSP O | | N/A | 0 |
| | 1.0.1 | | | | | | | . 10 | . 1 | |
| ther O Descr | ID MORE | Jeen | | | | - | Size (w x h |) m ² \ { | SXF | |
| YPE: Strea | m / river Cł | nannelized | Permanen | t Intermi | ittent | Epheme | ral ASSO | CIATED | WETLAND: | |
| | 8 | 0 | a | 0 | | 0 | | Inthe | wa | |
| YDRAULIC HI | EAD (mm): | lomn | | | | | | | | |
| Habitat T | ype S | ubstrate | Mea | an width | Mean de | epth | Mean | | Mean | Other |
| Run, Pool, Rif | fle, Flat? | wett | | wetted (m) wetted (m) | | bankfull | bankfull deptb(m) | | | |
| 0 | G | R10'C0 80 | > | b C | 0.20 | | | | | |
| Run | 5 | 416 | | IJM | 0,50 | | 17 | 0, | 95 | |
| Bedrock | Boulder | Cobble | Gravel Gr | Sand | Si | lt | Clay | Muc | sk | Detritus |
| ANK STABILI | TY | | | | | | | | | |
| | | Erodin | g | Vulnera | ble | | Protected | T | Depos | ition Zone |
| | | Angle>45°, e | rodible | Angle>45°, e | erodible | Angle | >45°, non-ero | dible | Angle<45° (| gradual slope), |
| | | bare so | bil | soli, no sign c erosio | n | | material/soli | | tine graine | ea sealments |
| Left Up | stream Bank | 0 | | 0 | | | 0 | | | 0 |
| Right Up | stream Bank | 0 | | 0 | | | 0 | | | 0 |
| ABITAT | | 1 | | | | | | | | |
| N-STREAM | Undercut | Boulders | Cobble | Woody D | ebris | | Organic | Vascula | r Macrophyt | es None |
| (check all | Janks | | 1 | Instream | V | | Genus | Instream | n | |
| hat apply; D | | | V | | . / | | <i>v</i> | | | |
| is for dominant | | | | Overhan | ging 🗸 | | | Overha | nging | |
| cover): | | | | | | | | | | |
| SHORE C (% stream s | OVER shaded): | 100 - 90 % 90 - 60% O O Submergent 0 | | 90 – 60% O | | 60- 30% | / | 30 – 1% O | N | lone O |
|-----------------------------------|---------------------|--|------------|---------------|--------------|-----------|------------|--------------|-----------|-----------|
| VEGETATIC (D for dom | ON TYPE ninant): | Sub | mergent | | Floatin | g | | Emergent | | None |
| Pre | dominant Species | | | | | | | | L | |
| IGRATORY BSTRUCTIC | DNS: | None | | | Seasonal/Ter | nporary | | Permanei | nt | |
| OTENTIAL RITICAL HA MITING: | BITAT | Spawning Wulkye | the | | Evidence of | Groundwa | nter | Other | | |
| RIPARIAN | COMMUN | IITY | | | | | | | | |
| | | | | | Dominant | Vegetatio | n Type | | | |
| | Num | Left | Upstream E | Bank | d Famat | North | F | Right Upstre | am Bank | Forest |
| Riparian Zone | None | Cultivated | Meadow | Scrubial | nd Forest | None | Cultivated | Meadow | Scrubiand | Forest |
| 1.5-10 m | | | | | | | | | | 4 |
| 10-30 m | | | | | 1 | | | - | | L |
| 30+ m | | | | | | | | | | C |
| HOTOGRAP | PHIC RECO | ORD: | | | _ | | | | | |
| PSTREAM F | PHOTO #: | | | | LEF | | AM BANK PH | HOTO #: | | |
| THER PHOT | TO #S: |)#: | | _ | KiGr | 11 UFSIK | | HOTO #. | | |
| _ | | | | | _ | | | | | |
| OMMENTS, | INCLUDIN | IG POTENTIAL | _ ENHANCE | MENT OPI | PORTUNITIES | : | | | | |
| | | | | | | | | | | |
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| GENERAL INF | ORMATION | | | | | | | | | |
|------------------------------|-------------------|--------------|--------------|-----------------|---------------|--------------------|---------------------------|----------------------|-------------|------------|
| PROJECT #: | 6-361 | NAME OF | PROJEC | т: т | IME START | ₽: | TIM | E FINISHED: | 1 | |
| COLLECTORS: | Cde H. | c/11+ | Dona | Leclar | Sal | MID #: mon Pres | I | DATE: 201 | 6-0 | 6-07 |
| VEATHER: < | COM C | CICIL | 210 | | | | | | | |
| OCATION | ong C | CIGIL | 210 | | - | | | | | |
| AME OF WAT | ERBODY: | GENERA | L AREA C | F PROJECT I | LOCATION: | 1. 0 | | 0.00 | 1 21 | 11 |
| Schlor | Kive | Ocide | <u>c lim</u> | ilrot T | anwo | -1L UN | terio | ottotst | ettel | d bridge |
| | OTHER IDEN | | IBUTE: | 01 | | ~ ~ ~ | | - 1 | | |
| teprox | Iknee | ast tion | -Mill | er Kd a | nd Sh. | effield | brid | ge Rd | | |
| PS COORDIN | ATES (UTM): | 18T 34 | 11438 | 21F (| 1424430 | 1.93 A | | 0 | | |
| AND USE ANI | D POLLUTION | | 1700 | | | | | | | |
| URROUNDING | G LAND USE: | | | sou | RCES OF PO | DLLUTION: | · | | | |
| Nestider! | ue l. | | | _5 | ocilie | in Or- | ofe | | | |
| XISTING STR | UCTURE TYPE | E (IF ANY) | | 1 120 | es) (ii c ki | ajon | 011 | | | |
| Bridge 🕼 | | Box CulvertO | (| Open Foot Cul | vert O | CSP | 0 | | N/A O | |
| | | | | | | | | 212V7 | | |
| ther O Desci | | | - | | | Si | ze (w x h) n | n² \) X / - | | |
| YPE: Strea | m / river Ch | nannelized | Permane | nt Interm | ittent E | phemeral | ASSOC | IATED WETLAN | ID: | |
| See. | 0 | 0 | Q | 0 | | 0 | | | | |
| IYDRAULIC H | EAD (mm): |),mm | | | | | | | | |
| Habitat T | ype S | ubstrate | M | ean width | Mean de | pth | Mean | Mean | | Other |
| Run, Pool, Rif | file, Flat? | | W | etted (m) | wetted (| m) t | ankfull | bankfull depth(m) | | |
| \bigcirc | G | HED25 | | ~ | 1-71 | | | | - | |
| Run | 6 | ROSLIS | | 12 | p./1 | i | 16 | p.ox | | |
| Bedrock Br | Boulder Bo | Cobble Co | Gravel Gr | Sand Sa | Sili | | Clay Cl | Muck Mu | Detr [| ritus) |
| ANK STABILI | ITY | 2- 4 | - | | | | | | | |
| | | Erodin | Ig | Vulnera | able | Pro | otected | De Angles | eposition 2 | Cone |
| | | soil, under | cut or | soil, no sign (| of recent | Angle>45 mat | , non-erour erial/soil | fine g | rained see | diments |
| Laffille | ates on Dark | bare so | bil | erosio | n | | / | | | |
| DiahAU | ostream Bank | 0 | / | 0 | | | 0 | | 0 | |
| Right Up | | 0 | | 0 | | | 0 | - | 0 | - |
| ABITAT IN-STREAM COVER | Undercut banks | Boulders | Cobbl | e Woody D | Debris | Org | ganic V bris | ascular Macro | phytes | None |
| (check all | | | . 7 | Instream | $\overline{}$ | | | nstream | | |
| hat apply; D is for | 1 | | | Overhan | | | | Overhanging V | 1 | |
| dominant cover): | | | | | 00 | | | | | |

| SHORE (% stream : | COVER shaded): | 100 – 90 O | % | 90 – 60% O | | 60- 30% | | 30 – 1% O | N | one O |
|--------------------------------|----------------------------------|-----------------|----------------------------|---------------|-----------------------------|----------------|------------|--------------|-----------|----------|
| VEGETATIO (D for don Pro | ON TYPE minant): edominant | Sub | mergent | | Floatir | g | | Emergent | ~ | None |
| | ONS: | None | \checkmark | | Seasonal/Te | nporary | | Permane | nt | |
| OTENTIAL RITICAL HA | ABITAT | Spawning |) | | Evidence of | Groundwa | ter | Other | | |
| RIPARIAN | | NITY | | | | | 1 | | | |
| | (1. j.). | 1 | | 1.1.0 | Dominant | Vegetatio | n Type | | and the | |
| | Nana | Left | Upstream B | ank | | | F | Right Upstre | am Bank | |
| Riparian Zone | Myded | Unitivated with | Meadow | Scrubian | d Forest | None Nytro(| Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | Hydrol | R | V | | | Hydrol | l | \bigvee | | |
| 10-30 m | 1 | | \checkmark | | | Mydde | 2 |) | | |
| 30+ m | ~, | | | | | | | ~ | | |
| IOTOGRAF | PHIC RECO | ORD: | | | 1 | | | | | |
| WNSTREAM | AM PHOTO #: |) #· | _ | | LEF | | | | | |
|)MMENTS, | INCLUDIN LIGE | POOL POOL | ENHANCEN Decos Svres | VIENT OPP | ORTUNITIES Sinte Pris | R | AAK. | | | |
|) . | | | | | | | | | | |



| GENERAL INFORM | ATION | | | | | | | | | |
|--|--|---|-------------------------------------|--|--|--------|---|-------------------------------------|--|--|
| PROJECT #: 1(| 21.74 | NAME OF | PROJECT | r: 1 | TIME STAR | ED: | 2 | ME FINISH | ED: 12:0 | 1 |
| | 30 T | 1 Loyali | 51 501 | lac | STRE | MID# | 2.00 | DATE: | 12:0 | 1 |
| C | aleHa | actin t | Dana | . Ledki | r Sali | non | River - I | 0 | 2016-06 | 5-07 |
| WEATHER: | andruck | Ma Ac | 5.0 | an co | 110 | 211 | 2 | | | |
| LOCATION | eannainean an a | CABIES . | 2011 | 14 CC | 611 | d | C | | | |
| NAME OF WATERE | BODY: | GENERAL | AREA OF | PROJECT | LOCATION: | | (, | | 1 (| 01 |
| Sal MON KIV | <u>er</u> | Outer | -limid | sot t | immor | ILO | Mario of | t toot t | taggedy | Kaw |
| CHAINAGE OR OTH | IER IDEN | | BUTE: | 1 | | . 1 | | | 55 1 | A |
| Easton H | lagge. | ly Rdi | < Un | til you | 1eccl | old | bidge | CLOSS | ing | |
| GPS COORDINATE | s (utim): | 118T | 3421 | ULU UGF | = 40 | 775- | 16.62 N | 1 | / | |
| LAND USE AND PC | | | | io i i i | | uc i | 101-0 | | | |
| SURROUNDING LA | ND USE: | | | sou | RCES OF P | OLLUTI | ON: | | | |
| - Acciuture | ĩ | | | -2 | Ocid Fo | tial | 11 | | | |
| EXISTING STRUCT | URE TYPE | (IF ANY) | | | Canada | 11000 | | | | |
| Bridge O | | Box CulvertO | 0 | pen Foot Cul | vert O | c | SP O | 1 | N/A O | |
| | 1150 | Jala (| | Lide | 2 | | | 2 | | |
| SECTION TYPE AN | | OLOGY | n dia | pricis | | | Size (W x h) | m | | |
| TYPE: Stream / r | iver Ch | annelized | Permanent | Interm | ittent E | pheme | al ASSOC | IATED WE | TLAND: | |
| Q | | 0 | ø | 0 | | 0 | Un | thown | | |
| HYDRAULIC HEAD | (mm): | 0 - | | | | | | | | |
| Habitat Type | S | ubstrate | Mea | an width | Mean de | pth | Mean | Me | an | Other |
| Run, Pool, Riffle, F | Flat? | | wet | teu (m) | wetted | (m) | bankfull width (m) | bank depti | cfull h(m) | |
| R | 6 | R=10 Bo- | 65 1 | 20 | 1 | | 11 5 | } | < | |
| TON | 5 | x-5 co- | 90 | 10 | | | 40 | | | |
| Bedrock Bou Br E | ılder 30 | Cobble Co | Gravel Gr | Sand Sa | Sil | t | Clay Cl | Muck | De | tritus D |
| | | | | | | | . | INIM | | |
| BANK STABILITY | | | | | | - | | | 1 | |
| BANK STABILITY | | Eroding | } | Vulnera | ble | | Protected | | Deposition | Zone |
| BANK STABILITY | | Eroding Angle>45°, er | } odible | Vulnera Angle>45°, | ible erodible | Angle | Protected | ible Ar | Deposition ngle<45° (grad | Zone lual siope), |
| BANK STABILITY | | Eroding Angle>45°, er soil, undercu bare soi | } odible ut or s I | Vulnera Angle>45°, soil, no sign o erosio | ble erodible of recent | Angle | Protected >45°, non-erod material/soil | ible Ar | Deposition ngle<45° (grad fine grained s | Zone lual slope), ediments |
| BANK STABILITY Left Upstre | am Bank | Eroding Angle>45º, er soil, underci bare soi |) rodible ut or I | Vulnera Angle>45°, , soil, no sign o erosio | ible erodible of recent | Angle | Protected >45°, non-erod material/soil | ible Ar | Deposition ngle<45° (grac fine grained so O | Zone lual slope), ediments |
| BANK STABILITY Left Upstre Right Upstre | am Bank am Bank | Eroding Angle>45°, er soil, underc bare soi O |] odible ut or I | Vulnera Angle>45°, , soil, no sign o erosio | able erodible of recent | Angle | Protected >45°, non-erod material/soil | ible Ar | Deposition ngle<45° (grad fine grained so O O | Zone lual slope), ediments |
| BANK STABILITY Left Upstre Right Upstre HABITAT | am Bank am Bank | Eroding Angle>45°, er soil, underc bare soi O |) odible ut or I | Vulnera Angle>45°, soil, no sign o erosio O O | able erodible of recent | Angle | Protected >45°, non-erod material/soil O O | ible Ar | Deposition ngle<45° (grad fine grained so O O | Zone lual slope), ediments |
| BANK STABILITY Left Upstre Right Upstre HABITAT IN-STREAM COVER | am Bank am Bank ndercut banks | Eroding Angle>45°, er soil, underc bare soi O Boulders | 3 odible ut or 1 Cobble | Vulnera Angle>45°, , soil, no sign o erosio O O Woody D | able erodible of recent n | Angle | Protected >45°, non-erod material/soil O O Organic | ible Ar | Deposition ngle<45° (grad fine grained so O O lacrophytes | Zone lual slope), ediments None |
| BANK STABILITY Left Upstre Right Upstre HABITAT IN-STREAM COVER (check all | am Bank am Bank ndercut banks | Eroding Angle>45°, er soil, underc bare soi O Boulders | Cobble | Vulnera Angle>45°, , soil, no sign o erosio O O Woody D Instream | able erodible of recent n Debris | Angle | Protected >45°, non-erod material/soil O O Organic debris | ible An Vascular M | Deposition ngle<45° (grad fine grained so O O lacrophytes | Zone lual siope), ediments None |
| EANK STABILITY Left Upstre Right Upstre HABITAT IN-STREAM (COVER (check all that apply; D is for | am Bank am Bank ndercut banks | Eroding Angle>45°, er soil, underc bare soi O Boulders | adible ut or I Cobble | Vulnera Angle>45°, , soil, no sign o erosio O O Woody D Instream | ble erodible of recent p Debris | Angle | Protected >45°, non-erod material/soil O O Organic debris | ible Ar Vascular M | Deposition ngle<45° (grad fine grained so O O lacrophytes | Zone lual slope), ediments None |
| BANK STABILITY Left Upstre Right Upstre HABITAT IN-STREAM U COVER (check all that apply; D is for dominant | am Bank am Bank ndercut banks | Eroding Angle>45°, er soil, underc bare soi O Boulders | Cobble | Vulnera Angle>45°, - soil, no sign o erosio O O Woody D Instream Overhan | able erodible of recent n Debris | Angle | Protected >45°, non-erod material/soil O O Organic debris | ible An Vascular M Instream V | Deposition ngle<45° (grad fine grained so O O lacrophytes | Zone lual slope), ediments None |

| SHORE Co (% stream s | OVER haded): | 100 – 90 % O | 6 9 | 0 – 60% O | | 60- 30% | - | 30 – 1% O | N | one O | |
|-------------------------|---------------------|------------------------------------|-----------------|--------------------|---------------|---------------|-------------|--------------|-----------|--------------|--|
| VEGETATIO (D for dom | N TYPE inant): | Subm | nergent | | Floating | 9 | | Emergent | | None | |
| Pre | dominant Species | Canada | water | ed Whi | ilcipon | 11117 | Picke | selve | ed | | |
| IGRATORY DBSTRUCTIO | NS: | None | Se | Seasonal/Temporary | | | | Permanent | | | |
| OTENTIAL RITICAL HA | BITAT | Spawning - Walleye - Cyprind | - Pike | Ev | idence of G | iroundwa A | iter | Other | | _ | |
| RIPARIAN | COMMUN | NITY | | | Deminent | locatetio | - Tune | | | | |
| | 1 | Left L | Jpstream Bar | nk | Dominant | regetatio | n Type F | Right Upstre | am Bank | | |
| Riparian Zone | None | Cultivated | Meadow | Scrubland | Forest | None | Cultivated | Meadow | Scrubland | Forest | |
| 1.5-10 m | | / | | | | | | | X | \checkmark | |
| 10-30 m | | | | | X | | | | | \checkmark | |
| 30+ m | | | | | \checkmark | | | | | \checkmark | |
| HER PHOT | O #S: | IG POTENTIAL | ENHANCEME | ENT OPPOI | RTUNITIES | | | | LURE COL | 1 | |
| -019 | , bri | dge for | inddic | 2~ p | leser | tal | t Cle | ossin | 5 | | |
| - Hak | silat | spanning, FVCONC | hition | 5 5 | Scidic | ble | forv | valleye | , pike an | 1 Cyprin | |
| - Fla | owin | head | ing So | outhe | east | | | | | * 1 | |
| - Che Majo | innel oridy. | is deep | in the reter ci | middle | e of pepth | neter IM | -course | cl the | oush the | - | |
| • | | | | | | | | | | | |
| | | | | | | | | | | | |
| ditional No | tes Appe | nded? | O Yes | num | per of page | s 3 | DESCRIP | TION | | | |



| GENERAL INFO | ORMATION | | | | | | | | |
|--|--------------|----------------------|-------------|----------------------------|------------|-------------------|-------------------|-------------|------------------|
| PROJECT #: | 6-367 | 4 NAME C | OF PROJE | CT: T | IME STARTE | D: 13:07 | TIME FIN | ISHED: 3 | :15 |
| COLLECTORS: | 0111 | 1 . K | | | STREA | W ID #: | DAT | | 7 |
| WEATHED. | aletta | ctin t k | Jana | hedair | Dalm | n kiver - US | | 2016 | -00-0T |
| WEATHER: | SUNNY | CC 61 | 10 2 | 21°C | | | | | |
| LOCATION | | | | | | | | | |
| NAME OF WAT | ERBODY: | GENER | AL AREA | OF PROJECT L | OCATION: | 1 | 1. | 1.7.17 | 101 |
| Salma | DA KIVE | - OUT | erti | m115 01 | t lam | Worth, Da | Ocrio, | ottort | taggertyled. |
| | | TIFTING ATT | RIBUTE: | | 1 | (| () | 1 | |
| test o | n Ac | iscierty | z Rd | W UN | fil you | recoh ol | d bei | dsecra | ossing |
| GPS COORDIN | ATES (UTM): | 181 | 3471 | All ligt | "ye | 1704.60 | 2N | |) |
| LAND USE AND | POLLUTION | 101 | 0129 | 0414112 | | 16010.00 | | | |
| SURROUNDING | LAND USE: | | | SOUR | CES OF PO | LLUTION: | | | |
| - K-eside | Tint | | | - 1 | goad n | KUNOTT | | | |
| EXISTING STRU | JCTURE TYPE | E (IF ANY) | | - | 16214 | ericl | | | |
| Bridge O | _ | Box Culvert | | Open Foot Culv | ert O | CSP O | | N/A | 0 |
| | | | | | | 1 | - | | |
| Other O Descri | be: | | | | | Size (w x | h) m ² | | |
| SECTION TYPE | AND MORPH | IOLOGY | Destruction | internet | Hant Er | hamand ASS | OCIATED | | |
| TTPE: Stream | | | Permane | Intermi | ttent Ep | onemeral ASS | UNE | .0 | |
| HYDRAULIC HE | AD (mm): | 0 | 0 | 0 | | 0 1 | UNIN | Jun | |
| | 0 | L | | | | 111 | | | |
| Habitat Ty Rup Pool Riff | /pe S | ubstrate | M | ean width etted (m) | Mean dep | th Mean | | Mean | Other |
| Run, Fooi, Rin | | | | | wetted (ii | width (m |) (| lepth(m) | |
| SIL | B | 0-15 50 | 5 | 20 | IM | 22 | / | 21 | |
| TIGI | | 0-70 D | -10 | 30 | 2-11 | 57 | | -1.2 | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Silt | Clay Cl | MU | ick lu | Detritus |
| BANK STABILIT | Y | | | | | | - | | |
| | | Erodi | ng | Vulneral | ole | Protected | | Depos | ition Zone |
| | | Angle>45°, | erodible | Angle>45°, e | rodible | Angle>45°, non-ei | rodible | Angle<45° | (gradual slope), |
| | | soil, unde bare s | rcut or | soil, no sign o erosior | f recent | material/soi | | fine grain | ed sediments |
| Left Ups | stream Bank | NO | / | 0 | | 0 | - | | 0 |
| Right Ups | stream Bank | nd nd | | 0 | | 0 | - | | 0 |
| HABITAT | | | | | | | - | | |
| IN-STREAM | Undercut | Boulders | Cobbl | e Woody De | ebris | Organic | Vascul | ar Macrophy | es None |
| COVER | banks | | | | . / | debris | | 15 | |
| that apply: D | | 111 | . / | Instream | V | | Instrea | mv | |
| and a hearing the second secon | | | | | | | | | |
| is for | V | | | Overhang | jing 🗸 | | Overha | anging | |
| is for dominant | \checkmark | | | Overhang | jing 🗸 | | Overha | anging | |

| SHORE C (% stream s | OVER haded): | 100 – 90 % O | 90 – 60 O | % | 60- 30% O | | 30 – 1% Ø | No | one O |
|---------------------------------------|-------------------------------|--|----------------|--------------------------------|---------------------------|-------------------------------------|--------------------------|------------------|--------------|
| VEGETATIO (D for dom | N TYPE inant): | Submerge | nt | Floating |] | See | Emergent | | None |
| Pre | Species | Canada wat | rheel | Wild Cele | ry . | Phod | os tale | \sim | |
| MIGRATORY | DNS: | None | | Seasonal/Terr | porary | - | Permaner | | |
| POTENTIAL CRITICAL HA LIMITING: | BITAT | Spawning Walleye, pita Cyprind, Ba | | Evidence of G | iroundwa | nter | Other | | |
| RIPARIAN | COMMUN | NITY | | Deminent | lagatatio | n Tuno | | - | |
| | | Left Upstre | am Bank | Dominant | regetatio | n type F | Right Upstre | am Bank | |
| Riparian Zone | None | Cultivated Mead | ow Scrub | land Forest | None | Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | | | | V | | | | | V |
| 10-30 m | | | | V | | | | | ~ |
| 30+ m | | | | × | | | | | ~ |
| PSTREAM F OWNSTREA THER PHOT | PHOTO #: M PHOTO TO #S: | ZMGP GIA D#: JMGPGIA Emersent Sp | 2 Decies Un | Known | UPSTRE T UPSTR I MG | EAM BANK PH EAM BANK F P 6 (4 | ното #: рното #: 8 | 2M6P61 2M6P61 | 34 |
| · Rish · Rish · Habidi and c | includit Lt st ct st | side of Dewing Cond | bon K | PPORTUNITIES Lcs Suiticb | hydro h fo | o line or ve | rish! Ileye, f | t of wa | y. 1 bess |
| - Flor | ~ (3 | heading s | outh e | east | | | | | |
| Additional No | tes Anna | nded? Ø No. O | Vae | number of page | 3 | DESCRI | PTION | | |



| GENERAL INFORM | ATION | | | | | | | | | | |
|----------------------|------------------|--------------|------------|------------------|--------------|---------|-------------------|---------|-------------------|-------------|------|
| PROJECT #: | 2114 | NAME OF | PROJEC | | ME STAR | TED: | Т | IME FIN | ISHED: 12 | · DY | |
| COLLECTORS | 261 | L0 | 401191 | >0/Cr | STRE | AM ID # | | DAT | | OK 1 | |
| Ca | le Hau | HINT Pa | na h | eclair | Samon | River | -DIS | | 2016 | 5-106-0 | of |
| WEATHER: | 1000 | CC (1) | 0 | 100 | | | | | 20-2 | | |
| | May | CC 6/1 | 0 1 | | | | | | | | - |
| NAME OF WATERB | ODY: | GENERA | AREA | OF PROJECT L | OCATION: | | | _ | | | |
| SalMon | River | Outer | imito | FS Jame | orthe | atari | id off | FH | iggerdy | Rdw | |
| CHAINAGE OR OTH | IER IDEN | TIFYING ATTR | BUTE: | | | | | | 00 / | | |
| EastonH | asgal | y RdL | J Ur | soy lite | read | old | bridge | CIC | SSIN | | |
| GPS COORDINATE | S (UTM): | IBT | 342 | 464. 49 F | Ē | 1972 | 576,62 | N |) | | |
| LAND USE AND PO | LLUTION | | | | | | | | | | - |
| SURROUNDING LA | ND USE: | | | SOUR | CES OF P | OLLUTI | ON: | | | | |
| -Kesideric | cl | | | -12 | padk | 129 | 92 | | | | |
| EXISTING STRUCTU | URE TYPE | (IF ANY) | | | 1081110 | 1001 | | | | | |
| Bridge O | | Box CulvertO | | Open Foot Culv | ert O | C | CSP O | | N// | A O | |
| | | | | | | | | 2 | | | |
| Other O Describe: | | OLOGY | | | | | Size (w x h | m | | | |
| TYPE: Stream / ri | iver Ch | annelized | Permane | nt Intermit | tent E | Ephemei | ral ASSO | CIATED | WETLAND | | |
| 0 | | 0 | 0 | 0 | | 0 | (| Inki | iown | | |
| HYDRAULIC HEAD | (mm): |) | | | | | | | | | |
| Habitat Type | S | ubstrate | M | ean width | Mean de | pth | Mean | 1 | Mean | Othe | r |
| Run, Pool, Riffle, F | lat? | | We | etted (m) | wetted | (m) | bankfull | | bankfull | | |
| CL | R | 10 31 - | 0-02 | | 1 | | width (m) | | lepth(m) | | |
| tlat | D | 6 20 MU | -10 | 32 | 1.0 | | 37 | | 1.3 | | |
| Bedrock Bou | lder | Cobble | Gravel | Sand | Sil | t | Clay | Mu | ick | Detritus | |
| Br B | 80 | Co | Gr | Sa | Si | | CI | N | lu | D | _ |
| BANK STABILITY | | | | | | | | | | | |
| | | Eroding | J | | | Angle | Protected | dible | Depo Angle<45° | sition Zone | (enc |
| | | soil, underc | ut or | soil, no sign of | f recent | Aligie | material/soil | | fine grai | ned sedime | nts |
| | | bare so | j <u>k</u> | erosion | 1 | _ | | | | | |
| Left Upstrea | am Bank | Ø | | 0 | | _ | 0 | | | 0 | |
| Right Upstrea | am Bank | Ó | | 0 | | | 0 | | | 0 | |
| HABITAT | | | | 1 MI | | 1 | | M | | | |
| COVER | ndercut banks | Boulders | Cobbl | e Woody De | ebris | | Organic debris | Vascul | ar Macrophy | ytes N | one |
| (check all | 1 | 1 | | Instream | \checkmark | | | Instrea | im V | | |
| that apply; D | V | | | 0 | / | | | Oursel | naine | | |
| dominant | ~ | | | Overhang | jing | | - | Overha | anging | | |
| cover): | | | | | | | | _ | | | |

| SHORE C (% stream s | OVER shaded): | 100 – 90 % O | 90 – 60 O |)% | 60- 30% O | | 30 - 1% | No | ne |
|---------------------------------------|----------------------|---------------------------|--------------|----------------|--------------|------------|----------------|----------|--------------|
| VEGETATIO | ON TYPE ninant): | Submerge | nt | Floatin | g | E | mergent | | None |
| Pre | edominant Species | Pontweed ST wild Celer | 7 | w.plily | / | Picke | selweee | 6 | |
| MIGRATORY | DNS: | None | | Seasonal/Ten | nporary | | Permanent | - | |
| POTENTIAL CRITICAL HA LIMITING: | BITAT | Spawning Walleye, Cy | prind | Evidence of C | Groundwat | er | Other | | |
| RIPARIAN | COMMUN | NITY | | Dominant | /egetation | Type | | | |
| | | Left Upstre | am Bank | Dominant | egetation | Ri | ght Upstream B | lank | |
| Riparian Zone | None | Cultivated Meac | low Scrub | land Forest | None | Cultivated | Meadow So | crubland | Forest |
| 1.5-10 m | | | | | | | | | 5 |
| 10-30 m | | | | V | | | | | \checkmark |
| 30+ m | | | | V | | | | | V |
| OTHER PHOT | INCLUDIN | NG POTENTIAL ENHA | NCEMENT O | PPORTUNITIES | 1 | | | | |
| - Very | min | incl flow | ~ | | | | | | |
| -obs | erved | 20+ | Cypriv | hids nea | er s | hore | bank | | |
| -obs | Servel | i fresh v | rde | musse(| S | | | | |
| - hab | idd. | Spawning C | onditis | ns suit | able | for | Welleye | -Kypr | inid |
| -Flow | ~ 15 | heading | south. | ecst | | | · | e y | |
| -Cott | ase | located w | ere a | ssessme | t we | es cond | uchel | | |
| | | | | | | | | | |
| Additional No | tes Appe | nded? O'No O | Yes | number of page | s_3 | DESCRIPT | | | |



| GENERAL INFORM | ATION | | | | | | | | | | |
|-----------------------|-----------|-------------------------|--------------|----------------------------|----------------|---------|-----------------------|----------------|----------------------|------------|------------|
| PROJECT #: 1 2 | 674 | NAME OF | PROJE | ICT: | IME STAR | TED: | Т | | IISHED: | | |
| COLLECTORS: | | (B | 5 10 | UTW 18 | STRE | AMID | #: | DATI | = | <i>c</i> ' | |
| C | de t | tertin | | | Tribute | ary 1 h | o the Scilinian & | yer- | dolb | 06. | do |
| WEATHER: | 100 | rc 2110 | 2 2 | 99 | | | 015 | | | | |
| LOCATION | 411.4 | CC an | | | | | | | | | |
| NAME OF WATERBO | ODY: | GENERA | AREA | OF PROJECT L | OCATION | 2 | | | | | |
| Unknown | | out | stelr | tsot Je | Auto | de. | Goyd | on | | | |
| CHAINAGE OR OTH | ER IDENT | TIFYING ATTR | BUTE: | | | | (| | | | |
| Southon | Testa | eyrd & | pefo | ic Inters | <i>iecello</i> | ~ of | Bawnr | land | Jester | 7 | |
| GPS COORDINATES | 6 (UTM): | 18T 3 | 4254 | 4.42E | 4919 | 290. | БN | | | | |
| LAND USE AND POL | | | | SOUE | CES OF P | | | | | | 4 |
| | I P | estided. | 1 | - K | CES OF P | Rund | SIL | <u>.</u> | | | |
| 102 Electore | 1 - 2 | C01140- | ` | ~ ' | Accia | Au | =[lunc | of F | | | |
| EXISTING STRUCTU | IRE TYPE | (IF ANY) | - | | | | | -1 | | | |
| Bridge O | | Box CulvertO | _ | Open Foot Culv | vert O | | CSP Ø | | N/. | A O | |
| Other O Describe: | Road | Celver | r | | | | Size (w x h) | m ² | r=0. | S | |
| SECTION TYPE AND | MORPH | OLOGY | | a starter a | * | | 1.000 | | | | |
| TYPE: Stream / riv | ver Ch | annelized | Perman | ent Intermi | ttent I | Epheme | assu | | WEILAND | | |
| | | 0 | Ø | Ø | | 0 | (| J 10 | IOwn | | |
| HIDRAULIC HEAD (| | | | | | | | | | | |
| Habitat Type | S | ubstrate | N | Mean width | Mean de | epth | Mean | | Mean | C | other |
| Run, Pool, Riffle, Fl | lat? | | | verrea (m) | wetted | (m) | bankfull width (m) | | bankfull lepth(m) | | _ |
| Q | M | Jo DZ | -7 | 1035 | Ó.C | 3 | 1.5 | 10 | 250 | | |
| Run | | | | | | | 1.2 | | ~ > > | | |
| Bedrock Boul Br Be | lder o | Cobble Co | Gravel Gr | l Sand Sa | Si | it i | Clay Cl | Mu | ick lu | Detri D | tus |
| BANK STABILITY | -12 | | | | | | | | | | - |
| | | Eroding | g | Vulnera | ble | | Protected | | Depo | sition Z | one |
| | | Angle>45°, e | rodible | Angle>45°, e | erodible | Angle | >45°, non-ero | dible | Angle<45 | (gradua | al slope), |
| | | soil, underd bare so | il or | soli, no sign o erosioi | n recent | | material/soli | | tine grai | nea sea | iments |
| Left Upstrea | m Bank | ø | | 0 | | | 0 | | | 0 | |
| Right Upstrea | ım Bank | 6 | | 0 | | | 0 | | | 0 | |
| HABITAT | | | | | | | | | | | - |
| IN-STREAM Un | dercut | Boulders | Cobb | ole Woody D | ebris | | Organic | Vascul | ar Macroph | tes | None |
| COVER t | Danks | | | Instream | | | GEDLIS | Instrea | m | | |
| that apply; D | | | | | | | ~ | | | | |
| is for | | | | Overhang | ging // | | | Overha | anging / | | |
| dominant | | | | | - | | | | | | |

| SHORE COVER | R d): | 100 – 90 % O | | 90 – 60% O | | 60- 30% O | | 30 - 1% | N | one O |
|--|-----------------------------------|-----------------|------------|---------------|---------------|--------------|-------------|--------------|-----------|----------|
| /EGETATION TY (D for dominant) | PE): | Subm | ergent | | Floating | 9 | | Emergent | | None |
| Predomin Spe | nant cies | | - | | | | Ree | 1 Cenes | 4 | |
| GRATORY BSTRUCTIONS: | Nor | ne | | 1 | Seasonal/Tem | nporary | | Permane | nt | |
| DTENTIAL RITICAL HABITAT MITING: | T Spa | awning | | | Evidence of G | iroundwa | ater | Other | | |
| RIPARIAN COM | MUNITY | | | ali | | | M | | | |
| | _ | Left U | ostream Ba | ink | Dominant \ | /egetatio | n Type F | Right Upstre | am Bank | _ |
| Riparian Nor Zone | ne C | ultivated | Meadow | Scrublan | d Forest | None | Cultivated | Meadow | Scrubland | Fores |
| 1.5-10 m | | | ~ | | | | | V | | |
| 10-30 m | | | | | V | | | V | | |
| 30+ m | | | | | V | | | ~ | | |
| MMENTS, INCLU | 0 #: IOTO #: ' : UDING P | TM6 P | NHANCEM | ENT OPP | PORTUNITIES | | EAM BANK P | ното #Эмул | 6357 | |
| Kool w Input | rede | - 16c | Sc. | 155e | stirs | Ŕ | 0551 | ole g | icent u | de |
| No water Seep. | er | inpu | f fic |)m | Up str | ein | Sugge | redig | Possik | de |
| , | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| ditional Notes A | ppendec | 17 O No | O Yes | nu | mber of page | s | DESCRIF | | | |



| GENERAL INF | ORMATION | | | | | | | | |
|---------------------|--------------|----------------|---------|-----------------|--------------|-----------------------|------------|------------------|-------------|
| PROJECT #: (| 3674 | NAME OF | PROJEC | T | IME STARTED |): | | HED: | |
| COLLECTORS: | | Legan | 61.00 | 10.4 | STREAM | 1D #: | DATE |) all of | 7- |
| | Call H | activ | | | Interlary ! | to the Things Kille | r e | 4016.06 | . 40 |
| WEATHER: | SUNNY | CC2 | 110 | 29°C | , | T | | | |
| LOCATION | 1 | | 110 | | | | | | |
| NAME OF WAT | ERBODY: | GENERAL | AREA O | F PROJECT I | OCATION: | 0 | 1 | | |
| CHAINAGE OR | OTHER IDEN | LIFYING ATTRIE | tiris | of to | mworth | Croya | lon | | |
| South | t so | erterrd | F | efore | Idense | dia of 1 | haward | (and Tes | Key |
| GPS COORDIN | ATES (UTM): | 1810 | 340 | 569 | 491 | 9298 | | Lacht in | 5 / |
| LAND USE AND | POLLUTION | . 410 |)10 | | 1 11 | 1010 | | | |
| SURROUNDING | LAND USE: | 1 11 | | SOUR | RCES OF POLI | UTION: | | | |
| Afsicutural | - (Resolid | stal | | -K | out Ren | choft | | | |
| EXISTING STRU | JCTURE TYPE | E (IF ANY) | | da seterio | | | - | | |
| Bridge O | | Box CulvertO | C | pen Foot Culv | vert O | CSP Q | | N/A O | |
| Other O Descri | ibe: Roa | 1 Celvo | A | | | Size (w x h | m^2 | = 0.5 | |
| SECTION TYPE | AND MORPH | OLOGY | | - TA. | | | | | |
| TYPE: Stream | m / river Ch | annelized F | ermanen | t Intermi | ttent Eph | emeral ASSC | | ETLAND: | |
| | or l | 0 | 0 | 0 | | 0 | In Prou | ~ | |
| HYDRAULIC HE | AD (mm): | | | | | | | | |
| Habitat T | ype S | ubstrate | Me | an width | Mean depth | n Mean | M | lean | Other |
| Run, Pool, Riff | ile, Flat? | | | tted (III) | wetted (m) | bankfull width (m) | ba der | nkfull oth(m) | |
| 511 | 5 | ilsihu4s | - | 2 | 000 | 11 | . 7 | | |
| HUT | č | 120000 | , | 1.) | 0.5> | 1. TM | 0.10 | | |
| Bedrock | Boulder | Cobble 🧿 | Gravel | Sand | Silt | Clay | Muck | C Def | tritus D |
| Di | DO | 00 | UI I | Ga | - OI | 01 | inte | - | |
| BANK STABILI | ΓY | Eroding | | Vulnera | ble | Protected | | Deposition | Zone |
| | | Angle>45°, erc | dible | Angle>45°, (| erodible A | ngle>45°, non-er | odible | Angle<45° (grad | ual slope), |
| | | soil, undercu | tor | soil, no sign o | of recent | material/soil | | fine grained se | diments |
| Left Up | stream Bank | bare soil | - | erosio | p. | 0 | | 0 | |
| Right Up | stream Bank | 0 | 5 | 8 | | 0 | | 0 | |
| HABITAT | 2 | | - | | | | | | |
| IN-STREAM | Undercut | Boulders | Cobble | Woody D | ebris | Organic | Vascular | Macrophytes | None |
| COVER (chock all | banks | | | Instroom | | debris | Instroam | / | |
| that apply; D | | | | mstream | - | / | Instream | | |
| is for | | | | Overhan | ging 🗸 | | Overhang | ging 🖌 | |
| | | | | | | | | | |
| 10101 | | | | Greinall | שיייש 🛩 | | - oronnang | aa | |
| dominant | | | | | | | | | |

- Ground mater feel - Cattle uses - 1.

| SHORE C (% stream s | OVER shaded): | 100 – 90 O | % | 90 – 60% O | 6 | 60- 30% O | | 30 - 1% | N | lone O |
|--------------------------|---------------------|---------------|------------|---------------|--------------|--------------|-------------|--------------|-----------|-----------|
| VEGETATIC (D for dom | ON TYPE ninant): | Sub | mergent | | Floatin | g | | Emergent | | None |
| Pre | dominant Species | - | | 1 | Deknee | 1 | Terrord | rld gres | 55 | |
| IIGRATORY | DNS: | None | _ | | Seasonal/Ten | nporary | lann | Permane | nt | |
| POTENTIAL CRITICAL HA | BITAT | Spawning | derlict | | Po Ssibl | Broundwa | iter | Other | - | |
| RIPARIAN | COMMUN | IITY | | | Deminent | lo seteti e | - T | <u>.</u> | | |
| | | Left | Upstream B | Bank | Dominant | regetatio | n Type I | Right Upstre | am Bank | |
| Riparian Zone | None | Cultivated | Meadow | Scrubla | nd Forest | None | Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | | | | | | | | 1 | | |
| 10-30 m | | | 1 | | | | | 1 | | |
| 30+ m | | | / | | | | | | | |
| HOTOGRAP | | DRD: | | | Licer | UDOTDO | | 1070 # | 141 (0 | |
| OWNSTREAM | M PHOTO |)#: JM61 | ρ | | RIGH | TUPSTRE | EAM BANK P | PHOTO #: _ | 1M6P | |
| THER PHOT | ro #s: | LMGP | | | | | | | | |
| OMMENTS, | INCLUDIN | IG POTENTIAL | . ENHANCEN | MENT OP | PORTUNITIES | | | a inte | | |
| - A.00 | recentl | y your | d water | - Se | ep, Says | lande | owner | al Ho | ough wat | 5 |
| - 70 | (). | 10 | -13 | for | rly was | m | | | Ū | |
| Job | Lide | ~ lorb | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |



| GENERAL INF | ORMATION | | | | | | | |
|-----------------------------|--------------|---------------|---------|---------------|---------------|-----------------------|-------------------------|-----------------------|
| PROJECT #: | 1-211 | 4 NAME O | FPROJE | CT: | TIME STARTED: | a T | THE FINISHED: | |
| COLLECTORS | 5 36 7 | Loyc | 1150 - | DOIC | STREAM | D# | | |
| | Call | latin t | Dar | a heck. | Tributary 2 | - to the Salman | 20/ | 6-06.08 |
| WEATHER: |).0 | 0 | 2 | | 1 | Ruer-D | 15 | |
| | 10 C | Overcu | 5 | | | | | |
| NAME OF WAT | ERBODY: | GENERA | LAREA | OF PROJECT | LOCATION: | | | |
| Unit | KNOWN | at | stin | to it | Croyd | () | | |
| CHAINAGE OR | OTHER IDE | NTIFYING ATTR | RIBUTE: | | | ~~~ | | |
| South | n of F | Edgers | FOR | 1 2001 | n befo | re mer | hin Ro | al |
| GPS COORDIN | ATES (UTM) | IST | 34419 | 35.97E | 11970 | 513 77 N | J | |
| LAND USE AND | D POLLUTIO | N | 0440 | | 9.00 | | V | |
| SURROUNDING | G LAND USE | : | | SOU | RCES OF POLL | UTION | | |
| - Agria | cuturd | | | - 04 | Accircle | vel Run | AD | |
| EXISTING STR | UCTURE TYP | PE (IF ANY) | | | | | Y | |
| Bridge C | | Box CulvertO | | Open Foot Cul | vert O | CSP of | | N/A O |
| Other O Descr | ribe: | | | | | Size (w x h) | m ² 0 | Sr. |
| SECTION TYPE | AND MORP | PHOLOGY | | 1 | | 1 1000 | | |
| TYPE: Strea | m / river 0 | Channelized | Perman | ent Interm | ittent Ephe | meral ASSO | CIATED WETL | and: |
| | | Ø | 0 | 0 | | | orkys ye |) |
| HIDRAGEIC HI | EAD (IIIII). | 0 | | | 6 | | 1 | |
| Habitat T | уре | Substrate | N | lean width | Mean depth | Mean | Mean | Other |
| Run, Pool, Rif | fle, Flat? | | | retted (m) | wetted (m) | bankfull width (m) | bankfull depth(m | |
| XIN | 1 | Mulo sie | 25 1 | 10 | 21 | < | 1 (| |
| Act | _ | pes | | 1.0 | 0.01 | 5 | 1.5 | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Silt | Clay | Muck | Detritus |
| ы | во | CO | Gr | Ja | 31 | G | IAICI | υ. |
| BANK STABILI | ΤY | Erodin | 0 | Vulnera | blo | Protected | | Deposition Zono |
| | | Angle>45°, e | rodible | Angle>45°, | erodible An | gle>45°, non-erc | dible Angle | <45° (gradual slope), |
| | | soil, under | cut or | soil, no sign | of recent | material/soil | fine | grained sediments |
| Left Up | stream Banl | bare so | bil | erosio | | 0 | | 0 |
| Right Up | stream Banl | k 0 | | | / | 0 | * | 0 |
| HABITAT | | 0 | | 0 | | 0 | | 0 |
| IN-STREAM | Undercut | Boulders | Cobb | le Woody D |)ebris | Organic | Vascular Macr | ophytes None |
| COVER | banks | | | | | debris | | |
| (check all that apply: D | | | | Instream | | | Instream V | , |
| is for | | | | Overhan | ging | | Overhanging | |
| dominant | | | | | | | - • | |
| | | | | | | 1 | | |

| SHORE COVER (% stream shade | R 100 - d): | - 90 % D | 90 – 60° | % | 60- 30% | · | 30 – 1% O | N | one O |
|---|--|--------------------------|----------|----------------------------|-------------------------|---------------|--------------|--------------------------------|---------------------|
| VEGETATION TY (D for dominant | PE): | Submergent | | Floatir | ig | | Emergent | e | None |
| Predomi | nant cies | | | Duck | reel | | | | |
| MIGRATORY OBSTRUCTIONS: | None | vetvil | hede | Seasonal/Ter | mporary | | Permaner | nt K | 1 |
| POTENTIAL CRITICAL HABITA LIMITING: | Spawning T | | -0 | Evidence of | Groundwa | ter -temp | Other | | |
| RIPARIAN COM | MUNITY | | | and the second | - | | | 200 - | |
| | CVA. 54 | oft Unstream I | Bank | Dominant | Vegetation | n Type | Right Upstre | am Bank | 0.0 |
| Riparian No Zone Mo | ne Cultivate | d Meadow | Scrubiz | and Forest | None | Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | | | | | | | | | |
| 10-30 m | | | | | | | | | |
| 30+ m | · | | 8 | 1 | | | | | |
| HOTOGRAPHIC F | RECORD: | | - | · · · · | | | 1 | | |
| | 0 #: 1M | 64 62 | -59 | LEF | | | | IM GO | 260 |
| THER PHOTO #S | Capital | 165 0 | 7.0 | 1 700 | p:C. | | noto | T. OL | |
| COMMENTS INCL | | | JAPU | | 1-10- | 238 | - | | |
| although frontu ground i trespan | sh pon L ditcl Lote An ssing. | d is r wes put. Ce | dice | flowin overed not in | s h the r resolic | Small refe | it wo | ter in po q°c so - due t | lt Issectus U |
| Didero | G (~ | | | | | | | | |
| | | | | | | | | | |
| dditional Notes A | ppended? | No O Yes | r | number of page | es N/ | | TION | VIA | |



| GENERAL INFO | RMATION | | | | | | | | |
|------------------|-------------|---------------|-----------|------------------|----------------|------------|--------------------------|---------------|-------------------------------|
| PROJECT #: | , | NAME OF | PROJE | CT: T | IME STARTI | ED: | TIME | FINISHED: | |
| 10 30 LY | F | Layali | 37-0 | olar | STREA | M ID #- | | 4121 ATE: | |
| COLLECTORS: | de Ha | dn + Sa | n P | husm | Tobto | ~ 7 4 Hz | Scher Que | 7016-09 | c-Z7 |
| WEATHER: | ye ru | HITI L VEG | n NO | Diricsor | I II DUI DV | 120100 | Marrie Velle | 000 00 | , ., |
| 2 | SIC | 4/10 cc | | | | | | | |
| LOCATION | | | | A MARKET CARDING | and the second | | | | |
| NAME OF WATE | RBODY: | GENERA | LAREA | OF PROJECT L | OCATION: | C1 | | | |
| Unkrann | | (| htsk | ints of | 1amul | wth | | | |
| CHAINAGE OR C | OTHER IDEN | ITIFYING ATTR | IBUTE: | | | | | | |
| County | Road | 27, Sa | th | of Mar | lin R | cad | | | |
| GPS COORDINA | TES (UTM): | 18T | 3.14 | 433.00E | 491 | 1158.00 | N | | |
| LAND USE AND | POLLUTION | 1 | | | | | | | |
| SURROUNDING | LAND USE: | | | SOUF | RCES OF PC | LLUTION: | | | |
| Wetland | ł | | | 6 | ca inn | - 04 | | | |
| EXISTING STRU | CTURE TYP | E (IF ANY) | | | | | | | |
| Bridge O | | Box CulvertO | | Open Foot Culv | vert O | CSP | 0 | N | /A O |
| Other O Describ | be: | | | | | Siz | e (w x h) m ² | 4Scm ra | ding |
| SECTION TYPE | AND MORPI | HOLOGY | | | | | | | |
| TYPE: Stream | n / river C | hannelized | Perman | ent Intermi | ttent E | ohemeral | ASSOCIA | TED WETLAND |); |
| | | 0 | 0 | Ø | | 0 | | | |
| HYDRAULIC HE | AD (mm): | 0 | | | | | | | |
| Habitat Ty | pe | Substrate | N | lean width | Mean dep | oth I | Mean | Mean | Other |
| Run, Pool, Riffl | e, Flat? | | V | vetted (m) | wetted (r | n) ba | ankfull | bankfull | |
| | | 6/19 14 | | | 6.0 | wi | dth (m) | depth(m) | |
| Pod | | 1117 Detail | 1 | 2.7 n | 015 | — I Ц. | | .80 | |
| Bedrock E | Boulder | Cobble | Gravel | Sand | Silt | 0 | lav | Muck | Detritus |
| Br | Bo | Co | Gr | Sa | Si | | CI | Mu | D |
| BANK STABILIT | Υ | | | | | | | 100 | |
| | | Erodin | g | Vulnera | ble | Prot | ected | Dep | osition Zone |
| | | Angle>45°, e | rodible | Angle>45°, e | erodible | Angle>45°, | non-erodible | Angle<45 | ^o (gradual slope), |
| | | soil, under | cut or | soil, no sign c | of recent | mate | rial/soil | fine gra | ined sediments |
| Left Ups | stream Bank | bare so | | erosio | n l | _ | 0 | | 0 |
| Right Ups | stream Bank | 6 | | 0 | | | 0 | - | 0 |
| HABITAT | | | | | | | | | |
| IN-STREAM | Undercut | Boulders | Cobb | ole Woody D | ebris | Orga | anic Vas | cular Macroph | nytes None |
| COVER | banks | | | | / | deb | oris | | - |
| (check all | / | | | Instream | | | Inst | tream | |
| is for | / | | $ \times$ | Overhan | aina | / | Ove | erhanging | |
| dominant | | | 1 | | | | | 0.00 | |
| cover): | | | | | | | | | |

| SHORE CO (% stream s | OVER haded): | 100 – 90 % O | 90 – 60 O | 0% | 60- 30% O | | 30 - 1% | None |
|--|---------------------|-----------------------|--------------|-----------------|--------------|------------|-----------------|------------------|
| VEGETATIO (D for domi | N TYPE inant): | Submerge | nt | Floating | 9 | | Emergent | None |
| Pred | dominant Species | / | | / | | Large- | Fruited Reed | |
| MIGRATORY OBSTRUCTIO | NS: | None | | Seasonal/Tem | porary | - | Permanent | 11 ⁻⁰ |
| POTENTIAL CRITICAL HAI LIMITING: | BITAT | Spawning | | Evidence of G | Froundwat | er | Other | |
| RIPARIAN | COMMUN | IITY | | | | | | |
| | | | | Dominant \ | /egetation | Туре | | |
| Riparian Zone | None | Cultivated Mead | ow Scrub | land Forest | None | Cultivated | Meadow | Scrubland Forest |
| 1.5-10 m | | | | | | | | rump |
| 10-30 m | | | | / | | | | / |
| 30+ m | | | | | | | | |
| PHOTOGRAPH | HIC RECO | DRD: | | | | | | |
| JPSTREAM P | HOTO #: | | | LEFT | UPSTREA | M BANK PH | OTO #: | |
| DOWNSTREA | M PHOTO |) #: | | RIGH | T UPSTRE | AM BANK P | НОТО #: | |
| JIHER PHOT | 0 #S: | | | | | | | |
| COMMENTS, I | NCLUDIN | IG POTENTIAL ENHA | NCEMENT O | PPORTUNITIES: | | | | |
| - Gravel | locat | ed peniciliza | h throw | gh road | side (| dith t | at oool | area |
| - Watera | arse Le c | is dry except | t for ic | tol area. | Obser | rations | nade of | 'vegetation |
| Measurer | ments | Cueffed widt | n etc) t | erken frem | m | area | | |
| - slight s | sheen | observed on c | reter g | ustace | · pu | or all | | |
| | | | | | | | | |
| No west | Pool | ubert R NA area | THE STATE | N1 ~ | | | | |
| dditional Not | es Apper | nded? ONO O | Yes | number of pages | s | DESCRIP | TION | |

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1



| GENERAL IN | FORMATION | | | | | | | | | |
|---------------|--|-----------------------|------------------------|------------------------|-----------|--------------|--------------|--------------|----------------------------|--------------------|
| PROJECT #: | 1.314 | NAME O | F PROJEC | 7: т | IME STAR | TED; | Т | ME FINISHE | D: | |
| COLLECTORS | 1000 | TILOYO | Ist So | | STRE | AM ID #: | | DATE: | 0 | |
| | Cale | Hartin | | | Fibritas | v 21 tot | le Salman & | $r \alpha$ | 016.01 | -20 |
| WEATHER: | · | ship > | 200 | | | D/5 | | | | |
| LOCATION | JUNNY | SIUZ | 00 | | | | | | | |
| NAME OF WA | TERBODY: | GENERA | L AREA O | F PROJECT L | | | | | | |
| waterow | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | out | skinds | of Cle | 240- | | | | | |
| CHAINAGE OF | R OTHER IDE | NTIFYING ATTR | RIBUTE: | | 1 | | - 11 | | | |
| westo | finter | Section 1 | of Ta | Kendra | h br | WY2 | F | | | - |
| GPS COORDIN | NATES (UTM) | ICT > | 1127/2 | INE | inde | in c | 711 | | | |
| | | 101 S | 451651 | OZE | 4419 | 26,6 | NV . | | | _ |
| SURROUNDIN | G LAND USE | : | | SOU | RCES OF P | QLLUTIO | 1 | | | - |
| - Agricult | long | | | -R | Och f | Run of | for | | | |
| - Restdi | nticl | | | - 1 | ACTER | wel Ri | nor | | | |
| EXISTING STR | RUCTURE TYP | PE (IF ANY) | | | | | . / | 1 | | |
| Bridge (| 0 | Box CulvertC | | Open Foot Culv | vert O | CS | PQ | | N/A O | |
| Other O Desc | cribe: | | | | | | Size (w x h) | m^2 | 2.4 m | |
| SECTION TYP | E AND MORP | HOLOGY | | | | | | | | |
| TYPE: Strea | am / river 0 | Channelized | Permaner | at Intermi | ittent E | Ephemeral | ASSO | | LAND: | |
| | 0 | 0 | 0 | 0 | | 0 | Un | Kadwa | | |
| HYDRAULIC H | IEAD (mm): | Inn | | | | | | | | |
| Habitat " | Туре | Substrate | Me | an width | Mean de | pth | Mean | Mea | n | Other |
| Run, Pool, Ri | ffle, Flat? | | we | πea (m) | wetted | (m) | bankfull | bankf | ull | |
| 0 | | CRIS MU | 10 | <i>c</i>] | | 1 | | depuit | | |
| Kun | | C065 D | 10 (|).80 | 0.0 | 1 | IM | 0.2 | d | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Sil | t | Clay | Muck | De | tritus |
| Br | Во | Co | Gr | Sa | Si | - 1 | CI | Mu | | D |
| BANK STABIL | ITY | | | | | | | | | |
| | | Erodir Angle>45° e | I g arodible | Vulnera Angle>45° e | ble | P Anale>4 | rotected | tible And | Deposition le<45° (orad | Zone ual slope) |
| | | soil, under | cut or | soil, no sign o | of recent | ma | aterial/soil | | ne grained se | diments |
| Loft II | notroom Bon | bare so | pil. | erosio | n | _ | | _ | | |
| Leit U | pstream ban | 0 | / | 0 | | | 0 | | 0 | |
| Right U | pstream Ban | (Q/ | | 0 | | | 0 | | 0 | |
| | Undersut | Bouldare | Cobble | Woody D | abris | | rganic | Vaecular Ma | cronhutes | None |
| COVER | banks | Douiders | | ; woody D | -enis | 6 | lebris | Agenigi iAig | cropitytes | NONe |
| (check all | | | V | Instream | | | _ | Instream | / | |
| that apply; D | | | | Overhand | | | | Overhanging | | |
| dominant | | | | | 98 | | | o vornangini | 9 | |
| | 1 | | | | | - | | | | |

| EEGETATION TYPE Submergent Floating Emergent None Predominant Species Seasonal/Temporary Permanent SRATORY Species Vestor Accident Permanent STENTIAL Spawning Evidence of Groundwater Other TTENTIAL Spawning Evidence of Groundwater Other TITICAL HABITAT None Cultivated Meadow Scrubland Ripartan None Cultivated Meadow Scrubland Porest 18-10 m Influence Scrubland Forest None Cultivated Meadow Scrubland 30* m Influence Scrubland Forest None Cultivated Meadow Scrubland Scru | SHORE Co (% stream s | OVER haded): | 100 – 90 9 O | % | 90 – 60° O | % | 60- 30% | | 30 – 1% O | N | lone O |
|--|--------------------------------------|--|-------------------------------------|----------------------------|---------------|-----------|--------------|--------------|---------------|-----------|-----------|
| Species Seasonal/Temporary Permanent Yes opstranduction Seasonal/Temporary Permanent TENTIAL Spawning Evidence of Groundwater Other MITCAL HABITAT Paladiduction Yes (ud stain) Permanent RIPARIAN COMMUNITY Dominant Vegetation Type Right Upstream Bank Riparian None Cultivated Meadow Scrubland Forest 20ne Cultivated Meadow Scrubland Forest None Cultivated Meadow Scrubland Forest 10-30 m Image: Scrubland Forest None Cultivated Meadow Scrubland Forest 10-30 m Image: Scrubland Forest None Cultivated Meadow Scrubland Forest 30* m Image: Scrubland Forest Image: Scrubland Forest Image: Scrubland Forest 30* m Image: Scrubland Forest Image: Scrubland Forest Image: Scrubland Forest Struct Records Scrubland Left Upstream Bank Photo #: Image: Scrubland | VEGETATIO (D for dom Pres | N TYPE inant): dominant | Subr | mergent | | Floa | ting | | Emergent | | None |
| Its opning Evidence of Groundwater Other ITTCAL HABITAT Spawning Yes MA shar Other RIPARIAN COMMUNITY Dominant Vegetation Type Ittrcal HABITAT Right Upstream Bank Riparian None Cuttivated Meadow Scrubland Forest 15-10 m Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation Meadow Scrubland Forest 10-30 m Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation 30+ m Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation 30+ m Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation 30+ m Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation 30+ m Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation 30+ m Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation Stream Photo #: Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation Ittrcal Habitation | | Species NS: | None | can dia | don | Seasonal/ | emporary | | Permane | nt | |
| RIPARIAN COMMUNITY Left Upstream Bank Right Upstream Bank Riparian None Cultivated Meadow Scrubland Forest 1.5-10 m Image: Cultivated Meadow Scrubland Forest None Cultivated Meadow Scrubland Forest 1.5-10 m Image: Cultivated Meadow Scrubland Forest Meadow Scrubland Forest 10-30 m Image: Cultivated Image: Cultivated Meadow Scrubland Forest 30+ m Image: Cultivated Image: Cultivated Image: Cultivated Meadow Scrubland Forest 00TOGRAPHIC RECORD: Stream Photo #: Image: Cultivated Image: Cultivated Scrubland Forest Stream Photo #: Image: Cultivated God Scrubland Forest Image: Cultivated Scrubland | OTENTIAL RITICAL HAI | BITAT | poder 1. dl | y Cyprili | (| Evidence | of Groundwa | ater dail | Other | | |
| Dominant Vegetation Type Right Upstream Bank Right Upstream Bank Right Upstream Bank Right Upstream Bank 20ne Cultivated Meadow Scrubland 15-10 m Image: Scrubland Forest None Cultivated 10-30 m Image: Scrubland Forest None Cultivated 30+ m Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland 30+ m Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland 30+ m Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland 30+ m Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland 30+ m Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland 0CTOGRAPHIC RECORD: Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland Stream Photo #: Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland OCOGRAPHIC RECORD: Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland OTOGRAPHIC RECORD: Image: Scrubland Image: Scrubland Ima | RIPARIAN | COMMUNI | TY | | | 1 0 | | | | | |
| Right and None Cultivated Meadow Scrubland Forest None Cultivated Meadow Scrubland Forest 1.5-10 m Image: Scrubland Forest None Cultivated Meadow Scrubland Forest 1.5-10 m Image: Scrubland Forest None Cultivated Meadow Scrubland Forest 1.5-10 m Image: Scrubland Forest None Cultivated Meadow Scrubland Forest 10-30 m Image: Scrubland Forest Image: Scrubland Forest Scrubland Forest 10-30 m Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland Forest 00TOGRAPHIC RECORD: Scrubland Image: Scrubland <td< td=""><td></td><td>_</td><td>l oft l</td><td>Instream B</td><td>ank</td><td>Domina</td><td>nt Vegetatio</td><td>on Type</td><td>Right Linstre</td><td>am Bank</td><td></td></td<> | | _ | l oft l | Instream B | ank | Domina | nt Vegetatio | on Type | Right Linstre | am Bank | |
| 1.5-10 m 10-30 m 30+ m 30+ m OTOGRAPHIC RECORD: STREAM PHOTO #: JMGP G364 WINSTREAM PHOTO #: JMGP G364 NIMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: MMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: - BUTTERP - Some Cyprinit's Observel - Padentially glowned water imput due do verte demp | Riparian Zone | None | Cultivated | Meadow | Scrubla | and Fores | t None | Cultivated | Meadow | Scrubland | Forest |
| 10-30 m 30+ m 30+ m OTOGRAPHIC RECORD: STREAM PHOTO #: IMGP 6366 STREAM PHOTO #: IMGP 6366 WINSTREAM PHOTO #: IMGP 6371 WINSTREAM PHOTO #: IMGP 6372 HER PHOTO #S: MMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: MMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: - ISCTEMP - Some Gyprinit's Observel - Dated Holly Glount war imput due do vetedemp | 1.5-10 m | | | \checkmark | - | | | | | ~ | |
| 30+m OTOGRAPHIC RECORD: STREAM PHOTO #: IMGP 6364 WINSTREAM PHOTO #: IMGP 6371 WINSTREAM PHOTO #: IMGP 6372 HER PHOTO #: MMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: MMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: - BUTTO - Some Cyprinidis Observel - Dated Holly Offound wat imput due do vate damp | 10-30 m | | | | | | | | | | ~ |
| OTOGRAPHIC RECORD: STREAM PHOTO #: IMGP 6366 WANSTREAM PHOTO #: IMGP 6377 HER PHOTO #: IMGP 3668 HER PHOTO #S: MMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: MMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: - ISCITENT - Some Gyprinid's Observel - Dated Holly Ofound water imput due do water damp | 30+ m | | | | | - | 1 | | | | ~ |
| | MMENTS, T - 130 - Som - Pad | o #s: NCLUDING Wath Ter ne Cy end hal | SPOTENTIAL Prinidis (19 OCS) | enhancen Obser unt w | Jel Je | PORTUNITI | ES: | - do v | eted. | enp | |



| GENERAL INF | ORMATION | | | | | | | | | | |
|--------------------|--------------|---------------|--------------|-----------------|-----------------|---------|-----------------------|------------------|----------------------|-----------------------|--------------------|
| PROJECT #: | 63674 | NAME OF | PROJE | ст: т | IME STAR | TED: | 1 | | IISHED: | } | |
| COLLECTORS | : 01 | 11 1 | · 3() C | | STRE | AM ID | #: | DAT | En 1/ | 1 |) |
| | Cale | Harl 1 | 2 | | Tribute | 2.2.1 6 | the Silna Li | Ø | 0/016- | 061 | 20 |
| WEATHER: | SUMA | 5/1- | RC | | | u | 5 | | | | |
| LOCATION | 0014 / | 0110 0 | ×6) C | | | | | | | | |
| NAME OF WAT | ERBODY: | GENERAL | AREA | OF PROJECT L | OCATION | : | | | | | |
| Unknow | n | at | Strin | Is of (| LOY A | 00 | | | | | |
| CHAINAGE OR | OTHER IDE | NTIFYING ATTR | IBUTE: | | e e | | | | | | |
| West | of inde | er seallon | of | Testey | rd ar | d H | Uy JF | | | | |
| GPS COORDIN | IATES (UTM): | 18T 3 | 4376 | 3.62 E | 4919 | 576 | GTN | | | | |
| LAND USE ANI | D POLLUTIO | N | 510 | | | | | | | | |
| SURROUNDING | G LAND USE: | | | SOUF | RCES OF F | OLLUT | TION: | | | | |
| Agricult | in | | | | | | | | | | |
| EXISTING STR | TTAL | E (IF ANY) | | | | | | | | | |
| Bridge | | Box CulvertO | 1 | Open Foot Culv | vert O | | CSP 0 | | N | A O | - |
| Bhage C | | Box ouronte | | | | | | | | / | |
| Other O Desci | ribe: | | | | | _ | Size (w x h |) m ² | Y-0. | X m | |
| SECTION TYPE | E AND MORP | HOLOGY | | | | | | CLATER | | | |
| TYPE: Strea | m/river C | hannelized | Permane | ent Intermi | ttent | Ephemo | eral ASSC | L'ATEL | VANETLAND | • | |
| | | 0 | 0 | 0 | 14 | 0 | C | ANN | own | _ | |
| HT BRAGEIC H | | \supset | | | | | | | - | _ | |
| Habitat T | уре | Substrate | M | lean width | Mean d | epth | Mean | | Mean | | Other |
| Run, Pool, Rif | ffle, Flat? | | | | wetted | (m) | bankfull width (m) | | bankfull depth(m) | | 1.00 |
| 0 | 0 | 1-30 W-2 | S | | 01 | | 1 (| | il e | | |
| KUN | < | indo P2 | S | 0.70 | 0.10 | > | 1.6 | C | 1.00 | | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Si | lt | Clay | Mu | ick | Det | ritus |
| Br | Во | Со | Gr | Sa | S | ſ | CI | N | lu | _ | |
| BANK STABILI | ITY | | Ť | | | n | | | | | |
| | | Eroding | g rodible | Vulnera | ble arodible | Angl | Protected | ndible | Depo Angle<45 | osition 2 ° (oradi | Zone Jal slope) |
| | | soil, under | ut or | soil, no sign o | of recent | , ingl | material/soil | | fine gra | ined se | diments |
| | | bare so | 11 | erosio | n | | | | | | |
| Left Up | ostream Bank | 6 | , | 0 | | - | 0 | | | 0 | |
| Right Up | pstream Bank | 0 | | 0 | | - | 0 | | | 0 | |
| | Laderaut | Bauldana | Cabl | la Mandu D | obric | | Organia | Vacar | ar Maararb | utee | None |
| COVER | banks | Boulders | CODD | | CUIIS | | debris | vasçu | ar macroph | yles | NOTE |
| (check all | | | | Instream | \smile | | | Instrea | im 🔪 | | |
| that apply; D | | | | | . , | | C | | . V | | |
| is for dominant | | | | Overhan | ging 🧹 | | | Overha | anging | | |
| | | | | | | | | | | | |

| VECETATION | aded): | 0 | //0 | 90 – 60% O | 1 | 60- 30% | - | 30 – 1% O | No | one O |
|--|---|---|--|--|----------------------|--------------|----------------------|--------------|----------------|----------|
| (D for domin | N TYPE nant): | Sut | omergent | | Floatin | g | | Emergent | | None |
| Pred | lominant Species | | | | | | FLORSM | (-)e5 | | |
| IGRATORY BSTRUCTION | NS: | None | | | Seasonal/Ten | nporary | | Permane | nt | |
| DTENTIAL RITICAL HAB MITING: | BITAT | Spawning | | | Evidence of C | Groundwa | ater | Other | | |
| RIPARIAN C | COMMUN | IITY | | | | | | ak | - | |
| | | Left | I Instream F | lank | Dominant | /egetatio | n Type | Right Upstre | am Bank | |
| Riparian Zone | None | Cultivated | Meadow | Scrublan | d Forest | None | Cultivated | Meadow | Scrubland | Fores |
| 1.5-10 m | | | V | | | | | 1 | | |
| 10-30 m | | | ~ | | | | | | / | |
| 30+ m | | | - | | | | | | / | |
| HOTOGRAPH | | RD: | | | - A | | | | | |
| OCTOEALS DI | IOTO #: | | | | LEFT | UPSTRE | AM BANK PH | IOTO #: | | |
| DWNSTREAM | | | | | | TIDGTD | | | | |
| OWNSTREAM | I PHOTO) #S: |) #: | | _ | RIGH | TUPSTR | EAM BANK P | HOTO #: | | |
| OWNSTREAM THER PHOTO | / РНОТО) #S: |)#: | | | RIGH | TUPSTR | EAM BANK P | MOTO #: | | |
| DWNSTREAM PF DWNSTREAM THER PHOTO DMMENTS, IN | I PHOTO D #S: NCLUDIN |) #: IG POTENTIAL | L ENHANCE | MENT OPP | PORTUNITIES | | LEAM BANK P | HOTO #: | | |
| DWNSTREAM THER PHOTO | I PHOTO D #S: NCLUDIN |) #: IG POTENTIAL | L ENHANCE | MENT OPP | PORTUNITIES | | | | | |
| OWNSTREAM THER PHOTO | I PHOTO D#S: NCLUDIN |) #: | L ENHANCE | MENT OPP | PORTUNITIES | : | LAM BANK P | | | |
| | A PHOTO D #S: NCLUDIN |) #: | L ENHANCE | MENT OPP | PORTUNITIES | | LAM BANK P | | | |
| | A PHOTO D #S: NCLUDIN |) #: | L ENHANCE | MENT OPP | PORTUNITIES | : | LAM BANK P | | | |
| | A PHOTO D #S: NCLUDIN |) #: | | MENT OPP | PORTUNITIES | | | 1010 #: | | |
| - 11°C | A PHOTO D #S: NCLUDIN | OF POTENTIAL | ferd ict | | OWNE | : с(с. | <u>(この)</u> (1) 後 | HOTO #: | F& | |
| - 11°C | A PHOTO D #S: NCLUDIN A (| OF POL | fendicl | MENT OPP | OWNER | <u>с(</u> с. | n) | Rec | F& | |
| - HOC BLOOK BLOOK | A PHOTO D #S: NCLUDIN AL | out port taking | tential, tates | MENT OPP , l cal odreca obse | OWNER Contunities | c(ca Shee | n) # | set. | F& | |
| - 110 DMMENTS, IN - 110 - Blook Brook Crouce | A PHOTO D #S: NCLUDIN AL AL | of potential of potential taking schares | tenticl, tenticl, te s beep unde | MENT OPP , lcal obse d th | Owner ervel(, 1 | c(ca shee | n) # | set. | F& | |
| - 11°C DMMENTS, IN - 11°C - Bloot Brook Groun - Had Larle | A PHOTO D #S: NCLUDIN AL AL AL AL AL AL AL AL AL AL AL AL AL | of pol tacin solution | tential tential tu s beep thet | MENT OPP , lind obse a fr sdre | OWNER ervel, 1 | c(c. Shee | n) As | set. | HG ECT TOUR | |

2.1



| GENERAL INF | ORMATION | | | | | | | | | | |
|----------------|--------------|---------------|----------|-----------------|--------------|--------------------|--------------------|------------------|------------|----------|-------------|
| PROJECT #: | 636 74 | LO Ya | PROJEC | T: 2 ar | IME STAR | TED: ۱۲۶ | ۲ ل | IME FIN | | 2:11 | |
| COLLECTORS | lactint | Sean Ro | sbirsi | 0 | STRE | AM ID # | 1: 12+5 He Saln | DATI | 201 | 6-0 | 8-23 |
| WEATHER: | UNAYO | 2/1024 | PC | | | / | River | 5 | | | |
| LOCATION | | | | | | | | | | | |
| NAME OF WAT | ERBODY: | GENERAL | AREAO | F PROJECT L | OCATION | - | | Y | | | |
| CHAINAGE OR | | | BUTE: | tankor | th on | Ed | ises re | ad | | | |
| -south | ohe | edres r | oada | befor | e tra | in t | ract | | | | |
| GPS COORDIN | ATES (UTM): | 18T 34 | 3763 | 62E | 4919 | 576.6 | TN | L. | | | |
| LAND USE AND | D POLLUTIO | N | | | | | | | | | |
| SURROUNDING | G LAND USE: | | | SOUF | RCES OF P | OLLUT | ION: | | | | _ |
| - Agriculta | e (| | | =Ko | all ren | Oth | - | 1 | | | |
| - Vet and | | | | ~ / ~ | gricoli | Ure(1 | | | | | |
| EXISTING STR | UCTURE TYP | E (IF ANY) | | | | | | | | | |
| Bridge C |) | Box CulvertO | C | Open Foot Culv | vert O | | CSP O | | N/ | AO | |
| Other O Descr | ribe: | | | ζ. | | | Size (w x h |) m ² | 1=0.2 | 0 | |
| SECTION TYPE | E AND MORP | HOLOGY | | | | | | | | | |
| TYPE: Strea | m / river C | hannelized | Permaner | ntermi | ittent | Epheme | | | VYEILAND | • | |
| | Ø | 0 | 0 | Ø | | 0 | ye |) en | | _ | |
| HYDRAULIC HI | EAD (mm): | 7 | | | | | | | | | |
| Habitat T | ype | Substrate | Me | an width | Mean d | epth | Mean | | Mean | | Other |
| Run, Pool, Rif | ffle, Flat? | | we | etted (m) | wetted | (m) | bankfull | | bankfull | | |
| | 1 | 1.165 | | - | | | wiath (m) | | | | _ |
| | ~ | D35 | - | | | | 0,68 | | 0,57 | | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Si | lt | Clay | ML | uck | Det | ritus |
| Di | 50 | 00 | OI - | Ou | | | | | | | |
| BANK STABILI | ITY | Erodin | a 1 | Vulnera | ble. | | Protected | - | Den | eition 7 | Zone |
| | | Angle>45°, et | rodible | Angle>45°, e | erodible | Angle | e>45°, non-ero | odible | Angle<45 | ° (gradu | ual slope), |
| | | soil, underc | ut or | soil, no sign o | of recent | Ŭ | material/soil | | fine gra | ined se | diments |
| Left Up | ostream Bank | bare so | il | erosio | n | | | | | 0 | |
| Right Up | pstream Bank | | | 0 | | | 0 | - | | 0 | |
| HABITAT | | 0 | | 0 | | | 0 | | | 0 | |
| IN-STREAM | Undercut | Boulders | Cobble | e Woody D | ebris | | Organic | Vascu | ar Macroph | ytes | None |
| COVER | banks | | | | . / | | debris | | 1 | | |
| (check all | | | ~/ | Instream | \checkmark | | | Instrea | im 🗸 | | |
| that apply; D | | 17 | 17 | Overban | | | \checkmark | Overh | anging N | | |
| dominant | | í í | , i i i | Overnali | anna - | | | CTCIN | | | |
| cover): | | | | - | | | | | | | |

| SHORE C (% stream s | OVER haded): | 100 – 90 O | % | 90 - 60% | | 60- 30% O | | 30 – 1% O | | None |
|-------------------------|---------------------|---------------|-----------|----------|---------------|--------------|------------|--------------|-----------|-------|
| VEGETATIO (D for dom | N TYPE inant): | Sut | omergent | | Floatin | g | | Emergent | | None |
| Pre | dominant Species | _ | | | | _ | Terre | storal | brases | |
| | INS: | None | | | Seasonal/Ten | porary |)(7 | Permane | nt | |
| OTENTIAL RITICAL HA | BITAT | Spawning | н. | | Evidence of C | iroundwa | ater | Other | | |
| RIPARIAN | COMMUN | IITY | | | | | | | | |
| | | l off | Linetroom | Bank | Dominant \ | /egetatio | п Туре | Picht Unetre | om Ponk | |
| Riparian Zone | None | Cultivated | Meadow | Scrublan | d Forest | None | Cultivated | Meadow | Scrubland | Fores |
| 1.5-10 m | - | | | | | | | | - | |
| 10-30 m | | | | ~ | | | | | 1 | × |
| 30+ m | | | | | - | | | | | × |
| HOTOGRAP | HIC RECO | ORD: | - | | | | | | | |
| OWNSTREAM P | HOTO #: |) #· | _ | | LEFT | | | | | |
| THER PHOT | O #S: | | | | Truen | | | | | |
| OMMENTS, I | INCLUDIN | IG POTENTIAL | - ENHANCE | MENT OPP | ORTUNITIES | | | | | |
| -Com | plete | y Dry | (| | | | | | | |
| -Collie | at is | in DOO | | difico | , unde | - H- | , deo lun | _ | | |
| | | | Con | 1110.01 | | | | | | |
| DCCLS | ston II- | 1 Moved | U | | | | | | | |
| | / | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | _ | / | _ | | | | | | |
| ditional Not | tes Apper | ided? O'N | lo O Yes | nu | mber of page | s | DESCRIP | TION | | |



| PROJECT #: 63674 NAME OF PROJECT: TIME STARTED: TIME FINISHED: COLLECTORS: COLLECTORS: CO | |
|--|--|
| COLLECTORS: Under A Son Polymen Solar 13:14 13:29 COLLECTORS: STREAM ID #: DATE: 2016-08 | |
| COLLECTORS: John Pohnon STREAM ID #: DATE: 2016-05 | |
| NUTP EXAMPLE AND NADIOSIN INSTOLATING A FILE STUDY | -23 |
| WEATHER: Sugar 31°C S/10 14 | |
| LOCATION | |
| NAME OF WATERBODY: GENERAL AREA OF PROJECT LOCATION: | |
| Unknown East of County Road 27 on Marlin Road 5 | |
| CHAINAGE OR OTHER IDENTIFYING ATTRIBUTE: | |
| Outskirts of Croydon | |
| GPS COORDINATES (UTM): 18T 344 302, 30 E 4919988,98 N | |
| LAND USE AND POLLUTION | |
| SURROUNDING LAND USE: SOURCES OF POLLUTION: | |
| (Meadaw (South) for and Runot | |
| EXISTING STRUCTURE TYPE (IF ANY) | |
| Bridge O Box CulvertO Open Foot Culvert O CSP 🔗 N/A | 0 |
| Other Q. Describe: Size ($w \times h$) $m^2 = 17.5$ | |
| SECTION TYPE AND MORPHOLOGY | |
| TYPE: Stream / river Channelized Permanent Intermittent Ephemeral ASSOCIATED WETLAND: | |
| | |
| HYDRAULIC HEAD (mm): | |
| (no water) | |
| Habitat Type Substrate Mean width Mean depth Mean Mean | Other |
| Run, Pool, Riffle, Flat? would (iii) wetted (m) bankfull bankfull bankfull bankfull | |
| | |
| | |
| 501 315 Aus 1.2 0.35 | |
| Soll Sistaus Soll Sistaus Bedrock Boulder Cobble Gravel Sand Silt Clay Muck Br Bo Co Gr Sand Silt Clay Muck | Detritus D |
| Soll Si5Aus In Z User (III) Bedrock Boulder Br Cobble Gravel Gr Sand Silt Clay Muck Mu Br Bo Co Gr Sa Si Cl Mu | Detritus D |
| Soll Sistaus Soll Sistaus Bedrock Boulder Br Cobble Cobble Gravel Co Sand Silt Clay Muck Mu BANK STABILITY Eroding Vulperable Protected Depose | Detritus D |
| Bedrock Boulder Cobble Gravel Sand Silt Clay Muck Br Bo Co Gr Sa Si Cl Mu BANK STABILITY Eroding Vulnerable Protected Depos Angle>45°, erodible Angle>45°, erodible Angle>45°, non-erodible Angle<45° | Detritus D sition Zone (gradual slope), |
| Bedrock Boulder Cobble Gravel Sand Silt Clay Muck Br Bo Co Gr Sa Si Cl Muck BANK STABILITY Eroding Vulnerable Angle>45°, erodible Soil, no sign of recent Protected Depos | Detritus D sition Zone (gradual slope), ed sediments |
| Bedrock Boulder Cobble Gravel Sand Silt Clay Muck Br Bo Co Gr Sand Si Cl Muck BANK STABILITY Eroding Angle>45°, erodible Soil, undercut or Soil, no sign of recent Protected Depos Angle>45°, erosible Soil, no sign of recent erosion Protected Depos | Detritus D sition Zone (gradual slope), red sediments |
| Bedrock Br Boulder Bo Cobble Co Gravel Gr Sand Sa Silt Si Clay Cl Muck Mu BANK STABILITY Eroding Angle>45°, erodible soil, undercut or bare soil Vulnerable Angle>45°, erodible soil, no sign of recent erosion Protected Angle>45°, non-erodible material/soil Depos Angle<45° fine graine | Detritus D sition Zone (gradual slope), led sediments O |
| Soll Siskus In Z Original Bedrock Br Boulder Cobble Cool Gravel Gr Sand Silt Clay Muck Mu Br Bo Cool Gr Sand Silt Clay Mu BANK STABILITY Eroding Angle>45°, erodible soil, undercut or bare soil Vulnerable Angle>45°, erodible soil, no sign of recent erosion Protected Angle>45°, non-erodible material/soil Depos Angle<45° (fine grain of the grain o | Detritus D sition Zone (gradual slope), led sediments O O |
| Bedrock Br Boulder Bo Cobble Co Gravel Gr Sand Sa Silt Si Clay Cl Muck Mu BANK STABILITY Eroding Angle>45°, erodible soil, undercut or bare soil Vulnerable Angle>45°, erodible soil, no sign of recent erosion Protected Angle>45°, non-erodible material/soil Depos Angle<45°, non-erodible material/soil Left Upstream Bank Right Upstream Bank O O Image Angle HABITAT Image Angle A | Detritus D sition Zone (gradual slope), ied sediments O O |
| Bedrock Br Boulder Bo Cobble Co Gravel Gr Sand Sa Silt Si Clay Cl Muck Mu BANK STABILITY Eroding Angle>45°, erodible soil, undercut or bare soil Vulnerable Angle>45°, erodible soil, no sign of recent erosion Protected Angle>45°, non-erodible Mu Depos Angle>45°, non-erodible material/soil Left Upstream Bank O O Image: Cobble Mage: Cobble Organic debris HABITAT IN-STREAM Undercut banks Boulders Cobble Cobble Woody Debris Organic debris Vascular Macrophytic | Detritus D sition Zone (gradual slope), led sediments O O O Les None |
| Bedrock Boulder Cobble Gravel Sand Silt Clay Muck Br Bo Co Gr Sand Silt Clay Muck BANK STABILITY Eroding Vulnerable Protected Angle>45°, erodible Soil, no sign of recent Angle>45°, erodible Soil, no sign of recent Protected Depos Left Upstream Bank O O Soil O Soil O Soil HABITAT IN-STREAM Undercut banks Boulders Cobble Woody Debris Organic debris Vascular Macrophyte | Detritus D sition Zone (gradual slope), ied sediments O O O None |
| Bedrock Boulder Cobble Gravel Sand Silt Clay Muck Br Bo Co Gr Sa Si Cl Muck BANK STABILITY Eroding Vulnerable Angle>45°, erodible Silt Clay Muck Bank STABILITY Eroding Vulnerable Angle>45°, erodible Silt Clay Muck Bank Stability Eroding Vulnerable Angle>45°, erodible Silt Angle>45°, non-erodible Angle>45°, non-erodible Angle>45°, non-erodible Angle>45°, for on -erodible Angle>45°, for on -erod | Detritus D sition Zone (gradual slope), ned sediments O O tes None |
| Bedrock Boulder Cobble Gravel Sand Silt Clay Muck Br Bo Co Gr Sa Silt Clay Muck BANK STABILITY Eroding Angle>45°, erodible Angle>45°, erodible Soil, no sign of recent Protected Depos Angle>45°, erodible soil, no sign of recent erosion Protected Depos Left Upstream Bank O O O Right Upstream Bank O O Soil IN-STREAM Undercut Boulders Cobble Woody Debris Organic (check all that apply; D Instream Overhanging Overhanging Overhanging | Detritus D sition Zone (gradual slope), red sediments O O O tes None |

| SHORE C (% stream s | OVER shaded): | 100 - 90 | % | 90 – 60% O | | 60- 30% O | | 30 – 1% O | No | one D |
|--------------------------|---------------------|------------|---------------------|---------------|--------------------|--------------|-------------------|--------------|-----------|----------|
| VEGETATIC (D for dom | ON TYPE ninant): | Sut | omergent | | Floatin | 9 | | Emergent | | None |
| Pre | dominant Species | | / | | 1 | / | | / | | |
| MIGRATORY DBSTRUCTIO | DNS: | None | | | Seasonal/Ter | nporary | coscilly city) | Permane | nt | |
| POTENTIAL CRITICAL HA | BITAT | Spawning | / | | Evidence of | Groundwa | ater | Other | | |
| RIPARIAN | COMMUN | IITY | | | | | | | | |
| <u> </u> | | Lefi | Upstream E | Bank | Dominant | Vegetatio | n Type F | light Upstre | am Bank | 10.11 |
| Riparian Zone | None | Cultivated | Meadow | Serublan | Forest | None | Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | | | 10 _D | / | | | | / | | |
| 10-30 m | | | | | | | | | | |
| 30+ m | 1 | 21 | | | | | | | | |
| HOTOGRAP | HIC RECO | ORD: | | h | | | | a | | |
| PSTREAM P | PHOTO #: | | | _ | LEFT | UPSTRE | AM BANK PH | OTO #: | | |
| THER PHOT | O #S: |)#: | | | RIGH | UPSIR | EAM BANK P | HOTO #: | | |
| | | | | | | | | | _ | |
| OMMENTS, | INCLUDIN | | | | | : | | | | |
| - Crack | ed 5 | oil inde | ates p | ast pa | oling of | nate | ſ | | | |
| - viate | depr | ession rat | ledy dry her the | t at a | time of defined | uerte | mad re rouse (| semble | es a rat | inally |
| defin | ned f | anks, etc | <i>i</i>) | | | | | | nge m - g | jeranen, |
| - cuiver | + 13 | raised | abue | streen | m bed | by | n zoc | m | | |
| | | | Бr | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | _ | | | | | _ |



| GENERAL INFO | ORMATION | | | - | | | | | |
|-----------------|------------|---------------|---------|----------------------------|-----------------|-------------------|--------------------|--------------|-------------|
| PROJECT #: | 367 | H NAME O | PROJEC | | ME STARTED | I GI T | ME FINISHED | : | |
| COLLECTORS: | Cele d | letin L | Deer | Locle | STREAM I | D#: | DATE: 20 | 016.06 | 80. |
| WEATHER: | 20°0 | Querco | .t | Partier | 1 /1 Tole Ray 1 | River-Vi | 5 | | 00 |
| | | world | | | | | | | |
| NAME OF WATE | ERBODY: | GENERA | L AREA | OF PROJECT L | OCATION: | , | | | |
| Untho | wn | Ou | AS. | Hirds (| of G | oydon | | | |
| CHAINAGE OR | OTHER IDE | NTIFYING ATTR | BUTE: | 1. A | 1 | 1 | | | |
| South | h of | Edse | ers | road | 200m | before | merlin | Rock | / |
| GPS COORDIN/ | ATES (UTM) | 187 | 3445 | 35.97E | 44204 | 53,77 N | | | |
| LAND USE AND | POLLUTIC | N | 1000 | ľ | | | | | |
| SURROUNDING | LAND USE | | | SOUR | CES OF POLL | UTION | | | 10 |
| rostoce | icra | | | -1 | criculd | | 12 | | _ |
| EXISTING STRU | ICTURE TY | PE (IE ANY) | | A | Gineon | Ung RUA C | | | - |
| Bridge | | Bay Cultratio | | Open Feet Culu | ort O | CSD (| 1 | N/A O | |
| Bridge U | | Box Cuivento | | Open Fool Culv | | | - | IN/A U | |
| Other O Descri | be: | | | 1.0 | | Size (w x h) | m ² 0.5 | <u>٢</u> | |
| SECTION TYPE | AND MORE | PHOLOGY | | | | 1 4880 | | AND: | |
| TYPE: Stream | n/river (| Channelized | Permane | nt Intermit | tent Ephe | emeral ASSO | | AND: | |
| | 0 | v | Ø | 0 | | 0 | (2) | | |
| HYDRAULIC HE | :AD (mm): | 2 | | | | | | | - A - 4 |
| Habitat Ty | /pe | Substrate | M | ean width | Mean depth | Mean | Mean | | Other |
| Run, Pool, Riff | le, Flat? | | W | etted (m) | wetted (m) | bankfull | bankfu | | |
| 0 | | (. Sob | -30 | | | width (m) | depth(n | n) | |
| Kun | | 66-200 | ,- | 0.50 | 0.8 | 1.8 | 0.4. | S | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Silt | Clay | Muck | Det | ritus |
| Br | Во | Co | Gr | Sa | Si | CI | Mu | | D |
| BANK STABILI | ΓY | | | | | - | | | |
| | | Erodin | g | Vulneral | ole | Protected | | Deposition 2 | Zone |
| | | Angle>45°, e | rodible | Angle>45°, e | rodible Ar | ngle>45°, non-ero | dible Angle | e<45° (gradu | ual slope), |
| | | soil, under | out or | soii, no sign o erosior | | material/soli | Tine | e grained se | aiments |
| Left Up: | stream Ban | k O | | ø | | 0 | | 0 | |
| Right Up | stream Ban | k O | | 6 | | 0 | | 0 | |
| HABITAT | IABITAT | | | | | | | | |
| IN-STREAM | Undercut | Boulders | Cobb | le Woody De | ebris | Organic | Vascular Mac | rophytes | None |
| COVER | banks | | | Instant | | debris | Instraam | - | |
| that apply: D | | | | Instream | • | | | | |
| is for | | | | Overhang | ling | | Overhanging | ~ | |
| dominant | | | | | | | | | |
| cover): | | | | | | | | | |

| SHORE C (% stream s | OVER shaded): | 100 – 90 ° | % | 90 – 60 O | % | 60- 30% | | 30 – 1% O | | None |
|-------------------------|---------------------|----------------|------------|----------------|---------------|-----------|-------------|--------------|--------------|--------|
| VEGETATIC (D for don | ON TYPE ninant): | Sub | mergent | - | Floatin | 3 | | Emergent | | None |
| Pri | dominant Species | | 1. | - | \rightarrow | Rice | Kweel | - | | |
| IIGRATORY BSTRUCTIO | ONS: | None | gale | , | Seasonal/Ten | yo a | s | Permaner | nt Ker | |
| OTENTIAL RITICAL HA | BITAT | Spawning Wc |) | - | Evidence of C | iroundwa | ater | Other | 4 1 | |
| RIPARIAN | COMMUN | IITY | | | | | | | | |
| 12 | 31.0 | Left | Upstream B | ank | Dominant | /egetatio | n Type F | Right Upstre | am Bank | 104 |
| Riparian Zone | None | Cultivated | Meadow | Scrubi | and Forest | None | Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | | | | V | | | | | V | 1 |
| 10-30 m | | | | V | | | | | V | |
| 30+ m | -1- | - | | V | / | | | | \checkmark | |
| THER PHO | TO #S: | | ENHANCER | ULL MENT OF | LWP | 620 | 0 | | | |
| l | 2°C | wede | denj- | > | | | | | | |
| | | | | | | | | | | |



| GENERAL INF | ORMATION | | | | | | | |
|--|---------------------|---------------|-------------|---------------------------|--|------------------|-----------------|---------------------|
| PROJECT #: | 626711 | NAME O | FPROJE | ЕСТ: Т | IME STARTED: | Т | IME FINISHED: | |
| COLLECTORS | | 6 | clist | 2016- | STREAM | D #: | DATE: | |
| Calette | idin t | Sen Rob | mson | , | Tributary 3 | to the Salura A | 2016 | 08-23 |
| WEATHER: | 10.01 | 2102 | 300 | / | 1-1- | | | |
| | Ming | alloa | 5.0 | | | | | |
| NAME OF WAT | ERBODY: | GENERA | L AREA | OF PROJECT L | OCATION: | , , | | |
| Unthrow | n | Duler | lini | s of Tami | worth sa | thonmiller | -ruad Eastor | Magger / roal |
| CHAINAGE OR | OTHER IDE | NTIFYING ATTR | IBUTE: | | 1 | | | |
| Corner | of Mil | ler and | Ha | ggerty 1 | oud. | | | |
| GPS COORDIN | ATES (UTM | 15 3 | 4175 | 4,22F | 49277 170 | 1.74 N | | |
| LAND USE AND | | DN . | | | 00.110 | | | |
| SURROUNDING | G LAND USE | li/ | | SOUR | CES OF POLL | UTION: | | |
| Assiculu | 501 | | | K | Acticula | al runof | F | |
| EXISTING STR | UCTURE TY | PE (IF ANY) | | | 19 | | | |
| Bridge C | | Box CulvertO | | Open Foot Culv | /ert O | CSP 0 | N | I/A Q |
| Bridge e | | | | opontoctoun | | | 0 | 20 |
| Other O Descr | ribe: | | _ | | | Size (w x h) | $m^2 R = 0$ | .38 |
| SECTION TYPE | AND MORI | PHOLOGY | D | | The second s | 0224 | | D+ |
| TYPE: Stream | m / river | Channelized | Perman | ient Intermi | ttent Ephe | meral ASSO | FATED WETLAN | 5. |
| | | 0 | 0 | Ø | | 5 0 | "Inona | |
| IT DRAGEIC III | EAD (mm). | 0 | | | | | | |
| Habitat T | уре | Substrate | I N | Wean width | Mean depth | Mean | Mean | Other |
| Run, Pool, Rif | fle, Flat? | | | | wetted (m) | width (m) | depth(m) | |
| | | BOJO MAKD | 45 | AUA | MA | 1/1 10 | 69 | |
| and a second sec | | ου, υφ | P.5 | NIN | NIL | 14.4 | 0.0 | |
| Bedrock Br | Boulder Bo | Cobble Co | Grave Gr | l Sand Sa | Silt | Clay Cl | Muck Mu | Detritus D |
| BANK STABILI | τv | | | | | | | |
| DAIRCOTADIEL | | Erodin | g | Vulnera | ble | Protected | Dep | osition Zone |
| 이에 온이 있는 | | Angle>45°, e | rodible | Angle>45°, e | erodible An | gle>45°, non-ero | dible Angle<4 | 5° (gradual slope), |
| l é | | soil, under | cut or | soil, no sign o erosio | of recent | material/soil | fine gra | ained sediments |
| Left Up | stream Ban | k O | /1 | 0 | | 0 | | 0 |
| Right Up | Right Upstream Bank | | | 0 | | 0/ | | 0 |
| HABITAT | ABITAT | | - | | | - | | |
| IN-STREAM | Undercut | Boulders | Cobl | ble Woody D | ebris 🗸 | Organic | Vascular Macrop | hytes None |
| COVER | banks | 1 | | Instrum | 1 | debris | Instrum | |
| that apply: D | | V | | Instream | v | 1 | instream | |
| is for | | | | Overhan | ging 🗸 | | Overhanging | |
| dominant | | | | | | | | |
| cover): | | | | | | | | |

| VEGETATION TYPE (D for dominant): Submergent Floating Emergent None Predominant): Species | (in an ann an | VER naded): | 100 – 90 O | % | 90 – 60 O | % | 60- 30% O | | 30 - 1% | No | one O |
|--|------------------------------------|------------------------------|------------------|--------------|--------------|------------|--------------|------------|----------|-----------|----------|
| Species Seasonal/Temporary Permanent OTENTIAL BSTRUCTIONS: Spawning Evidence of Groundwater Other OTENTIAL RITICAL HABITAT MITING: Spawning Evidence of Groundwater Other RITARIAN COMMUNITY Dominant Vegetation Type Right Upstream Bank Right Upstream Bank RIPARIAN COMMUNITY Dominant Vegetation Type Image: Cultivated Meadow Scrubland Riparian None Cultivated Meadow Scrubland Forest 1.5-10 m Image: Cultivated Meadow Scrubland Forest None Cultivated Meadow 10-30 m Image: Cultivated Meadow Scrubland Forest None Cultivated Meadow 30+ m Image: Cultivated Meadow Image: Cultivated Meadow Scrubland Forest 30+ m Image: Cultivated Meadow Image: Cultivated Meadow Scrubland Forest 30+ m Image: Cultivated Meadow Image: Cultivated Meadow Scrubland Forest 30+ m Image: Cultivated Meadow Image: Cultivated Meadow Scrubland Forest 10-30 m Image: Cultivated Meadow Image: Cultivated Meadow Scrubland Forest 10-30 m Image: Cultivated Meadow Image: Cultivated Meadow Scrubland Forest <tr< td=""><td>VEGETATION (D for domin Pred</td><td>I TYPE nant): Iominant</td><td>Sub</td><td>mergent</td><td></td><td>Float</td><td>ing</td><td>-large fr</td><td>Emergent</td><td>reed</td><td>None</td></tr<> | VEGETATION (D for domin Pred | I TYPE nant): Iominant | Sub | mergent | | Float | ing | -large fr | Emergent | reed | None |
| OTENTIAL RITICAL HABITAT Spawning Evidence of Groundwater Other RIPARIAN COMMUNITY Dominant Vegetation Type Image: Common Strubland Right Upstream Bank Right Upstream Bank Riparian None Cultivated Meadow Scrubland Forest None Cultivated Meadow Scrubland 10-30 m Image: Cultivated Meadow Scrubland Forest None Cultivated Meadow Scrubland Fo 10-30 m Image: Cultivated Meadow Scrubland Forest None Cultivated Meadow Scrubland Fo 10-30 m Image: Cultivated Meadow Scrubland Fo Image: Cultivated Meadow Scrubland Fo 10-30 m Image: Cultivated Meadow Scrubland Image: Cultivated Meadow Scrubland Fo 30+ m Image: Cultivated Meadow Image: Cultivated Meadow Scrubland Image: Cultivated | GRATORY | Species NS: | None | | | Seasonal/T | emporary | Control | Permanei | nt | |
| Dominant Vegetation Type Right Upstream Bank Riparian None Cultivated Meadow Scrubland Forest None Cultivated Meadow Scrubland Forest 1.5-10 m Image: College Collige College College College College College College College Coll | DTENTIAL RITICAL HAB MITING: | BITAT | Spawning N/A | | | Evidence o | Groundwa | ater | Other | | |
| Dominant Vegetation Type Right Upstream Bank Riparian None Cultivated Meadow Scrubland Forest None Cultivated Meadow Scrubland Fo 1.6.10 m Image: Scrubland Forest None Cultivated Meadow Scrubland Fo 1.6.10 m Image: Scrubland Forest None Cultivated Meadow Scrubland Fo 1.6.10 m Image: Scrubland Image: Scrubland Fo Image: Scrubland Fo 1.6.10 m Image: Scrubland Image: Scrubland Image: Scrubland Fo 1.6.30 m Image: Scrubland Image: Scrubland Image: Scrubland Fo 30* m Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland 4000 GRAPHIC RECORD: Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland PSTREAM PHOTO #: Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland POTOGRAPHIC RECORD: Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland Image: Scrubland PSTREAM PHOTO #: Image: Scrubland Image: Scrubland Image: Scrubland Imag | RIPARIAN C | COMMUN | ITY | | | 4 | | | | | |
| Left Opstream Bank None Cultivated Meadow Scrubland Forest None Cultivated Meadow Scrubland Forest 10-30 m Image: Scrubland Forest None Cultivated Meadow Scrubland Forest 10-30 m Image: Scrubland Forest None Cultivated Meadow Scrubland Forest 10-30 m Image: Scrubland Forest Image: Scrubland Forest Image: Scrubland Forest 10-30 m Image: Scrubland Image: Scrubland Forest Image: Scrubland Forest 10-30 m Image: Scrubland Image: Scrubland Image: Scrubland Forest Image: Scrubland Forest 30+ m Image: Scrubland Image: Scrubland< | | | | Unofrom D | lank | Dominar | t Vegetatio | on Type | | am Bank | |
| 1.5-10 m 10-30 m 10-30 m 30+ m HOTOGRAPHIC RECORD: PSTREAM PHOTO #: OWNSTREAM PHOTO #: THER PHOTO #: THER PHOTO #S: OMMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: COMPLETELY dry, previous visited. in Jan and water was present up do bankful height. Function (MIL) and a log | Riparian Zone | None | Cultivated | Meadow | Scrubi | and Forest | None | Cultivated | Meadow | Scrubland | Forest |
| 10-30 m 30+ m 30+ m 40TOGRAPHIC RECORD: PSTREAM PHOTO #: DWNSTREAM PHOTO #: DWNSTREAM PHOTO #: THER PHOTO #S: DMMENTS, INCLUDING POTENTIAL ENHANGEMENT OPPORTUNITIES: Abordance of chara Completely dry, previous visited. In Jan and water was present up to bankth height. Fuelo (u) D | 1.5-10 m | | | | ~ | - | | | | ~ | |
| 30+ m NOTOGRAPHIC RECORD: PSTREAM PHOTO #: DWNSTREAM PHOTO #: DWNSTREAM PHOTO #: ILEFT UPSTREAM BANK PHOTO #: RIGHT UPSTREAM BANK PHOTO #: THER PHOTO #S: DMMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: Abordance of chara Completely dry, previous visited. in Jan and water was present up do bankful height. There will be a backful height. | 10-30 m | | | | | | | | | | V |
| ADTOGRAPHIC RECORD: PSTREAM PHOTO #: DWNSTREAM PHOTO #: DWNSTREAM PHOTO #: THER PHOTO #S: DMMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: Abrilace of chara Completely day, previous visited. in Jan and water was present up to bankful height. Frida (will) | 30+ m | | | | V | / | | | | | V |
| EFT UPSTREAM BANK PHOTO #: DWNSTREAM PHOTO #: THER PHOTO #S: MMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: MMMENTS, INCLUDING POTENTIAL ENHANCEMENT OPPORTUNITIES: Abordance of chara Completely dry, previous Visited. In Jan and water was present 10 do bankfor height. Frace (with a solution of the solu | OTOGRAPH | | DRD: | 8 | | 4 | | | <u>.</u> | | |
| Abrilace of chara Completely day, previous visited. In Jan and water was present up to bankful height. | STREAM PH | HOTO #: | | | | LE | | | | | |
| abalace of chara Completely dry, previous visited. in Jan and water was present up to bankful height. | THER PHOTO |) #S: | <i>ν</i> π. | | | | | | 11010 #. | | |
| abadace of chara Completely dry, previous visited. In Jan and water was present up to bankful height. | | | | | | | | | | | |
| FIUSION (Mild) acount Collect | abrila | re of | i charc dry f | ~)cev!ou | 5 Vi | sited i | Jer | ant | reter v | ucs prese | ,F |



| GENERAL INF | ORMATION | | | | | | | | | | |
|--------------------|-------------------------|----------------|---------|-----------------|-----------|---------|---------------|--------|-------------|-----------|------------|
| PROJECT #: | 3674 | NAME OF I | ROJEC | ד: ד | IME STAR | | > . | | IISHED: n | .25 | |
| COLLECTORS: | 7 5011 | - 1-0yall | MUC | | STRE | AM ID # | + !: | DAT | | 122 | |
| | Cele He | AIL + D | ona.L | eddr | Unnam | et lub | Hercourse 2 | | dolb | 106 | .ot |
| WEATHER: | SUMM | 611.00 | c 21 | °c | | | | | | | |
| LOCATION | 00111 | | | | | | | | | | |
| NAME OF WAT | ERBODY: | GENERAL | AREA O | FPROJECT | LOCATION | | - 1 | | | | |
| Unterior | \sim | out. | Strir | 15 OF | Tamble | orth | Ontar | 10 | | | |
| CHAINAGE OR | OTHER IDEN | TIFYING ATTRIE | BUTE: | | | | | | | | |
| Southa | on Hag | gorly Re | ad. | | | | | | | | _ |
| GPS COORDIN | ATES (UTM): | 14402 | 69 | 34°N | 760 | Sa | 19.804 | / | | | 131 |
| LAND USE AND | D POLLUTION | | | × | | | 1 10 | | | | |
| SURROUNDING | G LAND USE: | | | sou | RCES OF P | OLLUT | ION: | | | | |
| hesiden | 161 | | | -2 | ecidadi | JR | Aff | | | | |
| EXISTING STR | UCTURE TYPE | E (IF ANY) | | | estean | 10 | | | | | 1 |
| Bridge C |) | Box CulvertO | 0 | pen Foot Cul | vert O | | CSP O | | N | A O | |
| | | | | llauced | | 0. / 1 | , 2 (| Smx | O.Sm | | |
| SECTION TYPE | | | 55125 | Hugga | ynou | | Size (w x h |) m (| J. JIN P | 0.01 | 1 |
| TYPE: Strea | m / river Ch | annelized F | ermanen | t Interm | ittent E | Epheme | aral ASSC | CIATE | WETLAND |): | |
| | 0 | 0 | 0 | 0 | | 0 | Un | eva | Wated | | |
| HYDRAULIC HI | EAD (mm): | | | | | | | | | | |
| Habitat T | vpe S | ubstrate | Me | an width | Mean de | epth | Mean | 1 | Mean | 0 | ther |
| Run, Pool, Rif | fle, Flat? | | we | tted (m) | wetted | (m) | bankfull | | bankfull | - | |
| CI I | 5 | | 0 | | | _ | width (m) | | depth(m) | - | _ |
| Alat | | rganicios | 202 | 3.5 1 | | 71.0m | | | >Im | | 0.01 |
| Bedrock | Boulder | Cobble | Gravel | Sand | Si | lt | Clay | M | uck | Detri | tus |
| Br | во | CO | GI | Ja | 3 | | CI | | iu iii | | |
| BANK STABILI | ΤY | Eroding | - 1 | Vulnera | ble | | Protected | | Den | osition Z | 000 |
| | | Angle>45°, erc | dible | Angle>45°, | erodible | Angle | >45°, non-en | odible | Angle<45 | ° (gradua | al slope), |
| | | soil, undercu | t or | soil, no sign o | of recent | | material/soil | | fine gra | ined sed | iments |
| Left Up | stream Bank | bare soil | | erosio | | - | 0 | | | 0 | |
| Right Up | stream Bank | 0 | - | d | - | | 0 | | | 0 | |
| HABITAT | - | U | | V | | | U | | | 0 | |
| IN-STREAM | Undercut | Boulders | Cobble | Woody D |)ebris | | Organic | Vascu | lar Macroph | ytes | None |
| COVER | banks | | | hard in | | | debris | Inches | 1/ | | |
| (cneck all | (check all | | | Instream | | | Instream V | | | | |
| I TUAL ADDIA: 11 | that apply; D is for | | | Overhanging | | | Overhanging | | | | |
| is for | | | | Overhan | ging | | \bigvee | Overh | anging | | |
| is for dominant | | | | Overhan | ging | | V | Overh | anging | | |

| SHORE C (% stream s | COVER shaded): | 100 – 90 ° | % § | 00 – 60% O | | 60- 30% O | | 30 - 1% | N | one D |
|-----------------------------------|----------------------|--------------|-------------|---------------|-----------------------|--------------------|-------------|--------------|-----------|----------|
| VEGETATIC (D for don | ON TYPE ninant): | Subr | nergent | | Floatin | g | | Emergent | | None |
| Pro | edominant Species | | | Alle | owheed | | Large | ruited bu | | |
| IGRATORY BSTRUCTIO | ONS: | None | | S | easonal/Ten | nporary | | Permane | nt | |
| OTENTIAL RITICAL HA MITING: | ABITAT | Spawning | atra. | E | vidence of (Sheen | Broundwa Dleser | ater H | Other | | |
| RIPARIAN | | IITY | | | | 1 | | | | - |
| | - | Left | Upstream Ba | nk | Dominant | /egetatio | n Type F | Right Upstre | am Bank | - |
| Riparian Zone | None | Cultivated | Meadow | Scrubland | Forest | None | Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | Pood | | | | | | | V | | |
| 10-30 m | Marsh | | | | | | | V | | 1 |
| 30+ m | March | | | | | 1 | | | | |
| IOTOGRAF | PHIC RECO | ORD: | 200 | | 1 | | | | | |
| | PHOTO #: | JACHT. | a120 | | LEFT | | AM BANK PH | | | _ |
| THER PHO | TO #S: ~ | LM6PG1 | 28 (| livent | Truor | | | 1010 #. | | |
| OMMENTS, | , INCLUDIN | IG POTENTIAL | ENHANCEM | ENT OPPC | RTUNITIES | 1 | | | | |
| sheer | - mha | eruel an | Luche | C | | | | | | |
| 0.0 | | | 00000 | | | | | | | |
| Very | low | poderticl | for | fish | pres | ense, | water | is V | ery | |
| Sta | Shant | . chara | hes | basi | ally A | mosu | occupi | el mos | st of the | _ |
| waln | er Co | lumn | | | 1 | | | | | |
| 1 | .11. | C 1. | - [| . \ | | | | | | |
| Very | IITIE | 410m (| Sperve | 24 | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | ~ | | | | | | | | |



| GENERAL INF | ORMATION | | | | | | | | | | |
|-----------------------------|---------------------|--------------|---------|----------------------------|----------------------|-----------|---------------|----------------|-------------|------------|-----------|
| PROJECT #: | 121-11- | NAME OF | PROJE | СТ: ТІ | ME STAR | TED: | Т | ME FIN | ISHED: | 130 | |
| 0011505050 | 10,50 19 | Loyali | 4 50 | bar | 16:30 | A 84 10 4 | | DATE | 06 10 | 121 | |
| COLLECTORS | Linchon 6 | Span | Deba | 60.0 | S RE | AMID # | k | 20 | 516 - 139 | 8-2 | 3 |
| WEATHER: | | JEan | KOUM | .90m | | d cruc | | 100 | | | |
| 2 | D°C | 2/10 0 | C | | | | | | | | |
| LOCATION | | | | | | | | | | | |
| NAME OF WAT | ERBODY: | GENERA | | OF PROJECT L | OCATION | 1 | 10 | | | | |
| Unknow | | Jaut Jaut | neas | st of | Great | er 1 | Ivapane | e | | | |
| | | | IBUTE: | - | ~ | ` | | | | | |
| Kattre | Load , | North | of | Hineh | Road | | | _ | | | |
| GPS COORDIN | IATES (UTM): | IGT A | 2117- | 116 110 | 275 | 0 | | | | | |
| | | | 14 C | 1101 49 | 1210 | | 9 | | | | |
| SURROUNDING | G LAND USE: | | | SOUR | RCES OF P | OLLUT | ION: | | | | |
| . Mar | | | | | Dund | and | and and | | | | |
| Metta | ana | | | | road | sice | - 101 | u 710 | 7 | | |
| EXISTING STR | UCTURE TYP | E (IF ANY) | - | | | A | _ | | | | |
| Bridge C |) | Box CulvertO | | Open Foot Culv | rent O | PUC (| CSP Ø | | N// | 4 O | |
| Other O Desc | ribe: | | | | | | Size (w y h) | m ² | 2× 4 | Scm (| (rad-lis) |
| SECTION TYPE | E AND MORPH | HOLOGY | | | | | JIZE (W X II) | | | Jerne | 100.03 |
| TYPE: Strea | am / river C | hannelized | Perman | ent Intermi | ttent | Epheme | ral ASSO | CIATED | WETLAND | | |
| | 0 | 0 | 0 | 0 | | 0 | | | | | |
| HYDRAULIC H | EAD (mm): | 0 | | | | | | | | | |
| Habitat T | Type S | Substrate | N | lean width | Mean d | epth | Mean | | Mean | Ot | her |
| Run, Pool, Ri | ffle, Flat? | | W | vetted (m) | wetted | (m) | bankfull | | bankfull | | |
| | | 1.509 1 | 000 | | | - | width (m) | | depth(m) | | |
| Flat | · | 14,50 | 770 | 25m | 710 | 1 | 41 Known, we | Hand | Cunnan | | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Si | ilt Clay | | Muck | | Detritu | JS |
| Br | Bo | Co | Gr | Sa | S | i | CI | N | lu | D | |
| BANK STABIL | ITY | | | | | | | | | | |
| | | Erodin | g | Vulnera | ble | | Protected | | Depo | sition Zo | ne |
| | | Angle>45°, e | rodible | Angle>45°, e | erodible | Angle | >45°, non-ero | dible | Angle<45 | ' (gradual | slope), |
| | | soil, under | out or | soil, no sign o erosioi | n recent | | material/soli | | fine grai | nea seam | ients |
| Left U | pstream Bank | 0 | | 0 | | | ø | | | 0 | |
| Right U | Right Upstream Bank | | | 0 | | | o | | | 0 | |
| HABITAT | ABITAT | | | | | | | | | | |
| IN-STREAM | Undercut | Boulders | Cobb | ole Woody D | ebris | | Organic | Vascu | lar Macroph | ytes | None |
| COVER | banks | | | . In | / | | debris | Inches | / | | |
| (cneck all that apply: D | | / | | Instream | | | / | instrea | | / | |
| is for | | $ $ \times | | Overhang | Overhanging \times | | 1 | Overha | anging 🧹 | | |
| dominant | 1 | | | ` | | | | | | | |
| cover): | 1 | | 1.1 | | | | | | _ | - | |

| SHORE COVE (% stream shade | :R ed): | 100 – 90 O | % | 90 - 60% | · | 60- 30% O | | 30 - 1% | | None |
|--|-----------------|-----------------------------|------------------|--------------------|----------------------|--------------|--------------|------------|-----------------------|-------|
| VEGETATION TY (D for dominan | YPE nt): | Sub | mergent | | Floatin | 9 | | Emergent | | None |
| Predom Spi | ninant ecies | Coontail | / | Du | ton Pond - | C ly | lasse-fr | Saddelao | theed , | |
| IIGRATORY BSTRUCTIONS: | N | lone | / | | Seasonal/Ten | porary | Drode | Perman | ent a Mail | |
| OTENTIAL RITICAL HABITA IMITING: | AT P | spawning ike yoriwida | 0 | | Evidence of G | Broundwa | iter | Other | | |
| RIPARIAN COM | MMUNI | ТҮ | | | graded | | | | | |
| | _ | l off | linetroam F | lank | Dominant \ | /egetatio | n Type | Picht Upot | nom Bonk | |
| Riparian No Zone | one | Cultivated | Meadow | Scrubler vetlan | nd Forest | None | Cultivated | Meadow | -Serubland Wetland | Fores |
| 1.5-10 m | | | | / | | | | | / | |
| 10-30 m | | | | / | | | | | 1 | |
| 30+ m | | - | / | | | | | | / | |
| HOTOGRAPHIC | RECOF | RD: | | | | | | | | |
| PSTREAM PHOT | O #: | | | | LEFT | UPSTRE | AM BANK PH | IOTO #: | | |
| DWNSTREAM PH | HOTO # | #: | | | RIGH | T UPSTR | EAM BANK P | HOTO #: | | |
| | | | | | | | | | | |
| -Yellow - Erosian | Ponc | I-lily F 100ds1 | observe de gr | ed in avel | . uateri observed | t a | ? round c | aterca | urg | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |



| | | | | | | | | - | 1 | | |
|---------------|-----------------------|----------------------------------|---------|-------------------|-------------|---------------|----------------|-----------------------------|-----------|----------|-------------|
| GENERAL INI | FORMATION | والمتحد والمتحد | | | | | | | | | |
| PROJECT #: | 1/2/-11. | NAME OF | PROJEC | <u>ст:</u> т | IME STAR | TED: | 1 | IME FIN | VISHED: | | |
| | 1676 14 | 1-076 | 1181 5 | Dur | 212 |) ph | n | | 2:57p | m | |
| COLLECTORS | Cale He | thatse | en Rr | his In | STRE | AM 1D # | #: ee k | DAT | 2016-0 | - 80 | 23 |
| WEATHER: | where st | 1000 | 240 | C | | 1 | | | | | |
| LOCATION | Only di | Toto | | | | | | | | | - |
| NAME OF WA | TERBODY | GENERA | | E PROJECT I | OCATION | | | | | | |
| Ung | 10~~ | Cert | e-vil | le out | Skirt | 2 | | | | | |
| CHAINAGE OF | R OTHER IDEN | TIFYING ATTR | IBUTE: | | | | | | | | |
| | | | Cent | prille k | and. | we | st of | Cant | v Roat | 27 | |
| GPS COORDI | NATES (UTM): | | | | - /. | aldo | I light | | | -1 | |
| | annee (erradi | 181 | 345 | 535,06 F | - Ψ | 11868 | 1,48N | | | | |
| LAND USE AN | ID POLLUTION | | | | | | | | | | |
| SURROUNDIN | IG LAND USE: | | | SOUF | RCES OF P | OLLUT | ION: | | | | |
| Reside | nd'al | | | ~ 2 | ocil. | JAG | ott | 12 | | | |
| 100010 | | | | - i i | resid | enti | E FUN | 312 | | | |
| EXISTING STR | RUCTURE TYPI | E (IF ANY) | | | | | | | | | _ |
| Bridge | 0 | Box CulvertO | | Open Foot Culv | vert O | 2 | CSP O | | N// | A O | |
| Other O Desc | Other O Describe: Dyb | | ,P | PVC | | | Size (w x h |) m ² | 1230 | | |
| SECTION TYP | E AND MORPH | IOLOGY | | | | | | | 3 | | |
| TYPE: Strea | am / river CI | nannelized | Permane | ntermi | ttent | Epheme | eral ASSC | CIATE | WETLAND | | |
| | 0 | 0 | B | 0 | | 0 | | les | | | |
| HYDRAULICH | IFAD (mm): | | 0 | | | 0 | | | | - | |
| | |) | | | | | | | | | |
| Habitat | Type S | ubstrate | M | ean width | Mean d | epth | Mean | | Mean | | Other |
| Run, Pool, Ri | iffle, Flat? | | W | wetted (m) wetter | | i (m) bankful | | | bankfull | | |
| | | | | Wett | | width | | | depth(m) | | |
| \mathbf{x} | G | 「雨られしるの | | 1- | n 2' | * | on 1 | 9 | 61) | | |
| Fun | < S | AISDZS | | Ø | U() | 0 | Erry, 1, 1 | | VIGL | | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Si | lt | Clay | M | uck | Det | ritus |
| Br | Во | Co | Gr | Sa | S | i | CI | N | lu | I | 2 |
| BANK STABIL | ITY | | | | 4. | | | | The left | | |
| | | Erodin | a | Vulnera | ble | | Protected | | Depo | sition Z | Zone |
| | | Angle>45°, e | rodible | Angle>45°, e | erodible | Angle | e>45°, non-ero | dible | Angle<45° | (gradu | ial slope), |
| | | soil, underc | ut or | soil, no sign o | of recent | | material/soil | | fine grai | ned se | diments |
| | | bare so | il | erosio | n | | | | | | |
| Left U | pstream Bank | 0 | | ø | 1 | | 0 | | | 0 | |
| Right U | pstream Bank | 0 | | o | | | 0 | | | 0 | |
| HABITAT | | | | - | | | | | | | |
| IN-STREAM | Undercut | Boulders | Cobbl | e Woody D | ebris | | Organic | rganic Vascular Macrophytes | | None | |
| COVER | banks | | | | , | | debris | | | | |
| (check all | 1 | Instream / Instream / Instream / | | | | | | | | | |
| that apply; D | ~ | I X | | | 1 | | | | | | |
| is for | 1 | ſ | | Overhang | Overhanging | | | Overh | anging 🧹 | | |
| dominant | | | | | | | | | | | |
| cover): | | | | | | | | | | | |

| SHORE COVER (% stream shaded) | 100 – 90 %): O | 90 - 6 O | 0% | 60- 30% Ø | - | 30 – 1% O | N | one O |
|---|------------------------|--------------|----------------|--------------|--------------------------|---------------------|-----------|----------|
| VEGETATION TYPE (D for dominant): | E Subme | rgent | Floatin | g | | Emergent | | None |
| Predomina Speci | ant Canada w | daved | Neder Cre | 55 | Broch | lleaden | rowheal | |
| MIGRATORY OBSTRUCTIONS: | None | | Seasonal/Ten | nporary | | Permaner | nt | |
| POTENTIAL CRITICAL HABITAT LIMITING: | Spawning Cypcinid | | Evidence of C | Groundwa | ter | Other | | |
| RIPARIAN COMM | IUNITY | | Deminert | Variation | Tune | | | |
| | Left Ur | stream Bank | Dominant | Vegetation | n Type F | Right Upstre | am Bank | |
| Riparian Zone | Cultivated | leadow Scrul | bland Forest | None | Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | • | | | | | V | | |
| 10-30 m | | 1 X 3 4 | | | - | V | | |
| 30+ m | / | | | | | V | | |
| PHOTOGRAPHIC RE JPSTREAM PHOTO DOWNSTREAM PHO | ECORD: #: DTO #: | | LEFT | UPSTRE | AM BANK PH EAM BANK P | IOTO #: PHOTO #: | | |
| OTHER PHOTO #S: COMMENTS, INCLUI | DING POTENTIAL E | | OPPORTUNITIES | 8 | | | | |
| -Double C | isp-Puc | Colver | t cross | ingi | ato h | etter | larea | |
| -North coad | side d | The ro | oul Oft | tous | i ditcl | n foil | 10~5 | |
| -Smalld | cn upsta | ecm, fish | vbstruc | fior | L . | | | |
| -Afatch de | 8-9 turt | obsecu | red ervel | | - | 1 | Turtle | ۶ |
| 23°C | Snapp | ins ture | すして) | | | L | | - |
| Additional Notes Ap | pended? O No | O Yes | number of page | S | DESCRIP | TION | | |



| GENERAL INF | ORMATION | and the second second | | | | | | | | |
|----------------|-------------|-----------------------|-------------|----------------------|--------------|--------|---------------|----------------|-------------|------------------|
| PROJECT #: | 1267LL | NAME OF | PROJEC | Т: Т | ME STAR | TED: | Т | IME FIN | IISHED: | |
| COLLECTORS | | Loyang | st ou | lar | STPE | | ¥• | | 5:43 | |
| | Cale 1 | tartin r | Span | Repueson | Triber | ari 2 | to Mid Ger | K | 2016 - | 08-23 |
| WEATHER: | 2101 | 2/10 | Vice | | | 1 | | | | |
| | 210 | 5710 | cc | | | | | | | |
| NAME OF WAT | ERBODY: | GENERAL | AREA O | F PROJECT L | OCATION | : | | | | |
| Unknow | | | | | | | | | | |
| CHAINAGE OR | OTHER IDE | | BUTE: | | | | | | | |
| (antra | cillo 1 | and a | loch | 01.10 | deal | | | | | |
| GPS COORDIN | ATES (UTM): | vaar, | VESI | OF U | China | f | | | | |
| | | 181 3 | 4408 | 6,1E | Ψ | 11590 | 39.48 1 | _ | | |
| LAND USE AND | | J | | ROUE | | | | | | |
| Hay Bold | J LAND USE: | 1 1 11 | 1 | Roo | CES OF P | | ION: | | | |
| ing tiena, | woodla | nd Iwetlan | e) | | ~ Tun | -041 | | | | |
| EXISTING STRU | UCTURE TYP | E (IF ANY) | | | | | | | | |
| Bridge O | | Box CulvertO | 0 | pen Foot Culv | vert O | PUC | CSP Ø | | N/ | A O |
| | 1 | | | | | | | | 110 | 1. |
| Other O Descr | ibe: | | | | 4 | | Size (w x h) | m ² | 45cm | radius |
| TYPE: Stream | | hannelized | Permanen | t Intermi | k ttent | Enhome | ASSO | CIATE | WETLAND | |
| Girea | | | Q | | | | i tu | 14.00 | 10 | |
| HYDRAULIC HE | EAD (mm): | 0 | 0 | 0 | | 0 | u, | innu | | |
| | | 0 | | | | | | | | |
| Habitat T | ype | Substrate | Me | an width tted (m) | Mean d | epth | Mean | 1 - | Mean | Other |
| Run, Pool, Rin | fie, Flat? | | | | wetted | (m) | width (m) | | depth(m) | |
| 0.00 | 01.0 | 5R 309, Bo | 26% | 1 11 | 615 | | 010 | | 2.11.6 | |
| KIJ-J.K | e Mat | D 10% Co | 35% | 1145 | 0.75 | | 010 | | 5.4.0 | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Si | lt | Clay | Mu | lick | Detritus |
| Br | во | 0 | Gr | Ja | 3 | | G | I. IV | | U |
| BANK STABILI | ΤY | | 1 | Valacia | bla | - | Destasted | | Dene | aitian Zana |
| | | Angle>45° er |) odible | Angle>45° e | erodible | Angle | >45° non-ero | dible | Anale<45° | (gradual slope). |
| | | soil, underci | ut or | soil, no sign o | frecent | 7 mgre | material/soil | andro | fine grai | ned sediments |
| | | bare soi | | erosion | n | | | | | |
| Left Up | stream Bank | 0 | | ø | | | 0 | | | 0 |
| Right Up | stream Bank | 0 | 10 | 6 | | | 0 | _ | | 0 |
| HABITAT | 1 | | | - | | 1 | | | | - |
| | Undercut | Boulders | Cobble | Woody D | ebris | | Organic | Vascu | ar Macrophy | tes None |
| (check all | Danks | | | Instream | \checkmark | | depris | Instrea | m 🗸 | |
| that apply; D | | | / | | \sim | | / | | × | |
| is for | 6 | | | Overhang | ging 🦯 | | / | Overh | anging 🦯 | |
| dominant | | | | | | | | | | |
| cover): | 1 | 1 mil | 1 | | | | | | | |
| VEGETATION TYPE (D for dominant): Predominant Species MIGRATORY DBSTRUCTIONS: N COTENTIAL CRITICAL HABITAT S RIPARIAN COMMUNIT S Riparian Zone None 10-30 m I 30+ m I WOTOGRAPHIC RECOR S COMMENTS, INCLUDING I - 1.9° C C - 1.9° C C - 1.9° C C - 0.160 Aral C | Submerg | ream Bank adow Serut | Fi Seasona Evidence Domi | oating al/Temporary e of Grounds mant Vegetat rest None | Vater On Type F Cultivated | Emergent Permaner Other Right Upstre Meadow | am Bank Scrubland Methand | Forest |
|--|---|-------------------------|--|---|-------------------------------------|---|---------------------------------|--------|
| Predominant Species MIGRATORY DBSTRUCTIONS: POTENTIAL COTENTIAL COTENTIAL SRITICAL HABITAT IMITING: RIPARIAN COMMUNIT RIPARIAN COMMUNIT RIPARIAN COMMUNIT RIPARIAN COMMUNIT RIPARIAN COMMUNIT 10-30 m 10-30 m 10-30 m 30+ m 30+ m 30+ m 30+ m 30+ m 200WNSTREAM PHOTO #: 200WNSTREAM PHOTO #: 200WNSTREAM PHOTO #S: 200MENTS, INCLUDING - 18° C Cua - Potentral Conversation S gMg | lone pawning TY Left Upstr Cultivated Mea | ream Bank adow Scrut | Seasona Evidence Domi | nl/Temporary e of Grounds nant Vegetat rest None | Vater on Type F Cultivated | Permaner Other Right Upstre Meadow | am Bank Scrubland Methang | Fores |
| AIGRATORY DBSTRUCTIONS: POTENTIAL CRITICAL HABITAT IMITING: RIPARIAN COMMUNIT RIPARIAN COMMUNIT 10-30 m 10-30 m 10-30 m 30+ m 30+ m HOTOGRAPHIC RECOR PSTREAM PHOTO # DTHER PHOTO #S: COMMENTS, INCLUDING - 18° C Cua - Potentral Conversation S pMg | Ione pawning Y Left Upstr Cultivated Mea | ream Bank adow Serut | Seasona Evidence Domí Domí Cland Fo | e of Groundy nant Vegetat rest None | Vater on Type F Cultivated | Permaner Other Right Upstre Meadow | am Bank Scrubland Methang | Fores |
| RIPARIAN COMMUNIT RIPARIAN COMMUNIT RIPARIAN COMMUNIT RIPARIAN COMMUNIT RIPARIAN COMMUNIT RIPARIAN COMMUNIT 10-30 m 10-30 m 10-30 m 30+ m 10-30 m 30+ m HOTOGRAPHIC RECOR PSTREAM PHOTO #: OWNSTREAM PHOTO #: OWNSTREAM PHOTO #S: OMMENTS, INCLUDING - 1.8° C Cua - PoleAfral - Conversation S pMg | Pawning Y Left Upstr Cultivated Mea RD: | ream Bank adow Serut | Evidence Domi | nant Vegetat | Vater on Type F Cultivated | Other Right Upstre Meadow | am Bank Scrubland Welland | Fores |
| RIPARIAN COMMUNIT Riparian None Zone None 1.5-10 m 10-30 m 30+ m HOTOGRAPHIC RECOR PSTREAM PHOTO #: OWNSTREAM PHOTO #: OWNSTREAM PHOTO #S: OMMENTS, INCLUDING - 18° C Cua - Potentral - Conversation S pMg | Cultivated Mea | ream Bank adow Scrut | Domi Diand Fo | nant Vegetat rest None | on Type F Cultivated | Right Upstre Meadow | am Bank Scrublend Velland | Fores |
| Riparian Zone 1.5-10 m 10-30 m 30+ m HOTOGRAPHIC RECOR PSTREAM PHOTO #: OWNSTREAM PHOTO #: OWNSTREAM PHOTO # THER PHOTO #S: OMMENTS, INCLUDING - 18° C Cua - Potentral - Conversation S pMg | Left Upst Cultivated Mea | ream Bank adow Serut | Domí Diand Fo | rest None | on Type F Cultivated | Right Upstre Meadow | am Bank Scrubland Wethand | Fores |
| Riparian ZoneNone1.5-10 m1.5-10 m10-30 m10-30 m30+ m10-30 m30+ m10-30 mHOTOGRAPHIC RECOR PSTREAM PHOTO #: POWNSTREAM PHOTO #: DOWNSTREAM PHOTO #: D | Cultivated Mea | adow Serui | For | rest None | Cultivated | Meadow | Scrubland Velland | Fores |
| 1.5-10 m 10-30 m 30+ m HOTOGRAPHIC RECOR IPSTREAM PHOTO #: OWNSTREAM PHOTO #: OWNSTREAM PHOTO #S: OMMENTS, INCLUDING - 18° C Cua - Potentral - Conversation Spmg | RD: | | | | | | | |
| 10-30 m 30+ m HOTOGRAPHIC RECOR PSTREAM PHOTO #: OWNSTREAM PHOTO #: OWNSTREAM PHOTO #S: OMMENTS, INCLUDING - 18° C Cua - Potentral - Conversation S pMg | RD: | | | | | | 6.71 | |
| 30+ m HOTOGRAPHIC RECOR IPSTREAM PHOTO #: DOWNSTREAM PHOTO #: DOWNSTREAM PHOTO #S: OMMENTS, INCLUDING - 18° C Cua - PoleAtral - Conversation Spmg | RD: | | - | | | | | - |
| HOTOGRAPHIC RECOR PSTREAM PHOTO #: OWNSTREAM PHOTO #: THER PHOTO #S: OMMENTS, INCLUDING - 19°C Cua - 19°C Cua - Polentral - Conversation Spring | RD: | | | | | 1 1 | | |
| PSTREAM PHOTO #: OWNSTREAM PHOTO # THER PHOTO #S: OMMENTS, INCLUDING - 18°C Cua - 18°C Cua - Polentral - Conversation spring | | | | | | 4. J. | | |
| OMMENTS, INCLUDING - 18°C Cua - Potentral - Conversation spring | 4. | | | | EAM BANK PH | | | _ |
| OMMENTS, INCLUDING - 18°C Cua - Polentral - Conversation spring | • | <i>6</i> | | | | 11010 #. | | |
| - 1.9°C Cua - Polentral - Conversation spring | | | | | | | | _ |
| - Potentral - Conversation spring | ter temo | | OPPORTUN | ITIES: | 1.0 | | | |
| spring | graind wa | ter inpu | t. | | | | | |
| - / | n with | landonner | r hd | cales | presence | of ne | earby c | old |
| | | | | | | | | |
| | | | | | | | | |
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| GENERAL INF | ORMATION | | | Sec. 1 | | | | | | | | |
|----------------|--|--------------|------------|-----------------|-----------------------------|--------|-----------------------|-------------------|----------------------|----------|------------|--|
| PROJECT #: | 21 711 | NAME | OF PROJE | ECT T | IME STAR | TED: | 1 | IME FIN | ISHED: | | | |
| COLLECTOR | 130 (4 | Loyc | 7189 5 | olar | S. | | pm | DAT | <u>F; 11 q</u> | om | | |
| COLLECTORS | Hob | cet in + ? | Seca K | Robinson | Unnam | el W | Action 1 | | 206 | -08 | 5.23 | |
| WEATHER: | < | 2/1 | | Jeor | | | | | | | | |
| | Sund | 2110 | $(C \circ$ | 250 | | | | | | | | |
| NAME OF WAT | ERBODY: | GENER | AL AREA | OF PROJECT L | OCATION | | | - | | | | |
| () de | Durito | O. | Ast | tids of | - Cal | erul | lle | | | | | |
| CHAINAGE OR | OTHER IDE | NTIFYING ATT | RIBUTE: | | Care | V | | | | | | |
| On Cent | erville | road | neo | -local | qua | 114 | | | | | | |
| GPS COORDIN | 79,93 F | 40 | 11581 | 8.22 N | | | | 1.1 | | | | |
| LAND USE AND | D POLLUTIO | N | | | | | | | | | 1 | |
| SURROUNDING | G LAND USE | | | SOUF | SOURCES OF POLLUTION: | | | | | | | |
| Agricult | Addicultural | | | | | Run | off | | | | | |
| EXISTING STR | UCTURE TYP | PE (IF ANY) | | | | | | | | | | |
| Bridge O | | Box Culvert | 0 | Open Foot Culv | Dot Culvert O CSP O N/A O | | | | | | | |
| Other O Descr | ibe: | | _ | | | | Size (w x h | $m^2 \mathcal{R}$ | :75. | 12 | em | |
| SECTION TYPE | AND MORP | HOLOGY | | | | | 1 4000 | CLATE | | | | |
| TYPE: Stream | TYPE: Stream / river Channelized Permanent | | | | | Epheme | eral ASSU | | WEILAND | | | |
| | Ø | 0 | Ø | 0 | | 0 | | ndeni |)wh | | | |
| HYDRAULIC H | =AD (mm): | 0 | | | | | | | | | | |
| Habitat T | уре | Substrate | | Mean width | an width Mean depth | | | - | Mean | | Other | |
| Run, Pool, Rif | fle, Flat? | | | wetted (iii) | wetted | (m) | bankfull width (m) | | bankfull tenth(m) | | | |
| Y II | C | JUDIN 20 | | 128 | 1 | | | | | | | |
| t lat | - (| 5+30 | | 1.20 | Ide | m | 1.58 | Ē | 340~ | | | |
| Bedrock | Boulder | Cobble | Grave | I Sand | Si | it - | Clay | Mu | | Detr | itus) | |
| | BU | 00 | | - Cu | | | 01 | | | - | | |
| BANK STABILI | ΙΥ | Erod | ina | Vulneral | ble | | Protected | 1 | Depo | sition Z | one | |
| | | Angle>45°, | erodible | Angle>45°, e | erodible | Angle | e>45°, non-ero | dible | Angle<45° | ' (gradu | al slope), | |
| | | soil, unde | ercut or | soil, no sign o | f recent | | material/soil | | fine grai | ned sec | diments | |
| Left Up | stream Ban | k Dare | SOII | erosion | | | 0 | | | 0 | | |
| Right Up | stream Ban | k o | - | 0 | | | 0 | | | 0 | | |
| HABITAT | | | | | | | | - | | | | |
| IN-STREAM | Undercut | Boulders | Cob | ble Woody D | ebris | | Organic | Vascu | ar Macrophy | ytes | None | |
| COVER | banks | V | | In stars a | | | debris | Inches | - | | | |
| that apply; D | | | | instream | v | | | 112169 | | , | | |
| is for | . / | | | Overhang | Overhanging V Overhanging V | | | | | | | |
| dominant | | | | | | | | | | | | |
| cover): | | _ | | | | | | _ | | 10.11 | | |

| SHORE Co (% stream s | SHORE COVER 100 - 90 % 90 - 60 % stream shaded): O O | | | | % | 60- 30% | / | 30 – 1% O | N | None | | |
|--|--|-------------------|------------|---------|-------------|--------------|-------------|------------------|-----------|--------|--|--|
| VEGETATIO (D for dom | N TYPE inant): | Sut | omergent | | Float | ing | | Emergent | None | | | |
| Pre | dominant Species | - | 100 | | | _ | - | Ternestrul Grass | | | | |
| MIGRATORY DBSTRUCTIO | NS: | None | | | Seasonal/T | emporary | | Permane | nent | | | |
| POTENTIAL CRITICAL HAI LIMITING: | BITAT | Spawning Cypri | vid | | Evidence o | f Groundwa | ater | Other | | | | |
| RIPARIAN | COMMUN | ITY | | | Demine | | Turne | * | | | | |
| | | Left | Upstream E | Bank | Dominar | t Vegetatio | on lype | Right Upstre | am Bank | | | |
| Riparian Zone | None | Cultivated | Meadow | Scrubla | and Forest | None | Cultivated | Meadow | Scrubland | Forest | | |
| 1.5-10 m | | | | | | \vee | | | | | | |
| 10-30 m | | | | | / | | | | | | | |
| 30+ m | | | | | | \checkmark | | | | | | |
| HOTOGRAP | HIC RECO | ORD: | | | Ť | 2 | | -le - gle | | 4 | | |
| | HOTO #: |) #· | | | LE | T UPSTRE | EAM BANK PH | HOTO #: | | | | |
| THER PHOT | O #S: | | | | | | | | | | | |
| OMMENTS. | INCLUDIN | G POTENTIAI | ENHANCE | MENT OF | PORTUNITIE | S: | | | | | | |
| -Wede | e di | enp 1 Hosh | 4°C | erved | 8, | | | | | | | |
| - D15 (| charge | -lado | 6 V | ~ct[| and th | richte | f | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| dditional No | tes Apper | nded? ØN | lo O Yes | n | umber of pa | ges | DESCRIF | TION | | | | |



| GENERAL INF | ORMATION | | | | | | | | | | |
|---------------------------|------------------|--------------|---------------------------------|--|----------------|-------------|------------------|---------|-------------------|---------------|-----|
| PROJECT #: (| 6261 | A NAME OF | PROJE | CT: T | IME STAR | | In I | IME FIN | ISHED: | | |
| COLLECTORS | 0 101 | 1 Layd | 1505 | 2014 | STRE | AM ID # | #: | DATI | 3.49 | (4 | |
| (| Cale H | ictim f 1 | Dana | Leclar | - Black | (Gre | ek-D/S | | 2016- | 06.0t | |
| WEATHER: | Ques | ract | 7000 | | | | | | | | |
| LOCATION | 000 | curry 1 | Col | | | | | | - | | |
| NAME OF WAT | ERBODY: | GENERA | LAREA | OF PROJECT I | OCATION | h | 01 | 1 | 3 | | |
| SWIMON | AIVE | | SKIP | 35 OF 1 | and | 071 | 1 UNTO | inc |) | | _ |
| CHAINAGE OR | | | K | -11 | 6 | | NI | P | | | |
| TERE E | terfyrd | KOOLE | Tas f | 5 | outha | 21 | Murph | YK | Ocd. | | _ |
| GPS COORDIN | ATESYUTM | 1 4402 | 12,5 | 59.581 | √ [−] | 760 | 'SF48 | .95 | h | | |
| LAND USE ANI | | DN | | 801 | | OLUT | ION | | | | |
| ALCIC | LANDUS | =: | | - AG | acath | rel | ION: | | | | |
| 1 Marice | 1000 | | | -RS | Lat R. | in od | Fd. | _ | | | |
| EXISTING STR | UCTURE TY | PE (IF ANY) | | Construction of the local distance of the lo | 1 | | | 12 | | 1 | |
| Bridge C | | | Open Foot Culvert O CSP O N/A 🍖 | | | | | | 4 97 | | |
| Other O Descr | ribe: Roc | 1 CLASS | ire | | | | Size (w x h | m^2 | Jolsi | h | |
| SECTION TYPE | AND MOR | PHOLOGY | | 10 | i. | | | | | | |
| TYPE: Strea | m / river | Channelized | Perman | ent Intermi | ittent I | Epheme | eral ASSC | | WETLAND | | |
| | | 0 | R | 0 | 1 | 0 | | n jenu | m | | |
| | | 0 | | | | | | | | | |
| Habitat T Run Pool Rif | ype fle Flat? | Substrate | N V | lean width vetted (m) | Mean de wetted | epth (m) | Mean bankfull | | Mean bankfull | Other | |
| | no, r laci | Co-20% | 2 | Wetted (m) | | | width (m) | | depth(m) | | _ |
| Rian | | Sa - 15 | | 8m | 0.25 | - | 8.5 0 | | 0.55 | | |
| Bedrock | Boulder | Cobble | Gravel | Sand | Si | lt | Clay M | | Muck Detritu: | | - |
| Br | Во | Co | Gr | Sa | S | | cı | M | lu | D | |
| BANK STABILI | ТҮ | | | | | | | | | | |
| 1 | | Eroding | g rodible | Vulnera | ble | Angle | Protected | dible | Depo Angle<45° | sition Zone | a) |
| | <u>.</u> | soil, underc | ut or | soil, no sign o | of recent | Angie | material/soil | | fine grai | ned sediments | ·// |
| l eft llr | stream Bar | bare so | il | erosio | n | | ./ | | | - | 1 |
| Right Ur | etream Bar | ··· 0 | - | ٩. | | | 0 | | | 0 | - |
| HADITAT | Stream Dar | к О | | 0 | | _ | 0 | | _ | 0 | - |
| IN-STREAM | Undercu | t Boulders | Cobb | bble Woody Debris | | | Organic | Vascul | ar Macrophy | tes Non | e |
| COVER | banks | | | | | | debris | Inches | | | |
| that apply; D | ./ | . / | | instream | - | | V | mstrea | | | |
| is for | | | | Overhanging 🗸 | | | | Overha | anging 1 | | |
| cover): | | | | | | | 1.1.1 | | | 1 | - |

| SHORE COVER 100 - 90 % 90 - 60% 60- 30% 30 - 1% N (% stream shaded): O | | | | | lone O | | | | | |
|--|---------------------------------|---------------------------------------|--------|---------|---------------------------------|-----------|-----------------|----------|--------------|--------|
| VEGETATIC (D for dom Pre | ON TYPE ninant): dominant | Submergent D wild alery | | | Floating Sm. 1/14 pads write | | | Emergent | tain | None |
| IIGRATORY BSTRUCTIO | ONS: | None | | | Seasonal/Ten | porary | | Permane | nt díam | |
| OTENTIAL RITICAL HA IMITING: | BITAT | Spawning Cyptini | ł | | Evidence of G | iroundwa | ater | Other | | |
| RIPARIAN | COMMUN | IITY | | | | | | | | |
| | | | | | Dominant \ | /egetatio | n Type | | | |
| Riparian Zone | None | Cultivated | Meadow | Scrubla | Ind Forest | None | F Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | | | | | ~ | | | | \checkmark | bar |
| 10-30 m | | | | | ~ | | | | | ~ |
| 30+ m | | | 1 | | V | | | | | V |
| MMENTS, | INCLUDIN Lk fn | NHO GPOTENTIAL DG - 2 Jinged | | WENT OF | PORTUNITIES | - | | | | |
| s left | sizla | , Ar | lan | ion | inh p | nte | et i a | fews | pots 9 | |
| , (og | jan | ~~5 | md | owi | nstrea | M | | | | |
| | | | | | | | | | | |



| | ORMATION | | | | | | | | | |
|--|---|---|---|--|-----------------------------------|-----------------|--|---------------------------|--|---|
| PROJECT #: | 13(14 | NAME OF | PROJE | СТ: (Т | IME START | ED: | 2114 1 | IME FIN | IISHED: | Va |
| COLLECTORS | 6167 | Loya | ilist. | SOLCE | STREA | AM ID | #: | DATI | 20 | |
| (| Celett | stat De | nal | edar | Black | c Cre | ek-US | | 2016 | obot |
| WEATHER: | 12.00 | al e | 2000 | | | | | | | |
| LOCATION | Overt | ast, | 10-0 | , | | | | - | | - |
| NAME OF WAT | ERBODY: | GENERAL | LAREA | OF PROJECT L | OCATION: | | | | | |
| Untro | NA | Oct | Sti | MS of | terme | NOr | h Dal | rari | 0 | |
| CHAINAGE OR | OTHER IDEN | TIFYING ATTR | IBUTE: |) | | | | | | |
| South | M ner | erohy (| 206 | 1. | | | | | | |
| GPS COORDIN | IATES (UTM): | Dipig | 1000 | -6(.3 | | | | | | |
| | | | <u></u> | | - | _ | | | - | |
| | D POLLUTION | | | SOU | RCES.OF P | OLLUT | TION: | | | |
| Acricul | tard | | | -R | 061 FC | 201 | off | | | |
| NSCIDUC | 1010 | | | - 1 | Adde | turn | 3(| | | |
| EXISTING STR | UCTURE TYP | E (IF ANY) | | | 1 | | | | | |
| Bridge 0 | \checkmark | Box CulvertO | | Open Foot Culv | vert O | | CSP O | | N/ | A O |
| Other O Desc | ribe: | | | | | | Size (w x h | m ² | 4×1 | 5 |
| SECTION TYPE | E AND MORPI | HOLOGY | | - | - | | | | | |
| TYPE: Strea | ım / river C | hannelized | ept Intermi | ittent E | Ephem | eral ASSO | CIATED | WETLAND | : | |
| | 0 | 0 | Ø | 0 | | 0 | - | | | |
| HYDRAULIC H | EAD (mm): | 7 | | | | | | | | |
| Habitat T | ype | Substrate | N | lean width | Mean de | epth | Mean | | Mean | Other |
| Run, Pool, Rif | ffle, Flat? | | W | vetted (m) | wetted | (m) | bankfull | | bankfull | |
| | | | - | A T. | | | |) depth(m | | |
| | | Ciscil in | 2 | 5 | 1. | | 1 | | | |
| Pool | | sissiswh | 5 | 8 | 0.00 | | 9 | 2.9 | 0 | |
| Pool Bedrock | Boulder | Cobble | 5 Gravel | Sand | 0.70 Sil | t | Clay | b.9 Mi | O ick | Detritus |
| P00 Bedrock Br | Boulder Bo | Cobble Co | Gravel Gr | Sand Sa | p. To Sil | t | Clay Cl | p.9 ML N | O Jock Iu | Detritus D |
| POO Bedrock Br BANK STABIL | Boulder Bo | Cobble Co | Gravel Gr | Sand Sa | p. To Sill Si | it i | Clay Cl | p.9 Mi | O Jick Iu | Detritus D |
| POO Bedrock Br BANK STABIL | Boulder Bo | Cobble Co Eroding | Gravel Gr | Sand Sa Vulnera | ble | it Angl | Clay Cl Protected | ML ML | Depu Angles 45 | Detritus D |
| POO Bedrock Br BANK STABIL | Boulder Bo | Cobble Co Eroding Angle>45°, et soil, underc | Gravel Gr g rodible :ut or | Sand Sa Vulnera Angle>45°, o soil, no sign o | ble erodible of recent | it Angl | Clay Cl Protected e>45°, non-erc material/soil | Mu Mu Mu | Depu Angle<45 fine gra | Detritus D D D D D D D D D D D D D D D D D D D |
| POO Bedrock Br BANK STABIL | Boulder Bo | Cobble Co Eroding Angle>45°, et soil, underco bare so | Gravel Gr g rodible sut or il | Sand Sa Vulnera Angle>45°, e soil, no sign c erosio | ble erodible of recent n | it Angl | Clay Cl Protected e>45°, non-erc material/soil | dible | Depo Angle<45 fine gra | Detritus D position Zone ° (gradual slope), ined sediments |
| POO Bedrock Br BANK STABIL | Boulder Bo ITY pstream Bank | Cobble Co Eroding Angle>45°, er soil, underco bare so O | Gravel Gr g rodible cut or il | Sand Sa Vulnera Angle>45°, o soil, no sign o erosio O | ble erodible of recent n | it i Angl | Clay Cl Protected e>45°, non-erc material/soil | dible | Depr Angle<45 fine gra | Detritus D Dosition Zone ° (gradual slope), ined sediments O |
| POO Bedrock Br BANK STABILI Left U | Boulder Bo ITY pstream Bank | Cobble Co Eroding Angle>45°, er soil, underco bare so O O | Gravel Gr g rodible cut or iil | Sand Sa Vulnera Angle>45°, e soil, no sign o erosio O O | ble erodible of recent n | it Angl | Clay Cl Protected e>45°, non-erc material/soil | dible | Depr Angle<45 fine gra | Detritus D D D D D D D D D D D D D D D D D D D |
| POO Bedrock Br BANK STABIL Left U Right U HABITAT | Bouider Bo ITY pstream Bank | Cobble Co Erodin Angle>45°, er soil, underc bare so O O | g rodible xut or il | Sand Sa Vulnera Angle>45°, o soil, no sign o erosio O O | ble erodible of recent n | t Angl | Clay Cl Protected e>45°, non-erc material/soil | dible | Depu Angle<45 fine gra | Detritus D D D D D D D D D D D D D D D D D D D |
| POO Bedrock Br BANK STABILI Left U Right U HABITAT IN-STREAM COVER | Boulder Bo ITY pstream Bank pstream Bank | Cobble Co Erodin Angle>45°, e soil, underco bare so O O Boulders | Gravel Gr g rodible cut or iil Cobb | Sand Sa Vulnera Angle>45°, e soil, no sign c erosio O O O | ble erodible of recent n | Angl | Clay Cl Protected e>45°, non-erc material/soil | dible Vascu | Lick Iu Depo Angle<45 fine gra | Detritus D D D D D D D D D D D D D D D D D D D |
| POO Bedrock Br BANK STABIL Left U Right U HABITAT IN-STREAM COVER (check all | Bouider Bo TY pstream Bank pstream Bank Undercut banks | Cobble Co Erodin: Angle>45°, e soil, underc bare so O O O Boulders | g rodible cut or il Cobb | Sand Sa Vulnera Angle>45°, o soil, no sign o erosio O O O U U Instream | ble erodible of recent n | Angl | Clay Cl Protected e>45°, non-erc material/soil | vascu Instrea | Lick lu Depr Angle<45 fine gra | Detritus D D D D D D D D D D D D D D D D D D D |
| POO Bedrock Br BANK STABIL Left U Right U HABITAT IN-STREAM COVER (check all that apply; D | Bouider Bo ITY postream Bank postream Bank Undercut banks | Cobble Co Erodin Angle>45°, e soil, underc bare so O O Boulders | g rodible cut or il Cobb | Sand Sa Vulnera Angle>45°, e soil, no sign c erosio O O O Instream | ble erodible of recent n | Angl | Clay Cl Protected e>45°, non-erc material/soil | Vascul Instrea | Lick Lu Dep Angle<45 fine gra | Detritus D D D D D D D D D D D D D D D D D D D |
| POO Bedrock Br BANK STABIL Left U Right U HABITAT IN-STREAM COVER (check all that apply; D is for dominant | Boulder Bo ITY pstream Bank pstream Bank Undercut banks | Cobble Co Erodin Angle>45°, e soil, underc bare so O O O Boulders | Gravel Gr g rodible cut or nil Cobb | Sand Sa Vulnera Angle>45°, o soil, no sign o erosio O O O U U Nody D Instream Overhan | ble erodible of recent n | Angl | Clay Cl Protected e>45°, non-erc material/soil | dible Vascu Instrea | Lick lu Depa Angle<45 fine gra | Detritus D D D D D D D D D D D D D D D D D D D |

| SHORE (% stream : | COVER shaded): | 100 - 90 O | % | 90 – 60 ⁴ | 60% 60- 30% | | | 30 - 1% | | None | |
|------------------------|----------------------|--|-------------------|----------------------|---------------------|-------------|-------------------|--------------|-----------|-------|--|
| VEGETATION | ON TYPE ninant): | Sub | Submergent | | Floatin | g | -Any H | Emergent | | None | |
| Pre | edominant Species | tope ! | zros | - | Tedar | yrl | E | kir ree. | (| | |
| IGRATORY BSTRUCTIO | ONS: | None Bo | polders. | 115 1.1.5 C | Seasonal/Ter | nporary | 5 | Permane | nt | | |
| OTENTIAL RITICAL HA | ABITAT | Spawning Dossid | ble. | | Evidence of | Groundwa | ater | Other | | | |
| RIPARIAN | COMMUN | IITY | | | | | | | | | |
| - | | Left | Upstream B | ank | Dominant | Vegetatio | on Type | Right Unstre | am Bank | _ | |
| Riparian Zone | None | Cultivated | Meadow | Scrubl | and Forest | None | Cultivated | Meadow | Scrubland | Fores | |
| 1.5-10 m | fun | | V | | | | | | V | Æ | |
| 10-30 m | | | / | | | | | | | V | |
| 30+ m | | | | | | | | | | V | |
| MMENTS, | Minn Ball For | ig potential mil 170 less hu what | enhancer Le be | Cr Like | placel is e to k | in a pea | nd croc Cettle | un(W | eder Cou | rse | |
| | | | | | | | | | | | |



| GENERAL INFORMATION | 1 | | | | | | | | | |
|--------------------------|----------------------|-----------------------|-----------------------|----------------------------|----------------|-----------------|--|--|--|--|
| PROJECT #: 16367 | NAME OF PRO | JECT: TIME | TARTED | TIME | FINISHED: | | | | | |
| COLLECTORS: Cele Ha | din + Druce | Lector | Stream ID #: | (-] D | ATE: 2016 - | 06.07 | | | | |
| WEATHER: Overc | oust 7000 | | | | | | | | | |
| LOCATION | | | | | | | | | | |
| NAME OF WATERBODY: | GENERAL ARE | A OF PROJECT LOCA | TION: | | 1 | | | | | |
| Untrown | Out st | urds of Tr | in word | 6 00 | davio | | | | | |
| CHAINAGE OR OTHER IDE | NTIFYING ATTRIBUTE | E: | | | 4-1-0 | | | | | |
| South on M | Lurphy Ro | al | | | | | | | | |
| GPS COORDINATES (UTM) | | | 20 | | | | | | | |
| LAND USE AND POLLUTIO | N | | 100 | | | | | | | |
| SURROUNDING LAND USE | : | SOURCES | SOURCES OF POLLUTION: | | | | | | | |
| V/A We | pod lot | Ma | Irun are | | | | | | | |
| EXISTING STRUCTURE TYP | PE (IF ANY) | | | | | | | | | |
| Bridge | Box Culvert | Open Foot Culvert | CSF | 0 | N/A | 0 | | | | |
| Other O Describe: BoxC | clued with tw | o culue, - Insi | de s | ize (w x h) m ² | 4X15 | | | | | |
| SECTION TYPE AND MORP | HOLOGY | | - P | | | | | | | |
| TYPE: Stream / river C | Channelized Perm | anent Intermittent | Ephemeral | ASSOCIAT | ED WETLAND: | | | | | |
| 0 | 0 0 | 0 | 0 | CALM | Jurn | | | | | |
| HYDRAULIC HEAD (mm): | 0 | | | | | | | | | |
| Habitat Type | Substrate | Mean width M | ean depth | Mean | Mean | Other | | | | |
| Run, Pool, Riffle, Flat? | | wetted (m) w | etted (m) | bankfull | bankfull | | | | | |
| | 2140 120 | , | | width (m) | depth(m) | | | | | |
| Flart | COND 10 10 | 8 0! | 15 | 9 | 0.85 | | | | | |
| Sedrock Boulder Br Bo | Cobble Grav Co Gr | vel Sand Sa | Silt Si | Clay Cl | Muck Mu | Detritus D | | | | |
| BANK STABILITY | | | - | | | | | | | |
| | Eroding | Vulnerable | Pr | otected | Depos | ition Zone | | | | |
| | Angle>45°, erodible | Angle>45°, erodik | le Angle>4 | 5°, non-erodible | Angle<45° | gradual slope), | | | | |
| And the Marine | soil, undercut or | soil, no sign of rece | ent ma | terial/soil | fine grain | ed sediments | | | | |
| Left Upstream Bank | Left Upstream Bank O | | | 0 | | 0 | | | | |
| Right Upstream Bank | 0 | 0 | | 0 | | 0 | | | | |
| HABITAT | | | | | | | | | | |
| IN-STREAM Undercut | Boulders Co | bble Woody Debris | 01 | ganic Vas | cular Macrophy | es None | | | | |
| (check all | 1 | Instream / | | | ream / | | | | | |
| that apply; D | | motivam | | | 1 | | | | | |
| is for dominant | is for dominant | | Overhanging | | | | | | | |
| 100000 | | | | | | | | | | |

| SHORE COVER 100 - 90 % 90 - 60% 60- 30% 30 - 1% (% stream shaded): O O O O O | | 30 – 1% O | No | None | | | | | | | |
|--|-------------------------------|--------------|----------|--------|--------|----------|----------|------------|--------------|-----------|--------|
| /EGETATIO (D for dom Pre | N TYPE inant): dominant | Fel gross | mergent | | yella | Pont | Burn | | Emergent | | None |
| GRATORY | Species | None | | | Seaso | nal/Terr | porary | | Permaner | it | |
| | BITAT | Spawning | | | Evider | ice of G | iroundwa | ter | Other | | |
| RIPARIAN | COMMUN | | | | | | | | | | |
| | | | | | Don | ninant V | egetatio | n Type | | | |
| 1 | | Left | Upstream | Bank | | | | F | Right Upstre | am Bank | |
| Riparian Zone | None | Cultivated | Meadow | Scrub | land | Forest | None | Cultivated | Meadow | Scrubland | Forest |
| 1.5-10 m | | | | L | / | | | | | / | |
| 10-30 m | | | | | | / | | | | | - |
| 30+ m | | | | | | 0 | | | | | |
| OTOGRAP | HIC RECC | RD: | | | | | | | | | 4 |
| | HOTO #: | IMICI T | 2617 | T | | | | | | MbPG17 | 8 |
| HER PHOT | O #S: | #16611 | A | | | Light | TUPSIK | | 1010 #. | | |
| | | | _ | _ | | | | | | _ | |
| MMENTS, I | INCLUDIN | G POTENTIAL | ENHANCE | MENT C | PPORTU | NITIES | | | | | |
| | | | | | | | | | | | |
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| | | | | | | | | | | | |
| ('A. | | | J | | | | | | | | |
| jolden | hingen | Vab | e- | | | | | | | | |
| | | | | | | | | | | | |

DETAILED ASSESSEMENT LAKES & PONDS



| GENERAL INFO | RMATIC | NC | | | | | | | - | | | |
|---|---|----------|-----------------|------------|---------------------------|--------------------------------------|-----------|-----------------|------------|----------|-------------|--|
| PROJECT #: 16 | -36 | 74 | NAME O | FPROJE | olar | | D | DAY: 23 | MONTH: | YE | AR: 2016 | |
| COLLECTORS: | Se | an | Pohn | SCM | F (00 | Harton | TIME ST | ARTED: | TIME | FINISHED |): | |
| WEATHER CONE | DITIONS | B: | nurs | 2011 | a che | 164.1 | | SURFACE C | ONDITIONS: | 0.13 | | |
| 2101 01 | -11 | | | 1 | | Calm | R | tippled | Wavv | B | louah | |
| 5, 5, 51 | igna | 7 00 | ercas | 1 | | 0 | | 0 | 0 | | 0 | |
| LOCATION | | | | | | 10 | | 0 | 0 | | 0 | |
| NAME OF WATE | R BODY | Y: | Potenti | al Wa | terbod | 1 | | | | _ | | |
| LOCATION OF W | ATER | BODY: S | artheast | of H | he Ro | attic Road / Hunch Road Intersection | | | | | | |
| GPS COORDINA | GPS COORDINATES: | | | | | | MUNICIF | PALITY: | h al | 011 | | |
| CONSERVATION | | | | | | Newburgh, UN | | | | | | |
| CONSERVATION | AUTIK | JATT. | Quinte | (A | | MNR DISTRICT: | | | | | | |
| LAND USE / TER | RAIN A | ND POLL | UTION | | | | | | | | | |
| SURROUNDING | SURROUNDING LAND USE / TERRAIN: | | | | | SOURCES O | FPOLL | UTION: | | | | |
| Con pasture | e/mea | oder 1 | residen | fiul | | ranure 1 | un-0: | *1 | | | | |
| SECTION TYPE A | AND MC | RPHOLO | GY | | - | | - | | - | | | |
| TYPE: | Large | Lake | Sm | Small Lake | | | | Reservoir | | Dug-out | | |
| | |) | | 0 | | Ø | | 0 | | | | |
| Intermittent | | Run-off | f Spring-fed | | | Not Connec | cted | By-pas | s | In-stre | eam | |
| 0 | _ | 0 | 0 0 | | | 0 | | 0 | | 0 | | |
| DIMENSIONS: | | Length (| ^{m)} 6 | 5 | | | Mean W | /idth (m) | 25 | | | |
| SUBSTRATE | | | | - | - | | | | | | | |
| SHORELINE SUB | STRAT | Έ: S | 70 M | lu 15 | DI | 5 | | | | | | |
| BOTTOM SUBST | RATE: | Mu | 7095 | 1) 3 | 0% | | | | | | | |
| Substrate: | Bedroc | k (Br) | Sand (Sa |) 8 | Silt (Si) | Clay (C | l) | Muck (Mu) | Mari (Ma |) D | etritus (D) | |
| BANK HABITAT | | | | | | - | - | | | | | |
| BANK | Unde | ercut | Boulder | s | Cobble | Wood | dy | Organic | Vascu | lar | None | |
| (% Surface | Bar | IKS | / | | | Debri | IS | Debris | Macropi | nytes | | |
| area): | 7 | 5 | \times | | \times | 5% | | 5% | 90% | 2 | | |
| NEAR SHORE SL | .OPE (% | 6): | 10% | | | | | | | - In- | | |
| SHOPE COVE | D | 100 - | 90 % | | 60 % | 59 - | 30 % | 20 | 9 - 1% | | Jone | |
| (% Shaded): | | | | | | | 0 | - | 0 | | 0 | |
| IN-WATER HABI | ТАТ | | | | | | 0 | | 0 | - | 0 | |
| VEGETATION T (%): | YPE | 5 | Submerger | nt | | Floating | | Er | nergent | | None | |
| Predon | minate Chara | | | | / | | Broad-le | wed catta | a - | | | |
| UNDERWATER COVER (% Surface area): | Species: ATER Undercut Boulders Cobble R Banks ace | | Cobble | Woody | Woody Debris Organic Debr | | ebris Mac | ris Macrophytes | | | | |

DETAILED ASSESSEMENT LAKES & PONDS

| MIGRATORY OBSTRUCTIONS | | |
|---|---|---|
| None | Seasonał | Permanent |
| PHOTOGRAPHIC RECORD: | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| COMMENTS, INCLUDING POTE | NTIAL ENHANCEMENT OPPORTUNITIES | |
| - A grassed sua road side di-the pond | le etro appears to a 33 on Hindh road in a | dram surface later from a southeast direction into |
| | | |
| | | |
| Additional Notes Appended? | No o Yes number of pages | DESCRIPTION: |

Appendix D

Site Photos



Loyalist Solar LP *Water Assessment Report February 2017 – 16-3674* Photograph 1, facing east. Water body 1, located on a residential property southeast of the intersection of Hinch Road and Rattie Road.





Photograph 2, facing west. Location of potential water body 2, determined to be a dugout pond.



Photograph 3, facing southeast. Potential water body 3, determined to be an area of shallow open water within a wetland. Photograph taken from Edges Road.



Photograph 4, facing north.

Upstream end of Mud Creek prior to crossing Centreville Road. Photo shows concrete barrier that may negatively impact fish migration through the watercourse.









Photograph 6, facing south. Downstream end of Mud Creek where it crosses Centreville Road, flowing southward into an adjacent Reed Canary Grass Mineral Meadow Marsh.





Photograph 7, facing southwest. Mud Creek, flowing under Rattie Road within the Project Location via a series of CSP culverts.



Photograph 8, facing north. Location of Tributary 1 to Mud Creek, determined to be a shallow grassed spillway used for drainage of the surrounding pasture area.





Photograph 9, facing south. Location of Tributary 2 to Mud Creek, flowing southward under Centreville road via an culvert.



Photograph 10, facing northeast. Substrates found within Tributary 2 to Mud Creek were predominantly cobble, gravel and boulders.





Photograph 11, facing northeast. Upstream end of Tributary 2.1 to Mud Creek at the intersection with the Project Location on Centreville Road, facing upstream.









Photograph 13, facing northeast. Location of Salmon River, facing upstream towards the intersection with Sheffield Bridge Road.



Photograph 14, facing southeast. Habitat within the Salmon River was observed as primarily flat morphology. Photo taken near Sheffield Bridge Road when Salmon River flows within 120 m setback of the Project Location.





Photograph 15, facing south. Salmon River, facing downstream toward the intersection of the River with the Project near Haggerty Road.





Photograph 16 Salmon River at intersection with Teskey Road.



Photograph 17, facing west.

Tributary 1 to the Salmon River was surrounded by meadow habitat, with overhanging vegetation providing in-stream cover. Muck was observed as the dominant substrate. Photo taken upstream of the intersection with Teskey Road.



Photograph 18, facing east. Tributary 1 to the Salmon River. Photo taken downstream of intersection with Teskey Road.





Photograph 19, facing west.

Tributary 2 to the Salmon River, flowing westward within the Project Location under Edges Road via a CSP culvert.





Photograph 20, facing west. Downstream end of Tributary 2 to the Salmon River.



Photograph 21, facing northeast.

A small grate attached to the upstream end of the culvert at the intersection of Tributary 2 to the Salmon River and Edges Road could provide migratory obstruction for various fish species.



Photograph 22, facing south. Tributary 2.1 to the Salmon River. Photo taken facing upstream near the intersection with County Road 27, east of Teskey Road.





Photograph 23, facing west. Tributary 2.1 to the Salmon River at intersection with County Road 27, south of Marlin Road. Photo taken facing downstream.







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Loyalist Solar LP *Water Assessment Report - Loyalist Solar Project* February 2017 – 16-3674 Photograph 25, facing northeast. Tributary 2.1 to the Salmon River at pool area approximately 50 m south of the intersection with County Road 27, south of Marlin Road.



Photograph 26, facing west. Tributary 2.2 to the Salmon River. Photo taken facing downstream towards the CSP culvert at the intersection with Edges Road.





Photograph 27, facing west. Intersection of Tributary 2.2 to the Salmon River with Edges Road. Photo taken from the road.









Photograph 29, facing northwest.

Area where Tributary 2.3 to the Salmon River was mapped during records review. No evidence of a watercourse was observed downstream of the culvert location adjacent to the wetland on Marlin Road.



Photograph 30, facing northeast. Tributary 3 to the Salmon River at intersection with Haggerty Road.





Photograph 31, facing southwest. Tributary 3 to the Salmon River at intersection with Haggerty Road.



Photograph 32, facing northwest. Upstream end of Tributary 3.1 of the Salmon River at the intersection with the Project Location on Miller Road, facing upstream.





Photograph 33, facing southeast. Downstream end of Tributary 3.1 of the Salmon River at the intersection with the Project Location on Miller Road, facing downstream.



Photograph 34, facing west. Downstream end of intersection between Black Creek and the Project Location on

Murphy Road.





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Photograph 35, facing east.

Upstream end of intersection between Black Creek and the Project Location on Murphy Road, facing upstream.



Photograph 36, facing east. Upstream end of Pennell's Creek near intersection with the Project Location on Miller Road, facing downstream.





Photograph 37, facing east.

Downstream end of Pennell's Creek near intersection with the Project Location on Miller Road, facing downstream.



Photograph 38, facing west. Evidence of the mapped Tributary to Pennell's Creek was not observed in assessment location. Mapped watercourse is estimated to be a combination of drainage swales through the agricultural field to the east and surface water in the grassed roadside ditches.



