Vermont Wetland Section
Wetland Application Database Form
(AFFIX TO THE FRONT OF THE APPLICATION)

Applicant Name: Pest Pro, Inc.	**Representative Name:** Gunnar Olson (Horizons Engineering)
Town where project is located: South Hero	**County:** Grand Isle

Project Location Description: 238 U.S. Route 2
South Hero, VT 05486
911 Street Address or direction from nearest intersection

Project Summary: Proposed access drive improvements are to minimally affect the Class II wetland buffer

Permit Type Requested (check all that apply)

☒ Vermont General Permit Coverage ☐ Wetland Determination ☐ Vermont Wetland Permit

Impact Calculations: Total up proposed impacts from wetland tables listed below

Total Wetland Impact	square feet (s.f.)	Total Buffer Zone Impact	810square feet (s.f.)
Total Wetland Clearing (qualified linear projects only)	square feet (s.f.)	Total Buffer Zone Clearing (qualified linear projects only)	square feet (s.f.)

Permit Fees: Make check payable to - *State of Vermont*

Wetland Impact Fee: ($0.75/sf)	$	Administrative Fee:	$240
Buffer Impact Fee: ($0.25/sf)	$202.50	Total Check Amount:	$442.50
Clearing Fee: ($0.25/sf)	$		

Existing Land Use Type: (check all that apply)
☐ Forestry ☒ Residential (Subdivision) ☐ Industrial/ commercial
☐ Agriculture ☐ Transportation ☐ Parks/Rec/Trail ☐ Residential (Single Family) ☐ Institutional ☐ Undeveloped

Proposed Land Use Type: (check all that apply)
☐ Forestry ☐ Residential (Subdivision) ☒ Industrial/ commercial
☐ Agriculture ☐ Transportation ☐ Parks/Rec/Trail ☐ Residential (Single Family) ☐ Institutional ☐ No Change

Proposed Impact Type: (check all that apply)
☐ Buildings ☐ Utilities ☐ Parking ☐ Septic/Well ☐ Stormwater
☒ Driveway ☐ Road ☐ Parks/Path ☐ Agriculture ☐ Pond ☐ Lawn
☐ Dry Hydrant ☐ Beaver dam alteration ☐ Silviculture ☐ Aesthetics ☐ Other ☐ No Impact

Wetland 1: Forested Wetland (Label using Wetland ID from application if applicable, use supplemental sheets if more than one wetland is being impacted)

Location: Subject Wetland is located in Southwest corner of property

Wetland Type: **POW - Open Water** WL Size Class : **<1 acre**

Proposed Alterations

Wetland Alteration:		**Buffer Zone Alteration:**		**Wetland Alteration Type** (check all that apply)	
Wetland Fill:	s.f.			☐Dredge	☐Drain
Temporary:	s.f.	Temporary:	s.f	☐Cut Vegetation	☐Stormwater
Permanent: :	s.f.	Permanent: :	810 s.f	☒Trench/Fill	☐Other

Mitigation

Avoidance and Minimization (s.f. of wetland NOT impacted): Wetland: 6 ac. s.f. Buffer Zone s.f.

Wetland Mitigation: (s.f. Gained)				**Buffer Zone Mitigation (s.f. Gained):**			
Restoration	s.f.	Enhancement	s.f.	Restoration	s.f.	Enhancement	s.f
Creation	s.f.	Conservation	s.f..	Creation	s.f	Conservation	s.f

Reason for Mitigation:	☐ Correction of Violation	☐ Mitigation to offset permit impacts	☐ Voluntary

All Applications Should be Mailed To: Vermont Wetlands Program Watershed Management Division One National Life Drive, Main 2 Montpelier, VT 05620-3522		
Staff To Complete		
Wetland Project Number:		
Wetland Project Name:	**DEC ID#:**	
Date Application Received:		
Request for Information Date:	**Information Received Date:**	
Request for Information Date:	**Information Received Date:**	
Date Application Complete:	**Distribution Complete Date:**	
Notice Begin Date:	**Notice End Date:**	
Final Action Date:	**Public Meeting Date:**	
Check#	**Check Amount**	**Date Check Received**
Check#	**Check Amount**	**Date Check Received**

Vermont Wetland Permit Application/Determination Petition

QUESTION	INSTRUCTIONS AND APPLICANT ANSWER	STAFF NOTE
1. Applicant	If the applicant is someone other than the landowner, the landowner information must also be included below.	
1.1. Applicant Name	Pest Pro, Inc.	
1.2. Applicant Address	22 Hill Rd. South Hero, VT 05486	
1.3. Applicant Phone Number	(802) 863-8815	
1.4. Applicant Email	jon@pestpro.com	
1.5. Applicant Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. X _____ Date: 12/8/15	
2. Representative	Consultant, engineer, or other representative that is responsible for filling out this application, if other than the applicant or landowner	
2.1. Representative Name	Gunnar Olson (Horizons Engineering, Inc.)	
2.2. Representative Address	17 Sunset Terrace, Newport, VT 05855	
2.3. Representative Phone Number	(802)738-8131	
2.4. Applicant Email	golson@horizonsengineering.com	
2.5. Representative Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. X Gunnar Olson Date: 12/10/15	
3. Landowner	Landowner must sign the application. Use this space if landowner is different from the applicant	
3.1. Landowner Name	John Quackenbush	
3.2. Landowner Address	22 Hill Road, South Hero, VT	
3.3. Landowner Phone Number	(802) 863-8815	
3.4. Landowner Email		
3.5. Landowner Easement	Attach copies of any easements, agreements or other documents conveying permission, and agreement with the landowner stating who will be responsible for meeting the terms and conditions of the permit. List the attachment for this information in this section.	
3.6. Landowner Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. X _____ Date: 12/8/15	
4. Location of Wetland and Project	Location description should include the road the wetland is located on, the compass direction of the wetland in relation to the road, 911 street address if available, and any other distinguishing geographic features. Located on route 2 West in South Hero, VT. Wetland is oriented in the North/South direction adjacent to Route 2	

5. Site Visit Date and Attendees	Date of visit with District Wetlands Ecologist August 2015	List people present for site visits including Ecologist, landowner, and representatives. Daniel Owzarski	
6. Wetland Classification	The wetland is a Class II wetland because (Choose one): The wetland is mapped on the VSWI map		
7. Description of Entire Wetland or Wetland Complex	Answer the following questions regarding the entire wetland or wetland complex. A wetland complex is generally defined as two or more wetland types that are contiguous and interrelated. Specific questions about the wetland in the project area will follow.		
7.1. Size of Wetland Complex in Acres	Can be obtained from the Environmental Interest Locator Map for mapped wetlands 6 ac.		
7.2. Natural Community Types Present	List all wetland types in the wetland or wetland complex and their abundance or relative abundance. For example: 50 acres of softwood forested swamp; or 30% scrub swamp, 70% emergent wetland 35% scrub swamp, 30% forested wewtland, 30% emergent wewtland		
7.3. Landscape Position	Where is the wetland located on the landscape? Examples: bottom of a basin, edge of a stream, shore of a lake, etc. edge of drainage low spot from farm land on south side of Route 2		
7.4. Wetland Hydrology	Describe the main source of wetland hydrology for the wetland complex. List any river, streams, lakes and ponds. Drainage swale from agricultural fields Include answers to the following where appropriate:		
7.4.1. Direction of flow	For example: stream flows from north to south through the wetland complex. Flow is from South to North into Lake Champlain		
7.4.2. Influence of hydrology on wetland complex	For example: The river provides flood water to the wetland in the spring. Intermittent stream provides natural drainage for agricultral fields		
7.4.3. Relation to the project area	Distance between the project area and any nearby surface waters. 80 ft		
7.4.4. Hydroperiod	Discuss frequency and duration of flooding, ponding, and/or soil saturation. Flooding and soil saturation during spring runoff from ag. fields and during high volume rain events		
7.5. Surrounding Landuse of the Wetland Complex	For example: rural residential and forested; agricultural and undeveloped, agricultural and undeveloped		
7.6. Relation to Other Nearby Wetlands	Provide any information on wetlands or wetland complexes that are close enough to contribute to the overall function of the wetland in question. Small wetlands two acres or less nearby connected through hydric soils		
7.7. Pre-project Cumulative Impacts to the Wetland	Identify any cumulative ongoing impacts outside of the project that may influence the wetland. Examples include but are not limited to wetland encroachments off the subject property, land management in or surrounding the wetland, or development that influences hydrology or water quality. No cumulative impacts observed		
8. Description of Subject Wetland	Subject Wetland is defined as the area of wetland in the project area, but not limited to the portion of the wetland to be directly impacted by the project. For the purposes of this application, the subject wetland should encompass any portion of the larger wetland or wetland complex that could be directly or indirectly impacted by the project, as defined by hydrology, vegetation and/or physical characteristics.		
8.1. Context of Subject Wetland	Describe where the subject wetland is in the context of the larger wetland or wetland complex described above. Wetland that follows the intermittent stream channel on the north side of		

	Route 2 fed by a culvert is downstream of the proposed driveway expansion. This area is approximately two acres of scrub swamp and emergent wetlands	
8.2. Wetland Landuse	For example: mowed lawn; old field; naturally vegetated. Describe any previous and ongoing disturbance in the subject wetland. Wetland area to the south is partially old agricultural field and mowed area. Subject wetland is naturally vegetated and undisturbed	
8.3. Wetland Vegetation	List dominant wetland community type and associated dominant plant species. Forested wetlands dominated by box elder and elm	
8.4. Wetland Soils	Use USDA NRCS information where possible and use the ACOE Delineation Manual soil description See Site Plan Sheet 1 of 1 for Soil Descriptions	
8.5. Wetland Hydrology	Use descriptions from the ACOE Delineation Manual. Surface water and high water table both present. Ground surface is sparsley vegetated with surface soil cracks.	
8.6. Buffer Zone	Describe the buffer zone of the subject wetland including:	
8.6.1. General landuse	For example: mowed road shoulder; forested; old field; paved road and residential lawns etc. Describe any previous and ongoing disturbance in the buffer zone. Mowed road shoulder and paved/gravel roads	
8.6.2. Buffer vegetation	List community type and dominant plant species Burdocks, upland grasses	
8.6.3. Buffer soils	Use USDA NRCS information where possible, and the ACOE Delineation Manual soil description See Site Plan Sheet 1 of 1 for Soil Descriptions	

9. **Wetland Determination**	If the application involves a wetland determination please answer the following. **If not, skip to Section 10.**	
9.1. Reason for Petition	Please choose one from the dropdown menu: Add a Section 4.6 presumed wetland to the VSWI map	
9.2. Previous Decisions	Please list all determinations and decisions, if any, issued by the Secretary, Panel or former Water Resources Board, pertaining to the wetland or buffer at issue:	
9.3. Narrative	Please provide any narrative to support the petition for a wetland determination here. This section is not required for petitions to add a Section 4.6 presumed wetland to the VSWI map, but is required for all other petitions.	

If the application is only for a Wetland Determination only, skip to Section 13

10. Project Description		
10.1. Overall Project	Description of the project. For example: six-lot residential subdivision; expansion of an existing commercial building, access drive to a single family residence. New office location for Pest Pro, Inc.	
10.2. Project Purpose	For example: To construct a residential subdivision, upgrade existing road to improve access, extend a trail system Improve access	

10.3. Acres Owned by Applicant	Acreage of subject property. 7.6	
10.4. Acres Involved in the Project	Acreage of area involved in the project. <1 acre	
11. Project Details	Provide details regarding specific impacts to the wetland and buffer zone	
11.1. Specific Impacts to Wetland and Buffer Zone	List portions of the project that will specifically impact the wetland or buffer zone. Access Drive improvements	
11.2. Dimension Details	Square footage of buildings, dimension of roads including fill footprint. See site plan sheet 1 of 1	
11.3. Bridges and Culverts	Culvert circumference, length, placement and shapes, or bridge details. 50' length, 18" HDPE culvert	
11.4. Construction Sequence	Describe any details pertaining to the worked planned in the wetland and buffer in terms of sequence or phasing that is relevant Access drive to be improved upon issuance of permits	
11.5. Stormwater Design	List any stormwater permits obtained or applied for. Describe any stormwater and/or erosion controls proposed to prevent discharges to the wetland and buffer zone. No storm water permits applied for. Silt fence proposed during construction	
11.6. Permanent Demarcation of Limits of Impact	Describe any plantings, fencing, signage, or other memorialization that provides permanent on-the-ground boundaries for the limits of disturbance for ongoing uses. None proposed	
12. Wetland and Buffer Zone Impacts		
12.1. Wetland Impacts	Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets. **Totals** Wetland Fill: 0 s.f. Temporary Wetland Impact: 0 s.f. Other Permanent Wetland Impact: 0 s.f. Describe in detail the proposed impact.	
12.2. Buffer Zone Impacts	Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets. **Totals** Temporary Buffer Impact: 0 s.f. Permanent Buffer Impact: 810 s.f. Describe in detail the proposed impact. Fill area and disturbance for access drive improvements and new culvert	

12.3. Cumulative Impacts	List any potential cumulative or ongoing, direct and indirect impacts on the functions of the wetland that could result from the proposed project. NA	
12.4. Avoidance and Minimization	Please refer to Section 9.5b of the rules on Mitigation Sequencing for this section.	
12.4.1. Avoidance	Can the proposed activity be practicably located outside the wetland/buffer zone, or on another site owned or controlled by the applicant or reasonably available to satisfy the basic project purpose? If not, indicate why. This answer should include any examination of alternatives that you have explored including using other properties, requesting easements, and altering the project design. Existing drive is to be used to avoid further filling and traffic impacts on Route 2. Existing drive is to be widened and improved with a culvert sufficient enough to transport storm water to wetland for drainage into Lake Champlain.	
12.4.2. Minimization	If the proposed activity cannot practicably be located outside the wetland/buffer zone, have all practicable measures have been taken to avoid adverse impacts on protected functions? Please include any information on on-site alternatives that have been examined; minimizing the size and scope of the project to avoid impacts; or relocating portions of the project to avoid impacts Proposed drive improvements are to meet the minimum standards set forth in B-71 AOT standards for roadways. Silt fence is proposed on downhill side to avoid runoff during construction.	
12.4.3. Mitigation	If avoidance of adverse effects on protected functions cannot be practically achieved, has the proposed activity has been planned to minimize adverse impacts on the protected functions and a plan has been developed for the prompt restoration of any adverse impacts on protected functions? Include any information on best management practices to be used for the project both for the initial construction and ongoing use. Also include any proposed restoration of temporary impacts, previously disturbed wetland or buffer zones or proposed conservation that are being used to offset the proposed impacts. Equipment will not be tracking through undisturbed buffer zone ground. Additional fill material will be placed with equipment on the existing roadway to allow for precise placement of fill and compaction of that fill. Silt fence is to be placed by had on the downhill side of the project area.	
12.4.4. Compensation	Please refer to Section 9.5c of the rules for compensation, which is appropriate when the project will result in an undue adverse impact. If compensation is proposed please include a summary here. NA	
13. Supporting materials	Where appropriate list the accompanying material by title, author, date and last revision date. Submit these documents and plans with the application.	
13.1. Location map	Provide a project location map that is 8 ½" x 11" and reproducible in black and white. An Environmental Interest Locator Map is appropriate using the USGS topography map base layer, roads, and VSWI wetlands at minimum. ANR Natural Resources Atlas	
13.2. Site Plans	List by title, author, date and last revision date. Plans should include wetland delineation and buffer zones, limits of disturbance, erosion controls, building envelopes and permanent memorialization. Wetland Impact Plan by Gunnar Olson (Horizons Engineering) dated 8/31/2015	
13.3. ACOE Delineation Forms	List by author, location, and date. Required only for Individual Permits. Gunnar Olson, 24 Sunrise Drive, South Hero, VT, dated 8/18/2015	
13.4. Other Supporting	Provide any other documentation that supports the application. List photographs; easements; agreements; may include a GIS-compatible	

Documents	wetland submittal for determinations; etc.	
13.5. List of Abutters (Neighbors with land adjoining wetland or buffer zone)	Attach list of names and mailing addresses or submit as word mailing document.	
13.5.1. Newspaper Notification	If choosing the option to fulfill the notice requirement with a newspaper notice, list the newspaper to be used here. A list of names and addresses for immediately adjacent landowners (500 foot radius) of the project area is required for the List of Abutters. *****NOTE: The applicant will be billed directly by the newspaper you list here. Use of newspaper notification may extend the notice period, depending on when the notice posts in the newspaper.**	
14. Check Which Functions are Present in the Subject Wetland and in the Wetland Complex.	**Wetland Function Summary:** (if more than one wetland use supplemental wetland sheets)	

Functions & Values	Subject Wetland	Wetland Complex	Functions & Values	Subject Wetland	Wetland Complex
Flood/Storm Storage	☒	☒	RTE Species	☐	☐
Surface & Groundwater Protection	☒	☒	Education & Research	☐	☐
Fish Habitat	☐	☐	Recreation/ Economic	☐	☐
Wildlife Habitat	☒	☒	Open Space/ Aesthetics	☐	☐
Exemplary Natural Community	☐	☐	Erosion Control	☐	☐

15. Coverage under Vermont General Wetland Permit	**If applying for an Individual Vermont Wetland Permit or Determination, please proceed to number 16 and answer the remaining application questions.** **If applying for Coverage under the Vermont General Wetland Permit, please complete question 15.1 prior to submitting application.**	
15.1. VWP Vermont General Permit eligibility checklist	If applying for coverage under the Vermont General Wetland Permit, please verify the following to complete the application: ☒The activity qualifies as an eligible activity for coverage under the Vermont General Wetland Permit ☒The proposed project will meet the conditions applicable to the proposed project in the Vermont Wetland General Permit ☐The activity does not qualify as an Allowed Use under Section 6 of the Vermont Wetland Rules. ☐The activity will not result in an undue adverse impact on protected wetland functions and values, nor does it need additional conditions to protect functions and values. ☐ All impacts have been avoided and minimized to the greatest extent possible.	

	☒The wetland complex is not significant for Function 5.5 Exemplary Wetland Natural Community or 5.6 Rare, Threatened and Endangered Species Habitat. ☒The activity is not located in or adjacent to a vernal pool, fen, or bog. ☒The wetland is not at or above 2,500' in elevation (headwaters wetland). ☒The project is not located in a Class I wetland or associated buffer zone. ☒The activity is not an as-built project that constitutes a violation of the Vermont Wetland Rules.	
Stop here if applying for Coverage under the Vermont General Wetland Permit		

Complete the following Functions and Values checklist if applying for an Individual Wetland Permit and/or a Wetland Determination		
Functions and Values	For each Function and Value, first evaluate the entire wetland or **wetland complex** and check all that apply. Secondly, evaluate how the wetland in the project area contributes to that function. Thirdly explain how the project will not result in adverse impacts to this function. Include any information on specific avoidance and minimization measures. If more than one wetland complex is involved, use the Supplemental Wetland Forms.	
16. Storage for Flood Water and Storm Runoff	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Constricted outlet or no outlet and an unconstricted inlet. ☒ Physical space for floodwater expansion and dense, persistent, emergent vegetation or dense woody vegetation that slows down flood waters or stormwater runoff during peak flows and facilitates water removal by evaporation and transpiration. ☒ If a stream is present, its course is sinuous and there is sufficient woody vegetation to intercept surface flows in the portion of the wetland that floods. ☒ Physical evidence of seasonal flooding or ponding such as water stained leaves, water marks on trees, drift rows, debris deposits, or standing water. ☒ Hydrologic or hydraulic study indicates wetland attenuates flooding. If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level. ☒ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level. ☒ Significant flood storage capacity upstream of the wetland, and the wetland in question provides this function at a	

	negligible level in comparison to upstream storage (unless the upstream storage is temporary such as a beaver impoundment). ☒ Wetland is contiguous to a major lake or pond that provides storage benefits independently of the wetland. ☐ Wetland's storage capacity is created primarily by recent beaver dams or other temporary structures. ☐ Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level. ☐ History of downstream flood damage to public or private property. ☐ Any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, could be impacted by a loss or reduction of the water storage function. ☐ 1. Developed public or private property. ☐ 2. Stream banks susceptible to scouring and erosion. ☐ 3. Important habitat for aquatic life. ☐ The wetland is large in size and naturally vegetated. ☐ Any of the following conditions present upstream of the wetland may indicate a large volume of runoff may reach the wetland. ☐ 1. A large amount of impervious surface in urbanized areas. ☐ 2. Relatively impervious soils. ☐ 3. Steep slopes in the adjacent areas.	
16.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Subject wetland is a stream channel with a wide flat gulley capable of transporting and or/ holding storm run-off from more significant wetland upstream. All waters transported through this wetland reach Lake Champlain directly.	
16.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. Existing drive is to be improved in a way that will enhance the protection of the subject wetland. An adequate culvert and proper sloping of the roadside will result in added protection.	
17. Surface and Ground Water Protection	☒ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Constricted or no outlets. ☐ Low water velocity through dense, persistent vegetation.	

- ☐ Hydroperiod permanently flooded or saturated.
- ☒ Wetlands in depositional environments with persistent vegetation wider than 20 feet.
- ☐ Wetlands with persistent vegetation comprising a defined delta, island, bar or peninsula.
- ☐ Presence of seeps or springs.
- ☐ Wetland contains a high amount of microtopography that helps slow and filter surface water.
- ☐ Position in the landscape indicates the wetland is a headwaters area.
- ☐ Wetland is adjacent to surface waters.
- ☐ Wetland recharges a drinking water source.
- ☐ Water sampling indicates removal of pollutants or nutrients.
- ☐ Water sampling indicates retention of sediments or organic matter.
- ☐ Fine mineral soils and alkalinity not low.
- ☒ The wetland provides an obvious filter between surface water or ground water and land uses that may contribute point or nonpoint sources of sediments, toxic substances or nutrients to the wetland, such as: steep erodible slopes; row crops; dumps; areas of pesticide, herbicide or fertilizer application; feed lots; parking lots or heavily traveled road; and septic systems.

If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.

☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level.

- ☐ Presence of dead forest or shrub areas in sufficient amounts to result in diminished nutrient uptake.
- ☐ Presence of ditches or channels that confine water and restrict contact of water with vegetation.
- ☐ Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively.
- ☐ Current use in the wetland results in disturbance that compromises this function.

☒ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level.

- ☐ The wetland is adjacent to a well head or source protection area, and provides ground water recharge.
- ☒ The wetland provides flows to Class A surface waters.

	☐ The wetland contributes to the protection or improvement of water quality of any impaired waters. ☐ The wetland is large in size and naturally vegetated.	
17.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above subject wetland flows directly into Lake Champlain	
17.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. Minimal impervious areas are proposed to meet B-71 standards for roadways and safety. Silt fence and adeqaute culvert are proposed.	
18. Fish Habitat	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Contains woody vegetation that overhangs the banks of a stream or river and provides any of the following: shading that controls summer water temperature; cover including refuges created by overhanging branches or undercut banks; source of terrestrial insects as fish food; or streambank stability. ☐ Provides spawning, nursery, feeding or cover habitat for fish (documented or professionally judged). Common habitat includes deep marsh and shallow marsh associates with lakes and streams, and seasonally flooded wetlands associated with streams and rivers. ☐ Documented or professionally judged spawning habitat for northern pike. ☐ Provides cold spring discharge that lowers the temperature of receiving waters and creates summer habitat for salmonoid species. ☐ The wetland is located along a tributary that does not support fish, but contributes to a larger body of water that does support fish. The tributary supports downstream fish by providing cooler water, and food sources.	
18.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above NA	
18.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. Stream channel is small in size and fish species were not observed in a sizable section of water course.	
19. Wildlife Habitat	☒ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Provides resting, feeding staging or roosting habitat to support waterfowl migration, and feeding habitat for wading birds. Good habitats for these species include open water wetlands.	

- ☐ Habitat to support one or more breeding pairs or broods of waterfowl including all species of ducks, geese, and swans. Good habitats for these species include open water habitats adjacent shallow marsh, deep marsh, shrub wetland, forested wetland, or naturally vegetated buffer zone.
- ☐ Provides a nest site, a buffer for a nest site or feeding habitat for wading birds including but not limited to: great blue heron, black-crowned night heron, green-backed heron, cattle egret, or snowy egret. Good habitats for these species include open water or deep marsh adjacent to forested wetlands, or standing dead trees.
- ☐ Supports or has the habitat to support one or more breeding pairs of any migratory bird that requires wetland habitat for breeding, nesting, rearing of young, feeding, staging roosting, or migration, including: Virginia rail, common snipe, marsh wren, American bittern, northern water thrush, northern harrier, spruce grouse, Cerulean warbler, and common loon.
- ☐ Supports winter habitat for white-tailed deer. Good habitats for these species include softwood swamps. Evidence of use includes deer browsing, bark stripping, worn trails, or pellet piles.
- ☐ Provides important feeding habitat for black bear, bobcat, or moose based on an assessment of use. Good habitat for these types of species includes wetlands located in a forested mosaic.
- ☒ Has the habitat to support muskrat, otter or mink. Good habitats for these species include deep marshes, wetlands adjacent to bodies of water including lakes, ponds, rivers and streams.
- ☐ Supports an active beaver dam, one or more lodges, or evidence of use in two or more consecutive years by an adult beaver population.
- ☐ Provides the following habitats that support the reproduction of Uncommon Vermont amphibian species including:
  - ☐ 1. Wood Frog, Jefferson Salamander, Blue-spotted Salamander, or Spotted Salamander. Breeding habitat for these species includes vernal pools and small ponds.
  - ☐ 2. Northern Dusky Salamander and the Spring Salamander. Habitat for these species includes headwater seeps, springs, and streams.
  - ☐ 3. The Four-toed salamander; Fowler's Toad; Western or Boreal Chorus frog, or other amphibians found in Vermont of similar significance.
- ☐ Supports or has the habitat to support significant populations of Vermont amphibian species including, but not limited to Pickerel Frog, Northern Leopard Frog, Mink Frog, and others found in Vermont of similar significance.

Good habitat for these types of species includes large marsh systems with open water components.

☐ Supports or has the habitat to support populations of uncommon Vermont reptile species including: Wood Turtle, Northern Map Turtle, Eastern Musk Turtle, Spotted Turtle, Spiny Softshell, Eastern Ribbonsnake, Northern Watersnake, and others found in Vermont of similar significance.

☐ Supports or has the habitat to support significant populations of Vermont reptile species, including Smooth Greensnake, DeKay's Brownsnake, or other more common wetland-associated species.

☐ Meets four or more of the following conditions indicative of wildlife habitat diversity:

- ☐ 1. Three or more wetland vegetation classes (greater than 1/2 acre) present including but not limited to: open water contiguous to, but not necessarily part of, the wetland, deep marsh, shallow marsh, shrub swamp, forested swamp, fen, or bog;
- ☒ 2. The dominant vegetation class is one of the following types: deep marsh, shallow marsh, shrub swamp or, forested swamp;
- ☒ 3. Located adjacent to a lake, pond, river or stream;
- ☒ 4. Fifty percent or more of surrounding habitat type is one or more of the following: forest, agricultural land, old field or open land;
- ☐ 5. Emergent or woody vegetation occupies 26 to 75 percent of wetland, the rest is open water;
- ☒ 6. One of the following:
  - ☒ i. hydrologically connected to other wetlands of different dominant classes or open water within 1 mile;
  - ☒ ii. hydrologically connected to other wetlands of same dominant class within 1/2 mile;
  - ☐ iii. within 1/4 mile of other wetlands of different dominant classes or open water, but not hydrologically connected;

☐ Wetland or wetland complex is owned in whole or in part by state or federal government and managed for wildlife and habitat conservation; and

☐ Contains evidence that it is used by wetland dependent wildlife species.

If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.

	☒ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level. ☒ The wetland is small in size for its type and does not represent fugitive habitat in developed areas (vernal pools and seeps are generally small in size, so this does not apply). ☐ The surrounding land use is densely developed enough to limit use by wildlife species (with the exception of wetlands with open water habitat). Can be negated by evidence of use. ☐ The current use in the wetland results in frequent cutting, mowing or other disturbance. ☒ The wetland hydrology and character is at a drier end of the scale and does not support wetland dependent species. ☒ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level. ☐ The wetland complex is large in size and high in quality. ☒ The habitat has the potential to support several species based on the assessment above. ☐ Wetland is associated with an important wildlife corridor. ☐ The wetland has been identified as a locally important wildlife habitat by an ANR Wildlife Biologist.	
19.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Subject wetland is connected through a stream channel to the more significant wetland upstream that receives storm run-off from adjacent agricultural lands	
19.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. No adverse impact will occur due to roadway being improved with proper construction procedures and adequate culverts, sloping, and silt fence	
20. Exemplary Wetland Natural Community	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Wetlands that are identified as high quality examples of Vermont's natural community types recognized by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department, including rare types such as dwarf shrub bogs, rich fens, alpine peatlands, red maple-black gum swamps and the more common types including deep bulrush marshes, cattail marshes, northern white cedar swamps, spruce-fir-tamarack swamps, and red maple-black ash seepage swamps are automatically significant for this function. The wetland is also likely to be significant if any of the following conditions are met: ☐ Is an example of a wetland natural community type that has been identified and mapped by, or meets the ranking and	

	mapping standards of, the Natural Heritage Information Project of the Vermont Fish and Wildlife Department. ☐ Contains ecological features that contribute to Vermont's natural heritage, including, but not limited to: ☐ Deep peat accumulation reflecting a long history of wetland formation; ☐ Forested wetlands displaying very old trees and other old growth characteristics; ☐ A wetland natural community that is at the edge of the normal range for that type; ☐ A wetland mosaic containing examples of several to many wetland community types; or ☐ A large wetland complex containing examples of several wetland community types. List species or communities of concern:	
20.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above	
20.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	
21. Rare, Threatened, and Endangered Species Habitat	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Wetlands that contain one or more species on the federal or state threatened or endangered lists, as well as species that are rare in Vermont, are automatically significant for this function. The wetland is also likely to be significant if any of the following apply: ☐ There is creditable documentation that the wetland provides important habitat for any species on the federal or state threatened or endangered species lists; ☐ There is creditable documentation that threatened or endangered species have been present in past 10 years; ☐ There is creditable documentation that the wetland provides important habitat for any species listed as rare in Vermont (S1 or S2 ranks), state historic (SH rank), or rare to uncommon globally (G1, G2, or G3 ranks) by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department; ☐ There is creditable documentation that the wetland provides habitat for multiple uncommon species of plants or animals (S3 rank).	

	List name of species and ranking:	
21.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above	
21.2. Statement of no adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	
22. Education and Research in Natural Sciences	☐ Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function. ☐ Owned by or leased to a public entity dedicated to education or research. ☐ History of use for education or research. ☐ Has one or more characteristics making it valuable for education or research.	
22.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above	
22.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	
23. Recreational Value and Economic Benefits	☐ Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function. ☐ Used for, or contributes to, recreational activities. ☐ Provides economic benefits. ☐ Provides important habitat for fish or wildlife which can be fished, hunted or trapped under applicable state law. ☐ Used for harvesting of wild foods. Comments:	
23.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above	
23.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	
24. Open Space and Aesthetics	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Can be readily observed by the public; and ☐ Possesses special or unique aesthetic qualities; or	

	☐ Has prominence as a distinct feature in the surrounding landscape; ☐ Has been identified as important open space in a municipal, regional or state plan. Comments:	
24.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above	
24.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	
25. Erosion Control through Binding and Stabilizing the Soil	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Erosive forces such as wave or current energy are present and any of the following are present as well: ☐ Dense, persistent vegetation along a shoreline or stream bank that reduces an adjacent erosive force. ☐ Good interspersion of persistent emergent vegetation and water along course of water flow. ☐ Studies show that wetlands of similar size, vegetation type, and hydrology are important for erosion control. What type of erosive forces are present: ☐ Lake fetch and waves ☐ High current velocities: ☐ Water level influenced by upstream impoundment If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level. ☐ The stream is artificially channelized and/or lacks vegetation that contributes to controlling the erosive force. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level. ☐ The stream contains high sinuosity. ☐ Has been identified through fluvial geomorphic assessment to be important in maintaining the natural condition of the stream or river corridor.	
25.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above	

25.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue adverse impact to this function. Include any avoidance and minimization measures relevant to this function.	

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Heritage Dr. City/County: Grand Isle Sampling Date: 8/18/15

Applicant/Owner: John Quackenbush State: VT Sampling Point: Wetland

Investigator(s): Gunnar Olson Section, Township, Range: South Hero

Landform (hillslope, terrace, etc.): Small Embankment Local relief (concave, convex, none): ravine

Slope (%): 20 Lat: 44° 38' 48.09" N Long: 73° 17' 37.87" W Datum: NAVD

Soil Map Unit Name: Covington Silty Clay loam NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✓ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✓ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ____

Water Table Present? Yes ✓ No ____ Depth (inches): (11)

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Box Elder	50	Y	FAC
2. American Elm	50	Y	FACW
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Buckthorn	10	N	UPlan
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Jewelweed	75	Y	FACW
2. Parsnip	10	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Riverbank Grape	50	Y	FACW
2.			
3.			
4.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Rapid Test for Hydrophytic Vegetation

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1].

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland TP 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	5Y 3/2	100	None	0			friable	SiH loam
2"- 18"	10YR 4/2	80	10YR 4/2	80			firm	Silty Clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✓ Depleted Below Dark Surface (A11)
- ✓ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

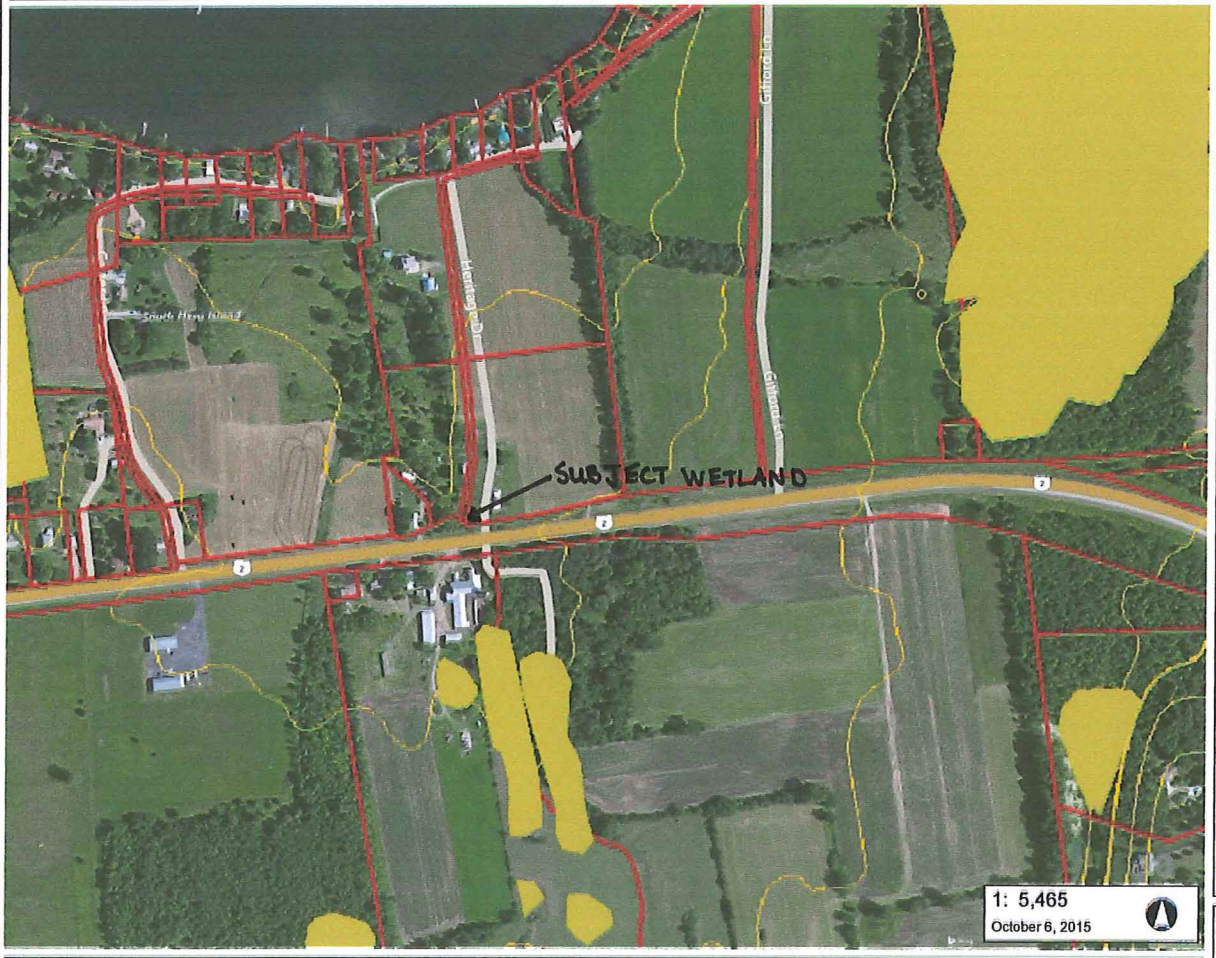
Remarks:

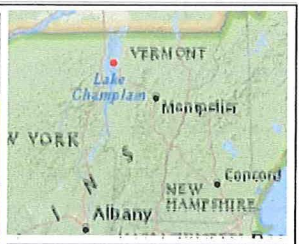
VERMONT

Natural Resources Atlas

Vermont Agency of Natural Resources

vermont.gov





LEGEND

Wetlands - VSWI
- Class 1 Wetland
- Class 2 Wetland

Parcels (where available)

Town Boundary

NOTES

Map created using ANR's Natural Resources Atlas

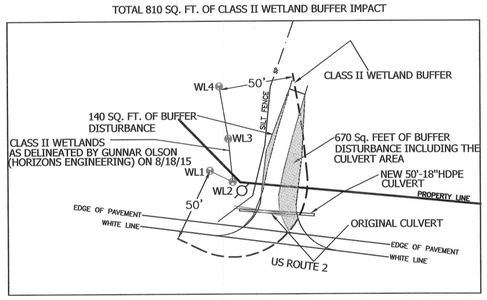
278.0 0 139.00 278.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 455 Ft. 1cm = 55 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION

PROPOSED COMMERCIAL ENTRANCE OVER EXISTING DRIVE

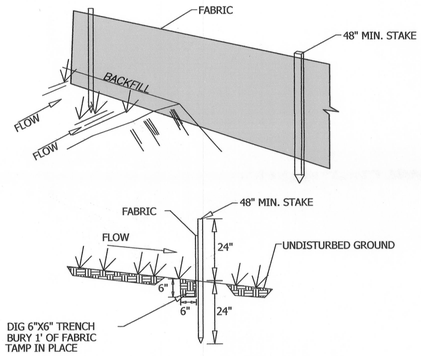
TOTAL 810 SQ. FT. OF CLASS II WETLAND BUFFER IMPACT



SOILS INVESTIGATIONS BY GUNNAR OLSON (HORIZONS ENGINEERING) WITH POST HOLE DIGGER

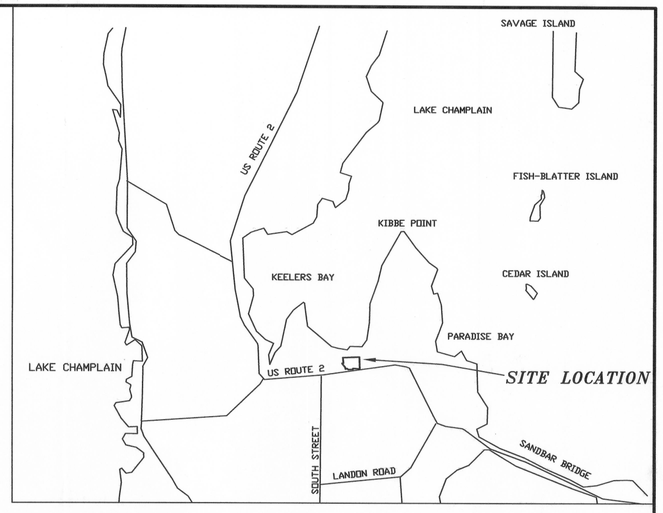
TP 1
0-2" DARK OLIVE GRAY (5Y 3/2), SILT LOAM, DAMP, FRIABLE
2"-18" DARK GRAYISH BROWN (10YR 4/2), SILTY CLAY LOAM, DAMP, FIRM, REDOXOMORPHIC FEATURES PREVALENT THROUGHOUT

TP 2
0-3" DARK OLIVE GRAY (5Y 3/2), SILT LOAM, DAMP, FRIABLE
3"-18" DARK GRAYISH BROWN (10YR 4/2), SILTY CLAY LOAM, DAMP, FIRM, REDOXOMORPHIC FEATURES PREVALENT FROM 8"-10"



SILT FENCE DETAIL

N.T.S.



LEGEND

- DRILLED WELL/WATER SHUT-OFF
- UTILITY POLE
- PROPERTY LINE
- WETLAND BUFFER LINE
- SILT FENCE
- TOP OF BANK
- STREAM
- WETLAND FLAG WL2
- SOIL TEST PIT TP 1

0 20 40 80 160

SCALE IN FEET

horizons Engineering Inc.
17 Sunset Terrace
Newport, Vermont 05855
Phone 802.334.6434 - Fax 802.334.5602

WETLAND IMPACT PLAN
PREPARED FOR

PEST PRO, INC.

P.O. BOX 601
SOUTH HERO, VERMONT

OF PROPERTY LOCATED AT
238 U.S. ROUTE 2
SOUTH HERO, VT

NO.	DATE	REVISION DESCRIPTION	ENG	DWG

DATE: 8/31/2015	PROJECT #: 15570
SURV'D BY: DAT	DRAWN BY: DAT/GDO
CHECK'D BY:	ARCHIVE #: H-___

SHEET 1 OF 1